BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

SECOND EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF

CATHERINE A. KOCH

ON BEHALF OF PUGET SOUND ENERGY

JANUARY 31, 2022
PUGET SOUND ENERGY

SECOND EXHIBIT (NONCONFIDENTIAL) TO THE PREFILED DIRECT TESTIMONY OF CATHERINE A. KOCH

CONTENTS

I. CUSTOMER AND PUBLIC SAFETY ............................................................1
   A. Overview ............................................................................................1
   B. Emergency Repair .............................................................................3
   C. Public Improvement ..........................................................................8

II. CONCLUSION .........................................................................................13
I. CUSTOMER AND PUBLIC SAFETY

A. Overview

Q. Please briefly describe Puget Sound Energy’s (“PSE”) customer and public safety investments presented in this case.

A. Customer and public safety are PSE’s highest priority. It is the primary focus for all work performed on PSE’s electric and gas systems. It is also the primary driver of key activities including emergency repair and public improvement through engagement with jurisdictions regarding transportation projects that may impact PSE’s infrastructure. Investments in new or modified infrastructure are designed and constructed in accordance with PSE standards and applicable state and federal safety standards.

Q. Please describe how these investments are managed through the activities of emergency repair and public improvement.

A. Customer and public safety investments are broken down into the investment categories of emergency repair1 and public improvement.2 These investments are classified as “programmatic” investments, meaning that recurring individual.

---

1 May be referred to as “Emergent” programs in other witness’s testimony.
2 May be referred to as “PI” programs in other witness’s testimony.
projects support a common objective with a basis for future investments that are extrapolated from historic trends or current investment plans. Table 1 provides the overarching objective, program type, and used and useful category.

**Table 1. Used and Useful Categorization of Operations Program Types**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Program Type</th>
<th>Used and Useful(^3) Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer and public safety</td>
<td>Emergency Repair</td>
<td>Programmatic</td>
</tr>
<tr>
<td></td>
<td>Public Improvement</td>
<td>Programmatic</td>
</tr>
</tbody>
</table>

Q. Please provide PSE’s actual and planned customer and public safety capital investments over the six rate periods presented in this case.

A. Table 2 provides the actual plant in service amounts from January 1, 2019 through the end of the test year of June 30, 2021. The remaining periods are estimated based on historic trends and programmatic plans.

**Table 2. Summary of Total Customer and Public Safety Investments by Rate Period**

<table>
<thead>
<tr>
<th>Customer and public safety ($ Millions)</th>
<th>Up through Current Test Year 1/1/2019 – 6/30/2021</th>
<th>Proforma 7/1/2021 – 12/31/2021</th>
<th>Gap Year 2022</th>
<th>Rate Plan Year 1 2023</th>
<th>Rate Plan Year 2 2024</th>
<th>Rate Plan Year 3 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Capital investment</td>
<td>223.4</td>
<td>52.0</td>
<td>117.3</td>
<td>131.0</td>
<td>133.8</td>
<td>138.0</td>
</tr>
<tr>
<td>Gas Capital investment</td>
<td>105.1</td>
<td>21.1</td>
<td>42.6</td>
<td>49.1</td>
<td>50.1</td>
<td>50.4</td>
</tr>
</tbody>
</table>

Additionally, there is incremental Operations and Maintenance (“O&M”) related to capital investment (“OMRC”) associated with the above rate periods of about $33 million.

\(^3\) Docket U-190531, Policy Statement on Property That Becomes Used and Useful After the Rate Effective Date (Jan. 31, 2020).
B. Emergency Repair

Q. Please describe PSE’s emergency repair investments and core objectives and priorities.

A. Emergency repairs, or “corrective maintenance,” includes the repair and/or replacement of failed or compromised infrastructure, such as replacing a pole that has been damaged or has been inspected and imminent failure could occur, repairing storm damage, repairing a meter set that has been damaged or repairing a leak that requires extensive pipe replacement. The core objectives of this work and investments are to respond quickly to resolve immediate and imminent safety concerns and return the infrastructure to sound function for the health of the system. Emergency repairs are the highest priority for PSE, including priority over discretionary work.

Q. Please provide PSE’s actual and planned emergency repair capital investments over the six rate periods presented in this case.

A. Table 3 provides the actual plant in service amounts from January 1, 2019 through the end of the test year of June 30, 2021. The remaining periods are estimated based on historic trends and programmatic plans.
Table 3. Summary of Emergency Repair Investments by Rate Period

<table>
<thead>
<tr>
<th>Emergency repair</th>
<th>Up through Current Test Year 1/1/2019 – 6/30/2021</th>
<th>Proforma 7/1/2021 – 12/31/2021</th>
<th>Gap Year 2022</th>
<th>Rate Plan Year 1 2023</th>
<th>Rate Plan Year 2 2024</th>
<th>Rate Plan Year 3 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Capital investment ($ Millions)</td>
<td>156.5</td>
<td>38.5</td>
<td>66.7</td>
<td>68.7</td>
<td>66.3</td>
<td>68.1</td>
</tr>
<tr>
<td>Electric Outages addressed (#)</td>
<td>38,000</td>
<td>9,402</td>
<td>16,268</td>
<td>16,765</td>
<td>16,162</td>
<td>16,614</td>
</tr>
<tr>
<td>Gas Capital investment ($ Millions)</td>
<td>44.6</td>
<td>9.7</td>
<td>23.5</td>
<td>25.7</td>
<td>26.9</td>
<td>28.1</td>
</tr>
<tr>
<td>Gas Leaks addressed (#)</td>
<td>2,792</td>
<td>608</td>
<td>1,472</td>
<td>1,607</td>
<td>1,684</td>
<td>1,758</td>
</tr>
</tbody>
</table>

Additionally, there is incremental OMRC associated with the above rate periods of about $13 million.

Q. Please describe the work completed and anticipated through the end of the rate plan.

A. PSE repaired infrastructure in response to 38,000 outages since the last rate case and up through the end of the current test year period. PSE anticipates outages will continue in a range of 16,000 and 17,000 annually from July 1, 2021 through December 31, 2025.

PSE responded to 47,504 odor calls and repaired 2,792 hazardous leaks since the last rate case and up through the end of the current test year period. PSE anticipates leaks to continue in a range of 1,500 and 1,800 annually from July 1, 2021 through December 31, 2025.
Q. Please describe the basis for the forecasted emergency repair investments in more detail.

A. Forecasted funding is generally based on historical failure trends and costs. For example, electric emergency repair funding continues to increase due to the increasing trend in electric outages as shown in Figure 1.

![Figure 1. Number of Outages by Year (2017-2020)](image)

In the case of gas emergency repair funding, while PSE has made tremendous progress in reducing the number of recorded leaks over the last 15 years, new gas leaks, as shown in Figure 2, continue at a slight upward trend requiring a continued increase in investment associated with emergency response to these leaks.
In general, PSE forecasted investment funding from 2019 actuals, added funding to account for units of property changes associated with conductors, and then adjusted by traditional escalators including inflation, labor, materials, and contracts. PSE’s experience in 2020 and thus far in 2021 regarding the number of outages and subsequent costs exceed the 2019 baseline. However, grid modernization investments are expected to have an offsetting affect to this trend as the degrading reliability trend flattens and starts to improve in the outer years of the rate plan. These emergency repair investments are not ranked against the evaluation criteria in the iDOT\(^4\) planning model.

---

\(^4\) As discussed in Exh. CAK-1T, in section II.C.4, PSE uses a tool called the Investment Decision Optimization Tool ("iDOT") to evaluate portfolio benefits, including both quantitative and qualitative benefits but only for discretionary planned investments.
Q. **Please describe cost controls employed to efficiently deploy capital investments.**

A. Because of the immediate needed actions to respond to emergencies, these investments are generally like-kind repairs and replacements in accordance with established procedures for repairs and completion defined in fourteen gas design, construction, and operating field procedures and standards and twenty-one electric design and construction work practices. I discuss the management of this work further in my Prefiled Direct Testimony, Exh. CAK-1T, section II.D regarding unplanned investments. PSE’s established service provider pricing and PSE’s oversight provide cost control with this immediate work. The investment level may vary based on the number of events and the degree of damage that must be repaired or replaced.

Q. **Please describe the benefits of emergency repair investments.**

A. Because these investments are primarily reactive when an event occurs, such as an outage or leak, the traditional idea of benefits does not apply. In fact, the events that create the response contribute negatively to performance metrics such as electric reliability, SAIDI and SAIFI, or gas methane emissions. The grid modernization and pipeline modernization programmatic investments address the causes of the emergency repair investments for longer term improvements.

Q. **Please describe the performance metrics that these investments impact.**

A. These investments generally impact the following corporate performance metrics by how quickly a repair can be made and power restored:
• Failure to restore electric service within 24 hours of an outage during non-major storms;
• Failure to restore electric service within 120 hours of an outage;
• SAIDI / SAIFI;
• Average gas field response time;
• Average electric field response time; and
• Complaints to the UTC per 1,000 customers.

Q. Are there O&M cost reductions that are expected to result from these program investments?

A. No. Replacing equipment in response to this unplanned need does not reduce O&M expense as the new equipment will need to be maintained as well.

C. Public Improvement

Q. Please describe PSE’s public improvement investments and core objectives and priorities.

A. Public improvement investments are in response to requests by municipalities to relocate facilities as specified in jurisdictional franchise agreements to provide that PSE’s infrastructure is safe from construction and future operational damage. The core objectives of this work and investments are to respond timely to resolve conflicts with transportation improvement plans, minimize relocation impacts, and so that during jurisdictional construction projects, damage to PSE infrastructure is avoided. Similar to emergency repair investments, public improvement investments take priority over discretionary work.
Q. Please provide PSE’s actual and planned public improvement capital investments over the six rate periods presented in this case.

A. Table 4 provides the actual plant in service amounts from January 1, 2019 through the end of the test year of June 30, 2021. The remaining periods are estimated based on historic trends and are adjusted for known jurisdictional plans.

Table 4. Summary of Public Improvement Investments by Rate Period

<table>
<thead>
<tr>
<th>Public improvement</th>
<th>Up through Current Test Year 1/1/2019 – 6/30/2021</th>
<th>Proforma 7/1/2021 – 12/31/2021</th>
<th>Gap Year 2022</th>
<th>Rate Plan Year 1 2023</th>
<th>Rate Plan Year 2 2024</th>
<th>Rate Plan Year 3 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Capital investment ($ Millions)</td>
<td>66.8</td>
<td>13.5</td>
<td>50.6</td>
<td>62.3</td>
<td>67.4</td>
<td>69.8</td>
</tr>
<tr>
<td>Electric Relocations addressed (#)</td>
<td>575</td>
<td>116</td>
<td>435</td>
<td>536</td>
<td>580</td>
<td>601</td>
</tr>
<tr>
<td>Gas Capital investment ($ Millions)</td>
<td>60.4</td>
<td>11.4</td>
<td>19.1</td>
<td>23.5</td>
<td>23.1</td>
<td>22.2</td>
</tr>
<tr>
<td>Gas Relocations addressed (#)</td>
<td>427</td>
<td>81</td>
<td>135</td>
<td>166</td>
<td>164</td>
<td>157</td>
</tr>
</tbody>
</table>

Additionally, there is incremental OMRC associated with the above rate periods of about $20 million.

Q. Please describe the work completed and anticipated through the end of the rate plan.

A. PSE completed 575 electric relocation projects and 427 gas relocation projects since the last rate case and up through the end of the current test year period. PSE anticipates 575 to 760 transportation relocation projects annually including relocation for 66 to 100 fish culverts, 20 Sound Transit projects, and an anticipated increase in transportation projects that will result from the
Infrastructure Investment and Jobs Act from July 1, 2021 through December 31, 2025. As the project scope, cost, and schedule are driven by the jurisdiction, the actual costs may vary from the forecasted investment plan. Additionally, projects can be delayed or accelerated based on the jurisdiction’s annual budget or funding level.

**Q. Please describe the basis for the forecasted public improvement investments in more detail.**

**A.** Forecasted funding is generally based on the current year’s public improvement investments (based on 2020 actuals) inflated by traditional escalators such as inflation, labor, materials, and contracts, and adjusted to include known projects received from the jurisdictions. This work is not ranked in iDOT due to the franchise obligations that must be complied with. Forecasts include the reimbursements from jurisdictions per franchise agreements. Figure 3 provides the public improvement trend since 2017. Historical trends have been less useful since COVID-19 and the subsequent economic and behavior impacts on jurisdictional decisions regarding transportation plans.
The annual funding level is re-forecasted each year as a result of the significant variability due to external decisions. These public improvement investments are not ranked against the evaluation criteria in the iDOT planning model.

**Q. Please describe cost controls employed to efficiently deploy capital investments.**

**A.** The cost controls deployed by PSE for investments follows the general approach discussed in the Prefiled Direct Testimony of Roque B. Bamba, Exh. RBB-1T. A project manager is assigned to manage the project from inception through closeout, driving the schedule, managing budgets, and coordinating construction and design activities and milestones with both internal and external team members. PSE’s established service provider pricing and PSE project oversight, including billing review and approval, drives cost control. The investment level
may vary based on the number of transportation projects and scope of work necessary such as small relocations or major rerouting of infrastructure such as for Sound Transit. While PSE is informed by local transportation improvement plans, some of them five to ten years out, factors such as the economy and national or state transportation infrastructure grants often shift project schedules which can contribute to investment level changes from forecasted levels. In most cases, existing infrastructure is relocated by replacing with like-kind equipment and materials, preserving the existing functionality of the system.

Q. **Please describe benefits of the public improvement investments.**

A. Because these investments are primarily reactive to jurisdictional projects and obligations, such as relocating a pole or gas main before or in coordination with a local transportation project, the traditional idea of benefits does not apply. In fact, the events that create the response may contribute negatively to performance metrics such as electric reliability, SAIDI and SAIFI, if an outage must be taken for the jurisdiction to do the work. The grid modernization and pipeline safety programmatic investments may factor in, when known, to jurisdictional plans and trends, for example, by proactively moving poles for clear zone requirements or moving infrastructure out of the public right of way to easements.

Q. **Please describe the performance metrics that these investments impact.**

A. These investments generally impact the SAIDI and SAIFI corporate performance metrics by avoiding an outage caused by jurisdictional construction damage or,
more negatively, by a scheduled outage and the length of time it takes to complete the work and restore power.

**Q. Are there O&M cost reductions that are expected to result from these program investments?**

**A.** No. PSE has a standard practice to review public improvement project locations and, where possible, to consolidate design, management, and coordination efforts when there is an overlap with planned programmatic or specific investments. This coordination may help to drive down poor condition asset populations that must be addressed, avoiding a potential future outage by replacing the poor condition assets through the relocation work. However, this may happen only one to two times per year thus the potential for meaningful impact is very small overall. This work may increase O&M expense, where given enough lead time and depending on the complexity of the public improvement plan, PSE can negotiate and pay for a redesign of the jurisdictional project to avoid relocation, which is an O&M expense in lieu of the capital relocation investment.

**II. CONCLUSION**

**Q. Does this conclude your testimony?**

**A.** Yes, it does.