

BEFORE THE WASHINGTON  
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

DOCKETS UE-190529, UG-190530,  
UE-190991, UG-190992, UE-190274,  
UG-190275, UE-171225, and UG-  
171226 (*Consolidated*)

**INITIAL POST-HEARING BRIEF  
OF PUBLIC COUNSEL**

March 17, 2020

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**VI. THE COMMISSION SHOULD NOT ALLOW PSE TO CHARGE CUSTOMERS FOR ITS IMPRUDENT INVESTMENT IN AMI**

101. PSE plans to spend \$473 million to replace its entire Automatic Meter Reading (AMR) system with an Advanced Metering Infrastructure (AMI) system over approximately six years.<sup>188</sup> The existing AMR system is still functioning and had several years left of depreciable life.<sup>189</sup> In its Business Case for the AMI project, PSE overstated the benefits and understated the costs of the full AMI deployment.<sup>190</sup> The actual benefits of the AMI deployment do not exceed the actual costs to PSE's customers. Less costly options were available to PSE in continuing to operate the existing AMR system and to achieve similar conservation voltage reduction (CVR) outcomes it claims as a benefit of its AMI investment.<sup>191</sup> Therefore, Commission should not allow PSE to charge ratepayers for the almost half a billion dollars in capital and return on investment that PSE plans to spend on the wholesale AMR system replacement with AMI.

102. If the Commission chooses to allow cost recovery of PSE's AMI deployment, the Commission should disallow cost recovery for the \$126.8 million in book value of the existing metering system replaced prematurely to avoid forcing customers to pay for two metering systems—the new AMI system and the undepreciated legacy AMR system that PSE chose to replace.<sup>192</sup> Further, the Commission should not allow PSE to collect \$62.5 million in carrying

<sup>188</sup> See Prefiled Rebuttal Testimony of Catherine A. Koch, Exh. CAK-6Tr, at 4:7-5:6; Prefiled Direct Testimony of Catherine A. Koch, Exh. CAK-1Tr at 26:5; Koch, CAK-4r at 1; Koch, TR. 282-88.

<sup>189</sup> See Koch TR. at 291:14-294:19; Prefiled Response Testimony of Paul J. Alvarez, Exh. PJA-1T at 10 (citing Alvarez, Exh. PJA-5, PSE Response to Public Counsel Data Request No. 146, Attachment A, lines 68 (electric), 76 (gas), & 91 (AMR nodes)).

<sup>190</sup> See Alvarez, Exh. PJA-1T at 5-21.

<sup>191</sup> *Id.* at 11-17.

<sup>192</sup> *Id.* at 6-7; see also Alvarez, Prefiled Cross-Answering Testimony of Paul J. Alvarez, Exh. PJA-8T at 5-6.

charges on the legacy AMR assets that are no longer in service but remain in rates due to the premature removal.<sup>193</sup>

103. In addition, PSE should be held accountable for all available benefits of the AMI deployment, including those discussed in the Get to Zero program. A requirement to report the benefits from AMI annually for five years after PSE achieves full deployment would serve to hold PSE accountable for delivering benefits to customers.

104. The Commission also should take steps to make distribution planning and capital budgeting more transparent and stakeholder-engaged.<sup>194</sup> An approach similar to the Commission's integrated resource planning process would help discourage similar imprudent investment in smart-grid technology in the future.

**A. Legal Standard for Cost Recovery**

105. Regulated public service companies bear the burden of proof that their decisions are prudent, just as they are required to demonstrate generally that their proposed rates are just and reasonable reflecting capital expenditures that are used and useful to end-users.<sup>195</sup> In the instant case, the Company, PSE, bears the burden of demonstrating that its decision to replace fully its existing AMR metering system with an AMI system over six years, as opposed to other alternatives, was prudent with respect to recovery of the associated costs—\$473 million—from Washington ratepayers.<sup>196</sup>

<sup>193</sup> *See id.*

<sup>194</sup> *See id.* at 21-23.

<sup>195</sup> *WUTC v. PacifiCorp*, Docket UE-152253, Order 12 (2016 WL 7245476) (Sept. 1, 2016) (citing *WUTC v. Cascade Nat'l Gas Corp.*, Docket UT-941408, Third Supplemental Order (Oct. 30, 1995)); *see also* RCW 80.04.130(4).

<sup>196</sup> *WUTC v. PacifiCorp*, Docket UE-152253, Order 12 (2016 WL 7245476) (Sept. 1, 2016).

106. The Commission has often cited the prudence legal standard as: “What would a reasonable board of directors and company management have decided given what they knew or reasonably should have known to be true at the time they made a decision?”<sup>197</sup> In other words, the analysis should not use the benefit of hindsight in evaluation of PSE’s decision to pursue a full replacement of the legacy AMR system with the AMI system. Moreover, the prudence standard applies both to the question of need and the appropriateness of the substantial capital investment in the AMI system.<sup>198</sup>

107. The Commission in the past has considered three factors in evaluating whether a Company’s decision was prudent: 1) if the initiation of the project was prudent 2) if the continued construction of the project was prudent and 3) if the associated expenses were prudently incurred.<sup>199</sup> In other words, the examination of prudence on a specific capital expenditure is not limited to a single point in time, but is considered in the continuum of the specifics of the action.<sup>200</sup>

**B. PSE’s Investment to Implement a Full Replacement of the Existing AMR System with AMI Was Not Necessary to Address Alleged Obsolescence of the Existing AMR System**

108. To justify its six-year expenditure of \$473 million to replace the existing AMR metering system with AMI, PSE claims that the AMR system was obsolete and failing to an unreasonable degree, that certain new equipment was discontinued and not obtainable, and that certain devices

<sup>197</sup> *Id.* (citing *WUTC v. Puget Sound Power & Light Co.*, Docket No. U-83-54, Fourth Supplemental Order at 32 (Sept. 28, 1984)).

<sup>198</sup> *Id.*

<sup>199</sup> *Id.* (citing *WUTC v. Wash. Water Power Co.*, Docket No. U-83-26, Fifth Supplemental Order (Jan. 19, 1984)).

<sup>200</sup> *Id.*

required reprogramming.<sup>201</sup> However, in fully replacing the AMR system with AMI, PSE removed functioning in-service AMR equipment with low failure rates and several years of undepreciated asset life remaining.<sup>202</sup> PSE was still able to obtain allegedly discontinued replacement AMR equipment well after PSE began deploying AMI equipment in 2018<sup>203</sup> and was able to reprogram devices at a proportionally small cost.<sup>204</sup>

109. PSE describes its AMI investment to replace its AMR system as one of several programs that are aimed at supporting a reliable and resilient grid.<sup>205</sup> PSE's AMR system was installed between 1998 and 2001 across its service territory that now serves 1.2 million electric customers and 800,000 gas customers.<sup>206</sup> Despite nine years of undepreciated asset life remaining for AMR electric meters and 14 years for AMR gas modules, PSE began replacing these assets in 2018 claiming design life of only 15 years and that the entire AMR system is obsolete.<sup>207</sup> PSE describes how the contractual life of AMR gas meters is 15 years, but "the true operational life is unknown."<sup>208</sup>

110. In 2013 PSE assessed the performance of its AMR system and observed the following annual failure rates:<sup>209</sup>

- Network equipment 4%
- Electric meters 1.6%

<sup>201</sup> See Prefiled Rebuttal Testimony of Catherine A. Koch, Exh. CAK-6Tr, at 4:7-5:6; Prefiled Direct Testimony of Catherine A. Koch, Exh. CAK-1Tr at 26:5; Koch, CAK-4r at 1; Koch, TR. 282-88.

<sup>202</sup> See Catherine A. Koch, TR. 294:11-19; Koch, Exh. CAK-6Tr at 10:1-4; Alvarez, Exh. PJA-5.

<sup>203</sup> See Koch, Exh. CAK-8X; Koch, TR. 282:21-287:2.

<sup>204</sup> See Koch, Exh. CAK-9X; Koch, TR. 288:3-17.

<sup>205</sup> Prefiled Direct Testimony of Catherina A. Koch, Exh. CAK-1Tr at 22:13-17.

<sup>206</sup> Koch, Exh. CAK-1Tr at 26; Koch, Exh. CAK-4r at 4:11-12.

<sup>207</sup> *Id.*; Alvarez, Exh. PJA-5, PSE Response to Public Counsel Data Request No. 146, Attachment A, lines 68 (electric), 76 (gas), & 91 (AMR nodes). Based on undepreciated balances as of 2018 divided by annual depreciation amounts of 8.99 years and 13.7 years for electric meters and gas AMR modules, respectively. See Alvarez, Exh. PJA-5, Attachment A. In Public Counsel exhibit PJA-5, PSE demonstrates that it is depreciating AMR meters over a mere 12 years as shown by dividing the original cost of the assets by the annual depreciation. See *id.*

<sup>208</sup> Koch, Exh. CAK-4, Appendix. B at 4.

<sup>209</sup> Koch, Exh. CAK-4r at 4-5; Koch, TR 288:18-289:20; Koch, Exh. CAK-4, Appendix B at 3.



- Gas AMR batteries reaching “end of life” 36%
- Commercial AMR gas modules 11%
- All gas modules 2%

111. Thus, with the possible exception of gas AMR batteries and commercial AMR gas modules, failure rates were less than five percent annually for network equipment and two percent annually or less for gas modules and electric meters, respectively.<sup>210</sup> These failure rates hardly indicate that the entire system is failing. To the contrary, these failure rates indicate that PSE’s existing meter equipment was performing well for equipment designed to last 20 to 30 years, and the AMR nodes were performing as expected for equipment designed to last 10 years on average with an expected five percent annual failure rate.<sup>211</sup> PSE could have replaced its batteries instead of replacing its entire metering system. Nevertheless, as PSE confirmed during cross examination, it proceeded with its AMI implementation and replaced AMR equipment despite it being functional and in use prior to removal.<sup>212</sup> These failure rates for PSE’s AMR equipment are not significant and did not warrant immediate action for wholesale removal of the AMR system and abandonment of \$126.8 million of assets still in use and far from being fully depreciated.<sup>213</sup>

112. To lend support to its claim that “the AMR network is failing and deficient,” PSE states that the AMR system “requires 50,000-60,000 meters to be manually read monthly, which is an additional monthly expense that would not be required for a properly functioning system.”<sup>214</sup> At the same time, PSE did not include the cost of the 50,000-60,000 manual meter reads in its

<sup>210</sup> *See id.*

<sup>211</sup> Alvarez, Exh. PJA-1T at 8; Alvarez, Exh. PJA-5. The low failure rates PSE provides in its testimony indicates at least 20 to 30 years of useful life. *See id.*

<sup>212</sup> Koch, TR. 294:11-19.

<sup>213</sup> Alvarez, Exh. PJA-1T at 10.

<sup>214</sup> Koch, Exh. CAK-6Tr at 5-6.

business case calculation of the cost of maintenance obligations for continuing to operate the AMR system.<sup>215</sup> PSE explains that because Landis + Gyr owned all the AMR equipment and managed the system for PSE, PSE “would have paid the same . . . whether they provided an automated read or a manual read.”<sup>216</sup> Yet PSE references the need to perform 50,000-60,000 manual meter readings monthly as one of its reasons for fully replacing the AMR system.

113. PSE also claims that the AMR system was obsolete because of an “inability to obtain new electric replacement equipment” due to the equipment being “discontinued.”<sup>217</sup> PSE began replacing the AMR network with AMI equipment in 2016, and began meter installation in 2018.<sup>218</sup>

114. In response to Public Counsel Data Request 256, PSE provided a list of the five AMR equipment items that were discontinued by PSE’s contractor, Landis + Gyr.<sup>219</sup> When asked to provide documentation of the discontinuation, PSE provided notices of “End-of-Sale” and a “Last Time Buy Opportunity” for the five equipment items.<sup>220</sup> For one item, the Focus AX S4, a notice issued on May 29, 2019, states that the item was “sunsetting” but that the window of time to buy new units was open and would not expire until December 1, 2019.<sup>221</sup>

115. For a second item, the Focus AL 1 way, a notice dated February 13, 2019 states that effective January 18, 2019, no new units would be produced but that Landis + Gyr would “work on a customized plan to support maintenance and growth operations for each customer.”<sup>222</sup> For a

<sup>215</sup> Koch, Exh. CAK-4r at 7-8; Koch, Exh. CAK-10X.

<sup>216</sup> Koch, Exh. CAK-10X; Koch, TR. 289:21-291:7.

<sup>217</sup> Koch, Exh. CAK-6Tr at 4:15-17.

<sup>218</sup> See Koch, Exh. CAK-9X; Koch, TR. 283:6-8.

<sup>219</sup> See Koch, Exh. CAK-8X.

<sup>220</sup> *Id.*

<sup>221</sup> *Id.* at Attachment A; Koch, TR. 284:14-285:4.

<sup>222</sup> *Id.* at Attachment B; Koch, TR. 285:6-19.

third item, the Focus AX USC, a notice dated September 6, 2019, announces a last opportunity to buy the item that would expire on December 1, 2019.<sup>223</sup> A fourth item, the Series 4 kV2c, is dated January 6, 2020, and announces a last time to buy that would expire March 31, 2020.<sup>224</sup> For a fifth item, the Gridstream RF, a notice announces end-of-sale effective March 31, 2012, and for a sixth, the Elster A2, a notice announces end-of-availability in 2016.<sup>225</sup>

116. The last two of these five items appear to have been phasing out in 2012 and 2016, respectively, and yet PSE was somehow able to manage continued use of its AMR system prior to beginning its AMI meter replacements in 2018. And for the other four discontinued items, replacements were available at least through 2019, and for one item, well into 2020. In each of the notices, contractor, Landis + Gyr offered to provide continued support and maintenance for these equipment items.

117. Based on the information in these notices attached to PSE's response to Public Counsel Data Request No. 256, the AMR system was not failing when it began its AMI implementation in 2016 and replacement of electric meters and gas modules in 2018. Nevertheless, PSE pursued replacement of its entire AMR system with an average annual replacement rate of 195,000 electric meters and 175,000 gas modules each year from 2018 through 2023.<sup>226</sup> PSE's full AMI implementation will remove AMR assets with a net book value totaling approximately \$127 million.<sup>227</sup> PSE intends for this \$127 million worth of unnecessarily stranded assets to go into customer rate base. Public Counsel estimates that these stranded assets will incur carrying

<sup>223</sup> *Id.* at Attachment C; Koch, TR. 285:20-286:5.

<sup>224</sup> *Id.* at Attachment E; Koch, TR. 286:6-17.

<sup>225</sup> *Id.* at Attachments D and F.

<sup>226</sup> Koch, Exh. CAK-4r at 3.

<sup>227</sup> Koch, TR. 291-93; Koch, Exh. CAK-11X; Koch, Exh. CAK-13X.

charges of \$62.5 million absent Commission action.<sup>228</sup> Carrying charges include 1) PSE's authorized return on equity, 2) federal income taxes on profits, 3) state sales taxes on revenues, and 4) interest expense.<sup>229</sup> Thus, PSE intends to recover a total of approximately \$189 million for metering equipment assets not in use, in addition to similar costs for the new AMI system. In effect, PSE's customers would pay for two metering systems, while only one is in use.

118. PSE also claims that AMR system is obsolete because of "the need to perform reprogramming of devices because different network equipment must be installed." However, in 2017, which was the last full year before PSE began to install AMI meters, the total cost of reprogramming for that year was only \$139,000—a small amount considering the alleged widespread failure of the entire AMR system.<sup>230</sup>

119. PSE's rationale for prematurely removing its AMR system is unpersuasive. The existing AMR metering system was still functioning and, at most, was failing at rates lower than five percent for residential customers. For units that needed it, reprogramming or replacements appear to have been readily available at relatively low cost. It is unreasonable and thus imprudent to replace 100 percent of the system before it is warranted at a cost of \$473 million to customers.

**C. PSE Understates Costs and Overstates Benefits of its AMI Project in its Business Case to Justify its Imprudent Investment in AMI**

120. In its business case for the AMI investment, PSE understates costs and overstates benefits of the AMI project. PSE uses this flawed analysis to justify an imprudent capital investment in AMI that will disadvantage customers by unnecessarily inflating rate base.<sup>231</sup> PSE estimates

<sup>228</sup> See Alvarez, Exh. PJA-3; Alvarez, Exh. PJA-1T at 6-7; Koch, Exh. CAK-11X; Koch, Exh. CAK-13X; Koch, TR. 291:21-294:19.

<sup>229</sup> Alvarez, Exh. PJA-1T at 9.

<sup>230</sup> Koch, Exh. CAK-9X; Koch, TR. 288:8-17.

<sup>231</sup> Alvarez, Exh. PJA-1T at 20.

costs of its AMI deployment at \$473 million<sup>232</sup> and benefits at \$668 million.<sup>233</sup> Subtracting this cost value from the benefit value yields a net benefit of \$195 million.<sup>234</sup>

121. However, the AMI business case cost figure of \$473 million omits the \$127 million net book value of the legacy AMR equipment abandoned in the AMI implementation and \$62.5 million in associated carrying charges.<sup>235</sup> Also, the \$668 million benefits sum improperly includes 1) \$230 million of avoided costs PSE claims would otherwise have been incurred in maintaining the existing AMR system; and 2) \$416 million in CVR benefits that could have been attained through a more selective placement of fewer smart meters at a lower cost.<sup>236</sup>

**1. PSE underestimated costs of its AMI investment**

122. PSE's business case AMI cost estimate of \$473 million understates the cost of its AMI deployment in two ways. First, PSE omitted the cost of the approximately \$127 million book value of the legacy meter equipment abandoned to make way for the AMI system.<sup>237</sup> Second, PSE did not include carrying charges that customers will pay on the abandoned legacy AMR meter equipment that is not fully depreciated.<sup>238</sup> These carrying charges include 1) PSE's authorized return on equity, 2) federal income taxes on profits, 3) state sales taxes on revenues, and 4) interest expense.<sup>239</sup> Public Counsel estimates these carrying charges to amount to an approximate \$62.5 million omission from the PSE Businesses Case.<sup>240</sup> Thus, the book value of

<sup>232</sup> Koch, CAK-4, Appendix A (AMI Business Case) at 5-6.

<sup>233</sup> *Id.* at 7.

<sup>234</sup> Alvarez, Exh. PJA-1T at 5:14-17.

<sup>235</sup> Alvarez, Exh. PJA-1T at 6.

<sup>236</sup> *Id.* at 12-16.

<sup>237</sup> *Id.* at 6-7.

<sup>238</sup> *Id.* at 6-7, 9.

<sup>239</sup> *Id.*

<sup>240</sup> *Id.*

the removed AMR assets and their associated carrying charges totals approximately \$189 million that were omitted from PSE's business case cost calculation for the AMI project.<sup>241</sup>

123. With regard to the book value of the legacy AMR equipment replaced, PSE estimates that as of June 30, 2019, \$102.8 million was invested for electric meters, \$23.8 million for gas meter data transmitters, and \$0.2 million for AMR nodes, for a total of \$126.8 million.<sup>242</sup> Public Counsel witness Paul Alvarez estimates that the \$126.8 million net book value of removed AMR equipment amounts to about \$90.66 per electric customer and \$28.45 per gas customer, not including the \$62.5 million in carrying charges those customers would pay in addition to these capital balances.<sup>243</sup>

124. Carrying charges are costs that customers must pay to cover a utility's investment financing costs, including its return on equity, interest expense on debt, federal income taxes on utility profits, and state sales taxes on revenues.<sup>244</sup> Carrying charges are a part of the costs that utility customers pay in rates. Thus, carrying charges should be included in an accurate estimation of costs and benefits of the AMI investment.<sup>245</sup>

125. In calculating \$62.5 million in carrying charges associated with the \$126.8 million of stranded AMR assets, Public Counsel witness Paul Alvarez considered the remaining years of life on these assets, their remaining book value, and PSE's own revenue requirements calculations.<sup>246</sup> Mr. Alvarez estimated total revenue requirements over the remaining useful lives of the assets removed, and then subtracted the return of capital (depreciation expense) to

<sup>241</sup> *Id.*

<sup>242</sup> Alvarez, Exh. PJA-4 (PSE Response to Public Counsel Data Request No. 70 (First Revised Response) (Nov. 22, 2019)).

<sup>243</sup> Alvarez, Exh. PJA-1T at 7.

<sup>244</sup> *Id.* at 9.

<sup>245</sup> *Id.* at 9-10.

<sup>246</sup> Alvarez, Exh. PJA-5.

determine the amount customers will pay over and above the return of capital. Mr. Alvarez took the following steps in estimating revenue requirements by:

- adding the requested rate of return (9.8 percent) on the equity portion of the rate base (48.5 percent);
- adding federal income taxes on that return (21 percent);
- adding the interest expense (5.57 percent weighted average cost of debt) on the debt portion of the rate base (51.5 percent); and
- grossing the resulting amount by the state sales tax (4.52 percent).<sup>247</sup>

After completing this process for the first year, Mr. Alvarez repeated it for every subsequent year of the remaining undepreciated asset lives, which was nine years for the electric meters removed and 14 years for both the gas meter data transmitters and AMR nodes,<sup>248</sup> and then reducing the size of the rate base each year by the amount of the previous year's depreciation until the equipment was fully depreciated (*i.e.*, \$0 book value remaining).<sup>249</sup>

126. In sum, PSE's cost estimate for the AMI project should be increased to include the value of equipment removed from service prematurely and the carrying charges on this value. The value of the equipment removed from service prematurely should be \$126.8 million, and carrying charges should be an additional \$62.5 million, for a total increase of \$189.3 million, which is a 40 percent increase over PSE's AMI cost estimate of \$473 million.

## **2. PSE overstates benefits of its AMI investment**

127. PSE's AMI business case identifies three sources of benefit: 1) \$436 million in CVR; 2) \$1.5 million from Distribution Automation; and 3) \$230 million of avoided costs that it would

<sup>247</sup> Alvarez, Exh. PJA-1T at 10-11 (citing Alvarez, Exh. PJA-5).

<sup>248</sup> Alvarez, Exh. PJA-5.

<sup>249</sup> Alvarez, Exh. PJA-1T at 10-11.

otherwise incur to maintain its AMR system if it had chosen not to implement AMI.<sup>250</sup> However, these estimates overstate the benefits of AMI in two ways.

128. First, full scale AMI deployment to replace the entire existing AMR system is not necessary to secure the CVR benefits which PSE attributes to AMI. PSE conducted a CVR Pilot on Mercer Island in 2013 to 2014 that included 10 circuits as part of a distribution efficiency initiative.<sup>251</sup> In this Pilot, PSE secured CVR benefits with just three smart meters per circuit that are substantially similar to those PSE claims for its full-scale AMI project.

129. PSE's proposed AMI deployment will install about 1,000 smart meters per circuit.<sup>252</sup> Public Counsel calculated this value by dividing PSE's 1,135,000 customers by 1,118 circuits based on information in PSE's response to Public Counsel Data Request No. 85, subpart (d).<sup>253</sup> As described in greater detail in the testimony of Public Counsel witness Paul Alvarez, the goal of CVR is to reduce voltage all along the circuit without violating the minimum 110-volt limit at the end of the circuit.<sup>254</sup> To implement CVR, a utility needs a way to measure voltage throughout a circuit's length to take advantage of voltage reduction opportunities while simultaneously ensuring that voltage does not drop below the 110-volt limit at the end of the circuit.<sup>255</sup>

130. While line voltage measurement devices such as line sensors have been available to utilities for quite some time, smart meters can also measure voltage. Thus, utilities may employ smart meters as line voltage measurement devices to achieve CVR. PSE used smart meters in

<sup>250</sup> Koch, Exh. CAK-4, Appendix A at 8; *see also* Koch, Exh. CAK-14X, item b.

<sup>251</sup> Alvarez, Exh. PJA-1T at 12.

<sup>252</sup> *Id.*; Koch, TR. 298:20-299:1.

<sup>253</sup> *Id.* (citing Alvarez, Exh. PJA-6, PSE Response to Public Counsel Data Request No. 85, subpart (d)).

<sup>254</sup> Alvarez, Exh. PJA-1T at 13-14.

<sup>255</sup> *Id.*



precisely this manner in its Mercer Island CVR Pilot, installing 30 meters to measure the voltage on ten circuits, *i.e.*, three meters per circuit, to secure the 1.09 percent conservation impact.<sup>256</sup>

131. More smart meters along a circuit enable greater energy reductions, but the marginal improvement from full smart meter voltage monitoring versus more strategic smart meter placement is tiny relative to the dramatic incremental costs of a full smart meter deployment.<sup>257</sup> For example, PSE assumed a 1.14 percent reduction in energy use from CVR in its AMI business case.<sup>258</sup> This is a 4.6 percent improvement over the results observed in the Mercer Island CVR Pilot of 1.09 percent reduction in energy use. PSE estimates that CVR benefits from full smart meter deployment will be \$436.41 million.<sup>259</sup> Because the energy use for a full deployment of AMI is assumed to be 1.14 percent less than typical voltage used, and this is only a 4.6 percent improvement over the 1.09 percent reduction in energy use observed in the Mercer Island Pilot, the \$436.41 in CVR benefits that PSE calculates minus the 4.6 percent improvement could still be derived from AMI implementation to the same extent as that observed in the Mercer Island Pilot.

132. The \$436.41 million of CVR benefits PSE claims reduced by 4.6 percent is \$416.34 in benefit that PSE could have derived from installation of a far fewer number of AMI meters per circuit. In other words, 95.4 percent of the \$436.41 million could have been obtained with a significantly less extensive deployment of AMI meters.<sup>260</sup> Thus, PSE could have secured 95.4 percent of the CVR benefits of a full smart meter deployment with just a few smart meters per

<sup>256</sup> Alvarez, Exh. PJA-7 at 7 (“There are 30 meters placed on Mercer Island for the 10 feeders . . . on the island.”).

<sup>257</sup> *Id.* at 15.

<sup>258</sup> Alvarez, Exh. PJA-6, PSE Response to Public Counsel Data Request No. 85, Attachment A, tab “Assumptions,” cell C28.

<sup>259</sup> Koch, Exh. CAK-4, Confidential Appendix G, tab “Scope Summary,” cell D77.

<sup>260</sup> Alvarez, Exh. PJA-1T at 16.

circuit, or even a few dozen smart meters per circuit.<sup>261</sup> For this reason, it is inappropriate for PSE to claim that \$436.41 million of CVR benefits are derived from full AMI deployment when substantially the same benefit could have been derived from a significantly smaller deployment.

133. Second, PSE counts as a benefit of the AMI deployment the avoided costs it would otherwise have incurred if PSE had pursued the option of continuing to use the AMR metering system. PSE evaluated three AMI options for replacing its AMR system, including deployments over six years starting immediately, ten years starting immediately, and five years but starting in 2023 to coincide with the expiration of PSE's existing meter reading managed services contract.<sup>262</sup> PSE also estimated the cost of continuing its AMR system. However, when comparing alternatives, it is inappropriate to consider avoided costs of paths not chosen as benefits. Even if it were appropriate to consider avoided costs as benefits, PSE did not do the same for the option to continue the AMR system, which would have avoided the \$473 million cost of implementing AMI.<sup>263</sup> PSE should have uniformly evaluated the costs and benefits of each metering option on a stand-alone basis, and selected the best option on behalf of customers. In its options analysis, PSE compared the AMI alternatives to continuing AMR. PSE estimated the cost of continuing the AMR system at \$230.3 million.<sup>264</sup> PSE estimated the cost of its AMI deployment at \$472.7 million. PSE's analysis of the AMI option should be corrected to remove the \$230 million of AMR costs from the benefits of AMI, just as PSE's AMR cost estimate does not include the benefit of avoided AMI option costs. This would correct the over-inflated

<sup>261</sup> *Id.*

<sup>262</sup> Alvarez, Exh. PJA-1T at 16.

<sup>263</sup> *Id.* at 12-13.

<sup>264</sup> Koch, Exh. CAK-4, Confidential Appendix G, tab "Scope Summary" cell D 76.

benefits calculation of the AMR benefits.<sup>265</sup> If PSE had done so, it may have chosen the \$230 million AMR continuation option over the \$473 million option of full AMI deployment.

134. In sum, PSE's benefits calculation should be reduced by the overstated CVR benefits attributed to the full AMI deployment and the inappropriate application of "Avoided AMR Investment." Public Counsel estimates that removing the overstated CVR benefits and the inappropriately included avoided AMR cost would decrease the total benefits of the AMI system by \$646.6 million. These benefit reductions, combined with the \$189 million of costs omitted from PSE's \$473 million AMI cost estimate, paint a very different and more accurate picture of the costs and benefits of PSE's AMI deployment. PSE's decision to deploy AMI was not prudent, particularly when compared to the \$230 million cost to continue the AMR system.<sup>266</sup>

**D. All Cost-Saving Benefits of PSE's AMI Investment Should Return to Customers**

135. Given the staggeringly large cost that PSE's AMI investment will impose on customers, all cost saving benefits of the AMI deployment should likewise go back to customers through reduction in revenue requirement, including the benefits PSE discusses in its "Get to Zero" program.<sup>267</sup> Despite attributing various cost-saving benefits of PSE's AMI investment in its discussion of the Get to Zero program, PSE states that it is not willing to commit to reductions in revenue requirement for these benefits.<sup>268</sup> PSE claims that the Commission's ongoing AMI Rulemaking under Docket U-180525 prevents it from quantifying these benefits at this time.

136. However, despite pendency of the AMI rulemaking, PSE was able to estimate these benefits in CAK-4, Appendix G, for remote disconnections and reconnections and move-ins and

<sup>265</sup> Alvarez, Exh. PJA-1T at 19.

<sup>266</sup> *Id.*

<sup>267</sup> *See* Alvarez, Exh. PJA-8T at 3-4.

<sup>268</sup> Koch, Exh. CAK-15X; Koch, TR. 300:11-301:18.

move-outs made possible by the AMI system. PSE discusses these alleged cost-saving benefits from its AMI investment in its “Get to Zero” program.<sup>269</sup> PSE insists that it should be responsible for maximizing smart meter benefits. PSE’s estimation of these AMI benefits belies PSE’s claimed inability to quantify the same benefits at this time. Indeed, PSE can and does quantify estimates for AMI benefits in its “Get to Zero” program, and it should return those benefits to customers through a reduction in revenue requirement. A requirement to report the benefits from AMI annually for five years after PSE achieves full deployment would serve to hold PSE accountable for delivering benefits to customers.

**E. Public Counsel Recommends Disallowance of PSE’s AMI Investment Because the Company Failed to Present an Adequate Business Case**

137. The Commission should disallow \$473 million for costs PSE plans to spend imprudently to implement its AMI system because:

- PSE did not consider the \$189 million cost of abandoned equipment customers must pay in making its decision.
- PSE improperly attributed \$416 million in CVR benefits to its full AMI deployment, even though PSE’s own CVR Pilot indicated it could have secured these benefits through selective smart meter placement at a fraction of the cost.
- PSE did not conduct stand-alone benefit-cost analyses on the various metering options available, further biasing its decision to install AMI.
- After making adjustments for the artificial inflation of benefits and omission of costs, customers will pay \$641 million for the AMI investment, whereas the alternative fixes to PSE’s existing AMR system would have only cost \$230 million.

138. PSE has not demonstrated that its decision to replace fully its existing AMR metering system with an AMI system, as opposed to other alternatives, was prudent with respect to recovery of the associated costs—\$473 million plus an additional \$189 million in stranded assets

<sup>269</sup> *Id.*

and associated carrying charges—from Washington ratepayers.<sup>270</sup> The record shows that PSE's existing AMR system was functioning at low failure rates and system reprogramming and other maintenance costs were low, if not nonexistent, prior to commencing the AMI deployment. This information was known at the time the AMI project was initiated and throughout the multi-year process of the AMI rollout. A reasonable board of directors and company management would understand that the AMI replacement was not necessary or appropriate at the substantial capital investment level of \$473 million in the AMI system.<sup>271</sup>

139. The choices utilities make regarding grid investments and operation and maintenance costs impact customer rates. Less costly options were available to attain the outcomes PSE claims from AMI. PSE made the decision to invest in AMI at a faster pace than necessary and more extensively than necessary, despite the high book value of the existing metering infrastructure. PSE chose to pursue a much higher capital investment rather than the greatest value to customers. Unless and until PSE can show that the benefits to customers of the AMI deployment exceed the deployment's costs, the investment should not be included in customer rates.

140. If the Commission finds PSE's AMI deployment for cost recovery prudent, Public Counsel recommends the Commission disallow cost recovery for the \$126.8 million in book value of the existing metering system that was replaced prematurely and \$62.5 million in associated carrying charges. The Commission should not allow cost recovery of the stranded assets that exist solely because of PSE's choice to pursue a wholesale conversion to AMI at great cost to ratepayers. Appropriate accounting for this option would involve writing the book value

<sup>270</sup> *WUTC v. PacifiCorp*, Docket UE-152253, Order 12 (2016 WL 7245476) (Sept. 1, 2016).

<sup>271</sup> *Id.*

of the existing metering system down to zero with the offset being a reduction in PSE income as an extraordinary expense.<sup>272</sup>

141. Public Counsel also recommends that the Commission hold PSE accountable for delivering benefits to customers by requiring PSE to report the benefits from AMI annually for five years after PSE achieves full deployment. The Commission should also establish a proceeding to consider how to improve the distribution investment decisions of Washington's regulated utilities through the implementation of a transparent, stakeholder-engaged distribution planning and capital budgeting process under regulatory review. This would increase the alignment of utility distribution investment decisions with state, community, and customer goals. The Commission's experience with its integrated resource planning process could help inform the design of a distribution planning and capital budgeting process and discourage imprudent investment in smart-grid technology in the future.<sup>273</sup>

## **VII. WATER HEATER RENTAL PROGRAM IS SUBJECT TO A SEPARATE DOCKET AND DOES NOT NEED TO BE DECIDED IN THIS CASE**

142. PSE leases water heating equipment to customers under a tariff that has been in existence since 1965, but is closed to new customers.<sup>274</sup> The program includes both residential and commercial rentals and has experienced annual declining participation rates.<sup>275</sup> In this case, PSE submitted testimony that it plans to cease providing the service or to sell the service if the

<sup>272</sup> Alvarez, Exh. PJA-1T at 25.

<sup>273</sup> *Id.*; see also Comments on behalf of Public Counsel, from Carla A. Colamonici, U-161024, (May 17, 2018) (In Docket U-161024, Public Counsel recommended incorporating distribution planning into the Commission's integrated resource planning process.).

<sup>274</sup> Prefiled Direct Testimony of William T. Einstein, Exh. WTE-1CT at 2:14-15, 2:21; Prefiled Response Testimony of Carla A. Colamonici, Exh. CAC-1T at 4:16-5:3. Ms. Colamonici is no longer an Analyst with Public Counsel. Ms. Laycock, Regulatory Analyst, adopted Ms. Colamonici's testimony in this proceeding. Prefiled Response Testimony of Sarah E Laycock, Exh. SEL-1T.

<sup>275</sup> Colamonici, Exh. CAC-1T at 5:1-3.

program 50/50 between shareholders and ratepayers. And, the Commission should adopt Public Counsel's post-test year adjustments.

158. Public Counsel also asks the Commission to disallow PSE's investment in AMI and to consider disallowing one-half of the costs of Get to Zero. Additionally, the Commission should instruct PSE to use liquidated damages from related to its Green Direct Program to offset program costs. The Commission should adopt Public Counsel's rate spread and rate design positions.

DATED this 17th day of March 2020.

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