

Corrected Second Supplemental Direct Testimony

Rick T. Link

24 The updated results of the 2017R RFP and the extensive modeling that supports
25 it continue to confirm that the Combined Projects are the least-cost, least-risk path
26 available to serve the company’s customers by meeting both near-term and long-term
27 needs for additional resources. My second supplemental direct testimony explains the
28 following:

- 29 • The Combined Projects continue to provide net customer benefits under all
30 scenarios studied through 2036, and in seven of the nine scenarios through
31 2050.
- 32 • Customer benefits increase to \$167 million in the medium case through 2050
33 (as compared to \$151 million in the supplemental direct filing), and range from
34 \$357 million to \$405 million in the medium case through 2036.
- 35 • The analysis reflects consideration of an interconnection-restudy process, that:
36 1) eliminated certain bids, including the company’s McFadden Ridge II
37 benchmark bid, from consideration in the 2017R RFP; and 2) supported an
38 increase to the assumed level of interconnection capacity in the constrained area
39 of PacifiCorp’s system in eastern Wyoming.
- 40 • Sensitivity analysis continues to show substantial benefits of the Combined
41 Projects persist when paired with PacifiCorp’s wind repowering project and are
42 not displaced or reduced when considering the potential procurement of solar
43 PPA bids, updated with best-and-final pricing, submitted into the on-going RFP
44 for solar resources, the 2017S RFP.

**Table 2-SS Updated SO Model and PaR PVRR(d)
(Benefit)/Cost of the Combined Projects (\$ million)**

Price-Policy Scenario	Second Supplemental Direct (Updated Final Shortlist)			Supplemental Direct (Original Final Shortlist)		
	SO Model PVRR(d)	PaR Stochastic Mean PVRR(d)	PaR Risk- Adjusted PVRR(d)	SO Model PVRR(d)	PaR Stochastic Mean PVRR(d)	PaR Risk- Adjusted PVRR(d)
Low Gas, Zero CO ₂	(\$185)	(\$150)	(\$156)	(\$145)	(\$126)	(\$131)
Low Gas, Medium CO ₂	(\$208)	(\$179)	(\$188)	(\$186)	(\$146)	(\$152)
Low Gas, High CO ₂	(\$370)	(\$337)	(\$355)	(\$297)	(\$280)	(\$294)
Medium Gas, Zero CO ₂	(\$377)	(\$319)	(\$334)	(\$306)	(\$268)	(\$280)
Medium Gas, Medium CO ₂	(\$405)	(\$357)	(\$386)	(\$343)	(\$333)	(\$349)
Medium Gas, High CO ₂	(\$489)	(\$448)	(\$469)	(\$430)	(\$409)	(\$428)
High Gas, Zero CO ₂	(\$699)	(\$568)	(\$596)	(\$619)	(\$531)	(\$557)
High Gas, Medium CO ₂	(\$716)	(\$603)	(\$633)	(\$636)	(\$561)	(\$588)
High Gas, High CO ₂	(\$781)	(\$694)	(\$728)	(\$696)	(\$627)	(\$658)

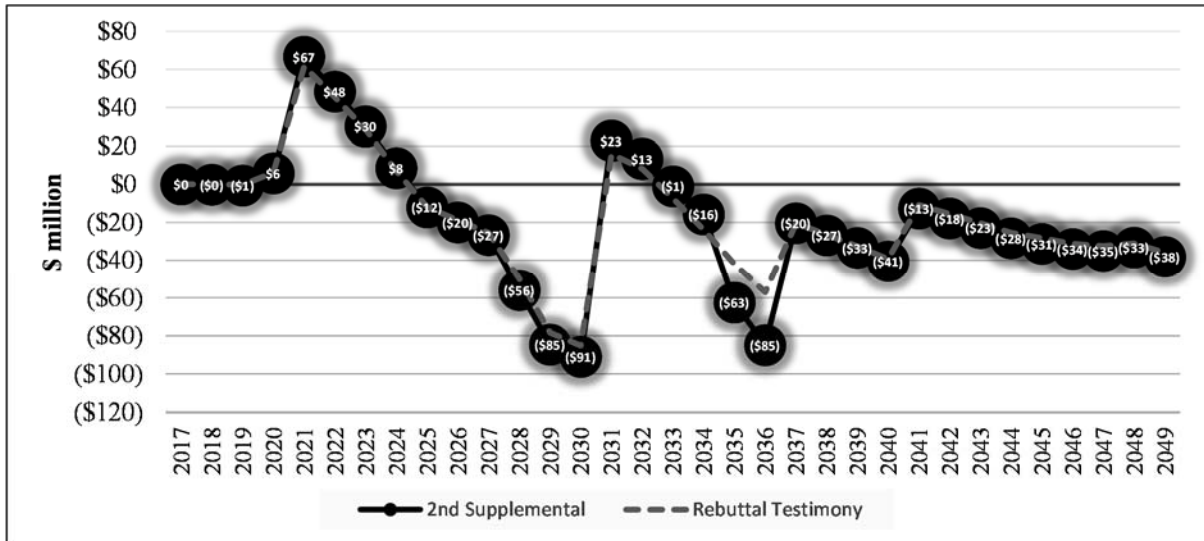
282 Over a 20-year period, the Combined Projects reduce customer costs in all nine
283 price-policy scenarios. This outcome is consistent in both the SO model and PaR
284 results. Under the central price-policy scenario, when applying medium natural gas,
285 medium CO₂ price-policy assumptions, the PVRR(d) net benefits range between \$357
286 million (up from \$333 million), when derived from PaR stochastic-mean results, and
287 \$405 million (up from \$343 million), when derived from SO model results. Net benefits
288 increase relative to those shown in my supplemental direct testimony. This is driven by
289 the increased interconnection capacity associated with the Aeolus-to-Bridger/Anticline
290 transmission line, which enables selection of the Ekola Flats benchmark resource.
291 Without this update, there was not sufficient interconnection capacity to accommodate
292 the Ekola Flats benchmark with the TB Flats I & II and Cedar Springs bids.

**Table 3-SS. Updated Nominal Revenue Requirement PVRR(d)
(Benefit)/Cost of the Combined Projects (\$ million)**

Price-Policy Scenario	Second Supplemental Direct (Updated Final Shortlist)	Supplemental Direct (Original Final Shortlist)
Low Gas, Zero CO ₂	\$184	\$195
Low Gas, Medium CO ₂	\$127	\$159
Low Gas, High CO ₂	(\$147)	(\$79)
Medium Gas, Zero CO ₂	(\$92)	(\$34)
Medium Gas, Medium CO ₂	(\$167)	(\$151)
Medium Gas, High CO ₂	(\$304)	(\$275)
High Gas, Zero CO ₂	(\$448)	(\$411)
High Gas, Medium CO ₂	(\$499)	(\$453)
High Gas, High CO ₂	(\$635)	(\$559)

335 When system costs and benefits from the Combined Projects are extended out
336 through 2050, covering the full depreciable life of the owned-wind projects included in
337 the updated 2017R RFP final shortlist, the Combined Projects reduce customer costs in
338 seven out of nine price-policy scenarios. Customer net benefits range from \$92 million
339 in the medium natural-gas, zero CO₂ price-policy scenario (up from \$34 million) to
340 \$635 million in the high natural gas, high CO₂ price-policy scenario (up from \$559
341 million). Under the central price-policy scenario, when applying medium natural gas,
342 medium CO₂ price-policy assumptions, the PVRR(d) benefits of the Combined
343 Projects are \$167 million (up from \$151 million). The Combined Projects provide
344 significant customer benefits in all price-policy scenarios, and the net benefits are
345 unfavorable only when low natural-gas prices are paired with zero or medium CO₂
346 prices. These results continue to show that upside benefits far outweigh downside risks.

**Figure 1-SS Updated Total-System Annual Revenue Requirement
With the Combined Projects (Benefit)/Cost (\$ million)**



388 The data shown in this figure for the updated economic analysis have the same
 389 basic profile as the data from the economic analysis summarized in my supplemental
 390 direct testimony. Despite a reduction in PTC benefits associated with changes in federal
 391 tax law, the reduced costs from winning bids from the 2017R RFP continue to generate
 392 substantial near-term customer benefits and continue to contribute to customer benefits
 393 over the long term. The Combined Projects produce net benefits in 23 years out of the
 394 30 years that the proposed owned-wind resources selected to the 2017R RFP final
 395 shortlist are assumed to operate.

396 As noted in my supplemental direct testimony, the year-on-year reduction in net
 397 benefits from 2036 to 2037 is driven by the company’s conservative approach to
 398 extrapolate benefits from 2037 through 2050 based on modeled results from the 2028-
 399 through-2036 time frame. This leads to an abrupt reduction in the benefits in 2037, and
 400 a subsequent year-on-year reduction to net benefits, which breaks from the trend
 401 observed in the model results over the 2035-to-2036 time frame. This extrapolation

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**Table 4-SS Updated Solar Sensitivity with Solar PPAs Included
in lieu of the Combined Projects (Benefit)/Cost (\$ million)**

	Sensitivity	Benchmark	Change in
Medium Gas, Medium CO2			
SO Model	(\$343)	(\$405)	\$61
PaR Stochastic Mean	(\$228)	(\$357)	\$129
PaR Risk Adjusted	(\$237)	(\$386)	\$149
Low Gas, Zero CO2			
SO Model	(\$196)	(\$185)	(\$11)
PaR Stochastic Mean	(\$139)	(\$150)	\$11
PaR Risk Adjusted	(\$145)	(\$156)	\$11

424 In this sensitivity, the SO model selects 1,122 MW of solar PPA bids in the low
425 natural gas, zero CO₂ price-policy scenario and 1,419 MW of solar PPA bids in the
426 medium natural gas, medium CO₂ price-policy scenario. All of the selected solar PPA
427 bids are for projects located in Utah.

428 In the medium natural gas, medium CO₂ price-policy scenario, a portfolio with
429 the Combined Projects delivers greater customer benefits relative to a portfolio that
430 adds solar PPA bids without the Combined Projects. Customer benefits are greater
431 when the resource portfolio includes the Combined Projects without solar PPA bids by
432 \$149 million in the medium natural gas, medium CO₂ price-policy scenario based on
433 the risk-adjusted PaR results. In the low natural gas, zero CO₂ price-policy scenario,
434 the portfolio with the Combined Projects delivers slightly greater customer benefits
435 relative to a portfolio that adds solar PPA bids without the Combined Projects when
436 modeled in PaR, and slightly lower customer benefits when analyzed with the SO
437 model. The decrease in net benefits in the solar PPA portfolio is \$11 million based on
438 the risk-adjusted PaR results.

439 When analyzed without the Combined Projects, the solar PPA bids produce net
440 customer benefits that are lower than the benefits expected from the Combined Projects

441 in the medium natural gas, medium CO₂ price-policy scenario. While the sensitivity
 442 with a portfolio containing solar PPAs without the Combined Projects produces
 443 PVRR(d) results that are similar to the PVRR(d) results with only the Combined
 444 Projects in the low natural-gas, zero CO₂ price-policy scenario, both portfolios deliver
 445 customer benefits. This sensitivity does not support an alternative resource
 446 procurement strategy to pursue solar PPA bids in lieu of the Combined Projects. This
 447 would leave the significant benefits from the Combined Projects, which include
 448 building a much-needed transmission line, on the table.

449 **Q. What were the results of the solar sensitivity where solar PPA bids are pursued**
 450 **with the Combined Projects?**

451 A. Table 5-SS summarizes PVRR(d) results for the solar sensitivity where solar PPA bids
 452 are assumed to be pursued along with the proposed investments in the Combined
 453 Projects. This sensitivity was developed using SO model and PaR simulations through
 454 2036 for the medium natural gas, medium CO₂ and the low natural gas, zero CO₂ price-
 455 policy scenarios. The results are shown alongside the benchmark study in which the
 456 Combined Projects were evaluated without solar PPA bids.

457 **Table 5-SS Updated Solar Sensitivity with Solar PPAs Included**
With the Combined Projects (Benefit)/Cost (\$ million)

	Sensitivity	Benchmark	Change in
Medium Gas, Medium CO₂			
SO Model	(\$647)	(\$405)	(\$242)
PaR Stochastic Mean	(\$519)	(\$357)	(\$163)
PaR Risk Adjusted	(\$543)	(\$386)	(\$157)
Low Gas, Zero CO₂			
SO Model	(\$312)	(\$185)	(\$127)
PaR Stochastic Mean	(\$250)	(\$150)	(\$100)
PaR Risk Adjusted	(\$259)	(\$156)	(\$103)

481 and to reflect the most recent cost-and performance estimates for the wind repowering
 482 project as described in my supplemental direct testimony filed in Docket No. 17-035-
 483 39.

484 **Q. What were the results of the updated wind-repowering sensitivity?**

485 A. Table 6-SS summarizes PVRR(d) results for this wind-repowering sensitivity. This
 486 sensitivity was developed using SO model and PaR simulations through 2036 for the
 487 medium natural-gas, medium CO₂ and the low natural-gas, zero CO₂ price-policy
 488 scenarios. The results are shown alongside the benchmark study in which the Combined
 489 Projects were evaluated without wind repowering.

490 **Table 6-SS Wind-Repowering
 Sensitivity (Benefit)/Cost (\$ million)**

	Sensitivity	Benchmark	Change in
Medium Gas, Medium CO₂			
SO Model	(\$608)	(\$405)	(\$204)
PaR Stochastic Mean	(\$541)	(\$357)	(\$184)
PaR Risk Adjusted	(\$567)	(\$386)	(\$181)
Low Gas, Zero CO₂			
SO Model	(\$334)	(\$185)	(\$149)
PaR Stochastic Mean	(\$281)	(\$150)	(\$131)
PaR Risk Adjusted	(\$295)	(\$156)	(\$138)

491 In the updated wind-repowering sensitivity, customer benefits increase
 492 significantly when the wind repowering project is implemented with the Combined
 493 Projects in both the medium natural-gas, medium CO₂, and the low natural-gas, zero
 494 CO₂ price-policy scenarios. These results continue to demonstrate that customer
 495 benefits not only persist, but also increase, if both the wind-repowering project and the
 496 Combined Projects are completed.

24 The updated results of the 2017R RFP and the extensive modeling that supports
25 it continue to confirm that the Combined Projects are the least-cost, least-risk path
26 available to serve the company’s customers by meeting both near-term and long-term
27 needs for additional resources. My second supplemental direct testimony explains the
28 following:

- 29 • The Combined Projects continue to provide net customer benefits under all
30 scenarios studied through 2036, and in seven of the nine scenarios through
31 2050.
- 32 • Customer benefits increase to ~~\$196-167~~ million in the medium case through
33 2050 (as compared to ~~\$177-151~~ million in the supplemental direct filing), and
34 range from ~~\$333-357~~ million to \$405 million in the medium case through 2036.
- 35 • The analysis reflects consideration of an interconnection-restudy process, that:
36 1) eliminated certain bids, including the company’s McFadden Ridge II
37 benchmark bid, from consideration in the 2017R RFP; and 2) supported an
38 increase to the assumed level of interconnection capacity in the constrained area
39 of PacifiCorp’s system in eastern Wyoming.
- 40 • Sensitivity analysis continues to show substantial benefits of the Combined
41 Projects persist when paired with PacifiCorp’s wind repowering project and are
42 not displaced or reduced when considering the potential procurement of solar
43 PPA bids, updated with best-and-final pricing, submitted into the on-going RFP
44 for solar resources, the 2017S RFP.

**Table 2-SS Updated SO Model and PaR PVRR(d)
(Benefit)/Cost of the Combined Projects (\$ million)**

Price-Policy Scenario	Second Supplemental Direct (Updated Final Shortlist)			Supplemental Direct (Original Final Shortlist)		
	SO Model PVRR(d)	PaR Stochastic Mean PVRR(d)	PaR Risk- Adjusted PVRR(d)	SO Model PVRR(d)	PaR Stochastic Mean PVRR(d)	PaR Risk- Adjusted PVRR(d)
Low Gas, Zero CO ₂	(\$185)	(\$126150)	(\$132156)	(\$145)	(\$104126)	(\$109131)
Low Gas, Medium CO ₂	(\$208)	(\$155179)	(\$164188)	(\$186)	(\$124146)	(\$131152)
Low Gas, High CO ₂	(\$370)	(\$313337)	(\$331355)	(\$297)	(\$258280)	(\$272294)
Medium Gas, Zero CO ₂	(\$377)	(\$295319)	(\$310334)	(\$306)	(\$246268)	(\$258280)
Medium Gas, Medium CO ₂	(\$405)	(\$333357)	(\$362386)	(\$343)	(\$311333)	(\$327349)
Medium Gas, High CO ₂	(\$489)	(\$424448)	(\$445469)	(\$430)	(\$388409)	(\$406428)
High Gas, Zero CO ₂	(\$699)	(\$545568)	(\$572596)	(\$619)	(\$509531)	(\$535557)
High Gas, Medium CO ₂	(\$716)	(\$579603)	(\$609633)	(\$636)	(\$539561)	(\$567588)
High Gas, High CO ₂	(\$781)	(\$671694)	(\$705728)	(\$696)	(\$605627)	(\$636658)

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Over a 20-year period, the Combined Projects reduce customer costs in all nine

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price-policy scenarios. This outcome is consistent in both the SO model and PaR

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results. Under the central price-policy scenario, when applying medium natural gas,

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medium CO₂ price-policy assumptions, the PVRR(d) net benefits range between ~~\$333~~

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~~357~~ million (up from ~~\$311-333~~ million), when derived from PaR stochastic-mean

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results, and \$405 million (up from \$343 million), when derived from SO model results.

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Net benefits increase relative to those shown in my supplemental direct testimony. This

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is driven by the increased interconnection capacity associated with the Aeolus-to-

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Bridger/Anticline transmission line, which enables selection of the Ekola Flats

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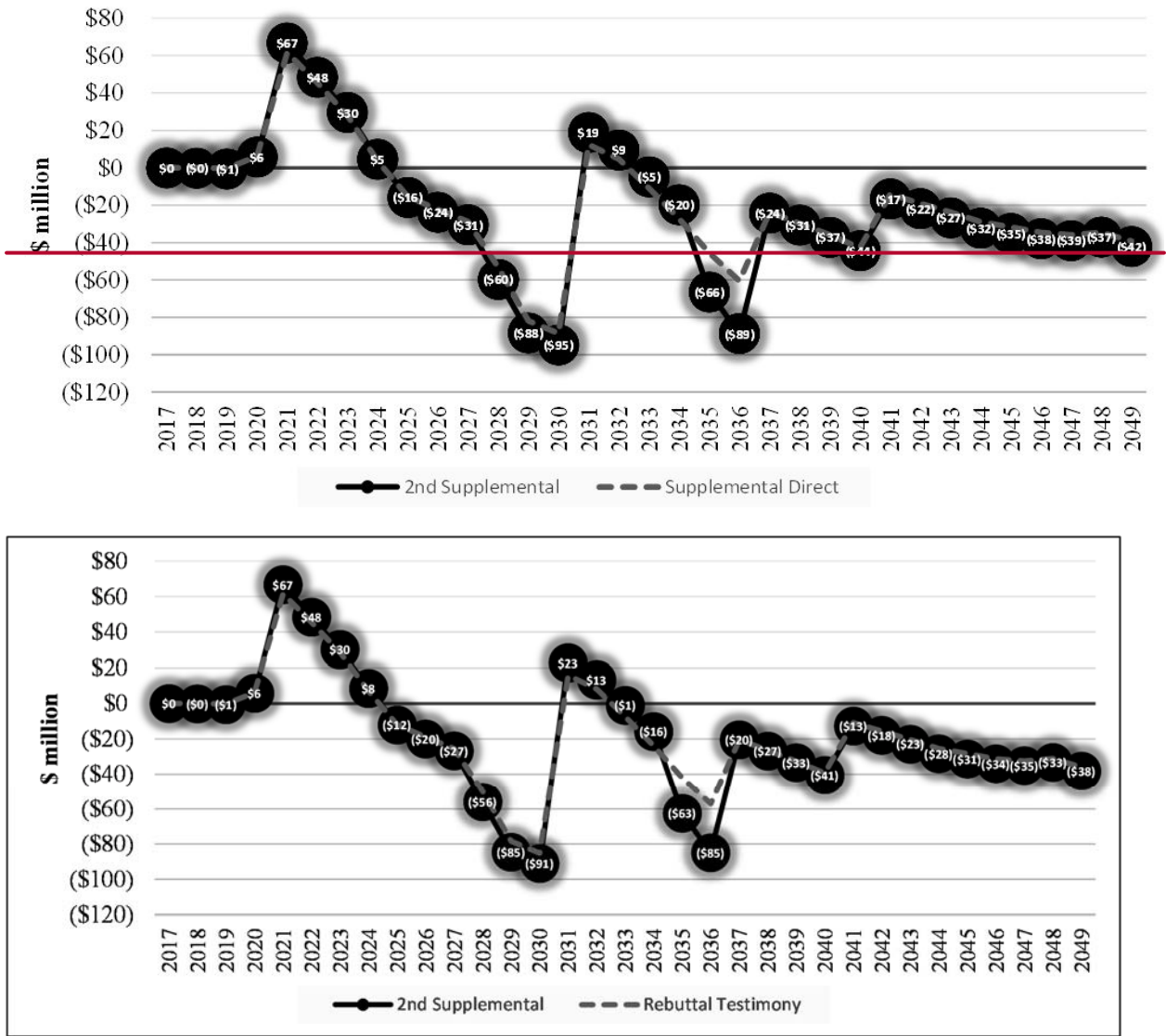
benchmark resource. Without this update, there was not sufficient interconnection

**Table 3-SS. Updated Nominal Revenue Requirement PVRR(d)
(Benefit)/Cost of the Combined Projects (\$ million)**

Price-Policy Scenario	Second Supplemental Direct (Updated Final Shortlist)	Supplemental Direct (Original Final Shortlist)
Low Gas, Zero CO ₂	\$155 <u>184</u>	\$169 <u>195</u>
Low Gas, Medium CO ₂	\$98 <u>127</u>	\$133 <u>159</u>
Low Gas, High CO ₂	(\$176) <u>147</u>	(\$105) <u>79</u>
Medium Gas, Zero CO ₂	(\$124) <u>92</u>	(\$60) <u>34</u>
Medium Gas, Medium CO ₂	(\$196) <u>167</u>	(\$177) <u>151</u>
Medium Gas, High CO ₂	(\$333) <u>304</u>	(\$301) <u>275</u>
High Gas, Zero CO ₂	(\$477) <u>448</u>	(\$437) <u>411</u>
High Gas, Medium CO ₂	(\$528) <u>499</u>	(\$479) <u>453</u>
High Gas, High CO ₂	(\$664) <u>635</u>	(\$585) <u>559</u>

336 When system costs and benefits from the Combined Projects are extended out
 337 through 2050, covering the full depreciable life of the owned-wind projects included in
 338 the updated 2017R RFP final shortlist, the Combined Projects reduce customer costs in
 339 seven out of nine price-policy scenarios. Customer net benefits range from ~~\$121~~92
 340 million in the medium natural-gas, zero CO₂ price-policy scenario (up from ~~\$60~~34
 341 million) to ~~\$664~~635 million in the high natural gas, high CO₂ price-policy scenario (up
 342 from ~~\$585~~559 million). Under the central price-policy scenario, when applying
 343 medium natural gas, medium CO₂ price-policy assumptions, the PVRR(d) benefits of
 344 the Combined Projects are ~~\$196~~167 million (up from ~~\$177~~151 million). The
 345 Combined Projects provide significant customer benefits in all price-policy scenarios,
 346 and the net benefits are unfavorable only when low natural-gas prices are paired with

Figure 1-SS Updated Total-System Annual Revenue Requirement With the Combined Projects (Benefit)/Cost (\$ million)



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The data shown in this figure for the updated economic analysis have the same basic profile as the data from the economic analysis summarized in my supplemental direct testimony. Despite a reduction in PTC benefits associated with changes in federal tax law, the reduced costs from winning bids from the 2017R RFP continue to generate substantial near-term customer benefits and continue to contribute to customer benefits over the long term. The Combined Projects produce net benefits in 23 years out of the

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419 A. Table 4-SS summarizes PVRR(d) results for the solar sensitivity where solar PPA bids
 420 are assumed to be pursued without any investments in the Combined Projects. This
 421 sensitivity was developed using SO model and PaR simulations through 2036 for the
 422 medium natural gas, medium CO₂ and the low natural gas, zero CO₂ price-policy
 423 scenarios. The results are shown alongside the benchmark study in which the Combined
 424 Projects were evaluated without solar PPA bids.

425 **Table 4-SS Updated Solar Sensitivity with Solar PPAs Included
 in lieu of the Combined Projects (Benefit)/Cost (\$ million)**

	Sensitivity	Benchmark	Change in
Medium Gas, Medium CO₂			
SO Model	(\$343)	(\$405)	\$61
PaR Stochastic Mean	(\$206228)	(\$333357)	\$127129
PaR Risk Adjusted	(\$216237)	(\$362386)	\$146149
Low Gas, Zero CO₂			
SO Model	(\$196)	(\$185)	(\$11)
PaR Stochastic Mean	(\$123139)	(\$126150)	\$311
PaR Risk Adjusted	(\$130145)	(\$132156)	\$311

426 In this sensitivity, the SO model selects 1,122 MW of solar PPA bids in the low
 427 natural gas, zero CO₂ price-policy scenario and 1,419 MW of solar PPA bids in the
 428 medium natural gas, medium CO₂ price-policy scenario. All of the selected solar PPA
 429 bids are for projects located in Utah.

430 In the medium natural gas, medium CO₂ price-policy scenario, a portfolio with
 431 the Combined Projects delivers greater customer benefits relative to a portfolio that
 432 adds solar PPA bids without the Combined Projects. Customer benefits are greater
 433 when the resource portfolio includes the Combined Projects without solar PPA bids by
 434 ~~\$146-149~~ million in the medium natural gas, medium CO₂ price-policy scenario based
 435 on the risk-adjusted PaR results. In the low natural gas, zero CO₂ price-policy scenario,
 436 the portfolio with the Combined Projects delivers slightly greater customer benefits

437 relative to a portfolio that adds solar PPA bids without the Combined Projects when
438 modeled in PaR, and slightly lower customer benefits when analyzed with the SO
439 model. The decrease in net benefits in the solar PPA portfolio is ~~\$3~~\$11 million based on
440 the risk-adjusted PaR results.

441 When analyzed without the Combined Projects, the solar PPA bids produce net
442 customer benefits that are lower than the benefits expected from the Combined Projects
443 in the medium natural gas, medium CO₂ price-policy scenario. While the sensitivity
444 with a portfolio containing solar PPAs without the Combined Projects produces
445 PVRR(d) results that are similar to the PVRR(d) results with only the Combined
446 Projects in the low natural-gas, zero CO₂ price-policy scenario, both portfolios deliver
447 customer benefits. This sensitivity does not support an alternative resource
448 procurement strategy to pursue solar PPA bids in lieu of the Combined Projects. This
449 would leave the significant benefits from the Combined Projects, which include
450 building a much-needed transmission line, on the table.

451 **Q. What were the results of the solar sensitivity where solar PPA bids are pursued**
452 **with the Combined Projects?**

453 A. Table 5-SS summarizes PVRR(d) results for the solar sensitivity where solar PPA bids
454 are assumed to be pursued along with the proposed investments in the Combined
455 Projects. This sensitivity was developed using SO model and PaR simulations through
456 2036 for the medium natural gas, medium CO₂ and the low natural gas, zero CO₂ price-
457 policy scenarios. The results are shown alongside the benchmark study in which the
458 Combined Projects were evaluated without solar PPA bids.

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**Table 5-SS Updated Solar Sensitivity with Solar PPAs Included
With the Combined Projects (Benefit)/Cost (\$ million)**

	Sensitivity	Benchmark	Change in
Medium Gas, Medium CO2			
SO Model	(\$647)	(\$405)	(\$242)
PaR Stochastic Mean	(\$455519)	(\$333357)	(\$122163)
PaR Risk Adjusted	(\$479543)	(\$362386)	(\$116157)
Low Gas, Zero CO2			
SO Model	(\$312)	(\$185)	(\$127)
PaR Stochastic Mean	(\$197250)	(\$126150)	(\$71100)
PaR Risk Adjusted	(\$206259)	(\$132156)	(\$74103)

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In this sensitivity, the SO model continues to choose the winning bids included in the updated 2017R RFP final shortlist as part of the least-cost bid portfolio. In addition to these wind resource selections, the SO model selects 1,042 MW of solar PPA bids in the low natural gas, zero CO₂ price-policy scenario and 1,419 MW of solar PPA bids in the medium natural gas, medium CO₂ price-policy scenario. Again, all of the selected solar PPA bids are for projects located in Utah.

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When the solar PPAs are assumed to be pursued in addition to the Combined Projects, total net customer benefits increase. This result is consistent with the company's expectation expressed during the 2017R RFP approval process in Docket No. 17-035-23 that cost-effective solar opportunities would not displace the Combined Projects, but would only potentially add to incremental resource procurement opportunities that might provide net customer benefits. Importantly, this sensitivity produces net benefits that are greater than the net benefits from the Combined Projects without the solar PPAs. This confirms that near-term renewable procurement is not a matter of whether the company should pursue the Combined Projects *or* the solar PPAs, but whether the company should consider both opportunities. At this time, it is clear

476 that the Combined Projects provide significant net benefits, and that these benefits are
 477 not eliminated if the company were to also pursue solar PPA bids through the 2017S
 478 RFP.

479 **WIND-REPOWERING SENSITIVITY**

480 **Q. Has the company updated its sensitivity analysis related to the wind repowering**
 481 **project?**

482 A. Yes. The wind repowering sensitivity was updated to reflect the updated final shortlist
 483 and to reflect the most recent cost-and performance estimates for the wind repowering
 484 project as described in my supplemental direct testimony filed in Docket No. 17-035-
 485 39.

486 **Q. What were the results of the updated wind-repowering sensitivity?**

487 A. Table 6-SS summarizes PVRR(d) results for this wind-repowering sensitivity. This
 488 sensitivity was developed using SO model and PaR simulations through 2036 for the
 489 medium natural-gas, medium CO₂ and the low natural-gas, zero CO₂ price-policy
 490 scenarios. The results are shown alongside the benchmark study in which the Combined
 491 Projects were evaluated without wind repowering.

492 **Table 6-SS Wind-Repowering
 Sensitivity (Benefit)/Cost (\$ million)**

	Sensitivity	Benchmark	Change in
Medium Gas, Medium CO2			
SO Model	(\$608)	(\$405)	(\$204)
PaR Stochastic Mean	(\$17541)	(\$333357)	(\$184)
PaR Risk Adjusted	(\$543567)	(\$362386)	(\$181)
Low Gas, Zero CO2			
SO Model	(\$334)	(\$185)	(\$149)
PaR Stochastic Mean	(\$257281)	(\$126150)	(\$131)
PaR Risk Adjusted	(\$271295)	(\$132156)	(\$138)