

Gary A. Dodge (0897)  
Phillip J. Russell (10445)  
HATCH, JAMES & DODGE  
10 West Broadway, Suite 400  
Salt Lake City, UT 84101  
Telephone: 801-363-6363  
Facsimile: 801-363-6666  
Email: gdodge@hjdllaw.com  
prussell@hjdllaw.com

Attorneys for the Utah Association of  
Energy Users

William J. Evans (5276)  
Vicki M. Baldwin (8532)  
Chad C. Baker (14541)  
PARSONS BEHLE & LATIMER  
201 South Main Street, Suite 1800  
Post Office Box 45898  
Salt Lake City, UT 84145-0898  
Telephone: (801) 532-1234  
Facsimile: (801) 536-6111  
Email: bevans@parsonsbehle.com  
vbaldwin@parsonsbehle.com  
cbaker@parsonsbehle.com

*Attorneys for UIEC, an Intervention Group*

---

**BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH**

---

In the Matter of the Application of Rocky Mountain Power for Approval of a Significant Energy Resource Decision and Request to Construct Wind Resource and Transmission Facilities	Docket No. 17-035-40
--	----------------------

---

**SUPPLEMENTAL REBUTTAL TESTIMONY OF BRADLEY G. MULLINS**

---

The Utah Association of Energy Users (“UAE”) and the Utah Industrial Energy Consumers (“UIEC”) hereby submit the Rebuttal Testimony of Bradley G. Mullins in this docket.

DATED this 17th day of April 2018

*/s/ Phillip J. Russell* \_\_\_\_\_

Gary A. Dodge

Phillip J. Russell

HATCH, JAMES & DODGE

*Attorneys for the Utah Association of Energy Users*

*/s/ Chad C. Baker* \_\_\_\_\_

William J. Evans

Vicki M. Baldwin

Chad C. Baker

PARSONS BEHLE & LATIMER

*Attorneys for UIEC, an intervention group*

Certificate of Service  
Docket No. 17-035-40

I hereby certify that a true and correct copy of the foregoing was served by email this day 17th day of April 2018, on the following:

ROCKY MOUNTAIN POWER

Jeff Richards	robert.richards@pacificcorp.com
Yvonne Hogle	yvonne.hogle@pacificcorp.com
Jana Saba	jana.saba@pacificcorp.com
datarequest@pacificcorp.com	

DIVISION OF PUBLIC UTILITIES

Patricia Schmid	pschmid@agutah.gov
Justin Jetter	jjetter@agutah.gov
Chris Parker	chrisparker@utah.gov
William Powell	wpowell@utah.gov

OFFICE OF CONSUMER SERVICES

Steven Snarr	stevensnarr@agutah.gov
Robert Moore	rmoore@agutah.gov
Michele Beck	mbeck@utah.gov
Cheryl Murray	cmurray@utah.gov

UTAH CLEAN ENERGY

Sarah Wright	sarah@utahcleanenergy.org
Kate Bowman	kate@utahcleanenergy.org

INTERWEST ENERGY ALLIANCE

Mitch M. Longson	mlongson@mc2b.com
Lisa Tormoen Hickey	lisahickey@newlawgroup.com

NUCOR STEEL-UTAH, A DIVISION OF NUCOR CORPORATION

Peter J. Mattheis	pjm@smxblaw.com
Eric J. Lacey	elacey@smxblaw.com
Jeremy R. Cook	jcook@cohnekinghorn.com

WESTERN RESOURCE ADVOCATES

Jennifer E. Gardner	jennifer.gardner@westernresources.org
Nancy Kelly	nkelly@westernresources.org

UTAH INDUSTRIAL ENERGY CONSUMERS

William J. Evans	bevans@parsonsbehle.com
Vicki Baldwin	vbaldwin@parsonsbehle.com
Chad C. Baker	cbaker@parsonsbehle.com

/s/ Phillip J. Russell  
Phillip J. Russell

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF UTAH**

---

In the Matter of the Application of Rocky Mountain Power for Approval of a Significant Energy Resource Decision and Request to Construct Wind Resource and Transmission Facilities	Docket No. 17-035-40
--	----------------------

---

**SUPPLEMENTAL REBUTTAL TESTIMONY OF BRADLEY G. MULLINS  
ON BEHALF OF  
THE UTAH ASSOCIATION OF ENERGY USERS  
AND  
THE UTAH INDUSTRIAL ENERGY CONSUMERS**

**April 17, 2018**

**TABLE OF CONTENTS TO THE  
SUPPLEMENTAL REBUTTAL TESTIMONY OF BRADLEY G. MULLINS**

I.	Introduction and Summary .....	1
II.	Background .....	3
III.	Issues Identified in the RFP Process .....	7
	a. The Generation Interconnection Queue Influenced the Wind RFP Selection.....	9
	b. More Cost-Effective Solar Resources Were Available Through the Solar RFP .....	18
	c. PacifiCorp Made Last Minute Modeling Changes that Had the Effect of Favoring Utility Ownership .....	21
IV.	Other Modeling Flaws .....	25
	a. PacifiCorp Has Not Considered that Forward Market Prices Have Declined .....	26
	b. PacifiCorp Incorrectly Attributes Wholesale Transmission Revenues to the Combined Projects .....	30
	c. PacifiCorp Improperly Considered the Costs and Benefits of the Energy Imbalance Market. ....	33
V.	PacifiCorp Does Not Have A Need for New Resources.....	37
VI.	Risk of new transmission technology .....	41

**EXHIBIT LIST**

UAE-UIEC Exhibit 3.1:	Company Responses to Data Requests
UAE-UIEC Exhibit 3.2 (Conf):	Impact of Most Recent Load Forecast on Resource Needs Assessment
UAE-UIEC Exhibit 3.3:	Questions and Answers from May 31, 2017 Pre-Bidder's Conference

I. INTRODUCTION AND SUMMARY

1  
2 **Q. ARE YOU THE SAME BRADLEY G. MULLINS THAT FILED DIRECT**  
3 **TESTIMONY IN THIS MATTER?**

4 A. Yes. I previously filed testimony on behalf of the Utah Association of Energy Users  
5 (“UAE”) and the Utah Industrial Energy Consumers (“UIEC”). My address has changed  
6 to 1750 SW Harbor Way, Suite 450, Portland, Oregon 97062.

7 **Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL REBUTTAL**  
8 **TESTIMONY?**

9 A. I respond to the Supplemental Direct Testimony of Rocky Mountain Power  
10 (“PacifiCorp”) witnesses Rick Link, Rick Vail and Chad Teply concerning PacifiCorp’s  
11 proposal to construct 1,311 MW of new wind resources in eastern Wyoming (“Wind  
12 Projects”) and its proposal to construct a 140 mile high voltage 500 kV transmission line  
13 between Aeolis and Jim Bridger, including associated network upgrades, (“Transmission  
14 Projects”). Collectively, I refer to the Wind Projects and Transmission Projects as the  
15 “Combined Projects.”

16 **Q. WHAT WAS THE SCOPE OF YOUR REVIEW?**

17 A. In addition to reviewing PacifiCorp’s testimony and workpapers, I conducted discovery  
18 and reviewed PacifiCorp’s response to data requests. Relevant responses to data requests  
19 can be found in UAE-UIEC Exhibit 3.1. I also review highly confidential documents  
20 relating to the bids received in both the Renewable Request for Proposal (“Wind RFP”) issued on September 27, 2017 and the Request for Proposal Solar Resources (“Solar RFP”) issued on November 15, 2017.

23 **Q. PLEASE PROVIDE AN OVERVIEW OF YOUR TESTIMONY?**

24 A. As discussed in my Direct Testimony, there is no imminent need for new resources. In  
25 discovery, PacifiCorp indicated in its most recent load forecast that loads are forecast to  
26 decline between 2017 and 2036 on both a peak- and energy-basis.<sup>1</sup> As a result,  
27 PacifiCorp is still in a surplus capacity position through 2026, irrespective of how front  
28 office transactions are considered in the load and resource balance.

29 And even if one were to conclude that a resource need existed, PacifiCorp's final  
30 resource procurement proposal is not the least-cost, nor least-risk, alternative for taking  
31 advantage of increasingly low-priced wind and solar resources. In addition to uncertainty  
32 surrounding the legal challenge to the Wind RFP, the Wind RFP selection process was  
33 flawed. Nevertheless, the Wind RFP and Solar RFP demonstrate that the cost of  
34 renewable resources has been declining rapidly. Both the Utah and the Oregon  
35 independent evaluators acknowledged that there were low cost, lower risk power  
36 purchase agreements ("PPAs") available through the Wind RFP, which were disqualified  
37 solely based on the generator interconnection queue position of the respective wind sites.  
38 Further, PacifiCorp's solar sensitivity studies also demonstrated that the final and best  
39 pricing in the ongoing Solar RFP produced potential resources that appear to present  
40 lower cost and lower risk resources than the Combined Projects.

41 Finally, I also continue to disagree with many of the assumptions in PacifiCorp's  
42 benefits study. I have also identified a number of new modeling problems and flaws  
43 surrounding market prices, transmission revenues, transmission capital assumptions, and  
44 energy imbalance market benefits. After adjusting for these factors, my analysis suggests

---

<sup>1</sup> See UAE-UIEC Exhibit 3.2 (Conf.).

45 that the Combined Projects will not produce a net present value ratepayer benefit and, in  
46 fact, will result in a net cost of \$103,956,638 under the medium gas, medium CO2  
47 scenario on a Net Present Value Revenue Requirement (“NPVRR”) basis.

48 **Q. WHAT IS YOUR RECOMMENDATION?**

49 A. I recommend that the Commission decline to approve PacifiCorp’s request for approval  
50 to construct the Wind Projects and voluntary request for approval to construct the  
51 Transmission Projects. The Commission’s decision approving the RFP is on appeal, and  
52 the RFP may not withstand appellate review. Further, the RFP that ultimately took place  
53 was not the competitive RFP process that was described when PacifiCorp first filed this  
54 case.

55 Where a range of potentially beneficial alternatives exist, the utility must produce  
56 and deliver at the lowest reasonable costs with the lowest risk, consistent with the public  
57 interest requirements of the Energy Resources Procurement Act. When a utility chooses  
58 a generating resource that is second best or, in this case, not even close to the next best  
59 alternative, such a resource decision should not receive Commission preapproval.

60 Further, I continue to recommend that the Commission reject PacifiCorp’s  
61 proposal for single-issue ratemaking through the proposed renewable resource tracking  
62 mechanism for the reasons described in my Direct Testimony

63 **II. BACKGROUND**

64 **Q. WHAT IS PACIFICORP’S FINAL RESOURCE PROPOSAL?**

65 A. PacifiCorp concluded its evaluation of the bids received in the Wind RFP in February  
66 2018, and identified four wind resources as its final shortlist resulting from that RFP as

67 its final resource proposal in this case.<sup>2</sup> In response to the Wind RFP issued September  
68 17, 2018, PacifiCorp received bids for development of approximately 18 different wind  
69 projects.<sup>3</sup> Of the 18 projects, 14 were located in Wyoming and only four sites were  
70 located outside of Wyoming. Most of these 18 projects, however, were disqualified by  
71 the Company due to transmission queue position issues, which will be discussed below.  
72 Accordingly, other than the Company's benchmark resources, only one independent  
73 Wyoming wind project had a low enough queue position to be considered by the  
74 Company as having a viable bid.<sup>4</sup>

75 **Q. DID PACIFICORP PERFORM AN UPDATED BENEFITS STUDY BASED UPON**  
76 **ITS FINAL RESOURCE SELECTION?**

77 A. Mr. Link performed an updated benefits study which contains numerous adjustments  
78 relative to the analysis presented previously in this proceeding, most of which were  
79 designed to make the benefits of the Combined Projects appear more attractive. The  
80 latest benefits analysis presented in this case was in Mr. Link's Corrected Second  
81 Rebuttal and Supplemental Direct testimony filed in this docket on February 23, 2018.

82 **Q. WHAT LEVEL OF BENEFITS DID PACIFICORP PROJECT WITH RESPECT**  
83 **TO THE COMBINED PROJECTS?**

84 A. Based upon its nominal revenue requirement studies, PacifiCorp alleges the Combined  
85 Projects will result in a cost to ratepayers of \$127,416,419 in the low gas price scenario, a

---

<sup>2</sup> In addition to the wind resources included in PacifiCorp's significant energy resource decision, PacifiCorp also seeks approval of its voluntary resource decision to build the Transmission Projects.

<sup>3</sup> Utah IE Report, Page 49, Table 10.

<sup>4</sup> Oregon IE Report, Page 34.



86 benefit to ratepayers of \$166,548,586 in the medium gas price scenario, and a benefit to  
87 ratepayers of \$499,249,164 in the high gas price scenario.<sup>5</sup>

88 I disagree that these numbers accurately reflect the actual costs and/or benefits  
89 ratepayers will experience if the projects are approved, and I expect the projects to be  
90 detrimental to customers. Notwithstanding, even if one were to agree with PacifiCorp's  
91 modeling assumptions, the wide range of outcomes shows that the Combined Projects are  
92 extraordinarily risky to ratepayers.

93 **Q. DOES THE TIMING OF THE ALLEGED BENEFITS CONTRIBUTE TO THE**  
94 **OVERALL RISKINESS OF THE PROJECTS?**

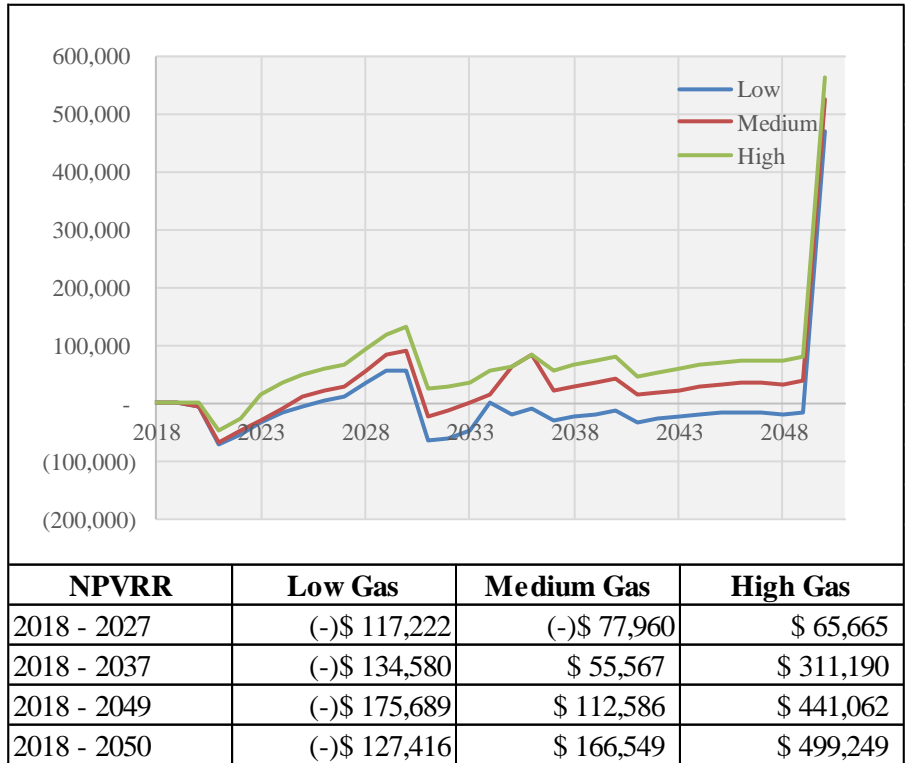
95 A. Yes. It's not just the variability of the alleged benefits that make PacifiCorp's proposal a  
96 risky project to ratepayers, but also the distant timing of when those alleged benefits  
97 might materialize. The benefits profile alleged by PacifiCorp is very much concentrated  
98 toward the end of the study period, as can be noted in Figure 1, below.

---

<sup>5</sup> These numbers assume a Medium CO2 policy projection. The values are derived from the Company's workpapers. See also Supplemental Direct and Rebuttal Testimony of Rick T. Link – CORRECTED, page 31 Table 3-SD. Note that the corresponding values in Table 3-SD are \$158,827,011 in the low gas price scenario, \$151,243,331 in the medium gas price scenario and \$453,406,161 in the high gas price scenario. The amounts reported Table 3-SD appeared to be based on older modeling scenarios, so the values from the workpapers were used here.

99  
 100  
 101

**FIGURE 1**  
Nominal, Total-Company Benefit/(Cost) Profile of Combined Projects  
by PacifiCorp Gas Price Scenario, Medium CO2 (\$000)



102

103 **Q. WHY IS THERE A LARGE INCREASE IN BENEFITS IN THE FINAL YEAR**  
 104 **OF THE STUDY PERIOD?**

105 A. The increase at the end of the study period represents a new terminal value assumption  
 106 that PacifiCorp incorporated into its modeling since filing its Direct Testimony. I discuss  
 107 that issue further below. However, it is important to point out, with respect to Figure 1,  
 108 that including the terminal values requires the y-axis to be expanded making it more  
 109 difficult to see the year-to-year benefit/(cost) profile in the years prior to 2048.

110 **Q. WHAT DOES FIGURE 1 SHOW?**

111 A. In addition to reviewing the timing of the claimed benefits, Figure 1 also details the  
 112 estimated net present value of the Combined Projects, measured over various timeframes,  
 113 based on the Company's modeling. As can be seen, even in PacifiCorp's model, the

114 Combined Projects are expected to increase rates over the first ten years of the study  
115 period under a medium gas, medium CO2 scenario. Thus, a key question with respect to  
116 PacifiCorp's benefits study is: If the Combined Projects will cause rates to increase over  
117 the next ten years, how reliable are the estimates of the benefits in the distant time  
118 periods of the modeled study period? Quite simply, I do not believe that PacifiCorp  
119 should be gambling with such significant sums of ratepayer money on speculative  
120 benefits not anticipated to materialize for many years.

121 III. ISSUES IDENTIFIED IN THE RFP PROCESS

122 **Q. IS THE WIND RFP CURRENTLY UNDER APPEAL?**

123 A. Yes. The Wind RFP is currently under appeal before the Utah Court of Appeals in  
124 Appellate Case No. 20170967-CA. While I will not and cannot predict its outcome, the  
125 appeal creates uncertainty with the Combined Projects that will not be resolved before the  
126 conclusion of this matter.

127 **Q. DID YOU REVIEW THE INDEPENDENT EVALUATOR REPORTS**  
128 **ASSOCIATED WITH THE PROPOSED RESOURCE PROCUREMENT?**

129 A. Yes and no. Two independent evaluators ("IEs") oversaw the Wind RFP process—  
130 Merrimack Energy Group, Inc. on behalf of the Public Service Commission of Utah and  
131 Bates White Economic Consulting on behalf of the Oregon Public Utility Commission. I  
132 have reviewed their respective reports filed in their respective states. Both IEs  
133 questioned the reasonableness of PacifiCorp's resource selection in the Wind RFP, as  
134 well as issues surrounding the fairness and competitiveness of the Wind RFP. With  
135 respect to the Solar RFP process, the independent evaluator was London Economics, who  
136 has yet to issue a report with respect to the Solar RFP. London Economics was

137 scheduled to issue that report on March 30, 2018, although that report has not been yet  
138 been filed with this Commission as of the time of writing this testimony.

139 **Q. DO YOU AGREE WITH THE CONCLUSIONS OF THE IE REPORTS IN THE**  
140 **WIND RFP?**

141 A. While I agree with many of the issues identified in the IE reports and with some of the  
142 conclusions, I do not agree with the ultimate conclusions of those reports. Particularly, I  
143 disagree with conclusory statements such as “[t]he IE is of the opinion that PacifiCorp’s  
144 selection of the final shortlist of 4 projects totaling 1,311 MW was a reasonable selection  
145 *based on the constraints identified.*”<sup>6</sup> From a ratepayer perspective, the *constraints*  
146 *identified* are too significant to be ignored.

147 **Q. WHAT ISSUES DID THE INDEPENDENT EVALUATORS IDENTIFY WITH**  
148 **RESPECT TO THE WIND RFP?**

149 A. The independent evaluators have documented at least three problems associated with the  
150 RFP process. I’ll discuss each of these in the sub-sections that follow. First, both IEs  
151 expressed concerns, and surprise, with the way PacifiCorp applied the transmission  
152 interconnection queue in making its final resource selections. Second, both IEs noted  
153 that the bids received in the solar RFP had the potential to be more cost competitive than  
154 the Combined Projects. Third, both IEs noted that PacifiCorp adopted last minute  
155 modeling changes that had the effect of favoring utility ownership bids. As a result of  
156 these problems, I do not agree that the Wind RFP has resulted in the lowest reasonable  
157 cost resource.

---

<sup>6</sup> Utah IE Report, Page 84 (emphasis added).

158 a. The Generation Interconnection Queue Influenced the Wind RFP Selection

159 **Q. HOW DID THE GENERATION INTERCONNECTION QUEUE INFLUENCE**  
160 **THE WIND RFP SELECTION?**

161 A. PacifiCorp's generation interconnection queue includes over 5,000 MW of generators  
162 seeking interconnection behind the TOT 4A cut-plane, in the transmission constrained  
163 area where PacifiCorp proposes to build the new Gateway Segment D2. Pursuant to its  
164 tariff, PacifiCorp Transmission is required to grant generator interconnection requests in  
165 serial queue order. Late in the process of making the resource selection in the Wind RFP,  
166 PacifiCorp took a position that it was required to grant interconnection requests in serial  
167 queue order and that, therefore, only those Eastern Wyoming resources with a sufficiently  
168 low interconnection queue position could be selected in the RFP process. PacifiCorp's  
169 position on this issue—that transmission capacity is assumed to be held in reserve for  
170 each bid in the interconnection queue—meant that bids with queue positions whose  
171 capacity when added to the capacity of the higher-queued bids exceeded the incremental  
172 transmission capacity provided through Gateway sub-segment D2 were disqualified,  
173 irrespective of whether those resources were lower cost or risk relative to the higher-  
174 queued bids.

175 **Q. WHEN DID PACIFICORP INFORM THE INDEPENDENT EVALUATORS OF**  
176 **ITS POSITION WITH RESPECT TO THE INTERCONNECTION QUEUE?**

177 A. It appears that PacifiCorp's position with respect to the interconnection queue was not  
178 communicated to the IEs until January 31, 2018, after best and final pricing had been

179 received.<sup>7</sup> Both independent evaluators had no previous knowledge of PacifiCorp’s  
180 position, and were surprised when PacifiCorp announced it.

181 **Q. WERE THE INDEPENDENT EVALUATORS CONCERNED WITH**  
182 **PACIFICORP’S NEW POSITION ON THE INTERCONNECTION QUEUE?**

183 A. Yes. In a phone conference two days later, the independent evaluators “expressed some  
184 frustration that the bid selection process ended up being limited to selection of only those  
185 projects with favorable queue positions,” and that “[a]ll other proposals submitted were  
186 behind the interconnection queue constraint and would have no chance of being  
187 selected.”<sup>8</sup>

188 **Q. HOW WERE THE HIGHER QUEUE RESOURCES DISQUALIFIED?**

189 A. The mechanics of the manner in which resources with lower queue positions were  
190 disqualified were described in the Oregon IE Report as follows:

191 The net result of these adjustments calls for consideration of the overall  
192 context of the RFP. Recall that in its RFP as originally drafted, PacifiCorp  
193 proposed to select only projects from the constrained area and offered  
194 three benchmark projects. Based on the final [transmission] analysis...  
195 only one other third party bid on the shortlist (the [CONF] project) could  
196 even compete with these offers. In fact, only one other Wyoming wind  
197 offer — the [CONF] wind proposal — had a high enough queue position  
198 to be viable. So this entire RFP really boiled down to two viable  
199 benchmarks and two third-party offers, meaning a lot of the analysis  
200 presented here was of questionable value.

201 To be clear, the remaining viable offers were competitive offers, but were  
202 not the best the market could provide based on cost or risk, but [the best]  
203 for the [new] transmission constraint issue.<sup>9</sup>

204 The Oregon IE noted that, as a result of the interconnection queue issue raised by  
205 PacifiCorp in January of 2018, “a majority of offers are no longer viable without

---

<sup>7</sup> Utah IE Report, Page 63-64.

<sup>8</sup> Utah IE Report, Page 67.

<sup>9</sup> Oregon IE Report at 34-35.

206 transmission investment.”<sup>10</sup> The Oregon IE identified three projects that “are only viable  
207 because they are outside the constrained area in Wyoming,” and noted that “[i]nside the  
208 constraint *only* three projects . . . are viable.”<sup>11</sup>

209 **Q. IS PACIFICORP’S APPLICATION OF THE INTERCONNECTION QUEUE**  
210 **CONSISTENT WITH ITS OPENING TESTIMONY?**

211 A. No. PacifiCorp did not disclose its position with respect to the application of the  
212 interconnection queue either when it filed its request for approval of the Wind RFP in  
213 Utah on June 16, 2017, or when it issued the Wind RFP on September 27, 2017.

214 In my opinion, it was not appropriate for PacifiCorp to omit this critical  
215 component from all discussion in the period leading up to the issuance of the RFP and  
216 only to inform parties of its intentions with respect to the interconnection queue after the  
217 bidding had been completed. In fact, PacifiCorp implied just the opposite when it made  
218 statements regarding its expectation for a robust RFP process, such as the following:  
219 “[t]housands of megawatts of Wyoming wind resource capacity are currently seeking  
220 interconnection service from PacifiCorp’s transmission function, suggesting adequate and  
221 increasing wind development activity in Wyoming to support a robust response to the  
222 2017R RFP.”<sup>12</sup> If it was PacifiCorp’s original intention to prosecute the interconnection  
223 queue through the Wind RFP process, then it had an obligation to indicate so when it  
224 filed its opening testimony and when it issued the Wind RFP.

---

<sup>10</sup> Oregon IE Report at 35.

<sup>11</sup> *Id.* (emphasis added).

<sup>12</sup> Ut.PSC Docket No. 17-035-23, Supplemental Testimony of Rick T. Link lines 296-299.

225 **Q. IS PACIFICORP’S FINAL TREATMENT OF TRANSMISSION COSTS**  
226 **CONSISTENT WITH ITS COMMUNICATIONS TO BIDDERS IN THE PERIOD**  
227 **LEADING UP TO THE ISSUANCE OF THE RFP?**

228 A. No. In Q&As from the May 31, 2017 pre-issuance bidders conference, PacifiCorp  
229 affirmatively stated that “[c]osts associated with providing the transmission capacity in  
230 order to relieve existing congestion and facilitate the interconnection and integration of  
231 new wind projects will not be assigned to an individual project as part of the RFP  
232 evaluation.”<sup>13</sup> Yet, that is not how PacifiCorp ultimately undertook the RFP. As the  
233 Utah IE noted “the studies found that bids with a queue position of Q0713 or higher  
234 triggered the requirements for Energy Gateway South. As a result, the SO model could  
235 essentially only select the projects that were actually selected based on their position in  
236 the queue.”<sup>14</sup> That is, contrary to what PacifiCorp previously stated to bidders, “costs  
237 associated with providing the transmission capacity in order to relieve existing  
238 congestion and facilitate the interconnection and integration of new wind projects” *was*  
239 directly assigned to the individual projects with interconnection queue positions of  
240 Q0713 or higher. For bidders with interconnection queue position Q0712 or lower, such  
241 interconnection costs were not directly assigned to the project.

242 **Q. DIDN’T PACIFICORP AGREE TO ELIMINATE THE REQUIREMENT THAT**  
243 **BIDDERS IN THE WIND RFP MUST HAVE A COMPLETED SYSTEM**  
244 **IMPACT STUDY?**

245 A. Yes. Originally, PacifiCorp drafted the RFP such that only resources with a completed  
246 System Impact Study (“SIS”) could compete in the Wind RFP.<sup>15</sup> Both UAE and

---

<sup>13</sup> UAE Exhibit 3.3.

<sup>14</sup> Utah IE Report at 82.

<sup>15</sup> Report of the Utah Independent Evaluator Regarding PacifiCorp’s Draft Renewable Request for Proposals at 35 (Aug. 11, 2017).



247 Interwest filed comments opposing the requirement for a SIS, on the basis that such a  
248 requirement would make the RFP uncompetitive. The Utah IE shared the concerns of  
249 UAE and Interwest, and PacifiCorp ultimately agreed to revise the Wind RFP to remove the  
250 requirement that bidders have a completed SIS.

251 **Q. WAS THE RFP MORE COMPETITIVE AS A RESULT OF ELIMINATING THE**  
252 **REQUIREMENT FOR A SIS?**

253 A. No. Ultimately, as a result of PacifiCorp's application of the generation interconnection  
254 queue, removing the requirement for a SIS did not open the RFP to any additional  
255 competition. The threshold queue position of Q0712 was made on October 9, 2015, and  
256 there were many subsequent resources in the queue with a completed SIS. Thus,  
257 eliminating the requirement for a SIS was not helpful since, as a result of PacifiCorp's  
258 position on the interconnection queue, the elimination of the SIS requirement did not  
259 expand the set of resources eligible to be selected in the Wind RFP. At a minimum,  
260 PacifiCorp had an obligation to disclose that removing the SIS requirement would make  
261 no difference due to the way it planned to implement the generation interconnection  
262 queue.

263 **Q. WAS IT APPROPRIATE FOR PACIFICORP NOT TO DISCLOSE ITS**  
264 **POSITION ON THE INTERCONNECTION QUEUE WHEN IT FILED THE**  
265 **WIND RFP?**

266 A. No. It certainly is possible that PacifiCorp did not realize the queue position would be  
267 the deciding factor when it initially conceived the Wind RFP. If true, however, that is  
268 simply an indication that PacifiCorp unintentionally designed an uncompetitive RFP.  
269 Whatever the case may be, representations of a robust RFP process have proved to be  
270 false. The fact that, in the period leading up to the Wind RFP, PacifiCorp undertook  
271 efforts to secure development rights for those resources—which were among the only

272 resources with a low enough queue position to be selected—suggests that PacifiCorp  
273 probably had formed its position on the interconnection queue well before it filed the  
274 RFP.

275 **Q. DO YOU AGREE WITH PACIFICORP'S POSITION ON THE**  
276 **INTERCONNECTION QUEUE?**

277 A. No. PacifiCorp has imposed this requirement based upon its interpretation of its OATT  
278 and FERC regulation. Accordingly, I believe PacifiCorp's position is fundamentally a  
279 legal question and I am not an attorney. Notwithstanding, my understanding of the RFP  
280 as represented by PacifiCorp and as I described above, was that all viable Wyoming wind  
281 resources would be considered, that PacifiCorp's goal was to acquire the lowest cost  
282 resources available to serve load, and that therefore PacifiCorp's interconnection queue  
283 would not bias the decision making one way or another. Thus, I was under the impression  
284 that all Wind RFP bids would be scored or evaluated on the same basis, with the  
285 Company being able to then either equalize or mitigate the bidding advantage otherwise  
286 available to a bidder with a higher queue position. Such a pro-active step by the Company  
287 seems all the more important, where otherwise it seems to have advantaged itself with  
288 better queue positions for its own wind resources than for some of the lower cost  
289 competitors.

290 **Q. WHAT IS THE SIGNIFICANCE OF PACIFICORP'S APPLICATION OF THE**  
291 **INTERCONNECTION QUEUE TO THE SOLICITATION PROCESS?**  
292

293 A. PacifiCorp's application of the interconnection queue in this manner is significant for  
294 several reasons. First, PacifiCorp did not notify the bidders, the IE, the parties, or the  
295 Commission that it would apply the interconnection queue in this manner when it sought  
296 approval of the solicitation process. Whether the Commission would have approved the

297 solicitation process had it known of this limitation, or whether the Commission would  
298 have required modifications to the solicitation process, is unknown. And because the  
299 bidders, the IE, the parties, and the Commission were not notified of the interconnection  
300 queue cut-off during the Wind RFP approval process, we will never know.

301 Second, the application of the interconnection queue essentially eliminated from  
302 consideration any bid within the constrained area in Wyoming with a queue number  
303 higher than Q0712.<sup>16</sup> As a result, only one third-party project was able to compete with  
304 PacifiCorp's proposed Benchmark projects.<sup>17</sup> As noted by the Oregon IE, "this entire  
305 RFP really boiled down to two viable benchmarks and two third-party offers, meaning a  
306 lot of the analysis presented here was of questionable value."<sup>18</sup>

307 Third, in the Utah Commission docket regarding approval of the solicitation  
308 process itself, the Utah IE testified that approval of the RFP was appropriate in part  
309 because the Commission could terminate the RFP at certain "off-ramps" or "go or no-go"  
310 decision points.<sup>19</sup> The Utah IE indicated one such "off-ramp" "is the response of bidders.  
311 If there is not a robust response from bidders resulting in little or no competition for the

---

<sup>16</sup> See Oregon IE Report at 33 ("[I]n effect, any bid within the constrained area in Wyoming with a higher queue number than 712 would require extensive new transmission investment to be deliverable and would likely not be deliverable by the end of 2020.").

<sup>17</sup> *Id.* at 34-35 ("Recall that in its RFP as originally drafted, PacifiCorp proposed to select only projects from the constrained area and offered three Benchmark projects. Based on the final analysis laid out above, only one other third party bid on the shortlist . . . could even compete with these offers. In fact, only one other Wyoming wind offer . . . had a high enough queue position to be viable.")

<sup>18</sup> *Id.* at 35.

<sup>19</sup> See Rebuttal Testimony of Wayne J. Oliver at lines 243-85, filed Sept. 13, 2017 in Utah PSC Docket 17-035-23, *In the Matter of the Application of Rocky Mountain Power for Approval of Solicitation Process for Wind Resources*.

312 Benchmark options, this could be one basis for terminating the solicitation process.”<sup>20</sup>  
313 The application of the interconnection queue limitation in this process eliminated nearly  
314 all of the competition for the Benchmark options. As a result, had the queue requirement  
315 been disclosed, the limited number of qualified bidders would have triggered one of the  
316 key decision points described by the Utah IE as justifying a termination of the solicitation  
317 process.

318 **Q. WERE THERE MORE COST EFFECTIVE ALTERNATIVES AVAILABLE**  
319 **THAN THE RESOURCES SELECTED IN THE REVISED FINAL SHORT LIST?**

320 A. Since PacifiCorp applied incremental transmission costs to the bids whose queue position  
321 exceeded the incremental transmission capacity, the resources with lower queue positions  
322 had no way of being selected by the model. As a result, the degree to which one of these  
323 lower queued resources might be more cost effective than the Combined Projects is not  
324 known. Notwithstanding, Table 13 in the Highly Confidential Utah IE’s report filed  
325 February 2018 in this docket shows that there were clearly better alternatives than those  
326 selected in the Final Short List. For example, Table 13 shows that thousands of  
327 megawatts of wind projects were available through PPA agreements with comparable  
328 costs, but lower risk to Utah ratepayers.<sup>21</sup>

329 **Q. WHY WOULD PPA OPTIONS PROVIDE LOWER RISKS IN THIS INSTANCE?**

330 A. As has been described in my testimony and that of others, the Combined Projects carry  
331 risks related to schedule including escalating costs and diminished PTC availability. In  
332 the build to transfer agreements (“BTAs”) ratepayers are not clearly protected from these

---

<sup>20</sup> *Id.* at lines 270-72.

<sup>21</sup> *See* Highly Confidential Final Report of Merrimack Energy Group, Inc. to Utah Public Service Commission, dated February 2018 at Table 13.

333 risks or RMP's economic assumptions should they prove to be inaccurate. These risks  
334 are not present with a PPA. With PPAs, the developers carry the risk of cost-overruns  
335 because the developer is compensated only through a fixed \$/MWh payment without  
336 regard to the cost to build the project. Similarly, with PPA options ratepayers do not bear  
337 the risk that PTCs might be unavailable, due to changes in tax laws or failure to meet the  
338 IRS safe harbor requirements. The capacity factor risk of PPAs is also lower because if  
339 the wind does not materialize at the level forecast, the ultimate payments to the  
340 counterparty will decline along with the reduced production of the project.

341 **Q. IS THE RESULT OF THE WIND RFP SUFFICIENT GROUNDS TO DENY**  
342 **PACIFICORP'S APPLICATION?**

343 A. Yes. Although I am not an attorney, I understand that a resource selection must, among  
344 other things, comply with the requirements of the Energy Resource Procurement Act and  
345 must likely result in the acquisition, production, and delivery of utility services at the  
346 lowest reasonable cost to the retail customer. The selection process seemed biased and  
347 not in accordance with the Wind RFP. There were potentially lower cost and/or lower  
348 risk alternatives available, which were summarily disqualified based on their  
349 interconnection queue position. As a result, I believe the RFP was deeply flawed, and it  
350 is not appropriate to grant a pre-approval for a sub-optimal utility plant selected through  
351 such a process.

352 b. More Cost-Effective Solar Resources Were Available Through the Solar RFP

353 **Q. PLEASE PROVIDE SOME BACKGROUND ON THE SOLAR RFP.**

354 A. When this Commission approved the RFP at issue in this matter, it strongly suggested  
355 (but did not require) that PacifiCorp include solar resources in the RFP.<sup>22</sup> PacifiCorp  
356 declined to include solar resources in this RFP, but issued a separate Solar RFP that is not  
357 before this Commission for approval. That Solar RFP was issued on November 15, 2017,  
358 approximately two months after issuing the Wind RFP. Because of the timing of the  
359 issuance of the two RFPs, the Solar RFP is on a schedule that is slightly delayed relative  
360 to the Wind RFP. The Company received best and final pricing from solar bidders in  
361 mid-February, and finalized the shortlist selection process in mid-March. Based upon the  
362 concerns of the independent evaluators, PacifiCorp prepared solar sensitivity studies to  
363 compare the economics of the Solar RFP short list with the Combined Projects, as  
364 discussed in Mr. Link's supplemental testimony.

365 **Q. WHAT DID THE SOLAR SENSITIVITIES SHOW?**

366 A. The issuance of separate RFPs for solar and wind makes it impossible to compile the  
367 necessary evidence in this docket to form an apples-to-apples comparison between the  
368 wind and solar bids received in the respective processes. Notwithstanding, the solar  
369 sensitivity studies showed that the final bids received in the Solar RFP were lower cost  
370 and lower risk than the final short list in the Wind RFP.

---

<sup>22</sup> See Order Approving RFP With Suggested Modification, filed September 22, 2017 in Utah PSC Docket. 17-035-23.

371 **Q. WHY DOES THE ISSUANCE OF A SEPARATE RFP PROCESS FOR SOLAR**  
372 **RESOURCES MAKE IT IMPOSSIBLE TO FORM AN APPLES-TO-APPLES**  
373 **COMPARISON BETWEEN WIND AND SOLAR BIDS RECEIVED IN THE**  
374 **SEPARATE RFPs?**

375 A. The Commission noted in its Order approving the Wind RFP that a second and separate  
376 RFP for solar resources “would not accomplish the objective of comparing the proposed  
377 solar resources against the wind resources in an equal basis.”<sup>23</sup> I agree. There are many  
378 factors that must be considered in order to make a rational decision about the relative  
379 costs, benefits and risks of wind and solar resources. Since the Solar RFP is a separate  
380 process, however, a comprehensive body of evidence does not exist in this docket to  
381 consider whether solar resources might better meet the public interest requirements of the  
382 Energy Resource Procurement Act. Based on the evidence that is available through the  
383 solar sensitivity studies, the indications are that the Solar RFP produced a lower cost,  
384 lower risk set of resources.

385 **Q. DID THE INDEPENDENT EVALUATOR OFFER STATEMENTS CONSISTENT**  
386 **WITH THIS POINT?**

387 A. Yes. The Utah IE issued a statement in his report indicating that the separate nature of  
388 the RFPs prevents a determination as to what resources are the lowest-cost, lowest-risk  
389 resources. Specifically, the Utah IE concluded that “[s]ince PacifiCorp’s solicitation is  
390 based solely on the solicitation for system wind resources, it is not possible to determine  
391 if other resources would have been included in a final least cost, least risk system  
392 portfolio, potentially displacing one or more wind resources.”<sup>24</sup> The Utah IE also stated  
393 that “it is not possible to determine if the wind-only resources offer the lowest reasonable

---

<sup>23</sup> *Id.* at 9.

<sup>24</sup> Utah IE Report, Page 84.

394 cost without an integrated resource procurement and evaluation process that also includes  
395 solar and potentially other resources.”<sup>25</sup> These statements confirm that the least-risk and  
396 most cost-effective set of resources cannot be selected as contemplated by the Utah  
397 statutes and rules.

398 **Q. HOW MUCH SOLAR CAPACITY WAS INCLUDED IN THE FINAL SHORT**  
399 **LIST FOR THE SOLAR RFP?**

400 A. Approximately 1,419 MW measured on nameplate capacity. That is a significant amount  
401 of resources, particularly given the lack of demonstrated resource need.

402 **Q. WHAT DID PACIFICORP’S SOLAR SENSITIVITY STUDIES SHOW?**

403 A. When viewed in PacifiCorp’s nominal study, the solar bids are overwhelmingly more  
404 cost effective than the new wind. The purported nominal benefit of the Combined  
405 Projects was just \$166,548,587 in the nominal revenue requirement studies presented in  
406 Mr. Link’s Supplemental Direct Testimony, under the medium gas, medium CO2  
407 scenario. In comparison, the modeling of the final shortlist from the Solar RFP produced  
408 a nominal revenue requirement benefit of \$424,128,293 in the same medium gas,  
409 medium CO2 scenario. Thus, the solar projects produced nominal benefits that were  
410 approximately 2.5 times greater than the Combined Projects, when viewed in the medium  
411 gas, medium CO2 scenario.

412 **Q. WERE THE SOLAR SENSITIVITIES BENEFICIAL UNDER THE LOW GAS**  
413 **PRICE SCENARIO?**

414 A. Yes. Not only was the solar short list more beneficial, the benefits were also more  
415 durable across price policy scenarios. PacifiCorp forecasts that ratepayers will recognize  
416 benefits from the Solar RFP final short list even in the low gas, zero carbon price policy

---

<sup>25</sup> *Id.* at 71.



417 scenario. In the low gas, zero carbon price policy scenario, the solar sensitivity study  
418 showed that the final short list from the Solar RFP would provide nominal ratepayer  
419 benefits of \$216,524,070. In contrast, ratepayers would suffer an economic *loss* of  
420 \$183,651,193 from the Combined Projects in the low gas, zero carbon price policy  
421 scenario. The solar RFP final shortlist also consisted entirely of PPA bids, making them  
422 less risky than the Combined Projects from that perspective, as well (as described above).

423 **Q. DID PACIFICORP'S STUDY IDENTIFY MATERIAL BENEFIT FROM**  
424 **ACQUIRING BOTH THE WIND AND SOLAR PROJECTS?**

425 A. No. If both the solar and the new wind is constructed, the PVRR(d) increased to only (-  
426 ) \$435,346,313 in the medium gas price scenario. This means that the incremental  
427 benefit of investing \$2.2 billion in the Combined Projects was only (-) \$11,218,020 in the  
428 nominal studies. Considering size of the investment, and the associated risk, the  
429 incremental nominal benefits of doing both sets of projects cannot be considered to be  
430 material.

431 **Q. HOW DOES THE SOLAR RFP IMPACT THE WIND RESOURCE DECISION?**

432 A. Given the results of the Solar RFP resources, the Commission should deny PacifiCorp's  
433 application for approval of the Wind Projects because other renewable resources are  
434 likely available with lower cost and lower risk, even in PacifiCorp's studies.

435 c. **PacifiCorp Made Last Minute Modeling Changes that Had the Effect of Favoring**  
436 **Utility Ownership**

437 **Q. PLEASE DESCRIBE THE MODELING CHANGES THAT PACIFICORP MADE**  
438 **WHEN MAKING THE FINAL SHORTLIST.**

439 A. PacifiCorp made at least two fundamental modeling changes late in the RFP process,  
440 which had the impact of making the utility ownership bids appear more attractive. First,  
441 PacifiCorp changed the way that it considered production tax credits in its "levelized"

442 revenue requirement study by considering those benefits on a nominal, rather than a  
443 levelized basis, over a 20-year study period. The change to the treatment of production  
444 tax credits did not impact the “nominal” revenue requirement studies. Second,  
445 PacifiCorp included a new terminal value calculation that purported to increase the  
446 relative benefit of the Combined Projects.

447 **Q. WHY DO THE NOMINAL AND LEVELIZED STUDIES PRODUCE SUCH**  
448 **DIFFERENT RESULTS?**

449 A. Understanding the difference between the “levelized” studies identified in CORRECTED  
450 Table 2-SS and the “nominal” studies identified in CORRECTED Table 3-SS is  
451 important when considering PacifiCorp’s benefits. In my view, the “levelized” studies  
452 are not properly considered levelized studies at all, since they include a mismatch of both  
453 levelized and nominal costs. In contrast, the nominal study simply considers all costs on  
454 a nominal basis, and is a more straight-forward approach.

455 **Q. DO YOU AGREE WITH PACIFICORP’S PROPOSAL TO CONSIDER THE**  
456 **PRODUCTION TAX CREDITS ON A NOMINAL BASIS?**

457 A. Conceptually, I don’t necessarily disagree that it is appropriate to consider production tax  
458 credits on a nominal basis. However, if those benefits are considered on a nominal basis,  
459 then all costs, including the cost of the transmission, should be considered on a nominal  
460 basis. In performing its levelization analysis, the Company performs a bizarre  
461 methodology for its transmission investment, which has the effect of simply ignoring a  
462 great deal of the costs that ratepayers will be responsible for with respect to the  
463 transmission investment. The problems with PacifiCorp’s transmission levelization  
464 assumptions were discussed beginning on page 48 of my Direct Testimony, and I remain  
465 concerned with that issue. Notwithstanding, if production tax credits are to be considered

466 on a nominal basis, it is more appropriate to consider all costs and benefits on a nominal  
467 basis, rather than mismatching incongruous levelized and nominalization assumptions in  
468 the same study.

469 This change to the treatment of production tax credits was also at issue in Docket  
470 No. 17-035-39, regarding PacifiCorp's wind repowering proposal. In that proceeding,  
471 Mr. Higgins testified on behalf of UAE noting that "[b]y changing the method for valuing  
472 PTCs without also changing the method of valuing capital costs, the Company is effectively  
473 "cherry-picking" the combination of valuation methods that achieves the most favorable  
474 optics for the projects."<sup>26</sup> I agree with this statement.

475 **Q. DO YOU AGREE WITH PACIFICORP'S NEW TERMINAL VALUE**  
476 **ASSUMPTION?**

477 A. I do not necessarily disagree that there might be some longer term value with respect to a  
478 utility owned wind site, in contrast to a power purchase agreement. Notwithstanding, if a  
479 longer-term terminal value is to be included for a Company-owned site, the Company  
480 must also consider all of the ongoing capital maintenance and investment that is required  
481 with respect to that site to identify an appropriate terminal value.

482 **Q. DOES PACIFICORP'S ANALYSIS INCLUDE ALL ONGOING CAPITAL**  
483 **MAINTENANCE AND INVESTMENT IN ITS TERMINAL VALUE**  
484 **ASSUMPTION?**

485 A. No. While there was some consideration of capital maintenance with respect to the Wind  
486 Projects, in response to UAE Data Request 5.4, PacifiCorp stated that its analyses did not  
487 consider the ongoing capital maintenance and replacements of the Transmission Projects.  
488 Since the ongoing capital was not considered, I do not believe it is appropriate to include  
489 a terminal value component in the benefits study PacifiCorp presented. In the alternative,

---

<sup>26</sup> Docket No 17-035-39, Response Testimony of Kevin C. Higgins at 54-57

490 the ongoing capital investment in the Transmission Projects must be included. The  
491 Company's terminal value calculations also do not consider the cost of the Transmission  
492 Projects after the 30-year study period, which also need to be considered in the economic  
493 analysis.

494 **Q. WHAT WAS THE IMPACT OF THE TERMINAL VALUE ASSUMPTION?**

495 A. As can be seen in Figure 1, above, the approximate impact of the terminal year revenue  
496 requirement ranges from \$48.3 million to \$58.2 million.

497 **Q. HOW DOES THAT COMPARE TO THE COST OF ONGOING CAPITAL**  
498 **MAINTENANCE FOR THE TRANSMISSION PROJECTS?**

499 A. The ongoing capital cost of the transmission investment is significant in the study period.  
500 PacifiCorp is correct that the rate of replacements associated with the Transmission  
501 Projects will be low in the early years of the study period. To address this concern, I  
502 estimated replacement costs in the study period assuming a rate of retirement  
503 corresponding to a 60-R3 survivor curve, which is the current curve used for Account  
504 356, conductors and devices. I also assumed a cost of replacement equal to 100 percent  
505 of the original cost of the investment with no adjustment for inflation. I input the  
506 resultant capital schedule into PacifiCorp's model and the result was a reduction to the  
507 PVRR benefits of approximately \$91,951,462 in the 30-year study period.

508 In the terminal period, the increasing level of capital investment will eventually  
509 overtake depreciation expense with respect to the Transmission Projects. Based on the  
510 capital schedule described above, including those terminal costs further reduces the  
511 PVRR in the medium gas, medium CO2 case by \$18,296,839.

512 IV. OTHER MODELING FLAWS

513 **Q. IN YOUR DIRECT TESTIMONY, YOU IDENTIFIED A NUMBER OF**  
514 **PROBLEMATIC ASSUMPTIONS IN PACIFICORP'S ANALYSIS. DO THOSE**  
515 **PROBLEMS PERSIST IN THE MODELING USED TO JUSTIFY THE RFP**  
516 **SHORT-LIST RESOURCES?**

517 A. Yes. The RFP selection process continues to be based on a number of unreasonable  
518 assumptions, which were identified in my direct testimony. In its Rebuttal Testimony,  
519 filed on December 12, 2017, PacifiCorp discussed many of these assumptions, but its  
520 testimony on the matter is not persuasive. In fact, economic benefits studies presented in  
521 PacifiCorp's final economic screens in the latest PacifiCorp update contained even more  
522 problematic assumptions.

523 **Q. WHAT IS THE IMPACT OF THESE PROBLEMATIC MODELING**  
524 **ASSUMPTIONS?**

525 A. Table 1 below details the impact of the problematic modeling adjustments that I have  
526 identified, including the issue related to ongoing transmission capital investment costs,  
527 discussed above.

528  
529

**TABLE 1**  
Impact of Contested Modeling Adjustments

	<b>Nominal PVRR(d) \$</b>
<b>Company Purported Net Benefits / (Cost)</b>	<b>166,548,587</b>
Modeling Adjustments:	
Ongoing Transmission Capital	(90,175,496)
OATT Transmission Revenues	(25,674,149)
EIM Unstructured Imbalance	(22,925,985)
EIM 300 MW Link	(43,416,002)
<b>Total Modeling Adjustments</b>	<b>(182,191,632)</b>
Combined Project Net Benefits / (Cost) (Before Market Change)	(15,643,045)
Approx. Impact of Declining Market Prices	(88,313,593)
<b>Combined Project Net Benefits / (Cost) After Market Adjustment</b>	<b>(103,956,638)</b>

530

531 a. PacifiCorp Has Not Considered that Forward Market Prices Have Declined

532 **Q. HAS PACIFICORP ADEQUATELY RESPONDED TO CHANGING MARKET**  
 533 **CONDITIONS?**

534 A. No. While PacifiCorp has made a number of modeling changes to improve the overall  
 535 economics of its project, it has ignored changing circumstances surrounding market  
 536 prices, a key driver of the economic case for its proposal. PacifiCorp’s argument for why  
 537 it should be permitted to spend \$2.2 billion to build the Combined Projects is premised  
 538 largely on PacifiCorp’s claim that the Combined Projects will lower costs for ratepayers  
 539 versus the status quo of purchasing front office transactions to acquire power for the next  
 540 30 years. However, forward market price projections have declined relative to the  
 541 forward prices included in PacifiCorp’s economic analysis used to justify the Combined  
 542 Projects.

543 **Q. HOW DOES PACIFICORP DEVELOP ITS LONG-TERM OFFICIAL**  
544 **FORWARD PRICE CURVE (“OFPC”)?**

545 A. The forecasting methodology PacifiCorp uses to develop its OFPC was described in  
546 detail in PacifiCorp’s response to UAE Data Request 3.2.<sup>27</sup> Effectively, there are three  
547 parts to PacifiCorp’s forecast methodology. The first 72 months, the forecast relies on  
548 market forwards based on quotes from brokers. This initial 72 months is often referred to  
549 as the *short-term* portion of the OFPC. The subsequent 12 months (months 73 through  
550 84) are a transition period that transitions between market forwards and a third-party  
551 fundamentals-based forecast. Beginning in month 85, the OFPC relies on a third-party  
552 forecast that PacifiCorp receives in one of its ongoing subscription services for multi-  
553 client, *off-the-shelf*, fundamentals-based forecasts. The part of the curve that relies on a  
554 third-party forecast is often referred to as the *long-term* portion of the OFPC.

555 **Q. WHAT IS THE TENOR OF THE FORWARD PRICE CURVE PACIFICORP**  
556 **USED IN ITS ECONOMIC ANALYSIS?**

557 A. In response to UAE Data Request 5.17, PacifiCorp noted that the economic analyses  
558 presented in the Corrected Second Supplemental Direct Testimony of Mr. Link used  
559 PacifiCorp’s December 2017 Official Forward Price Curve (“OFPC”).<sup>28</sup> As noted in my  
560 January 16, 2018 Rebuttal Testimony, that OFPC was issued on January 2, 2018.  
561 Notwithstanding, the long-term portion of the December 2017 OFPC was based on a  
562 long-term natural gas forecast dated November 21, 2017, as noted in PacifiCorp’s  
563 response to UAE Data Request 3.2 in Docket No. 17-035-40.<sup>29</sup> Thus, the long-term

---

<sup>27</sup> UAE-UIEC Exhibit 3.1

<sup>28</sup> *Id.*

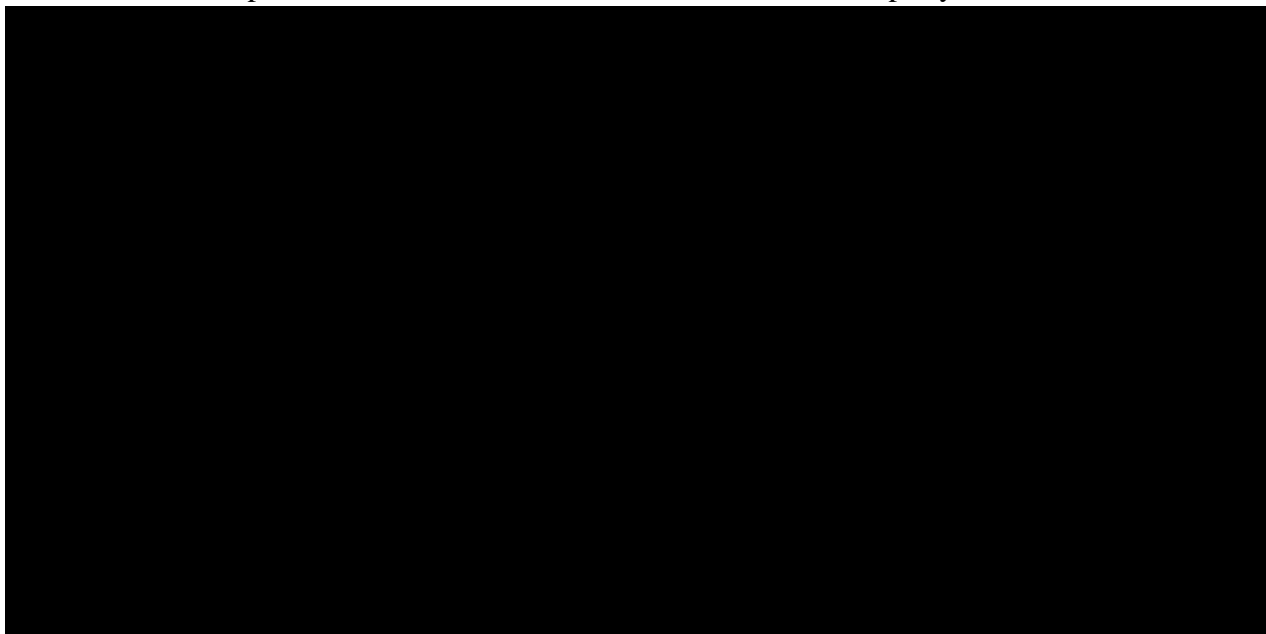
<sup>29</sup> *Id.*

564 market price projections did not consider the effects of tax reform or the reduction in  
565 forward market prices that occurred in late 2017.

566 **Q. HAS PACIFICORP RECEIVED MORE RECENT THIRD-PARTY FORECASTS?**

567 A. Yes. In UAE Data Request 5.18, UAE requested that PacifiCorp provide the long-term  
568 natural gas price forecasts that PacifiCorp has received through the third-party  
569 subscription service over the period January 1, 2018 through the present. The most recent  
570 price forecast of [REDACTED], as well as the prices from  
571 PacifiCorp's December 2017 OFPC, can be seen in Confidential Figure 3, below.

572 **CONFIDENTIAL FIGURE 3**  
573 Henry Hub Forward Price \$/MMBtu  
574 PacifiCorp December 2018 OFPC versus most recent third-party forecast.



575  
576 As can be seen from Confidential Figure 3, the more recent projections have  
577 declined, and are more in-line with current short-term forward market prices.



578 **Q. WHAT IS THE IMPACT OF DECLINING MARKET PRICE OF NATURAL GAS**  
579 **ON PACIFICORP'S PROPOSAL?**

580 A. To estimate the impact, I also performed an analysis that interpolated between the low  
581 and medium gas price scenario based upon the degree to which the February prices  
582 tended towards the low gas, zero CO2 scenario. Based on that analysis, I determined that  
583 prices were approximately 25% closer to the low gas, zero CO2 scenario, implying an  
584 impact of \$88,313,593 associated with the lower curve. Since the system will redispatch  
585 around the lower market prices, I view this value to be a reasonable estimate of the lower  
586 expected forward prices.

587           Importantly, this market adjustment is appropriately applied even before  
588 considering the largely academic issue of whether a risk premium is embedded in  
589 forward prices. Contrary to Mr. Link's Rebuttal Testimony, I never testified to the  
590 Oregon Public Utility Commission regarding an expectation for a negative risk premium.

591           Mr. Link is entitled to his opinion on whether a risk premium exists, but based on  
592 my experience, market prices have consistently been lower than the utilities' long term  
593 forecasts. The data presented in my Direct Testimony is evidence of that fact. Whether  
594 it's a risk premium, or just bad forecasting, the historical data justifies placing greater  
595 weight on the low gas price scenarios. Since consideration of a risk premium would  
596 render the projects even more uneconomical to ratepayers, I did not consider that  
597 adjustment in Table 1, above.

598 **b.** PacifiCorp Incorrectly Attributes Wholesale Transmission Revenues to the  
599 Combined Projects

600 **Q. DOES PACIFICORP'S FINAL BENEFITS STUDY CONTINUE TO INCLUDE**  
601 **FAULTY ASSUMPTIONS WITH RESPECT TO WHOLESALE TRANSMISSION**  
602 **REVENUES?**

603 A. Yes. As noted in my Direct Testimony, PacifiCorp continues to assume that 12% of the  
604 Transmission Projects, and 12% of the associated network upgrades will be funded by  
605 PacifiCorp's Open Access Transmission Tariff ("OATT") customers. The 12% amount  
606 is based on the portion of transmission revenue requirement that has historically been  
607 funded by OATT customers. PacifiCorp has assumed that the portion of transmission  
608 revenue requirement allocated to its retail customers, including Utah ratepayers, will not  
609 increase as a result of constructing the Combined Projects.

610 **Q. WHAT DID PACIFICORP SAY IN REBUTTAL TESTIMONY ON THIS ISSUE?**

611 A. Very little. Mr. Vail provided a high-level description of PacifiCorp Transmission's  
612 transmission revenue requirement ("ATRR"), and then went on to state that "[t]he 12  
613 percent figure represents the current level of ATRR funded by OATT customers."<sup>30</sup>

614 **Q. DO YOU AGREE?**

615 A. I do not dispute that the 12% figure represents the current level of ATRR funded by  
616 OATT customers. I do, however, disagree with PacifiCorp's assumption that the 12%  
617 figure will remain constant after the Combined Projects are placed into service. As a  
618 result of the way transmission costs are allocated, that percentage will decline as a result  
619 of constructing the Combined Projects. Correspondingly, the percentage of ATRR  
620 funded by PacifiCorp's retail customers, including Utah ratepayers, will increase. Mr.  
621 Vail never responded to the concern that the percentages will change.

---

<sup>30</sup> Supplemental Direct and Rebuttal Testimony of Rick Vail lines 750-770.

622 **Q. IS MR. VAIL CORRECT THAT THE PORTION OF TRANSMISSION**  
623 **REVENUE REQUIREMENT FUNDED BY RETAIL CUSTOMERS WILL NOT**  
624 **INCREASE?**

625 A. No. Mr. Vail's description of PacifiCorp's formula rate overlooks the way that costs are  
626 allocated between point-to-point and network integration transmission customers.  
627 Because the Combined Projects displace resources delivered through point-to-point  
628 transmission and replaces them with resources delivered through network integrated  
629 transmission, the allocation of transmission revenue requirement to PacifiCorp's  
630 merchant function will increase as a direct result of the construction of the Combined  
631 Projects. Thus, the 12% figure cited in Mr. Vail's testimony will decline, the portion of  
632 PacifiCorp's ATRR to be paid by PacifiCorp's retail customers will increase, and the  
633 calculated benefits of the Combined Projects will decrease.

634 If PacifiCorp constructs the Wind Projects, the effect will be to increase the load  
635 served by network resources and reducing the loads served by front office transactions  
636 through point-to-point transmission. While PacifiCorp's network service load will  
637 increase, resulting in an increase in allocated cost, PacifiCorp still has to pay for the full  
638 capacity of the point-to-point transmission that it holds in reserve to deliver front office  
639 transactions to load, irrespective of whether it actually acquires those front office  
640 transactions. PacifiCorp has indicated that it has no intention of terminating any of its  
641 point-to-point transmission rights as a result of constructing the Combined Projects,  
642 accordingly its allocation will increase.

643 **Q. DID MR. VAIL ADEQUATELY RESPOND TO THE RISK THAT THE**  
644 **TRANSMISSION PROJECTS WILL BE ASSIGNED ENTIRELY TO**  
645 **PACIFICORP MERCHANT?**

646 A. No he did not. Further, there continues to be a real risk that third party OATT customers  
647 will not be willing to pay for the cost of any of the Transmission Projects, and that the  
648 costs of the economic investment will be directly assigned to PacifiCorp's merchant  
649 function.

650 **Q. WHAT IS THE IMPACT OF DECLINING THIRD-PARTY REVENUES?**

651 A. Third-party revenues are a key component to PacifiCorp's benefits study. And if the  
652 Wind Projects are constructed the impact of the Wind Projects on PacifiCorp Merchant's  
653 share of transmission revenue requirement is easily determined. Based upon projected  
654 2017 net revenue requirement of \$438,765,673, construction of the Transmission  
655 Projects—with a first year gross revenue requirement of [REDACTED]—will produce a  
656 transmission rate increase of approximately 17.7%. As a result of the Wind Projects,  
657 however, the network load of PacifiCorp's merchant function will increase by the  
658 average energy produced by the Wind Projects—approximately 450 MW per month—  
659 with no corresponding reduction to the point-to-point transmission rights PacifiCorp  
660 holds in reserve to deliver front office transactions. As a result, the total billing  
661 determinants will increase from 13,875 to 14,325 on a 12 CP basis, but PacifiCorp's  
662 share of the billing determinants will also increase by about 450 MW. Based on these  
663 values, I estimate that the portion of revenue requirement funded by OATT customers  
664 would decline from the 12% value to approximately 11.62% and the portion of revenue  
665 requirement funded by PacifiCorp's retail customers would increase accordingly.

666 While the 0.38% difference may seem small, the impacts are material on the  
667 overall benefits alleged by PacifiCorp, since it applies to overall revenue requirement.  
668 Based on annual transmission revenue requirements of approximately \$516,629,044, the  
669 0.38% difference equates to approximately \$1,9634,190 million per year, which over a  
670 30-year study period results in an additional present value cost of \$25,674,149.

671 c. PacifiCorp Improperly Considered the Costs and Benefits of the Energy Imbalance  
672 Market.

673 **Q. PLEASE DESCRIBE THE EIM BENEFIT ASSUMPTION INCLUDED IN**  
674 **PACIFICORP'S MODELING.**

675 A. In response to UAE Data Request 5.9, PacifiCorp confirmed that the economic analyses  
676 in the Supplemental Direct Testimony of Rick T. Link included a modeling assumption it  
677 refers to as an "Energy Imbalance Market ("EIM") Benefit."<sup>31</sup> In both the System  
678 Optimizer and PaR models, the transmission topology<sup>32</sup> includes a new 300 MW  
679 transmission link between Jim Bridger and Walla Walla. This new transmission link  
680 does not exist today and PacifiCorp has no plans to build it. Notwithstanding, PacifiCorp  
681 believes that this incremental 300 MW of transmission capability will be made available  
682 when Idaho Power joins the EIM. Within its models, this assumption has the effect of  
683 reducing congestion out of Wyoming at Bridger (the terminating end of the proposed  
684 Gateway sub-segment D2) and increasing the purported economic benefits of the short  
685 list resources identified in the Supplemental Direct Testimony of Rick T. Link.

---

31 UAE-UIEC Exhibit 3.1

32 For an illustration of the transmission topology used in the IRP see PacifiCorp, *2017 Integrated Resource Plan*, Page 147, Figure 7.2.

686 **Q. DID YOU EXPRESS CONCERNS WITH THIS 300 MW LINK IN YOUR**  
687 **DIRECT TESTIMONY?**

688 A. In Direct Testimony, I testified that the EIM does not operate in a way that allows a  
689 utility to effectuate firm transmission of electricity, as PacifiCorp has modeled with  
690 respect to its EIM benefit adjustment.<sup>33</sup> In contrast, my view was that the EIM is likely  
691 to result in a net cost to Wyoming wind resources, since those resources will be subject to  
692 uninstructed imbalance charges, which PacifiCorp acknowledged was not considered in  
693 its economic analysis.<sup>34</sup>

694 **Q. HOW DID THE COMPANY RESPOND?**

695 A. In Rebuttal Testimony, PacifiCorp never actually responded to the propriety of including  
696 the unconstructed 300 MW transmission link between the Jim Bridger and Walla Walla.  
697 Mr. Link apparently disagreed with the way I characterized the Supplemental GRID  
698 studies that were prepared as a part of the 2017 IRP.<sup>35</sup> He noted that the GRID model  
699 studies were only used in the 2017 IRP, and not in subsequent analyses presented in this  
700 docket.<sup>36</sup> I, however, acknowledged that PacifiCorp only used the Supplemental GRID  
701 studies in the 2017 IRP, and that PacifiCorp had since incorporated the adjustments into  
702 the SO and PaR models.<sup>37</sup> The only reason that the Supplemental GRID studies were  
703 considered was due to the fact that, as can be noted in PacifiCorp's response to UAE  
704 Data Request 5.9, PacifiCorp has been unwilling to isolate the impact of the 300 MW  
705 link between Jim Bridger and Walla Walla (which, again, has not been built and

---

33 Direct Testimony of Bradley G. Mullins, page 41, line 15 – page 43, line 20.

34 *Id.*

35 Rebuttal Testimony of Rick Link, lines 1333 - 1340.

36 *Id.*

37 Direct Testimony of Bradley G. Mullins, page 41, line 15 – page 43, line 20.

706 PacifiCorp does not plan to build) in economic studies performed using the SO and PaR  
707 models. Since PacifiCorp has been unresponsive, the Supplemental GRID studies are the  
708 best information available estimating the economic impact of the unconstructed 300 MW  
709 transmission link between Jim Bridger and Walla Walla included in PacifiCorp's  
710 economic analyses related to the Combined Projects.

711 Further, in response to the argument that the EIM is likely to represent an  
712 additional ancillary service cost through the imposition of instructed imbalance charges,  
713 Mr. Vail testified that "there is no basis to assume that uninstructed imbalance will result  
714 in a net cost and, in fact, the expectation is that over time there will be no net impact  
715 associated with uninstructed imbalance"<sup>38</sup> Mr. Vail did not, however, provide any  
716 supporting data—such as actual uninstructed imbalance charges for existing Wyoming  
717 wind resources—to support his claim that the uninstructed imbalance of Wyoming wind  
718 resources will net to zero.

719 **Q. DID PACIFICORP CONFIRM THAT IT DID NOT CONSIDER ANY**  
720 **UNINSTRUCTED IMBALANCE CHARGES IN ITS BENEFITS STUDY?**

721 A. Yes. Mr. Vail's Supplemental Direct Rebuttal Testimony confirmed that the economic  
722 studies presented in the Supplemental Direct Testimony of Mr. Link in support of the  
723 Combined Projects did not consider *any* ancillary service costs associated with acquiring  
724 EIM imbalance services applicable to the Wind RFP short list wind resources.

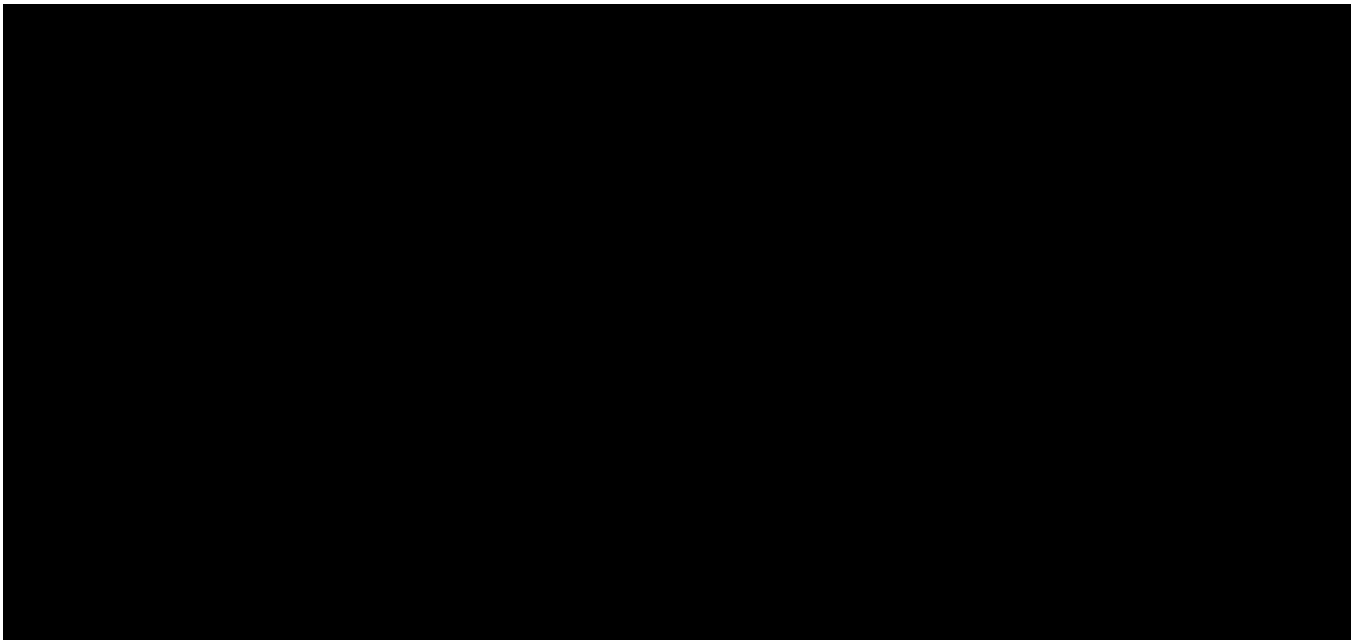
---

<sup>38</sup> Rebuttal Testimony of Rick Vail, lines 711 - 717.

725 **Q. WHAT DID PACIFICORP'S RESPONSE TO UAE DATA REQUEST 5.14**  
726 **SHOW?**

727 A. It showed that Mr. Vail was wrong. The uninstructed imbalance has tended to be positive  
728 for wind resource currently located in the transmission-constrained area of Wyoming.  
729 Confidential Table 2, below, shows the historical values.

730 **CONFIDENTIAL TABLE 2**  
731 Uninstructed Imbalance Costs for Wind Projects



732  
733 Based on the actual experience of wind resources located in eastern Wyoming, I  
734 estimate that the annual imbalance costs associated with the 1,311 MW Wind Projects  
735 will be material. I estimate that on an annual basis that cost will be \$1,770,692, as  
736 detailed in Confidential Table 2, above.

737 **Q. BASED ON THIS HISTORICAL DATA, HOW MUCH UNINSTRUCTED**  
738 **IMBALANCE DO YOU EXPECT FOR THE WIND PROJECTS?**

739 A. Based on the average \$/MWh of these historical levels, incorporating these imbalance  
740 charges will reduce the benefits of the Combined Projects by approximately \$22,925,985  
741 over the 30-year study period.



742 **Q. WHAT IS THE IMPACT OF THE 300 MW TRANSMISSION LINK?**

743 A. I continue to disagree with PacifiCorp's inclusion of the unconstructed 300 MW  
744 transmission link in its economic analysis supporting the Combined Projects. Inclusion  
745 of a firm 300 MW transmission link is not consistent with the operation of the EIM,  
746 which does not provide a utility with firm transmission rights, as assumed in PacifiCorp's  
747 analysis. In UAE-UIEC Exhibit 3.1, in response to UAE Data Request 5.11, PacifiCorp  
748 confirmed that PacifiCorp does not assert that it can "use the EIM to achieve new, firm  
749 transmission rights on another EIM participants' system," as modeled with respect to the  
750 300 MW transmission link. Based on the supplemental GRID studies, presented in the  
751 IRP, grossed up for the higher level of wind PacifiCorp has proposed through the final  
752 short list, I estimate the impact of this 300 MW link to be an approximate \$43,416,002  
753 reduction to the net present value revenue requirement benefits PacifiCorp has alleged.

754 V. PACIFICORP DOES NOT HAVE A NEED FOR NEW RESOURCES

755 **Q. ARE THE WIND PROJECTS, AND ASSOCIATED TRANSMISSION,**  
756 **NECESSARY TO PROVIDE ELECTRICAL SERVICES TO UTAH**  
757 **CUSTOMERS?**

758 A. No. Central to this case is whether the constructing combined projects are necessary to  
759 provide reliable, low-cost electrical services to Utah customers. As noted in my Direct  
760 Testimony, nothing presented in this case demonstrates that the Combined Projects are  
761 necessary utility investments. To the contrary, the most recent resource needs assessment  
762 presented on page 91 and 92 of PacifiCorp's 2017 IRP do not show a need for the  
763 addition of any capacity for the entirety of the ten year period of analysis.

764 **Q. HOW DID PACIFICORP RESPOND?**

765 A. PacifiCorp continues to argue that because it has yet to execute the front office  
766 transactions, that those should not be considered in its resource need. I continue to  
767 disagree. Having access to bilateral markets is very valuable, and it is not prudent for  
768 PacifiCorp to disregard that market access when considering its resource adequacy. Just  
769 because the prices are uncertain does not mean that the market should be excluded when  
770 considering the adequacy of existing resources.

771 **Q. HAS PACIFICORP PREVIOUSLY TAKEN THE POSITION THAT THE**  
772 **AVAILABILITY OF FRONT OFFICE TRANSACTIONS MEANS THAT IT**  
773 **DOES NOT HAVE A RESOURCE NEED?**

774 A. Yes. In Utah PSC Docket 15-035-53,<sup>39</sup> PacifiCorp filed an application requesting that  
775 the Commission reduce the PPA term for Qualifying Facilities from 20 years to 3 years.  
776 PacifiCorp attempted to justify the request on the grounds that PacifiCorp's 2015 IRP  
777 demonstrated that PacifiCorp did not need additional generation resources because of the  
778 Company's ability to acquire power through front office transactions.<sup>40</sup>

---

<sup>39</sup> See *In the Matter of the Application of Rocky Mountain Power for Modification of Contract Term of PURPA Power Purchase Agreements with Qualifying Facilities*, Utah PSC Docket 15-035-53.

<sup>40</sup> See, e.g., Direct Testimony of Paul Clements at lines 55-56 ("PacifiCorp's 2015 IRP, which was filed in March 2015, shows no new resource is required until 2028."); *id.* at 62-63 ("The Company has no need for resources in the next decade."); *id.* at lines 167-170 ("[I]t is extremely rare for a utility to voluntarily enter into a 20-year fixed-price energy contract without a specified energy resource need due to concerns about price risk, market liquidity, and other risk considerations."); *id.* at lines 372-374 ("Long-term resource needs are typically identified in the IRP only after lower-cost, lower-risk resource opportunities are exhausted such that a long-term resource is required to meet customer load requirements.").

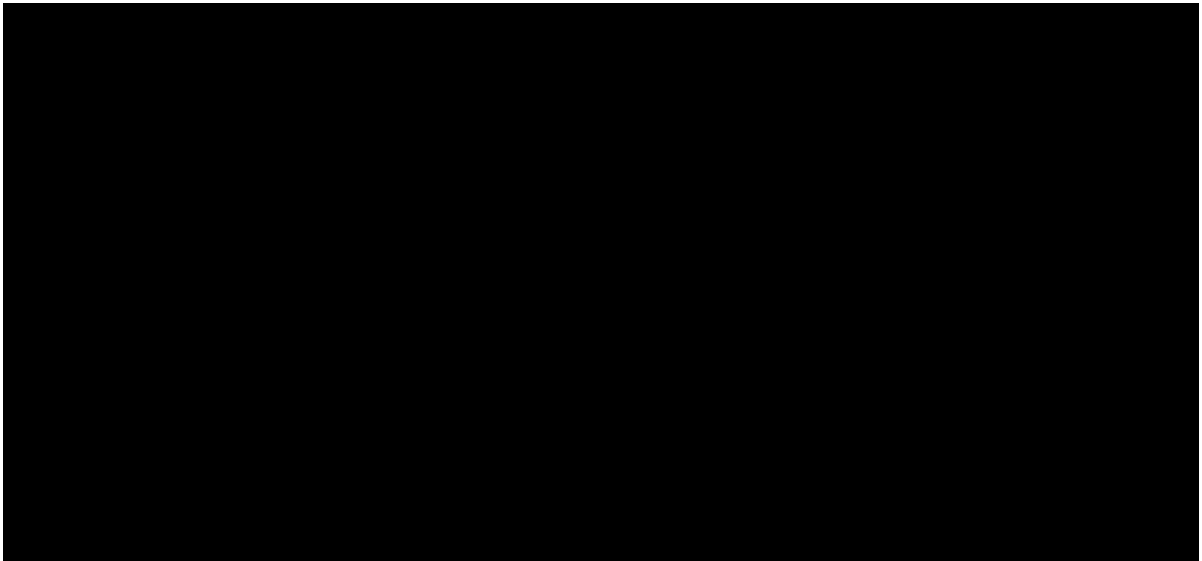
779 **Q. HAS PACIFICORP UPDATED ITS LOAD FORECAST SINCE THE 2017 IRP?**

780 A. Yes. In response to UAE Data Request 5.6, PacifiCorp provided its most recent load  
781 forecast. PacifiCorp did not, however, identify the tenor of that load forecast.

782 Notwithstanding, the load forecast has declined dramatically since the issuance of the  
783 2017 IRP. In 2026, peak loads are forecast to be down by approximately 14% or 1,525  
784 MW, relative to the 2017 IRP. This can be observed in Table 3, below.

785 **CONFIDENTIAL TABLE 3**

786 Impact of Most Recent Load Forecast (Coincident Peak, MW)



787

788 **Q. HOW DOES THIS DECLINING LOAD IMPACT PACIFICORP'S RESOURCE**  
789 **NEEDS?**

790 A. In Confidential UAE-UIEC Exhibit 3.2, I update the results of PacifiCorp's resource  
791 needs assessment in Table 5.14 from the 2017 IRP, changing nothing but the load  
792 forecast to be consistent with the Company's response to UAE Data Request 5.6. As the  
793 exhibit shows, even before considering front office transactions, PacifiCorp is forecast to  
794 be in a capacity surplus position of 526 MW in 2026. With front office transactions, that  
795 surplus position grows to 2,196 MW. Thus, with the declining load forecast,

796 PacifiCorp's concerns about whether front office transactions should be considered in  
797 evaluating resource needs is moot.

798 **Q. WHAT DOES THAT MEAN WITH RESPECT TO PACIFICORP'S RESOURCE**  
799 **PROPOSAL?**

800 A. Ratepayers are already in a tenuous position of having more resources than needed, and  
801 building the Combined Projects will only exacerbate that problem.

802 **Q. HAS THE COMPANY PREPARED AN UPDATED RESOURCE NEED**  
803 **ASSESSMENT WHEN CONSIDERING THE RFP RESOURCES?**

804 A. In UAE Data Request 5.1, UAE requested that PacifiCorp confirm that it has not  
805 performed an updated resource needs assessment when selecting the RFP resources. In  
806 its response, the Company stated that it has not performed an updated needs assessment.  
807 Finally, PacifiCorp noted that it planned to issue an IRP update on March 31.

808 **Q. DID PACIFICORP FILE ITS IRP UPDATE ON MARCH 31, 2018?**

809 A. No. Accordingly, the only resource needs assessment available is from the 2017 IRP and  
810 that assessment did not show any resource needs in the first ten years of the study period.  
811 And, in fact, after updating for the most recent load forecast, it is apparent that  
812 PacifiCorp's resource length will grow to uncomfortable levels, even without considering  
813 the Wind Projects. Accordingly, I continue to recommend that the request be denied on  
814 the basis that there has not been a clearly demonstrated resource need, with or without  
815 wholesale market transactions.

816 VI. RISK OF NEW TRANSMISSION TECHNOLOGY

817 **Q. HAS PACIFICORP CHANGED THE TRANSMISSION TOWER TECHNOLOGY**  
818 **THAT IT IS PROPOSING WITH RESPECT TO THE TRANSMISSION**  
819 **PROJECTS?**

820 A. Yes. Rather than using the steel lattice transmission towers described in PacifiCorp's  
821 opening testimony, the Company is now proposing to use an untested, undeveloped  
822 technology.

823 **Q. WHAT IS THIS NEW TECHNOLOGY?**

824 A. It is not clear from Mr. Vail's testimony. Mr. Vail noted, however, that PacifiCorp  
825 "decided it could use a new tower design that would significantly reduce the structures'  
826 weight, and therefore cost, as compared to the tower design used in other segments of the  
827 Energy Gateway project."<sup>41</sup>

828 **Q. HAS PACIFICORP FINISHED DEVELOPING THIS NEW TECHNOLOGY?**

829 A. No. Mr. Vail indicated that design and testing is still underway with respect to the new  
830 technology.

831 **Q. HAS RELIANCE ON NEW TECHNOLOGIES RESULTED IN SIGNIFICANT**  
832 **COST OVER-RUNS FOR OTHER UTILITIES IN THE PAST?**

833 A. Yes. When building the One Nevada ("ON") Line, NV Energy used "advanced electric  
834 transmission towers." Notwithstanding, the towers were unable to withstand sustained  
835 winds, and accordingly, testing and mitigation measures had to be undertaken, which  
836 delayed operation over one year and increased costs by \$42.5 million.

---

<sup>41</sup> Supplemental Direct and Rebuttal Testimony of Rick A. Vail, lines 114 – 123.

837 **Q. DOES USE OF A NEW TOWER DESIGN PRESENT AN ADDITIONAL RISK**  
838 **ASSOCIATED WITH THE TRANSMISSION LINES NOT COMING IN ON**  
839 **BUDGET?**

840 A. Yes. This issue with respect to the new transmission tower technology is just one of  
841 many risks that may cause PacifiCorp to go over budget on the transmission line. The  
842 need to meet safe harbor requirements to obtain the full value of production tax credits  
843 means that this sort of risk has the potential to be very costly with respect to the  
844 Combined Projects. Further, given the state of the economic justification, any such risks  
845 will only make the Combined Projects even more uneconomical to ratepayers. Mr. Vail  
846 acknowledges that the Populous to Terminal transmission line was originally forecast to  
847 cost only \$78 million, but ultimately cost \$801 million. He might disagree with the  
848 relevance of the \$78 million estimate, and the reasons that the Idaho Public Utilities  
849 Commission relied on that original estimate when disallowing a major portion of the  
850 Populous to Terminal transmission line, but Mr. Vail never disagrees that there is a real  
851 risk that it might not be possible to construct the Transmission Projects within the  
852 proposed budgets. As noted in my Direct Testimony, even a 15% overage on capital  
853 costs would eliminate any notion of benefits in PacifiCorp's modeling.

854 **Q. IS THE FAILURE TO CONSIDER THIS RISK A REASON NOT TO APPROVE**  
855 **PACIFICORP'S APPLICATION?**

856 A. Due to PacifiCorp's failure to adequately consider these risks, it is not appropriate to  
857 approve the Transmission Projects under the Energy Resource Procurement Act.

858 **Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL TESTIMONY?**

859 A. Yes.

860