

Rocky Mountain Power
Docket No. 16-035-36
Witness: Steven R. McDougal

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF UTAH

ROCKY MOUNTAIN POWER

Rebuttal Testimony of Steven R. McDougal

November 2016

1 **Q. Please state your name, business address and present position with PacifiCorp**
2 **dba Rocky Mountain Power (the “Company”).**

3 A. My name is Steven R. McDougal. My business address is 1407 West North Temple
4 Street, Suite 330, Salt Lake City, Utah 84116. My present position is Director of
5 Revenue Requirement for PacifiCorp.

6 **Q. Have you previously sponsored testimony in this proceeding?**

7 A. Yes.

8 **PURPOSE OF TESTIMONY**

9 **Q. What is the purpose of your rebuttal testimony?**

10 A. The purpose of my rebuttal testimony is to respond to and rebut certain issues raised
11 by Division of Public Utilities (“DPU”) witnesses Mr. Robert Davis and Mr. David
12 Thomson, Utah Office of Consumer Services (“OCS”) witnesses Mr. Bela Vastag,
13 Ms. Cheryl Murray and Mr. Danny Martinez, and Utah Clean Energy (“UCE”)
14 witness Ms. Sarah Wright. My testimony includes the Company's response to the
15 direct testimony of parties on the following issues:

- 16 • The Carrying Charge for the Sustainable Transportation and Energy
17 Plan Act ("STEP") pilot programs;
- 18 • The evaluation and analysis supporting the decision to proceed with the
19 Solar and Energy Storage Program, and why it is appropriate;
- 20 • The Company’s proposed accounting for the benefits and costs
21 associated with the Solar and Energy Storage Program, Blue Sky
22 funding and cost allocation;
- 23 • The Gadsby Emissions Curtailment Program replacement power costs;

- 24 • Tariff sheet modifications; and
25 • STEP Reporting Plan.

26 **STEP CARRYING CHARGE**

27 **Q. Mr. Thomson recommends that the carrying charge for the STEP pilot**
28 **programs be reset on an annual basis.¹ Does the Company agree with this**
29 **recommendation?**

30 A. Yes. As stated in paragraph 10 of the application in this docket and in my
31 Supplemental Testimony filed on October 17, 2016,² the Company recommends
32 that the Commission authorize the Company to use the carrying charge as
33 determined pursuant to the Commission order in Docket No. 16-035-69. In that
34 docket the Commission ordered the annual resetting of the carrying charge. The
35 Company supports the annual resetting of the carrying charge for the STEP pilot
36 programs.

37 **SOLAR AND ENERGY STORAGE PROGRAM**

38 **Q. Please provide some background to the Company decision to propose the Solar**
39 **and Energy Storage Program as part STEP.**

40 A. As discussed in Exhibit D to the application in this docket, the Company projects
41 that, by 2019, the nominal voltage on the transmission line in the area of this project
42 will drop below the required industry standards. These standards are designed to
43 protect Company and customer equipment from inadvertent mis-operation or
44 damage due to voltage excursions. The transmission voltage problems are being

¹ Direct Testimony of David Thomson filed November 9, 2016 in Docket No. 16-035-36, ll. 90-91.

² Supplemental Testimony of Steven R. McDougal filed October 17, 2016 in Docket No. 16-035-36, ll. 174-176.

45 caused by distribution load served from the line. In evaluating solutions to the
46 projected voltage issues, the Company considered both transmission and
47 distribution related solutions, including enhancement of the transmission
48 infrastructure, or the installation of energy storage equipment on the distribution
49 side of the system to reduce loading on the transmission line during peak load
50 periods. The Company analysis concluded that the least initial cost solution to
51 correct the projected voltage issues on the targeted line was to install an energy
52 storage system on the distribution system to balance the load on the line by
53 providing battery voltage support during peak loading periods. The Company
54 developed the Solar and Energy Storage Program as a low initial cost option to meet
55 the needs of the customers in the area and correct voltage issues on the targeted
56 transmission line by balancing the load with battery storage equipment on the
57 distribution system while gaining experience with the new technology as part of
58 STEP.

59 **Q. Mr. Davis states that the Company's Solar and Energy Storage Program is**
60 **different from other situs-assigned projects in that the intent of the Solar and**
61 **Energy Storage Program is to relieve a system transmission issue. Do you**
62 **agree with this assessment?**

63 A. As discussed above, the objective of the Solar and Energy Storage Program is to
64 solve a voltage issue on the transmission system caused by distribution load in the
65 area. This voltage issue can be fixed either through distribution-related projects or
66 transmission-related projects as identified in the application. The Company

67 proposes to address the voltage issue by installing solar and battery storage
68 equipment on the distribution system using the Solar and Energy Storage Program.

69 **Q. Both Mr. Davis and Mr. Vastag discuss evaluating the cost of the Solar and**
70 **Energy Storage Program options using Utah allocated amounts.^{3,4} Does the**
71 **Company agree with the approach of Mr. Davis and Mr. Vastag?**

72 A. No. The Company analyzes all investment option decisions based on total company
73 results. By looking at the Utah allocated costs, only a portion of the transmission
74 costs are included in the analysis, creating an incorrect investment comparison that
75 could lead to a suboptimal decision for the Company and its customers.

76 **Q. Why is it inappropriate to look at the decision on a Utah only basis?**

77 A. If all states were to look at transmission versus distribution investment decisions
78 based solely on the costs to their particular state, states could choose the
79 transmission project for investments in their state because a majority of the costs
80 would be allocated to other states. This type of investment decision making would
81 lead to suboptimal system operating results and increased overall costs to the
82 Company and customers in all states. It is not prudent for the Company to make
83 system investment decisions based on cost allocations.

84 **Q. What would be the result if the investment analysis method discussed by Mr.**
85 **Davis and Mr. Vastag were adopted regarding the Solar and Energy Storage**
86 **Program?**

87 A. The proposed investment analysis method may not select the Solar and Energy

³ Direct Testimony of Robert A. Davis filed November 9, 2016 in Docket No. 16-035-36, ll. 219-223.

⁴ Direct Testimony of Bela Vastag filed November 9, 2016 in Docket No. 16-035-36, ll.194-197.

88 Storage Program unless other states are willing to pay a portion of the cost, leading
89 the Company to explore other options and potentially missing out on an opportunity
90 to investigate the impact of distributed energy resources on Utah customers.

91 **Q. How would costs be allocated if a targeted demand-side management (DSM)**
92 **program were available and implemented in the area to reduce the peak**
93 **loading and voltage issues in lieu of building a transmission line?**

94 A. DSM program costs are state-specific and assigned to the state implementing the
95 programs. If DSM reduces the future need for system investments, the cost of the
96 DSM is not system allocated.

97 **SOLAR AND ENERGY STORAGE PROGRAM SYSTEM BENEFITS**

98 **Q. How will the benefits associated with the Solar and Energy Storage Program**
99 **be passed back to Utah customers?**

100 A. The Company agrees with the recommendation of Mr. Davis⁵ that the benefits of
101 the Solar and Energy Storage Program should be passed back to Utah customers
102 through the EBA. This will be done similar to the treatment of Black Cap Solar in
103 Oregon such that Utah will be credited for the market value of the solar production.
104 The one difference between the Solar and Energy Storage Program and the Oregon
105 Black Cap Solar projects is the addition of the energy storage in Utah. The energy
106 storage will enable the Company to shape the solar generation such that it can be
107 used during peak hours. Therefore, the Company will look at the net impact of the

⁵ Direct Testimony of Robert A. Davis filed November 9, 2016 in Docket No. 16-036-16, ll. 241-242.

108 combined solar and storage project in passing the benefits of the Solar and Energy
109 Storage Program to Utah customers.

110 **Q. How will the benefits of the Solar and Energy Storage Project be calculated?**

111 A. The benefits will be calculated using the same methodology as the Black Cap solar
112 project in Oregon, by taking the market price of the Four Corners market index
113 multiplied by the net output of the Solar and Energy Storage Program, on a monthly
114 basis for heavy and light load hours. Using the Four Corners market index to value
115 the net energy of the Solar and Energy Storage Program is also consistent with the
116 calculation of the Gadsby Emissions Curtailment Program.

117 **Q. Is this consistent with Mr. Davis' recommendation?**

118 A. Mr. Davis recommends that the total output of the project be a benefit to Utah.⁶ It
119 is unclear in his recommendation how to treat the inputs into the Solar and Energy
120 Storage Program, since energy storage provides output and requires an energy input
121 to charge the battery. The Company's proposal is to look at the hourly net input and
122 output of the project in measuring the Utah benefits.

123 **BLUE SKY FUNDING**

124 **Q. Does the Company agree with the recommendation of Ms. Wright that Blue**
125 **Sky funding should not be used to fund the solar portion of the Solar and**
126 **Energy Storage Program because it represents a deviation from the purpose**
127 **of the Blue Sky Program?⁷**

128 A. No. The Qualifying Initiatives section of the Blue Sky Tariff Schedule No. 70

⁶ *Id.*

⁷ Direct Testimony of Sarah Wright filed November 9, 2016 in Docket No. 16-035-36, ll. 146-147.

129 provides that Blue Sky funding can be used "for research and development projects
130 encouraging Renewable Energy in order to accelerate marketability of Renewable
131 Technologies." The proposal for funding the solar portion of the Solar and Energy
132 Storage Program fully aligns with allowed funding purposes in Schedule No. 70.
133 Moreover, as noted in the direct testimony of Douglas L. Marx, the Company has
134 received numerous requests for "steel in the ground" Blue Sky projects.⁸ This
135 project is the first of its kind and, as explained by Mr. Marx, may support the
136 development of additional integrated renewable installations in the future.

137 **Q. Do you agree with Ms. Wright's proposal that if Blue Sky funding is utilized**
138 **to fund a portion of the Solar and Energy Storage Program, a grant program**
139 **should be established to provide community organizations energy credits**
140 **based on the kilowatt-hours generated by the solar project?**⁹

141 A. No. The energy generated by the solar installation that UCE proposes to grant to
142 community organizations is not "excess generation" and could not logically be
143 counted as an additional generation resource available for a grant program. As
144 explained in the direct testimony of Mr. Marx, the generation captured from the
145 proposed photovoltaic installation is being used to reduce the loads on the
146 distribution circuit.¹⁰ Therefore, there would be no creation of excess generation
147 that would be available as a credit to other Company customers. Furthermore, the
148 cost of the program is being paid for by all of the Company's customers in Utah,

⁸ Direct Testimony of Douglas L. Marx filed September 12, 2016 in Docket No. 16-035-36, ll. 85-87.

⁹ Direct Testimony of Sarah Wright filed November 9, 2016 in Docket No. 16-035-36, ll. 169-173.

¹⁰ Direct Testimony of Douglas L. Marx filed September 12, 2016 in Docket No. 16-035-36, ll. 77-78.

149 and the benefits of the energy produced should be a benefit to all customers and not
150 to just those receiving grants.

151 **Q. Are there other concerns with the grant program proposed by Ms. Wright?**

152 A. Yes. The administrative costs to create a grant program that applies credits to
153 customer bills would require additional funding, including the creation of a new
154 rate schedule, billing system modifications and ongoing program management.

155 **GADSBY EMISSIONS CURTAILMENT PROGRAM**

156 **Q. Please summarize the recommendation of Mr. Martinez regarding the Gadsby**
157 **Emissions Curtailment Program.**

158 A. Mr. Martinez recommends that the Gadsby Emissions Curtailment Program be
159 approved but without specifically approving the method for calculating the
160 replacement power.¹¹ He also recommends additional filing requirements in the
161 EBA to support the replacement power costs of the Gadsby Emissions Curtailment
162 Program.

163 **Q. Why does the Company propose using a market price proxy when calculating**
164 **the replacement power costs of the Gadsby Emissions Curtailment Program?**

165 A. In the event Gadsby is curtailed, in real-time, the Company would optimize the
166 dispatch of its available generating units as a system and use market transactions to
167 economically balance the system. Determining the actual cost of real-time
168 curtailment would be burdensome, and potentially controversial, as it would require
169 a comparison to a counterfactual for the real-time duration of the curtailment. A
170 market proxy provides an independent and verifiable fair value of the energy. Using

¹¹ Direct Testimony of Danny Martinez filed November 9, 2016 in Docket No. 16-035-36, ll 241-245

171 the market proxy as the Company described in response to data request OCS 3.4,
172 as shown in Figure 1 below and contained in Exhibit RMP___(SRM-R1), provides
173 a reasonable, quantifiable, and transparent approach when determining the
174 replacement power costs for the Gadsby Emissions Curtailment Program. This is
175 also consistent with the approach used for valuing Utah's benefit related to the Solar
176 and Energy Storage Program.

Figure 1

$$\text{Actual } NG_{WF} \times \text{Heat Rate}_G = \text{Generation Costs}_G$$

$$\text{Market Price}_{4C} - \text{Generation Costs}_G = \text{Spark Spread}$$

$$\text{Spark Spread} \times \text{Curtailed Generation} = \text{Replacement Power Costs}$$

Where:

Actual NG_{WF} = Actual Natural Gas Cost per MMBTU for Wasatch Front

Heat Rate_G = Gadsby Heat Rate from Dispatch Model

Generation Costs_G = Gadsby Generation Costs per MWh

Market Price_{4C} = Actual Monthly Four Corners Market Price

177 **Q. Should the method for determining the replacement power costs of the Gadsby**
178 **Emissions Curtailment Program be determined and approved by the**
179 **Commission in this proceeding?**

180 A. Yes. The calculation method, based on the Four Corners market index, as outlined
181 in Figure 1 above and in Exhibit RMP___(SRM-R1), provides a reasonable
182 estimation of the replacement power costs. The Company would also support the
183 calculation of replacement power costs based on other market price indices,
184 specifically, the Palo Verde or the Mid-C market hubs. However, the market to be
185 used should be determined in this docket to avoid potential disputes in future
186 proceedings.

187 **Q. What is the Company's proposal relating to the Gadsby Emissions**
188 **Curtailment Program?**

189 A. The Company respectfully proposes that the Commission approve the Gadsby
190 Emissions Curtailment Program and recovery of the replacement power calculated
191 as described in Figure 1 above and in Exhibit RMP___(SRM-R1) using market
192 pricing at the Four Corners market hub, as recommended by the Company, or if the
193 Commission chooses, market pricing at either the Palo Verde, or the Mid-C market
194 hubs.

195 **Q. Would the Company proceed with implementation of the Gadsby Emissions**
196 **Curtailment Program if it were approved but without determining the method**
197 **of calculating the replacement power?**

198 A. No. The Company could not reasonably accept the risk of replacement power cost
199 recovery under the Gadsby Emissions Curtailment Program without a Commission-
200 approved method of calculating replacement power.

201 **TARIFF SHEET MODIFICATIONS**

202 **Q. Ms. Murray recommends that the Company cancel Schedule 195 and create**
203 **a new tariff with a new schedule number for the STEP surcharge tariff.¹²**

204 **Does the Company agree with this recommendation?**

205 A. Yes, the Company agrees to cancel Schedule 195 and create a new tariff with a new
206 schedule number for the STEP surcharge tariff. Exhibit RMP___(SRM-R2)
207 contains the proposed cancellation of Schedule 195. Exhibit RMP___(SRM-R3)
208 contains the proposed Schedule 196 replacing Schedule 195.

¹² Direct Testimony of Cheryl Murray filed November 9, 2016 in Docket No. 16-035-36, ll. 92-95.

209 **Q. Ms. Murray further recommends a correction to the Company’s proposed**
210 **tariff sheet 195.2 identifying Contract 3 as being a \$154,410/monthly charge,**
211 **which should be identified as an annual charge.¹³ Does the Company agree**
212 **with this recommendation?**

213 A. Yes, the Company agrees with the recommended correction. The correction is
214 incorporated in the Company’s proposed Schedule 196 contained in
215 Exhibit RMP___(SRM-R3), which replaces Schedule 195.

216 **Q. Mr. Thomson recommends that the Company’s proposed Tariff Sheet 195.1**
217 **include the term “Pilot Program” and that it make note of the program period**
218 **of five years.¹⁴ Does the Company agree with this recommendation?**

219 A. Yes, the Company agrees with this modification proposed by Mr. Thomson. The
220 recommendations are incorporated in the Company’s proposed Schedule 196
221 contained in Exhibit RMP___(SRM-R3).

222 **Q. Mr. Davis¹⁵ and Ms. Murray¹⁶ recommend removing the line referencing 2017**
223 **shown in Table 2 Available Capacity in the Company’s proposed modification**
224 **to Tariff Sheet 107.4. Does the Company agree with this recommendation?**

225 A. Yes. The line in Table 2 for 2017 Capacity was inadvertently not removed.
226 Exhibit RMP___(SRM-R4) contains the proposed correction to Tariff Sheet 107.4.

¹³ Direct Testimony of Cheryl Murray filed November 9, 2016 in Docket No. 16-035-36, ll. 98-101.

¹⁴ Direct Testimony of David Thomson filed November 9, 2016 in Docket No. 16-035-36, ll. 214-215.

¹⁵ Direct Testimony of Robert A. Davis filed November 9, 2016 in Docket 16-035-36, ll.418-421.

¹⁶ Direct Testimony of Cheryl Murray filed November 9, 2016 in Docket 16-035-36, ll. 69-71.

227 **Q. Ms. Murray recommends modifying the “APPLICABLE” section in the**
228 **Company’s proposed Tariff Sheet 107.1.¹⁷ Does the Company agree with Ms.**
229 **Murray’s proposed modification?**

230 A. Yes. The Company agrees with the modification proposed by Ms. Murray as
231 follows:

232 *APPLICABLE: All customers that have received a capacity*
233 *reservation and paid the required deposit under the Solar Incentive*
234 *Program as of December 31, 2016.*

235 Exhibit RMP___(SRM-R5) contains the proposed modification to Tariff Sheet
236 107.1.

237 **Q. Were there any other changes to the tariff sheets?**

238 A. Yes. The cost adjustment percentages on proposed Schedule 196 were updated to
239 reflect the price change on November 1, 2016 for Schedule 94 - Energy Balancing
240 Account (“EBA”) Pilot Program. The calculation of the revised Schedule 196
241 prices is included in the Company’s workpapers. Additionally, pursuant to the
242 proposed cancellation of Tariff Schedule 195 and creation of Tariff Schedule 196,
243 resulting changes have been proposed to Electric Service Schedules, Sheet B.1 and
244 Schedule 80 contained herein as Exhibit RMP___(SRM-R6) and
245 Exhibit RMP___(SRM-R7) respectively.

¹⁷ *Id.* at ll. 58-61.

246 **STEP REPORTING PLAN**

247 **Q. Do other parties recommend reporting requirements in addition to what the**
248 **Company has already proposed?**

249 A. Yes. The DPU and OCS each provide detailed recommendations regarding the
250 reporting requirements on the STEP programs the Company should be required to
251 provide annually, and at the end of the pilot period.

252 **Q. Does the Company support these detailed recommendations?**

253 A. Not entirely. Mr. Vastag recommends that for the Solar and Energy Storage Program
254 the Company develop a “proposal of realistic allocation methods that would result
255 in an equitable matching of costs and benefits...”¹⁸ The Company believes that the
256 proposal discussed previously in my testimony of giving Utah the benefits of the
257 net power cost difference through the EBA meets this requirement. Therefore, the
258 requirement proposed by Mr. Vastag should be satisfied by including the net power
259 cost benefits of the Solar and Energy Storage Program in the EBA.

260 **Q. Please provide an update on the Company’s STEP reporting plan, including**
261 **the recommended additional reporting requirements supported by the**
262 **Company.**

263 A. Based on the input received by the parties, the Company proposes to file with the
264 Commission an annual report on all approved STEP programs at the same time as
265 the year-end results of operations report. The annual STEP report will consist of the
266 following:

¹⁸ Direct Testimony of Bela Vastag filed November 9, 2016 in Docket No. 16-035-36, ll. 208-210.

267 STEP Accounting (Total STEP and by individual STEP program)

268 Actual and final project costs by year consisting of the following:

- 269 ▪ Annual collection (budget)
- 270 ▪ Annual spend
- 271 ▪ Committed Funds
- 272 ▪ Uncommitted funds
- 273 ▪ External OMAG expenses

274 Individual STEP Program Status Updates

- 275 • Program objective
- 276 • Accounting (including an explanation for any unforeseen budget
- 277 issues)
- 278 • Milestones
- 279 • Key Findings / Challenges / Lessons Learned
- 280 • Program benefits
- 281 • Results / Assessment of potential future applications for similar
- 282 projects

283 Final comprehensive program evaluation reports will be filed upon program
284 completion.

285 The annual status updates on NOx reduction clean coal projects will also include
286 the following:

- 287 • Project performance information such as changes to NOx emissions
- 288 and heat rates,
- 289 • A copy of all proposals and reports that the Company received or
- 290 produced relating to NOx projects since the previous report, and
- 291 • An offer to host a post-NOx report workshop to address questions
- 292 and concerns.

293 In addition to filing the annual STEP report with the Commission, the
294 Company also agrees to the following reporting requirements:

295

EBA Filing

296

- If STEP funds are used for Gadsby Emissions Curtailment Program,

297

the Company will include in the annual EBA filing the following:

298

- The calculation of replacement power from the curtailment, including all supporting documentation for the calculation inputs used based on an approved Commission methodology.

299

300

301

302

- The market price used in calculating replacement power and other market prices.

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304

- The justification documentation for changing the market price proxy, if applicable.

305

CONCLUSION

306

Q. Please summarize your rebuttal testimony.

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A. As supported by the Company's application in this docket, the testimony of

308

Company witnesses accompanying the application, and in my rebuttal testimony

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the Company recommends the Commission find as follows:

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311

- The Company has properly evaluated the cost-effectiveness of its Solar and Energy Storage Program;

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313

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- The Company-proposed accounting treatment will properly allocate to Utah customers the benefits of the Solar and Energy Storage Program through the EBA;

315

316

- It is appropriate to allow Blue Sky funding for the solar portion of the Solar and Energy Storage Program;

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319

- It is not appropriate or feasible to establish a grant program to benefit community service organizations based on the kilowatt-hours generated by the solar portion of the Solar and Energy Storage Program;

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321

322

- The replacement power costs resulting from operation of the Gadsby Emissions Curtailment Program should be calculated using the Four Corners trading market;

323

324

- The various Tariff Sheet modifications reflecting modifications and needed corrections addressed by parties are approved; and

325

326

- The Company proposed reporting plan provides all appropriate STEP reporting information requested by various parties in the docket.

327 The Company further respectfully recommends the Commission approve all issues
328 under consideration in Phase One of this docket as outlined in my rebuttal testimony
329 and the application and testimony of other Company witnesses in this docket.

330 **Q. Does that conclude your rebuttal testimony?**

331 A. Yes