

**Before the Public Service Commission of Utah**

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In the Matter of the Investigation of the  
Costs and Benefits of PacifiCorp's Net  
Metering Program

**Docket No. 14-035-114**

Vote Solar Exhibit 3.0 (RT)

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**REBUTTAL TESTIMONY OF DAVID W. DERAMUS, PH.D.**

**ON BEHALF OF**

**VOTE SOLAR**

July 25, 2017

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6 I. Qualifications and Purpose of Testimony

7 **Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.**

8 **A.** My name is David W. DeRamus. I am a Partner with Bates White, LLC. My business address  
9 is 1300 Eye Street N.W., Suite 600, Washington, DC 20005.

10 **Q. HAVE YOU SUBMITTED TESTIMONY PREVIOUSLY IN THIS DOCKET?**

11 **A.** Yes. I filed direct testimony in this docket on behalf of Vote Solar. This responsive testimony  
12 is also sponsored by Vote Solar.

13 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

14 **A.** I have been asked to review and respond to the June 8, 2017 Direct Testimony filed by  
15 witnesses for the Utah Division of Public Utilities (DPU) and the Office of Consumer Services  
16 (OCS).

17 II. Response to Testimony of Witnesses for OCS

18 **Q. ARE THERE AREAS IN WHICH YOU AGREE WITH OCS WITNESS DANIEL?**

19 **A.** Yes, I agree with OCS witness Daniel on the following points:

20 Ñ I agree that no new rate schedule for net metering customers should be implemented outside  
21 of a rate case.

22 Ñ I agree that RMP's data is "stale"<sup>1</sup> and not a valid basis for ratemaking.

23 Ñ I agree that RMP's proposal to separate residential DSG customers into a separate class should  
24 be rejected.

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<sup>1</sup> Daniel Direct Testimony, lines 163 – 165.

25   Ñ I agree that the projected growth of residential DSG in Utah is not currently an urgent problem  
26       that would justify RMP’s proposed radical departure in terms of rate design and Commission  
27       policy at the present time.

28   Ñ I agree that RMP has failed to consider other rate options for residential NEM customers,  
29       including optional TOU rates.

30   **Q. ARE THERE AREAS IN WHICH YOU AGREE WITH OCS WITNESS BECK?**

31   **A.** Yes, I agree with OCS witness Beck on the following points:

32   Ñ I agree that there is a need for gradualism with regard to any change in the current rate design  
33       for NEM customers.

34   Ñ I agree that there is no basis for RMP to implement demand charges for NEM customers.

35   Ñ I agree that there is no basis to segregate residential NEM customers into a separate class.

36   Ñ I agree that the current rate structure for NEM customers is just and reasonable.

37   Ñ I agree that “grandfathering” current residential NEM customers for some suitable length of  
38       time is appropriate, given the investments they have made under the current NEM program.

39   Ñ I agree that it would be appropriate for the Commission to establish a separate proceeding to  
40       evaluate the appropriate compensation for “exports” provided by residential NEM customers  
41       (i.e., excess generation from customer generating facilities that flows onto the local  
42       distribution network), including a consideration of the capacity benefits (among other  
43       benefits) associated with residential DSG systems.

44   **Q. DO YOU DISAGREE WITH OTHER PORTIONS OF TESTIMONY BY MS. BECK**  
45       **AND MR. DANIEL?**

46   **A.** Yes. I disagree with both Ms. Beck and Mr. Daniel that the costs to serve residential NEM  
47       customers currently exceed their benefits. I also disagree with several specific elements of  
48       Ms. Beck’s proposal to end the current NEM program, reduce the export compensation rate

49 for residential DSG customers, implement an hourly (or less) “netting” procedure, and require  
50 mandatory time-of-use (TOU) rates for residential NEM customers.

51 **Q. WHAT IS THE BASIS FOR YOUR DISAGREEMENT WITH OCS WITNESSES**  
52 **REGARDING WHETHER RMP’S COSTS TO SERVE RESIDENTIAL NEM**  
53 **CUSTOMERS EXCEED THE BENEFITS?**

54 **A.** OCS witnesses do not offer any critical review or independent analysis of the assumptions or  
55 calculations of RMP’s cost of service studies; they simply accept RMP’s conclusions from  
56 these studies at face-value. As I explain in my Direct Testimony, RMP’s analysis is  
57 fundamentally flawed and unsupported. The most glaring error in RMP’s cost of service  
58 analysis is its treatment of NEM customers’ behind-the-meter generation as a “cost” to other  
59 ratepayers, simply because such behind-the-meter generation results in foregone revenue for  
60 RMP. Neither Ms. Beck nor Mr. Daniel question the reasonableness of that assumption. In  
61 her testimony, however, Ms. Beck states that self-generation by residential NEM customers  
62 should not be treated any differently than other behind-the-meter investments or actions by  
63 residential customers.<sup>2</sup> I agree that treating behind-the-meter generation by residential NEM  
64 customers differently from other behind-the-meter activities by other residential customers  
65 would result in unduly discriminatory and disparate treatment among different groups of  
66 residential customers.<sup>3</sup> Given that premise, it is inconsistent for Ms. Beck to accept RMP’s  
67 treatment in its COS study of a reduction in load from behind-the-meter energy generation as  
68 a “cost” to other ratepayers, when it does not treat reductions in load from energy conservation  
69 measures in a similar manner. At bottom, RMP’s approach mistakes a reduction in its revenue  
70 for an increase in the cost of service. Correcting this basic error in RMP’s COS analysis  
71 makes RMP’s alleged revenue shortfall from the residential NEM program insignificant, even

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<sup>2</sup> Beck Direct Testimony, lines 476 – 481.

<sup>3</sup> DeRamus Direct Testimony, lines 658 – 664.

72 before correcting for other errors and gaps in RMP’s analysis.<sup>4</sup> As I note in my Direct  
73 Testimony, the amount of RMP’s lost revenue attributable to other residential load reduction  
74 programs, such as energy efficiency programs, far exceeds the amount of lost revenue  
75 attributable to behind-the-meter generation by residential NEM customers.<sup>5</sup>

76 **Q. HOW DO YOU RESPOND TO MR. DANIEL’S STATEMENT THAT THE LOAD**  
77 **CHARACTERISTICS AND USAGE PATTERN OF NEM CUSTOMERS ARE**  
78 **SUFFICIENTLY DIFFERENT SUCH THAT RMP DOES NOT RECOVER THE**  
79 **COST OF SERVING RESIDENTIAL NEM CUSTOMERS?**

80 **A.** I strongly disagree with that statement. Mr. Daniel does not perform any independent analysis  
81 of RMP’s data to arrive at that conclusion. First, the “load characteristics and usage patterns”<sup>6</sup>  
82 of RMP’s residential NEM customers are derived from an inadequate data sample of just 52  
83 residential NEM customers, with production data for just 36 residential NEM customers.  
84 Even leaving aside the insufficiency of RMP’s data sample, Mr. Daniel fails to recognize that  
85 RMP’s “load and usage” data actually *refute* the notion that residential NEM customers are  
86 significantly different from other residential customers and that they fail to cover their costs  
87 of service. Specifically, the available data show that:

88 Ñ The load factors for residential NEM customers are generally consistent with those of other  
89 residential customers;

90 Ñ When residential NEM customers invest in solar systems, they substantially reduce their peak  
91 period load, which is an incontrovertible *benefit* to the system and other customers; and

92 Ñ The peak hour of their load profile is shifted later in the evening, well after the system peak,  
93 which is also a system *benefit*.<sup>7</sup>

<sup>4</sup> DeRamus Direct Testimony, lines 645 – 657; and 745 – 750.

<sup>5</sup> DeRamus Direct Testimony, lines 356 – 360.

<sup>6</sup> Daniel Direct Testimony, lines 69 – 74.

<sup>7</sup> DeRamus Direct Testimony, lines 700 – 750 and 968 – 1003.

94 Simply because residential NEM customers produce power during the day does not mean that  
95 RMP is somehow under-recovering the costs reasonably attributable to these customers. To  
96 the contrary, the data show that residential NEM customers reduce their load precisely when  
97 such a reduction is most valuable to the system – and to other customers. Differences in the  
98 shape of their load curve over the course of the day do not justify treating NEM customers  
99 differently, because those differences do not reflect an increase in their costs of service.

100 **Q. ARE THERE OTHER ELEMENTS OF OCS WITNESSES' TESTIMONY THAT**  
101 **UNDERMINE THEIR CONCLUSION THAT COSTS EXCEED BENEFITS FOR**  
102 **RESIDENTIAL NEM CUSTOMERS?**

103 **A.** Yes. OCS witness Mr. Martinez states that RMP has not provided a sufficient evidentiary  
104 basis to increase the Level 2 and 3 NEM customer application fees. In contrast, however,  
105 OCS witnesses do not appear to be troubled by the fact that RMP has failed to provide any  
106 meaningful cost support justifying its asserted increase in engineering, metering,  
107 administrative, and customer service costs associated with serving residential NEM  
108 customers, as I discuss in my Direct Testimony.<sup>8</sup> Absent such support demonstrating  
109 significant incremental costs actually caused by residential NEM customers, it is unreasonable  
110 to conclude that the costs of the residential NEM program currently exceed its benefits.

111 **Q. YOU STATE THAT YOU AGREE WITH OCS'S CONCLUSION THAT RMP'S**  
112 **DATA ARE "STALE." WHAT IS THE IMPLICATION OF THAT CONCLUSION?**

113 **A.** The fact that RMP's data are "stale" means that it has not provided a reliable factual basis on  
114 which to draw reasonable conclusions regarding the costs and benefits of the NEM program.  
115 As I explain in my testimony, it is not simply RMP's cost data that are "stale" and insufficient,  
116 as Mr. Daniel recognizes;<sup>9</sup> RMP's small sample of load and generation data for residential

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<sup>8</sup> DeRamus Direct Testimony, lines 758 – 810.

<sup>9</sup> Daniel Direct Testimony, lines 163 – 165.

117 NEM customers is also similarly “stale” and insufficient. The fact that RMP’s filing relies on  
118 load data for only 52 residential NEM customers and production data for only 36 residential  
119 NEM customers – representing less than **0.2%** of RMP’s current 19,000 residential NEM  
120 customers – should have caused OCS to reject RMP’s conclusions regarding the asserted  
121 costs and benefits of residential NEM customers. RMP also has not provided any data to  
122 support its contention that residential NEM customers cause significant reverse flows on the  
123 distribution system, cause RMP to invest in additional equipment upgrades to accommodate  
124 those reverse flows, or cause RMP to “handle” those reverse flows, which it does not even  
125 currently measure. RMP’s conclusions regarding the costs and benefits to serve residential  
126 NEM customers are based on unsupported conjecture, not reasoned analysis and reliable data.

127 **Q. ARE THERE OTHER PORTIONS OF OCS WITNESSES’ TESTIMONY THAT**  
128 **UNDERMINE THEIR CONCLUSION THAT COSTS TO SERVE RESIDENTIAL**  
129 **NEM CUSTOMERS EXCEED THE BENEFITS?**

130 **A.** Yes. Ms. Beck correctly acknowledges that to determine the appropriate value of residential  
131 NEM customers’ export generation, the Commission should initiate a new proceeding that  
132 allows for a more complete consideration of the benefits of such export generation, including  
133 a consideration of capacity benefits, and that also may require using a longer time period of  
134 analysis. This implies that at a minimum, the COS analysis submitted by RMP in this  
135 proceeding understates the system benefits provided by residential NEM customers, and thus  
136 it is an insufficient basis on which to justify a conclusion that their costs exceed the benefits.

137 **Q. DO YOU CONSIDER THE TESTIMONY SUBMITTED BY RMP TO BE**  
138 **SUFFICIENT TO END THE CURRENT NEM PROGRAM, AS MS. BECK**  
139 **SUGGESTS?**

140 **A.** No. Ms. Beck’s recommendation that the Commission terminate the current NEM program  
141 (in the future, once the NEM penetration equals 10%) is based on her erroneous conclusion  
142 that the costs of the current program exceed the benefits – a conclusion she derives solely



143 from RMP's flawed and incomplete COS analysis. RMP's COS analysis, however, does not  
144 establish that the current NEM program has imposed significant additional system costs,  
145 either during the test year used in RMP's analysis or in the reasonably near future, and it is  
146 premature to try to redesign the NEM program based on flawed, incomplete data and analysis.  
147 I agree that in the future, as the penetration of DSG increases and its costs and benefits become  
148 more apparent, it may be appropriate for the Commission to consider changing the current  
149 NEM program in such a way that reasonably compensates residential DSG customers for the  
150 value of the services they provide. The record submitted by RMP, however, does not provide  
151 a sufficient basis for the Commission to terminate the current NEM program at this time,  
152 even if the termination were to take effect in the future (e.g., when total NEM penetration  
153 reaches 10%, as Ms. Beck suggests). Establishing a specific end date to the NEM program in  
154 this proceeding would put the cart before the horse, by adopting a major change to the existing  
155 rate structure for residential customers without any reliable supporting analysis.

156 **Q. DO YOU AGREE WITH OCS WITNESSES' CONCLUSIONS REGARDING TOU**  
157 **RATES?**

158 **A.** I agree with the OCS witnesses that, as a general matter, a transition of the rate structure for  
159 the residential class as a whole towards TOU rates would provide better incentives for  
160 customers to reduce their consumption during peak periods, when such a reduction is of  
161 greatest value to the system. However, I disagree with an approach that would require only  
162 residential NEM customers to adopt TOU rates, as this would result in unduly discriminatory  
163 and disparate treatment of these customers. The policy considerations that favor TOU rates  
164 apply equally to all residential customers. I agree with Mr. Daniel that "TOU rates should be  
165 considered as an *option* for rates for new DG customers,"<sup>10</sup> and the Commission could  
166 reasonably decide to initiate a pilot TOU rate program for residential NEM customers to

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<sup>10</sup> Daniel Direct Testimony, lines 292 – 299.

167 explore that option. However, I disagree with Ms. Beck's recommendation that the  
168 Commission adopt *mandatory* TOU rates for new residential DSG customers.<sup>11</sup> Requiring in  
169 this proceeding mandatory TOU rates for only residential NEM customers, particularly  
170 without knowing the specifics of the TOU rates that RMP may propose, is both unwarranted  
171 and an invitation to RMP to financially penalize residential customers who choose to install  
172 DSG systems. This, in turn, could allow RMP to use such a discriminatory rate structure to  
173 stifle the further growth of residential DSG and prevent customers from having increased  
174 choice with regard to the source of the energy that they consume.

175 **Q. DO YOU AGREE WITH MS. BECK'S PROPOSAL TO RAMP DOWN THE**  
176 **EXPORT RATE FOR RESIDENTIAL NEM CUSTOMERS OVER THE NEXT 12**  
177 **YEARS?**

178 **A.** No. Ms. Beck proposes setting the export credit initially at 9 cents/kWh and then reducing it  
179 by an additional 1 cent/kWh every two to three years over 12 years, after which a new  
180 formulaic rate will be implemented in 2030. Through this proposal, Ms. Beck supports a  
181 transition to an export rate that is less than half the current average retail rate. There is no  
182 reliable evidentiary basis in this proceeding for the Commission to implement such a drastic  
183 reduction in the export rate, or for any current reduction in the export rate, even if such a  
184 reduction is implemented gradually, as Ms. Beck proposes. Ms. Beck also fails to recognize  
185 that a large gap between the retail rate and the export rate will encourage residential NEM  
186 customers to install home battery storage systems simply in order to effectively "disconnect"  
187 from the grid. If customers are only compensated for their exports at 5 cents/kWh, for  
188 example, while being charged an energy rate of up to 14.5 cents/kWh (using the current rate  
189 for the highest energy consumption tier), customers have a strong financial incentive to store  
190 the energy that otherwise would be exported to offset their later use. While I consider the

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<sup>11</sup> Beck Direct Testimony, lines 377 – 380.

191 further development and deployment of residential battery storage systems to be beneficial,  
192 the primary benefits from such systems are from their increased integration into  
193 “dispatchable” microgrids within the larger RMP distribution system, which can both improve  
194 reliability and reduce the need for other system investments. As I note in my Direct  
195 Testimony, a low export rate would simply encourage relatively inefficient and expensive  
196 “autarky” (i.e., “cutting the cord”), rather than efficient system integration and dispatch.<sup>12</sup>  
197 Such a move towards residential DSG “autarky” would only exacerbate RMP’s challenges  
198 associated with fixed cost recovery, which appears to be the primary concern of OCS  
199 witnesses. As I also note in my Direct Testimony, reducing the export rate significantly below  
200 the retail rate will strongly encourage residential NEM customers to shift more of their  
201 consumption from off-peak hours to the middle of the day when their solar panels are  
202 generating electricity.<sup>13</sup> Given the small penetration of residential DSG in Utah, such a shift  
203 in consumption from off-peak to on-peak hours would be perverse from a system perspective,  
204 and contrary to the Commission’s other programs to incentivize exactly the *opposite* behavior.

205 **Q. DO YOU AGREE WITH MS. BECK’S PROPOSAL TO IMPLEMENT HOURLY**  
206 **NETTING?**

207 **A.** No, and certainly not at this time or in the near future. First, the current Utah NEM statute  
208 requires monthly netting.<sup>14</sup> Implementing hourly netting thus would require terminating the

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<sup>12</sup> DeRamus Direct Testimony, lines 1511 – 1532.

<sup>13</sup> DeRamus Direct Testimony, lines 1636 – 1657.

<sup>14</sup> 54-15-104. “Charges or credits for net electricity.

- (1) Each electrical corporation with a customer participating in a net metering program shall measure net electricity during **each monthly billing period, in accordance with normal metering practices.**
- (2) If net metering does not result in excess customer-generated electricity **during the monthly billing period**, the electrical corporation shall bill the customer for the net electricity, in accordance with normal billing practices.
- (3) Subject to Subsection (4), **if net metering results in excess customer-generated electricity during the monthly billing period:**
  - (a) (i) the electrical corporation shall credit the customer for the excess customer-generated electricity based on the meter reading for the billing period at a value that is at least avoided cost, or as determined by the governing authority.”

209 current NEM program and establishing an entirely new DSG program, which the record in  
210 this proceeding does not support. Second, as explained above, RMP has not provided a  
211 sufficient evidentiary basis to conclude that the costs of the current NEM program (with  
212 monthly netting) exceed its benefits, which is presumably the only reason to move to an hourly  
213 netting procedure. Third, the shift to hourly netting will unduly complicate residential  
214 customer decisions regarding how to manage their electricity consumption. Residential NEM  
215 customers do not have sufficiently accurate and actionable hourly information to manage their  
216 electricity use to accommodate such a shift to hourly netting (without near-constant  
217 monitoring of the weather, their generation, and their consumption); nor does RMP even  
218 collect the hourly data at present that would allow customers to make informed investment  
219 decisions about the likely financial implications of investing in rooftop solar systems under  
220 an hourly netting export credit approach. Whether (and when) to implement hourly vs.  
221 monthly netting should be decided in a subsequent proceeding, at the same time that the  
222 Commission establishes the value of export generation (as recommended by OCS), if a need  
223 to terminate the current NEM program has been established. If the Commission were  
224 ultimately to decide to transition to hourly netting and reduce the value of the export credit  
225 below the retail rate (in a subsequent proceeding, assuming there is evidentiary support for  
226 such a decision), it would be appropriate to transition first to monthly netting. Such a “staged”  
227 implementation of a transition in the export credit compensation would be consistent with the  
228 principles of gradualism, since customers currently manage their electricity consumption on  
229 a monthly basis, and their billing and consumption information is currently available to them  
230 only on a monthly basis.

231 III. Response to Testimony of Witnesses for DPU

232 **Q. PLEASE SUMMARIZE YOUR RESPONSES TO DPU WITNESS FARYNIARZ.**

233 **A.** I agree with DPU witness Faryniarz on the following points:

234 Ñ I agree that it is not necessary to separate NEM customers into their own class at current  
235 penetration levels.

236 Ñ I agree that differences in load shapes and load factors between NEM and non-NEM  
237 customers do not warrant the added costs and complexity of creating separate rate classes and  
238 rates.

239 Ñ I agree that NEM and non-NEM residential customers have similar total unit costs. A similar  
240 total unit cost indicates a similar cost to serve each customer and thereby indicates no need  
241 for separate rate classes and rates.

242 Ñ I agree that RMP's avoided generation, transmission, distribution, and environmental  
243 compliance cost benefits may not be captured in RMP's results, since RMP is using one-year  
244 historic test period for its cost-benefit analyses.

245 Ñ I agree that avoided generation, transmission, distribution, and environmental compliance  
246 costs and benefits would need to be analyzed over a longer period than one year.

247 Ñ I agree that it is appropriate for the Commission to establish a separate proceeding to evaluate  
248 properly the costs and benefits of DSG, in order to determine the appropriate compensation  
249 for residential NEM customers' exports.

250 Ñ I agree that transformer costs should not be included in the monthly customer charge.

251 Ñ I agree that any change in the current rate design and rates for NEM customers should be  
252 implemented gradually to avoid or mitigate adverse bill impacts for customers.

253 Ñ I agree that TOU or other time-differentiated energy charges may more closely align NEM  
254 rate design with cost causation principles.

255 Ñ I agree that data collection through a rate pilot program(s) would enable the Commission to  
256 make more informed decisions about different time-based rate structures going forward.

257 **Q. PLEASE SUMMARIZE YOUR RESPONSES TO DPU WITNESS POWELL.**

258 **A.** I agree with DPU witness Powell on the following points:

259 Ñ I agree that RMP's current proposal is premature and thus the Commission should not approve  
260 its proposal at this time.

261 Ñ I agree that typical measures such as load factor and average usage do not warrant segregating  
262 residential NEM customers into a separate class.

263 Ñ I agree that it would be appropriate for the Commission to establish a separate proceeding to  
264 develop appropriate compensation for excess distributed generation (i.e., exports).

265 **Q. DO YOU DISAGREE WITH OTHER PORTIONS OF TESTIMONY BY DPU**  
266 **WITNESSES?**

267 **A.** Yes. I disagree with Dr. Powell and Mr. Faryniarz that the costs to serve residential NEM  
268 customers currently exceed their benefits. I also disagree with several specific elements of  
269 Dr. Powell's proposal to end the current NEM program, reduce the current NEM program cap,  
270 adopt both RMP's three-part rate design and a TOU structure for residential NEM customers,  
271 and reduce the export compensation rate for residential DSG customers.

272 **Q. PLEASE SUMMARIZE THE BASIS FOR YOUR DISAGREEMENT WITH DPU**  
273 **WITNESSES' CONCLUSION THAT THE COSTS TO SERVE RESIDENTIAL NEM**  
274 **CUSTOMERS EXCEED THE BENEFITS.**

275 **A.** Based on his review of RMP's data, Mr. Faryniarz concludes that the costs to serve residential  
276 customers modestly exceed the benefits, although the amount by which costs exceed benefits  
277 is less than RMP asserts.<sup>15</sup> As I explain in my Direct Testimony, however, RMP's calculations

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<sup>15</sup> Faryniarz Direct Testimony, lines 526 – 528; 609 – 615.

278 are flawed, because RMP incorrectly counts behind-the-meter consumption as a system  
279 “cost,” and RMP includes costs that are not, in fact, incremental. Mr. Faryniarz does not  
280 correct for this error. If he had, his analysis would have shown not only that RMP overstates  
281 the costs of the NEM program for the reasons Mr. Faryniarz identifies, but also that the  
282 residential NEM program currently provides net benefits, contrary to Mr. Faryniarz’s  
283 conclusion. I also explain in my Direct Testimony that the net benefits would further increase  
284 if additional quantifiable long-term benefits are considered. Indeed, Mr. Faryniarz concurs  
285 that there are other benefits of DSG that are not captured in RMP’s analysis, and he  
286 recommends that the Commission establish a separate proceeding to fully account for such  
287 benefits and costs over a longer time horizon.

288 **Q. PLEASE RESPOND TO DPU WITNESSES’ ANALYSIS OF THE LOAD PROFILE**  
289 **AND LOAD FACTORS OF NEM VS. NON-NEM CUSTOMERS.**

290 **A.** After comparing the load profiles and usage characteristics of NEM vs. non-NEM customers,  
291 Dr. Powell concludes that the evidence is “mixed” as to whether the unique usage  
292 characteristics of NEM customers justify segregating them into a distinct class.<sup>16</sup> He states  
293 that although the average usage and load factors are similar, other comparisons indicate that  
294 residential NEM customer usage is different from that of residential non-NEM customers,  
295 particularly given the significant reduction in NEM customer load during the day. Dr. Powell  
296 then states, “This ambiguity may indicate that traditional measures or analysis do not capture  
297 the full spectrum of customer impacts well and more research is needed.”<sup>17</sup> Similarly Mr.  
298 Faryniarz states, “Differences in load shape between residential NEM and non-NEM  
299 customers do not translate into large differences in annual load factors,” and “there is more  
300 variation in the load factors of the residential NEM customers, but not drastically so.”<sup>18</sup>

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<sup>16</sup> Powell Direct Testimony, line 429.

<sup>17</sup> Powell Direct Testimony, lines 435 – 437.

<sup>18</sup> Faryniarz Direct Testimony, lines 1277 – 1280.

301 **Q. DO YOU AGREE WITH THESE CONCLUSIONS?**

302 **A.** I agree with their overall observations that the load *factors* are generally similar for NEM and  
303 non-NEM residential customers; and that their load *shapes* are generally different, since NEM  
304 customers self-generate during the day, which reduces their load during the day. Neither  
305 Dr. Powell nor Mr. Faryniarz address the fact that the load and production data sample for  
306 residential NEM customers is very small, which both increases the variability observed in the  
307 data and seriously undermines their reliability as a basis for the radical change in rate structure  
308 proposed by RMP. While I disagree with certain details of their analysis, I agree with both  
309 witnesses that these data, taken alone, do not suggest that a separate rate class for residential  
310 NEM customers is necessary. However, neither Dr. Powell nor Mr. Faryniarz appreciate the  
311 full implications of their observations regarding the different load shape of NEM vs. non-  
312 NEM customers: namely that after installing rooftop solar, NEM customers significantly  
313 reduce their load during system peak hours, and significantly reduce their peak hour load,  
314 which is an unambiguous system *benefit*. Both Dr. Powell and Mr. Faryniarz also fail to assess  
315 the system impact of the differences in NEM customers' load shapes. Given current low levels  
316 of penetration, the aggregate effect of NEM customers' adoption of rooftop solar is simply to  
317 reduce total RMP system load by a correspondingly small amount during daylight hours,  
318 including peak period hours. At current low levels of penetration, the fact that their individual  
319 load shapes are different than those of non-NEM customers has no negative impact on the  
320 system, i.e., it does not produce significant reverse flows or cause RMP to manage hourly  
321 changes in their individual loads, for example. If anything, these differences in load shapes  
322 should lead the DPU to expect significant future benefits for all customers from the NEM  
323 program, to the extent that the resulting "peak-load shaving" at a system level avoids the need  
324 for certain RMP generation, transmission, and distribution investments in the future.



325 **Q. HOW DO YOU RESPOND TO DR. POWELL’S AND MR. FARYNIARZ’S**  
326 **QUALIFIED SUPPORT FOR A SEPARATE RATE CLASS?**

327 **A.** Dr. Powell states that “separating residential NEM customers into their own class is *not*  
328 *unreasonable,*” although he further qualifies this “belief” when he says that “the Commission  
329 may wish to reserve a final decision to do so for a future rate case.”<sup>19</sup> Mr. Faryniarz states, “I  
330 would not object to the separation of NEM customers into a separate class if deemed  
331 appropriate for other policy reasons, or to address compensation rates for excess generation  
332 exported to the grid.”<sup>20</sup> The evidentiary record does not support even this tenuous support  
333 for (or lack of opposition to) a separate rate class for residential NEM customers in Utah,  
334 especially given the current low level of residential DSG penetration in Utah. Dr. Powell, for  
335 example, states that it is “not yet clear to the Division” how NEM customers’ “different use”  
336 of the system “impact the utility’s costs,” and that “typical measures, such as load factor, do  
337 not appear to warrant splitting NEM customers into their own class.”<sup>21</sup> Those two conclusions  
338 should be dispositive: there is no evidentiary support for RMP’s proposal to establish a  
339 separate NEM residential rate class. Mr. Faryniarz expresses concerns regarding the  
340 sustainability of full retail rate compensation for excess energy “in the long-run with very  
341 high rates of DG penetration,” and presumably considers that a separate rate class would help  
342 address those concerns.<sup>22</sup> But Utah does not have “very high rates of DG penetration,” and  
343 the current NEM program has only been in place for a relatively short period of time.  
344 Furthermore, Mr. Faryniarz recognizes that the export compensation rate is a distinct issue  
345 from the load shape, load factor, and cost of service analysis, which is what should drive the  
346 recommendation for whether a separate residential DSG customer rate class and modifications

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<sup>19</sup> Powell Direct Testimony, lines 437 – 439 (emphasis added).

<sup>20</sup> Faryniarz Direct Testimony, lines 1302 – 1304.

<sup>21</sup> Powell Direct Testimony, lines 273 – 278.

<sup>22</sup> Faryniarz Direct Testimony, lines 101-102; 771 – 773.

347 to the rate structure are warranted. Because he recognizes that the export compensation rate  
348 should be evaluated in a separate proceeding, considering all of the costs and benefits of DSG  
349 from a longer-term perspective, Mr. Faryniarz does not have a reasoned basis for even  
350 qualified support for a separate rate class or a fundamental change in the rate structure.

351 **Q. HOW DO YOU RESPOND TO DR. POWELL'S CONCLUSION THAT THE**  
352 **CURRENT NET METERING PROGRAM'S BANKING AND COMPENSATION**  
353 **FOR EXCESS GENERATION IS NOT IN THE PUBLIC INTEREST?**

354 **A.** Dr. Powell's conclusion is premised on his conclusion that NEM program costs exceed  
355 benefits, and that NEM customers unfairly shift costs to non-NEM customers. However, this  
356 conclusion is only supported by RMP's flawed COS studies. As discussed above and in my  
357 Direct Testimony, the evidence provided by RMP in this proceeding is insufficient to arrive at  
358 such a conclusion, particularly given the current low level of residential DSG penetration.

359 **Q. HOW DO YOU RESPOND TO DR. POWELL'S PROPOSAL THAT THE EXPORT**  
360 **COMPENSATION RATE BE SET HALFWAY BETWEEN THE AVERAGE RETAIL**  
361 **RATE AND RMP'S MOST-RECENT AVOIDED COST FILING?**

362 **A.** Dr. Powell provides no empirical basis to support his proposal. As Mr. Faryniarz recognizes,  
363 the export compensation rate should be determined in a future proceeding, in which all of the  
364 long-term costs and benefits of DSG are included. Dr. Powell's recommendation  
365 inappropriately presupposes the outcome of that proceeding.

366 **Q. HOW DO YOU RESPOND TO DR. POWELL'S RECOMMENDATION THAT THE**  
367 **COMMISSION ADOPT BOTH RMP'S THREE-PART RATE DESIGN AND A TOU**  
368 **STRUCTURE TO ALLOW FOR CUSTOMER CHOICE?**

369 **A.** In his testimony, it is not clear on what basis Dr. Powell is supporting RMP's proposed rate  
370 design. Dr. Powell did not conduct any analysis to determine whether RMP's proposed three-  
371 part rate structure would be just and reasonable. Instead, Dr. Powell simply notes that he is  
372 "conceptually" in agreement with RMP. As I discuss in my Direct Testimony, RMP's

373 proposed demand charge and energy charge rate, and its proposed increase in monthly  
374 customer charges, would be unreasonable and unduly discriminatory; and it would provide  
375 perverse incentives that are contrary to Commission policy and sound ratemaking principles.<sup>23</sup>  
376 I agree that over the long-term, the Commission should gradually implement TOU rates as an  
377 option for residential NEM customers, but this should not be done in combination with RMP's  
378 proposed discriminatory rate structure, as Dr. Powell recommends.

379 **Q. HOW DO YOU RESPOND TO DR. POWELL'S RECOMMENDATION THAT THE**  
380 **CURRENT NET METERING PROGRAM BE TERMINATED AS OF 2018?**

381 **A.** Dr. Powell recommends that the Commission: (i) cap the current NEM program cap at its  
382 current level (as of January 1, 2018); (ii) request that the Utah legislature eliminate the current  
383 net metering program; and (iii) move to a new model effective no later than January 1, 2025.  
384 Dr. Powell justifies this draconian recommendation by simply asserting that the "current  
385 program puts undue upward pressure on retail rates," without demonstrating that it has had  
386 that effect.<sup>24</sup> In so doing, Dr. Powell ignores the potential for *reduced* retail rates from DSG  
387 resulting from avoided generation, distribution, and transmission investments; he ignores the  
388 potential for other benefits from DSG (e.g., reliability, resiliency, and environmental benefits);  
389 and he ignores the current low level of penetration of residential DSG in Utah. His  
390 recommendation is also at odds with his and Mr. Faryniarz's proposal for a gradual transition  
391 for the current NEM program. In combination with Dr. Powell's other recommendations,  
392 terminating the current NEM program as of January 1, 2018, would stifle the further  
393 development and growth of residential DSG in Utah, to the detriment of all customers.

394 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

395 **A.** Yes.

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<sup>23</sup> DeRamus Direct Testimony, lines 1355 – 1532.

<sup>24</sup> Powell Direct Testimony, lines 459 – 464.