

**BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH**

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In the Matter of the Application of Rocky Mountain Power to Implement Programs Authorized by the Sustainable Transportation and Energy Act	)	Docket No. 16-035-36 DPU Exhibit PIII 1.0 REB
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**REBUTTAL TESTIMONY – PHASE THREE**

**OF**

**ROBERT A. DAVIS**

**ON BEHALF OF THE**

**UTAH DIVISION OF PUBLIC UTILITIES**

**April 27, 2017**

1 **Q: Please state your name and occupation?**

2 **A:** My name is Robert A. Davis. I am employed by the Division of Public Utilities (Division)  
3 at the Utah Department of Commerce as a Utility Analyst in the Energy Section.

4

5 **Q: Are you the same Robert A. Davis who testified in Phase One and Phase Two and**  
6 **provided testimony in Phase Three in this docket on behalf of the Division?**

7 **A:** Yes. I filed direct and rebuttal testimony in Phase One, direct and surrebuttal testimony  
8 in Phase Two and direct testimony in Phase Three of this same Docket.

9

10 **Q: What is the purpose of your rebuttal testimony?**

11 **A:** The purpose of my rebuttal testimony is to express the Division's concerns with the pilot  
12 program incentive award level proposals offered by Mr. Kevin Emerson of Southwest  
13 Energy Efficiency Project (SWEEP) and Utah Clean Energy (UCE). I will also respond to  
14 suggestions offered by Mr. James Ellis on behalf of ChargePoint, Inc. Lastly, I will offer  
15 the Division's recommendation for the Time of Use (TOU) rate structure based on  
16 consideration of UCE's TOU rate design proposal and the Office of Consumer Services'  
17 (OCS) TOU proposals.

18

19 **Q: Would you briefly describe the Division's concerns with Mr. Emerson's proposed**  
20 **changes to the incentive program?**

21 **A:** Yes. Mr. Emerson's proposal offers different incentive award levels with a stronger  
22 position towards Level 2 chargers and chargers for multi-family dwellings. His proposed  
23 annual incentive caps sum to the same total as those originally proposed by the  
24 Company.<sup>1</sup> However, the Division couldn't verify whether the charger technology pricing  
25 provided by Mr. Emerson is illustrative of what Utah prices would be. The Division  
26 understands that SWEEP's pricing for the chargers is based on a similar program in  
27 Colorado and a report for fast chargers that is scheduled to be released in May by UCE.<sup>2</sup>  
28 Although the costs in Utah may be similar for the same type of installation, the Division  
29 is concerned that using Colorado costs might not lead to proper conclusions for Utah  
30 systems and are different than those presented by the Company. Additionally, it seems  
31 Mr. Emerson's proposal would ultimately reduce the number of chargers available  
32 through incentives compared to the Company's proposal based on Mr. Emerson's  
33 pricing.

34

35 The Company's proposal offers the ability to re-assign the incentive award levels after  
36 the first year and every year thereafter through the five year pilot as agreed to by the  
37 parties. The Division is not convinced of the need to change the incentive award levels  
38 at this time and supports the Company's original incentive award levels.

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<sup>1</sup> UCE and SWEEP witness Kevin Emerson, Direct Testimony, at line 348.

<sup>2</sup> Id., lines 234-238 and lines 307-310.

40 **Q: Does the Division agree with Mr. Ellis’s recommendation for the use of EV program**  
41 **funds to be spread year over year?**

42 **A:** No. The STEP statute is very clear on how the funds are to be used. Section 54-7-12.8  
43 (6)(b) states that the Commission shall authorize a large-scale electric utility to spend up  
44 to: (i) \$2,000,000 **annually** for the electric vehicle incentive program described in  
45 Section 54-20-103. Meaning, funds not spent in one year are not available to roll over to  
46 a subsequent year or pulled from a future year.

47

48 **Q: Does the Division agree with Mr. Ellis’s recommendation to modify the program**  
49 **eligibility to be based on “port” versus “station”?**

50 **A:** Generally, yes. It makes sense to define chargers with multiple charge points as “ports”  
51 versus “stations”.<sup>3</sup> However, the Division recommends that the incentive award  
52 calculated for each station be divided among the ports for each station so the incentive  
53 level remains the same for the whole station.

54

55 **Q: What is your understanding of UCE’s TOU rate proposal?**

56 **A:** UCE’s TOU proposal is based on rates that promote energy efficiency while providing  
57 the necessary information to evaluate the pilot program. Both of UCE’s TOU proposals  
58 include a two tiered rate design with its second option having a super off-peak  
59 component. UCE’s proposal also includes a deviation to the TOU time windows to be

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<sup>3</sup>ChargePoint witness James Ellis, Direct Testimony, lines 181-182.

60 used compared to the Company's.

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62 **Q: What are the Division's concerns with UCE's TOU proposals?**

63 **A:** UCE has proposed two options, both of which combine tiered rates with TOU rates. One

64 purpose of the tiered rates is to promote energy efficiency or conservation while the

65 TOU aspects incent customers to charge during off-peak periods. While not opposed to

66 UCE's TOU proposals, the Division has some concerns. First, the two-tiered blocking, 0

67 to 1000 kWh and greater than 1000 kWh, proposed by UCE may actually undermine the

68 main reason for adopting tiered rates. For example, given the average customer uses

69 approximately 700 to 750 kWh per month, and assuming an EV owner uses

70 approximately 300 to 350 kWh<sup>4</sup> per month to charge an EV, the EV owner could, under

71 the UCE's proposal, potentially charge their vehicle without entering the second tier. To

72 preserve the conservation price signals, the Division would recommend using a smaller

73 usage level to define the blocks; 700 kWh per month.

74

75 Second, the UCE proposes a super off-peak period in one option. However, UCE does

76 not provide any empirical support for their proposal. Costs are generally identified with

77 peak and off-peak periods. For example, the cost to the Company of a kW at 1:00 a.m.

78 may not be different than the cost at 1:00 p.m. Without further evidence demonstrating

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<sup>4</sup> Based on a Nissan Leaf at 1,157 miles per month. Company witness Robert M. Meredith's, Exhibit RMM-5. The Division understands that the average monthly kWh to charge would vary by vehicle and customer behavior.

79 lower costs in the so-called super off-peak period, the Division does not support UCE's  
80 Option 2 proposal.

81  
82 Lastly, the Division is concerned with UCE's proposal to deviate away from the TOU time  
83 windows proposed by the Company. This may lead to a lower probability of capturing a  
84 statistically significant number of peaks.<sup>5</sup> I will discuss this issue further in connection  
85 with the OCS's proposal.

86

87 **Q: Does the Division have concerns with the TOU options proposed by the Office of**  
88 **Consumer Services?**

89 **A:** Yes. Again, the Division is not opposed to OCS's proposed Option 1 and Option 2, as  
90 both options reduce the high ratio of on-peak to off-peak pricing as compared to the  
91 Company's TOU Option 2. The Division expressed concern about the high ratio in its  
92 direct testimony. However, the Division is also concerned about the impacts of changing  
93 the TOU on and off-peak windows as proposed by OCS.

94

95 The Company's proposed TOU periods of 3 p.m. to 8 p.m. for the summer and winter  
96 months with an additional 8 a.m. to 10 a.m. during the winter months capture

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<sup>5</sup> UCE witness Sarah Wright, Direct Testimony, lines 213-222. Although Ms. Wright recommends removing the Winter 8 a.m. to 10 a.m. TOU window, she doesn't offer a recommendation for the other TOU windows but references the recommendation of the Regulatory Assistance Project presentation from the webinar on November 3, 2016 for the use of 3-hour TOU windows.

97 approximately 94 percent of the peaks.<sup>6</sup> The Division is concerned that the OCS's  
98 proposed TOU time windows will lower the probability of capturing a significant number  
99 of peaks, leading to cost/causality problems. Namely, the narrower on-peak window  
100 may not capture the actual peaks that cause costs. Consequently, a TOU rate that is  
101 designed on a narrower peak period is more likely to charge the customer a peak price  
102 when the peak actually occurs at a different time.

103

104 **Q: Would you summarize the change to the Company's load study proposed by OCS**  
105 **witness Mr. Thomas?**

106 **A:** Yes. As I understand, Mr. Thomas proposes a second stratification variable, the type of  
107 charger, Level 1 or Level 2, in addition to the Company's stratification variables.  
108 According to Mr. Thomas, the additional stratification is necessary in order to ensure a  
109 balance between those using Level 1 chargers and those using a Level 2 charger to  
110 develop a more robust study that is statistically valid.<sup>7</sup>

111

112 **Q: Does the Division have concerns about the changes to the load study as proposed by**  
113 **the OCS?**

114 **A:** Yes. While the Division is not claiming any expertise in sampling techniques, to the  
115 extent that Mr. Thomas's proposal increases the number of samples necessary to  
116 achieve the level of accuracy the Company is seeking, the Division is concerned that the

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<sup>6</sup> Company witness Robert M. Meredith, Direct Testimony, at line 237.

<sup>7</sup> OCS witness Jacob Thomas, Direct Testimony, lines 236-243.

117 additional sampling may be difficult to achieve given the population of EV owners  
118 potentially eligible for the study.

119

120 According to conversations among the parties, the Division understands that there are  
121 approximately 2,000 registered EVs in the state. This constitutes the population from  
122 which Company can sample. Under the Company's proposal, there are three main  
123 categories that EV owners would be assigned to: a control group, RAG group, and ASG  
124 group. To illustrate the problem, if each group requires, say 60 customers for statistical  
125 validity, then 180 customers will have to participate in the study. Given the limited  
126 population of EV users, this level of participation rate may be difficult to achieve. Mr.  
127 Thomas's proposal could potentially double the required participation and significantly  
128 increase the difficulty of achieving a valid sample.

129

130 **Q: Does the Division have a recommendation for the TOU rate design?**

131 **A:** The Division understands the complexity of trying to design rates that will meet all the  
132 parties' expectations for a program such as the EV Incentive Pilot Program. The pilot  
133 program should help reveal a rate structure that is cost based and has a structure that  
134 will survive as EV penetration increases, even if various components change. Although  
135 the Division has not taken a firm position in this matter, it does support various aspects  
136 of the Company's, UCE's and OCS's proposals.

137



138 First, the Division supports the Company's proposed TOU windows of 3 p.m. to 8 p.m. in  
139 the summer and winter months, with an additional 8 a.m. to 10 a.m. window during the  
140 winter months. These TOU windows offer a relatively high probability of capturing the  
141 demand peaks, leading to more accurate cost allocation. Secondly, for TOU Option 1,  
142 the Division supports the Company's and OCS's proposals of a rate structure with  
143 approximately a 3:1 on-peak to off-peak ratio. Lastly, to create enough diversity to help  
144 validate the study, the Division supports UCE's TOU Option 1 with two-tiers utilizing the  
145 modified or lower blocking structure of 0 to 700 kWh and greater than 700 kWh.<sup>8</sup>  
146

147 **Q: Does the Division have a recommendation for the load study?**

148 **A:** Not specifically. As already expressed, the Division agrees that not stratifying for Level 2  
149 versus Level 1 chargers may introduce bias into the study. However, the Division is  
150 concerned that adding this vector to the study will create the need for a larger sample  
151 size, which risks not having enough participants to create a statistically valid study. The  
152 complexity and time required to survey participants regarding Level 1 or Level 2 charger  
153 use, re-calculating sample sizes for the TOU 1 and TOU 2 options for the load study  
154 groups may hinder the parties' time to evaluate the results over the five-year pilot. The  
155 Division is open to further discussion with the parties to find a solution to this issue.

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<sup>8</sup> UCE witness Sarah Wright, Direct Testimony, at line 272. UCE's proposed rates for on and off-peak would likely change for different tier blocking. The Division did not have the necessary data or time to re-calculate the rates before filing of rebuttal.

156

157 **Q: Do you have any final thoughts for your rebuttal testimony?**

158 **A:** The Division believes the TOU rates and load study should be designed as reasonably as  
159 possible to optimize the results so the parties can draw sound conclusions. The parties'  
160 conclusions can then be used to tailor better TOU rate structures if needed. For now,  
161 the Division believes the path forward is to find amicable solutions to the load study  
162 problems and TOU rate structures that will give the diversity needed to complete the  
163 study.

164

165 **Q: Does this conclude your rebuttal testimony?**

166 **A:** Yes it does.