

REBUTTAL TESTIMONY
OF
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ENERGY DIVISION—POLICY PROGRAM
ILLINOIS COMMERCE COMMISSION

PETITION FOR APPROVAL OF AN ALTERNATIVE RATE REGULATION PLAN

PURSUANT TO SECTION 9-244 OF THE PUBLIC UTILITIES ACT

COMMONWEALTH EDISON COMPANY

DOCKET No. 10-0527

DECEMBER 22, 2010

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1 **I. Witness Identification**

2 **Q. Please state your name, job title, and business address.**

3 A. My name is Jennifer L. Hinman and I am an Economic Analyst on the Staff of the
4 Energy Division's Policy Program at the Illinois Commerce Commission ("ICC" or
5 "Commission"). My business address is Illinois Commerce Commission, 527
6 East Capitol Avenue, Springfield, Illinois 62701.

7 **Q. Are you the same Jennifer L. Hinman who previously submitted direct**
8 **testimony in this Docket?**

9 A. Yes. My testimony is contained in Staff Ex. 2.0.

10 **II. Overview**

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

12 The purpose of my rebuttal testimony is to address the rebuttal testimonies of
13 Commonwealth Edison Company ("ComEd" or "Company") witnesses Dr. Hemphill
14 (ComEd Ex. 6.0) and Mr. McMahan (ComEd Ex. 7.0) as those testimonies relate to
15 ComEd's proposed Electric Vehicle ("EV") Pilot program.

16 **Q. What issues in Dr. Hemphill's rebuttal testimony are you responding to?**

17 A. I respond to Dr. Hemphill's statements regarding ComEd's Budget-Based
18 Alternative Regulation Plan, double-checking the budgeting assumptions and

19 numbers, and the Rate ACEP tariff modification with respect to the EV Pilot.
20 (ComEd Ex. 6.0)

21 **Q. What issues in Mr. McMahan's rebuttal testimony are you responding to?**

22 A. Mr. McMahan's rebuttal testimony concludes that the budgeted amounts presented
23 by ComEd for the EV Pilot program in his direct testimony (ComEd Ex. 2.0) are
24 reasonable. (ComEd Ex. 7.0 at 2:28-29) Mr. McMahan asserts that the
25 assumptions and data I relied upon to calculate unit costs for line items in the EV
26 Pilot budget are inappropriate or mistaken. (ComEd Ex. 7.0 at 2:26-28) I respond
27 to Mr. McMahan's assertions.

28 **Q. Please summarize your Direct Testimony¹ in this Docket.**

29 A. My direct testimony analyzes the EV Pilot program that is part of the Alternative
30 Regulation ("Alt Reg") Plan being proposed by ComEd. My analysis concludes that
31 the proposed EV Pilot program's budget appears to be excessive. Of the proposed
32 \$5 million budget for the EV Pilot program, I was only able to find information on
33 projected assets estimated by ComEd to cost \$3.22 million. My review suggests
34 that ComEd's estimate of \$3.22 million for these assets may be overstated by \$1.12
35 million. Further, I note that my estimate of the overstatement may be conservative
36 because I do not have access to the same information that a market participant like
37 ComEd does. ComEd may have access to price discounts available to it that only it
38 is aware of. Such discounts would reward ComEd not for superior efficiency, but

¹ Staff Ex. 2.0

39 rather for its superior knowledge as a participant in the market. Even with the
40 transparency with this program, the fact that my research found lower asset prices
41 which may be more reasonable points to the intractable nature of calculating a fair
42 budget.

43 **Q. Are you attaching any exhibits to your rebuttal testimony?**

44 A. Yes. Staff Ex. 9.1 contains ComEd Responses to Staff Data Requests that are
45 used to support my rebuttal testimony.

46 **Q. What are your conclusions and recommendations?**

47 A. My conclusions and recommendations discussed further below are as follows:

48 1. ComEd has not provided verifiable information that substantiates the costs
49 that ComEd includes in its Rate ACEP EV Pilot budget. Therefore, there is
50 no evidence in the record to support the approval of ComEd's proposed
51 Rate ACEP EV Pilot budget.

52 2. Mr. McMahan's rebuttal testimony illustrates that the EV Pilot is not
53 transparent in terms of the specific assets to be purchased, which refutes Dr.
54 Hemphill's assertion that ComEd's Rate ACEP budget estimate
55 assumptions and numbers can be double-checked.

56 3. I recommend that ComEd make clear in its surrebuttal testimony that it
57 intends to revise Rate ACEP to ensure *all* investments and expenses under

58 Rate ACEP associated with government grants or tax credits are credited to
59 Rate ACEP recoveries.

60 4. I recommend that ComEd include, in its surrebuttal testimony, additional
61 language in its Rate ACEP tariff to remove any revenues received from
62 implementation of the EV Pilot, or any other project under Rate ACEP, from
63 the cost recovery under Rate ACEP.

64 **III. Response to Rebuttal Testimony of ComEd Witnesses Dr. Hemphill (ComEd**
65 **Ex. 6.0) and Mr. McMahan (ComEd Ex. 7.0)**

66 **A. ComEd's Budget-Based Alternative Regulation Plan**

67 **Q. How does Dr. Hemphill describe the concept of Budget-Based Alternative**
68 **Regulation?²**

69 A. Dr. Hemphill states, among other things:

70 ComEd is proposing to: (1) use **budgets as a benchmark** for the
71 success of its alternative regulation program; and (2) make
72 **discretionary investments** out of a conviction that **their benefits**
73 **will be greater than their costs.**

74 (ComEd Ex. 6.0 at 11:238-240, emphasis added)

75 **Q. How do you respond to Dr. Hemphill's description of ComEd's Budget-Based**
76 **Alternative Regulation Proposal?**

77 A. I understand Dr. Hemphill's statements to mean that the proposed "budgets" are at
78 the front and center of ComEd's Alt Reg proposal. In fact, Dr. Hemphill even coins

² ComEd Ex. 6.0 at 11:237

79 the term “Budget-Based Alternative Regulation” to describe ComEd’s proposal,
80 which further emphasizes the importance of the budgets in this proceeding.
81 (ComEd Ex. 6.0 at 11:237)

82 **Q. Is the Rate ACEP EV Pilot program budget being reviewed in this**
83 **proceeding?**

84 A. Yes, Dr. Hemphill acknowledges that “the Rate ACEP budgets are being reviewed
85 in this very proceeding.” (ComEd Ex. 6.0 at 15:323) The Rate ACEP budgets
86 including that for the EV Pilot program budget of \$5 million are being reviewed in
87 this Docket. In fact, Rate ACEP states:

88 APPROVAL OF RECOVERY.
89 The Company is allowed to begin recovery of certain costs it incurs
90 in accordance with the provisions of this tariff only after receiving
91 approval from the ICC for specifically proposed programs or
92 modifications to previously approved programs associated with
93 such costs. **Approval from the ICC for any such program**
94 **constitutes a determination by the ICC that implementing such**
95 **program at the approved budgeted cost is prudent.** Any such
96 **approved program may not again be subject to review** with
97 respect to the **prudence** of such approved program or the
98 **reasonableness of the costs** associated with such program up to
99 and including the amounts approved for recovery for such program.

100 (Rate ACEP, ComEd Ex. 1.2 at Original Sheet No. X+1, emphasis added)

101 **Q. What information does ComEd provide to substantiate the costs included in**
102 **its proposed Rate ACEP EV Pilot budget?**

103 A. In its initial filing, ComEd does not provide information that demonstrates the
104 budgeted costs of its EV Pilot are reasonable. In an attempt to find sufficiently
105 detailed support for ComEd’s proposal and budgets, Staff requested copies of *all*

106 workpapers for ComEd Exhibits 1.0-5.0 and related exhibits on September 9, 2010,
107 and ComEd responded, however incompletely as discussed below. The
108 workpapers and exhibits provided in ComEd's Response to Staff Data Request
109 DLH 2.04, served on September 30, lack necessary detail to support ComEd's
110 budgeted costs for the EV Pilot presented in ComEd Ex. 2.0. (Staff Ex. 9.1 at 1-6)
111 Additionally, Staff Data Request JLH 1.09(a) requested ComEd to provide all
112 supporting calculations and documents for the unit cost estimates of the ComEd EV
113 Pilot Program Assets. (Staff Ex. 9.1 at 34) The response provided on October 11,
114 2010 referenced an attachment to ComEd's Response to Staff Data Request JLH
115 1.09 labeled as JLH 1.09_Attach 1. (Staff Ex. 9.1 at 36, 42-43) JLH 1.09_Attach 1
116 is the same workpaper as DLH 2.04_Attach 05 and DTR 1.17_Attach 1. (Staff Ex.
117 9.1 at 2-5, 42-43, 63-64) In its response to Staff Data Request JLH 1.12³ served on
118 October 8, 2010, ComEd states in part, "All workpapers relating to testimony
119 supporting the proposed EV pilot have already been produced in ComEd's
120 Response to Staff Data Request DLH 2.04 in this docket. Nor are there any
121 additional workpapers that were used in the development of the EV pilot." (Staff Ex.
122 9.1 at 47)

³ Staff Data Request JLH 1.12 states: Please provide ComEd's workpapers related to the purchase, use or performance of EVs, including but not limited to, the expected penetration levels, charging patterns, maintenance cost savings, driver habits, vehicle performance, direct load control, charge management strategies (including proposals for residential EV charging tariff structures and any proactive steps that ComEd has taken or plans to take regarding being notified of electric vehicle sales in ComEd's service territory—either directly from car dealerships or electricians) and impacts of plug-in electric vehicles on ComEd's electric grid (including impact on life of transformers and associated distribution cost increases). This includes any internal reports based on the plug-in electric vehicles currently deployed in ComEd's Meter Reading organization as well as the hybrid bucket trucks currently deployed by ComEd, unless otherwise provided in response to JLH-1.10(f). (Staff Ex. 9.1 at 47)

123 However, a subsequent statement conflicts with ComEd's response to Staff
124 Data Request JLH 1.12 just quoted. In his rebuttal testimony, Mr. McMahan states,
125 "The \$5,000 per unit estimate for the CT-2100 [charging station] is based on a
126 quote from Coulomb Technologies." (ComEd Ex. 7.0 at 10:185-186) Mr. McMahan
127 provides one workpaper supporting ComEd's budgeted cost of the 55 Level 2
128 charging stations that ComEd proposes to purchase as part of its EV Pilot
129 program. (Staff Ex. 9.1 at 7-17) The workpaper Mr. McMahan provided on
130 December 3, 2010 consists of a pricing quotation⁴ provided by Coulomb
131 Technologies (Carbon Day Automotive), the charging station vendor of the Level
132 2 charging stations that ComEd intends⁵ to purchase as part of its EV Pilot.
133 (Quote Date: 8/27/2010, Quote Expires: 11/27/2010) (Staff Ex. 9.1 at 7-17)

134 **Q. Is the information sufficient for Staff to analyze the cost of each asset**
135 **included in the EV Pilot budget?**⁶

136 A. No. ComEd does not provide sufficiently detailed information to substantiate the
137 costs included in its proposed Rate ACEP EV Pilot budget. There is no detailed list
138 with complete technical specifications or even information on vehicles most likely to
139 be retired.⁷ Of the five categories⁸ of proposed EV Pilot program assets, ComEd

⁴ Quote #: AEC-ComeED.2.1 (Staff Ex. 9.1 at 8)

⁵ Staff Ex. 9.1 at 36

⁶ Dr. Hemphill states that ComEd is proposing to: "(1) use budgets as a benchmark for the success of its alternative regulation program". (ComEd Ex. 6.0 at 11: 238-239)

⁷ ComEd Response to Staff Data Request JLH 1.03 states that the vehicles in the pilot program will be used to replace older vehicles that are at the end of their useful life. Specific vehicles have not yet been identified as the 2011 replacement plan has not yet been finalized. Replacement vehicles will be like-for-like within the assigned departments listed. (Staff Ex. 9.1 at 20) This information could help narrow down the hybrid bucket truck model.

140 provides only one vendor quotation⁹ that supports its \$5,000 budgeted cost for a
141 Level 2 charging station. It provides no verifiable information to substantiate the
142 costs of the remaining \$4.7 million¹⁰ in the EV Pilot budget. Additionally, while
143 ComEd appears to believe that the particular vehicles and charging stations¹¹ it has
144 chosen are necessary to ensure benefits¹² to its customers, it did not present this
145 important information in its direct testimony.

146 **Q. How does ComEd support its contention that the EV Pilot program will likely**
147 **result in net benefits to customers?**¹³

148 A. Mr. McMahan provides a workpaper in support of his direct testimony related to the
149 potential quantifiable net benefits¹⁴ for the proposed EV Pilot program. The
150 workpaper is an Electric vs. Gas Vehicle comparison worksheet with ComEd-
151 specific¹⁵ data inputs (“ComEd EV Benefits Spreadsheet”)¹⁶ originally developed by

⁸ These five broad categories include: (1) Plug-in car, (2) Plug-in cargo/service vehicle, (3) Hybrid bucket truck (non-pluggable), (4) PHEV digger-derrick, and (5) Level 2 charging stations for company vehicles. (ComEd Ex. 2.0 at 5:86)

⁹ This quotation was provided three months after ComEd’s initial filing.

¹⁰ \$4.725 million [= \$[EV Pilot Budget] – (\$5,000×55 charging stations)]

¹¹ ComEd Ex. 7.0 at 9:164-166, 10:174-188

¹² ComEd Ex. 7.0 at 10:186-188

¹³ Dr. Hemphill states that ComEd is proposing to: “(2) make discretionary investments out of a conviction that their benefits will be greater than their costs... Before approving the Rate ACEP investments, the Commission will consider the investment and O&M budgets as a tool to determine whether the programs are indeed likely to result in net benefits to customers.” (ComEd Ex. 6.0 at 11: 239-244)

¹⁴ Staff Data Request JLH 1.04(b) states: “How will the analysis of the data directly benefit ratepayers?” ComEd Response to Staff Data Request JLH 1.04(b) states: “Data gathered throughout the pilot period will benefit ratepayers by providing actual costs and benefits of EVs vs. equivalent “non-EV” vehicles. This information will be valuable for both residential customers and commercial fleets considering adoption of EVs.” (Staff Ex. 9.1 at 22)

¹⁵ The inputs included in Mr. McMahan’s analysis are presented in Staff Ex. 9.1 at 6; however, he does not justify these assumptions in his workpaper. Lacking explanation, I assume these to be ComEd-

152 the University of Delaware.¹⁷ (ComEd Response to Staff Data Request DLH
153 2.04_Attach 06; Staff Ex. 9.1 at 6) The ComEd EV Benefits Spreadsheet contains
154 an analysis of the total lifecycle costs for a Nissan Leaf EV versus a Ford Focus
155 gas vehicle. ComEd's estimates show potential net financial benefits due to cost¹⁸
156 savings equal to \$6,304 over the expected ten-year¹⁹ lifetime from employing an
157 electric-powered Nissan Leaf (at a cost of \$32,700) instead of a gas-powered Ford
158 Focus (at a cost of \$16,640) assuming a \$7,500 tax credit with the breakeven point
159 occurring in year seven. (Staff Ex. 9.1 at 6) Mr. McMahan's analysis shows the
160 Nissan Leaf owner pays an initial premium of \$8,560 $=[(\$32,700 - \$7,500) -$
161 $\$16,640]$. With this premium, the Leaf's cost is less than the expected ten-year
162 lifetime fuel and maintenance cost savings for the Focus.²⁰ (Staff Ex. 9.1 at 6)

163 **Q. How do you assess this information?**

164 A. While Mr. McMahan correctly acknowledges, "plug-in electric vehicles... are
165 substantially different from traditional vehicles in both their operations and the
166 'fueling' (charging) infrastructure required – both of which impact the overall

specific inputs as they differ from the inputs contained in the original University of Delaware model. (Staff Ex. 9.1 at 6, 57-59)

¹⁶ See Staff Ex. 9.1 at 6

¹⁷ ComEd provides a link to the original model developed by the University of Delaware in ComEd Response to Staff Data Request DTR 1.20: http://www.udel.edu/V2G/page13/files/page13_2.xls ("EV Lifecycle Cost Spreadsheet") (Staff Ex. 9.1 at 57-59)

¹⁸ Taking into consideration fuel and maintenance cost savings. See Staff Ex. 9.1 at 6.

¹⁹ Mr. McMahan's workpaper focuses on a "ten-year" lifecycle cost analysis. This ten-year lifetime assumption appears to stem from the assumption of an estimated battery pack life of ten years. ComEd Response to Staff Data Request JLH 1.09(r) states: "Based on conversations, with OEMs, it is expected that the batteries in the EVs will last 10 years." (Staff Ex. 9.1 at 37)

²⁰ Mr. McMahan's analysis assumes a \$3.00 price per gallon of gasoline, an \$0.08 cost per kWh of electricity, and 13,000 miles driven per year. The other assumptions included in Mr. McMahan's analysis are presented in Staff Ex. 9.1 at 6; however, he does not justify these assumptions in his workpaper.

167 lifecycle costs of the vehicles”, he fails to include the charging infrastructure cost
168 required in his ComEd EV Benefits Spreadsheet workpaper. (ComEd Ex. 7.0 at
169 4:72-75; Staff Ex. 9.1 at 6) Adding in the additional cost of the charging
170 infrastructure per electric vehicle of \$10,909 [=($\$5,000+\$5,000+\909)],²¹ ComEd’s
171 estimated fixed cost per electric vehicle in ComEd’s proposed EV Pilot is \$47,161
172 [=($\$36,252+\$10,909$)].²² Because it is vital²³ that ComEd purchases a Level 2
173 charging station with added functionality²⁴ for each Nissan Leaf for this EV Pilot, the
174 Nissan Leaf owner pays a premium of \$28,340 [=($\$47,161 - \$18,821$)]. This
175 premium significantly exceeds the expected ten-year lifetime fuel and maintenance
176 cost savings. (Staff Ex. 9.1 at 60) Holding constant the rest of the ComEd-specific
177 assumptions²⁵ in Mr. McMahan’s workpaper, and using ComEd’s budgeted cost
178 per electric vehicle of \$47,161 in the EV Pilot, the investment from employing a
179 Nissan Leaf instead of a Ford Focus may result in a net financial loss of \$13,476

²¹ \$5,000 charging station, \$5,000 installation cost, and \$909 [=($\$50,000/55$)] additional installation cost.

²² Mr. McMahan’s workpaper does not include the additional cost for taxes, title, and freight in the Nissan Leaf and Ford Focus prices. If the additional cost for taxes, title, and freight are accounted for, the estimated total cost of the Nissan Leaf vehicle rises to \$36,252. Mr. McMahan’s workpaper (ComEd EV Benefits Spreadsheet) specifies the Ford Focus cost at \$16,640, which is the starting MSRP. (Staff Ex. 9.1 at 6; www.Ford.com/Focus) Assuming the same 8% sales tax rate, car title cost of \$150, and \$700 for freight costs as with the Nissan Leaf (See Staff Ex. 2.0 at 11:fn 8), the 2011 Ford Focus price inclusive of these additional costs is roughly \$18,821.

²³ ComEd Ex. 7.0 at 10:177-178

²⁴ Some additional functionalities of the Coulomb Technologies CT-2100 charging station proposed by ComEd include the following: utility grade energy meter (integrated power metering circuitry provides accurate *bi-directional* energy measurement), smart grid compatible (utility grade meter and smart-grid interfaces enable *demand response* and Time-Of-Use (TOU) pricing), over-the-air station upgrade (upgrade station firmware remotely over-the-air to keep charging station current with future and evolving EV charging needs), integrated fault detection, remote diagnostics and control, and network interface. (Staff Ex. 9.1 at 14) It has the ability to be networked and remote communications capability, which enables aggregate management of the electrical load associated with ComEd’s fleet of plug-in vehicles. (ComEd Ex. 7.0 at 10:182-184)

²⁵ ComEd EV Benefits Spreadsheet; Staff Ex. 9.1 at 6

180 over the expected ten-year battery life. (Staff Ex. 9.1 at 61) These results are
181 presented in the “Modified ComEd EV Benefits Spreadsheet – full EV Pilot cost and
182 no tax credit” in Staff Ex. 9.1. (Staff Ex. 9.1 at 61)

183 Based on ComEd’s own budgeted costs, and taking into consideration that
184 ComEd proposes to use 45 Nissan Leaf vehicles in its EV Pilot, the potential net
185 financial loss to ComEd and its customers for this specific EV Pilot investment is
186 estimated²⁶ to be \$606,420 [=(\$13,476)*45] over ten years. Considering ComEd
187 plans to purchase the charging stations before the end of 2011, the 30% Alternative
188 Fuel Vehicle Refueling Property²⁷ Credit can help alleviate some of the costs of the
189 charging stations to ComEd and its customers. (ComEd Ex. 2.0 at 6:96) ComEd
190 has not monetized the “informational”²⁸ benefits of this investment nor has ComEd
191 provided any other quantitative analysis of this investment that potentially could
192 offset this estimated net financial loss over the ten year period.

193 **B. Double-Checking the Budgeting Assumptions and Numbers**

194 **Q. What is Dr. Hemphill’s position on whether budgets can be double-checked?**

195 A. Dr. Hemphill states, “ComEd’s assumptions and numbers can be double checked,
196 and the budgets can be altered if appropriate.” (ComEd Ex. 6.0 at 13:283-284) Dr.
197 Hemphill also states that my direct testimony demonstrates that “it is possible to

²⁶ Estimated using Mr. McMahan’s workpaper with ComEd’s budgeted cost for the EVs.

²⁷ The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 signed into Law by President Obama on December 17, 2010 extends the Alternative Fuel Vehicle Refueling Property Credit through 2011, a credit for 30% of the purchase and installation costs of the charging equipment, up to \$30,000 for businesses. It is lower than the credit for 50% (\$50,000 for businesses) that it had been for all of 2010. (<http://www.gpo.gov/fdsys/pkg/BILLS-111hr4853enr/pdf/BILLS-111hr4853enr.pdf>)

²⁸ ComEd Ex. 2.0 at 3:52, 3:62-4:67, 4:75-77, 7:110-111

198 double check ComEd's budgeting assumptions and numbers." (ComEd Ex. 6.0 at
199 14:297-298)

200 **Q. Please respond to Dr. Hemphill's statements.**

201 A. Dr. Hemphill contends that the Commission can readily oversee ComEd's budgets
202 and determine whether ComEd's proposed budgets are reasonable benchmarks to
203 evaluate ComEd's Alt Reg performance. I disagree. While my direct testimony
204 acknowledges, "to some extent, market prices can be compared to the budgeted
205 prices," Dr. Hemphill fails to account for Mr. McMahan's rebuttal testimony, in which
206 he attempts to discredit the cost estimates for the few EV Pilot items for which I
207 found objective support.²⁹

208 For example, to justify his own estimate of the charging station installation
209 cost, Mr. McMahan relies on his discussions with charging station providers. He
210 then concludes, "ComEd *feels* that its \$5,000 estimate for installation is more
211 reasonable than those cited by Ms. Hinman from the 2008 U.S. Department of
212 Energy Study^[30]." (ComEd Ex. 7.0 at 13:234-236, emphasis added) Without
213 documentation or even contact information for the vendor on which to base his
214 opinion, it is impossible to "double-check" his conclusion. He is offering an opinion.
215 Considering the dearth of publicly available price information for EV Pilot assets, Dr.

²⁹ Staff Ex. 2.0 at 22:427-428; ComEd Ex. 6.0 at 14:297-298; ComEd Ex. 7.0

³⁰ Kevin Morrow, Donald Karner, and James Francfort. November 2008. U.S. Department of Energy Vehicle Technologies Program – Advanced Vehicle Testing Activity Plug-in Hybrid Electric Vehicle Charging Infrastructure Review Final Report, Battelle Energy Alliance Contract No. 58517. Prepared for the U.S. Department of Energy Assistant Secretary for Energy Efficiency and Renewable Energy Under DOE Idaho Operations Office, Contract DE-AC07-05ID14517, Section 5.1.1. (<http://avt.inel.gov/pdf/phev/phevInfrastructureReport08.pdf>) ("DOE Study")

216 Hemphill's comment implying that the Commission can easily or readily double-
217 check ComEd's budgeting assumptions and numbers for Alt Reg programs is so
218 overly optimistic that it is not a fair representation of the facts.

219 **C. Rate ACEP Tariff Modifications for EV Pilot**

220 **Q. Does ComEd accept the recommendations of Staff witness Hathhorn with**
221 **respect to modifying the Rate ACEP tariff to take tax credits and grants into**
222 **account for the EV Pilot program?**

223 A. Yes, Mr. McMahan states, "ComEd accepts the recommendation of Staff witness
224 Hathhorn to modify the Rate ACEP tariff to account for any grants or credits that
225 ComEd uses." (ComEd Ex. 7.0 at 11:198-200) If the EV tax credits are extended,
226 Dr. Hemphill states, "ComEd would certainly revise the budget to take them into
227 account, as well as the tariff, as Staff witness Hathhorn recommends." (ComEd Ex.
228 6.0 at 32:711-33:714) Additionally, Dr. Hemphill states that ComEd "is willing to
229 work with Staff to develop appropriate language and identify appropriate places in
230 the tariff to insert such language." (ComEd Ex. 6.0 at 47:1033-1036; ComEd Ex.
231 1.2)

232 **Q. How do you respond to ComEd's acceptance of the modification to the Rate**
233 **ACEP tariff regarding grants and tax credits?**

234 A. While ComEd agreed to fix some problems associated with its proposed Rate
235 ACEP tariff, it did so only after Staff pointed them out.³¹ (ComEd Ex. 6.0 at 32:711-
236 33:714; ComEd Ex. 7.0 at 11:198-200) It is my opinion that this could have easily

³¹ ComEd Response to Staff Data Requests JLH 1.08(b) and (d); Staff Ex. 9.1 at 31

237 been part of the initial proposal. The recognition by ComEd of a need for a tariff
238 change³² to allow the benefits of grants and tax credits to flow through³³ to
239 ComEd's customers – while correct – shows that ComEd recognizes the proposed
240 Rate ACEP tariff should change to ensure ratepayer benefit. However, ComEd
241 was aware of these credits prior to its initial filing; see ComEd Response to Staff
242 Data Request JLH 1.08(a)³⁴ listing the potential charging station and EV credits, in
243 addition to Mr. McMahan's workpaper, the ComEd EV Benefits Spreadsheet,³⁵
244 showing the potential \$7,500 tax credit. (Staff Ex. 9.1 at 6, 30) ComEd's Advanced
245 Metering Program Adjustment ("Rider AMP") also includes language to ensure
246 ratepayer benefit of any government funds received for projects associated with
247 costs recovered under Rider AMP. (ILL C.C. No. 10, 1st Revised Sheet Nos. 230
248 and 234) Yet, ComEd neglected to include a provision for the potential tax credits
249 and grants in Rate ACEP in its initial filing. (ComEd Ex. 1.2) Together, these facts
250 indicate that the proposed Rate ACEP tariff would have allowed ComEd to profit³⁶
251 from grants and tax credits³⁷ for the Electric Vehicle Plant ("EVP") proposed in the
252 EV Pilot if not brought up as an issue by Staff. (ComEd Ex. 1.2) The point is that

³² ComEd Response to Staff Data Requests JLH 1.08(b); Staff Ex. 9.1 at 31

³³ Flow through in the form of reduced approved program plant in the Rate ACEP tariff. (ComEd Ex. 1.2)

³⁴ Staff Ex. 9.1 at 30

³⁵ The ComEd EV Benefits Spreadsheet workpaper provided in support of Mr. McMahan's direct testimony, ComEd Response to Staff Data Request DLH 2.04_Attach 06, shows that the \$7,500 tax credit was used as an assumption in its ten-year gas-powered to electric-powered car cumulative savings analysis. (Staff Ex. 9.1 at 6)

³⁶ Under the name of "efficiency improvements". (ComEd Ex. 6.0 at 12:247)

³⁷ The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 signed into Law by President Obama on December 17, 2010 extends the Alternative Fuel Vehicle Refueling Property Credit through 2011, a credit for 30% of the purchase and installation costs of the charging equipment, up to \$30,000 for businesses. (<http://www.gpo.gov/fdsys/pkg/BILLS-111hr4853enr/pdf/BILLS-111hr4853enr.pdf>)

253 tax credits, grants, and revenue enhancements, in addition to purchasing assets
254 with reduced functionality and potentially lower quality, while lower cost, would not
255 be subject to an after-the-fact review. (ComEd Ex. 1.2 at Original Sheet No. X+1)

256 **Q. Do you have a further recommendation on the issue of tax credits and**
257 **grants?**

258 A. Yes. In its surrebuttal testimony, I recommend that ComEd make clear that it
259 intends to revise Rate ACEP to ensure *all* investments and expenses under Rate
260 ACEP associated with government grants or credits are credited to Rate ACEP
261 recoveries.

262 **Q. Aside from the potential for tax credits and grants, do you have reason to**
263 **believe there may be other sources of potential revenue available that could**
264 **help offset some of the costs of the EV Pilot?**

265 A. Yes. ComEd provides a link³⁸ to an analysis tool developed by the University of
266 Delaware that suggests the overall cost may be lower for an electric vehicle in
267 comparison to a gas vehicle. (Staff Ex. 9.1 at 57-59) Staff at the University of
268 Delaware created an EV Lifecycle Cost Spreadsheet that is designed to be used as
269 an analysis tool for “organizations to learn the potential results of replacing gas-
270 powered vehicles with all-electric vehicles equipped with vehicle-to-grid (V2G)
271 technology.” (Staff Ex. 9.1 at 57-59) The EV Lifecycle Cost Spreadsheet analysis
272 tool allows users to take into account the value of federal and state tax credits for

³⁸ ComEd Response to Staff Data Request DTR 1.20 (Staff Ex. 9.1 at 65): http://www.udel.edu/V2G/page13/files/page13_2.xls (“EV Lifecycle Cost Spreadsheet”) Delmarva Power © 9-2005 and 6-2009 Pepco Holdings and Len Beck (Staff Ex. 9.1 at 57-59)

273 electric vehicles in the analysis as well as all the inputs Mr. McMahan's ComEd EV
274 Benefits Spreadsheet workpaper takes into account. (Staff Ex. 9.1 at 6, 58) In
275 addition, the EV Lifecycle Cost Spreadsheet analysis tool allows users to take into
276 account the regulation³⁹ service rate per megawatt-hour ("MWh") based on PJM
277 regulation history and the estimated regulation service gross income per year, as
278 well as other regulation service related inputs. (Staff Ex. 9.1 at 58) Some of the
279 revenue-related default values contained in the EV Lifecycle Cost Spreadsheet⁴⁰
280 include: \$40.48 for the *Regulation Service Rate per MWh* and \$6,501 for the
281 *Estimated Regulation Service Gross Income per year*.⁴¹ (Staff Ex. 9.1 at 58)

282 I am not sure of all the possible revenue streams, but I would point out that
283 Mr. McMahan's ComEd EV Benefits Spreadsheet workpaper and the Rate ACEP
284 tariff do not include any provision for *potential* PJM Ancillary Services⁴² Market
285 revenues, and ComEd has made no offer to reduce the budget to reflect this

³⁹ PJM Interconnection defines "Regulation" as "The capability of a specific resource with appropriate telecommunications, control and response capability to increase or decrease its output in response to a regulating control signal to control for frequency deviations." (<http://www.pjm.com/Home/Glossary.aspx>)

⁴⁰ See Staff Ex. 9.1 at 59 for baseline data explanations.

⁴¹ Many of the default input values in the EV Lifecycle Cost Spreadsheet are not accurate in relation to ComEd's proposed EV Pilot. For example, ComEd does not plan to have its EVs plugged in 22 hours per day. "They must be available a minimum of 8 hours per day". (ComEd Ex. 7.0 at 8:153)

⁴² "In December 2009, three plug-in electric vehicles (PEVs) began receiving payment for participation in the PJM Ancillary Services Market." (<http://www.pjm.com/about-pjm/exploring-tomorrows-grid/phev/evp-ancillary-serv-market.aspx>)

PJM Interconnection defines "Ancillary Services" as "Those services that are necessary to support the transmission of Capacity and energy from resources to loads, while maintaining reliable operation of the Transmission Provider's Transmission System in accordance with Good Utility Practice." (<http://www.pjm.com/Home/Glossary.aspx>)

Additionally, PJM Interconnection currently operates two markets for ancillary services: (1) "Synchronized Reserve" supplies electricity if the grid has an unexpected need for more power on short notice. (2) "Regulation" is a service that corrects for short-term changes in electricity use that might affect the stability of the power system. (<http://www.pjm.com/markets-and-operations/ancillary-services.aspx>)

286 potential revenue. (Staff Ex. 9.1 at 6; ComEd Ex. 1.2) The potential net financial
287 loss of \$606,420 [$=(\$13,476)*45$] (Staff Ex. 9.1 at 61)⁴³ to ComEd and its
288 customers⁴⁴ means that ComEd should include additional language in its Rate
289 ACEP tariff to net out any revenue the Company could receive from implementation
290 of the EV Pilot in the approved EVP (or any other project under Rate ACEP). If net
291 financial benefits materialize, customers can benefit from them in the form of
292 reduced budgeted costs.

293 **Q. What is your recommendation on this issue?**

294 A. I recommend that ComEd include additional language in its Rate ACEP tariff in its
295 surrebuttal testimony to net out any revenue the Company could receive from
296 implementation of the EV Pilot in the approved EVP (or any other project under
297 Rate ACEP). This is consistent with ComEd's Rider AMP's treatment of applying
298 any payments it could receive for in-home devices as reduction to costs recovered
299 under Rider AMP. (ILL C.C. No. 10, 1st Revised Sheet No. 235)

300 **D. Hybrid Bucket Truck Costs**

301 **Q. How does Mr. McMahan react to the hybrid bucket truck cost estimate**
302 **provided in Staff Ex. 2.0?**

303 A. Mr. McMahan states:

⁴³ See ComEd's Budget-Based Alternative Regulation Plan subsection above for explanation of the changes made to Mr. McMahan's original workpaper in the calculation of this estimate.

⁴⁴ The potential net financial loss from the proposed Nissan Leafs and their associated charging station investments in ComEd's EV Pilot is discussed in ComEd's Budget-Based Alternative Regulation Plan subsection above.

304 Given that ComEd's budget is based on hybrid trucks with a variety
305 of aerial equipment, the average \$250,000 per hybrid bucket truck
306 is a more realistic cost estimate because it is more reflective of the
307 range of potential costs for these vehicles (between \$215,000 and
308 \$266,000 for prior purchases), whereas the \$215,000 used by Ms.
309 Hinman reflects only the lower-end of the cost spectrum.

310 (ComEd Ex. 7.0 at 3:51-56)

311 **Q. How do you respond to Mr. McMahan's reaction to the hybrid bucket truck**
312 **cost estimate?**

313 A. In ComEd Response to Staff Data Request JLH 1.09(b), ComEd indicates that it
314 intends to buy the TA40 model of aerial equipment for the hybrid bucket trucks.
315 (ComEd Response to Staff Data Request JLH 1.09(b); Staff Ex. 9.1 at 36) In his
316 response to my discussion of the hybrid bucket truck budget, Mr. McMahan
317 suggests the plan is to purchase hybrid bucket trucks with a variety of aerial
318 equipment whose composition is unknown. (ComEd Ex. 7.0 at 3:38-44) In other
319 words, ComEd's plan to purchase hybrid bucket trucks with a variety of aerial
320 equipment indicates that the EV Pilot program budget is not as transparent as
321 previously thought. (Staff Ex. 2.0 at 22:423-425) There is no objective method to
322 determine an appropriate budget for an unknown assortment of trucks of different
323 models and capabilities.

324 **Q. Mr. McMahan further claims that your "estimated cost for a hybrid bucket**
325 **truck reflects the low end of the cost spectrum for such vehicles, versus the**
326 **mid-range cost budgeted by ComEd." (ComEd Ex. 7.0 at 14:260-261) How do**
327 **you respond to Mr. McMahan's comment?**

328 A. To be clear, as stated in my direct testimony, the minimum cost of a hybrid bucket
329 truck purchased by ComEd is \$181,138⁴⁵ while the maximum cost is \$266,118.
330 (Staff Ex. 2.0 at 8:141-142) Thus, the \$215,000 estimate is not at the “low end” of
331 the cost spectrum as Mr. McMahan states. (ComEd Ex. 7.0 at 14:260-261) Indeed,
332 within this range ComEd’s estimate of \$250,000 appears to be at the high-end of
333 the cost spectrum.

334 **Q. Mr. McMahan states, “The \$250,000 estimated cost per unit provided by**
335 **ComEd in its budget is an average cost for a hybrid bucket truck.” (ComEd**
336 **Ex. 7.0 at 3:48-49) How do you respond?**

337 A. ComEd’s average cost estimates for hybrid bucket trucks seem to vary widely. For
338 example, the attachment to ComEd’s Response to Staff Data Request JLH 1.08(c)
339 labeled JLH 1.08_Attach 1 (“Clean Cities Project’ grant proposal”) disaggregates
340 grant share and cost estimates for vehicles and charging infrastructure. (Staff Ex.
341 9.1 at 32-33) In ComEd’s “Clean Cities Project” grant proposal, ComEd estimates
342 a \$230,000 cost per unit for a hybrid bucket truck, \$175,000 for the standard diesel
343 vehicle and \$55,000 for the incremental hybrid cost. (Staff Ex. 9.1 at 31-33) As a
344 result, ComEd estimates the cost per unit for a hybrid bucket truck at a \$20,000
345 higher cost in its Alt Reg proposal than it estimates in its “Clean Cities Project” grant
346 proposal. ComEd does not explain these differences in cost estimates. (ComEd
347 Ex. 2.0 at 5:86; Staff Ex. 9.1 at 31-33)

⁴⁵ This is the 2005/2006 nominal price. I have not adjusted any bucket truck prices for inflation. However, due to the economic downturn since 2005/2006, adjustment for inflation could be minimal. I acknowledge that the real price (in today’s dollars) may be somewhat higher than \$181,138, but by how much is unknown.

348 In addition, ComEd's Response to Staff Data Request JLH 1.08(c)(ii) states
349 that ComEd is party to the Transportation Electrification Grant that covers the
350 incremental plug-in hybrid electric vehicle ("PHEV") cost of bucket trucks. (Staff Ex.
351 9.1 at 31) ComEd plans to deploy 25 PHEV bucket trucks and estimates the base
352 vehicle costs \$106,000. (Staff Ex. 9.1 at 31) While ComEd does not disaggregate
353 the hybrid bucket truck cost for its Alt Reg proposal in terms of base vehicle and
354 incremental hybrid cost, I note that the \$106,000 base vehicle cost for the
355 Transportation Electrification Grant is \$69,000 less than the standard diesel vehicle
356 cost for ComEd's "Clean Cities Project" grant proposal. (Staff Ex. 9.1 at 31-33)
357 Again, ComEd does not explain these differences in cost estimates.

358 As stated in my direct testimony, details such as model numbers and
359 technical specifications that are missing from the proposed program budgets can
360 significantly impact ComEd's final investment expenditure amounts. (Staff Ex. 2.0
361 at 9:144-146) Different models and manufacturers of virtually the same type of
362 vehicle can vary significantly in costs. (Staff Ex. 2.0 at 9:151-152) Mr. McMahan
363 further expands on this important fact and states, "Bucket truck costs vary widely
364 depending on the mounted aerial equipment (e.g., TA40, TA45, TA50), as well as
365 other components such as lighting, storage boxes, and ladder racks." (ComEd Ex.
366 7.0 at 3:49-51) Yet, ComEd still expects the Commission to be able to determine
367 whether the proposed Rate ACEP budgets are reasonable in cost given the high
368 level overview of the assets to purchase under the programs.

369 **Q. Do you have any observations about your experience investigating the**
370 **hybrid bucket truck budget?**

371 A. Yes. Upon investigation, ComEd's hybrid bucket truck budget proved not to contain
372 sufficient information for the Commission to make a judgment.⁴⁶ (ComEd Ex. 7.0 at
373 3:41-44) In arguing that my estimate was wrong, Mr. McMahan does not describe
374 with enough precision the specific vehicles ComEd proposes to buy. This makes
375 estimating the budget, in addition to making the determinations required in the Rate
376 ACEP tariff, problematic. (ComEd Ex. 1.2 at Original Sheet No. X+1) In the end,
377 the situation is far from Dr. Hemphill's concept of "assumptions and numbers [that]
378 can be double checked, and the budgets [that] can be altered if appropriate."
379 (ComEd Ex. 6.0 at 13:283-284) In truth, a better characterization of Rate ACEP
380 might be that ComEd is asking the Commission to place a great deal of trust in
381 ComEd's Alt Reg proposal and Rate ACEP budget estimates.

382 **E. ComEd's Existing Fleet of Alternative Fueled Vehicles**

383 **Q. McMahan states, "Prius PHEVs are after-market conversions that were**
384 **converted primarily for ComEd to begin studying the use of smart grid**
385 **technology to manage EV charging." (ComEd Ex. 7.0 at 5:77-80) How do you**
386 **respond?**

387 A. ComEd's Response to Staff Data Request JLH 1.12 states that ComEd "has no
388 internal reports based on the electric vehicles or bucket trucks currently deployed
389 by ComEd[.]"⁴⁷ But ComEd has also claimed, "Most of this information [data to

⁴⁶ A judgment with respect to the determinations in the "APPROVAL OF RECOVERY" section in the Rate ACEP tariff. (ComEd Ex. 1.2 at Original Sheet No. X+1)

⁴⁷ Regarding ComEd's current EV related fleet, Staff requested in part, "any relevant documents associated with the purchase, use, maintenance, and cost savings of each asset [currently owned]" and

390 collect and analyze for the EV Pilot] is available from ComEd's existing fleet
391 management system." (ComEd Response to Staff Data Request 1.04(c); Staff Ex.
392 9.1 at 22) It is thus unclear what ComEd's purpose was in converting the Prius
393 hybrids to plug-ins. (Staff Ex. 9.1 at 47) That is, the data is available, but it has not
394 been analyzed.

395 **Q. Does ComEd explain why it does not have any studies based on its current**
396 **fleet of EV-related assets?**

397 A. No, ComEd failed to address this concern⁴⁸ in its rebuttal. However, through data
398 request responses, ComEd points out, "two hybrid bucket trucks do not provide a
399 sufficient sample size to understand the overall operational impacts and benefits of
400 hybrid service vehicles as compared to their non-hybrid counterparts in a large
401 commercial fleet."⁴⁹ It is inconsistent to argue the two hybrid bucket trucks are an
402 insufficient sample size, when its own EV Pilot proposes to buy only two PHEV
403 digger-derricks. (ComEd Ex. 2.0 at 5-6) Note that ComEd states, "While we are
404 proposing the pilot period conclude at the end of 2013, ComEd believes it will have
405 collected enough data by that time to develop a total life cycle cost of ownership for
406 each class of vehicle as well as data on how the vehicles performed." (ComEd Ex.
407 2.0 at 6:107-109, emphasis added)⁵⁰

"Please provide all workpapers related to these assets." (Staff Data Request JLH 1.10(a), 1.10(f); Staff Ex. 9.1 at 44)

⁴⁸ Staff Ex. 2.0 at 20:370-381

⁴⁹ ComEd Response to Staff Data Request JLH 1.01; Staff Ex. 9.1 at 18

⁵⁰ ComEd Response to Staff Data Request JLH 1.04(c) and JLH 1.08(e); Staff Ex. 9.1 at 22, 29

408 **F. Nissan Leaf Costs**

409 **Q. Mr. McMahan states, “In developing a budget for the EV Pilot, ComEd cannot**
410 **rely on a tax credit that may or may not be available when the vehicles are**
411 **available for purchase.” (ComEd Ex. 7.0 at 6:109-110) How do you respond?**

412 A. In the quoted discussion of developing a budget for the EV Pilot, Mr. McMahan
413 insists that ComEd cannot assume the \$7,500 tax credit will be available without an
414 explanation of why it can be part of the cost savings calculation when estimating⁵¹
415 “benefits”, but not part of the cost calculation itself when estimating “budgets”.
416 (ComEd Ex. 7.0 at 6:108-115) Absent justification, it is inconsistent of Mr.
417 McMahan to believe it is justified to assume tax credits are available when
418 estimating whether the EV Pilot has the potential to result in net financial benefits to
419 ComEd and its customers, while at the same time contending that ComEd cannot
420 assume tax credits are available when it comes to estimating the EV Pilot program
421 budgets that, according to ComEd, are supposed to be used as the benchmark by
422 the Commission to determine whether the projects will result in net benefits to
423 customers. (ComEd Ex. 6.0 at 11:238-244)

424 Without the federal tax credit in Mr. McMahan’s ComEd EV Benefits
425 Spreadsheet workpaper,⁵² the Nissan Leaf owner pays a premium of \$16,060
426 [=($\$32,700 - \$16,640$)]. This premium exceeds the expected ten-year lifetime fuel

⁵¹ Mr. McMahan’s ComEd EV Benefits Spreadsheet workpaper shows net financial benefits in terms of cost savings of \$6,304 over ten years from employing an electric-powered Nissan Leaf (at a cost of \$32,700) versus a gas-powered Ford Focus (at a cost of \$16,640), assuming a \$7,500 tax credit with the breakeven point occurring in year seven. (Staff Ex. 9.1 at 6)

⁵² Staff Ex. 9.1 at 6

427 and maintenance cost savings for the Focus. (Staff Ex. 9.1 at 60) The net financial
428 benefits⁵³ from the Nissan Leaf investment disappear after removing the \$7,500 tax
429 credit and result in a net financial loss of \$1,196 over ten years. (Staff Ex. 9.1 at 60)
430 These results are presented in the “Modified ComEd EV Benefits Spreadsheet – no
431 tax credit” in Staff Ex. 9.1. (Staff Ex. 9.1 at 60) Therefore, without more information,
432 Mr. McMahan’s assertion regarding the assumption of tax credits with respect to
433 budget estimates is unreasonable. ComEd could have proposed to alter the
434 budgets for EVs initially as they eventually agreed to do after Staff’s
435 recommendation.

436 **Q. ComEd agrees with the Nissan Leaf’s MSRP equal to \$32,780, but kept its**
437 **cost estimate at \$36,000 to account for tax, title, and freight costs. How do**
438 **you respond to Mr. McMahan’s rebuttal testimony regarding the Nissan**
439 **Leaf cost estimates?**⁵⁴

440 A. While I do not dispute Mr. McMahan’s \$700 freight cost estimate, he fails to
441 address whether the MSRP is the appropriate cost to consider or whether fleet
442 discounts in fact are available⁵⁵ to ComEd that should be considered in estimating
443 the EV Pilot budget.

⁵³ The net financial benefits from employing an electric-powered Nissan Leaf (at a cost of \$32,700) instead of a gas-powered Ford Focus (at a cost of \$16,640), holding constant the rest of the ComEd-specific assumptions in Mr. McMahan’s workpaper. (Staff Ex. 9.1 at 6)

⁵⁴ ComEd Ex. 6.0 at 6

⁵⁵ Available in the form of discounts for bulk purchases or tax credits.

444 **G. Charging Infrastructure Costs**

445 **Q. Does Mr. McMahan provide any supporting documentation for ComEd's**
446 **estimated installation costs to alleviate the concerns that you expressed with**
447 **the budget?**

448 A. No.⁵⁶ Rather than provide a basis for ComEd's installation cost estimates, Mr.
449 McMahan discusses why the only publicly available study of EV charging station
450 installation costs⁵⁷ does not apply to ComEd's proposed EV Pilot program. (ComEd
451 Ex. 7.0 at 7-13)

452 **Q. Mr. McMahan asserts that you do not cite several assumptions used in the**
453 **2008 U.S. DOE Study and did not consider how realistic those assumptions**
454 **were for ComEd. (ComEd Ex. 7.0 at 11:208-210) How do you respond?**

455 A. While I did not repeat all assumptions in the publicly available DOE Study (ComEd
456 Ex. 7.0 at 11:208-210), the section referred to responds to Mr. McMahan's direct
457 testimony that provides no assumptions behind his estimates beyond the \$10,000
458 per charging station and \$50,000 for incidental equipment and contingency.
459 (ComEd Ex. 2.0 at 5) It was only in response to Staff Data Request DLH 2.04 for
460 workpapers supporting ComEd's exhibits that ComEd produced a document
461 disaggregating the Level 2 charging station costs into \$5,000 for the charging

⁵⁶ ComEd Response to Staff Data Request JLH 1.09(d) provides a link to the installation guide for ComEd's proposed Level 2 charging stations. (Staff Ex. 9.1 at 36) Additionally, the installation guide is presented, in part, in Staff Ex. 9.1. (Staff Ex. 9.1 at 67-105) Part 4 "Installing a Wall Mount" is excluded from the installation manual in Staff Ex. 9.1 because Mr. McMahan indicates in his rebuttal testimony, "wall-mounted units are not applicable". (ComEd Ex. 7.0 at 12:225-226)

⁵⁷ 2008 DOE Study

462 station and \$5,000 for installation of the charging station. (Staff Ex. 9.1 at 1-5) Mr.
463 McMahan's workpaper provides no breakdown of the component costs⁵⁸ for the
464 charging station and its installation, let alone any assumptions behind those
465 numbers. (Staff Ex. 9.1 at 1-5) Once again, ComEd simply asks the Commission to
466 place trust in ComEd's estimate of what the budgeted cost for charging station
467 installations should be. Given the paucity of information provided by ComEd
468 regarding the locations of the charging stations, there is insufficient information to
469 allow a proper analysis. (Staff Ex. 9.1 at 36)

470 **Q. Mr. McMahan states, "While specific installation factors will vary from site to**
471 **site, ComEd feels that its \$5,000 estimate for installation is more reasonable**
472 **than those cited by Ms. Hinman from the 2008 U.S. Department of Energy**
473 **Study." (ComEd Ex. 6.0 at 13:234-236) How do you respond?**

474 **A.** Mr. McMahan supports these cost estimates by stating, "per-unit costs for charging
475 infrastructure are based on estimates generated from conversations with charging
476 infrastructure providers, and not actual quotes for work." (ComEd Ex. 7.0 at 13:243-
477 345) These statements are not verifiable.

478 **Q. Mr. McMahan states, "[T]he \$50,000 included for incidental equipment and**
479 **contingency reflects the level of variability in the actual costs for installing**
480 **the infrastructure for 55 Level 2 charging stations." (ComEd Ex. 6.0 at 13:239-**
481 **241) What is your response?**

⁵⁸ Components such as conduit, conductors, service panels, breakers, and cement.

482 A. There is no verifiable evidence in the record to support his estimate for charging
483 station installation costs. A \$50,000 “variability” fund in no way reflects actual
484 charging station installation costs. It is unsupported and simply provides a cushion
485 that may inflate the cost that customers ultimately have to pay.

486 **IV. Conclusion**

487 **Q. Mr. McMahan concludes, “[T]he analysis relied upon by Ms. Hinman to**
488 **contend that ComEd’s EV Pilot budget is inflated by an estimated \$1.1**
489 **million... fails to consider actual costs.” (ComEd Ex. 7.0 at 14:254-256) How**
490 **do you respond?**

491 A. First, for most items, actual costs are not publicly available. Second, specificity of
492 all assets⁵⁹ and underlying verifiable sources of the unit cost estimates are lacking.
493 (ComEd Ex. 2.0 at 5, 9; Staff Ex. 9.1 at 3-4) ComEd does not provide an exact and
494 complete list of which trucks it plans to buy. ComEd only lists, in many cases,
495 generic names of assets. (ComEd Ex. 2.0 at 5:86, 9) Although in some cases, it
496 lists the unit cost for each asset and the number it plans to purchase. (ComEd Ex.
497 2.0 at 5:86; Staff Ex. 9.1 at 3-4) Mr. McMahan may criticize outside cost estimates
498 that contradict those put forward by ComEd, because ComEd leaves open the
499 details of all of the projects proposed involving assets.

500 **Q. Based on rebuttal testimonies provided by ComEd witnesses Dr. Hemphill**
501 **(ComEd Ex. 6.0) and Mr. McMahan (ComEd Ex. 7.0), have your concerns**

⁵⁹ Or at least a list of the most likely assets (including model numbers and other technical specifications) to purchase for each asset category accompanied with a detailed explanation.

502 **about employing a Budget-Based Alternative Regulation Plan⁶⁰ for the EV**

503 **Pilot been ameliorated?**

504 A. No, they have not.

505 **Q. Does this complete your rebuttal testimony?**

506 A. Yes.

⁶⁰ ComEd Ex. 6.0 at 11:237