

**STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSOIN**

COMMONWEALTH EDISON COMPANY)	
)	
PETITION FOR APPROVAL OF BENEFICIAL)	
ELECTRIFICATION PLAN UNDER THE)	Dockets 22-0432/22-0442 (Consol.)
ELECTRIC VEHICLE ACT, 20 ILCS 627/45 AND)	
NEW EV CHARGING DELIVERY CLASSES)	
UNDER THE PUBLIC UTILITIES ACT,)	
ARTICLE IX)	

**Revised Direct Testimony of
Eric Borden and Courtney Lane

On Behalf of
The People of the State of Illinois**

AG Exhibit 1.0R

September 22, 2022

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Please state your name, title, and employer.**

3 A. **Mr. Borden:** My name is Eric Borden. I am a Principal Associate at Synapse Energy
4 Economics (“Synapse”), located at 485 Massachusetts Avenue, Suite 3, Cambridge, MA
5 02139.

6 **Ms. Lane:** My name is Courtney Lane. I am a Senior Associate at Synapse, located at
7 485 Massachusetts Avenue, Suite 3, Cambridge, MA 02139.

8 **Q. Please describe Synapse.**

9 A. Synapse is a research and consulting firm specializing in electricity and gas industry
10 regulation, planning, and analysis. Our work covers a range of issues, including economic
11 and technical assessments of demand-side and supply-side energy resources; energy
12 efficiency policies and programs; integrated resource planning; electricity market
13 modeling and assessment; renewable resource technologies and policies; and climate
14 change strategies. Synapse works for a wide range of clients, including state attorneys
15 general, offices of consumer advocates, trade associations, public utility commissions,
16 environmental advocates, the U.S. Environmental Protection Agency, U.S. Department of
17 Energy (“DOE”), U.S. Department of Justice, the Federal Trade Commission, and the
18 National Association of Regulatory Utility Commissioners. Synapse has over 30
19 professional staff with extensive experience in the electricity industry.

20 **Q. Please summarize your professional and educational experience.**

21 A. **Mr. Borden:** I have over 10 years of experience in the energy industry and joined
22 Synapse in 2022. From 2015 to 2022, I was a Senior Energy Expert at the Utility Reform

23 Network (“TURN”) in California, where I served as an expert witness in numerous
24 proceedings before the California Public Utilities Commission. I provided in-depth
25 analysis to inform policy recommendations on a variety of energy issues, including
26 several applications and policy-related proceedings related to electric vehicle
27 infrastructure and policy. Prior to my role at TURN, I served as a Senior Energy Analyst
28 at 4Thought Energy, where I conducted financial analyses based on multiple utility tariffs
29 for a distributed generation natural gas combined heat and power firm. I also have
30 previous consulting experience. I have a Bachelor’s degree in finance from Washington
31 University in St. Louis and a Master’s in Public Affairs from the University of Texas at
32 Austin. My resume is attached as AG Ex. 1.1.

33 **Ms. Lane:** I have 18 years of experience in energy policy and regulation. At Synapse, I
34 work on issues related to performance-based regulation, grid modernization, benefit-cost
35 analysis, rate and bill impacts, and review of distributed energy resource and electric
36 vehicle utility filings. Prior to working at Synapse, I was employed by National Grid as
37 the Growth Management Lead for New England where I oversaw the development of
38 customer products, services, and business models for Massachusetts and Rhode Island. In
39 previous roles at National Grid, I led the development of Rhode Island Annual and
40 Three-Year Energy Efficiency Plans, led the facilitation of the Rhode Island Energy
41 Efficiency Collaborative, and worked with key stakeholders on the development of
42 policies and strategies to further promote energy efficiency and demand response in the
43 state. Prior to joining National Grid, I worked on regulatory and state policy issues
44 pertaining to energy conservation, retail competition, net metering, and the Alternative

45 Energy Portfolio Standard for Citizens for Pennsylvania’s Future. Prior to that, I worked
46 for Northeast Energy Efficiency Partnerships, Inc. where I promoted energy efficiency
47 throughout the Northeast.

48 I have testified before the New Hampshire Public Utilities Commission, the Maryland
49 Public Service Commission, the New Mexico Public Regulation Commission, the
50 Pennsylvania Public Service Commission, the Public Service Commission of the District
51 of Columbia, and the Rhode Island Public Utilities Commission.

52 I hold a Master of Arts in Environmental Policy and Planning from Tufts University and
53 a Bachelor of Arts in Environmental Geography from Colgate University. My resume is
54 attached as AG Ex. 1.2.

55 **Q. On whose behalf are you testifying in this case?**

56 A. We are testifying on behalf of the People of the State of Illinois represented by the Office
57 of the Attorney General (“AG”).

58 **Q. What is the purpose of your testimony?**

59 A. The purpose of our testimony is to review and assess the Beneficial Electrification Plan
60 (“BE Plan”) submitted by Commonwealth Edison Company (“ComEd” or the
61 “Company”) and to provide recommendations for improvement. We do not address all
62 aspects of the Company’s proposal. However, silence on any issue should not be taken as
63 acceptance of the Company’s proposals as it relates to that issue.

64 **Q. What materials did you rely on to develop your testimony?**

65 A. The sources for our testimony and exhibits are the Company’s direct testimony and
66 exhibits, public documents, and responses to discovery requests, as well as our personal
67 knowledge and experience.

68 **Q. Were these exhibits prepared by you or under your direction?**

69 A. Yes. Our testimony and the accompanying exhibits were prepared by us or under our
70 direct supervision and control.

71 **II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS**

72 **Q. Please summarize your concerns with the Company’s BE Plan in its current form**
73 **and provide your recommendations to address these concerns.**

74 A. We find several issues should be addressed to ensure ComEd’s programs support the
75 transportation electrification goals of the State of Illinois and are in the best interest of
76 ratepayers. Briefly, our conclusions and recommendations are as follows:

- 77 • The Illinois Commerce Commission (the “Commission”) should reject ComEd’s
78 proposal to provide rebates for vehicles. ComEd’s proposed \$100 million annual
79 budget is among the highest in the country on a per-customer basis, with most of
80 its transportation-related budget (78 percent) going towards funding vehicle
81 rebates rather than infrastructure. This design differs significantly from other
82 investor-owned utilities (“IOU”) across the country. In other jurisdictions,
83 ratepayer expenditures have been primarily targeted to charging station incentives
84 and supporting infrastructure (“make-ready”) costs.
- 85 • The Company also fails to account for the impact of state and federal incentives in
86 the design of its rebate programs and would allow for high-end vehicles to receive

87 rebates. These program design choices will lead to high levels of free ridership,
88 where ratepayers subsidize the electric vehicle (“EV”) purchase of a customer that
89 would have bought the EV regardless of ComEd’s rebates.

- 90 • We also understand that ICC Staff (“Staff”) recently filed a motion in this
91 proceeding that may implicate the legality of some of ComEd’s rebate programs
92 that it proposes to offer in its BE Plan.

- 93 • We recommend the Commission reject the Company’s proposed non-
94 transportation electrification measures. Within its BE Plan, the Company
95 proposes to spend \$30 million over three years on measures that do not address
96 transportation electrification. ComEd currently offers non-transportation
97 electrification through its Energy Efficiency and Demand Response (“EE and
98 DR”) Plan. The Company has not sufficiently justified why ratepayers should
99 fund stacked, or multiple, incentives for electrification measures, the subsidization
100 of which will ultimately help ComEd meet its savings requirements for its EE and
101 DR Plans. Finally, the Company ignores the prior stipulation agreement for non-
102 transportation electrification entered in ICC Docket No. 21-0155, which includes
103 important protections for income-eligible customers.

- 104 • ComEd’s benefit-cost analysis (“BCA”) assumes 100 percent of EV adoption
105 occurs due to its programs; in other words, the Company assumes no free
106 ridership. This is an unrealistic assumption that results in higher calculated
107 benefits than can be reasonably expected. The Commission should approach

108 approval of BE programs with caution before more data can be collected on this
109 issue.

110 • The Company does not adequately analyze the financial impacts of the BE Plan
111 on non-participants. Our analysis of these impacts finds that the costs of the BE
112 Plan far outweighs the financial benefits even when assuming no free ridership or
113 additional BE Plan costs beyond the instant proposal. Further, the expected
114 financial benefits from all EVs across the service territory during 2023-2025 will
115 be virtually eliminated due to the high proposed BE Plan costs. From 2026-2029,
116 the revenue requirement of the BE Plan is larger than the estimated financial
117 benefit from all EV charging in the service territory.

118 • The requirement to enroll residential participants in Rate BESH is inappropriate
119 and inadequate.

120 ○ In addition to Rate BESH, the Company could offer residential customers
121 subscription to its “time of day” rate option¹ for at least three years.

122 ○ As part of the BE Plan’s implementation, the Company should be required
123 to design and file time-of-use (“TOU”) rate options for the generation and
124 distribution cost components of its rate that accurately reflect peak times
125 and provide appropriate cost signals to customers to allow for grid

¹ComEd, *Time-of-Day Pricing*,
<https://www.comed.com/WaysToSave/ForYourHome/Pages/TimeofDayPricing.aspx>.

126 beneficial charging. This could then become a requirement of enrolling in
127 the BE Plan for 2024 and 2025 for non-low income customers.

128 ○ The Company should put forth a clear plan to implement submetering
129 using networked Level 2 charging stations or vehicle telematics so that
130 rates can be applied to EV load and not whole house usage.²

131 ○ ComEd should describe its distribution planning practices and address
132 whether these ensure grid beneficial charging is incorporated into utility
133 planning practices to avoid or defer distribution capital expenditures.

134 • The Company’s proposal to treat operation and maintenance (“O&M”) costs as a
135 “regulatory asset” is higher cost than traditional ratemaking practices and not in
136 the best interest of ratepayers. It should be rejected, and an annual budget that is
137 capped according to statutory requirements should be adopted.

138 • The Commission should reject the Company’s proposal to create two new
139 commercial rate classes, as this may not promote grid beneficial charging.

140 **III. REGULATORY CONTEXT**

141 **Q. What is the regulatory context for ComEd’s BE Plan?**

142 A. The Climate and Equitable Jobs Act (“CEJA” or the “Act”) establishes a goal of adopting
143 1,000,000 EVs in Illinois by 2030 and requires electric utilities that serve more than

² California has adopted submetering protocols for its utilities and continues to investigate use of vehicle telematics. California Public Utilities Commission, Decision Adopting Plug-in Electric Vehicle Submetering Protocol and Electric Vehicle Supply Equipment Communication Protocols, August 4, 2022. Available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M496/K405/496405751.PDF>.

144 500,000 customers to file a BE Plan with the Commission no later than July 1, 2022, for
145 beneficial electrification programs to support the rapid deployment of EVs and make-
146 ready infrastructure statewide.³

147 **Q. What is considered a beneficial electrification program?**

148 A. CEJA defines beneficial electrification programs as those “that lower carbon dioxide
149 emissions, replace fossil fuel use, create cost savings, improve electric grid operations,
150 reduce increases to peak demand, improve electric usage load shape, and align electric
151 usage with times of renewable generation.”⁴ The Act further defines these programs to
152 include demand response and optimized charging programs that encourage charging at
153 times beneficial to the electric grid; time-of-use and hourly pricing electric rates; and
154 incentives for electrification and associated infrastructure directed to specific sectors such
155 as transit, school buses, fleets, government, and public corridors.⁵ The programs should
156 also target population segments of equity-investment-eligible and/or low-income (“LI”)
157 individuals and communities.⁶

158 **Q. What are the requirements of the BE Plan?**

159 A. The Act states that the BE Plan shall, at a minimum, address the following 10
160 requirements:⁷

161 1. Make-ready investments to facilitate the rapid deployment of charging equipment
162 throughout the State, facilitate the electrification of public transit and other

³ 20 ILCS 627/45(a)(1) and (d).

⁴ *Id.* at 627/45(b).

⁵ *Id.* at ILCS 627/45(b)(1-15).

⁶ *Id.* at ILCS 627/45(b)(10).

⁷ *Id.* at ILCS 627/45(d)(i-x).

- 163 vehicle fleets in the light-duty, medium-duty, and heavy-duty sectors, and align
164 with agency-issued rebates for charging equipment;
- 165 2. The development and implementation of beneficial electrification programs,
166 including time-of-use rates and their benefit for EV users and for all customers,
167 optimized charging programs to achieve savings identified, and new contracts and
168 compensation for services in those programs, through signals that allow EV
169 charging to respond to local system conditions, manage critical peak periods,
170 serve as a demand response or peak resource, and maximize renewable energy use
171 and integration into the grid;
- 172 3. Optional commercial tariffs utilizing alternatives to traditional demand-based rate
173 structures to facilitate charging for light-duty, heavy-duty, and fleet EVs;
- 174 4. Financial and other challenges to EV usage in LI communities, and strategies for
175 overcoming those challenges, particularly in communities and for people for
176 whom car ownership is not an option;
- 177 5. Methods of minimizing ratepayer impacts and exempting or minimizing, to the
178 extent possible, LI ratepayers from the costs associated with facilitating the
179 expansion of EV charging;
- 180 6. Plans to increase access to Level 3 Public Electric Vehicle Charging
181 Infrastructure to serve vehicles that need quicker charging times and vehicles of
182 persons who have no other access to charging infrastructure, regardless of
183 whether those projects participate in optimized charging programs;

- 184 7. Whether to establish charging standards for type of plugs eligible for investment
185 or incentive programs, and if so, what standards;
- 186 8. Opportunities for coordination and cohesion with EV and EV charging equipment
187 incentives established by any agency, department, board, or commission of the
188 State, any other unit of government in the State, any national programs, or any
189 unit of the federal government;
- 190 9. Ideas for the development of online tools, applications, and data sharing that
191 provide essential information to those charging EVs, and enable an automated
192 charging response to price signals, emission signals, real-time renewable
193 generation production, and other Commission-approved or customer-desired
194 indicators of beneficial charging times; and
- 195 10. Customer education, outreach, and incentive programs that increase awareness of
196 the programs and the benefits of transportation electrification, including direct
197 outreach to eligible communities.

198 **IV. COMED'S BE PLAN**

199 **Q. Please summarize ComEd's BE Plan.**

200 A. ComEd proposes to spend \$100 million per year for three years on a suite of programs
201 summarized in Table 1 below.

202

203

Table 1. Summary of ComEd BE Plan

BE Plan Program	Description	Annual Budget
Residential Program	Rebates for: the purchase of electric passenger vehicles; EV charging stations; purchase or installation of residential electric appliances and equipment; and electrical infrastructure upgrades	\$15M
Commercial and Industrial and Public Sector Program	Rebates for the purchase of electric light-duty, medium-duty, and heavy-duty fleet vehicles; electric school buses and transit buses; EV charging stations; infrastructure for forklift or small business appliances; and electrical infrastructure upgrades	\$63M
Customer Education and Awareness	Seeks to expand the customer knowledge base of electrification opportunities	\$9M
BE Pilot Program	Pilot and demonstration projects to examine potential of beneficial electrification	\$5M
Portfolio	Cross-cutting activities supporting the overall BE Plan	\$8M
Total		\$100M

204

Source: ComEd Ex. 1.01 at 32–44.

205 A. The Company also proposes two new EV Charging Delivery Classes for commercial and
206 industrial (“C&I”) customers. These classes will enable a customer to payback the
207 upfront cost associated with ComEd’s make-ready infrastructure that is needed to connect
208 the customer’s EV charging station to the distribution transformer.⁸ Customers enrolling
209 in these classes will pay back these costs to ComEd over time on their monthly bill.⁹

210 **V. BE PLAN CREATES UNECESSARY BURDEN ON RATEPAYERS**

211 **ComEd’s Funding Request Is Among the Highest in Country**

212 **Q. Did you compare ComEd’s proposed BE Plan budget to those of similar IOUs in the**
213 **country?**

⁸ ComEd Ex. 5.0 at 2:42–3:50.

⁹ *Id.* at 11:211–221.

214 A. Yes, we did. We conducted a comparison of commission-approved electric transportation
215 programs offered by IOUs in states with similar EV adoption goals to Illinois.

216 **Q. Please explain how you conducted this comparison.**

217 A. We first identified states that had similar state-level transportation electrification goals to
218 Illinois' goal of adopting 1,000,000 EVs by 2030.¹⁰

219 To identify these states, we initially listed the transportation electrification goals for
220 every state in which they exist. Since some goals are expressed in percentages, while
221 others are expressed in terms of an absolute number of vehicles, we converted each
222 absolute vehicle goal to a percentage of the total registered vehicles in the state based on
223 2020 Highway Statistics from the Federal Highway Administration.¹¹ In cases where a
224 state had multiple targets divided by vehicle class, we used the light-duty vehicle goal.
225 For Illinois, a goal of one million vehicles equals about 24 percent of the State's 2020
226 registered vehicle stock. We included states with (1) a percentage greater than or equal to
227 24 percent, and (2) a deadline similar to Illinois' 2030 target (within 5 years, *i.e.*, between
228 2025 and 2035). AG Ex. 1.3 summarizes the states we identified as having EV adoption
229 goals that are similar to, or more aggressive than, Illinois' goal.

230 We then narrowed down the list of states to those that include IOUs primarily serving
231 more urban areas to better match ComEd's service territory. This resulted in a review of
232 the seven states and nine IOUs shown in Table 2 below.

¹⁰ 20 ILCS 627/45(a)(1).

¹¹ U.S. Federal Highway Administration. 2022. "Table MV-1 – Highway Statistics 2020" Highway Statistics Series. Available at: <https://www.fhwa.dot.gov/policyinformation/statistics/2020/mv1.cfm>.

233 **Q. How does IOU funding for EV programs in these states compare to ComEd’s**
234 **proposed BE Plan?**

235 A. The Company’s proposed BE Plan budget, if approved as filed, would be significantly
236 larger on an annual, per-customer basis than those of most utilities in the United States.
237 We have identified only two utilities, both in California, with approved budgets greater
238 than ComEd’s proposal on an annual, per customer basis, which is shown in Table 2
239 below.

240 **Table 2. Approved Utility Program Expenditures vs. ComEd’s BE Plan Proposal**

State	Utility	Annual \$/customer
CA	Southern California Edison	\$44.08
CA	San Diego Gas & Electric	\$29.01
IL	ComEd BE Plan Proposal	\$24.54
CO	Public Service Company of Colorado	\$23.80
CT	Connecticut Light & Power	\$19.37
NY	Consolidated Edison	\$16.51
CA	Pacific Gas & Electric	\$16.04
NJ	Public Service Elec & Gas	\$12.05
MA	Eversource	\$6.23
OR	Portland General Electric	\$2.57

241
242 **Role of Utilities in Electrification of the Transportation Sector**

243 **Q. Is it common for utility EV programs in other states to focus on vehicle and charger**
244 **rebates?**

245 A. No, it is not. ComEd’s BE Plan is both an outlier on price and in content. ComEd
246 proposes to primarily focus ratepayer funding on vehicle rebates (78 percent of the
247 proposed transportation-related budget) rather than infrastructure. This differs

248 significantly from utility EV programs in other states. While there are utilities that offer
249 rebates for vehicles, the majority of ratepayer expenditures have been targeted to make-
250 ready costs.

251 **Q. Are you aware of IOUs that provide rebates for light, medium, and heavy-duty fleet**
252 **vehicles, or buses?**

253 A. San Diego Gas & Electric has a small scale pilot where it is permitted to spend around
254 \$450,000 to offset the cost of school busses for a vehicle-to-grid (“V2G”) test use case.
255 However, this program may not utilize ratepayer funds to support vehicle purchases as
256 the utility agreed to “seek [outside] funds to pay for the electric school buses” from
257 federal and state sources.¹² Apart from this small-scale pilot, we are not aware of an IOU
258 that offers rebates for these vehicle types. This is an important point as ComEd proposes
259 an annual budget of \$47 million (\$141 million over three years and approximately half of
260 its transportation-related annual spending) on rebates for light, medium, and heavy-duty
261 fleet vehicles, school buses, and transit buses.¹³ Based on our review of IOUs, the most
262 common programs are make-ready and charger rebate programs as summarized in Table
263 3 below.

264 **Table 3. Common IOU EV Programs**

State	Utility	Program Type
CA	Pacific Gas & Electric	Fleet make-ready, LI/workplace fleet charging, LI public charger, make-ready
	San Diego Gas & Electric	Multi-family charging, school bus pilot, fleet charging, public (workplace) charging, make-ready

¹² Public Utilities Commission of the State of California. Application No. 18-01-012, Joint Motion of Settling Parties for Commission Adoption of Settlement Agreement, 11/5/2018, at 14.

¹³ ComEd Ex. 1.01 at 39.

	Southern California Edison	Multi-family charging, fleet charging, public/commercial charging, make-ready
CO	Public Service Company of Colorado	LI residential vehicle, residential charger, multi-family charger, school bus, LI/workplace fleet charging, LI public charging
CT	Connecticut Light & Power	Residential charging, multi-family charging, fleet charging, public charging
MA	Eversource	Make-ready only
NJ	Public Service Electric & Gas	Make-ready only
NY	Consolidated Edison	Make-ready only
OR	Portland General Electric	Residential charging, LI multi-family charging

265
266

Rebate Levels Do Not Account for State and Federal EV Incentives

267 **Q. Aside from the novelty of ComEd’s rebate proposals, do you have any concerns with**
268 **ComEd’s proposed rebates?**

269 A. Yes. It is unclear to what extent ComEd designed its rebates to account for existing state
270 and federal incentives. As required by the Act, a utility’s BE Plan must address, at a
271 minimum, “opportunities for coordination and cohesion with electric vehicle and electric
272 vehicle charging equipment incentives established by any agency, department, board, or
273 commission of the State, any other unit of government in the State, any national
274 programs, or any unit of the federal government.”¹⁴

275 It is important that ComEd design its BE Plan programs while considering existing
276 external funding sources. Having a utility provide rebates for technologies that are
277 already incentivized through state and federal incentive programs is not a good use of
278 ratepayer funds. This can lead to situations where a customer may access more than one

¹⁴ 20 ILCS 627/45(d)(viii).

279 rebate for the same vehicle or charging location or may not actually need that rebate in
280 order to cover the incremental cost of the EV or EV charging infrastructure.

281 **Q. What state and federal incentives are currently available for EVs and EV charging**
282 **infrastructure?**

283 A. Based on our review of existing incentives and those recently created through the federal
284 Inflation Reduction Act (“IRA”), there are numerous incentives ranging from rebates for
285 residential passenger vehicles, commercial vehicles, school buses, and public transit, as
286 well as to support EV supply equipment. AG Ex. 1.4 includes a table of these incentive
287 programs.

288 **Q. Does ComEd consider these available incentives in its BE Plan?**

289 A. While ComEd indicates that it tracks relevant state and federal energy legislation and
290 corresponding incentives once legislation has passed into law,¹⁵ it is not clear how it
291 accounts for these incentives within its BE Plan and its proposed rebate levels. For
292 example, ComEd indicates that the proposed rebate level per passenger vehicle does not
293 change based on whether a customer receives a state or federal incentive.¹⁶ In addition,
294 when asked in discovery what sources and information the Company relied upon to
295 develop its proposed rebate levels, ComEd did not include state and federal incentives.¹⁷
296 The Company’s reasoning for excluding these incentives appears to relate to its
297 unsupported claim that EV financial incentives provided by the state or federal
298 government may be limited.¹⁸

¹⁵ ComEd response to BTK 1.06(a).

¹⁶ ComEd response to AG 2.04(d).

¹⁷ ComEd response to AG 2.07.

¹⁸ *Id.*

299 **Passenger Vehicle Rebates and Free Ridership**

300 **Q. Do you have specific concerns with ComEd’s proposed rebates for vehicles?**

301 A. Yes. ComEd’s proposed incentives for non-LI customers is a wasteful use of ratepayer
302 dollars due its redundancy with state and federal incentives and the potential for high
303 levels of free ridership.

304 **Q. What do you mean by free ridership?**

305 A. Free ridership refers to situations whereby participants in a program would have adopted
306 an EV or invested in charging infrastructure even without the existence of the program or
307 incentive. The impact of free ridership is a standard part of energy efficiency evaluations.
308 Utility energy efficiency programs undergo independent third-party evaluations to
309 determine a net-to-gross ratio that measures the portion of participation that would not
310 have occurred but for the program. Evaluators apply this ratio to energy savings to
311 determine what portion of those savings can be directly attributable to the utility program,
312 often referred to as net savings.¹⁹ As with customer adoption of energy efficiency
313 measures, EV adoption is driven by a number of factors beyond the presence of charging
314 stations or vehicle subsidies, including an individual’s environmental consciousness,
315 available on-site charging locations, saving money on ongoing fuel costs, vehicle
316 performance, vehicle availability, and technology considerations.²⁰

317 **Q. What have free ridership studies found in other states?**

¹⁹ National Renewable Energy Laboratory (“NREL”). 2014. *The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measure. Chapter 17. Estimating Net Savings: Common Practices.*

²⁰ NREL, Mark Singer, *Consumer Views on Plug-in Electric Vehicles*, January 2016, p. 15.

318 A. A recent study examining the cost-effectiveness of the Massachusetts Offers Rebates for
319 Electric Vehicles (“MOR-EV”) program found high free ridership levels for customers
320 receiving the MOR-EV rebate. The study determined an average free ridership rate of 57
321 percent for program years 2014 to 2020.²¹ This means that more than half of the program
322 participants would have purchased a new EV without the MOR-EV rebate. Another
323 important finding of this study was that free-ridership levels increased with the price of
324 the EV. The study found that approximately 40 percent of program participants who
325 purchased a vehicle with a price of up to \$20,000 were free riders whereas more than 80
326 percent of participants who purchased a vehicle with a price of \$100,000 or more were
327 free riders.²²

328 **Q. Is your opinion that an EV rebate in Illinois would have similar issues with free**
329 **ridership?**

330 A. Depending on the design of the program, yes. This is in part due to where Illinois is on
331 the EV adoption curve. In the early stages of EV adoption, market participants tend to be
332 wealthier and do not rely on rebates to motivate purchases. For example, participants in
333 the MOR-EV program had a median household income that exceeded the statewide
334 median income. In addition, 65 percent of participants responded as having post-graduate
335 degrees.²³ Conversely, only 9 percent of the rebates went to lower-income ZIP codes.²⁴

²¹ *Massachusetts Offers Rebates for Electric Vehicles (MOR-EV) Cost-Effectiveness Study*. 2022. Prepared for the Massachusetts Department of Energy Resources. At 16. Available at: <https://www.synapse-energy.com/sites/default/files/MOR-EV%20Cost%20Effectiveness%20Study%20FINAL%2002-25-2022.pdf>.

²² *Id.* at 17.

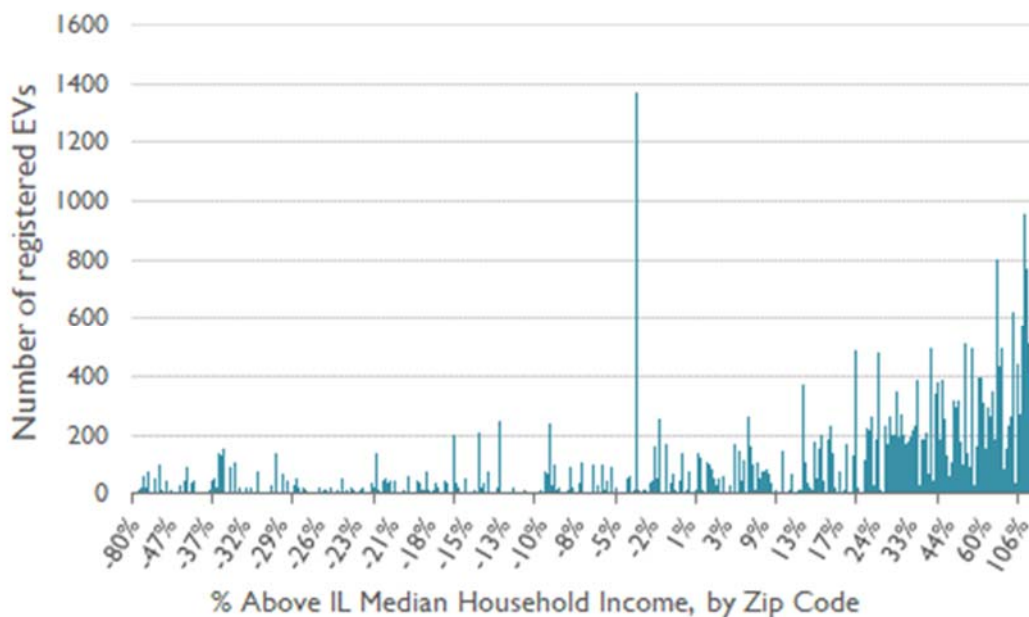
²³ Center for Sustainable Energy. 2018. MOR-EV Year Three Report (July 2016 – October 2017). Submitted to Massachusetts Department of Energy Resources.

²⁴ MilNeil, C. 2021. *Analysis: Bay State’s EV Rebate Program Overwhelmingly Benefits Wealthy Suburbanites*. Available at: <https://mass.streetsblog.org/2021/02/18/analysis-bay-states-ev-rebate-program-overwhelmingly-benefits-wealthy-suburbanites/>.

336 Similar findings are seen in California where free ridership rates have ranged from 43
337 percent to 54 percent for participants in its Clean Vehicle Rebate Project.²⁵

338 Given that adoption of EVs is currently at a nascent stage in Illinois, it is likely that a
339 similar demographic is purchasing EVs in the State and a similar range of free ridership
340 exists. Indeed, an examination of the number of registered EVs by median household
341 income in Illinois found that the majority of EVs are registered in zip codes with a greater
342 than average median income as shown below in Figure 1.

343 **Figure 1. Number of Registered EVs in Illinois by % Above IL Median Household Income²⁶**



344 Sources: U.S. Census Bureau. "Median Household Income in the Past 12 Months." 2020 American
345 Community Survey. Available at: <https://data.census.gov/cedsci/>
346 Department of Vehicle Services, Illinois Secretary of State. "Electric Vehicle Counts by County."
347 September 2022. Available at: <https://www.ilsos.gov/departments/vehicles/statistics/electric/home.html>.
348
349

²⁵ California Clean Vehicle Rebate Project. EV Consumer Survey Dashboard. Available at: <https://cleanvehiclerebate.org/eng/survey-dashboard/ev>.

²⁶ The 60018 zip code contains a higher-than-expected registered EV count (1,372), likely due to its location adjacent to O'Hare International Airport with its Green Vehicles program. Available at: <https://www.flychicago.com/community/environment/greenvehicles/pages/default.aspx>.

350 **Q. Please explain why ComEd’s proposed vehicle rebates will lead to higher free-**
351 **ridership levels.**

352 A. As indicated above, free ridership is found to increase for higher priced EVs. While
353 ComEd plans to differentiate passenger vehicle rebate levels between non-LI and LI,
354 Environmental Justice (“EJ”), and Restore, Reinvest, Renew (“R3”) communities, it has
355 no intention of offering different rebate levels based on the type of vehicle or the vehicle
356 model, including high-priced EVs.²⁷ This is concerning because a customer purchasing a
357 \$100,000 Tesla or electric Porsche would still be eligible to receive a vehicle rebate
358 under ComEd’s proposed program.

359 The Company states it does not plan to exclude certain vehicles from rebate eligibility
360 because both lower-priced and higher-priced EVs can provide the benefits of
361 electrification.²⁸ This logic is flawed and represents irresponsible program design. While
362 it is true that EVs at various price points provide benefits of electrification, that does not
363 mean that it is prudent for ratepayers to fund rebates going towards higher priced and
364 luxury EV models. In designing its rebate program, the Company should consider at what
365 point a rebate is needed to incentivize a customer to purchase that vehicle.

366 **Q. What is the main purpose of ComEd’s proposed vehicle rebates?**

367 A. The Company indicates that the vehicle rebates will help to address the cost disparity
368 between EVs and internal combustion engine (“ICE”) vehicles.²⁹ Specific to LI

²⁷ ComEd response to AG 2.04(c) and (g).

²⁸ *Id.* at 2.04(g).

²⁹ ComEd Ex. 1.01 at 34.

369 customers and EJ/R3 communities, the Company indicates that the enhanced EV rebate
370 will address the financial barriers to new and used EV ownership in those communities.³⁰

371 **Q. Are the proposed rebate levels appropriate given available state and federal**
372 **incentives and the current cost disparity between EVs and ICE vehicles??**

373 A. No, they are not. We are concerned that passenger rebate levels are too high compared to
374 the incremental cost of an EV compared to an ICE vehicle. This is exacerbated when the
375 customer also accesses available state and federal incentives.

376 The Company indicates that its proposed \$4,000 passenger EV rebate is equivalent to
377 approximately 96 percent of this estimated incremental purchase cost of an EV compared
378 to an ICE. The \$6,000 rebate available to LI/EJ/R3 customers and communities is
379 equivalent to approximately 144 percent of this estimated incremental purchase cost.³¹

380 There is little justification for these levels. ComEd states it did not model these rebates
381 after another program, and it is therefore unclear if the Company studied what level of
382 rebate is effective at driving EV adoption or the basis for the amounts it proposes to
383 offer.³²

384 The fact that these rebates are intended to cover roughly all of the incremental cost, at a
385 minimum, without consideration of state and federal incentives, will lead to situations
386 where ratepayer funds create windfalls for program participants. For example, Illinois has
387 an existing Electric Vehicle Rebate Program that is starting a second rebate cycle on
388 November 1, 2022. Under this program, an Illinois resident that purchases a new or used

³⁰ ComEd Ex. 2.0 at 13:244–247.

³¹ ComEd response to AG 2.05(a) and (b).

³² *Id.* at 2.05(d).

389 EV can receive a \$4,000 rebate.³³ As stated above, ComEd indicated that a \$4,000 rebate
390 covers approximately 96 percent of the incremental cost of the EV. This means if the
391 customer receives the Illinois Electric Vehicle Rebate of \$4,000, this rebate will cover all
392 but 4 percent of the incremental cost between an EV and an ICE. If this customer then
393 receives an additional \$4,000 rebate from ComEd, ratepayer dollars would then be used
394 to cover costs unrelated to the price difference for that EV, thus creating a windfall to
395 customers, even before accounting for the federal tax credit.

396 **Q. Does ComEd's proposed vehicle rebate levels account for recent price declines in**
397 **EVs?**

398 A. That is unclear. Regardless of the existence of federal and state incentives, ComEd's
399 proposed vehicle rebate levels appear high in comparison to the cost of EVs. For
400 example, a recent survey of EV manufacturers' suggested retail prices indicates that the
401 Nisan Leaf has a base price of \$27,400. After accounting for destination charges and the
402 federal tax credit, the net price is \$20,875.³⁴ After the Illinois EV rebate, the cost of the
403 Leaf would decrease to \$16,875. This is well within the price range of a traditional ICE
404 vehicle.³⁵ The same is true for vehicles that no longer qualify for the federal tax credit.
405 Starting in 2023, Chevy Bolt EV prices will start at \$25,600 without any incentive.³⁶ This

³³ Illinois Electric Vehicle Program website: <https://www2.illinois.gov/epa/topics/ceja/Pages/Electric-Vehicle-Rebates.aspx>.

³⁴ Inside EVs. US Electric Car Prices: Cheapest to Most Expensive. Feb 7, 2022. Available at: <https://insideevs.com/news/565883/electric-car-prices-us-20220207/>.

³⁵ ComEd indicates that a light-duty passenger ICE vehicle will have a total cost of \$28,794. ComEd response to AG 2.07_Attach 1, Tab: LD Car Purchase Diff.

³⁶Dow, Jameson. 2023 Chevy Bolt EV and EUV get \$6,000 price cut, start at \$25,600. June, 1, 2022. Available at: <https://electrek.co/2022/06/01/2023-chevy-bolt-ev-and-euv-get-6000-price-cut-start-at-25600/>.

406 is already lower than ComEd's estimated cost of \$28,794 for a light duty passenger ICE
407 vehicle.³⁷

408 **Q. What about vehicle rebates for LI customers?**

409 A. Rebates for vehicles for LI/EJ/R3 customers will not have the same issue of free ridership
410 due to the larger impact of the higher upfront cost of an EV on this customer segment.
411 However, it is not clear that vehicle rebates are the best means to target this sector.

412 ComEd has not provided justification for why vehicle rebates are the best way to provide
413 benefits to LI customers. The Company did not calculate or estimate the number of LI
414 customers in the ComEd service territory that own or lease a vehicle.³⁸ It is also unclear
415 what specific outreach ComEd did to understand the needs of this community. In
416 response to discovery asking which local community organizations representing LI/EJ/R3
417 communities ComEd met with as part of developing its BE Plan, the Company would not
418 answer and only indicated it was an active participant in the ICC Beneficial
419 Electrification workshops.³⁹ It is unclear how many LI customers will seek to participate
420 in ComEd's vehicle rebate program. This can lead to cross-subsidization where LI
421 customers are helping to fund the purchase of EVs by non-LI customers, when they are
422 not able to take advantage of these rebates themselves.

423 **Q. Do you have recommendations for additional LI offerings beyond vehicle rebates?**

424 A. Yes. Higher upfront costs are only one of the barriers LI customers face in benefiting
425 from the electrification of the transportation sector. Studies have shown that over 50

³⁷ ComEd response to AG 2.07 Attach 1, Tab: LD Car Purchase Diff.

³⁸ ComEd response to AG 2.04(h) and (i).

³⁹ *Id.* at 2.04(j).

426 percent of households living in poverty do not have access to a vehicle at least some of
427 the time and over 25 percent of households earning less than \$25,000 per year do not
428 have a car.⁴⁰ It is important that ComEd meet with local organizations serving LI/EJ/R3
429 communities as well as relevant state agencies to determine what program models these
430 communities will utilize. Depending on levels of car ownership, it may be more
431 beneficial to support the electrification of public transit and school buses serving these
432 communities, or fleets and yard trucks located in or near communities disproportionately
433 affected by vehicle emissions.

434 **Charger Rebate Levels Should Be Reduced**

435 **Q. What are your concerns with ComEd’s proposed rebates for charging**
436 **infrastructure?**

437 **A.** A key concern with the proposed rebates for charging infrastructure is their high cost,
438 especially compared to the rebates of other IOUs.

439 In the residential sector, ComEd proposes to provide customers with a rebate of up to
440 \$2,500 for non-LI customers and up to \$3,750 for LI/EJ/R3 customers.⁴¹ Based on the
441 IOU programs we reviewed, as discussed earlier in this section, ComEd’s proposed
442 rebate levels are high in comparison. We found that only three of the IOUs, Portland
443 General Electric (“PGE”), Connecticut Light & Power (“CL&P”), and Public Service,
444 offer rebates for residential chargers and their rebate levels are substantially lower than
445 those proposed by ComEd. All three of these IOUs have a \$500 rebate level for non-LI

⁴⁰ International Council on Clean Transportation (ICCT). 2021. *When might lower-income drivers benefit from electric vehicles? Quantifying the economic equity implications of electric vehicle adoption.* Gordon et al. at 17.

⁴¹ ComEd Ex. 1.01 at 34.

446 residential customers and LI rebates range from a low of \$500 for CL&P up to \$1,300 for
447 Public Service.⁴²

448 Aside from the high cost of these rebates, we are also concerned that ComEd's charging
449 infrastructure rebate program does not address free-ridership issues. The installation of
450 chargers is likely to come with the same free-ridership problems described above where
451 customers who already planned on installing a charger would be subsidized under
452 ComEd's proposal. Further, the program does not consider the utility of Level 1 charging,
453 which will be sufficient for a substantial number of residential customers. While Level 1
454 is the slowest method of charging, it is sufficient for drivers who charge overnight and
455 travel 30-40 miles per day.⁴³ Here, however, ComEd's residential charging infrastructure
456 rebate seemingly allows customers to also seek a rebate on the installation of Level 2
457 chargers, even though the electrical upgrade costs associated with the installation of these
458 chargers can increase the total cost of charger installation to upwards of \$4,500.⁴⁴ The
459 Company has not justified the need for these chargers, nor has it has identified how many
460 customers would adopt an EV due to a rebate that subsidizes Level 2 chargers.

⁴² For PGE: Oregon Public Utilities Commission, Advice No. 20-18. Available at:

<https://edocs.puc.state.or.us/efdocs/UBF/adv1151ubf113615.pdf>.

For CL&P: Connecticut Public Utilities Regulatory Authority, Final Decision 21-08-06. Available at:

[https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/372233877774b222852587ac005e47c2/\\$FILE/210806-121521.pdf](https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/372233877774b222852587ac005e47c2/$FILE/210806-121521.pdf).

For Public Service: Colorado Public Utilities Commission. 20A-0204E Public Service Company of Colo - Trans Electrification Plan. Available at:

https://www.dora.state.co.us/pls/efi/EFI.Show_Filing?p_session_id=&p_fil=G_774601.

⁴³ Drive Clean CA. Available at: <https://driveclean.ca.gov/electric-car-charging>. Accessed on 9/14/22.

⁴⁴ Kelley Blue Book. An EV Charger Buying Guide: See All Your Options. Available at: <https://www.kbb.com/car-advice/ev-charger-buying-guide/>. Accessed on 9/14/22.

461 Finally, we are also concerned about conditioning the receipt of the charging
462 infrastructure rebate on participation in Rate BESH (Basic Electric Service Hourly
463 Pricing) for at least three years.⁴⁵ ComEd currently operates a TOU rate pilot program
464 through its Rate RTOUPP (Residential Time-of-Use Pilot Program) approved in ICC
465 Docket No. 18-1725. A compliance filing from spring of 2022 showed that of the 102
466 low-income customers in the pilot, “six have saved \$258.53 cumulatively overall and 96
467 have lost a cumulative \$6,709.01” since June 2020.⁴⁶ Thus, LI customers have lost a
468 substantial amount of money by participating in this pilot program.

469 **Rebates – Statutory Limitations**

470 **Q. Aside from these policy issues, do you have any other concerns with ComEd’s**
471 **proposed rebates?**

472 A. We have been advised by counsel that several of ComEd’s rebate programs may not be
473 authorized or consistent with the Act. While we are not lawyers, we understand that Staff
474 recently filed a motion in this proceeding that asserted that ComEd’s BE Plan cannot
475 include rebates for passenger EVs or for public and private organizations and companies
476 that install and maintain EV charging infrastructure because the Illinois General
477 Assembly granted the authority to administer these specific types of rebates to the Illinois
478 Environmental Protection Agency.

479 **Recommended BE Plan Improvements**

480 **Q. What is your recommendation regarding ComEd’s proposed rebates?**

⁴⁵ ComEd Ex. 2.0 at 15:265–271.

⁴⁶ *Commonwealth Edison Company, Verified Petition for Approval of a Revision to Integrated Distribution Company Implementation Plan*, ICC Docket No. 18-1725, Residential Time-of-Day Pricing Pilot Semi-Annual Compliance Filing #4 at 21 (Apr. 12, 2022).

481 A. Illinois has ambitious goals related to electrification of the transportation sector and
482 reductions in greenhouse gas emissions. However, this goal should be met through all
483 levels of the government and the private sector, not just through utilities. While utilities
484 have a role to play in electrification, it should be done in a manner that creates
485 incremental benefits to what is already occurring in the market while limiting the cost to
486 ratepayers. We therefore recommend that the Commission account for state and federal
487 incentives when determining whether to approve rebates to ComEd customers and in
488 setting the level of those rebates. Responsible program design should account for a
489 review of other utility rebate levels, existing evaluations, and the potential for free
490 ridership. It is important that ratepayer dollars be used to create benefits that are truly
491 incremental to what would have occurred without ComEd's programs.

492 One way to ensure that ComEd's programs are truly incremental and create additional
493 benefits is to have the Company focus its BE Plan programs on make-ready work and
494 rate design. These are programs that are within the traditional role of the utility, will not
495 be redundant with external funding sources or programs, and will not result in free
496 ridership. These programs are in line with the primary responsibility of ComEd, which is
497 to provide reasonably priced and reliable electricity service to its customers and will help
498 to ensure that the increased adoption of EVs does not negatively impact the distribution
499 system.

500 We also recommend that in the event the ICC approves ComEd's proposed rebates for
501 charging infrastructure that the Company not require LI/EJ/R3 customers to participate in
502 Rate BESH to receive the rebate.

503 **VI. PROPOSAL FOR NON-TRANSPORTATION ELECTRIFICATION PROGRAMS**
504 **SHOULD BE REJECTED**

505 **Regulatory Background**

506 **Q. What is the current statutory authority for the delivery of non-transportation**
507 **electrification measures and programs?**

508 A. The existing authority for ComEd to deliver non-transportation electrification measures
509 and programs, or those unrelated to supporting adoption of EVs and EV related
510 infrastructure, is found in Section 8-103B of the Public Utilities Act. This section
511 mandates that electric delivery utilities develop EE and DR Plans.⁴⁷ In 2021, CEJA added
512 a new subsection to Section 8-103B authorizing electric utilities to begin offering and
513 promoting measures “that electrify space heating, water heating, cooling, drying,
514 cooking, industrial processes, and other building and industrial end uses that would
515 otherwise be served by combustion of fossil fuel at the premises, provided that the
516 electrification measures reduce total energy consumption at the premises” beginning in
517 2022.⁴⁸

518 CEJA imparts additional requirements related to building electrification. It limits the
519 savings a utility can count from electrification measures toward its annual total savings
520 goals at 5 percent per year from 2022-2025, 10 percent per year from 2026-2029, and 15
521 percent per year for 2030 and beyond.⁴⁹ In addition, CEJA requires that a utility must
522 provide a customer with an estimate of the impact of a new electrification measure on the

⁴⁷ 220 ILCS 5/8-103B.

⁴⁸ *Id.* at 5/8-103B(b-27).

⁴⁹ *Id.* at 5/8-103B(b-27)(1-3).

523 participating customer's average monthly electric bill and total annual energy expenses
524 prior to installing an electrification measure.⁵⁰

525 **Q. Did ComEd include electrification measures in its most recent EE and DR Plan?**

526 A. Yes. As part of its Revised 2022-2025 EE and DR Plan, the Company includes a suite of
527 electrification measures to the residential, income-eligible, business, and public sectors.
528 Eligible electrification measures include, but are not limited to, heat pumps, heat pump
529 water heaters, electric appliances, electric commercial cooking equipment, and forklifts.⁵¹

530 **Q. Does the Electric Vehicle Act authorize electric utilities to offer and promote non-**
531 **transportation electrification measures outside of EE and DR Plans?**

532 A. While we are not lawyers, our understanding is that the Electric Vehicle Act did not
533 authorize utilities to offer and promote electrification measures beyond what is included
534 in Section 8-103B of the Public Utilities Act, which pertains specifically to EE and DR
535 Plans.⁵²

536 Apart from Section 8-103B, CEJA's only other provisions related to electrification are
537 found in Section 45 of the Electric Vehicle Act. This section, which ComEd refers to as
538 the "Electric Vehicle Act,"⁵³ states that Illinois has a goal of increasing EV adoption and
539 requires electric utilities that serve more than 500,000 customers to file a BE Plan for
540 beneficial electrification programs to support the rapid deployment of EVs and make-

⁵⁰ *Id.* at 5/8-103B(b-27).

⁵¹ *Commonwealth Edison Company, Approval of the Energy Efficiency and Demand Response Plan Pursuant to Section 8-103B of the Public Utilities Act*, ICC Docket No. 21-0155, ComEd Ex. 1.01R at 65, 67, and 86 (Mar. 1, 2022).

⁵² 220 ILCS 5/8-103B(b-27).

⁵³ ComEd Ex. 1.0 at 2:34.

541 ready infrastructure statewide.⁵⁴ While there is language in the Electric Vehicle Act that
542 is not clearly defined and therefore could allude to other forms of electrification, such as
543 the provision that BE Plans must include “incentives for electrification in eligible
544 communities,”⁵⁵ it is clear that the purpose of the BE Plan is to electrify the transportation
545 sector.

546 It is the intent of the General Assembly to decrease reliance on
547 fossil fuels, reduce pollution **from the transportation sector**,
548 increase access to electrification for all consumers, and ensure that
549 **electric vehicle adoption** and increased electricity usage and
550 demand do not place significant additional burdens on the electric
551 system and create benefits for Illinois residents.⁵⁶

552 Furthermore, all the 10 requirements that utilities must address in their BE Plans, which
553 we summarized earlier in our testimony, pertain to electrification of the transportation
554 sector.⁵⁷

555 **Summary of ComEd’s Proposal**

556 **Q. Notwithstanding the language of the Electric Vehicle Act, does ComEd include a**
557 **proposal for non-transportation electrification measures in its BE Plan?**

558 **A.** Yes. The Company proposes a suite of building electrification measures through its BE
559 Technology Adoption Sub-programs and BE Infrastructure Readiness Sub-programs for
560 residential customers (including multifamily LI or located in EJ/R3 communities), C&I
561 customers, and the public sector. The BE Technology Adoption Sub-programs seek to
562 provide rebates for non-transportation electrification measures, whereas the BE

⁵⁴ 20 ILCS 627/45(a)(1) and (d).

⁵⁵ *Id.* at 627/45(b)(10).

⁵⁶ *Id.* at 627/45(a) (emphasis added).

⁵⁷ *Id.* at 627/45(d)(i-x).

563 Infrastructure Readiness Sub-programs would provide rebates to lower the cost of
 564 electrical infrastructure upgrades associated with non-transportation BE adoption.⁵⁸

565 Table 4, below, summarizes the proposed measures and annual budgets for these sub-
 566 programs. The Company states that it is still developing a measure list for its C&I and
 567 Public Sector Sub-program but indicates potential measures may include, but are not
 568 limited to, material handling equipment, industrial process technologies, and electric
 569 agricultural equipment.⁵⁹ While ComEd indicates that heat pump rebates will be
 570 primarily targeted to income-eligible multifamily properties,⁶⁰ we were unable to find a
 571 more granular breakout of how the budget would be allocated between multifamily and
 572 single-family households or between LI and non-LI customers.

573 **Table 4. Summary of ComEd’s Proposed Non-Transportation Electrification Sub-Programs**

Sub-program	Eligible Measures	Rebate Value	Annual Budget	Total Plan Budget
Residential BE Technology	Supplemental Rebates for High Efficiency Electric Heat Pumps	Up to \$3,000	\$2M	\$6M
	Electric Lawn Equipment	\$25-\$50 per unit	\$1M	\$3M
	Induction / Electric Cooktops	\$100-\$500 per unit		
	Electric / Heat Pump Clothes Dryers	\$50-\$200 per unit		
Residential BE Infrastructure Readiness	Residential BE Infrastructure	Up to \$750/res. unit, capped at \$5,000 for multi-family	\$1M	\$3M
C&I and Public Sector BE Technology Adoption	C&I BE Rebate Pool (Custom)	Custom	\$2M	\$6M

⁵⁸ ComEd Ex. 1.01 at 34–42.

⁵⁹ *Id.* at 41.

⁶⁰ ComEd response to AG 2.17(b).

C&I BE Infrastructure Readiness	High Efficiency Electric Forklift Infrastructure Rebate	Up to \$5,000/unit, capped at \$50,000/facility	\$4M	\$12M
	Small Business BE Infrastructure Rebate	Up to \$10,000/facility		
Total Budget			\$10M	\$30M

574 *Source: ComEd Ex. 1.01 at 34–42.*

575 **Q. How will these programs interact with the electrification offerings in the Company’s**
 576 **EE and DR Plan?**

577 A. The Company states there may be interaction between the electrification programs
 578 offered in its BE Plan and its EE and DR Plan. In response to discovery, ComEd provides
 579 specific examples of this interaction. First, it states that a customer could receive a rebate
 580 for a building electrification appliance through the EE and DR Plan and another rebate
 581 through its BE Plan for an electrification measure not incentivized under the EE and DR
 582 Plan, such as lawn equipment.⁶¹ The Company also states that a customer would be able
 583 to stack incentives for the same electrification measure incentivized by both the BE Plan
 584 and the EE and DR Plan, specifically mentioning residential and commercial heat
 585 pumps.⁶² ComEd further indicates that it plans to actively “co-promote all such rebates as
 586 bundled offerings that help the customer overcome barriers to adoption.”⁶³

587 **Q. How does the Company plan to count savings toward the goals it must reach**
 588 **through its EE and DR Plan in instances when rebates from that program and the**
 589 **BE Plan support a measure?**

590 ComEd states that it will count the savings resulting from electrification measures that
 591 receive a rebate from both its BE Plan and its EE and DR Plan towards its statutorily
 592 mandated cumulative persisting annual savings (“CPAS”) target and applicable annual

⁶¹ ComEd response to AG 2.16(a).
⁶² ComEd response to AG 2.14(b).
⁶³ ComEd response to AG 2.16(a).

593 incremental goal (“AAIG”) that it must achieve through the execution of its EE and DR
594 Plan.⁶⁴ In this manner, ComEd would be using BE Plan funds to help meet its CPAS and
595 AAIG goals.

596 **Q. How does the Company justify this stacking of incentives across the plans?**

597 A. The Company cites the high upfront costs of heat pumps as a primary reason for offering
598 stacked, or multiple, incentives. ComEd states that, while it is still setting incentive levels
599 for heat pumps for income-eligible properties within its EE and DR Plan, typically, the
600 rebate does not cover the full cost of large capital projects for multifamily property
601 owners.⁶⁵

602 ComEd also justifies this approach based on its “responsibility to its customers to meet
603 the statutory energy savings goals cost-effectively, leveraging additional funding sources,
604 where possible.”⁶⁶

605 Finally, the Company indicates that the approach of stacking incentives and claiming
606 savings within its EE and DR Plan is similar to how utilities leverage funding from the
607 Illinois Home Weatherization Assistance Program (“IHWAP”) to help fund LI energy
608 efficiency programs. ComEd further notes that in this situation the utilities claim all
609 resulting savings toward utility statutory goals.⁶⁷

610 **Q. Do you have concerns with this approach and the Company’s justification?**

⁶⁴ ComEd response to AG 2.14(b).

⁶⁵ ComEd response to AG 2.17(b).

⁶⁶ *Id.* at 2.17(a).

⁶⁷ *Id.*

611 A. Yes. We have several concerns. First, we strongly disagree that the Company’s proposal
612 to stack incentives is the same as leveraging IHWAP funds for its energy efficiency
613 programs. The IHWAP program is funded by the federal government, not ratepayers.
614 Within its EE and DR Plan, ComEd leverages federal funding for weatherization to
615 supplement its ratepayer-funded LI energy efficiency programs. In this case, the
616 leveraging of funds helps to meet statutory energy savings goals cost-effectively by
617 reducing the amount of funding required by ratepayers.

618 This is much different than what ComEd proposes in its BE Plan. Within its BE Plan, the
619 Company proposes to use, or to leverage, additional funding from ratepayers to
620 supplement the existing ratepayer-funded electrification programs within its EE and DR
621 Plan. ComEd then proposes to count the savings as if ComEd generated the savings with
622 only ratepayer funding from the EE and DR Plan.

623 While we are not lawyers, we understand that the Company stacking incentives in this
624 way may violate Section 8-103B(m) of the Act. For the 2022-2025 EE and DR Plan
625 cycle, the Act caps how much money ComEd can collect from ratepayers for energy
626 efficiency investments to accomplish its EE and DR Plan goals and directs that the
627 Company can spend no more than 4 percent “of the average amount paid per kilowatt
628 hour by residential eligible retail customers during calendar year 2015” on its plan in
629 each year.⁶⁸ It is our understanding that ComEd spends up to this limit in its EE and DR
630 Plan, thus meaning that if ComEd uses any additional ratepayer money to accomplish the

⁶⁸ 220 ILCS 5/8-103B(m).

631 goals in the EE and DR Plan, like spending from the BE Plan, this spend would exceed
632 the limitation included in the statute. This issue will be further described in briefs.

633 Relatedly, ComEd’s stacking of incentives may also increase the return it receives on its
634 energy efficiency investments. The Act allows ComEd to earn a return on its EE and DR
635 Plan spending with the exact amount of the return scaling based on how much energy
636 reduction the Company creates.⁶⁹ ComEd’s proposal would allow the Company to claim
637 the entirety of the additional savings generated by the BE Plan rebates, and thus a higher
638 return on its EE and DR Plan spending, by leveraging ratepayer funding outside of that
639 approved under Section 8-103B.

640 ComEd’s proposal to stack incentives is especially concerning given the fact that in ICC
641 Docket No. 21-0155, the Commission approved ComEd’s Revised 2022-2025 EE and
642 DR Plan that detailed the proposed budget, savings, costs (in \$/kWh), and cost-
643 effectiveness of electrification measures. Now, the Company requests additional funds
644 from ratepayers to meet the originally planned level of electrification without providing
645 any data on how this request will impact the cost of these measures or cost-effectiveness.
646 In response to discovery, the Company confirms it has not examined the cost-
647 effectiveness of stacking incentives, indicating it has not analyzed the “cost-effectiveness
648 of low-income building electrification measures assuming a customer uses a BE Plan
649 rebate and an EE and DR Plan rebate.”⁷⁰ In addition to this lack of analysis regarding the
650 cost-effectiveness and impact of stacking incentives, ComEd indicates it has not

⁶⁹ *Id.* at 5/8-103B(g)(7)(A).

⁷⁰ ComEd response to AG 2.17(f).

651 conducted any analysis that demonstrates multiple rebates are needed for heat pumps.⁷¹

652 The Company itself acknowledges that it has “only just begun offering [Energy
653 Efficiency Electrification] measures to income-eligible customers, and so it is too early to
654 say definitively if there will be difficulty in recruiting low-income customers to
655 participate in [these] measures through its EE and DR Plan.”⁷²

656 **Q. Did you identify other issues with the Company’s proposal for non-transportation**
657 **electrification measures?**

658 A. Yes, in addition to the issues noted above, we are concerned that the Company’s proposal
659 ignores important customer protections agreed to in the February 28, 2022 Revised
660 Stipulation Agreement (“Stipulation”) for ComEd’s Revised 2022-2025 EE and DR
661 Plan.⁷³

662 **Q. What customer protections were included in the Stipulation?**

663 A. In the Stipulation, ComEd agreed to only promote direct installation of income eligible
664 electrification measures “in applications for which all measure installations within each
665 home are collectively expected to lower total energy bills.”⁷⁴

666 **Q. Does the Company agree to commit to this Stipulation for income-eligible**
667 **electrification measures in its BE Plan?**

668 A. No, it does not. When asked in discovery if it will agree to not promote or offer rebates
669 for electrification measures to income-eligible customers under its BE Plan if the
670 installations within each home are collectively expected to increase total energy bills, the

⁷¹ ComEd response to AG 2.17(c).

⁷² *Id.* at 2.17(d).

⁷³ *Commonwealth Edison Company, Approval of the Energy Efficiency and Demand Response Plan Pursuant to Section 8-103B of the Public Utilities Act*, ICC Docket No. 21-0155, ComEd Ex. 1.02R (Mar. 1, 2022).

⁷⁴ *Id.* at 32.

671 Company did not respond with an affirmative “yes”. Instead, the Company responded
672 that it “intends to offer residential rebates to all customers and does not want to exclude
673 any customer groups from eligibility” and it “will make best efforts to make information
674 available to customers regarding anticipated energy bill impacts from relevant
675 electrification measures, so that they are empowered to make their own informed
676 decisions regarding program participation.”⁷⁵

677 This is problematic because the Stipulation was intended to add a layer of protection for
678 income-eligible customers that face higher-than-average energy burdens and are less
679 likely to be able to absorb any kind of increase in their monthly energy costs. Energy
680 burden is defined as the percentage of household income spent on energy bills. A high
681 energy burden is above 6 percent, while severe burden is above 10 percent. In 2020, the
682 median LI energy burden in the Chicago metropolitan area was 8 percent, with 20 percent
683 of Chicago households having a high energy burden and 10 percent having a severe
684 burden.⁷⁶

685 **Q. What is your recommendation regarding the Company’s proposed non-**
686 **transportation electrification measures?**

687 A. We recommend the Commission reject the Company’s proposed non-transportation
688 electrification measures. Within its BE Plan, the Company proposes to spend \$30 million
689 over three years on measures that address non-transportation electrification but are
690 already included in ComEd’s 2022-2025 EE and DR Plan. Further, the Company has not

⁷⁵ ComEd response to JHM 2.03.

⁷⁶ American Council for an Energy-Efficient Economy (“ACEEE”). September 2020. Energy Burdens in Chicago. Full report on energy burden available at: <https://www.aceee.org/energy-burden>.

691 sufficiently justified why ratepayers should fund stacked incentives for the same measure,
692 or why it should be allowed to claim the resulting savings as if ComEd accomplished its
693 CPAS and AAIG targets without any other ratepayer funding. Finally, the Company
694 ignores the prior Stipulation agreement for non-transportation electrification, which
695 includes important protections for income-eligible customers.

696 **VII. IMPACTS TO NON-PARTICIPANTS**

697 **Q. Please describe ComEd’s benefit-cost analysis and results.**

698 A. ComEd’s BCA compares the cost of its BE Plan to the four categories of benefits listed in
699 the Act: a reduction in other customer energy costs, net revenue from electric charging,
700 and the societal value of reduced carbon pollution and surface-level pollutants.⁷⁷
701 ComEd’s results indicate benefits greater than costs on a present value basis.⁷⁸ The
702 largest benefit according to ComEd’s analysis is avoided fuel (gasoline/diesel) costs,
703 which are benefits that accrue solely to program participants purchasing an EV. The
704 Company’s approach closely resembles the Total Resource Cost (“TRC”) test with a
705 societal benefit component, including a societal discount rate.⁷⁹

706 **Q. Do you have any concerns about this analysis?**

707 A. Yes. First, ComEd assumes 100 percent of participant EV adoption occurs solely due to
708 ratepayer subsidies provided through its BE Plan.⁸⁰ In other words, the Company assumes
709 there will be no free ridership. Based on our discussion for the high potential of free

⁷⁷ ComEd Ex. 3.0 at 5:92–98.

⁷⁸ *Id.* at 15.

⁷⁹ *Id.*

⁸⁰ ComEd Excel Workpaper “Witness Vogt_Benefit Cost Analysis”, tab “BE BCA Dashboard.” Shows all vehicles expected to participate in the program with no adjustment for free ridership.

710 ridership in Section 5, this is an unrealistic assumption. Due to the fact that other states
711 have seen free ridership rates upwards of 50 percent,⁸¹ the benefits included in ComEd’s
712 BCA are likely overstated. Therefore, the Company’s proposed programs and budgets
713 should be approached with a degree of caution.

714 In addition, the results of ComEd’s BCA do not adequately describe or measure non-
715 participant benefits. The statute states: “The Commission shall consider whether the
716 investments and other expenditures are designed and reasonably expected to: (1)
717 maximize total energy cost savings and rate reductions so that nonparticipants can
718 benefit.”⁸²

719 **Q. Does ComEd present a secondary BCA to demonstrate benefits of its programs to**
720 **non-participants?**

721 A. No. Unlike Ameren, ComEd does not include a ratepayer impact measure (“RIM”) test as
722 a secondary cost-effectiveness test to determine impacts to non-participants. This is a
723 helpful secondary analysis because the largest benefits in ComEd’s BCA are avoided fuel
724 costs, which do not accrue to non-participants. It is therefore important to determine how
725 non-participants (*i.e.*, non-EV drivers), who are funding the plan, will benefit from the
726 BE Plan.

727 **Q. How can you calculate the financial impacts of EV adoption on non-participants?**

728 A. From a financial perspective, non-participants can benefit from “downward pressure on
729 rates” caused by increased load. Essentially, this entails greater ability to spread fixed

⁸¹ MOR-EV Cost-Effectiveness Study and California Clean Vehicle Rebate Project. EV Consumer Survey Dashboard.

⁸² 20 ILCS 627/45(d)(1) (emphasis added).

730 costs over a larger number of kilowatt hours (in this case due to EV charging). This
731 benefit can be calculated by comparing the “net revenue” of EV charging, defined as the
732 revenue from incremental load less the marginal cost, to the cost of the BE Plan.

733 **Q. Has ComEd calculated net revenues generated by EV load and compared this figure**
734 **to BE Plan costs to determine the impact of the plan on rates?**

735 A. No. The Company interprets the “net revenue” portion of the Act’s description of
736 applicable benefits as “additional services provided through charging and discharging.”⁸³
737 While ComEd presents bill impacts, it does not compare the costs of its plan to net
738 revenues of all EV charging or revenues expected to be generated by its BE Plan. This
739 additional information must be evaluated to understand expected impacts on non-
740 participants, as discussed in the Act.

741 **Q. Please explain and provide the results of your analysis focusing on the financial**
742 **impacts of ComEd’s BE Plan.**

743 A. We conducted an analysis of net revenues from EV charging on an overall and annual
744 basis and compared these to the BE Plan’s revenue requirements. We conducted this first
745 at the plan level to compare the potential financial benefits of ComEd’s BE Plan to
746 forecasted revenue requirements. We also conducted an analysis comparing these
747 revenue requirements to all EV charging in ComEd’s service territory.

748 Our analysis incorporates assumptions used by ComEd in its BCA, such as vehicle
749 lifetime, battery efficiency, annual miles driven, and discount rate by vehicle type. The
750 analysis starts in 2025 because ComEd does not expect to recover revenue requirements

⁸³ ComEd Ex. 3.0 at 7:129–130.

751 associated with the BE Plan until that year⁸⁴ and we wish to compare the plan’s benefits
752 with costs. We incorporate benefits for the full life of the vehicles (12 years for light-duty
753 and 14 years for medium-heavy duty).⁸⁵

754 As shown in the figures below, analysis of the BE Plan alone shows non-participants will
755 not benefit financially from ComEd’s proposal as the costs far outweigh potential
756 benefits on a cumulative and annual basis. Incorporating the benefits of all EV charging
757 in the service territory associated with the BE Plan rebates and other programs, the
758 present value cost of the BE Plan through 2038 (representing the life of the vehicles) is
759 slightly less than the present value of net revenues from all cumulative EVs adopted from
760 2023-2025, according to our assumptions. However, when viewed on an annual basis, BE
761 Plan revenue requirements are expected to exceed net revenues from 2026-2029, again
762 calling into question the cost of ComEd’s proposal.

763 **Q. Please explain the analysis you conducted to compare net revenues to costs for**
764 **ComEd’s BE Plan.**

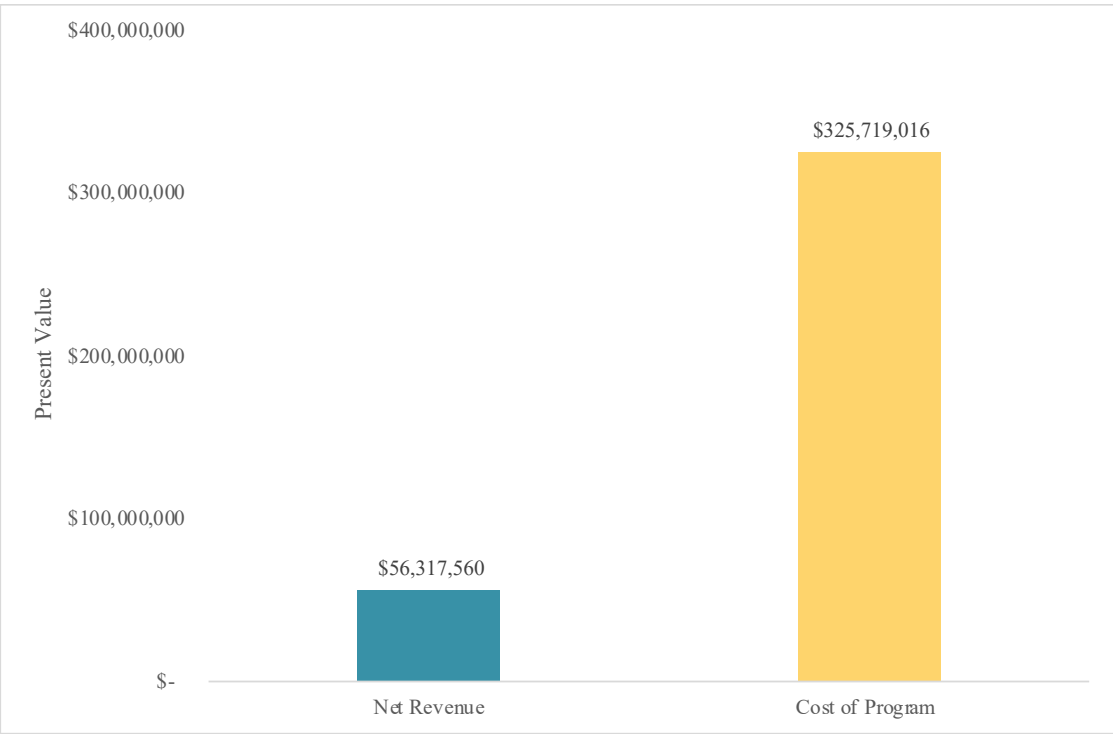
765 A. We compared the present value of the BE Plan’s annual revenue requirements as
766 proposed by ComEd to annual net revenues of all vehicles expected to participate in the

⁸⁴ This is due to the Company’s proposal to recover costs in Rider BE. 2023 costs would be collected through a filing to occur in April 2024, for approval in rates beginning January of the following year (2025). *See* ComEd Ex. 5.0 at 18:370–19:382.

⁸⁵ ComEd Excel Workpaper “Witness Vogt_Benefit Cost Analysis”, tab “Inputs.” The number of vehicles in ComEd’s BE Plan are provided in this workpaper, “BCA Dashboard” tab. Vehicle forecast for ComEd’s service territory for 2023-2025, we obtained the number of EVs from Office of Illinois Secretary of State through August 2022 and assumed one-third greater EV adoption to account for later 2022 sales. We then escalated this figure by the 2019-2021 annual average growth rate in Illinois through 2025 (39 percent) for each year from 2023-2025. Since Illinois data does not break out EV by vehicle type (medium-duty, heavy-duty, etc.) we obtained data on the number of electric busses in Illinois from a study. *See* CalStart, *Zeroing in on ZEBs*, 12/21. We rounded up from 88 to 100. This was then increased at the same rates as light-duty vehicles. Light-duty vehicles are assumed to charge on retail residential rates, while medium-duty and heavy-duty are assumed to charge on commercial rates, with the exception of light-duty fleet vehicles. Costs are the annual revenue requirement for the program on a present value basis from ComEd response to AG 2.01. Any additional assumptions can be found in our workpapers.

767 BE Plan, which runs from 2023-2025. Again, this assumes no free ridership. Rate
768 information was taken from ComEd’s BCA to estimate both retail rates and marginal
769 costs.⁸⁶ As discussed above, net revenue benefits were calculated for the full lifetime of
770 vehicles. The results of this analysis are shown in Figures 2 and 3 below in present values
771 terms on both a cumulative and annual basis.

772 **Figure 2. BE Plan Analysis Net Charging Revenues from 2025-2038 vs. 2023 BE Plan Costs from**
773 **2025-2035 (Total, Present Value), Plan Participants Only**

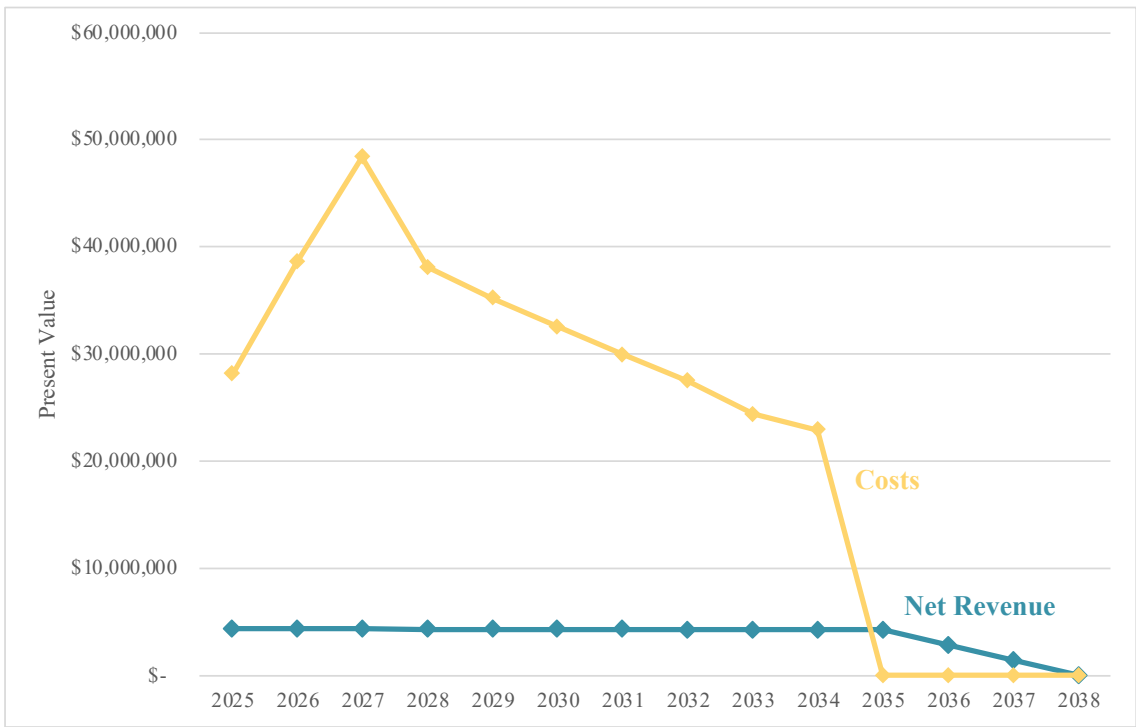


774

⁸⁶ Marginal costs are represented by energy and capacity costs provided in utility workpapers. See ComEd Excel Workpaper “Witness Vogt_Benefit Cost Analysis”, tab “Electricity Costs.”

775
 776

Figure 3. BE Plan Analysis: Net Annual Charging Revenues vs. Annual BE Plan Costs (Annual, Present Value), Plan Participants Only



777

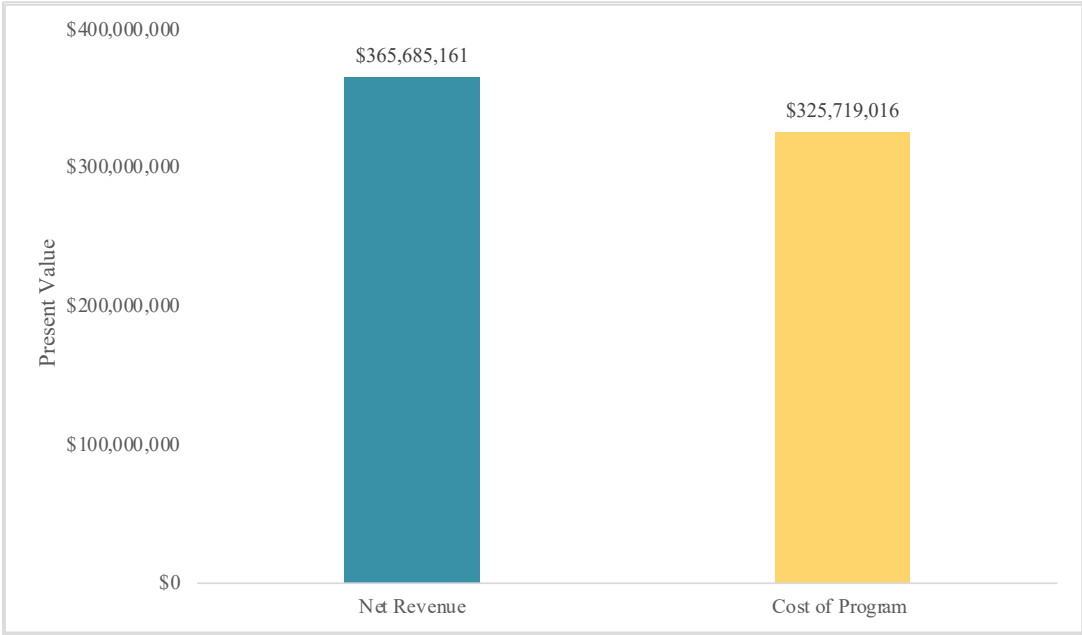
778 **Q. Did you also conduct a comparison of net revenues to program costs for all EV**
 779 **charging without regard to whether they participate in ComEd’s EV Plan?**

780 **A.** We compared the present value of the BE Plan’s annual revenue requirements as
 781 proposed by ComEd to annual net revenues of all EVs expected in ComEd’s service
 782 territory through 2025. Rate information was taken from ComEd’s BCA to estimate both
 783 retail rates and marginal costs.⁸⁷ We developed a total EV forecast by applying the
 784 average 2019-2021 growth rate to actual adoption figures from the State of Illinois.⁸⁸ The
 785 results of this analysis are shown below in present value terms on both a cumulative and
 786 annual basis.

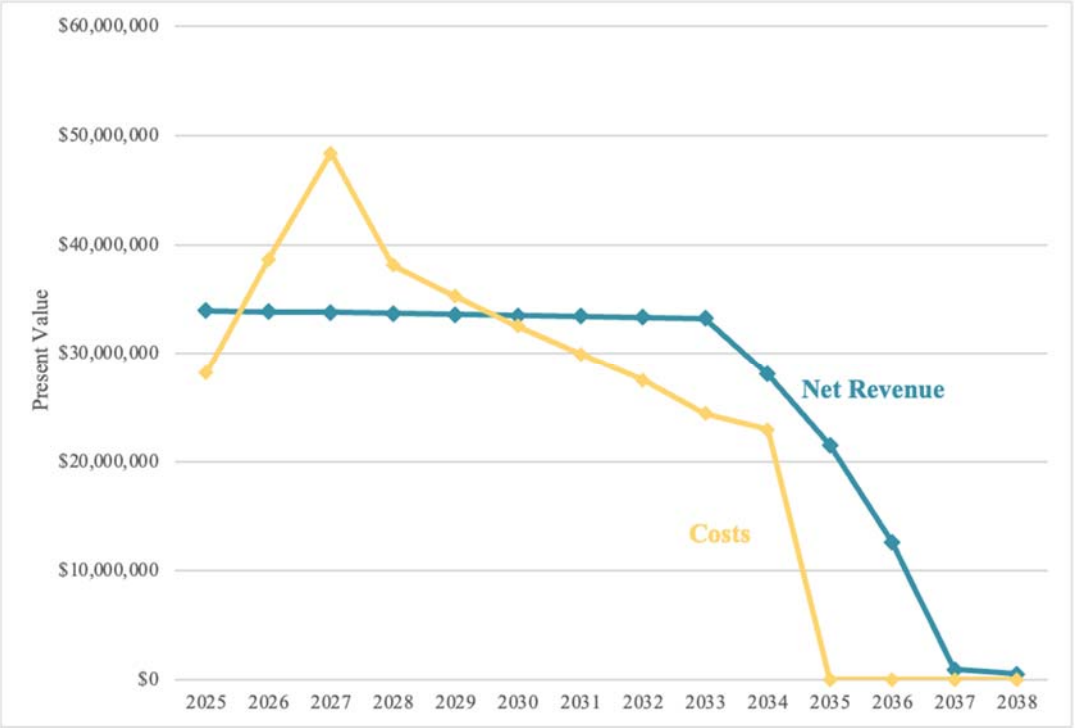
⁸⁷ Marginal costs are represented by energy and capacity costs provided in utility workpapers. *See id.*

⁸⁸ Office of Illinois Secretary of State (through August 2022), <https://www.ilsos.gov/departments/vehicles/statistics/electric/home.html>.

787 **Figure 4. All EVs in Service Territory: Analysis Net Charging Revenues vs. 2023 BE Plan Costs from**
788 **2025-2035 (Cumulative Total, Present Value)**



789 **Figure 5. All EVs in Service Territory Analysis: Net Charging Revenues vs. 2023 BE Plan Costs**
790 **(Annual, Present Value)**
791



792
793

794 **Q. What conclusions can you draw from these results?**

795 A. As Figures 2 and 3 show, the cost of ComEd’s 2023 BE Plan significantly outweighs
796 potential benefits on both a cumulative and an annual basis, based on anticipated plan
797 participation even assuming no free ridership occurs. Figures 4 and 5 show that when
798 total net revenues, or financial benefits from all EV charging in the service territory—not
799 just from EVs associated with the BE Plan—are considered, revenues are only slightly
800 larger than 2023 BE Plan costs on a present value basis. This indicates that the cost of
801 just the Company’s 2023 BE Plan proposal would eliminate most of the financial benefits
802 from the increased load of all EVs charging in the ComEd service territory based on the
803 number of EVs in the service territory as of the end of 2025, including these vehicles’
804 charging through 2038. Notably, from 2026-2029, costs exceed net revenues and
805 ratepayers would experience upward pressure on rates when comparing ComEd’s 2023
806 BE Plan costs to all EV charging *despite significantly increased EV adoption through*
807 *2025.*

808 **Q. What is a more reasonable annual budget?**

809 A. The Electric Vehicle Act includes a provision to limit the retail rate impact from the
810 development of EV infrastructure to 1 percent per year of the total annual revenue
811 requirements of the utility.⁸⁹ Counsel has advised us that Staff’s recently filed motion in
812 this proceeding applies this 1 percent limit to all of ComEd’s BE Plan spend. Under this
813 interpretation, ComEd’s BE Plan budget for 2023 would be approximately \$28 million,
814 or 1 percent of ComEd’s annual revenue requirement of \$2.86 billion requested for 2023

⁸⁹ 20 ILCS 627/45(g).

815 in its latest formula rate update proceeding.⁹⁰ This maximum BE Plan budget is more
816 consistent with other utilities and is appropriate to minimize ratepayer costs and ensure at
817 least some nonparticipant benefits from all EV charging over the BE Plan period.

818 **VIII. GRID BENEFICIAL CHARGING**

819 **Q. Should BE Plans promote grid beneficial charging?**

820 A. Yes, they should. This is a requirement of the Electric Vehicle Act and will help ensure
821 that programs are in the interest of all ratepayers. As EV adoption accelerates, generation
822 procurement costs and distribution related expenditures will be critical to ensure all
823 customers can benefit from EV adoption. This is recognized in the Act as a requirement
824 for the Commission to consider whether BE Plans are in the public interest, namely that
825 they “support the efficient and cost-effective use of the electric grid.”⁹¹

826 **Q. Please describe ComEd’s proposals to encourage grid beneficial charging from EVs.**

827 A. The Company’s primary proposal to encourage grid optimal charging is to require
828 residential participants to enroll in its hourly generation rate:

829 As a condition of receiving a Residential EV Charging
830 Infrastructure Sub-program rebate, ComEd requires that the
831 customer enrolls in ComEd’s Basic Electric Service Hourly pricing
832 program (Rate BESH) for at least three years. This requirement
833 will provide a strong incentive to ensure that the customer’s EV
834 charging occurs during off-peak hours. Hourly pricing provides the
835 clearest signal to a customer of the relative cost to the electric
836 system of charging at that time.⁹²
837

⁹⁰ See *Commonwealth Edison Company, Annual formula rate update and revenue requirement reconciliation under Section 16-108.5 of the Public Utilities Act*, ICC Docket No. 22-0302, ComEd Ex. 10.01, Sch. FR A-1, Line 23 (Sept. 12, 2022). This document reflects ComEd’s revenue requirement requested in its surrebuttal testimony and is subject to change pending a final order from the Commission.

⁹¹ 20 ILCS 627/45(d)(7).

⁹² ComEd Ex. 1.01 at 34.

838 ComEd also proposes a School Bus V2G pilot program to capture grid benefits. In
839 addition, the Company believes its Customer Education and Awareness program “will
840 help provide the customer with the information they need to choose the appropriate rate
841 tariff to match their EV charging needs.”⁹³

842 **Q. Are these programs and requirements sufficient to ensure grid beneficial charging**
843 **from EVs in ComEd’s service territory?**

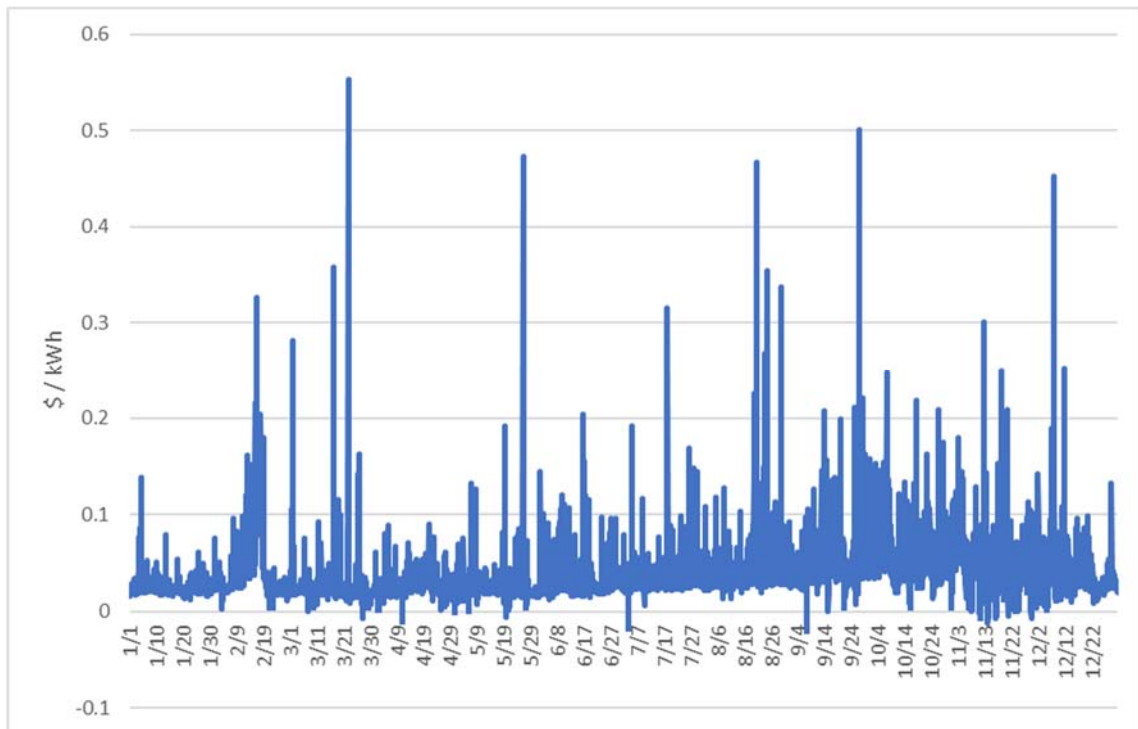
844 A. No, they are not. There are several areas where ComEd’s proposal either overlooks
845 fundamental aspects of how to enable cost-effective use of the electric grid or could be
846 improved to be more customer friendly. First, the Company does not adequately address
847 how to shift charging from times when *distribution* circuits experience peak load and
848 may therefore require costly grid upgrades that could otherwise be avoided. Second,
849 related to the first issue, the Company does not address the role of distribution planning
850 in enabling cost savings from grid beneficial charging behavior. Third, Rate BESH may
851 not be suitable for all customers, and in particular LI customers, due to significant price
852 volatility and the fact that it applies to all household load, not just the EV. Fourth,
853 ComEd’s proposal, being based on the generation component of retail rates, limits
854 consumer rate choice. And fifth, customers would only be subscribed to Rate BESH for
855 three years, putting into question long-term benefits from this proposal, even if it were
856 appropriate.

857 **Q. Please explain why Rate BESH does not adequately incentivize off-peak charging**
858 **related to distribution system peaks.**

⁹³ ComEd Ex. 3.0 at 19:375–378.

859 A. Rate BESH is an hourly dynamic rate meant to collect the generation or supply
860 component of retail rates from subscribing customers. The primary drivers are the PJM
861 locational marginal prices for the ComEd zone for the applicable hour, plus market
862 capacity charges and uncollectible factors.⁹⁴ Relatively high or low prices reflect
863 generation market conditions rather than an evaluation of peak times on distribution
864 circuits. The prices are volatile, with some extreme spikes in particular hours that can
865 occur in both winter and summer. This is shown in Figure 6 below.

866 **Figure 6. 2021 BESH Hourly Prices**



867 *Source: ComEd response to AG 3.07_Attach 3.*

867
868
869

⁹⁴ ComEd, *Rate BESH*, https://www.comed.com/SiteCollectionDocuments/MyAccount/MyBillUsage/CurrentRates/05_RateBESH.pdf; Ill. C. C. No. 10, 3rd Revised Sheet No. 29.

870 While ComEd objected to requests for distribution circuit peak data to compare historical
871 price data with historical peak loads on distribution circuits,⁹⁵ we have seen no evidence
872 to demonstrate this rate provides a consistent price signal to shift load off-peak relative to
873 distribution system historical peak load hours.

874 **Q. What do you recommend?**

875 A. ComEd should analyze its data on distribution peaks and develop distribution TOU rates
876 to offer its customers. These rates should encourage off-peak charging by identifying the
877 times by season when most circuits experience peak load. Offering a consistent
878 distribution price signal to customers to help avoid peak times on the distribution system
879 would reduce the need for upgrades and should become the default arrangement for EV
880 customers so that ratepayers can save on grid upgrades as this load grows. Adoption of
881 this TOU rate should not, however, be a requirement for LI customers at this time given
882 the relatively low penetration of EVs for these customers. While the rate may not be
883 available for program participants in 2023, it should be a requirement for non-LI
884 customers starting in 2024 once it is vetted by stakeholders and approved by the
885 Commission.

886 **Utility Distribution Planning**

887 **Q. Please describe what you mean by “utility distribution planning.”**

⁹⁵ ComEd response to AG 3.08.

888 A. Utility planning for its distribution system involves, among other aspects, peak load
889 forecasts at a circuit and substation level to determine the need for equipment and
890 substation upgrades.

891 **Q. Is this fundamental to realizing benefits from grid optimal charging behavior?**

892 A. Yes. While price signals, demand response, and other programs can all enable greater off-
893 peak charging, these will not actually save ratepayers money on capital upgrades unless
894 the utility incorporates these benefits in its modeling to minimize or avoid distribution
895 grid costs and investment.

896 **Q. Has ComEd recognized this in its BE Plan?**

897 A. No. Additionally, the Company objected to basic questions on the topic as “outside the
898 scope of the BE Plan.”⁹⁶ We disagree. The effect of the BE Plan on grid planning is
899 fundamental to realizing benefits from grid optimal EV charging.

900 **Q. What is your recommendation?**

901 A. The Commission should clarify that the distribution planning process is an integral part
902 of evaluating utility BE plans. ComEd should address both how its BE Plan affects
903 distribution costs and how its distribution planning process incorporates the benefits of its
904 BE Plan. In addition, it should quantify the expected value of these benefits in terms of
905 cost containment or reduction.

906 **Customer Acceptance**

907 **Q. Are there any customer acceptance issues related to Rate BESH?**

⁹⁶ ComEd response to AG 3.09.

908 A. The rate is highly volatile, as seen in Figure 6, which could introduce the potential for
909 rate and bill shock if customers are unable to shift load in certain hours. In addition, this
910 rate includes a monthly capacity charge that is based on the customer's peak usage in
911 certain hours in the previous year, although the precise hours and the charge are not
912 known until after the fact.⁹⁷ This volatility is exacerbated by the fact that the rate applies
913 to all household load, not just to the EV, as the Company has not introduced submetering
914 as part of its BE plan.⁹⁸ Combined, these features may make this rate highly unattractive
915 to some customers, whereby only those willing to pay attention to energy prices and to
916 modify their usage and behavior in response to pricing will participate in Rate BESH. As
917 described above, LI customers on a TOU rate have not realized savings from variable
918 prices⁹⁹ so it is likely that relatively wealthy customers, who are more likely to pay
919 attention to real-time rates and can absorb the volatility of pricing, will be the main
920 participants in Rate BESH. As applied to ComEd's Residential EV Charging
921 Infrastructure Sub-program, which awards rebates for charging infrastructure in exchange
922 for participation in Rate BESH, this would be an inequitable outcome and result in
923 ineffective programs, likely with high levels of free ridership.

924 **Q. Do ComEd customers currently have the option to participate in hourly supply**
925 **pricing?**

⁹⁷ ComEd, *What is the Capacity Charge?*, <https://hourlypricing.comed.com/faqs/?question=what-is-capacity-charge>.

⁹⁸ ComEd response to AG 3.15(d).

⁹⁹ *Commonwealth Edison Company, Verified Petition for Approval of a Revision to Integrated Distribution Company Implementation Plan*, ICC Docket No. 18-1725, Residential Time-of-Day Pricing Pilot Semi-Annual Compliance Filing #4 at 21 (Apr. 12, 2022).

926 A. Yes. The last report indicated that as of December 31, 2020, 38,829 customers out of 4.1
927 million customers participate in the program.¹⁰⁰ While the rate of participation has grown
928 over the years, it is still a tiny percentage of eligible customers.

929 **Duration of Rate Adoption and Competition**

930 **Q. For what period does ComEd require residential program participants to remain on**
931 **Rate BESH?**

932 A. The Company proposes participants in the residential EV charging infrastructure sub-
933 program must adopt ComEd's rate for at least three years.¹⁰¹

934 **Q. Do you have any concerns about this?**

935 A. Yes. Given that new EVs are expected to last more than 10 years,¹⁰² even if Rate BESH
936 was appropriate for most customers, the benefits may be extremely limited in contrast
937 with the lifetime of the vehicle. While this may lead one to conclude that participants
938 should be required to adopt the rate for longer, we believe this would be even more
939 inappropriate given the issues described above.

940 **Q. Are there any additional concerns you wish to raise?**

941 A. Yes. It is our understanding that Illinois has competitive options for electric supply,
942 including from alternative retail electric suppliers.¹⁰³ If customers are forced to adopt
943 ComEd's Rate BESH, this limits the customer's choice among alternative suppliers or

¹⁰⁰ *ComEd 2021 AMI Implementation Report* at Attachment 1, ATT 1-32, available at: <https://icc.illinois.gov/industry-reports/comed-advanced-metering-infrastructure>. As of the end of 2020, 975 customers identified as LIHEAP or PIPP recipients were on real time or hourly pricing. *Id.*

¹⁰¹ ComEd Ex. 1.01 at 34.

¹⁰² ComEd assumes 12 years in its BCA. See ComEd Excel Workpaper "Witness Vogt_Benefit Cost Analysis," "Inputs" tab.

¹⁰³ Citizens Utility Board, *What are my choices in the electricity market?* Available at: <https://www.citizensutilityboard.org/electriccompetitioncomed/>.

944 other retail rate options developed by ComEd that better suit customer needs and ensure
945 grid beneficial charging.

946 **Q. Given your testimony, what is your overall recommendation regarding Rate BESH**
947 **as ComEd’s primary measure to ensure grid-beneficial charging?**

948 A. Our concerns with Rate BESH illustrate that ComEd’s plan does not meet the intended
949 goals of the Act with regard to realizing benefits of grid beneficial charging. First, in
950 addition to Rate BESH, the Company could offer residential customers its “time of day”
951 rate option¹⁰⁴ for at least three years. As part of the BE Plan’s implementation, the
952 Company should be required to design and file TOU rate options for the generation and
953 distribution cost components of its rate that accurately reflect peak times and provide
954 appropriate cost signals to customers to allow for grid beneficial charging. This could
955 then become a requirement of enrolling in the program for 2024 and 2025 for non-LI
956 customers. Furthermore, the Company should put forth a clear plan to implement
957 submetering using networked Level 2 charging stations or vehicle telematics so that rates
958 can be applied to EV load and not whole house usage.¹⁰⁵ Lastly, ComEd should describe
959 its distribution planning practices and address whether these ensure grid beneficial
960 charging is incorporated into utility planning practices to avoid or defer distribution
961 capital expenditures.

962 **Q. Please explain why you recommend implementation of submetering, including how**
963 **this is related to TOU rates.**

¹⁰⁴ComEd, *Time-of-Day Pricing*,
<https://www.comed.com/WaysToSave/ForYourHome/Pages/TimeofDayPricing.aspx>.

¹⁰⁵ California has adopted submetering protocols for its utilities and continues to investigate use of vehicle telematics. California Public Utilities Commission, Decision Adopting Plug-in Electric Vehicle Submetering Protocol and Electric Vehicle Supply Equipment Communication Protocols, August 4, 2022. Available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M496/K405/496405751.PDF>.

964 A. Submetering is critical for ensuring an EV driver can reap the financial benefits of off-
965 peak charging with a TOU rate. Without segregating EV load from the rest of household
966 load, a customer who needs to run air-conditioning or other electric load during on-peak
967 hours, but still charges off-peak, may actually be worse off than if they were on a non
968 TOU rate.¹⁰⁶ Since EV adoption is expected to grow significantly and represents a very
969 flexible load that can easily be shifted off-peak for most drivers, it is imperative for
970 ComEd to get its submetering protocols in place to ensure grid beneficial charging.

971 **IX. REGULATORY ASSET**

972 **Q. Does ComEd propose any special ratemaking treatment for its BE Plan?**

973 A. Yes. ComEd proposes that 83 percent (\$83 million per year)¹⁰⁷ of its costs should be
974 treated as a “regulatory asset,” although most of the costs are for rebates for vehicles or
975 other expenditures that would normally be treated as O&M. Utilities generally collect
976 O&M expenses from ratepayers in the year those costs are incurred. From an accounting
977 perspective, ComEd’s proposal to include these costs in a regulatory asset means the
978 costs will be treated as capital expenditures, which will generate a rate of return—
979 including profit—and will incur taxes and other fees paid for by all ratepayers, despite
980 the fact that the Company will not own the related assets.

981 **Q. Why does the Company propose this accounting treatment?**

982 A. The Company states that “it is appropriate to amortize certain BE Plan costs for recovery
983 over ten years as a regulatory asset because these costs will translate into assets beneficial

¹⁰⁶ This depends on miles of driving, household load, and exact rate design.

¹⁰⁷ ComEd Ex. 4.0 at 9:154–155. The Company also requests to earn a return for O&M expenses amortized over two years which we do not address here.

984 to customers and having long useful lives.”¹⁰⁸ The Company states this accounting
985 treatment allows the “rate impact of [the] \$100 million investment [to] be smaller up
986 front and gradually increase over time instead of resulting in a sharp and substantial
987 increase in rates.”¹⁰⁹ According to the Company’s calculations, adoption of regulatory
988 asset treatment, rather than treating expenditures as O&M to be recovered in the year
989 they are spent, is expected to save residential ratepayers \$.21 to \$.32 cents per month
990 from 2025-2027, while increasing monthly expenditures from 2028-2032 by \$.12 to \$.15
991 per month.¹¹⁰ Commercial customers will similarly save in the short-term but pay more
992 over time.¹¹¹

993 **Q. Do you agree with the Company’s arguments that expenditures should be treated as**
994 **a regulatory asset? If not, why not?**

995 A. We do not agree that regulatory asset treatment in this case is in ratepayers’ interest.
996 While it is true that regulatory asset treatment allows upfront costs to be amortized over
997 time, which minimizes the upfront rate increase, it also means ratepayers pay more over
998 time. This approach is akin to only paying the minimum on a credit card balance. This
999 myopic view of affordability can land ratepayers in a troubling predicament over the long
1000 run, as BE Plan costs are not likely to be the only request for a rate increase by ComEd
1001 over the next ten years. In fact, ComEd has other costs that it amortizes over several

¹⁰⁸ *Id.* at 10:162–164.

¹⁰⁹ *Id.* at 10:176–180.

¹¹⁰ *Id.* at 12.

¹¹¹ *Id.* ComEd presents commercial customer impacts in \$/MWh terms rather than bill impacts.

1002 years, including its EE and DR Plan costs and its DG Rebate costs—both of which are
1003 increasing year-over-year as each annual cost is amortized.¹¹²

1004 Further, the Company’s logic regarding long-lived asset life is flawed. While rebates in
1005 this case will help spur vehicle or infrastructure investments that last a long period, a
1006 rebate is expensed in the *short-term* to offset *short-term expenses*. And unlike assets that
1007 the Company owns and maintains, ComEd will have no ownership or actual control over
1008 the EVs or charging infrastructure owned by customers who take advantage of the
1009 rebates. This means ratepayers could pay ComEd both for the vehicles or infrastructure
1010 rebates, while ComEd earns a profit on those rebates, despite the assets not providing any
1011 benefits to ratepayers or the grid.

1012 **Q. How much more would ratepayers pay under ComEd’s regulatory asset treatment**
1013 **proposal?**

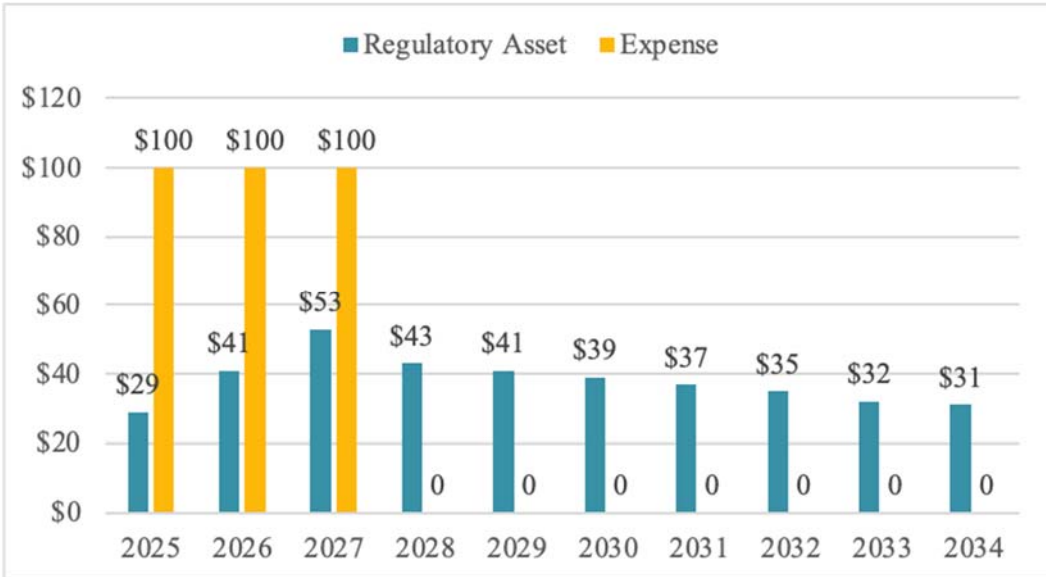
1014 A. As noted above, from a bill impact perspective, residential ratepayers will save in the
1015 short run but pay more overtime. In total, this amounts to \$381 million in expenditures
1016 under regulatory asset treatment compared with \$300 million if these costs were treated
1017 as an O&M expense.¹¹³ Figure 7 below compares the revenue requirement of regulatory
1018 asset treatment versus O&M expense.

¹¹² See Ill. C. C. No. 10, 3rd Revised Sheet No. 350 (DG Rebate).

¹¹³ Nominal dollars. ComEd response to AG 2.01 CORRECTED, Excel Attach 1. This amounts to an additional \$46 million on a present value basis using the long-term inflation rate from ComEd’s BCA (2.80%).

1019

Figure 7. Regulatory Asset vs. Expense Accounting Treatment Revenue Requirement (\$Millions)



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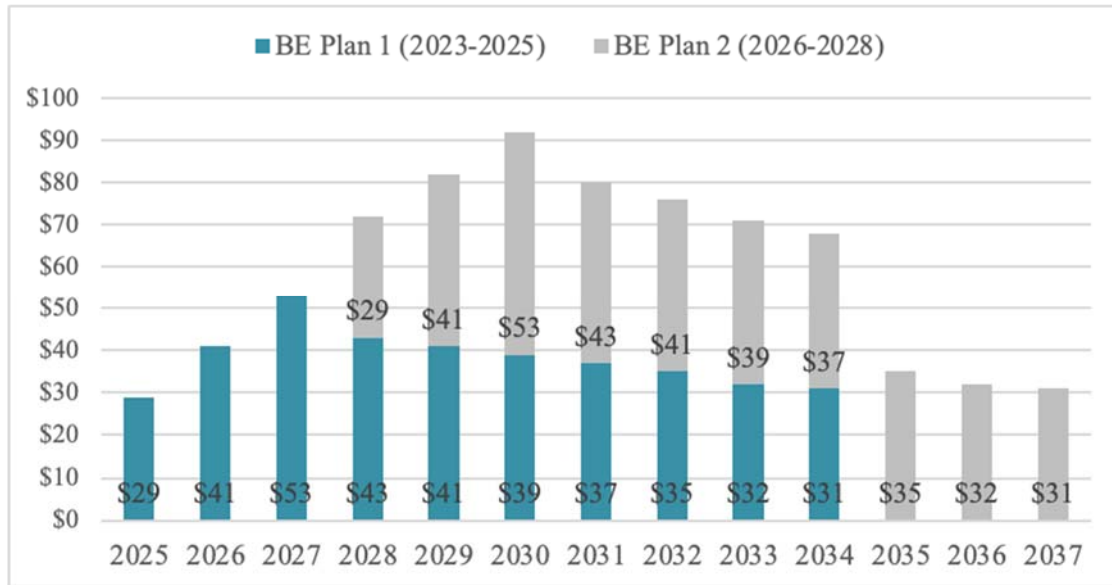
Source: Nominal figures. ComEd response to AG 2.01_Attach 1. Expense assumes \$100m in expense for each year over three years for illustrative purposes.

Q. Do you expect that there will be expenses for the BE Plan after this plan expires in 2026?

A. Yes. The Electric Vehicle Act calls for a BE Plan every three years. As a result, the cost to consumers can be expected to grow as each year’s expenses accumulate. This is illustrated below by assuming ComEd proposes the same costs in two years with the same cost recovery mechanisms as the BE Plan under consideration in this proceeding.

1030

Figure 8. Illustrative Future Cumulative Revenue Requirements (\$Millions)



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1032 **X. COST ALLOCATION**

1033 **Q. Please describe ComEd’s proposal regarding cost allocation for commercial**
 1034 **customers.**

1035 A. The Company proposes to create two new customer classes for commercial customers.
 1036 ComEd would allow customers to choose between a volumetric (\$/kWh) or demand
 1037 (\$/kW) based rate, depending on charging profiles. Costs for ComEd’s programs related
 1038 to commercial customers would be collected from these classes.¹¹⁴

1039 **Q. Do you have any concerns about this proposal?**

1040 A. First, we do not oppose several aspects of the proposal, such as allowing for volumetric
 1041 or demand-based rates. However, we are concerned with the creation of new *customer*
 1042 *classes* to enable these changes.

1043 **Q. Please describe the nature of your concern.**

¹¹⁴ ComEd Ex. 5.0 at 11:211–221.

1044 A. Primarily, EV charging patterns may differ from the load profile that applies to the rest of
1045 the commercial class which affects the calculation of non-coincident peak load related to
1046 the distribution system. This is problematic because, as ComEd develops TOU rates or
1047 other types of programs and rates to shift load off-peak, it should do so in a manner that
1048 benefits the *whole system*, not just the specific load profiles of the new classes. As
1049 ComEd explains, “each EV charging delivery class will establish its own non-coincident
1050 peak, which may or may not be at the same hours as that of other classes.”¹¹⁵

1051 **Q. What is your recommendation?**

1052 A. While other aspects of the proposal may be retained, the development of new classes
1053 appears to present more risk than potential benefit at this stage of EV adoption. We
1054 recommend the proposal to establish new rate classes be rejected, with other elements of
1055 the proposal such as cost allocation in proportion to approved subsidy amounts examined
1056 independently and determined on their merits.

1057 **XI. REPORTING AND EVALUATION IMPROVEMENTS**

1058 **Q. Does ComEd propose to report on its BE Plan each year?**

1059 A. Yes. The Company indicates that it will submit an annual report to the Commission. This
1060 report will include a summary of “aggregated information on the demographics of
1061 program and procurement applicants and beneficiaries.”¹¹⁶ It will also include
1062 information related to the diversity of vendors in hiring, contracting, and job training.¹¹⁷

¹¹⁵ ComEd response to AG 2.03(a).

¹¹⁶ ComEd Ex. 1.0 at 30:625–631.

¹¹⁷ *Id.*

1063 ComEd also proposes to report on several metrics related to the implementation of its
1064 residential, C&I, customer education, and pilot programs. These metrics include items
1065 like the total number of applications and rebates by program and sub-program,
1066 percentage of funding going to LI/EJ/R3 customers, total annual spending, and
1067 descriptions of activities undertaken during the year.¹¹⁸

1068 **Q. Do you find ComEd’s proposed reporting to be adequate?**

1069 A. No, we do not. While ComEd plans to comply with the data collection and reporting
1070 requirements of the Act in relation to its collection of demographic and geographic data
1071 for plan participants, vendor and employee diversity, and general information on
1072 applications and rebates, more should be done to increase transparency and track the
1073 resulting benefits of the BE Plan. As proposed by ComEd, there will be insufficient
1074 transparency and data collection to determine if ComEd’s plans are achieving the goals
1075 set forth in the Act. It is also not clear when the Company will report and track its
1076 progress in achieving the other purported benefits of its BE Plan related to reduced air
1077 emissions and off-peak EV charging.

1078 **Q. What is your recommendation to improve ComEd’s BE Plan reporting?**

1079 A. We recommend that in addition to its proposed reporting metrics, ComEd be required to
1080 track and include the following information related to its rate design options (EV
1081 Charging Delivery Classes and rate BESH):

- 1082 • Number of enrolled participants.
- 1083 • Average frequency of daily charging.

¹¹⁸ *Id.* at 30:632–34:707.

- 1084 • Average length of daily charging.
1085 • Timing of daily charging, including hourly breakdown.
1086 • Comparison of energy use profiles for customers enrolled in program-specific
1087 tariff/program to customers not enrolled.

1088 These additional reporting requirements will help to demonstrate the extent to which
1089 customers are responding to various program and rate signals. This will also provide data
1090 to calculate the benefits resulting from these various price signals.

1091 We also recommend that ComEd report on the estimated avoided air emissions resulting
1092 from its BE Plan.

1093 **Q. Does ComEd propose to conduct an evaluation of its BE Plan?**

1094 A. No. The Company does not indicate that it will conduct an evaluation of the programs
1095 included in its BE Plan.

1096 **Q. What is your recommendation regarding an evaluation of ComEd’s BE Plan?**

1097 A. ComEd should develop and propose an evaluation, measurement, and verification
1098 (“EM&V”) plan. This should include a proposed budget and timeline related to the
1099 procurement of an independent, third-party EM&V contractor to assess the performance
1100 of ComEd’s BE Plan and develop recommendations for plan updates. The contractor
1101 should have oversight from Staff.

1102 The EM&V activities should include, at a minimum, verification of the metrics described
1103 above; customer surveys to determine the extent to which ComEd’s programs increased
1104 EV adoption, charging behavior, and awareness of EVs; and net-to-gross evaluations to
1105 determine the levels of free ridership by program. These activities will help to provide

1106 important information as to whether the BE Plan is having the intended effect, and if
1107 changes to program design and incentive levels are needed in the future. ComEd should
1108 use this information to update the BCA models filed as part of this BE Plan. This will
1109 provide increased visibility as to whether the projected benefits of the BE Plan are
1110 actually realized and will help to refine inputs for future BE Plan cost-effectiveness filed
1111 with future BE Plan updates.

1112 **Q. Does this conclude your testimony?**

1113 **A.** Yes, it does.