

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON COMPANY	:	
	:	No. 13-0387
Tariff filing to present the Illinois Commerce	:	
Commission with an opportunity to consider	:	
revenue neutral tariff changes related to rate	:	
design authorized by subsection 16-108.5(e)	:	
of the Public Utilities Act.	:	

Surrebuttal Testimony of

PHILIP Q. HANSER

Principal,

The Brattle Group

On Behalf Of

Commonwealth Edison Company

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1 **I. INTRODUCTION**

2 **A. Witness Identification**

3 **Q. What is your name and business address?**

4 A. My name is Philip Q Hanser. My business address is 44 Brattle Street, Cambridge,
5 Massachusetts 02138.

6 **Q. By whom and in what position are you employed?**

7 A. I am a Principal at The Brattle Group. I am testifying on behalf of Commonwealth
8 Edison Company (“ComEd”) in this proceeding.

9 **Q. Are you the same Philip Q. Hanser that submitted rebuttal testimony in this
10 proceeding?**

11 A. Yes.

12 **B. Summary of Surrebuttal Testimony**

13 **Q. What is the purpose of your surrebuttal testimony?**

14 A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of City of
15 Chicago and Citizens Utility Board (“City/CUB”) witness Edward Bodmer and Illinois
16 Attorney General (“AG”) witness Scott Rubin.

17 **Q. In brief, what conclusions do you reach?**

18 A. Messrs. Bodmer and Rubin both reassert their view that ComEd should revert back to a
19 rate design in which most fixed and demand-related costs are recovered through a charge
20 that is a function of a customer’s monthly usage. They suggest that this approach better
21 satisfies well-established ratemaking principles than the modified straight fixed variable
22 (“SFV”) design that the Illinois Commerce Commission (“Commission” or “ICC”)

23 approved in Docket No. 10-0467, ComEd's 2010 rate case ("2010 Rate Case") and
24 further clarified in Docket No. 11-0721. These findings of Messrs. Bodmer and Rubin
25 are fundamentally flawed in several ways, as I discuss in this surrebuttal testimony.

26 Messrs. Bodmer and Rubin also assert that the ICC's approval of formula rates
27 has diminished the need for SFV pricing. I disagree with this assertion, as formula rates
28 do not address the key issues of economic efficiency and equity.

29 Additionally, Mr. Bodmer asserts that I am in support of ComEd's Commission-
30 approved SFV rate design because it discourages the adoption of solar power and energy
31 efficiency. This assertion is false and is a mischaracterization of my rebuttal testimony. I
32 support ComEd's Commission-approved SFV rate design because it moves closer to a
33 cost-based rate that is equitable and economically efficient. ComEd's SFV rate design
34 simply conveys the cost of delivering power to the consumer through accurate price
35 signals. It does not selectively discriminate against customers who install rooftop solar
36 panels or buy efficient appliances.

37 Finally, Mr. Bodmer reasserts his personal view that electricity usage and income
38 are strongly correlated. I provide evidence from a number of studies that have found that
39 the correlation between usage and income is very weak. Therefore, his view that a fixed
40 charge is essentially a tax on low income customers has no basis.

41 **C. Itemized Attachments**

42 **Q. Do you have exhibits attached to your surrebuttal testimony?**

43 **A. No.**

44 **II. STRAIGHT FIXED VARIABLE RATE DESIGN**

45 **Q. Mr. Rubin states that you have misinterpreted Dr. Bonbright's rate design**
46 **principles in your evaluation of ComEd's SFV rate and asserts that ComEd's rate**
47 **design is not cost-based. (AG Ex. 3.0, 11:221-12:261). Mr. Bodmer makes a similar**
48 **assertion. (City/CUB Exs. 2.0 5:104-6:129; Ex. 2.3, p. 6). Do you agree?**

49 **A.** No, I do not. A fundamental difference between my rebuttal testimony and that of
50 Messrs. Bodmer and Rubin is our opposing views on the cost basis for rate design. Much
51 of their rebuttal testimony is based on a basic misunderstanding of this issue.

52 Mr. Rubin's interpretation of Bonbright is that long run marginal costs – which
53 include “capital costs or capacity costs” - should be treated as variable costs. Mr.
54 Bodmer takes a similar stance, by proposing that these costs be recovered through a
55 charge that is tied to a customer's monthly usage. This may apply to generation capacity
56 costs that are driven largely by system peak demand (e.g. the cost of a new peaking unit).
57 The focus of this proceeding, however, is on delivery costs, which are only partly driven
58 by system peak demand, and only over a very long run time horizon that is not a
59 reasonable basis for recovering the costs through a volumetric charge. If ComEd's
60 customers in a given Chicago neighborhood were to collectively reduce their demand by,
61 say 10 percent, ComEd would not downsize the transformers and reconfigure the
62 substations that serve that neighborhood. Distribution system maintenance costs, and the
63 cost of repairs following an outage, would not decrease as a result of that reduction in
64 demand. There are basic practical considerations and industry standards that Mr. Bodmer
65 and Mr. Rubin ignore when characterizing these distribution costs as being variable costs.

66 For all practical purposes, these costs are considered to be fixed when designing rates,
67 whether on a marginal or fully allocated cost basis.

68 To illustrate, consider estimates of avoided costs that are associated with utility
69 demand response programs. These programs are designed to reduce system peak
70 demand. The business case for such programs is virtually always driven by avoided or
71 deferred future generation capacity investments and typically includes only a very modest
72 amount of avoided transmission and distribution capacity costs, if it is included at all.
73 While generation capacity costs might fall into the “long run” category of variable costs
74 to which Mr. Rubin is referring when citing Bonbright, distribution costs would not fall
75 into this category. Indeed, Bonbright takes some pains to distinguish the long run from
76 the *very* long run¹ in which the time horizon is so long that no costs are fixed because the
77 utility has the potential to replace all of its existing system.

78 When the initial edition of Bonbright was put to paper, the industry was vertically
79 integrated. The industry has been unbundled since Bonbright wrote his canon. Thus, Mr.
80 Rubin’s quote of Dr. Bonbright was not addressing the same nuanced issues that are at
81 the center of this proceeding, which are delivery focused. Further, Mr. Rubin has taken
82 Bonbright’s quote in isolation and has not considered it relative to his other principles,
83 which include bill and revenue stability, equity, and other important aspects of rate
84 design. Mr. Bodmer’s views are subject to the same weaknesses.

85 By the second edition of *Principles*, the insistence on long-run costs as the basis
86 for rate design is more nuanced. According to the text, “in short, asking us to pick

See Bonbright, James C. *Principles of Public Utility Rates* (New York: Columbia University Press, 1961) at p. 326.

87 between long-run and short-run marginal costs is like asking whether we find Kathleen
88 Turner or Cybil Shepherd more attractive.”² This highlights the deficiency in Mr.
89 Rubin’s and Mr. Bodmer’s arguments of solely appealing to Bonbright as justification for
90 their approach to rate design.

91 Finally, it is worth noting that the importance of the role of fixed charges has been
92 recognized by respected economists for decades. Nobel laureate R.H. Coase stressed the
93 importance of fixed charges in “The Marginal Cost Controversy.”³ According to Coase:

94 A consumer does not only have to decide whether to consume additional
95 units of a product; he has also to decide whether it is worth his while to
96 consume the product at all rather than spend his money in some other
97 direction. ... [T]he consumer should not only pay the costs of obtaining
98 additional units of product at the central market, he should also pay the
99 cost of carriage. How can this be brought about? The obvious answer is
100 that the consumer should be charged one sum to cover the cost of carriage
101 while for additional units he should be charged the cost of the goods at the
102 central market. We thus arrive at the conclusion that the form of pricing
103 which is appropriate is a multi-part pricing system (in the particular case
104 considered, a two-part pricing scheme), a type of pricing well known to
105 students of public utilities and which has often been advocated for just the
106 reasons which I have set out in this article.⁴

107 **Q. Mr. Bodmer states that your rebuttal testimony is in disagreement with ComEd’s**
108 **testimony about cost causation as the basis for rate design. (City/CUB Ex. 2.3, p. 7,**
109 **para. 2). Do you agree?**

110 **A.** No. There is total agreement between my rebuttal testimony and ComEd’s testimony.
111 Both ComEd and I agree that fixed costs should be recovered through fixed charges and
112 variable costs should be recovered through volumetric charges. Only a small portion of

See Bonbright, James C., Albert L. Danielsen, and David R. Kamerschen, *Principles of Public Utility Rates*, 2nd ed. (Arlington, VA: Public Utilities Reports, 1988) at p. 474.

³ R. H. Coase, “The Marginal Cost Controversy,” *Economica*, Vol 13, No 51, August 1946.

⁴ *Ibid*, page 173.

113 delivery costs can be attributed to month-to-month variability in energy consumption, and
114 it therefore is unreasonable to recover fixed charges through a charge that is a function of
115 customers' monthly energy consumption.

116 **Q. Mr. Bodmer claims that his rate proposal outperforms ICC approved ComEd rate**
117 **design on 8 of the 10 Bonbright principles. (City/CUB Ex. 2.3, p. 3-6). Do you**
118 **agree?**

119 **A.** No. Mr. Bodmer has misinterpreted the Bonbright principles when evaluating the rate
120 designs. As I discussed in my rebuttal testimony, the Bonbright principles can be
121 distilled to an updated relevant list of five key ratemaking criteria: economic efficiency,
122 equity, revenue adequacy/stability, bill stability, and customer choice/satisfaction.
123 ComEd's Commission-approved SFV rate significantly outperforms Mr. Bodmer's
124 proposal on each of these five criteria, as I summarize in Table 1.

125

Table 1: Evaluation of ComEd’s SFV Rate and City/CUB’s Proposed Rate Design

126

	ICC-Approved ComEd Rate Design	City/CUB Proposed Rate Design	Rate Design that Conforms Better to Principle
Economic efficiency	More accurately conveys the underlying cost of delivering power by collecting a larger portion of the fixed costs through fixed charges	Overcollects costs through charges that are a function of monthly consumption, thus providing a distorted price signal and encouraging sub-optimal investments	ComEd
Equity	Addresses cross-subsidies between customers by more accurately allocating costs to cost-causers	Undercollects from lower users of electricity the costs that they impose on the system	ComEd
Revenue adequacy/stability	Two-part SFV rate is simple for the utility to implement, and when fixed costs are recovered through fixed charges, there is an appropriate level of revenue adequacy and stability	19 tiers of fixed charges would be unnecessarily burdensome and complicated for ComEd to implement; collection of fixed costs through consumption-based charges subjects much of revenue to uncertainty associated with monthly consumption levels	ComEd
Bill stability	ComEd's SFV rate is predictable and the transition to SFV pricing has been made gradually	Overstatement of consumption-based charges would lead to excessive month-to-month bill variability; would additionally lead to large bill changes for many customers by reversing the ICC's 2010 approval of the transition to SFV pricing	ComEd
Customer choice/satisfaction	ComEd's customers are familiar with the simple two-part tariff design in its delivery service rate - it is simple and easy for customers to understand	The proposed dramatic change to the rate design would come as a shock to many customers; the 19 tiers of fixed charges would be unpredictable and difficult for customers to understand	ComEd

127

128 **Q. Messrs. Bodmer and Rubin both indicate that formula rates have been introduced**
 129 **since the ICC’s approval of SFV in 2010, and suggest that this addresses a primary**
 130 **reason for an SFV rate design, which they say is revenue stability. (City/CUB Ex.**
 131 **2.3, p. 3, para. 1; AG Ex. 3.0, 8:169–9:179). Do you agree with their view?**

132 A. No, I do not. The key reason for ComEd to have SFV pricing is for its rate design is to
133 accurately reflect its underlying delivery costs, as the ICC recognized in its 2010 Rate
134 Case Order.⁵ This is an important reason why SFV is needed. Otherwise, the rates will
135 create inequities through cross-subsidies among customers and provide economically
136 inefficient price signals.

137 Q. **Mr. Bodmer states that you support ComEd’s SFV rate design “because it**
138 **discourages solar power.” (City/CUB Ex. 2.3, p. 5). He also states that you agree**
139 **with “explicitly charging a ratepayer for making investments in alternative supply**
140 **resources or energy efficiency.” (City/CUB Ex. 2.3, p. 21, para. 4). Are these**
141 **statements true?**

142 A. No, this is a mischaracterization of my rebuttal testimony. I support rate design that is
143 simple, cost-based, and provides accurate price signals to all customers. Such a rate
144 design will be equitable and will provide customers with the right financial incentives to
145 invest in energy efficiency measures, distributed generation, rooftop solar panels, or any
146 other devices affecting their electricity consumption. As I have discussed above and in
147 my rebuttal testimony, ComEd’s SFV rate design satisfies these criteria and does not
148 selectively discriminate against customers who pursue these measures, as Mr. Bodmer
149 has implied in his rebuttal testimony.

150 If there is a desire to promote solar power or energy efficiency investment, that is
151 a policy issue and should be addressed outside of the rate design. This will avoid or at
152 least transparently address the issue of unintended subsidization of those who install solar

⁵ Order of the Illinois Commerce Commission in Commonwealth Edison’s Proposed General Increase in Electric Rates. Docket No. 10-0467. May 24, 2011.

153 (likely more affluent customers) by those who do not (likely less affluent customers), for
154 example.

155 Finally, it is worth repeating that we are only discussing ComEd's delivery
156 service charges. The supply charge is the aspect of the customer's rate that is most
157 relevant when considering incentives for pursuing energy efficiency or other behind-the-
158 meter investments, and that is not the focus of this proceeding.

159 **Q. Mr. Bodmer states that there is “a strong relationship between income and usage.”**
160 **(City/CUB Ex. 2.3, p. 24, para. 2). Do you agree with this statement?**

161 **A.** No, I do not. Several studies have looked at this exact issue and have found the
162 relationship between income and energy consumption to be weak. The following are
163 summaries of findings from three such studies to illustrate this point:

- 164 • A very recent study by the University of California (“UC”) at Davis Energy
165 Efficiency Center found that low users are a “demographically diverse
166 population.” It also explicitly states that “most low users are not poor” and finds
167 that “higher income households appear in the lowest [usage] category.”⁶
- 168 • A study by the Policy Studies Institute found very weak correlation between
169 usage and income: Specifically, “regression analysis... shows that the correlation
170 between energy use and household income is 0.171, so 17.1% of the variance in
171 energy use is related to variation in household income.” Further, “when
172 household incomes are adjusted for household size and composition... [t]he

⁶ Reuben Deumling, Alan Meier, “Exploring Very Low Energy Consumption Rates in Urban California Households,” UC Davis Energy Efficiency Center, prepared for California Air Resources Board Research Seminar, August 12, 2013. <http://www.arb.ca.gov/research/seminars/delmas/deumling.pdf>

173 correlation between energy use and equivalised income is 0.081, so only 8.1% of
174 the variance in energy use is explained by variation in equivalised income.”⁷

175 • A study by Dr. Severin Borenstein, a UC Berkeley economics professor, found
176 that the correlation between natural gas consumption and income is very low.
177 This is relevant given that natural gas and electricity are both common sources of
178 household energy use. Specifically, “the simple correlation between natural gas
179 consumption and household income is 0.19 and the correlation between natural
180 gas consumption and needs-adjusted household income is 0.13.”⁸ The authors go
181 on to state that, “part of this lack of correlation between natural gas consumption
182 and household income can be explained by systematic differences in natural gas
183 consumption across climate zones. However, even within geographic divisions
184 household income explains only a small fraction of the variation in natural gas
185 consumption... Across census divisions the average R-squared from a regression
186 of natural gas consumption on household income is 0.09.”⁹

187 Additionally, in response to my critique that Mr. Bodmer should be looking at
188 individual customer data rather than zip-code level groupings in his assessment of the
189 correlation between income and usage, he makes the unsupported statement that “there is
190 nothing at all wrong with grouping the data by zip code” (City/CUB Ex. 2.3, p. 24, para.

⁷ Simon Dresner and Paul Ekins, “Economic Instruments for a Socially Neutral National Home Energy Efficiency Programme,” PSI Research Discussion Paper 18, 2004. <http://www.psi.org.uk/docs/rdp/rdp18-dresner-ekins-energy.pdf>

⁸ Severin Borenstein and Lucas W. Davis, “The Equity and Efficiency of Two-Part Tariffs in U.S. Natural Gas Markets,” Energy Institute at Haas Working Paper 213, December 2010. http://ei.haas.berkeley.edu/pdf/working_papers/WP213.pdf

⁹ Ibid., page 9.

191 3). A study by the California Public Utilities Commission comments on this specific
192 issue as well and confirms that Mr. Bodmer is incorrect. The authors qualitatively
193 observe a correlation between usage and income among customer groupings, but state
194 that “measures of central tendency, such as an average, reduce the variation observed for
195 the variable. Therefore, it is possible that, the correlation between income groupings and
196 average electricity use appear to be more significant than correlation between actual
197 income and electricity use.”¹⁰ (emphasis added).

198 In summary, there is ample empirical evidence to support the view that usage and
199 income are likely to be weakly correlated, and there are serious flaws in Mr. Bodmer’s
200 own analysis of this issue.

201 **Q. Mr. Bodmer suggests that it was difficult for you to find examples of other utilities**
202 **with fixed charges that are similar to ComEd’s. (City/CUB Ex. 2.3, p. 20, para. 4).**
203 **Is that true?**

204 A. No. I simply provided a few examples to illustrate the prevalence of substantial fixed
205 charges among utilities across the country. There are many other utilities with similar
206 fixed charges.

207 Further, Mr. Bodmer out of hand dismisses the New York Public Service
208 Commission’s (NY PSC’s) decision to approve SFV ratemaking for the New York
209 investor owned utilities because it is dated. That the New York utilities and their
210 customers have retained SFV pricing for nearly two decades is a strong indication that

¹⁰ Nilgun Atamturk, Marzia Zafar, and Paul Clanon, “Electricity use and Income: A Review,” California Public Utilities Commission, Policy and Planning Division Literature Review, June 21, 2012. <http://www.cpuc.ca.gov/NR/rdonlyres/609BC107-EF3C-4864-AD56-E964884D51AC/0/PPDElectricityUseIncome.pdf>

211 SFV pricing will not have the deleterious consequences in Illinois that Mr. Bodmer
212 suggests.

213 As a more recent example of regulatory support for SFV pricing, the Public
214 Utilities Commission of Ohio (“PUCO”) issued an Order in August 2013 encouraging the
215 electric utilities to file an SFV rate design in their next base rate case. PUCO staff will
216 develop an alternative SFV rate proposal for any utility that does not file such a design.
217 The Ohio Commission’s reasoning included a desire to remove a disincentive for utilities
218 to pursue energy efficiency and distributed generation adoption, and recognized SFV
219 pricing among the state’s natural gas utilities as an effective ratemaking model that offers
220 an accurate price signal and equitably allocates distribution costs to cost causers.¹¹

221 **III. CONCLUSION**

222 **Q. Does this complete your surrebuttal testimony?**

223 **A. Yes.**

¹¹ Finding and Order of the Public Utilities Commission of Ohio in the Matter of Aligning Electric Distribution Utility Rate Structure with Ohio’s Public Policies to Promote Competition, Energy Efficiency, and Distributed Generation. Case No. 10-3126-EL-UNC. August 21, 2013.