

ILLINOIS COMMERCE COMMISSION

DOCKET No. 12-0244

REBUTTAL TESTIMONY ON REHEARING

OF

WILLIAM R. DAVIS

Submitted on Behalf Of

**AMEREN ILLINOIS COMPANY
d/b/a Ameren Illinois**

September 11, 2012

TABLE OF CONTENTS

	Page No.
I. INTRODUCTION.....	1
II. PURPOSE OF TESTIMONY AND IDENTIFICATION OF EXHIBITS	2
III. RESPONSE TO AG WITNESS MR. HORNBY	2
IV. CONCLUSION	9
APPENDIX.....	1

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7 **I. INTRODUCTION**

8 **Q. Please state your name and business address.**

9 A. My name is William R. Davis. My business address is One Ameren Plaza, 1901
10 Chouteau Avenue, St. Louis, Missouri 63103.

11 **Q. By whom are you employed and in what capacity?**

12 A. I am a Senior Corporate Planning Analyst in the Corporate Planning department for
13 Ameren Services Company ("Ameren Services").

14 **Q. Please describe your educational background and relevant work experience.**

15 A. See my Statement of Qualifications, attached as an Appendix to this testimony.

16 **Q. Please describe your current job duties and responsibilities.**

17 A. Generally I am responsible for designing and conducting economic analyses, mostly
18 related to Ameren Missouri's resource needs. I was the team leader for Ameren Missouri's 2011
19 Integrated Resource Plan filing and Ameren Missouri's 2012 Missouri Energy Efficiency
20 Investment Act filing.

21 **Q. Have you filed testimony before?**

22 A. Yes, I have testified in Missouri Case Nos. ER-2011-0028, EO-2012-0142, and ER-2012-
23 0166.

24 **II. PURPOSE OF TESTIMONY AND IDENTIFICATION OF EXHIBITS**

25 **Q. What is the purpose of your rebuttal testimony on rehearing in this proceeding?**

26 A. The purpose of my rebuttal testimony is to comment on and respond to certain Intervenor
27 witnesses' direct testimony. Specifically, I am responding to certain statements in the direct
28 testimony of Attorney General ("AG") witness Mr. J. Richard Hornby.

29 **Q. Are you sponsoring any exhibits with this testimony?**

30 A. No, I am not.

31 **III. RESPONSE TO AG WITNESS MR. HORNBY**

32 **Q. Please identify the statements made by Mr. Hornby to which you will be responding.**

33 A. In his direct testimony, Mr. Hornby claims the AMI Plan is not cost-effective under his
34 version of the "Total Resource Cost" ("TRC") test, which excludes societal benefits and uses a
35 discount rate of 8.8%. In my rebuttal testimony, I respond to the relevance of the TRC analysis
36 and his use of an 8.8% discount rate.

37 **Q. In Mr. Hornby's testimony, what is the difference between the two analyses he
38 conducted – the Societal Cost Test and the Total Resource Cost Test?**

39 A. From what I can tell, there were only two differences between the two analyses. First,
40 the projected benefits from carbon emission reductions were included in Mr. Hornby's Societal
41 Cost Test, but these benefits were excluded from this Total Resource Cost test. Second, Mr.
42 Hornby used a discount rate of 3.62% in his Societal Cost Test, and a discount rate of 8.8% in his

43 Total Resource Cost test.

44 **Q. Why did AIC choose to include customer/societal benefits in its analysis?**

45 A. AIC included customer/societal benefits in its calculation of the Net Present Value
46 (“NPV”) of the AMI Plan because of the statutory definition of “cost-beneficial” that the General
47 Assembly included in the Energy Infrastructure Modernization Act (“EIMA”). Section 16-
48 108.6(a) of the Public Utilities Act provides that, when measuring the “present value of the total
49 benefits” of the Plan, the “total benefits shall include the sum of avoided electricity costs,
50 including avoided utility operational costs, avoided consumer power, capacity, and energy costs,
51 and avoided societal costs associated with the production and consumption of electricity, as well
52 as other societal benefits, including the greater integration of renewable and distributed power
53 resources, reductions in the emissions of harmful pollutants and associated avoided health-
54 related costs, other benefits associated with energy efficiency measures, demand-response
55 activities, and the enabling of greater penetration of alternative fuel vehicles.”

56 **Q. Has Illinois defined the TRC test as it relates to measuring the cost and benefit of**
57 **utility investment?**

58 A. Yes, as it relates to energy efficiency and demand response. From 20 ILCS 3855/1-10
59 (emphasis added):

60 "Total resource cost test" or "TRC test" means a standard that is met if, for an
61 investment in energy efficiency or demand-response measures, the benefit-cost
62 ratio is greater than one. A total resource cost test compares the sum of avoided
63 electric utility costs, representing the benefits that accrue to the system and the
64 participant in the delivery of those efficiency measures, as well as other
65 quantifiable societal benefits, including avoided natural gas utility costs, to the
66 sum of all incremental costs of end-use measures that are implemented due to the
67 program (including both utility and participant contributions), plus costs to
68 administer, deliver, and evaluate each demand-side program, to quantify the net

69 savings obtained by substituting the demand-side program for supply resources.
70 In calculating avoided costs of power and energy that an electric utility would
71 otherwise have had to acquire, reasonable estimates shall be included of financial
72 costs likely to be imposed by future regulations and legislation on emissions of
73 greenhouse gases.

74 **Q. So should the TRC test include societal benefits?**

75 A. From my understanding, it varies depending on the application and the state practices
76 relevant to the context in which the TRC test is being applied. However, from the definition
77 above, it appears that Illinois has included societal benefits in its TRC definition in at least one
78 instance.

79 **Q. What is the significance of excluding projected carbon emission reductions as Mr.**
80 **Hornby recommends?**

81 A. Notwithstanding its applicability even in a TRC analysis, the projected carbon emission
82 reductions are a small part of the Cost/Benefit Analysis. To provide perspective, Ameren Illinois
83 has quantified this benefit to be about \$6.3 million (or 0.7%) of the approximately \$870 million
84 in total quantified benefits. Even if one were to consider Mr. Hornby's Societal Cost Test results,
85 the carbon emission reductions account for only 0.5% of his total benefits. It is immediately
86 apparent that whether carbon emission reductions should or should not be included in the TRC is
87 of little practical consequence when determining cost-effectiveness.

88 **Q. Mr. Hornby quotes the Illinois State Smart Grid Collaborative Report on page 7 for**
89 **the proposition that different discount rates may be appropriate for different cost benefit**
90 **tests. Do you agree generally with that statement?**

91 A. Yes. Different discount rates may be appropriate for different cost benefit tests. Where I

92 differ with Mr. Hornby is on what the appropriate discount rate should be for the measuring the
93 “present value of the total benefits” of the Plan where total benefits “shall include” customer and
94 societal benefits, and not just operational benefits.

95 **Q. In your opinion, should the Illinois State Smart Grid Collaborative Report dictate**
96 **what type of cost benefit analysis should be relied upon in this proceeding?**

97 A. I acknowledge that Section 16-108.6(c) provides that the Commission must find that
98 implementation of the Plan “will be cost-beneficial consistent with the principles established
99 through the Illinois Smart Grid Collaborative.” I personally was not involved in the Illinois
100 Smart Grid Collaborative. I understand that Ameren witness Mr. Michael Abba participated in
101 the Smart Grid Collaborative and could better to speak to whether the Plan is “consistent with the
102 principles” established therein. But for purposes of deciding whether societal benefits should be
103 included in the cost benefit analysis of the Plan, I may not be a lawyer, but it seems the statutory
104 definition of “cost-beneficial” expressly requires the Commission to include them.

105 **Q. Did AIC document the discount rates used in its base case and sensitivity analyses**
106 **and the rationale for their use in its rehearing direct case?**

107 A. Yes. AIC explained the justification for the chosen discount rate of 3.62% in the AMI
108 Cost/Benefit Analysis and in Ameren witness Mr. Craig Nelson’s testimony submitted on
109 rehearing, and in his rebuttal testimony in the underlying case. I have reviewed Mr. Nelson’s
110 direct testimony submitted on rehearing and his rebuttal testimony from the underlying case.

111 **Q. Does Mr. Hornby acknowledge the discount rate used in a societal cost-benefit**
112 **analysis is usually lower than the discount rate used in other cost-benefit analyses?**

113 A. Yes. On page 6 of his testimony, he acknowledges, based on a "leading reference
114 source", the discount rate used in the Societal Cost test is usually lower than the discount rate
115 used in a Total Resource Cost test.

116 **Q. Is the Societal Cost Test the appropriate test to use in this case?**

117 A. Yes. As I mentioned previously, Section 16-108.6(a) of the Public Utilities Act
118 specifically provides that societal benefits should be included in the determination of cost-
119 effectiveness. This provides a clear indication that the societal test is the appropriate test to use
120 in this case.

121 **Q. Mr. Hornby claims his analysis shows the Plan is not cost-effective under the "Total
122 Resource Cost." How do you respond to this claim?**

123 A. As I previously explained, there are two differences in Mr. Hornby's analysis between his
124 Total Resource Cost test and his Societal Cost Test. The first difference is Mr. Hornby argues
125 that the reduction in carbon emissions should be excluded from the TRC. This difference is not
126 practically important in this case because the expected benefit is relatively low. The second
127 difference is the discount rate used for the analysis. Given the fact that the disagreement over the
128 inclusion of carbon emission reductions is of little consequence, it is apparent that Mr. Hornby's
129 TRC analysis is simply a discount rate sensitivity analysis on top of his substantial reduction in
130 projected benefits. Therefore, it is apparent that Mr. Hornby's conclusion is more about a series
131 of extreme unfavorable assumptions as opposed to a difference in cost-effectiveness tests.

132 **Q. What is an appropriate discount rate to use in a TRC analysis?**

133 A. Under the traditional definition of a TRC, it is typical to use the utility's discount rate

134 which is represented by its Weighted Average Cost of Capital ("WACC"). Again this is
135 consistent with Mr. Hornby's cited "leading reference source".

136 **Q. What is the Company's discount rate and what is it intended to represent?**

137 A. A discount rate is used to measure the time value of money; that is, a dollar today is
138 worth more than a dollar tomorrow. For the utility, the discount rate is represented by its net-of-
139 tax WACC; that is, the cost of its source of capital funds net of any tax benefits. Table 1 below
140 demonstrates the calculation of the Company's discount rate which is 7.02%.

141 **Table 1 – Ameren Illinois Discount Rate**

Source of Funds	Weights (w)	Rate (r)	Weighted Rate (w * r)	Net of Taxes Weighted Rate*
Long-Term Debt	48%	6.25%	3.00%	1.76%
Common Equity	52%	10.10%	5.25%	5.25%
Net-of-Tax WACC				7.02%

142 *Federal and State Income Tax Rate of 41.175%

143 **Q. Mr. Brightwell testified that the Company's WACC was 8.25%. Why is that**
144 **different than what you calculated?**

145 A. Although I cannot speak for Mr. Brightwell, I believe the difference stems from a
146 terminology issue. Table 1 shows that without incorporating the tax-deductibility of long-term
147 debt interest expense one might conclude that the WACC is 8.25%. In the Company's
148 workpapers the 8.25% was labeled as the WACC. A more appropriate label for the 8.25% could
149 have been "Return on Rate Base" because when the revenue requirement is calculated the tax
150 deductibility of long-term debt interest expense is handled separately. It is easy to see how the
151 numbers can be confused because they are very closely related and the terminology is often used
152 interchangeably.

153 **Q. What is the significance of using a WACC that is net of taxes for discounting**
154 **purposes?**

155 A. The WACC represents the utility's cost of capital, as the name implies. The deduction for
156 long-term debt expense (like when a homeowner deducts mortgage interest expense on his or her
157 income taxes) effectively reduces the utility's cost of capital and must be factored into the
158 analysis.

159 **Q. Mr. Hornby provided an exhibit with discount rates used in other AMI cases, is**
160 **7.02% consistent with those references?**

161 A. Yes. Mr. Hornby's Exhibit 1.8 from his direct testimony included 9 different AMI cases.
162 It is not apparent what the different discount rates represent (e.g. WACC), but it is apparent that
163 the Company's net-of-tax WACC is within the cited range

164 **Q. What impact would using a 7.02% have in the Cost Benefit Analysis?**

165 A. Mr. Michael Abba includes the impact of using the Company's net-of-tax WACC as the
166 discount rate for those scenarios that used discount rates that are simply too high. In the case of
167 the Company's Cost Benefit Analysis, using a lower discount rate will improve the cost-
168 effectiveness.

169 **Q. If Mr. Brightwell had used the Company's net-of-tax WACC as the discount rate**
170 **would it have changed his conclusions?**

171 A. No. Mr. Brightwell's testimony was clear about his conclusion that the Company's
172 proposal was cost-effective even when using a discount rate that was too high. As included in
173 Mr. Michael Abba's testimony, the change in discount rate (in addition to other minor corrections)

174 would improve Staff's lowest cost-effectiveness from 0.99 to 1.06.

175 **Q. Mr. Hornby included a 1.8% inflation adder to a real discount rate of 7%, is that**
176 **adjustment applicable to the utility's discount rate?**

177 A. No. The utility's net-of-tax WACC is already appropriate for discounting streams of
178 nominal numbers, such as the Company's estimates of future benefits and costs presented in this
179 case.

180 **Q. Mr. Hornby claims the Company did not provide any analyses of the uses to which**
181 **its ratepayers would put their money if they were not paying for AMI, and did not provide**
182 **any estimates of ratepayers "opportunity cost" of money. Please respond.**

183 A. Mr. Hornby's claim is a red herring. Given the wide range of options in both expected
184 return and riskiness across the various customer classes it is simply impractical for such a study
185 to be conducted. In addition, such a study would provide little value to this proceeding. The
186 merits of the Cost Benefit Analysis rest squarely on its quantification of costs and benefits to
187 which Mr. Michael Abba and Dr. Ahmed Faruqui have testified and shown that the benefits
188 exceed the costs.

189 **IV. CONCLUSION**

190 **Q. With so much testimony regarding the discount rate, what is your recommendation**
191 **to the Commission?**

192 A. It is clear even to Mr. Hornby that a lower discount rate is the most relevant from a
193 societal standpoint; therefore, I recommend the Commission recognize all of the benefits the
194 Company has quantified and also use the 3.62% discount rate proposed by the Company. Mr.

195 Hornby only considered a higher discount rate because he was performing a different cost-
196 effectiveness test. Mr. Michael Abba has provided the Commission with several data points on
197 cost-effectiveness that include different discount rates. Amongst those data points, Mr. Hornby
198 concocted the scenario with the lowest cost-effectiveness rating (0.87). In his scenario, 75% of
199 the demand response benefits were excluded, nearly all of the energy efficiency benefits were
200 excluded, all of the electric vehicle benefits were excluded, all of the carbon emission reduction
201 benefits were excluded, and he used a discount rate that was well above the utility's net-of-tax
202 WACC. If Staff's scenarios are, as Staff characterized these scenarios themselves, considered
203 "extreme and unfavorable" then I would describe Mr. Hornby's analysis as unreasonable. Even
204 with such unfavorable and unreasonable assumptions it would only take a discount rate of 6.05%
205 for even Mr. Hornby's case to be cost-effective.

206 **Q. Does this conclude your rebuttal testimony on rehearing?**

207 A. Yes, it does.

208

APPENDIX

STATEMENT OF QUALIFICATIONS
WILLIAM R. DAVIS

I received a Bachelor of Science in Economics from Illinois State University in 2002. I subsequently received a Master of Science in Economics with an emphasis on electricity, natural gas, and telecommunications economics from Illinois State University in 2003. I had several internships during my college career, including an internship with Illinois Power Company. Upon completion of my master's degree I began working full-time for Caterpillar, Inc. at its corporate headquarters in Peoria, Illinois as an Advanced Quantitative Analyst in the Business Intelligence Group, with the primary duties of performing economic and sales analyses. In May 2005, I joined Ameren Services as a Load Research and Forecasting Specialist in Corporate Planning. My duties included electricity and natural gas forecasting, load research, weather normalization, and various other sales analyses. In September 2007, I became a Senior Load Research Specialist and then moved to the Resource Planning Group in March 2009. In October 2011, I became a Senior Corporate Planning Analyst.