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Rate Case Expense; Clean Charge
Network
Witness: Darrin R. Ives
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Case No.: ER-2014-0370
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: ER-2014-0370

SURREBUTTAL TESTIMONY

OF

DARRIN R. IVES

ON BEHALF OF

KANSAS CITY POWER & LIGHT COMPANY

**Kansas City, Missouri
June 2015**

*** [REDACTED] *** Designates "Highly Confidential" Information
Has Been Removed.

KCP&L Exhibit No. 121-NP
Date 6-15-15 Reporter AT
File No. ER-2014-0370

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SURREBUTTAL TESTIMONY

OF

DARRIN R. IVES

Case No. ER-2014-0370

1 **Q: Please state your name and business address.**

2 A: My name is Darrin R. Ives. My business address is 1200 Main, Kansas City, Missouri
3 64105.

4 **Q: Are you the same Darrin R. Ives who pre-filed Direct, Supplemental Direct and**
5 **Rebuttal Testimony in this matter?**

6 A: Yes, I am.

7 **Q: What is the purpose of your Surrebuttal Testimony?**

8 A: I will provide an overview of the witnesses filing Surrebuttal Testimony on behalf of
9 Kansas City Power & Light Company ("KCP&L" or "Company") in addition to
10 providing Surrebuttal Testimony for KCP&L in response to certain of the Missouri
11 Public Service Commission ("MPSC" or "Commission") Staff's ("Staff") Rebuttal
12 Testimony, the witnesses of the Office of the Public Counsel ("OPC"), and the Missouri
13 Energy Consumers' Group ("MECG") on the following issues: (1) KCP&L's Ability to
14 Earn its Commission Authorized return on equity ("ROE") and the effects of Regulatory
15 Lag; (2) Fuel Adjustment Clause ("FAC") and Tracker Requests; (3) Rate Case Expense;
16 and (4) Clean Charge Network ("CCN") Pilot. I will also provide a La Cygne in-service
17 status update and brief testimony in response to certain testimony offered during the local
18 public hearings convened by the Commission in this case.

1 Q: Who will be providing Surrebuttal Testimony for KCP&L?

2 A: In addition to the matters I will address described above, the following is a list of the
3 witnesses who will provide Surrebuttal Testimony for KCP&L along with a general
4 description of the issues they will address:

- 5 • Robert B. Hevert – return on equity (“ROE”);
- 6 • H. Edwin Overcast – regulatory mechanisms;
- 7 • Tim M. Rush – fuel adjustment clause, trackers, class cost of service and rate design,
8 miscellaneous service fees;
- 9 • Burton L. Crawford – fuel adjustment clause;
- 10 • James “Jamie” S. Kiely – vegetation management costs;
- 11 • Ronald A. Klote – construction accounting deferrals and miscellaneous accounting
12 adjustments;
- 13 • Melissa K. Hardesty – property taxes;
- 14 • Ryan A. Bresette – Southwest Power Pool (“SPP”) transmission expense accounting;
- 15 • Joshua F. Phelps-Roper – CIPS/cybersecurity costs; and
- 16 • John R. Carlson – SPP transmission fees.

17 The Company has attempted to address all issues raised by other parties in their Rebuttal
18 Testimony which the Company contests, but the Company’s inadvertent failure to
19 address an issue raised by any party does not constitute agreement by the Company.

1 **Executive Summary**

2 **Q: Please explain a significant accomplishment related to KCP&L's operations and this**
3 **rate case.**

4 A: I am pleased to report that the La Cygne Environmental project is now in service. The
5 project was completed ahead of schedule and is expected to be under budget and, to date
6 in this case, no party aside from Sierra Club has taken issue with recovery of any of the
7 La Cygne Environmental project costs.

8 **Q: Have the Company and Staff reached agreement regarding the in-service criteria?**

9 A: Yes, Kansas City Power & Light Company and the Missouri Public Service Commission
10 Staff reached mutual agreement regarding the in-service criteria for the La Cygne Project.
11 Staff acknowledged this agreement in their "Errata to Revenue Requirement Cost of
12 Service Report" filed in this docket on April 9, 2015.

13 **Q: Has the Company successfully achieved the in-service criteria?**

14 A: Yes.

15 **Q: What are the actual in-service dates for the environmental retrofit equipment at La**
16 **Cygne?**

17 A: As of March 24, 2015, La Cygne Unit 2 and Common equipment is in-service. As of
18 April 30, 2015, La Cygne Unit 1 equipment is in-service.

19 **Q: Is any documentation available to substantiate the in-service?**

20 A: Not yet. In-Service Testing Reports for Unit 2/Common and Unit 1 are in the process of
21 being developed. These reports will be submitted upon completion and will include all
22 documentation required to validate that the equipment has met the agreed in-service
23 criteria.

1 Q: Please discuss other important aspects of the case that are addressed in KCP&L's
2 Surrebuttal Testimony filing.

3 A: Many parties have devoted significant attention and substantial amounts of testimony to
4 the fuel adjustment clause ("FAC") and trackers requested by KCP&L, and likewise
5 those topics are addressed in the Surrebuttal Testimony of KCP&L witnesses Overcast,
6 Bresette, Carlson, Crawford, Kiely, Roper and Rush as well as later in my Surrebuttal
7 Testimony.

8 Substantial attention has also been paid to KCP&L's actual earnings over the past
9 several years compared to its Commission-authorized earnings level and that topic is
10 addressed later in my Surrebuttal Testimony.

11 From my perspective, all of this testimony goes to the heart of what the
12 Commission is striving to achieve when it issues KCP&L's rate order in this case. A
13 question central to identifying that objective is *what will the impact of the rate order be,*
14 *on both the Company and its customers?* And while questions about process and
15 methodology (i.e., Should an FAC be adopted or not? Should the rate allowance for
16 property taxes be set at a fixed amount by reference to historical levels or tracked such
17 that future changes to historical property tax levels have an opportunity to be recovered?
18 Etc.) cannot be ignored, those process and methodology questions are necessarily
19 subservient to questions about the *impact* of the rate order.

20 KCP&L has carefully crafted its proposed regulatory mechanisms (FAC and
21 trackers) to provide a reasonable opportunity for KCP&L to achieve its Commission-
22 authorized return on equity after the Commission issues this rate order. The *impact* of
23 such a rate order would therefore be fair to both KCP&L and its customers. I am

1 confident that rejection of the regulatory mechanisms KCP&L has proposed will simply
2 result in a continuation of the substantial earnings shortfalls KCP&L has experienced
3 over the last several years, including in each year since this Commission issued its last
4 KCP&L rate order in January of 2013. The *impact* of a rate order that rejects the
5 regulatory mechanisms requested by KCP&L, on the other hand, would deprive KCP&L
6 of a reasonable opportunity to achieve its Commission-authorized ROE.

7 **1. KCP&L-MO's Ability to Earn its Commission Authorized ROE and the Effects of**
8 **Regulatory Lag**

9 **Q: Can you summarize what you took away from Staff's Rebuttal Testimony on this**
10 **topic?**

11 A: Yes. In response to the Company's requests for alternative regulatory mechanisms, the
12 Staff's firm position is "Just Say No". Staff's simplified justification is that this process
13 has been in place for 100 years and it works.

14 **Q: What is your quick response to the Staff's position?**

15 A: My response is that Staff's position is unworkable. Burying its head in the sand in the
16 face of overwhelming national discussion and accelerating action by other state
17 commissions across the country, among other evidence that the utility industry is
18 undergoing significant change, would have this Commission make a decision that is not
19 in the long-term best interest of KCP&L or its Missouri electric customers. In their
20 Rebuttal Testimony Staff, in particular witnesses Featherstone and Hyneman take an
21 approach I would refer to as "throwing spaghetti at the wall to see what sticks" in an
22 effort to muddy the record for the Commission in this case regarding KCP&L's need for
23 the limited alternative regulatory mechanisms that KCP&L has requested. They utilize
24 financial analysis and information that is one-sided, misapplied, or not relevant to the

1 topic in an effort to convince the Commission that no changes are warranted or necessary
2 to the historical Missouri regulatory model. While I do not address all points they
3 “throw against the wall”, witnesses Featherstone and Hyneman make a number of leaps
4 of faith and inaccurately portray certain information in their Rebuttal Testimony that I
5 will directly respond to below.

6 **Q: Do Staff witnesses address regulatory lag and its effects in their Rebuttal**
7 **Testimony?**

8 A: Yes. A number of Staff witnesses address regulatory lag and, among several items, their
9 concerns with my discussion of regulatory lag in my Direct Testimony in this case. Staff
10 witnesses Featherstone and Hyneman are the primary witnesses on this topic. I will
11 address each in turn.

12 *Response to Staff Witness Featherstone*

13 **Q: Does Staff provide a general description of regulatory lag in its Rebuttal Testimony?**

14 A: Yes. Staff witnesses describe regulatory lag a few times in their Rebuttal Testimony.
15 Specifically, witness Featherstone provides on page 5, starting on line 9 the following
16 general description: “Generally, regulatory lag is the period of time between when an
17 increase or decrease in expenses or revenues and investment costs is incurred and when
18 they are recognized in rates. Regulatory lag can benefit the utility or can work to its
19 detriment.”

20 **Q: Do you agree with this general description?**

21 A: Yes, I do and I have testified to such on previous occasions in written testimony in front
22 of this Commission.

1 **Q: Staff witnesses make a lot of your lack of attention to positive regulatory lag in your**
2 **Direct Testimony. How do you respond?**

3 A: In my Direct Testimony I was not attempting to ignore the potential for positive
4 regulatory lag. As noted, I have previously provided testimony to this Commission
5 recognizing that there can be positive as well as negative impacts of regulatory lag. I do
6 not believe the two-way nature of regulatory lag is lost on this Commission nor did I feel
7 I needed to define regulatory lag for this Commission. The message from my Direct and
8 Rebuttal Testimony was to inform the Commission of the significant earnings shortfalls
9 experienced by KCP&L-MO since rates became effective from its most recent general
10 rate case (those rates took effect in January 2013) and what will continue to happen to
11 KCP&L-MO if rates are approved in this rate case without appropriate alternative
12 mechanisms put in place to restore the balance to the Missouri ratemaking model and
13 provide KCP&L-MO a reasonable opportunity to earn its Commission authorized return
14 on equity as determined in this case.

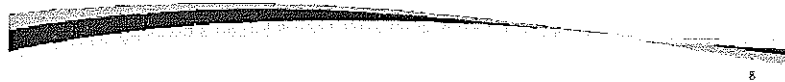
15 **Q: Has KCP&L acknowledged the cost reductions (positive regulatory lag) in the**
16 **context of this case?**

17 A: We certainly have. We are not ignoring, or hiding from, the cost savings we have been
18 able to achieve. We are pleased that we were able to achieve a number of significant cost
19 savings, albeit nowhere near the level needed to offset the increased costs in areas
20 described in my Direct Testimony. In this proceeding, I have been the Company
21 representative presenting at the five public hearings that were conducted from the end of
22 April through early May. Provided below is a page from my presentation at those public

1 hearings which clearly describes some of the major cost savings we have achieved since
2 rates went into effect from our last case.

Closely Managing Our Costs

- KCP&L has worked hard to **reduce the customer impact** of this rate case.
- Over the last three years, KCP&L has:
 - **Kept** operations budgets flat.
 - **Reduced** our workforce.
 - **Saved** millions of dollars through more efficient processes.



3
4 **Q: Any other points you would like to make about these cost savings?**
5 **A:** Yes. The Commission needs to be aware that continued cost savings at this level are not
6 achievable in the future as a mechanism to offset future cost increases in other cost
7 categories – certainly not at the levels expected for property taxes, CIP/cyber security
8 compliance and SPP transmission fees.

9 As far as the headcount reductions, we have been able to reduce headcount by
10 approximately 4% over the two years since rates from our last case were effective. It
11 should go without saying that a 4% headcount reduction every two years going forward is
12 unsustainable if we are to continue to provide the safe and reliable service our customers
13 deserve and expect.

14 In regard to more efficient inventory and purchasing processes, much of these
15 savings have been made possible by reengineering these processes after the acquisition of

1 Aquila. Not only were we able to reengineer these processes, part of these savings are a
2 result of our improved negotiating and purchasing power as a result of becoming a larger
3 organization. Most other synergy savings from the integration of the Aquila operations
4 have already been put in place and flowed through to customers as described more fully
5 in my Rebuttal Testimony on this topic.

6 Finally, in regard to our ability to keep our operating budgets flat except where
7 government mandates have caused cost increases I would say two things. First, our
8 continued ability to absorb inflationary cost increases becomes increasingly difficult as
9 we exhaust the potential for headcount reductions and major process reengineering as I
10 just described. Second, using CIPs/Cybersecurity as an example, we fully expect to
11 continue facing increasing cost pressures from additional federal and state mandates.

12 In summary, this Commission should not consider our level of cost reductions
13 achieved over the last two years to be sustainable at the levels we have were able to
14 achieve.

15 **Q: Please discuss the positive regulatory lag described in detail by Staff witnesses in**
16 **their Rebuttal Testimony.**

17 **A:** Staff witnesses mention positive regulatory lag experienced by KCP&L since its last rate
18 case in several places, the most comprehensive discussion is by witness Featherstone. On
19 page 20 of his Rebuttal Testimony witness Featherstone provides a listing as he states of
20 “several cost reductions occurred since the last rate case, allowing KCPL to enjoy the
21 benefits of those savings until rates change in this case.” He goes on to discuss the cost
22 reductions in detail through page 29 of his Rebuttal Testimony.

1 **Q: Do you agree with the cost reductions described by witness Featherstone and how**
2 **has KCP&L enjoyed the benefits of those savings as indicated by Mr. Featherstone?**

3 A: Without addressing each item addressed by Mr. Featherstone, I do agree that KCP&L had
4 cost reductions in the areas listed on page 20 of his testimony. I also have no doubt that
5 KCP&L had additional cost reductions in other areas from amounts used to set rates in
6 KCP&L's last rate case.

7 The point for the Commission to take away from all of the testimony on this topic
8 is that the effects of positive and negative regulatory lag under the current historical
9 ratemaking model in Missouri are out of balance. Even with all of the areas of positive
10 lag articulated by witness Featherstone and "enjoyed" by KCP&L – all of which are
11 reflected in the actual KCP&L surveillance report results discussed in my Direct and
12 Rebuttal Testimony – the bottom line is that in 2013 and 2014, the first two years after
13 new rates were effective from KCP&L-MO's last general rate case, KCP&L-MO's
14 earned ROE was 6.5% and 5.9%, respectively. This level of earned ROE is nowhere
15 close to a fair and reasonable opportunity for KCP&L to earn its Commission authorized
16 ROE of 9.7% that was in place during this timeframe.

17 **Q: Do you have any other points to make regarding Staff's position on the benefits of**
18 **the savings enjoyed by KCP&L?**

19 A: Yes. Even though the positive lag benefits "enjoyed" during 2013 and 2014 were
20 significantly out of balance with the detrimental regulatory lag experienced in other cost
21 of service areas, resulting in earned ROEs approximately 320 and 380 basis points,
22 respectively, below the Commission authorized ROE, Staff apparently doesn't think the

1 Company's shareholders have subsidized enough of the Company's cost to serve its
2 customers.

3 Specifically, I am addressing two positive regulatory lag items addressed by
4 witness Featherstone on page 20 of his Rebuttal Testimony. Item 5 discussed on that
5 page, "KCPL experienced a reduction in nuclear storage fees paid to the Department of
6 Energy." And Item 6 discussed on that same page, "KCPL retained cost savings from
7 amortizations that expired during various times since the last rate case." In a shocking
8 request in this case, Staff has proposed that the Commission employ retroactive
9 ratemaking on these items and require KCP&L to return to customers the positive cost
10 reductions enjoyed in these areas. This is shocking on a couple of fronts. First, there
11 were no orders from the Commission in KCP&L's last rate case to track the costs in these
12 areas to ensure no over- or under-recovery. Second, on page 29 of his Rebuttal
13 Testimony witness Featherstone states, "Staff does not dispute the fact KCPL has
14 experienced a level of cost increases from the cost of service level determined from the
15 last rate case in January 26, 2013 – almost 2 ½ years ." Acknowledging this fact, Staff
16 still attempts to apply retroactive ratemaking to address these limited areas of cost
17 savings. Staff does not suggest any retroactive ratemaking to address the level of cost
18 increases acknowledged by Mr. Featherstone.

19 This goes beyond Staff's overall message of "Just Say No" to alternative
20 mechanisms, the process works just fine. It crosses the line to apply retroactive
21 ratemaking in an effort to increase the shareholders' subsidization of KCP&L's costs to
22 serve its customers. Apparently, requiring shareholders to foot the bill to cover costs to
23 serve customers to the tune of almost \$32 million annually over the period from 2007 to

1 2013 is not enough for Staff. I implore the Commission to see the imbalance in risk
2 being placed upon the Company's shareholders under the current environment and take
3 action. The proposals offered by KCP&L do not represent a sea change to the
4 Commission's customary practices, but instead are narrowly tailored to address just a few
5 specific cost items where the use of historical information to set future rates will
6 undoubtedly result in a mismatch of revenues and costs.

7 **Q: On pages 6-11 of his Rebuttal Testimony, Staff witness Featherstone takes issue with**
8 **your description in Direct Testimony of the use of a historical test year. Can you**
9 **summarize his issue?**

10 A: Mr. Featherstone uses a lot of words and discussion in his testimony in an effort to
11 demonstrate that usage of historical costs in a general rate case are not as impactful as I
12 discussed in my Direct Testimony.

13 **Q: Please respond to Mr. Featherstone's testimony on this issue.**

14 A: I will start with the core of the discussion of this topic from my Direct Testimony.

15 **Q: What factors contribute to regulatory lag for KCP&L in**
16 **Missouri?**

17 A: There are several. First and foremost, the regulatory model in
18 Missouri is built primarily on historical financial information.
19 From a cost of service perspective, the process utilizes historical
20 test year costs, true-up for known and measurable changes.
21 Regardless of the true-up period, this model results in rates being
22 set on historical costs that were incurred in a range anywhere from
23 5 months to 27 months prior to the date rates are effective. This
24 model not only ignores cost increases that have occurred between
25 the historical test year used and the date rates are effective, it also
26 ignores the fact that in a rising cost environment, costs to serve our
27 customers continue to increase from the date rates are effective,
28 with little ability to synchronize recovery with costs incurred other
29 than to initiate another expensive and time-consuming rate case.

1 First, I will start from the end of my answer above, as that sentence is most
2 relevant to this instant proceeding. I, as well as other KCP&L witnesses, have provided a
3 significant amount of evidence and testimony that supports this sentence regarding the
4 limitations of the current Missouri regulatory model in a rising cost environment. As I
5 have provided, KCP&L-MO's Commission authorized return on equity was 9.7% in its
6 last general rate case. In the first two full years after rates effective from that case, 2013
7 and 2014, KCP&L's Missouri surveillance reports demonstrated that KCP&L-MO's
8 earned return on equity was 6.5% and 5.9%, respectively. My Direct and Rebuttal
9 Testimony demonstrates that a significant amount of the shortfall in both years is driven
10 by rising costs that are not effectively addressed by the historical cost-based regulatory
11 model in Missouri. KCP&L's requests are narrowly tailored to address just a few
12 specific cost items where the use of historical information to set future rates will
13 undoubtedly result in a mismatch of revenues and costs.

14 Second, Mr. Featherstone mentions a number of rate-making techniques that are
15 utilized to make adjustments in a rate case. I am in agreement that several techniques are
16 utilized, I will address the limitations to the techniques briefly.

- 17 1) Use of multi-year averages to annualize costs – This technique while
18 beneficial to smooth fluctuating costs is not effective in addressing rising
19 costs. In Missouri, these multi-year averages historically have not employed
20 an index, or inflation adjustment, thus the older costs are not adjusted to
21 reflect current year dollars. There is also no adjustment to reflect that if costs
22 are increasing, they will be higher in the rate year than in the years utilized in
23 the multi-year average.

- 1 2) True-up to actual prices (Fuel and Payroll) – These are the costs that I refer to
2 in my Direct Testimony that are only about five months old on a historical
3 basis when rates become effective. Similar to 1) above, in a rising cost
4 environment these costs are still five months old when rates become effective
5 and there is also no adjustment to reflect that if costs are increasing, they will
6 be higher in the rate year than in the determination using prices at true-up.
- 7 3) True-up using twelve-months historical costs at the true-up date – Mr.
8 Featherstone is correct that costs handled in this way at true-up do not include
9 historical costs that are up to 27 months old prior to the date rates are
10 effective. The true-up process moves this up to where costs are generally only
11 as dated as starting about 16 months prior to the rates effective date. Similar
12 to 1) and 2) above, the older costs are not indexed or inflation adjusted to
13 reflect current year dollars and there is also no adjustment to reflect that if
14 costs are increasing, they will be higher in the rate year than in the historical
15 twelve month period utilized at true-up.
- 16 4) Test-year historical costs – As Mr. Featherstone acknowledges, there are
17 historical costs that are used in determining rates that are based on the test
18 year. He is correct that these costs are considered by the proposing party to be
19 representative of costs to be incurred in the years for which rates are being set.
20 These are the costs that I refer to in my Direct Testimony that can be up to 27
21 months old by the time new rates are effective. Similar to 1) through 3)
22 above, the older costs are not indexed or inflation adjusted to reflect current
23 year dollars.

1 In summary, Mr. Featherstone provides pages of testimony to assert that a number of
2 adjustments are made to historical test year costs in a rate case. He is absolutely correct.
3 What he fails to point out is the limitations to the adjustment methodologies in a rising
4 cost environment, which I have summarized above. Mr. Featherstone's discussion in this
5 area is another attempt to muddy the discussion of the true issue at hand that KCP&L is
6 asking the Commission to address. KCP&L-MO is continually significantly under
7 earning its Commission-authorized returns, on average by almost \$32 million annually
8 over the period from 2007 to 2013, with an even larger annual shortfall for 2014.

9 **Q: Staff witness Featherstone discusses cash availability, increasing dividends and**
10 **shareholder returns as indicators that KCP&L's parent company has experienced**
11 **benefits from the operations of KCP&L and KCP&L Greater Missouri Operations**
12 **Company ("GMO"). Do you agree with this statement?**

13 A: Of course I agree. KCP&L and GMO's operations are the primary active operations
14 under Great Plains Energy. If Great Plains Energy was not experiencing benefits from
15 the utility operations, Great Plains Energy should not continue its support of these
16 businesses. What I will respond to is Mr. Featherstone's characterization of these
17 benefits and the implication of his testimony that these are signs that everything is ok and
18 the KCP&L witnesses have overblown the "alleged poor rates on return and skyrocketing
19 costs".

20 **Q: Please address the cash availability comments made by Mr. Featherstone.**

21 A: The first area I will address is the positive support KCP&L received through enhanced
22 cash flows and positive credit metrics resulting from Additional Amortizations authorized
23 by the Commission in Case No. EO-2005-0329, in which the Commission approved

1 KCP&L's Alternative Regulatory Plan ("Regulatory Plan"). I would start by agreeing
2 that the Additional Amortizations were a positive, and as parties to the 2005 case agreed,
3 essential mechanism to support and sustain cash flows and credit metrics during the
4 proposed construction cycle. I am including a Q and A from the testimony of KCP&L
5 witness Chris Giles in his Direct Testimony in support of the stipulation and agreement in
6 Case No. EO-2005-0329.

7 **Q: The Stipulation and Agreement discusses current amortizations and**
8 **additional amortizations to maintain financial ratios. Please explain**
9 **the significance of these amortizations and the maintenance of**
10 **financial ratios for KCPL.**

11 A: The Signatory Parties agreed that it is desirable to maintain KCPL's debt
12 at an investment grade rating during the period of the construction
13 expenditures contained in the Stipulation and Agreement. KCPL
14 understands it has the responsibility to take prudent and reasonable actions
15 in an effort to achieve the goal of maintaining its debt at investment grade
16 levels. KCPL understands that it is incumbent upon it to take prudent and
17 reasonable actions that do not place its investment grade debt rating at
18 risk. The non-KCPL Signatory Parties committed to work with KCPL to
19 ensure that based on prudent and reasonable actions, KCPL has a
20 reasonable opportunity to maintain its bonds at an investment grade rating
21 during the construction period ending June 1, 2010. As part of this
22 commitment, the non-KCPL Signatory Parties agreed to support the
23 "Additional Amortizations to Maintain Financial Ratios," as defined in the
24 Stipulation and Agreement and related appendices, in KCPL general rate
25 cases filed prior to June 1, 2010. The "Additional Amortization to
26 Maintain Financial Ratios" will only be an element in any KCPL rate case
27 when the Missouri jurisdictional revenue requirement in that case fails to
28 satisfy the financial ratios shown in Appendix E of the Stipulation and
29 Agreement through the application of the process illustrated in Appendix
30 F of the Stipulation and Agreement.

31 **Q: What is the purpose of the "Additional Amortizations to Maintain**
32 **Financial Ratios"?**

33 A: The "Additional Amortizations to Maintain Financial Ratios," is designed
34 to satisfy two of three financial ratios shown in Appendix E of the
35 Stipulation and Agreement "Credit Ratio Ranges & Definitions." The
36 three selected financial ratios are: (i) Total Debt to Total Capitalization;
37 (ii) Funds from Operations Interest Coverage; and (iii) Funds from
38 Operations as a Percentage of Average Total Debt. The Total Debt to
39 Total Capitalization ratio will be addressed in the KCPL financing
40 application that will be filed in the near future. The values for these ratios

1 were selected to meet the lower end of the top third of the three financial
2 ratios under the BBB columns as shown in Appendix E of the Stipulation
3 and Agreement "Credit Ratio Ranges & Definitions." If these ratio
4 guidelines or ranges are changed or modified before June 1, 2010, the
5 Signatory Parties will work together to determine the appropriate values
6 for these ratios, including consideration of the use of the last published
7 ranges for these ratios.

8 **Q: In addition to Mr. Giles' testimony, did other parties file support for the Stipulation**
9 **and Agreement in the EO-2005-0329?**

10 A: Yes. OPC witness Mr. Trippensee filed Direct Testimony in support of the Stipulation
11 and Agreement. In addition, MPSC Staff filed on May 10, 2005, *Staff Suggestions In*
12 *Support Of Stipulation And Agreement.* Both parties were supportive of the Additional
13 Amortizations in their respective filings. Additionally, in its Post-Hearing brief in Case
14 No. EO-2005-0329, Staff refers to testimony provided in the case by Staff witness
15 Schallenberg, "Mr. Schallenberg further testified that under the Additional Amortizations
16 To Maintain Financial Ratios provision, assuming all other things remaining equal, rates
17 may be higher in the short run than they otherwise would be, but rates in the future will
18 be more than offset by rate base being reduced by the amortization."

19 **Q: Can you elaborate on the testimony you reference provided by Mr. Schallenberg in**
20 **the 2005 proceeding and its impact on your testimony in this case?**

21 A: Yes. Mr. Schallenberg points out the rate base offset for the accumulation of the amounts
22 received through the Additional Amortizations. So, while as described by Mr.
23 Featherstone, the Additional Amortizations provided enhanced cash flows and positive
24 credit metric support during the planned construction. I would point out, consistent with
25 the point made by Mr. Schallenberg in the 2005 proceeding, that while providing cash
26 during construction, there was no return on equity, or earnings, generated by the
27 Additional Amortizations. From a return on equity, or earnings, perspective just the

1 opposite was true. The cost to the Company and its shareholders of the enhanced cash
2 flows came at the conclusion of the Regulatory Plan. By agreement, the accumulated
3 cash flow enhancements, provided by Mr. Featherstone in his testimony as \$183.4
4 million, were required to be offset against rate base in the ER-2010-0355 rate case, the
5 case that placed the newly constructed Iatan 2 in-service. This offset to rate base reduced
6 the return on equity potential for shareholders and therefore reduced earnings going
7 forward from that case.

8 In reality, shareholders gave up returns on the accumulated amortizations balance
9 over the life of Iatan 2 in order to receive the needed cash flow enhancement and credit
10 metric support during the Regulatory Plan construction cycle. So while the Additional
11 Amortizations were supportive and helpful during the Regulatory Plan, there was still
12 certainly a long-term return on equity loss absorbed by shareholders to receive this
13 support.

14 **Q: As you mentioned, Mr. Featherstone identifies authorized increases in dividends**
15 **paid by Great Plains Energy's shareholders implying this counters KCP&L witness**
16 **testimony regarding poor rate on return. Please respond.**

17 **A:** I would start by pointing out that this is another instance where Mr. Featherstone attempts
18 to blur the line between cash and actual return on equity performance compared to
19 Commission authorized return on equity. As described by KCP&L witness Bob Hevert
20 in his Direct Testimony, the United States Supreme Court (the "Court") established the
21 guiding principles for establishing a fair return for capital in the *Hope* and *Bluefield*
22 cases.¹ In those cases, the Court recognized that the fair rate of return on equity should

¹ *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944)("Hope"); and *Bluefield Water Works and Improvement Co. v. Public Service Comm'n of West Virginia*, 262 U.S. 679 (1923)"Bluefield").

1 be: (1) comparable to returns investors expect to earn on other investments of similar
2 risk; (2) sufficient to assure confidence in the company's financial integrity; and (3)
3 adequate to maintain and support the company's credit and to attract capital. Witness
4 Hevert also goes on to describe that Missouri precedent provides similar guidance.

5 My point in restating this here is that the Company witnesses have clearly
6 provided in testimony in this case that KCP&L has not over the last several years earned
7 a fair and reasonable return on equity as provided for by Hope and Bluefield. Nowhere
8 does Hope and Bluefield address availability of cash. This issue is not about cash as Mr.
9 Featherstone attempts portray it; the issue is about KCP&L's ability to earn a fair and
10 reasonable return on equity.

11 **Q: Is there another point regarding dividends to shareholders that Mr. Featherstone**
12 **left out of his Rebuttal Testimony?**

13 **A:** Yes there is. He conveniently omitted that during the Regulatory Plan, specifically on
14 February 10, 2009, Great Plains Energy cut its annual dividends to shareholders in half,
15 from \$1.66 per share annually to \$0.83 per share annually. Not only did Additional
16 Amortizations enhance cash flows as Mr. Featherstone describes, Great Plains Energy's
17 shareholders also contributed significantly to enhanced cash flows, and continue to do so,
18 through the reduction in annual cash dividends. Thus, while Great Plains Energy has
19 authorized increases in dividend paid to shareholders four times in five years as Mr.
20 Featherstone states; the current annualized dividend level of \$0.98 per share remains well
21 below the authorized annualized dividend level of \$1.66 per share that was in place
22 before the 2009 dividend reduction.

1 **Q: Do you have a final point to make on Mr. Featherstone's discussion of dividends to**
2 **shareholders?**

3 A: Yes. Cash dividends to shareholders are paid out of Great Plains Energy's retained
4 earnings. The Missouri Commission has already spoken clearly on a company's rights to
5 do as it wishes with its retained earnings. On pages 24-25 of its Order in Ameren
6 Missouri's Case No. ER-2012-0166, the Commission clearly stated in regards to retained
7 earnings:

8 The important fact is that retained earnings belong to the company and its
9 shareholders, not to ratepayers. Ameren Corporation can do whatever it
10 wants with its retained earnings. If it chooses to use those earnings to
11 declare a dividend to its shareholders, it may do so. If it chooses to use
12 those retained earnings to throw a giant party or invest in property on the
13 moon, it must answer only to its shareholders, not to this Commission, and
14 not to ratepayers. Ameren Corporation and its shareholders are entitled to
15 keep any tax benefits that arise from its decision on how to spend its
16 money.

17 To summarize, I think it is abundantly clear that Mr. Featherstone's discussion of
18 increasing cash dividends is misleading, is misplaced and does not support his contention
19 that KCP&L's recent earnings have been sufficient.

20 **Q: You mentioned that you would also address Mr. Featherstone's discussion in his**
21 **Rebuttal Testimony of shareholder returns. Please continue.**

22 A: In a consistent theme with much of his Rebuttal Testimony, Mr. Featherstone presents
23 shareholder returns in a one-sided approach without providing appropriate context. On
24 page 15, he states, "Great Plains total shareholder return, a key financial indicator to
25 Great Plains, was 21% in 2014 and over the last two years, a 51% return".

1 **Q: The total shareholder returns provided in Mr. Featherstone's testimony seem very**
2 **good. What is your issue with these returns and his presentation of them?**

3 A: Simply, Company performance is only one factor in the determination of total
4 shareholder returns. To evaluate company specific-performance in a review of
5 shareholder returns you need to understand overall market returns in the period as well as
6 utility industry specific returns. Mr. Featherstone does not provide those comparables, I
7 can only assume, because they do not support his implication that returns are good so the
8 Company does not need the limited alternative mechanisms requested to have a fair and
9 reasonable opportunity to earn its Commission-authorized return on equity.

10 The information provided below clearly shows that this is another area where Mr.
11 Featherstone has presented a distorted interpretation of data to the Commission, in this
12 case by not putting the data in context. Mr. Featherstone's testimony regarding the Great
13 Plains Energy's total shareholder returns should be disregarded as it is not relevant to the
14 Commission's consideration of alternative mechanisms necessary to provide KCP&L a
15 fair and reasonable opportunity to earn its Commission authorized return on equity
16 established in this case.

17 **Q: Please provide the comparable information you mention is necessary to put Great**
18 **Plains Energy's total shareholder returns in the appropriate context?**

19 A: First, I would note that the one- and two-year total shareholder returns noted by Mr.
20 Featherstone are definitely positive results for Great Plains Energy's shareholders. Put in
21 context though, as I will do in the following tables, clearly demonstrates that Great Plains
22 Energy is actually lagging its peers in total shareholder return over the last five years.

Great Plains Energy
Comparison to Market Indices
Cumulative Returns by Period
^December 31, 2014

	1 year	2 year	3 year	5 year
Dow Jones	10.0%	42.7%	57.3%	94.4%
S&P 500	13.7%	50.5%	74.6%	105.1%
Philadelphia Utility Index	29.7%	46.0%	47.4%	87.0%
Great Plains Energy	21.4%	50.5%	46.1%	78.8%

This first table depicts Great Plains Energy's total shareholder returns over 1, 2, 3 and 5 year periods compared to major market indices. This table demonstrates that much of Great Plains Energy's total shareholder return can be related more to total market returns as opposed to individual company performance.

Great Plains Energy relative EEI
Total Return Ranking
^December 31, 2014

1 year	39 of 48
2 year	24 of 48
3 year	31 of 48
5 year	39 of 48

This second table provides Great Plains Energy's relative total shareholder return ranking over 1, 2, 3 and 5 year periods as provided by the Edison Electric Institute for the respective periods ending December 31, 2014. What this second table clearly shows is that while the stand alone total returns looks impressive as presented in isolation by Mr. Featherstone, Great Plains Energy's relative ranking within its peer group has been consistently below average over the periods and well below average in the 1 year and 5 year periods.

1 Q: Staff witness Featherstone indicated on pages 18-19 of his Rebuttal Testimony that
2 major environmental construction is ending and completion of the construction
3 cycle will reduce pressure on earnings going forward. How do you respond?

4 A: First, I would agree with Mr. Featherstone that reduced capital investment would reduce
5 earnings pressure as it would result in lower negative regulatory lag from the effects of
6 placing investments in-service between general rate cases. This would certainly be true
7 in a scenario where capital investments approximated depreciation expense recovered in
8 rates. However, this is not the situation KCP&L projects itself to be in for at least the
9 next five years.

10 KCP&L's projected capital expenditures over this year and the next four years
11 are:

12 **  **
13
14
15
16

17 This capital expenditure plan for KCP&L is in excess, for each year, of the requested
18 depreciation and amortization expense in KCP&L's current general rate cases which
19 totals approximately \$237 million for the KCP&L-MO and KCP&L-KS jurisdictions
20 combined. I would note that Missouri Staff has recommended approximately \$10 million
21 less annually than the Company requested, which would only serve to widen the gap
22 between projected capital expenditures and capital recovery through depreciation.

23 Second, and more importantly, the alternative mechanisms KCP&L has requested
24 in this case – FAC (including transmission costs), Property tax tracker, Vegetation
25 management tracker and CIPS/Cybersecurity tracker – do not attempt to address capital
26 investment lag. I have acknowledged and discussed in my Rebuttal Testimony that

1 KCP&L will still be subjected to capital investment regulatory lag even if all of its
2 requested alternative mechanisms are authorized by the Commission. That said, as I
3 stated in my Rebuttal Testimony the alternative mechanisms KCP&L has requested,
4 based on the projections I provided in my Rebuttal Testimony, would mitigate 130 basis
5 points and 170 basis points of negative regulatory lag in these cost of service categories
6 over the first two years after rates become effective from this case.

7 Clearly the alternative mechanisms are necessary to provide KCP&L a fair and
8 reasonable opportunity to earn its Commission authorized return from this general rate
9 case – irrespective of the reduced earnings pressure from capital investments asserted by
10 Mr. Featherstone.

11 *Response to Staff Witness Hyneman*

12 **Q: On page 3 of his Rebuttal Testimony, witness Hyneman states that his Rebuttal**
13 **Testimony provides the Commission with a more balanced, transparent, and helpful**
14 **discussion of regulatory lag as compared to my Direct Testimony on these issues.**
15 **How do you respond?**

16 **A:** As I mentioned in response to witness Featherstone’s Rebuttal Testimony, I generally
17 agree with the description of regulatory lag provided by Staff in its Rebuttal Testimony
18 and I have testified to such on previous occasions in written testimony in front of this
19 Commission. As I also noted in response to witness Featherstone, I do not believe the
20 two-way nature of regulatory lag is lost on this Commission nor did I feel I needed to
21 define regulatory lag for this Commission. I will respond separately to several
22 comments/assertions in witness Hyneman’s testimony. Most importantly for the
23 Commission I will address the distortion of certain financial information applied by

1 witness Hyneman in his testimony that I can only assume is intended to persuade the
2 Commission to ignore that the actual surveillance reports supplied to this Commission
3 and Staff clearly show that KCP&L-MO's actual earned ROE was 6.5% and 5.9% in
4 2013 and 2014, respectively. As I have noted, these were the first two years following
5 KCP&L-MO's rates effective from its last general rate case in which KCP&L-MO was
6 granted a Commission authorized ROE of 9.7%.

7 **Q: Distortion of financial information is a strong accusation, please elaborate on this.**

8 A: It is a strong accusation and is not made lightly. On page 2 of his Rebuttal Testimony,
9 witness Hyneman states that, "These beneficial effects of regulatory lag allowed KCPL's
10 shareholders to enjoy past actual returns on equity (ROE) significantly higher than
11 KCPL's actual cost of equity and significantly higher than the average ROEs awarded to
12 U.S. electric utilities by regulatory commissions over a period of many years." To
13 support this assertion, witness Hyneman presents some analysis starting on page 10 of his
14 Rebuttal testimony using, as he says, data publicly available in KCPL's Form 10-K, filed
15 with the Securities and Exchange Commission ("SEC") each year. He states on page 10
16 that he calculated KCPL's annual ROE using KCPL's reported net income available for
17 common stockholders as the numerator and KCPL's beginning common stock equity as
18 the denominator. He spends the next several pages of his Rebuttal Testimony discussing
19 his analysis. It is all premised on the misuse and distortion of the publicly available
20 financial information used in the analysis by witness Hyneman.

1 **Q: How can the use of publicly available financial information be misused and**
2 **distorted?**

3 A: Witness Hyneman has been an auditor for the MPSC assigned to work on KCP&L
4 proceedings for a number of years. He is, or should be, fully aware that KCP&L SEC
5 reported data includes results from both KCP&L's Missouri and Kansas jurisdictions. In
6 addressing earned ROE's in KCP&L's Missouri jurisdiction, it is clearly a distortion and
7 misuse of this information that includes results from its Kansas jurisdiction. Over time
8 KCP&L's Kansas jurisdiction has accounted for about 45% of KCP&L's utility
9 operations.

10 Mr. Hyneman should also be fully aware that in addition to the inclusion of
11 KCP&L's Kansas jurisdictional results, for the years prior to the 2001 formation of Great
12 Plains Energy as a holding company, the KCP&L results used by Mr. Hyneman reflect
13 fully consolidated financial results, including results from unregulated subsidiaries. This
14 inclusion is clearly not relevant in assessing KCP&L's Missouri jurisdictional earned
15 returns compared to Commission authorized returns.

16 **Q: Are there other factors to consider why it is a distortion to include results for**
17 **Kansas operations in the analysis?**

18 A: Yes. As I provided in my Direct Testimony in this case, while KCP&L-MO was only
19 able to achieve a 6.5% earned ROE in Missouri in 2013 (based on Surveillance reports
20 filed with the Commission and Staff) KCP&L-KS was able to achieve a ** [REDACTED] **
21 earned ROE in Kansas that same year. Using the blended results, as witness Hyneman
22 has done, clearly distorts the financial picture this Commission needs to consider when
23 understanding regulatory lag implications for KCP&L in Missouri. As I noted in my

1 Direct Testimony, the Company had more tools to manage regulatory lag in Kansas. In
2 Kansas, KCP&L was able to more timely recover increased fuel and purchased power,
3 transmission, and property tax costs through its authorized rider mechanisms. These are
4 many of the same categories we are attempting to address with alternative mechanisms in
5 this case in Missouri as KCP&L-MO had no such mechanisms available in Missouri in
6 2013. For these reasons, Mr. Hyneman's use of the blended state financial results to
7 discuss earned ROEs in this rate case is distorted and misleading for the Commission.

8 **Q: Is there another clear distortion in witness Hyneman's use of the KCP&L Form 10-**
9 **K information in his analysis?**

10 A: Yes. Mr. Hyneman indicated that he utilized KCPL's beginning common stock equity in
11 the denominator in his calculation of KCPL's annual ROE.

12 **Q: How can the use of KCP&L's beginning common stock equity be misused and**
13 **distorted?**

14 A: Again, witness Hyneman has been an auditor for the MPSC assigned to work on KCP&L
15 proceedings for a number of years. He is, or should be, fully aware that for KCP&L
16 general rate cases in Missouri since the establishment of Great Plains Energy as the
17 holding company, the Commission has accepted the utilization of the Great Plains
18 consolidated capital structure in determining KCP&L's cost of capital in its Missouri
19 jurisdictional rate cases.

20 **Q: Why is this important?**

21 A: The effect of differences in the common stock equity used in the denominator to witness
22 Hyneman's analysis can result in dramatic differences to the outcome of his analysis.
23 While I do not agree at any level with the use of the KCP&L Form 10-K information in

1 his analysis, I have replaced his common stock equity with the common stock equity
2 utilized in the submitted Missouri surveillance reports for all years since the adoption of
3 the use of Great Plains Energy's consolidated capital structure in Missouri ratemaking for
4 KCP&L to show the distortion for this item in witness Hyneman's analysis.

Change in Common Shareholder Equity Used in Calculation

	KCP&L Calculated ROE ¹	Staff Calculated ROE ²
2007	10.0%	11.3%
2008	4.8%	8.5%
2009	7.3%	7.9%
2010	9.2%	8.4%
2011	7.4%	6.8%
2012	6.7%	6.9%
2013	7.6%	8.1%
2014	7.0%	7.5%
Avg	7.5%	8.2%

¹KCP&L calculated ROE's utilizes GPE's common equity amounts at calendar year-end as reported in the KCP&L Missouri Annual Surveillance Reports.

² Staff's calculated ROE's utilizes KCP&L's prior year-end common equity amounts obtained from the Form SEC 10-K (KCP&L Total Company).
Formula used: (Net Income Available for Common Stockholders-KCPL Total Company / Common Stock Equity at prior year-end)

5
6 **Q: Did witness Hyneman have more representative financial information to base his**
7 **analysis on than the KCP&L Form 10-K data that he utilized and you have taken**
8 **issue with?**

9 **A:** Yes he did. That is what is appalling to his approach in providing what he calls "a more
10 balanced, transparent, and helpful discussion of regulatory lag" (as compared to my
11 Direct Testimony on these issues). Witness Hyneman certainly has access to KCP&L's
12 Surveillance reports submitted annually to the Commission and available to Staff which

1 provide actual earned ROEs specifically for KCP&L's Missouri jurisdictional operations.
2 Why Mr. Hyneman chose not to present this information to the Commission is
3 inexplicable to me. After all, this case is about KCP&L's Missouri rates, Missouri cost
4 of service, Missouri earnings and Missouri customers.

5 In addition, I have previously provided a history back to 1988 of the results from
6 these annual Surveillance report filings compared to authorized ROEs in written
7 testimony before this Commission, in response to positions taken by Commission Staff.
8 The only logical conclusion that I can draw is that use of the actual Surveillance reports
9 did not support the distorted view of earned ROE that witness Hyneman wanted to
10 portray in his analysis. Therefore, I am going to once again provide the history of
11 KCP&L-MO's filed annual Surveillance reports in testimony to this Commission, in
12 response to Commission Staff testimony. This time I will also lay those Surveillance
13 results next to witness Hyneman's analysis.

	KCP&L Missouri Jurisdictional Earned ROE	KCP&L Missouri Jurisdictional Authorized ROE	Notes	KCPL ROE Form SEC 10- K	RR&A – Average Electric Utility Authorized ROE ⁷
1993	12.30%	15.00%	¹	12.0%	11.4%
1994	11.67%	15.00%		11.7%	11.3%
1995	NA	15.00%	²	13.6%	11.6%
1996	NA	15.00%	²	11.6%	11.4%
1997	12.90%	15.00%		8.0%	11.4%
1998	14.13%	15.00%		13.3%	11.7%
1999	10.07%	15.00%		8.8%	10.8%
2000	8.26%	15.00%		18.2%	11.4%
2001	11.17%	15.00%		12.9%	11.1%
2002	13.55%	15.00%		12.9%	11.2%
2003	12.20%	15.00%		15.7%	11.0%
2004	11.57%	15.00%		17.0%	10.8%
2005	9.32%	15.00%		12.9%	10.5%
2006	7.67%	15.00%		13.0%	10.4%
2007	10.04%	11.25%	³	11.3%	10.4%
2008	7.69%	10.75%	³	8.5%	10.5%
2009	6.15%	10.75%		7.9%	10.5%
2010	6.91%	Settlement	⁴	8.4%	10.3%
2011	5.09%	10.00%	⁵	6.8%	10.3%
2012	5.84%	10.00%		6.9%	10.2%
2013	6.49%	9.70%	⁶	8.1%	10.0%
2014	5.69%	9.70%		7.5%	10.0%
Avg	9.4%	13.4%		11.2%	10.8%

Missouri Jurisdictional Authorized ROEs:

¹Case No. EO-85-185, effective 4/23/1986

²Case No. ER-2006-0314, effective 1/1/2007

³Case No. ER-2007-0291, effective 1/1/2008

⁴Case No. ER-2009-0089, effective 9/1/2009

⁵Case No. ER-2010-0355, effective 5/4/2011

⁶Case No. ER-2012-0174, effective 1/26/2013

⁷Regulatory Focus published by Regulatory Research Associates ("RRA") dated October 10, 2014

⁸Returns for 1995-1996 are not available. Allocators for 1995 were not developed due to the rate design and Staff audit in Case No. EO-94-199.

1 Q: What conclusions do you draw from your comparison of KCP&L-MO annual
2 Surveillance report results to witness Hyneman's analysis?

3 A: First, the comparison quickly shows the magnitude of the impact of the misuse and
4 distortion of information provided by witness Hyneman. Second, based upon its
5 submitted Missouri jurisdictional surveillance reports, KCP&L-MO has not had a
6 reported period of earned ROE in excess of authorized ROE since at least 1993, the start
7 of my historical summary of filed annual Surveillance reports by KCP&L in Missouri

1 included in the table above. Third, not only does Mr. Hyneman's distorted analysis over
2 state KCP&L-MO average returns over the presented period by 180 basis points, his
3 complete omission of the comparison of KCP&L-MO jurisdictional earned returns to
4 Commission authorized returns for the same periods would have left the Commission
5 without the important information depicted showing that average earned returns for
6 KCP&L-MO over the presented period were 400 basis points below the average
7 Commission authorized returns over the same period.

8 **Q: Do you have more evidence that witness Hyneman's Rebuttal Testimony does not**
9 **provide "a more balanced, transparent, and helpful discussion of regulatory lag" to**
10 **the Commission as he suggests?**

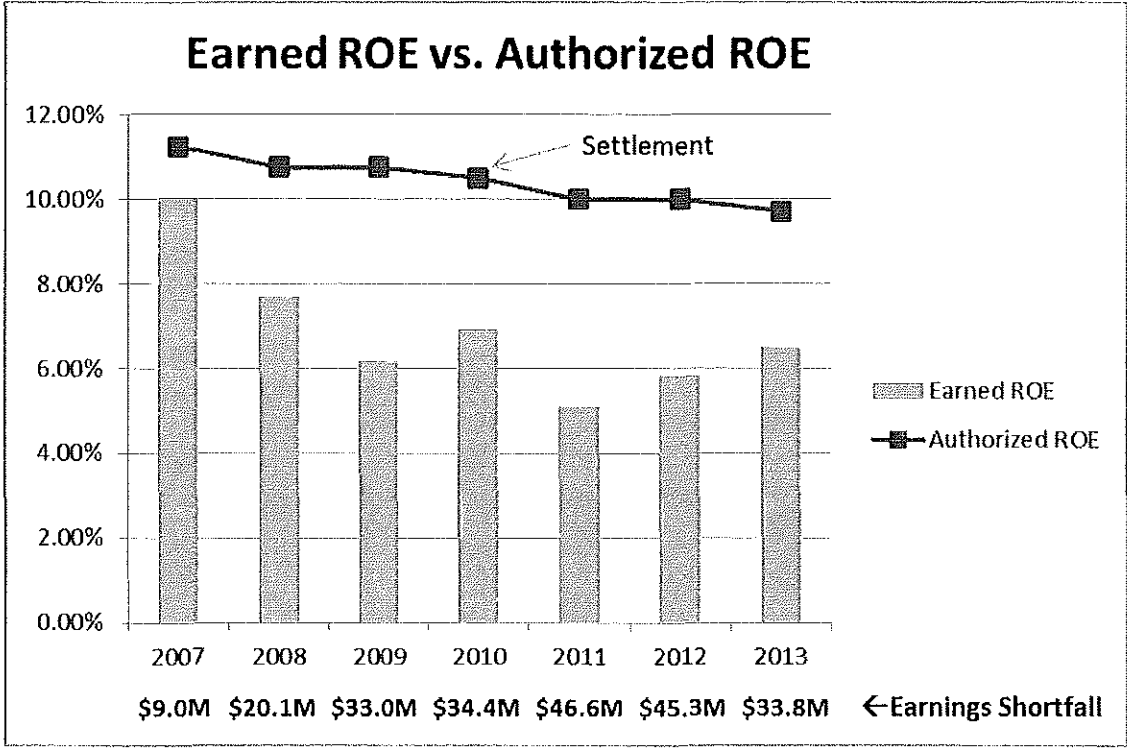
11 A: Yes, I do. As part of his response to a question on page 9 of his testimony, witness
12 Hyneman states, "However, utilities like KCPL are protected to the extent that they
13 control the effect of regulatory lag, and most importantly, this effect of regulatory lag is
14 limited. While it may be time consuming and require the incurrence of additional costs,
15 utilities have total control over when they file for rate increases to offset any negative
16 effects of regulatory lag. On the other side of the regulatory lag equation, ratepayers
17 have no such defense and are completely powerless to mitigate when regulatory lag
18 works to the utilities' advantage with higher than authorized ROEs such as experience by
19 KCPL over past periods, including the eight-year period of 2000-2007."

20 **Q: Please elaborate on your concerns regarding this section of witness Hyneman's**
21 **testimony.**

22 A: First, as I demonstrated earlier in this testimony, witness Hyneman misused financial
23 information to provide a distorted view of earned ROEs specific to KCP&L-MO

1 operations. The evidence clearly shows that for all periods presented (1993-2014),
 2 including the infamous overearning period for 2000-2007 asserted by witness Hyneman,
 3 that KCP&L-MO's earned ROE was below its then-effective Commission-authorized
 4 ROE based upon annual Surveillance reports for KCP&L's Missouri operations
 5 submitted annually with this Commission and provided to the Staff.

6 Second, as I provided in a table to my Direct Testimony in this case, and it is
 7 worth repeating here, the gap between earned returns and authorized returns from 2007
 8 through 2013, as portrayed below, has resulted in an aggregate earnings shortfall to our
 9 shareholders over the period in excess of \$220 million. This equates to an average annual
 10 shortfall to our shareholders of just under \$32 million each year.



11 Why is this important? It goes to the statement made by witness Hyneman that
 12 "utilities have total control over when they file for rate increases to offset any negative
 13

1 effects of regulatory lag.” During the period 2007 to 2013, KCP&L-MO had new rates
2 takes effect on 5 separate occasions as a result of general rate cases. The dates new rates
3 became effective during the period were January 1, 2007, January 1, 2008, September 1,
4 2009, May 4, 2011 and January 26, 2013. It is very clear that with the current Missouri
5 historical ratemaking model, which is continually provided a ringing endorsement from
6 Staff, KCP&L may have total control over when it files for rate increases, but as the
7 consistent and significant earnings shortfalls resulting from that model show, KCP&L’s
8 frequent filings did not offset the significantly imbalanced negative effects of regulatory
9 lag, contrary to the assertions of witness Hyneman.

10 I want to clearly point out to the Commission, from the above example, it clearly
11 shows that the Company’s shareholders have been subjected to an average annual
12 shortfall from their authorized return of nearly \$32 million each year even with
13 management’s efforts to mitigate this through the completion of 5 general rate cases
14 resulting in new rates in the same 7 year span. I want to make clear that these shortfalls
15 to shareholders are not lag, in other words under Missouri’s historical ratemaking model
16 advocated by Staff, there will be no opportunity to recover these amounts in future years
17 or general rate cases – they are truly lost returns that were authorized by the Commission
18 that KCP&L should have had a fair and reasonable opportunity to earn. That no such
19 opportunity was provided is established beyond doubt by the \$220 million in KCP&L
20 earnings shortfalls over the seven year period.

1 **Q: Do you have additional concerns to share regarding the section of witness**
2 **Hyneman’s testimony that you have been discussing?**

3 A: Yes I do. My last concern on this section of testimony is the sentence where he states,
4 “On the other side of the regulatory lag equation, ratepayers have no such defense and are
5 completely powerless to mitigate when regulatory lag works to the utilities’ advantage
6 with higher than authorized ROEs.”

7 **Q: Do you disagree that ratepayers have no such defense?**

8 A: I definitely do. Just four pages later in his testimony, witness Hyneman states, “The Staff
9 of the Commission did, on occasion seek to reduce KCPLs base rates. Pursuant to
10 various stipulations and agreements with the Commission, KCPL reduced Missouri retail
11 rates at least four times.” Now these were discussions raised by the Staff and agreed to
12 by KCP&L after negotiation in settlements. However, witness Hyneman also fails to
13 acknowledge that earnings complaints can be filed against KCP&L pursuant to Missouri
14 statute.

15 **Q: Do you have any final remarks regarding Staff witness Hyneman’s Rebuttal**
16 **Testimony?**

17 A: I could continue rebutting specific comments in witness Hyneman’s Rebuttal Testimony,
18 but I think I have made the point regarding witness Hyneman’s so-called “more balanced,
19 transparent, and helpful discussion of regulatory lag” (as compared to my direct
20 testimony on these issues). I have made clear that he has misused financial information
21 and provided a very distorted view of regulatory lag and its impact on KCP&L-MO in an
22 effort to support the Staff’s “Just Say No” approach to KCP&L’s efforts to rebalance the
23 historical ratemaking model in Missouri. His testimony should be given very little

1 weight, if any, by the Commission in formulating its decision on the issues of KCP&L's
2 requested alternative mechanisms.

3 **Q: What is your conclusion regarding KCP&L-MO's ability to earn its Commission**
4 **authorized return and the increasing impact of regulatory lag on KCP&L-MO's**
5 **business?**

6 A: In the first two years following rates effective from its last general rate case, KCP&L-
7 MO, based upon its annual Surveillance reports submitted to the MPSC and Staff, earned
8 a 6.5% and 5.9% ROE in 2013 and 2014, respectively. These actual results are compared
9 to a Commission authorized ROE of 9.7% for those periods. This significant shortfall
10 from the authorized ROE clearly indicates that the Missouri historical ratemaking process
11 endorsed by Staff and other parties in this case, and utilized in KCP&L-MO's last general
12 rate case has not come close to giving the Company a fair and reasonable opportunity to
13 earn its authorized ROE.

14 It is apparent that the current operating environment for KCP&L-MO including
15 low to declining kWh growth², increasing capital requirements to comply with federal
16 mandates and to address aging infrastructure, and increased cost of service driven in large
17 part by federal and state imposed costs, when addressed utilizing historical ratemaking
18 advocated by Staff has not resulted in rates reflective of costs to serve for the go forward
19 rate years. This is inconsistent with my understanding of how the rate setting process is
20 intended to work.

21 I have discussed that the many aspects of positive regulatory lag discussed by
22 Staff witnesses in their Rebuttal Testimony are in fact already included in the 2013 and

² KCP&L's recent IRP filing includes load growth forecasts of 0.9%, 0.2% and 0.2% for 2016-2018, respectively.

1 2014 actual ROE earned by KCP&L-MO of 6.5% and 5.9%, respectively. I have also
2 described that while the Company continually seeks process improvements and efficiency
3 gains, that the savings we achieved over the last two years were hard fought. An ability
4 to reduce headcount by 4% every two years into the future and to achieve levels of
5 savings such as were unlocked in our procurement area, driven in large part by our
6 improved negotiating and purchasing power as a larger entity post-acquisition of Aquila,
7 is unsustainable going forward if we are to continue to provide the safe and reliable
8 service that our customers deserve and expect. I have also addressed any misconception
9 that regulatory lag can be managed/alleviated by the utilities simply filing general rate
10 cases. As I demonstrated, for the period from 2007-2013 the Company's shareholders
11 were subjected to incurring a \$220 million shortfall in earned returns from the
12 Commission authorized returns over that period. This shortfall occurred despite
13 management's completion of five general rate cases implementing new rates each time
14 over that seven year period. Clearly, more frequent general rate cases is not the answer to
15 restoring balance in Missouri's ratemaking model.

16 Therefore, I respectfully request the Commission to look past the rhetoric of the
17 Staff and other parties to this case. Look across the country at changes occurring in the
18 utility industry, look at changes other state commissions are implementing to their
19 historical rate making construct, and examine the facts presented in this case regarding
20 the pressures KCP&L-MO faces and its consistent inability to come close to earning its
21 Commission-authorized return on equity. Make a change. Adopt the modest changes
22 requested by KCP&L to the Missouri historical ratemaking treatment advocated by Staff
23 and other parties for a limited number of very specific items (property taxes, CIP/cyber

1 security compliance costs and FAC, including SPP transmission fees) and acknowledge
2 that it is not appropriate for shareholders to fund costs to serve KCP&L-MO's customers
3 to the tune of almost \$32 million per year as they have done on average over each of the
4 last seven years, despite five general rate increases requested by KCP&L management
5 and implemented by this Commission. In my Rebuttal Testimony, I have provided
6 testimony demonstrating that even if the Commission adopts the modest changes
7 requested, if in place over the last two years KCP&L-MO would still have been subjected
8 to significant negative regulatory lag. I also demonstrated that our budgets over the next
9 few years, with the modest requested changes in place, would still subject KCP&L-MO
10 to significant regulatory lag pressures. Inaction in this case is a message that Missouri is
11 not willing to give KCP&L a fair and reasonable opportunity to earn its Commission-
12 authorized returns and that it is an expectation that KCP&L's shareholders subsidize
13 Missouri customers' cost of service by millions of dollars per year.

14 **Q: Can you translate your conclusion to put it in context of the Staff's position taken in**
15 **their Rebuttal Testimony?**

16 **A:** Yes. Staff's clear position in their Rebuttal Testimony regarding the Company's request
17 was "Just Say No", do not change anything from what has been in place for 100 years. I
18 would say to the Commission, be smarter than that. Trust what you hear and read
19 regarding the actions of other state commissions and trust all of the information you read
20 and hear at conferences regarding significant structural changes occurring in the utility
21 industry. As examples, the NARUC 2013 Summer Electric Committee Meeting
22 included a Utility Business Model Panel and explored a number of factors putting stress
23 on the prevailing utility business model; NARUC issued a February 2013 report titled

1 Cybersecurity for State Regulators 2.0; and closer to home the Financial Research
2 Institutes upcoming 2015 Public Utility Symposium, *Issues in Infrastructure:
3 Replacement, Resilience and Regulation* will focus on “utility infrastructure and the
4 challenges associated with its replacement and modernization, the extent to which
5 resiliency and sufficiency exists within the utility industries, and how to design more
6 effective regulatory or business models.”

7 The Commission should also give significant consideration to the Rebuttal
8 Testimony of KCP&L witness H. Edwin Overcast including Schedule HEO-2 to that
9 testimony which includes the Black and Veatch report titled, “Modernizing Utility
10 Ratemaking Practices in a Changing Industry”. That report shows the prevalence of
11 alternative mechanisms currently being employed by utilities and their regulators across
12 the country.

13 Burying our collective heads in the sand and ignoring all of the evidence of these
14 industry changes and pressures is not good policy and is not in the best interest of
15 KCP&L nor is it in the best long-term interests of KCP&L’s Missouri electric customers.

16 2. FAC and Tracker Requests

17 **Q: Staff witness Oligschlaeger (on p. 12, ll. 10-20 of his Rebuttal Testimony) asserts**
18 **that the Company’s request for a CIP/cyber security cost tracker is premature.**
19 **How do you respond?**

20 **A:** KCP&L has developed a comprehensive plan and cost estimate for its CIP/cyber security
21 compliance efforts which is set forth in the Rebuttal Testimony of Mr. Joshua F. Phelps-
22 Roper. Although CIP/cyber security requirements are evolving and admittedly fluid,
23 KCP&L does not have the luxury of waiting until some indeterminate time in the future

1 to begin the work (and incur the associated costs) necessary to achieve compliance by
2 April 1, 2016. Mr. Oligschlaeger's suggestion that the Company wait until later to
3 implement a regulatory mechanism for CIP/cyber security compliance costs, if adopted
4 by the Commission, would preclude KCP&L from having an opportunity to recover all of
5 its reasonable, necessary and prudent CIP/cyber security costs.

6 **Q: Have other governmental agencies recognized the urgency of CIP/cyber security**
7 **efforts?**

8 A: Yes, in testimony before House Committee on Energy and Commerce, Subcommittee on
9 Energy and Power on May 19, 2015, Michael Bardee, Director of the Office of Electric
10 Reliability at the Federal Energy Regulatory Commission ("FERC") advocated for
11 broader FERC authority to deal with "emergency action" to address "urgent cyber and
12 other national security risks" to the grid. (Schedule DRI-10, pp. 6-8).

13 **Q: What message would Commission adoption of the Staff's "wait and see" approach**
14 **send to KCP&L?**

15 A: If the Commission follows the Staff recommendation and refuses to adopt a mechanism
16 that provides KCP&L a reasonable opportunity to recover its CIP/cyber security
17 operating and maintenance ("O&M") expenses, KCP&L would be left wondering
18 whether the Commission values CIP/cyber security compliance. The clear message from
19 that decision would be that the Commission does not value CIP/cyber security
20 compliance very much at all and the Company would have an economic incentive to
21 adopt a "bare bones" CIP/cyber security compliance approach designed to do just enough
22 to comply with governmental requirements and no more. I do not believe this kind of

1 approach would serve our customers well and would therefore urge the Commission to
2 adopt the CIP/cyber security cost tracker KCP&L has proposed.

3 **3. Rate Case Expenses**

4 **Q: Did Staff and/or OPC witnesses file Rebuttal Testimony on rate case expenses?**

5 A: Yes. On behalf of Staff, witness Matthew Young filed rate case expense Rebuttal
6 Testimony. On behalf of OPC, witness William Addo filed rate case expense Rebuttal
7 Testimony.

8 **Q: Are these updates/changes to Staff's and OPC's positions regarding rate case
9 expenses?**

10 A: With a couple of exceptions, which I will address here in my testimony, their testimony is
11 reiterating their positions articulated in the earlier filed Staff Report and by OPC witness
12 Addo in his Direct Testimony.

13 **Q: Please summarize the rate case expense issues articulated by Staff and OPC in this
14 case?**

15 A: This issue is comprised of four sub-issues: 1) the total level of rate case expense to be
16 recovered in rates; 2) the appropriateness of retroactive application of a tracker
17 mechanism to rate case expense recovery previously authorized by the Commission
18 without a Commission ordered tracker mechanism in place; 3) the period of time over
19 which this total amount of rate case expense should be normalized; and 4) the period of
20 time over which depreciation study costs (an element of rate case expense) should be
21 normalized.

1 **Q: Please discuss the Company's position responding to Staff and OPC issues raised in**
2 **this area.**

3 A: I provided extensive Rebuttal Testimony in response to Staff and OPC rate case expense
4 testimony in their direct cases. As the Staff and OPC witnesses did not generally expand
5 or change their testimony on the issues in their Rebuttal Testimony, I will not repeat my
6 Rebuttal Testimony here in detail and will allow my Rebuttal Testimony to stand. I
7 would note that KCP&L witness Ron Klote also provided Rebuttal Testimony,
8 specifically in response to testimony provided in the Staff Report addressing their
9 retroactive application of a tracker mechanism to rate case expense recovery previously
10 authorized by the Commission without a Commission ordered tracker mechanism in
11 place. Witness Ron Klote's Rebuttal Testimony in this area is also still responsive to
12 Staff's position and should continue to be considered by the Commission.

13 **Q: Would you please summarize KCP&L's Rebuttal Testimony on rate case expenses?**

14 A: Recognizing that utilities must possess the financial wherewithal to maintain the ability to
15 provide customers with safe and reliable service and that utilities are obligated by law to
16 file rate cases in order to increase rates, the Commission should honor its consistent past
17 practice by allowing KCP&L the opportunity to recover all of its reasonable and prudent
18 rate case expenses. The Commission has disallowed rate case expense in the past using
19 this standard, and these past disallowances provide ample incentive for KCP&L and other
20 utilities to ensure that rate case expenses are reasonable and prudent. Past practice has
21 demonstrated that if the Commission determines on the basis of specific evidence in a
22 specific proceeding that rate case expenses are unreasonable or imprudent, then the

1 Commission has the ability under this standard to protect customers by disallowing
2 recovery of rate case expenses deemed unreasonable or imprudent.

3 OPC and Staff, on the other hand, would have the Commission abandon its
4 consistent past treatment of rate case expense. Staff proposes that the Commission
5 disallow 50% of actual rate case expenses incurred by KCP&L. (Young Rebuttal, p. 5,
6 lines 3-5) OPC takes a slightly different approach, proposing that the Commission
7 disallow 50% of actual rate case expenses not deemed imprudent which, presumably,
8 would be otherwise disallowed. (Addo Rebuttal, p. 46, lines 8-14) The Commission
9 should reject these OPC and Staff proposals because they arbitrarily disallow rate
10 recovery of costs necessary for the Company to maintain its financial ability to continue
11 providing safe and reliable service to its customers without any evidence whatsoever that
12 such rate case expenses are in any way unreasonable or imprudent.

13 **Q: You indicated that there were a few additions/changes to Staff and OPC's Rebuttal**
14 **testimony positions that you would address. Please begin.**

15 **A:** Witness Addo has revised his rate case expense amortization recovery period from two
16 years in his Direct Testimony to three years in his Rebuttal Testimony now matching
17 Staff's three year recovery position in their Staff Report.

18 **Q: Do you have concerns about this revision?**

19 **A:** Yes, I do. Witness Addo indicated that his two year amortization period was based upon
20 the duration between rates effective from KCP&L's ER-2010-0355 case and its ER-
21 2012-0174 case. He then states that based upon further review of the Company's
22 workpapers and discussions from a prehearing conference with the Company that
23 KCP&L is leaning towards a three-year timeframe to file its next case. I do not believe

1 there is any more certainty that KCP&L will be filing a case in three years as opposed to
2 two years, perhaps less certainty.

3 **Q: Please elaborate.**

4 A: I was a participant at the prehearing conference. What I said was that we would like to
5 be in a position to extend the timeframe for our next case. No one, especially our
6 customers, likes to have rate cases at a high frequency. I also went on to say that the
7 outcome of this current case would be very impactful to our ability to extend the
8 timeframe for our next case. To elaborate, KCP&L's hope from this general rate case is
9 that the Commission will recognize the need for, and value of, the alternative
10 mechanisms that it has requested to address significant cost of service items that are
11 largely outside of the Company's control, largely driven by state and federal mandates,
12 which if ordered by the Commission will improve the Company's chances of initiating
13 rate cases less frequently than has been required in the last ten years or so. Staff and
14 OPC have not supported any of the requested regulatory mechanisms and have basically
15 told the Commission the historical ratemaking model works and that the Commission
16 should "Just Say No" to all of the Company's requests for alternative mechanisms. I do
17 not understand how, with the history of rate cases filed, and the Staff and OPC's adamant
18 refusal to support any alternative mechanisms, witness Addo can conclude that the timing
19 of rate cases will extend to three years assuming OPC expects Staff and OPC's position
20 regarding alternative mechanisms to be adopted by the Commission in this case. I would
21 strongly suggest that if the history of KCP&L under-earning its authorized returns
22 persists as a result of the Commission not approving KCP&L's requested alternative

1 mechanisms, as my Rebuttal Testimony demonstrates it would be very likely to, then
2 witness Addo's optimism toward extending rate case timing is misplaced.

3 **Q: Did Staff have any additional Rebuttal Testimony to address?**

4 A: Yes. On page 5 of his Rebuttal Testimony, witness Young indicates that Staff
5 recommends the use of actual rate case expense incurred and that a cut-off date will need
6 to be established.

7 **Q: Do you agree with Staff witness Young's recommendation to use actual rate case
8 expense incurred and that a cut-off date will need to be established?**

9 A: Yes.

10 **Q: What is your recommendation for establishment of a cut-off?**

11 A: I suggest the following process be utilized to establish the level of rate case expenses to
12 be considered for recovery in this case. 1) KCP&L should file a final update of KCP&L-
13 only rate case expense two weeks before the expected Commission order date in this
14 case; 2) a final update of Staff and OPC expenses should be provided by those parties
15 through the same date. As rate case expenses are often back loaded in the procedural
16 schedule, a final update this close to the expected Order date is necessary to capture as
17 much rate case expense incurred by all parties as possible.

18 **Q: Will your recommended update process provide for recovery of all of KCP&L's
19 rate case expenses incurred in this proceeding?**

20 A: No. While it is necessary to have a cut-off in order to include actual rate case expenses to
21 be recovered in the Commission's determination of revenue requirement in this case,
22 because rate case expenses are generally back loaded in the procedural schedule, it is
23 likely the cut-off will not include all rate case expenses incurred for the proceeding. In

1 addition, in the event that any party, KCP&L, Staff or any intervenor(s) file an
2 application for rehearing of the Commission's Order in the case, none of the expenses
3 incurred by KCP&L to develop an application for rehearing or respond to an application
4 for rehearing by other parties would be included for recovery. Furthermore, if Staff or
5 OPC file an application for rehearing or respond to such an application by another party,
6 those costs are charged against KCP&L without any opportunity of recovery.

7 **Q: How often are applications for rehearing/reconsideration/clarification filed as a**
8 **result of a Commission order in a rate case?**

9 A: Where the Commission's order addresses a full settlement of a case, applications for
10 rehearing/reconsideration/clarification are rare. However, where one or more issues
11 within a rate case are contested and litigated at evidentiary hearing, they are quite
12 common. Of the KCP&L and GMO rate cases since 2006 that did not involve full
13 settlement, applications for rehearing/reconsideration/clarification were filed in each case
14 by two to seven parties.

15 **Q: Are there other rate case expenses that would not be recovered under the process**
16 **you recommend?**

17 A: Yes. If a party to the proceeding appeals the Commission's Order to the Court, KCP&L
18 is not able to recover its costs incurred in the appellate process. This does not happen as
19 often as applications for rehearing/reconsideration/clarification, but it is not uncommon.

20 **Q: Is there another risk of under-recovery of rate case expense for KCP&L?**

21 A: Yes. Excluding the 50% disallowances proposed by both Staff and OPC, Staff witness
22 Young also recommends on page 2 of his Rebuttal Testimony that the rate case expenses
23 be normalized over a three year period. He goes on to recommend that the rate case

1 expense recovered in base rates should not be considered for future consideration of over
2 or under recovery.

3 While KCP&L is not rebutting Staff's proposal to normalize rate case expenses
4 over a three year period, exclusive of the 50% disallowance that we do not agree with,
5 and include that amount in base rates with no future consideration of over or under
6 recovery, I do provide testimony in response to OPC witness Addo's move from a two-
7 year normalization to a three-year normalization. In general I would reiterate here that,
8 among other factors, the outcome of the Commission's decision in this case will have a
9 direct bearing on whether KCP&L will be able to extend the timing of its next rate case
10 filing such that a three-year normalization would provide full recovery of the rate case
11 expenses considered prudent for recovery by the Commission in its Order in this case.

12 4. Clean Charge Network Pilot

13 **Q: What is the purpose of this section of your testimony regarding the Clean Charge**
14 **Network Pilot?**

15 **A:** I will address the CCN Rebuttal Testimony of Staff witnesses Byron M. Murray and
16 Keith Majors, as well as the Rebuttal Testimony of OPC witnesses David E. Dismukes
17 and William Addo.

18 **Q: What position has the Staff and OPC taken with regard to the Company's request**
19 **to include an amount in rates for the recovery of the cost of the investment and**
20 **expense associated with the CCN?**

21 **A:** Both Staff and OPC are opposed to such recovery.

1 **Q: What is the basis of Staff's opposition?**

2 A: Staff's witness Murray takes issue with the Company's assertions that there is potential
3 benefit to all of KCP&L's customers (not just those driving electric vehicles ("EV"));
4 that EVs can have a positive impact on air quality; and that EVs can contribute to
5 meeting the goals of the EPA's Clean Power Plan.

6 **Q: How does Mr. Murray support these positions?**

7 A: In denying the existence of possible benefit to all KCP&L ratepayers, Mr. Murray states
8 "KCPL did not do any studies showing that its Clean Charge Network will benefit
9 customers who do not own an electric vehicle." He goes on to present evidence that over
10 99% of KCPL's Missouri customers do not own an EV.

11 **Q: Do you disagree with these statements?**

12 A: No, I do not. KCP&L specific studies are not necessary to understand the potential
13 benefits of the Clean Charge Network pilot for all KCP&L customers even if currently
14 over 99% of KCP&L's Missouri customers do not own an EV.

15 **Q: Did the Company conduct due diligence prior to making the decision to embark on
16 the CCN pilot project?**

17 A: Yes it did. The fact that KCP&L did not conduct a specific study does not mean that it
18 embarked on this pilot project on a whim, and conducted no due diligence. While Mr.
19 Murray quoted my Supplemental Direct Testimony, he failed to note that same
20 Supplemental Direct Testimony included 7 Schedules that were in fact EV studies the
21 Company considered in making the decision to move forward with the CCN pilot project.
22 Schedule DRI-3, *California Transportation Electrification Assessment Phase 2: Grid
23 Impacts*, Dated October 23, 2014 is an in depth analysis of the costs and benefits

1 associated with EVs from both a societal and ratepayer perspective. This analysis
2 showed benefits associated with the adoption of EVs for both ratepayers and society at
3 large.

4 **Q: What does a study conducted in California have to do with the Company's Missouri
5 and Kansas CCN initiative?**

6 A: The Company acknowledges there are differences between Missouri and Kansas as
7 compared to California. However, geography does not change the basic fundamentals
8 underlying the study. The magnitude of the numbers may change given the difference in
9 retail electric rates, adoption rates, and generation mix, but the science regarding
10 emissions created by an internal combustion engine vehicle and an electric vehicle will
11 not change just because the vehicle is in Missouri, Kansas, California, or really anywhere
12 on the planet.

13 **Q: Beyond the resources identified in the 7 Schedules supplied with your Supplemental
14 Direct Testimony, did KCP&L rely on any other sources in determining that this
15 pilot project is in the public interest?**

16 A: Yes, the Company met with personnel at the Electric Power Research Institute ("EPRI")
17 and participated on electric vehicle and electric vehicle infrastructure working groups and
18 task forces through EPRI and the Edison Electric Institute ("EEI").

19 **Q: How do you respond to Mr. Murray's reference to a Sierra Club article titled
20 *ELECTRIC VEHICLES: MYTHS VS. REALITY* in support of his position that the
21 CCN will have "the greatest negative impact during peak daytime hours when the
22 vehicles are being charged at commercial lots"?**

1 A: I would point out that the section quoted by Mr. Murray is a comparison of “electric
2 vehicles” to “hybrid vehicles”. This comparison has no bearing on the CCN project and
3 its potential to provide environmental benefits as compared to a conventional vehicle
4 with an internal combustion engine. In fact, this specific Sierra Club article and the
5 Sierra Club web site are supportive of the adoption of EVs. I would also point out that in
6 terms of emissions; the offset in emissions generated by the use of an EV versus a
7 conventional internal combustion engine vehicle is the same regardless of the time of
8 day. I have attached the entire article as Schedule DRI-11.

9 **Q: Did Mr. Murray provide testimony related to the EPA’s Clean Power Plan and the**
10 **role of EVs in compliance with the Plan?**

11 A: Yes, Mr. Murray indicated the Clean Power Plan is specific to electric generation units
12 using fossil fuels and will not take into account tailpipe emissions. He goes on to say
13 “KCPL must address its electric generation units and lower emissions from them to come
14 into compliance with 111d. KCPL’s promotion of electric vehicles will only build load,
15 and may increase emissions due to the increased amount of electricity required to charge
16 the vehicles.”

17 **Q: Do you agree with Mr. Murray’s assessment?**

18 A: I agree in part. While Mr. Murray is correct in that EPA’s focus of the proposed Clean
19 Power Plan is specific to electric generation units, compliance is proposed to be achieved
20 by increasing the efficiency of coal generation, switching coal to gas generation,
21 increasing generation from low or zero emitting sources, and increasing customer energy
22 efficiency. Initially, EVs with their limited numbers will not likely have a significant

1 effect, but over time as the generation mix changes the electrification of the mobile sector
2 will occur from a generation system emitting less emissions.

3 KCP&L has been addressing its electric generation units to lower emissions,
4 which is in large part the reason for this request to increase rates. KCP&L has already
5 taken significant steps to achieve compliance with the proposed Clean Power Plan, for
6 example, the addition of efficient coal generation, increased wind and solar generation,
7 and customer energy efficiency programs. In addition, KCP&L's Integrated Resource
8 Plan proposes additional wind, solar generation, and customer energy efficiency
9 programs.

10 Mr. Murray seems to imply that increased load associated with EVs will in some
11 way make it more difficult for KCP&L to comply due to increased emissions. In
12 examining Mr. Murray's Schedule BMM-R1-1 EPA FACT SHEET: Clean Power Plan
13 NATIONAL FRAMEWORK FOR STATES, the EPA describes setting state goals, "The
14 basic formula for the state goal is a rate: CO₂ emissions from fossil fuel-fired power
15 plants in pounds (lbs) divided by state electricity generation from fossil-fuel fired power
16 plants and certain low-or zero-emitting power sources in megawatt hours (MWh)." This
17 calculation results in a rate for CO₂ per MWh generated. KCP&L will be required to
18 comply with this rate for its generation fleet which will result in decreased emissions. By
19 proposing a rate and not a set amount of CO₂, EPA has allowed for future potential
20 changes including the potential electrification of the mobile sector. Therefore, adding
21 load is not an issue as long as the mix of generation maintains at or below the proposed
22 rate. In other words, while I am not an expert regarding the Clean Power Plan, adding

1 load is not necessarily contrary, but actually contemplated, in the proposed Clean Power
2 Plan.

3 **Q: What does Mr. Murray say about the impact electric vehicles may have on the air
4 quality in the Kansas City area?**

5 A: Mr. Murray states “Electric vehicles alone aren’t sufficient to impact the air quality of the
6 Kansas City area”.

7 **Q: Do you believe EVs have the potential to impact air quality in the Kansas City area?**

8 A: Yes, I do believe over time EVs can have a positive impact on the air quality in the
9 Kansas City area. I cannot quantify the potential impact today, but logically even minor
10 incremental improvements in emissions count. There was a time when no one would
11 have considered changing out a light bulb to be significant, but that is not the world we
12 live in today. Any improvements—especially any improvements that do not degrade the
13 efficacy of the end use should count and matter.

14 **Q: Mr. Murray also discusses a case brought before the Indiana Utility Regulation
15 Commission (“IURC”) by Indiana Power and Light Company (“IPL”). Are there
16 differences you would like to point out between IPL’s request for recovery
17 associated with EV charging and KCP&L’s request in this case?**

18 A: Yes there are. Mr. Murray begins this discussion with the question, “Has a similar
19 electric vehicle charging network been proposed anywhere else in the Midwest?” The
20 fact that both IPL’s request and KCP&L’s request are related to electric vehicle charging
21 is about the only similarity that exists between the two requests.

1 Q: What can you tell me about the BlueIndy project?

2 A: At a high level, the BlueIndy project is an electric car sharing program consisting of 200
3 charging station locations across the city of Indianapolis. The city contracted with the
4 Bolloré Group, a French conglomerate, to provide 500 plug-in electric cars at sites across
5 town that residents can rent for as little as 15 minutes to run errands. Bolloré runs a
6 similar program in Paris. BlueIndy is a city/private venture.

7 Q: What did IPL ask of the IURC?

8 A: From the *Order of the Commission*³:

9 3. **Requested Relief.** IPL seeks approval of an ARP⁴ that provides
10 for the extension of electric facilities (“Extension Costs”) and installation
11 of BlueIndy-owned equipment (emphasis added) (“Installation Costs”) for
12 an electric vehicle (“EV”) car-sharing service for the general public in the
13 Indianapolis metropolitan area (“BlueIndy Project”) and associated
14 accounting and ratemaking treatment.

15 Q: Was IPL awarded this relief by the IURC?

16 A: IPL was awarded recovery of Extension Costs, but denied recovery of Installation
17 Costs. From the same *Order of the Commission*, page 19, the Commission stated:

18 **B. Whether the ARP will enhance or maintain the**
19 **value of the utility’s retail energy services.** The BlueIndy
20 Project would add up to 200 EV charging stations to IPL’s system.
21 These stations would be used by BlueIndy to charge the EVs in the
22 car sharing program, and would also be available for public use to
23 charge privately owned EVs. It follows that IPL would experience
24 increased revenues from the sale of electricity for EV charging. In
25 addition, the installation of EVSE⁵ throughout IPL’s service
26 territory could result in increased demand for in-home charging.
27 Based on this evidence, we find that the ARP will enhance or
28 maintain the value of IPL’s retail energy services. However, our
29 finding is limited to the extension of IPL infrastructure necessary
30 to serve the charging stations.

³ Order of the Comm’n, Indiana Utility Reg. Comm’n, Cause No. 44478 (Feb. 11, 2015), p. 3.

⁴ ARP means Alternative Rate Plan.

⁵ EVSE means Electric Vehicle Supply Equipment.

1 The evidence in this case is clear that although IPL is
2 seeking recovery of the costs of installing the charging
3 infrastructure itself, BlueIndy, not IPL, would own the charging
4 infrastructure. As such, the installation of the charging
5 infrastructure does not enhance or maintain the value of IPL's
6 retail energy services: it primarily enhances the value of
7 BlueIndy's car-sharing program. While there could be some
8 benefit to IPL through increased sale of electricity as discussed
9 above, such a benefit is not sufficient to merit the \$12.3 million
10 cost to ratepayers, especially given the lack of evidence that
11 BlueIndy Project will be profitable. Therefore, we find the portion
12 of the ARP covering the installation of BlueIndy-owned charging
13 infrastructure will not enhance or maintain the value of IPL's retail
14 energy services.

15 **C. ARP Approval.**

16 **1. Extension Costs.**

17 ***

18 We note that once the enhanced infrastructure is in
19 place it could be attractive to business development other than the
20 specific BlueIndy Project. Even if BlueIndy were to abandon the
21 car-sharing service and remove tis charging equipment, the
22 infrastructure would remain in place for another company or IPL to
23 install EVSE for public charging, or some other program, Thus the
24 Extension Costs result in a real addition to IPL's system aside from
25 the BlueIndy Project.

26 In light of our discussion above, we find that the
27 ARP is in the public interest and will enhance the value of IPL's
28 retail energy services or property with respect to the line extension
29 costs only.

30 **2. Installation Costs.** There can be little
31 argument that the request to recover the Installation Costs is
32 anything other than a request to have IPL's customers pay a
33 portion of the start-up costs for a private business
34 enterprise...Despite the benefits discussed above, the primary
35 purpose of the BlueIndy Project is to make a profit for BlueIndy.
36 We do not believe that ratepayer funds should be used for this
37 purpose without sufficient justification...

1 Q: **In reading Mr. Murray’s Rebuttal Testimony regarding this matter, is it clear that**
2 **the BlueIndy Project is a private venture and the charging stations were not to be**
3 **owned by IPL?**

4 A; No, that distinction was not clear in Mr. Murray’s Rebuttal Testimony and KCP&L’s
5 CCN pilot is very different than this aspect of the BlueIndy Project. Unlike the KCP&L
6 Clean Charge Network, where KCP&L will own the charging stations, IPL will not own
7 the charging station equipment itself. The fact that IPL will not own the charging stations
8 was a key fact in the IURC’s decision not to allow recovery of the charging station
9 installation costs by ratepayers even though the IURC did in fact allow recovery of the
10 costs to extend the infrastructure to serve them.

11 Q: **What recommendation did Mr. Murray make regarding the Company’s request to**
12 **recover costs associated with the CCN?**

13 A: Mr. Murray on behalf of Staff recommends denial of Company’s request stating,
14 “KCP&L, its investors, and the affiliates of the project are the cost causer of the electric
15 vehicle charging stations. The cost causers should cover the full cost of this project, not
16 the captive ratepayers. This venture is a voluntary effort by KCPL, which has significant
17 financial risk”.

18 Q: **How do you respond to Mr. Murray’s recommendation?**

19 A: There is no denying this venture is a voluntary effort by KCP&L. That said, anytime the
20 Company builds a substation, or upgrades a line, or builds-out service to a new
21 subdivision due to anticipated new load, it is at the Company’s discretion. It is the
22 business of the Company to anticipate new load and the need for new or upgraded
23 infrastructure to serve customers. In that regard, the Company is always the cost causer

1 and often there is risk involved with that new investment. There is no basis for denying
2 recovery for these reasons as it is the responsibility of the Company to provide the
3 infrastructure to serve load. In this case the load happens to be mobile and requires
4 infrastructure not previously deployed. That doesn't make it an imprudent investment.

5 **Q: Staff witness Keith Majors also provided Rebuttal Testimony regarding the**
6 **recovery of costs associated with the CCN. How do you respond to this testimony?**

7 A: Mr. Majors concluded his discussion of the CCN by reiterating the recommendation
8 made by Staff witness Michael L. Stahlman in the direct filed cost of service report.
9 Specifically, "KCPL should keep proper accounting of all revenues and expenses related
10 to the vehicle chargers by:

- 11 • Fully allocating costs related to the Clean Charge Network pursuant to the
- 12 Commission approved cost allocation manual (CAM);
- 13 • Record the cost related to the Clean Charge Network to "below the line"
- 14 accounts; and
- 15 • Segregate the revenues and expenses for ease of identification."

16 As to the allocation of costs, KCP&L is following its standard accounting process to
17 ensure charges are identifiable and assigned to the appropriate jurisdiction. As to
18 recording costs "below the line", KCP&L considers these costs "above the line" as a
19 regulated service to customers and is recording them as such. Charging stations are
20 separately metered. The revenues from those stations receiving separate bills are
21 identifiable by account, and the revenues from those stations where the usage is added to
22 the customer's main meter can be estimated based on metered usage.

1 Q: Earlier you said OPC opposed recovery of the CCN. What is the basis of OPC's
2 opposition?

3 A: OPC's witness Mr. Dismukes rejection of the Company's request is largely due to lack of
4 stakeholder input, uncertainty regarding the CCN project itself and its potential to
5 succeed and provide benefit to customers, and a perceived shifting of risk from the
6 Company to ratepayers.

7 Q: What benefits does the Company believe all customers, even those that do not drive
8 EVs, experience due to the CCN?

9 A: There are five areas of customer and public benefit that KCP&L believes the Clean
10 Charge Network pilot project can provide:

11 **Beneficial Electrification:** More efficient use of the electrical grid through increased
12 electrical sales during off-peak times. As more drivers adopt electric vehicles, not only
13 will vehicle emissions be reduced, but the cost of operating and maintaining the electrical
14 grid will be spread over more kilowatt-hours without causing increased investment in
15 additional generation and grid upgrades.

16 **Environmental Benefits:** Environmental and health benefits through reducing tailpipe
17 emissions—in particular regional ozone emissions and compliance, carbon dioxide
18 reduction as part of state compliance with the Clean Power Plan, and reductions in other
19 Environmental Protection Agency ("EPA") categorized pollutants.

20 **Economic Development:** Regional economic development through increased attraction
21 of auto industry, electric vehicle industry, battery and charging station companies to the
22 KCP&L service territory; local job creation through increased household spending on
23 local goods and services rather than at the gas pump; direct and indirect job creation from

1 electric vehicle charging station deployment, electric vehicles sales and servicing; and
2 increased talent recruitment in competitive job categories such as STEM (Science,
3 Technology, Engineering, Math) and Information Technology jobs.

4 **Customer Programs:** Network enabled customer programs for cost-effective demand
5 side management, time of use incentives/rates, and vehicle to grid battery storage and
6 discharge.

7 **Cost and Efficiency Benefits:** Cost and design benefits through installation and
8 operation of charging station installations as part of the electrical grid resulting in
9 reduced cost of equipment and installation, streamlining infrastructure through central
10 design, enabling easier expansion, creating one regional standard for payment and
11 reduced expense resulting from electric vehicle charging stations utilization of the
12 electrical grid:

- 13 ▪ Study the value of integration with other components of the grid, such as demand
14 response and solar installations.
- 15 ▪ Increased efficiency and decreased cost of charging station infrastructure through
16 streamlined design, deployment where data shows capacity is needed, reduced
17 maintenance costs and economies of scale.

18 Charging station deployment and demand can be factored into utility grid planning and
19 reduce the cost of meeting increased demand and maintaining the grid.

20 **Q: Should all customers pay some portion of this investment, even though only a few
21 own electric vehicles?**

22 **A:** Yes, as all customers will benefit from this investment, it is logical that all pay for some
23 portion of the investment.

1 **Q: Is the Company proposing a new rate or rate structure for charging electric**
2 **vehicles?**

3 A: No, not in this case. KCP&L hopes to learn from these installations, gathering
4 information during the pilot period to be shared with stakeholders in developing a longer
5 term view. KCP&L is interested in discussing with interested stakeholders issues related
6 to this pilot program including, but not limited to, impacts on retail customers, impacts on
7 KCP&L, pricing alternatives, and other issues.

8 **Q: Does the lack of a specific rate for electric vehicle charging during the CCN pilot**
9 **create a subsidy for the drivers of electric vehicles?**

10 A: KCP&L is not providing a “subsidy” to customers owning electric vehicles. The
11 program is based upon tariff rates which are approved by the Commission and recover
12 the cost of providing the service. Charging station hosts or Nissan will be paying for the
13 electric usage at tariffed rates approved by the Commission. To the extent that electric
14 vehicle owners themselves are receiving charging services for free, it is important to note
15 that it is the owners of the host sites or Nissan that are providing the service, not KCP&L.

16 **Q: Even so, won’t customers that do not drive electric vehicles be paying some portion**
17 **of the investment in the CCN?**

18 A: Yes, the Company has estimated, once the CCN project is fully deployed, the bill impact
19 for a typical Residential KCP&L-MO customer will be about \$2.12 per year, or about
20 18 cents per month. This estimate is based on a \$7.6 million MO capital investment and
21 is high level, but representative of what the impact will be for the fully implemented
22 CCN project.

1 **Q: If the Commission grants recovery of the investment thus far as reflected in the**
2 **Company's case, what would be the impact to a typical Residential KCP&L-MO**
3 **customer?**

4 A: The Company estimates the annual impact for a typical Residential Missouri customer
5 per year would be \$0.32, or just under 3 cents per month. This estimate is based on a
6 Missouri plant infrastructure investment of \$884,990 as of March 31, 2015 for charging
7 stations (to be trued-up as of May 31, 2015), and annual O&M expense of \$213,079.

8 **Q: Mr. Dismukes cites examples of other utilities and their EV tariffs. Are these**
9 **examples consistent with KCP&L's CCN program?**

10 A: In that they pertain to EV charging they are. However, it should be pointed out that most,
11 if not all, of the 25 utilities with EV tariffs identified in the study cited by Mr. Dismukes
12 are focused on some form of incentive to encourage residential customers to purchase
13 EVs and charge at home. Most are for a separately metered EV Time Of Use ("TOU")
14 service, whole house TOU rate, and some even provide a subsidy to offset the cost of
15 installation of the home electric vehicle charging stations. While related this is a separate
16 issue from a public charging infrastructure like CCN.

17 **Q: Mr. Dismukes claims the Company has been less than forthcoming regarding the**
18 **CCN details. How do you respond?**

19 A: We have provided the details that are available. It needs to be remembered that this is a
20 pilot project, one of the primary purposes of which is to obtain experience and detailed
21 information regarding electric vehicle charging stations. In that context, the inability of
22 KCP&L to provide significant amounts of detailed information about the CCN pilot

1 should not be a surprise and it certainly serves as no reasonable basis to deny cost
2 recovery.

3 **Q: What information did KCP&L rely upon in determining that this pilot project is in**
4 **the public interest?**

5 A: In addition to meetings with personnel at the Electric Power Research Institute (“EPRI”)
6 and participation on electric vehicle and electric vehicle infrastructure working groups
7 and task forces through EPRI and the Edison Electric Institute (“EEI”), the Company
8 reviewed and relied upon a number of electric vehicle-related reports and studies,
9 including:

- 10 • California Transportation Electrification Assessment, Phase 1, Updated
11 September 2014 (attached hereto as Schedule DRI-2);
- 12 • California Transportation Electrification Assessment, Phase 2, dated October 23,
13 2014 (attached hereto as Schedule DRI-3);
- 14 • Plug-in Electric Vehicle Deployment in California: An Economic Jobs
15 Assessment (attached hereto as Schedule DRI-4);
- 16 • Economic Analysis, California Low Carbon Fuel Standard (attached hereto as
17 Schedule DRI-5); and
- 18 • Introduction to ChargePoint, dated October 16, 2014 (attached hereto as Schedule
19 DRI-6).

20 The Company also reviewed and relied upon KCP&L’s own data from electric vehicle
21 charging stations already deployed in KCP&L’s service territory through federal grants
22 and KCP&L’s SmartGrid project.

1 Q: Do you consider the electric vehicle-related reports and studies listed above to be
2 authoritative?

3 A: Yes.

4 Q: Do you believe it is reasonable to rely upon those reports and studies for the
5 conclusion that implementing this pilot project is in the public interest?

6 A: Yes.

7 Q: Did you supply this information in your Supplemental Direct Testimony filed in this
8 case?

9 A: Yes, as I stated earlier in this testimony, I did supply this information with my
10 Supplemental Direct Testimony.

11 Q: Why has the Company chosen to proceed with this initial phase of the CCN as a
12 pilot?

13 A: The Company has consistently characterized this initial phase of the CCN as being a
14 “pilot” phase. During this time, the Company’s intent is to involve various interested
15 stakeholders as it gathers data, and solicit input from those same interested stakeholders
16 regarding how the CCN might evolve over time. The Company went as far as to request
17 a workshop docket to formalize this effort, but was denied due to ex parte communication
18 concerns, as Mr. Dismukes notes in his Rebuttal Testimony. It has always been and
19 continues to be the Company’s intent to provide interested stakeholders the opportunity
20 to provide input.

21 As I stated in my Supplemental Direct Testimony, this pilot project is large
22 enough to be impactful, but is moderately sized from a capital expenditure perspective
23 and extends KCP&L’s commitment to environmental sustainability. Along with

1 KCP&L's environmental upgrades at several local power plants, renewable energy
2 portfolio and energy efficiency programs and KCP&L's recent announcement regarding
3 cessation of burning coal at certain KCP&L and GMO generating units between 2016
4 and 2021, the KCP&L Clean Charge Network will reduce carbon emissions and help the
5 Kansas City region attain Environmental Protection Agency ("EPA") regional ozone
6 standards which is beneficial to the entire Kansas City region.

7 **Q: Does Mr. Dismukes also discuss activity in other states regarding EV charging?**

8 A: Yes he discusses actions taken by other Commissions and provides examples where
9 policy issues and roll outs of EV programs through working groups and formal
10 proceedings have occurred. All of these working groups and formal proceedings
11 mentioned by Mr. Dismukes appear to have been established by the respective
12 Commissions. This is essentially what the Company requested when it requested the
13 Commission establish a formal workshop docket to formalize a stakeholder process
14 regarding the CCN. As Mr. Dismukes noted, that request was denied by the MPSC.

15 **Q: Does OPC's witness William Addo express concerns regarding the Company's**
16 **request for recovery of the CCN project?**

17 A: Yes, he does for largely the same reasons as Mr. Dismukes. Mr. Addo expresses
18 concerns that the CCN benefits only those few customers who own electric vehicles. As
19 I stated earlier, KCP&L believes there is benefit for all customers from the CCN project.

20 **Q: Do you understand OPC's and Staff's reluctance to support recovery of KCP&L's**
21 **CCN investment at this time?**

22 A: Yes, at some level. However, I would reiterate that the Company views this pilot as an
23 investment in infrastructure to serve load that in my opinion is inevitable. Electric

1 vehicles are on the roads today and are expected to increase. They do and will require
2 away-from-home service and as the electric provider it is incumbent on us to provide that
3 service by investing in the infrastructure to do so, just as we would build a new substation
4 to serve a new residential development.

5 **Q: Isn't there a fair amount of uncertainty that makes this investment somewhat risky?**

6 A: Yes, but lack of certainty is not a reason for doing nothing. Rather, it is precisely why we
7 should conduct this pilot and work with Mid-America Regional Council to assess
8 emission reductions from increased electric vehicle penetration. Electric sales will occur
9 in some fashion to serve this emerging end-use. We can either stand by and react as it
10 happens, or we can work with the Commission and other stakeholders to study the impact
11 of electric vehicle charging with the goal to provide benefits to all customers.

12 In this regard, it also needs to be understood that the Company fully intends to
13 move forward with this initiative, which means that KCP&L will deploy additional
14 capital on the CCN pilot in Missouri that will not be reflected in rates to be set in this
15 case even if those rates include the O&M costs proposed by KCP&L in the Application
16 and the rate base investment as of May 31, 2015, the true-up date utilized in this case.⁶
17 As such, those additional costs will be borne by the Company and its shareholders until
18 they can be included for Commission consideration in KCP&L's next general rate case.
19 As a consequence, it is not fair or accurate to suggest that the Company is proposing that
20 customers bear all of the risks associated with the CCN pilot.

⁶ As of May 31, 2015, CCN pilot plant-in-service for KCP&L's Missouri jurisdiction amounted to less than \$900,000 of the approximately \$7 to 9 million total CCN pilot capital expected to be deployed for KCP&L-MO.

1 **Q: Has KCP&L made an adjustment for revenues expected to be generated from the**
2 **Clean Charge Network?**

3 A: No, the Company did not make an adjustment for revenues expected to be generated from
4 the CCN in its direct filed case, as it was not expected that any meaningful revenues
5 would be generated by the Clean Charge Network before the end of the true-up period.
6 During May 2015, the CCN recorded 1705 kWh used by EV drivers in the KCP&L MO
7 service territory, most of which was registered at the Level 3 fast charging stations. The
8 Level 3 stations are billed on the Small General Service Rate (“SGS”). The average SGS
9 rate during the test period in this case was \$0.1187 per kWh. Using the May kWh and
10 the annual average rate, an annualized revenue amount for this case is approximately
11 \$2,429 (1705 X 12 X .1187). The Company proposes a revenue adjustment based on this
12 information in the amount of \$2,429.00.

13 **5. Local Public Hearings**

14 **Q: Did you attend all of the local public hearings in this case?**

15 A: Yes, I did.

16 **Q: Do you have a response to any of the testimony that was offered during these**
17 **hearings?**

18 A: Yes, I will respond to three topics, one of which was raised at the April 23 hearing at the
19 Bruce Watkins Center in Kansas City, one of which was raised at the May 5 hearing in
20 Marshall, and one of which was raised at the May 6 hearing in Gladstone.

1 **Q: Has KCP&L followed up with Ms. Sara Carter who testified in Kansas City on**
2 **April 23 about the problems concerning enrollment in the Company's average bill**
3 **plan?**

4 A: Yes. Ms. Carter's situation is discussed on pp. 21-22 and 24-29 of volume 3 of the
5 transcript. I can report that Ms. Carter is now enrolled in KCP&L's average bill plan, as
6 should have occurred had the customer service representative followed KCP&L's policy
7 when Ms. Carter called in the first time. In addition to apologizing to Ms. Carter,
8 KCP&L personnel have coached the customer service representative with whom Ms.
9 Carter first spoke on this issue and reminded that employee of KCP&L's policy. This
10 situation also provided an opportunity to re-visit this KCP&L policy with all of our
11 customer service representatives and this too has been done.

12 **Q: Has KCP&L followed up regarding voltage variability issues raised on May 5 in**
13 **Marshall?**

14 A: Yes. These issues are discussed on pp. 7-37 of the transcript (Volume 6). After that local
15 public hearing,

16 KCP&L personnel met with Mr. Art Jacobi to discuss the placement of the
17 regulator station near his home. Although KCP&L personnel had met with Mr. Jacobi
18 before the regulator station was installed and thought agreement had been reached
19 regarding its location, KCP&L is presently evaluating what should be done regarding its
20 location.

21 KCP&L personnel also met with personnel at APAC, the quarry operation that is
22 the source of the voltage variability issues in the area. KCP&L personnel reiterated

1 emphasis previously provided to the quarry operator that start-up and shutdown of the
2 quarry's motors needed to be staggered to mitigate voltage response.

3 Recording voltmeters were installed on May 11, 2015 at various points along this
4 circuit. Results indicated that the quarry was starting one crusher motor right after the
5 other which allows no time for regulation to recover.

6 The voltage variability issues have been discussed periodically and mitigation
7 efforts have been implemented since the quarry in the area changed hands in 2004.
8 Those mitigation efforts included installation of 1) "soft start" equipment on the quarry's
9 side of the meter that was intended to ease the voltage impacts of the quarry's start-up of
10 its rock crushing motors and 2) the regulator station located near Mr. Jacobi's home. It is
11 apparent, however, that these issues have not been sufficiently mitigated and KCP&L is
12 taking steps to determine a cost-effective way of doing so.

13 In an effort to solve this issue, KCP&L has recently reset the regulators at the
14 substation to standard voltage and we will continue to oversee these recommended
15 regulator settings on a going forward basis. KCP&L's engineering department is
16 evaluating potential system upgrade options to determine impact on mitigating voltage
17 fluctuation concerns, and a third party expert may be brought in to assist in that effort.

18 **Q: Has KCP&L undertaken any additional follow-up to the Marshall local public**
19 **hearing?**

20 **A:** Yes. KCP&L personnel also met with Mr. Delmar Fisher regarding three poles and a
21 service drop to a barn on property he formerly owned and that is located near his home.
22 Although we have not yet been able to contact the new owner of the barn, we will
23 continue to attempt do so in an effort to resolve this issue.

1 Q: **Has KCP&L undertaken any follow-up to the Gladstone local public hearing held**
2 **on May 6, 2015?**

3 A: Yes, KCP&L personnel met with Mr. Greg Libbe who expressed concern about trees
4 near power lines on his property (pp. 6-15 of Volume 7 of the transcript) and will trim
5 two trees in his yard.

6 Q: **Does that conclude your Surrebuttal Testimony?**

7 A: Yes, it does.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Kansas City Power & Light)
Company's Request for Authority to Implement)
A General Rate Increase for Electric Service) Case No. ER-2014-0370

AFFIDAVIT OF DARRIN R. IVES


STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

Darrin R. Ives, being first duly sworn on his oath, states:

1. My name is Darrin R. Ives. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Vice President – Regulatory Affairs.

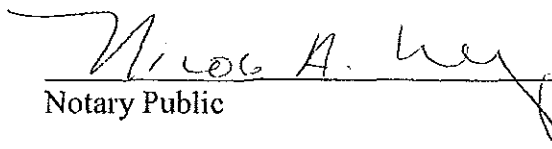
2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Kansas City Power & Light Company consisting of Sixty - Seven (67) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.



Darrin R. Ives

Subscribed and sworn before me this 5th day of June, 2015.



Notary Public

My commission expires: Feb. 4, 2019

NICOLE A. WEHRY Notary Public - Notary Seal State of Missouri Commissioned for Jackson County My Commission Expires: February 04, 2019 Commission Number: 14391200

**Summary of Testimony of Michael Bardee
Director, Office of Electric Reliability
Federal Energy Regulatory Commission
Before the Committee on Energy and Commerce
Subcommittee on Energy and Power
United States House of Representatives
May 19, 2015**

Summary

Chairman Whitfield, Ranking Member Rush, and Members of the Committee:

Thank you for this opportunity to appear before you today. My testimony will focus primarily on those parts of the Discussion Draft that relate to the Commission's authorities.

I support the concept underlying section 1201 of the Discussion Draft, that operating a power plant in compliance with an order under Federal Power Act section 202(c) should not result in a violation of an environmental law.

The Commission generally has not maintained the tools and data to perform the analyses required under section 1202, particularly not on the proposed timelines. If Congress decides to give the Commission this responsibility, section 1202 should be expanded to clarify that NERC, its regional entities and other planning authorities must timely conduct and provide to the Commission analyses and information as may be requested by the Commission. With that clarification, section 1202 would rely primarily on their existing processes for identifying and addressing reliability issues, adjusted as appropriate for the circumstances. In this way, the Commission could rely on the resources and capabilities of these entities while ensuring consistent, objective analyses of major rules affecting generating units.

With respect to cyber and physical security, section 1204 of the Discussion Draft would address concerns that the current processes are too slow, too open and too unpredictable to ensure responsiveness in emergencies. However, while it authorizes emergency requirements to protect against imminent danger, it is not clear that it authorizes requirements for restoration of grid reliability after an unforeseen attack or event.

Finally, the Commission prefers to rely on competitive forces when reasonable, but recognizes that traditional regulatory approaches are sometimes necessary in wholesale electricity markets. Section 1208 takes a different approach, and would impose on RTO and ISO capacity markets a broad overlay of traditional regulatory requirements. This approach may reduce the potential for these markets to provide consumers with the benefits achievable through competitive forces and may cause unnecessary conflicts between federal and state regulatory efforts. It would be preferable to not mandate such an approach legislatively, and instead to allow the Commission to adapt market rules over time with the goal of maximizing competitive forces, while using other approaches when competitive forces are insufficient.

**Testimony of Michael Bardee
Director, Office of Electric Reliability
Federal Energy Regulatory Commission
Before the Committee on Energy and Commerce
Subcommittee on Energy and Power
United States House of Representatives
May 19, 2015**

Introduction

Thank you for this opportunity to appear before you to discuss energy reliability and security. My name is Michael Bardee. I am the Director of the Office of Electric Reliability of the Federal Energy Regulatory Commission (FERC or Commission). I am here today as a Commission staff witness, and my remarks do not necessarily represent the views of the Commission or any individual Commissioner.

My testimony will focus primarily on those parts of the draft legislation that resolve conflicts between environmental regulations and Department of Energy emergency reliability orders (section 1201), require analysis of the reliability impacts of major federal regulations affecting electricity generation (section 1202), address grid security emergencies resulting from cyber or physical attacks or geomagnetic storms (section 1204), and require consideration of performance assurance in regional transmission organizations (section 1208).

Background

Before turning to the provisions of the Discussion Draft, it is important to note that the Commission's role on reliability is defined by Congress, and generally consists of approving proposed reliability standards for the Bulk-Power System, if they meet the statutory criteria, and then enforcing or overseeing enforcement of those standards. This authority is in section 215 of the Federal Power Act. Section 215 requires the Commission to select an Electric Reliability Organization (ERO) responsible for proposing, for Commission review and approval, new reliability standards or modifications to existing reliability standards. The Commission has

certified the North American Electric Reliability Corporation (NERC) as the ERO. The ERO may delegate certain responsibilities to “Regional Entities,” subject to Commission approval.

The reliability standards apply to the users, owners and operators of the bulk power system and become mandatory in the continental United States only after Commission approval. If the Commission disapproves a proposed standard or modification, the Commission must remand it to the ERO for further consideration. The Commission, upon its own motion or upon complaint, may direct the ERO to submit a proposed standard or modification on a specific matter but the Commission does not have the authority to modify or author a standard itself. The ERO is authorized to impose, after notice and opportunity for a hearing, penalties for violations of the reliability standards, subject to Commission review and approval. The Commission also can enforce the reliability standards directly.

Resolving Environmental and Grid Reliability Conflicts

Section 1201 of the Discussion Draft seeks to avoid conflicts between requirements imposed under environmental laws and by the Department of Energy under Federal Power Act section 202(c). Essentially, section 1201 says that compliance with the latter will not be considered a violation of the former. I support the concept underlying section 1201.

To help ensure that the electric grid remains reliable, Federal Power Act section 202(c) allows the Department of Energy to require a power plant to run in certain emergency circumstances. Ideally, FPA section 202(c) will not need to be invoked, but experience demonstrates that orders under section 202(c) are sometimes necessary. However, in certain circumstances, operating a power plant in compliance with FPA section 202(c) order can result in a violation of the Clean Air Act (or other environmental laws). In this sense, federal law could

require a power plant owner to choose between violating either the environmental law(s) or the Federal Power Act. The law should not require such a choice.

Reliability Analysis for Certain Rules Affecting Electric Generating Facilities

Section 1202 of the Discussion Draft would require the Commission, in coordination with the ERO, to perform and issue reliability analyses of major rules proposed or issued by other federal agencies, if they may impact an electric generating unit(s) and have an annual effect on the economy of \$1 billion or more. The analyses would have to consider effects on reliability and resource adequacy; fuel diversity; wholesale power markets; and energy delivery and infrastructure.

The number and type of rulemakings that might be subject to this section is unclear. Thus, it is difficult for me to foresee and understand the ramifications of this proposal from the perspective of Commission workload or otherwise.

As I stated before, the Commission's role on reliability generally consists of approving proposed reliability standards for the Bulk-Power System, if they meet the statutory criteria, and then enforcing or overseeing enforcement of those standards. The Commission's exercise of its rate jurisdiction also, at times, has effects on reliability issues. As part of these responsibilities, the Commission has developed the expertise to review and evaluate the type of extensive analyses described in section 1202, but the Commission generally has not maintained the tools and data to perform such analyses itself, particularly not on the proposed timelines.

If Congress decides to give the Commission this responsibility, certain modifications of section 1202 would be appropriate. First, section 1202(b)(2) requires the initiating agency to provide the Commission relevant data, modeling and assessments, and this should be expanded to clarify that the ERO, regional entities and others also must "timely conduct and provide

analyses and information as may be requested by the Commission.” This should include entities such as regional transmission organizations (RTOs) and independent system operators (ISOs), the ERO, regional entities and reliability coordinators that collectively perform the functions needed to plan, operate and assess the reliability of the bulk power system. With the clarification I am suggesting, section 1202 would allow the Commission to rely primarily on these existing processes for identifying and addressing reliability issues, adjusted as appropriate for the circumstances. Under such a process, the Commission could rely on the resources and capabilities of these entities while ensuring consistent, objective analyses of major rules affecting generating units. Even so, the future workload from this section may require additional resources at the Commission, beyond its current levels in this area.

Section 1202 also should be modified so that our work is done “in consultation with” the ERO, instead of “in coordination with” the ERO, to recognize our statutory role in overseeing the ERO. This also would be consistent with other provisions in the Discussion Draft, such as section 1205’s requirement that the Department of Energy develop a Strategic Transformer Reserve Plan, “in consultation with” the ERO.

Section 1202 also should require the initiating agency to notify the Commission when it issues a covered proposed or final rule, since the Commission otherwise might not know of a covered rule issued by another agency. Also, section 1202’s reference to considering “local electric reliability and resource adequacy” (emphasis added) could be construed as broadening the Commission’s role beyond the bulk power system, and the reference to fuel diversity could be construed as conflicting with the Commission’s traditional role of preventing undue discrimination instead of favoring particular fuels or technologies; both of these references may warrant further consideration. Finally, the deadlines for the Commission to issue its analyses (90

days after a proposed rule and 120 days after a final rule) are not reasonably achievable and should be extended.

Critical Infrastructure Security

Section 1204 would allow the Secretary of Energy to address grid security emergencies if the President provides a written directive or determination identifying a grid security emergency. Section 1204 also would exempt certain Critical Electric Infrastructure Information from disclosure, and require the Commission to establish standards for and authorize the voluntary sharing of such information among various entities.

As I will explain, the Commission's current authority is not adequate to address cyber or other national security emergencies on the electric grid. These types of emergencies pose a serious risk to our Nation's electric grid, which undergirds our government and economy and helps ensure the health and welfare of our citizens.

An important part of the Commission's responsibility to oversee the development of standards for the bulk power system involves security-related standards. For example, standards for cyber-security have been mandatory since July 2010. In 2013, the Commission approved a new version of the cyber-security standards, which broadened the scope of the covered systems and included a tiered approach for applying different requirements to high-, medium- and low-impact cyber assets. The Commission also directed the ERO to develop certain modifications for, e.g., transient devices such as laptops, and the Commission is now reviewing the ERO's recently-proposed modifications.

The Commission also has directed the ERO to develop, in two stages, standards to address the impact of geomagnetic disturbances on the electric grid. The first stage required real-time operational practices for addressing a geomagnetic disturbance. The Commission

approved the ERO's proposal for this stage. Earlier this year, the ERO submitted a proposal for the second stage, which would require owners and operators of the Bulk-Power System to conduct initial and subsequent assessments of the potential impact of benchmark GMD events and to mitigate those impacts through equipment modifications or other means. Last week, the Commission proposed to approve the ERO's second stage standard and also proposed to direct certain modifications to that standard. The Commission is seeking comments on its proposal and, after receiving the comments, will decide on further actions.

Finally, in March 2014, the Commission directed the ERO to propose standards on physical security that require owners and operators of the Bulk-Power System to perform a risk assessment to identify their critical facilities; evaluate potential threats to, and vulnerabilities of, those facilities; and develop and implement a security plan to protect against attacks on those facilities. In November 2014, the Commission approved NERC's proposed physical security reliability standard, and directed NERC to make one modification.

It is important to recognize that reliability standards must be developed by the ERO through an open, inclusive, and public process. NERC's procedures for developing standards allow extensive opportunity for stakeholder comments. The process is intended to develop consensus on both the need for, and the substance of, the proposed standard. Although inclusive, the process is relatively slow, open and unpredictable in its responsiveness to the Commission's directives. (The ERO was able to submit a physical security standard within the 90 day deadline imposed by the Commission, but this process still may not work quickly enough to avoid imminent danger.)

In my view, FPA section 215 is inadequate for emergency action. This is true of both cyber and physical emergencies. The procedures used under section 215 for the development

and approval of reliability standards do not provide an effective and timely means of addressing urgent cyber or other national security risks to the bulk power system. Certain circumstances, such as those involving national security, may require immediate action. Also, the open and inclusive process required for standards development is not consistent with the need to protect security-sensitive information.

Section 1204 of the Discussion Draft would address these issues. Section 1204 would allow the Secretary of Energy to issue orders for emergency measures whenever the President issues a written directive or determination identifying a grid security emergency. The emergency could involve cyber or physical attack (including an EMP attack) or a geomagnetic storm. Also, section 1204 provides an exemption from disclosure for Critical Electric Infrastructure Information. Without this, the grid may be more vulnerable to attack. Section 1204 also provides for cost recovery, since it is important that utilities be able to recover costs they incur to mitigate emergencies.

Section 1204 may warrant modification or clarification in limited respects. First, while it authorizes emergency requirements to protect against imminent danger, it is not clear that it authorizes requirements for restoration of grid reliability after an unforeseen attack or event. One way to clarify this point would be to revise section 1204 (on page 11, line 2) to address “the occurrence or imminent danger” of an emergency and (on page 12, line 9) to allow the Secretary to “protect or restore” the reliability of the electric grid. Second, while section 1204 requires the Commission to establish a cost recovery mechanism in certain circumstances, it does not make clear whether this mechanism should be developed under our existing rate authority for public utilities or through a more comprehensive mechanism beyond our existing rate authority, e.g., including non-public utility “users.”

Reliability and Performance Assurance in Regional Transmission Organizations

Section 1208 would require the Commission to direct each regional transmission organization (RTO) and independent system operator (ISO) with an existing capacity market or comparable market to demonstrate how it meets certain requirements. The requirements include certain integrated system planning practices such as having a diverse generation portfolio and stable pricing for customers, as well as a sufficient supply of physical generation facilities with reliability attributes such as being able to operate each day for not less than 30 days.

The Commission has sought for many years to foster the development of competitive markets for wholesale electricity. As stated in our current Strategic Plan (page 7):

When competitive markets exist and there are assurances against the exercise of market power, FERC leverages competitive market forces to promote efficiency for consumers while taking measures to make those markets more efficient. When competitive market conditions do not exist and competitive forces are inadequate to protect consumers, FERC relies on traditional rate-setting authority and tools such as cost-of-service ratemaking.

The Commission also has stated that marketplace competition benefits energy consumers by encouraging diverse resources, spurring innovation and deployment of new technologies, improving operating performance, and exerting downward pressure on costs. In short, the Commission prefers to rely on competitive forces when reasonable, but recognizes that traditional regulatory requirements are sometimes necessary in wholesale electricity markets.

Section 1208 takes a different approach, and would impose on RTO and ISO capacity markets a broad overlay of traditional regulatory requirements. This approach may reduce the potential for these markets to provide consumers with the benefits achievable through competitive forces. While the Commission recognizes the need to approve or require rules for capacity markets to encourage an adequate supply of resources at reasonable prices, the breadth of requirements in section 1208 may unduly impair the competitive aspects of these markets, to

the ultimate detriment of consumers. It would be preferable to not mandate such an approach legislatively, and instead to allow the Commission to adapt market rules over time with the goal of maximizing competitive forces to benefit consumers, while using other approaches when competitive forces are insufficient to result in adequate resources at a reasonable cost.

Section 1208 also may cause unnecessary conflicts between federal and state regulatory efforts. For example, section 1208 would require RTO and ISO capacity markets to have a “diverse and flexible generation portfolio,” but the Commission and states may differ on the proper components of (and their percentages in) such a portfolio. If so, section 1208 is unclear on how such differences should be addressed. Similarly, regulators may differ on which facilities can generate “during emergency and severe weather conditions,” since this phrase may or may not include drought-prone hydropower facilities; coal facilities dependent on winter-impaired deliveries of coal by rail or barge; or natural gas facilities affected by wellhead freeze-offs.

Finally, Section 1208 requires the RTOs and ISOs and the Commission to evaluate contractual terms for both fuel certainty and stable pricing. This requirement places the RTOs, ISOs and the Commission in the position to second guess the business decisions that market participants have made. The Commission prefers to allow market rules to create an incentive for a market participant to take actions that best manage its risks while meeting system needs.

Strategic Transformer Reserve

As noted above, section 1205 would require the Secretary of Energy to develop a strategic transformer reserve plan, in consultation with the ERO. This section should be modified to also require consultation with the Commission.

Conclusion

The reliability and security of the electric grid is of primary importance to the Commission. Thank you for inviting me to testify today on the Discussion Draft. I look forward to working with you in the future on these issues and would be happy to answer any questions you may have.

ELECTRIC VEHICLES: MYTHS VS. REALITY

Myth 1: *Switching to an electric vehicle will just mean that the same amount of pollution comes from the electricity generation rather than from the tailpipe — I'll just be switching from oil to coal.*

Reality: According to a range of studies doing a 'well to wheels' analysis, an electric car leads to significantly less carbon dioxide pollution from electricity than the CO₂ pollution from the oil of a conventional car with an internal combustion engine.[1][2][3] In some areas, like many on the West Coast that rely largely on wind or hydro power, the emissions are significantly lower for EVs. And that's today. As we retire more coal plants and bring cleaner sources of power online, the emissions from electric vehicle charging drop even further. Additionally, in some areas, night-time charging will increase the opportunity to take advantage of wind power -- another way to reduce emissions.

A caveat to consider is that when coal plants supply the majority of the power in a given area, electric vehicles may emit more CO₂ and SO₂ pollution than hybrid electric vehicles. Learn where your electricity comes from, what plans your state or community has for shifting to renewables, and whether you have options for switching to greener power.



The all-electric Nissan Leaf. Photo by Darrell Clarke.

Myth 2: *Plug-in cars will lead to the production of more coal and nuclear plants.*

Reality: Even if the majority of drivers switched to electric, the existing electrical grid's off-peak/nighttime capacity for power generation is sufficient without building a single new power plant. Studies have shown that electric vehicle owners will largely charge their vehicles at night when there is plenty of capacity on the grid. In some areas, new "smart charging" allows you and the utility to set up a system by which you and other electricity users distribute the load evenly during charging so that the system is not overwhelmed by increased demand.

Myth 3: *Electric car batteries pose a recycling problem.*

Reality: Internal combustion engine vehicles use lead-acid batteries, and their recycle rate is about 98% in the US. The newer batteries for electric vehicles, such as those made of lithium-ion, include even more valuable and recyclable metals and will have a life well beyond the vehicle. In fact, a Belgian company plans to use Tesla Motor's electric vehicle battery pack material to produce an alloy it can further refine into cobalt, nickel, and other valuable metals as well as special grades of concrete. Technology will soon allow for EV batteries to store energy produced by solar or wind power.

Myth 4: *My electricity bill will go way up.*

Reality: While you'll spend more on electricity, the savings on gas will more than cover it. If you drive a pure battery electric vehicle 15,000 miles a year at current electricity rates (assuming \$.12 per kilowatt hour though rates vary throughout the country), you'll pay about \$500 per year for the electricity to charge your battery, but you'll save about \$1900 in gas (assuming \$3.54 per gallon, a 28 miles per gallon vehicle, and 15,000 miles driven). So \$1900 minus \$500 equals \$1400 in savings - a 74% reduction in fueling costs. Some utilities are offering EV owners lower off-peak/nighttime rates. The more we successfully advocate for these off-peak incentives, the lower your electricity payments will go.

Myth 5: *Electric vehicles will just fail again like they did before.*

Reality: Manufacturers are serious this time -- rolling out more than a dozen new plug-in models in the next couple of years. With higher gas prices and climate change worrying many consumers, stricter fuel economy standards for new vehicles required of auto manufacturers, and

billions of public and corporate dollars being spent on an EV infrastructure and research in the US, EVs are here to stay.

Myth 6: *My battery will run out of juice.*

Reality: It is true that fueling an electric vehicles takes a different type of planning than for longer range conventional cars. However, the majority of drivers in the US drive less than 35 miles each day, sufficient for a fully charged pure electric vehicle (most can go 70 to 130 miles on one charge), and an extended range electric vehicle (that drives about 35 miles on electric and then the gasoline power kicks in). Using a 220-volt outlet and charging station, a plug-in hybrid recharges in about 100 minutes, an extended range plug-in electric in about four hours, and a pure electric in six to eight hours. A regular 110-volt outlet will mean significantly longer charging times, but for plug-in hybrids and extended range electrics, this outlet may be sufficient. Most of the time, the battery will not be empty when you plug in, thus reducing charging time.

Most people will charge at home. However, some businesses and public entities are beginning to install 220-volt public chargers. Some are installing fast-charging stations along highways and in public places that can re-charge a car to 80% of battery capacity in less than 30 minutes.

Myth 7: *Electric vehicles are much more expensive than traditional vehicles.*

Reality: While the initial sticker price of EVs is higher than traditional vehicles, you need to do the math to account for a variety of factors. For individual consumers, there is currently a federal tax credit of up to \$7,500 for the purchase of an electric vehicle, as well as a partial federal credit for the charging unit. Several states have additional tax credits on top of the federal ones.

Additionally, the average plug-in vehicle driver will save between \$700 and \$1600 a year in fuel (the cost of electricity compared to gasoline). Due to a cleaner, more streamlined system under the hood, an EV may save the average driver about 46% in annual maintenance costs, according to one federal government study.[4]

Myth 8: *Electric vehicles aren't available in my state.*

Reality: Several plug-in vehicle models are available nationwide, and many others are available in many locations. Plug-in vehicle makers include Nissan, General Motors/Chevy, Tesla, Ford, Mitsubishi, BMW, and Toyota. Check your local dealerships to check on availability.

Myth 9: *Charging an EV on solar power is a futuristic dream.*

Reality: The technology to power your EV with solar power is already available. The investment in solar panels pays off faster when the solar power is not only replacing grid electricity, but replacing much more expensive gasoline. According to [Plug In America](#), EVs typically travel three to four miles (or more) per kWh (kilowatt hour) of electricity. If you drive 12,000 miles per year, you will need 3,000-4,000 kWh. Depending on where you live, you will need a 1.5kW-3kW photovoltaic (PV) system to generate that much power for your vehicle using about 150 to 300 square feet of space on the roof of your home. According to [SolarChargedDriving.org](#), for both vehicle and other home electricity needs, you will need about 7-10 kW of solar power in total on your roof. If your solar system is already in place but does not have enough panels for both home and vehicle charging needs, you may be able to buy a converter that can handle another "string;" micro inverter systems may be particularly good for this. Utility credits for the daytime solar power

can offset the cost of charging the car at night. If solar PV isn't feasible at your home, find out if your utility offers a green energy option.

1. * Union of Concerned Scientists. "State of Charge: Electric Vehicles' Global Warming Emissions and Fuel-Cost Savings Across the United States." April, 2012.
http://www.ucsusa.org/assets/documents/clean_vehicles/electric-car-global-warming-emissions-report.pdf
2. MIT Energy Initiative. "The Electrification of the Transportation System." April, 2010.
3. Electric Power Research Institute and Natural Resources Defense Council. "Environmental Assessment of Plug-in Hybrid Electric Vehicles." 2007. Cited February 16, 2011.
4. Touchstone Energy Business Energy Advisor. "Getting Charged Up Over Electric Vehicles." Cited February 16, 2011.

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- [Electric Auto Association](#)
- [Electric Drive Transportation Association](#)
- [NRDC](#)
- [Plug In America](#)
- [Plugshare](#)
- [SolarChargedDriving.com](#)
- [Green Car Reports](#)
- [InsideEVs](#)
- [Union of Concerned Scientists' State of Charge Report](#)
- [Dept of Energy's eGallon calculator: state-based electricity vs gasoline fueling costs](#)
- [US Department of Energy Vehicle Technologies Office](#)