Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/10/2013

JLH 2.07

Referring to pages 54-57 of Ameren Ex. 1.1R, would establishing standard net-to-gross ("NTG") protocols for measuring free-ridership and spillover for each program type in Illinois alleviate any of the perceived NTG risk described by AIC? Referring to pages 54-57 of Ameren Ex. 1.1R, does AIC support establishment of NTG protocols (e.g., survey instruments) on a statewide basis for measuring free-ridership and spillover for each program type in Illinois? What forum would AIC support such protocols be established, if any?

RESPONSE

Prepared By: Keith E. Goerss
Title: Assistant Manager, Energy Efficiency
Phone Number: 309-677-5708

Pages 54-57 of Ameren Ex. 1.1 refers to the appropriate and accurate calculation of the NTG value and does not pertain to or identify any perceived risk. Regardless of establishing protocols for measuring free-ridership and spillover, a factor for both free-ridership and spillover (participant and non-participant) should be included when calculating the NTG value.

AIC prefers to seek the judgment of the independent evaluators for their expert opinion on the issue of establishing NTG protocols on a statewide basis. AIC's concern includes but is not limited to how the establishment of protocols would eliminate opportunity for flexibility as needed for determining NTG to accommodate the use of alternate or new methods. Most especially, AIC is concerned that if NTG protocols existed on a statewide basis there would be a lack of flexibility with using different and appropriate methods due to differences in program design, implementation, program maturity and territory among other factors, even with similar or similarly named programs.

AIC would be supportive of a SAG led Commission workshop for an exploratory discussion regarding the establishment of NTG protocols.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.05

Please state the basis (and include citations to page numbers and direct quotes from the Staff Report) of AIC's assertion on page 51 of Ameren Ex. 1.1R: "The Staff Report conveys the consensus positions reached th
rough the Section 16-111.5B EE Workshops which includes prospective treatment of fixed NTG and TRM values prior to start of program year."

RESPONSE

Prepared By: Keith E. Goerss
Title: Assistant Manager, Energy Efficiency
Phone Number: 309-677-5708

See JLH 3.05 Attach 1 for a copy of the email distribution for the Matrix of Parties' Positions, as provided by Staff. See JLH 3.05 Attach 2 for a copy of the Matrix of Parties' Positions, as provided by Staff.

On page 16, consensus item #63 reads as follows:

63	**IL-TRM values "in effect" at time of bid submission should be deemed for the length of time the Commission approves the Section 16-111.5B EE program, including the Section 16-111.5B portion of an expanded EE program, where "in effect" means the most recent Commission-approved IL-TRM.**

Based on this being an evident consensus item at the workshop, and its appearance on the consensus document, it was AIC's expectation that it would also appear in the final report. AIC assumes it was an oversight on Staff's part to not include it in the final report.

See JLH 3.05 Attach 3 for a copy of the Staff Report Summary, which indicates on page vi: **"In general, the IL-TRM should be used for Section 16-111.5B EE programs."**

In regards to NTG, item 61c on page 15 reads as follows whereby all parties with the exception of NRDC is indicated as being in agreement:

61 C	**Limit to three year EE procurement under Section 16-111.5B and then can deem NTG for those three years for EE programs approved pursuant to Section 16-111.5B, including the Section 16-111.5B portion of an expanded EE program.**

AIC was present and participated in the IPA workshops. AIC's recollection was that it was a consensus opinion to use prospective treatment of fixed NTG and TRM values for Section 16-111.5B EE programs, especially due to bids being received 1.5 years prior to implementation.

AIC notes that while the application of NTG and TRM values for Section 16.111.5B is not pertinent to this docket, the point that this data request references is an effort to align the application of values between Section 8-103, 8-104 and 16.111.5B programs, especially since the programs may be an extension of the same program across all Section portfolios.

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

ICC Staff Report

RE: Summary of Section 16-111.5B Energy Efficiency Workshops Required by the Commission's Order in Docket No. 12-0544

August 2, 2013

THOMAS E. KENNEDY
JENNIFER L. HINMAN
Illinois Commerce Commission
Policy Division
527 East Capitol Avenue
Springfield, IL 62701
tkennedy@icc.illinois.gov
jhinman@icc.illinois.gov
Phone: (217) 785-1414
(217) 785-1078

Table of Contents

Disclaimer

The Section 16-111.5B Energy Efficiency ("EE") Workshops were held pursuant to the Commission's December 19, 2012 Final Order in Docket No. 12-0544 ("2013 Procurement Order"). The Commission's 2013 Procurement Order noted that "[b]ecause this is the first procurement proceeding to consider the Section 16-111.5B energy efficiency programs, and considering the lack of agreement on other requests, suggestions or recommendations -- for which determinations are not required by statute -- the Commission declines to render a decision or require modifications to the Procurement Plan with respect to these matters. However, in light of the fact that several parties have raised or otherwise addressed additional requests, suggestions, or recommendations regarding the Section 16-111.5B energy efficiency programs that warrant further attention, the Commission directs Staff to work with the IPA to conduct a series of workshops – if the IPA is agreeable to doing so -- to determine if there are additional changes or refinements to consider with regard to such requests, suggestions, or recommendations in future procurement proceedings." 2013 Procurement Order at 271.

This report conveys the consensus positions of those parties participating in the public workshops concerning Section 16-111.5B EE issues. Each consensus statement was taken from the matrix of issues reviewed at the Section 16-111.5B EE Workshops for which no opposition was presented on that statement (i.e., parties took only support or neutral positions on the statement). After the Section 16-111.5B EE Workshops, Staff requested parties to make best efforts to send any corrections to the revised matrix by Wednesday, June 19, 2013, and noted that failure of any party to provide corrections by that date would be interpreted as agreement that the positions specified in the matrix are accurate. Staff notes, however, that parties reserved the right to change, alter, or modify without prejudice their position in respect to any issue contained in their written comments and/or presented during the workshop process.

Acknowledgements

Staff thanks all the workshop participants, including representatives from: the Ameren Illinois Company; the Applied Energy Group; the Citizens Utility Board; the City of Chicago; CNT Energy; Commonwealth Edison Company; the Environmental Law and Policy Center; the Illinois Attorney General's Office; the Illinois Department of Commerce and Economic Opportunity; the Illinois Power Agency; the Illinois Stakeholder Advisory Group's facilitator; Lockheed Martin Energy Solutions; the Natural Resources Defense Council; Navigant Consulting; and Nicor Gas Company .

Web Access

This report along with various other materials related to the Section 16-111.5B EE Workshops can be found in electronic form by using the following link to the Commission's *Energy Efficiency Workshops 16-111.5B* website: http://www.icc.illinois.gov/electricity/EnergyEfficiencyWorkshops161115B.aspx

Executive Summary

In the Illinois Commerce Commission's ("Commission" or "ICC") December 19, 2012 Final Order in ICC Docket No. 12-0544 ("2013 Procurement Order"), the Commission directed ICC Staff to work with the Illinois Power Agency ("IPA") to conduct a series of public workshops regarding Section 16-111.5B[1] energy efficiency ("EE") issues "to determine if there are additional changes or refinements to consider with regard to such requests, suggestions, or recommendations in future procurement proceedings."[2]

Three Section 16-111.5B EE Workshops were held at the ICC in Springfield in 2013.[3] Initial and Reply Comments were also submitted concerning the Post-Workshop Section 16-111.5B EE Questions. In addition to parties having a better understanding of the Section 16-111.5B EE issues, the outcome of the workshop process includes a number of statements concerning Section 16-111.5B EE issues where parties participating in the Section 16-111.5B EE Workshops reached consensus (i.e., no opposition to the statement).

This report conveys the consensus positions of those parties participating in the public workshops concerning Section 16-111.5B EE issues. Each consensus statement was taken from the matrix of issues reviewed at the Section 16-111.5B EE Workshops for which no opposition was presented on that statement (i.e., parties took only support or neutral positions on the statement). Below are the Post-Workshop Section 16-111.5B EE Questions covered through written Initial and Reply Comments[4] and discussed in detail at the second and third Section 16-111.5B EE Workshops. Below each question is a bulleted list of statements where consensus was reached among the workshop participants. The superscript numbers following each statement is a reference to the statement number from the workshop matrix.[5]

[1] 220 ILCS 5/16-111.5B.

[2] 2013 Procurement Order at 271.

[3] Workshop #1, Thursday, April 11, 2013, 9:30 AM – 4:30 PM; ICC, 527 East Capitol Avenue, Springfield, IL 62701; Hearing Room A.
Workshop #2, Monday, June 3, 2013, 10:30 AM – 4:30 PM; ICC, 527 East Capitol Avenue, Springfield, IL 62701; Hearing Room A
Workshop #3, Tuesday, June 4, 2013, 9:00 AM – 4:30 PM; ICC, 527 East Capitol Avenue, Springfield, IL 62701; Hearing Rooms A and B

[4] Initial and Reply Comments of the parties can be accessed via the Commission's website: http://www.icc.illinois.gov/electricity/EnergyEfficiencyWorkshops161115B.aspx

[5] 'Matrix of Parties' Positions on 16-111.5B Issues - DRAFT 6-4-13 430pm.docx', 'Matrix of Parties' Positions on 16-111.5B Issues - DRAFT 6-14-13 430pm.docx', and 'Staff Consensus Matrix, OAG edits[1].docx'.

Consensus Positions on Post-Workshop Section 16-111.5B EE Questions

A. Coordination of Energy Efficiency Programs

1. Is it feasible for the energy efficiency ("EE") programs and measures procured by the Illinois Power Agency ("IPA") pursuant to Section 16-111.5B[6] to include expansions of Section 8-103[7] EE programs and measures? If yes, please explain how, describe the benefits and costs of doing so, and explain whether expansions of Section 8-103 EE programs and measures should be included in IPA procurements of EE pursuant to Section 16-111.5B.

   1.1. Should the Section 16-111.5B EE programs be limited to new or different EE programs than those included in a utility's Section 8-103 EE portfolio? What are the benefits and costs of such an approach?

   - **It is feasible to include EE program expansions in IPA procurements.[4]**
   - **The utilities should include cost-effective expansions of the Section 8-103 EE programs in the annual EE assessment they submit to the IPA, unless Section 8-103 EE programs are already expected to achieve the maximum achievable cost-effective savings.[6]**
   - **Due to timing problems, it may not be feasible to include expansion of Section 8-103 EE programs in IPA procurements during years in which there are no Section 8-103 EE programs that have been approved by the Commission.[5]**
   - **To align the filing timelines across Sections 8-103 and 16-111.5B to facilitate including EE program expansions in the EE assessments the utilities submit to the IPA, the utilities and DCEO could file their next Section 8-103 EE plans with the Commission by July 1, 2016. (Need gas utility support)[7]**
   - **An "expansion" of a Section 8-103 EE program per Section 16-111.5B is not strictly defined and could include expanding the EE program in such a way as to facilitate tracking of the Section 16-111.5B portion of the expanded EE program.[3]**

2. Should expansion of existing Section 8-103 EE programs under Section 16-111.5B also include expansion of DCEO's Section 8-103 EE programs? If yes, please explain how and describe the benefits and costs of such an approach.

   - **Expansion of DCEO's Section 8-103 EE programs should be included in the EE assessment that the utilities submit to the IPA per Section 16-111.5B, assuming cooperation from DCEO. (Still questioning contracting relationship with DCEO under Section 16-111.5B EE programs.)[15A]**
   - **Expansion of DCEO's Section 8-103 EE programs would need to be shown to be cost-effective per Section 16-111.5B requirements.[16]**
   - **DCEO is allowed to offer EE programs under Section 16-111.5B.[14]**

[6] 220 ILCS 5/16-111.5B
[7] 220 ILCS 5/8-103

- **It would be appropriate for DCEO to bid programs into the utilities' annual EE assessments (RFP). (Still questioning contracting relationship with DCEO under Section 16-111.5B EE programs.)[15B]**

3. Given the existing EE statutes, should the Commission treat Sections 8-103 (EEPS) and 16-111.5B (IPA) EE portfolios as *separate* portfolios (*e.g.,* separate EE goals, separate budgets, separate sets of standards) or as a *combined* portfolio (*e.g.,* single EE goal, single budget, single set of harmonized standards)? Please explain which approach (*i.e.,* separate or combined EE portfolios) is preferred and provide rationale.
   3.1. How would the preferred approach (*i.e.,* separate or combined EE portfolios) actually work in practice (in terms of EE evaluation, tracking, reporting, portfolio administration, goals, banking, flexibility, merged or separate budget, and other overlap with Section 8-103)? Please be very specific.
   3.2. Under what circumstances (if any) could you support the alternative approach (*i.e.,* separate or combined EE portfolios), and how would the alternative approach actually work in practice (in terms of EE evaluation, tracking, reporting, portfolio administration, goals, banking, flexibility, merged or separate budget, and other overlap with Section 8-103)? Please be specific.
   - **Sections 8-103 and 16-111.5B EE portfolios can be kept separate.[17]**
   - **Sections 8-103 and 16-111.5B EE budgets would be kept separate.[28]**
   - **EE program expansions would be expanded in such a way as to facilitate utility tracking of the original Section 8-103 portion and the Section 16-111.5B portion of the expanded EE program. (not expanded in exactly the same manner)[30]**
   - **Savings from the Section 8-103 portion of an expanded EE program would count toward achievement of a utility's Section 8-103 savings goal.[21]**
   - **Savings from the Section 16-111.5B portion of an expanded EE program would count toward achievement of a utility's Section 16-111.5B savings goal, not the Section 8-103 savings goal.[23]**
   - **Banking policies would not overlap between Sections 8-103 and 16-111.5B.[24]**
   - **There is no need for banking under Section 16-111.5B.[25]**
   - **For general reporting purposes, it would be appropriate to report each Section's EE goals, achieved savings, budgets, and impact on EE rider surcharge to show the impact of the utilities' EE portfolios across the state, both individually and collectively, so that progress can be tracked separately for each EE portfolio.[32AG]**

B. Procurement of Energy Efficiency Programs

4. How should EE programs be procured by the IPA?

4.1. For example, should the IPA procurement allow for multi-year EE programs? Can the number of years that the utilities propose for IPA EE programs be flexible (1, 2, 3, 4 or 5 years)?

4.2. How should payments be structured?

- **Multi-year EE procurement is allowed in the context of the annual EE procurement plan proceeding.[54]**
- **Utilities should include all bids in their EE assessments submitted to the IPA (similar to Ameren last year).[55D]**
- **Utilities should include bid reviews in their EE assessments submitted to the IPA (similar to ComEd last year) (would be confidential).[55C]**
- **Section 16-111.5B does not require the utility to be responsible for determining what vendors should be contracted for what amount of savings.[84]**
- **Utilities should have flexibility to structure Section 16-111.5B EE contracts in a manner which best balances the potentially competing objectives of making the procurement process attractive to as many bidders as possible and providing confidence that the savings which are proposed/bid will actually be delivered.[57]**
- **Parties should work toward agreeing upon a set of principles for Section 16-111.5B EE contract design.[58]**
- **It's appropriate to structure Section 16-111.5B EE contracts as "pay-for-performance".[56]**
- **There are no legal requirements for Section 16-111.5B EE contracts to be structured around a "pay-for performance" structure.[59]**
- **To the extent parties are concerned with EE replacing power purchase needs under Section 16-111.5B, it would be appropriate for the IPA and procurement administrator in consultation with the utilities and/or evaluators to attempt to estimate the amount that the Section 16-111.5B EE programs reduce the IPA's need to procure supply, to serve as a check on the utilities' original estimate required by Section 16-111.5B(a)(3)(G), and to provide useful information to customers.[41]**

5. How should Section 16-111.5B EE programs be evaluated (*e.g.,* using IL-TRM in effect at time of submission, using IL-TRM in effect at time of implementation, deemed NTG) and what is appropriate forum for review (*e.g.,* docketed proceeding, SAG)?
   5.1. Do EE programs and measures procured by the IPA pursuant to Section 16-111.5B *require* evaluation, measurement and verification? If yes, please answer the following as well:
      5.1.1. Should assessments of IPA EE programs be included as part of the work done assessing Section 8-103 EE programs and measures through the Technical Reference Manual ("TRM")? Should the processes now completed for the evaluation of Section 8-103 EE programs, including the TRM and net-to-gross ("NTG") ratio development, also be done for Section 16-111.5B EE programs?
      5.1.2. Should the same NTG ratios and savings values, methodologies and assumptions be applied to both Section 8-103 EE programs and Section 16-111.5B EE programs?

- **In general, the IL-TRM should be used for Section 16-111.5B EE programs.[46]**
- **There may be special circumstances where deviation from the IL-TRM may be appropriate; the utility/vendor should have the option to make the case for the special circumstance. However, the IL-TRM values must also be provided for comparison purposes.[47]**
- **Section 16-111.5B portions of the expanded EE programs should operate under the same rules as the third party vendor proposals submitted through the annual assessment (RFP process).[34C]**
- **Evaluation of the Section 16-111.5B EE programs should be performed by the Section 8-103 EE program evaluators.[11]**
- **Evaluation of Sections 8-103 and 16-111.5B EE programs should be coordinated.[12]**
- **Evaluation sampling (e.g., NTG) could occur on an expanded EE program-level basis, or could be based on each component of the expanded EE program (the Section 8-103 portion and the Section 16-111.5B portion of the expanded EE program), depending on the specific circumstance.[37]**
- **There must be a balance in the evaluation of Section 16-111.5B EE programs between the degree of evaluation and the size of the program, wherein larger programs justify more complete evaluations.[40]**
- **Expenditures on evaluation should be capped for the Section 16-111.5B EE programs as they are for the Section 8-103 EE programs.[69]**
- **Section 16-111.5B EE evaluation reports should be provided to the Commission in a public docket, either reconciliation proceeding or savings docket.[33B]**
- **Ex-post cost-effectiveness analysis should be performed for the Section 16-111.5B EE programs.[38]**
- **Ex-post cost-effectiveness analysis should be performed using actual participation and the best available information (e.g., updated NTG).[39B]**

6. Is it reasonable to hold utilities (or third party vendors) accountable for annual EE savings goals (EE program-level or portfolio-level goals) established pursuant to Section 16-111.5B?
   6.1. How should failure of any party to fulfill its Section 16-111.5B obligations be dealt with in the context of Section 16-111.5B EE goals, budgets, and affected supply requirements[8]?
   6.2. What are the consequences, if any, should an ex-post evaluation of an EE program or measure procured by the IPA pursuant to Section 16-111.5B fail to show the expected savings?
      - **Utilities are not subject to penalties for failure to achieve the annual Section 16-111.5B energy savings goal.[43]**

7. Can utilities and third party vendors adjust (EE program and portfolio) goals or budgets after the IPA order but prior to implementation reflecting changes in values and the market given the over one year time lag between RFP submission and implementation? If yes, please answer the following as well:
   7.1. Under what circumstances can the utilities and third party venders make such adjustments? Please be specific.
   7.2. What guidelines or rules should govern how such adjustments are made? Please be specific.
   7.3. What is the appropriate forum for review (*e.g.,* docketed proceeding, SAG) and approval (*e.g.,* docketed proceeding) of such adjustments, if any?
   7.4. Should previously approved EE programs that undergo goal or budget adjustments after approval be rescreened prior to implementation with revised cost-effectiveness estimates submitted to the IPA and the Commission? What should happen if the revised EE program goal (and budget) results in the EE program screening as cost-ineffective?
      - **Under the pay for performance contract, the ICC could authorize on a program basis, a maximum energy savings achieved and spending cap.[100C]**
      - **There is prudence accountability in a docketed proceeding but no docketed proceeding for savings goals is required per Section 16-111.5B.[66]**

[8] Please note that item (5) under subsection (a) of Section 16-111.5B states:
(5) Pursuant to paragraph (4) of subsection (d) of Section 16-111.5 of this Act, the Commission shall also approve the energy efficiency programs and measures included in the procurement plan, including the annual energy savings goal, if the Commission determines they fully capture the potential for all achievable cost-effective savings, to the extent practicable, and otherwise satisfy the requirements of Section 8-103 of this Act.
In the event the Commission approves the procurement of additional energy efficiency, it shall reduce the amount of power to be procured under the procurement plan to reflect the additional energy efficiency and shall direct the utility to undertake the procurement of such energy efficiency, which shall not be subject to the requirements of subsection (e) of Section 16-111.5 of this Act. The utility shall consider input from the Agency and interested stakeholders on the procurement and administration process.
220 ILCS 5/16-111.5B(a)(5).

C. Energy Efficiency Program Management

8. What type and amount of flexibility is allowed or appropriate for EE programs approved in an IPA procurement plan under Section 16-111.5B (for one year, and for multiple years, and flexibility between the Sections 16-111.5B and 8-103 EE portfolios)?
   8.1. For example, can or should resources be transferred between and among Section 16-111.5B EE programs in order to maximize cost-effective savings?
   8.2. Can or should resources be transferred between the Section 16-111.5B EE portfolio and the Section 8-103 EE portfolio in order to maximize cost-effective savings?
   - **Funds approved pursuant to Section 16-111.5B could not be spent on EE programs that were not approved in the procurement plan docket.[29]**
   - **The Commission may authorize on a program basis an expected spending level and the spending level cap.[100D]**

D. Cost-Effectiveness of Energy Efficiency Programs and Measures

9. What criteria of cost-effectiveness is appropriate for EE programs and measures procured by the IPA pursuant to Section 16-111.5B?
   - **The Total Resource Cost ("TRC") test should be calculated at the program or measure level.[102]**
   - **Cost-ineffective programs should be dropped during the procurement plan proceeding.[90C]**

10. What is the meaning of 220 ILCS 5/16-111.5B(a)(3)(D)-(E) in terms of which statistics or cost-effectiveness tests should be used to comply with each of the two requirements? Please be specific.

    (D) Analysis showing that the new or expanded cost-effective EE programs or measures would lead to a reduction in the overall cost of electric service.

    (E) Analysis of how the cost of procuring additional cost-effective EE measures compares over the life of the measures to the prevailing cost of comparable supply.

    10.1. How should the additional information required of the utilities in the IPA's procurement of EE programs and measures under Section 16-111.5B(a)(3)(D)-(E) be used? For example, should this additional information be used to exclude EE programs from IPA consideration?
    - **Section 16-111.5B(a)(3)(D) can be interpreted as the Utility Cost Test ("UCT").[105]**
    - **Section 16-111.5B(a)(3)(D) should be calculated for each program.[107]**
    - **Section 16-111.5B(a)(3)(E) can be interpreted as the Total Resource Cost ("TRC") test.[110]**
    - **The Commission should determine how the additional information provided pursuant to Section 16-111.5B(a)(3)(D)-(E) should be used (i.e., litigate).[113]**

ICC Staff Report
RE: Summary of Section 16-111.5B Energy Efficiency Workshops Required by the Commission's Order in Docket No. 12-0544

I. Background

On September 28, 2012, pursuant to the Illinois Power Agency Act, 20 ILCS 3855/1-1, et seq., and the Illinois Public Utilities Act ("Act" or "PUA"), 220 ILCS 5/1-101, et seq., the Illinois Power Agency ("IPA") filed a petition with the Illinois Commerce Commission ("Commission" or "ICC") requesting approval of the 220 ILCS 5/16-111.5(d) Procurement Plan ("2013 Procurement Plan"), ICC Docket No. 12-0544. Section 16-111.5B of the PUA outlines the provisions relating to energy efficiency ("EE") procurement and the specific requirements for the consideration of cost-effective EE in the procurement plan. Section 16-111.5B of the PUA requires the IPA to consider the utilities' annual assessment of cost-effective EE programs or measures that are incremental to those included in the Commission-approved Section 8-103 EE and demand-response plans that could be included in the procurement plan. Section 16-111.5B(a)(4) directs the IPA to include in the procurement plan beginning in 2012, EE "programs and measures it determines are cost-effective and the associated annual energy savings goal included in the annual solicitation process and assessment submitted pursuant to" Section 16-111.5B(a)(3) of the PUA. The IPA's filing of the 2013 Procurement Plan represented the first opportunity for the Commission to consider the Section 16-111.5B EE issues. In the Commission's Final Order in Docket No. 12-0544, the Commission directed ICC Staff to work with the Illinois Power Agency ("IPA") to conduct a series of workshops regarding the Section 16-111.5B[9] EE issues "to determine if there are additional changes or refinements to consider with regard to such requests, suggestions, or recommendations in future procurement proceedings." Illinois Power Agency, ICC Order Docket No. 12-0544, 271 (Dec. 19, 2012) ("2013 Procurement Order"). While the Commission did not direct Staff to file a Staff Report summarizing the outcome of the Section 16-111.5B EE Workshops, based on the request of the Section 16-111.5B EE Workshop participants, Staff produces this ICC Staff Report summarizing the Section 16-111.5B Energy Efficiency Workshops required by the Commission's 2013 Procurement Order.

[9] 220 ILCS 5/16-111.5B.

II. Facilitated Collaborative Process

On February 22, 2013, ICC Staff requested input from interested parties regarding Section 16-111.5B EE issues that should be considered in the workshop process. Comments were received by March 8, 2013 from Ameren Illinois Company ("AIC" or "Ameren"), Applied Energy Group ("AEG"), Commonwealth Edison Company ("ComEd"), the IPA, and a joint submission from the Citizens Utility Board ("CUB"), the Environmental Law and Policy Center ("ELPC"), the Natural Resources Defense Council ("NRDC"), and the People of the State of Illinois ("AG").

The first Section 16-111.5B EE Workshop was held at the ICC on April 11, 2013 to address Section 16-111.5B EE issues raised by the parties. Based on the collective desire of interested parties attending the April 11, 2013 workshop, a post-workshop comment period was agreed to as an appropriate next step in order to determine where consensus had been reached on various Section 16-111.5B EE issues. As agreed to at the first workshop, ICC Staff distributed a draft list of Section 16-111.5B EE questions on April 15, 2013, and requested input from interested parties regarding additional Section 16-111.5B EE questions that should be addressed in post-workshop comments. Additional questions were received from Ameren and CUB (with concurrence from NRDC and the AG) by April 22, 2013. ICC Staff requested input from interested parties and issued a notice of comment period regarding Post-Workshop Section 16-111.5B Energy Efficiency Questions developed by the parties on April 24, 2013. Initial Comments were received from Ameren, ComEd, and the IPA by May 8, 2013. Initial Comments were received from the City of Chicago, CUB, ICC Staff, NRDC and the AG by May 15, 2013. Reply Comments were received from Ameren, CUB, ICC Staff, and the IPA by May 29, 2013.

The second and third (final) Section 16-111.5B EE Workshops, held on June 3, 2013 and June 4, 2013 at the ICC, focused on documenting, reviewing, and clarifying areas of consensus regarding the various Section 16-111.5B EE issues. ICC Staff compiled a draft matrix[10] of Section 16-111.5B EE issues that represented a compilation of ICC Staff's understanding of the parties' positions on the issues based on the Initial and Reply Comments of the parties and circulated the draft matrix with the parties. ICC Staff edited the matrix throughout the Section 16-111.5B EE Workshops to ensure accuracy of the parties' positions on the issues. At the conclusion of the June 4, 2013 Section 16-111.5B EE Workshop, ICC Staff circulated with the parties the revised draft summary matrix[11] of the parties' positions on the Section 16-111.5B EE issues. Parties agreed to review of the revised draft summary matrix after the workshop and further agreed to provide ICC Staff with confirmation/modification of their parties' positions. Based on consensus at the Section 16-111.5B EE Workshop, ICC Staff agreed to send out a summary of the consensus Section 16-111.5B EE statements grouped by subject matter at a later date. This document contains the summary of the consensus Section 16-111.5B EE statements that was developed in the manner discussed above. The consensus matrix was created by ICC Staff and was modified based on input from the parties. It was

[10] 'Matrix of Parties' Positions on 16-111.5B Issues - DRAFT 6-3-13 950am.docx'.
[11] 'Matrix of Parties' Positions on 16-111.5B Issues - DRAFT 6-4-13 430pm.docx'.

initially based on ICC Staff's understanding of the parties' positions on the issues as contained in the Initial and Reply Comments of the parties, then it was modified based on discussions at the second and third Section 16-111.5B EE Workshops, and finalized based on follow-up confirmation with parties after the workshops.

III. Overview of the Workshops

The Section 16-111.5B EE Workshops were held at the ICC's Springfield Office.[12] The Section 16-111.5B EE Workshops were discussion based. The topics covered at the first workshop were:

A. Sections 8-103 and 16-111.5B Overlap and Coordination
    a. Goals
    b. Evaluation
    c. Flexibility
    d. Coordination
B. Cost-Effectiveness
C. RFP Process and Timing

Please see the April 11, 2013 Workshop Agenda for a detailed list of topics and questions.

The topics covered through Initial and Reply Comments regarding the Post-Workshop Section 16-111.5B EE Questions and the second and third workshops were:

A. Coordination of Energy Efficiency Programs
B. Procurement of Energy Efficiency Programs
C. Energy Efficiency Program Management
D. Cost-Effectiveness of Energy Efficiency Programs and Measures

The second and third Section 16-111.5B EE Workshops focused on clarifying areas where consensus was reached regarding the aforementioned topics.

[12] Workshop #1, Thursday, April 11, 2013, 9:30 AM – 4:30 PM; ICC, 527 East Capitol Avenue, Springfield, IL 62701; Hearing Room A.
Workshop #2, Monday, June 3, 2013, 10:30 AM – 4:30 PM; ICC, 527 East Capitol Avenue, Springfield, IL 62701; Hearing Room A
Workshop #3, Tuesday, June 4, 2013, 9:00 AM – 4:30 PM; ICC, 527 East Capitol Avenue, Springfield, IL 62701; Hearing Rooms A and B

IV. Consensus Positions on Post-Workshop Section 16-111.5B EE Questions

Below are the Post-Workshop Section 16-111.5B EE Questions covered through written Initial and Reply Comments[13] and discussed in detail at the second and third workshops. Below each question is a list of bulleted statements where consensus was reached among the workshop participants. The superscript numbers following each statement is in reference to the statement number from the workshop matrix.[14] Please note that the consensus statements are taken from the matrix of issues reviewed at the workshops for which no opposition was presented.

A. Coordination of Energy Efficiency Programs

1. Is it feasible for the energy efficiency ("EE") programs and measures procured by the Illinois Power Agency ("IPA") pursuant to Section 16-111.5B[15] to include expansions of Section 8-103[16] EE programs and measures? If yes, please explain how, describe the benefits and costs of doing so, and explain whether expansions of Section 8-103 EE programs and measures should be included in IPA procurements of EE pursuant to Section 16-111.5B.

1.1. Should the Section 16-111.5B EE programs be limited to new or different EE programs than those included in a utility's Section 8-103 EE portfolio? What are the benefits and costs of such an approach?

- **It is feasible to include EE program expansions in IPA procurements.[4]**
- **The utilities should include cost-effective expansions of the Section 8-103 EE programs in the annual EE assessment they submit to the IPA, unless Section 8-103 EE programs are already expected to achieve the maximum achievable cost-effective savings.[6]**
- **Due to timing problems, it may not be feasible to include expansion of Section 8-103 EE programs in IPA procurements during years in which there are no Section 8-103 EE programs that have been approved by the Commission.[5]**
- **To align the filing timelines across Sections 8-103 and 16-111.5B to facilitate including EE program expansions in the EE assessments the utilities submit to the IPA, the utilities and DCEO could file their next Section 8-103 EE plans with the Commission by July 1, 2016. (Need gas utility support)[7]**
- **An "expansion" of a Section 8-103 EE program per Section 16-111.5B is not strictly defined and could include expanding the EE program in such a way as to facilitate tracking of the Section 16-111.5B portion of the expanded EE program.[3]**

[13] Initial and Reply Comments of the parties can be accessed via the Commission's website: http://www.icc.illinois.gov/electricity/EnergyEfficiencyWorkshops161115B.aspx

[14] 'Matrix of Parties' Positions on 16-111.5B Issues - DRAFT 6-4-13 430pm.docx', 'Matrix of Parties' Positions on 16-111.5B Issues - DRAFT 6-14-13 430pm.docx', and 'Staff Consensus Matrix, OAG edits[1].docx'.

[15] 220 ILCS 5/16-111.5B

[16] 220 ILCS 5/8-103

2. Should expansion of existing Section 8-103 EE programs under Section 16-111.5B also include expansion of DCEO's Section 8-103 EE programs? If yes, please explain how and describe the benefits and costs of such an approach.
    - **Expansion of DCEO's Section 8-103 EE programs should be included in the EE assessment that the utilities submit to the IPA per Section 16-111.5B, assuming cooperation from DCEO. (Still questioning contracting relationship with DCEO under Section 16-111.5B EE programs.)[15A]**
    - **Expansion of DCEO's Section 8-103 EE programs would need to be shown to be cost-effective per Section 16-111.5B requirements.[16]**
    - **DCEO is allowed to offer EE programs under Section 16-111.5B.[14]**
    - **It would be appropriate for DCEO to bid programs into the utilities' annual EE assessments (RFP). (Still questioning contracting relationship with DCEO under Section 16-111.5B EE programs.)[15B]**

3. Given the existing EE statutes, should the Commission treat Sections 8-103 (EEPS) and 16-111.5B (IPA) EE portfolios as *separate* portfolios (*e.g.,* separate EE goals, separate budgets, separate sets of standards) or as a *combined* portfolio (*e.g.,* single EE goal, single budget, single set of harmonized standards)? Please explain which approach (*i.e.,* separate or combined EE portfolios) is preferred and provide rationale.
    3.1. How would the preferred approach (*i.e.,* separate or combined EE portfolios) actually work in practice (in terms of EE evaluation, tracking, reporting, portfolio administration, goals, banking, flexibility, merged or separate budget, and other overlap with Section 8-103)? Please be very specific.
    3.2. Under what circumstances (if any) could you support the alternative approach (*i.e.,* separate or combined EE portfolios), and how would the alternative approach actually work in practice (in terms of EE evaluation, tracking, reporting, portfolio administration, goals, banking, flexibility, merged or separate budget, and other overlap with Section 8-103)? Please be specific.
    - **Sections 8-103 and 16-111.5B EE portfolios can be kept separate.[17]**
    - **Sections 8-103 and 16-111.5B EE budgets would be kept separate.[28]**
    - **EE program expansions would be expanded in such a way as to facilitate utility tracking of the original Section 8-103 portion and the Section 16-111.5B portion of the expanded EE program. (not expanded in exactly the same manner)[30]**
    - **Savings from the Section 8-103 portion of an expanded EE program would count toward achievement of a utility's Section 8-103 savings goal.[21]**
    - **Savings from the Section 16-111.5B portion of an expanded EE program would count toward achievement of a utility's Section 16-111.5B savings goal, not the Section 8-103 savings goal.[23]**
    - **Banking policies would not overlap between Sections 8-103 and 16-111.5B.[24]**

- **There is no need for banking under Section 16-111.5B.[25]**
- **For general reporting purposes, it would be appropriate to report each Section's EE goals, achieved savings, budgets, and impact on EE rider surcharge to show the impact of the utilities' EE portfolios across the state, both individually and collectively, so that progress can be tracked separately for each EE portfolio.[32AG]**

B. Procurement of Energy Efficiency Programs

4. How should EE programs be procured by the IPA?

4.1. For example, should the IPA procurement allow for multi-year EE programs? Can the number of years that the utilities propose for IPA EE programs be flexible (1, 2, 3, 4 or 5 years)?

4.2. How should payments be structured?

- **Multi-year EE procurement is allowed in the context of the annual EE procurement plan proceeding.[54]**
- **Utilities should include all bids in their EE assessments submitted to the IPA (similar to Ameren last year).[55D]**
- **Utilities should include bid reviews in their EE assessments submitted to the IPA (similar to ComEd last year) (would be confidential).[55C]**
- **Section 16-111.5B does not require the utility to be responsible for determining what vendors should be contracted for what amount of savings.[84]**
- **Utilities should have flexibility to structure Section 16-111.5B EE contracts in a manner which best balances the potentially competing objectives of making the procurement process attractive to as many bidders as possible and providing confidence that the savings which are proposed/bid will actually be delivered.[57]**
- **Parties should work toward agreeing upon a set of principles for Section 16-111.5B EE contract design.[58]**
- **It's appropriate to structure Section 16-111.5B EE contracts as "pay-for-performance".[56]**
- **There are no legal requirements for Section 16-111.5B EE contracts to be structured around a "pay-for performance" structure.[59]**
- **To the extent parties are concerned with EE replacing power purchase needs under Section 16-111.5B, it would be appropriate for the IPA and procurement administrator in consultation with the utilities and/or evaluators to attempt to estimate the amount that the Section 16-111.5B EE programs reduce the IPA's need to procure supply, to serve as a check on the utilities' original estimate required by Section 16-111.5B(a)(3)(G), and to provide useful information to customers.[41]**

5. How should Section 16-111.5B EE programs be evaluated (*e.g.,* using IL-TRM in effect at time of submission, using IL-TRM in effect at time of implementation, deemed NTG) and what is appropriate forum for review (*e.g.,* docketed proceeding, SAG)?
   5.1. Do EE programs and measures procured by the IPA pursuant to Section 16-111.5B *require* evaluation, measurement and verification? If yes, please answer the following as well:
      5.1.1. Should assessments of IPA EE programs be included as part of the work done assessing Section 8-103 EE programs and measures through the Technical Reference Manual ("TRM")? Should the processes now completed for the evaluation of Section 8-103 EE programs, including the TRM and net-to-gross ("NTG") ratio development, also be done for Section 16-111.5B EE programs?
      5.1.2. Should the same NTG ratios and savings values, methodologies and assumptions be applied to both Section 8-103 EE programs and Section 16-111.5B EE programs?

- **In general, the IL-TRM should be used for Section 16-111.5B EE programs.[46]**
- **There may be special circumstances where deviation from the IL-TRM may be appropriate; the utility/vendor should have the option to make the case for the special circumstance. However, the IL-TRM values must also be provided for comparison purposes.[47]**
- **Section 16-111.5B portions of the expanded EE programs should operate under the same rules as the third party vendor proposals submitted through the annual assessment (RFP process).[34C]**
- **Evaluation of the Section 16-111.5B EE programs should be performed by the Section 8-103 EE program evaluators.[11]**
- **Evaluation of Sections 8-103 and 16-111.5B EE programs should be coordinated.[12]**
- **Evaluation sampling (e.g., NTG) could occur on an expanded EE program-level basis, or could be based on each component of the expanded EE program (the Section 8-103 portion and the Section 16-111.5B portion of the expanded EE program), depending on the specific circumstance.[37]**
- **There must be a balance in the evaluation of Section 16-111.5B EE programs between the degree of evaluation and the size of the program, wherein larger programs justify more complete evaluations.[40]**
- **Expenditures on evaluation should be capped for the Section 16-111.5B EE programs as they are for the Section 8-103 EE programs.[69]**
- **Section 16-111.5B EE evaluation reports should be provided to the Commission in a public docket, either reconciliation proceeding or savings docket.[33B]**
- **Ex-post cost-effectiveness analysis should be performed for the Section 16-111.5B EE programs.[38]**
- **Ex-post cost-effectiveness analysis should be performed using actual participation and the best available information (e.g., updated NTG).[39B]**

6. Is it reasonable to hold utilities (or third party vendors) accountable for annual EE savings goals (EE program-level or portfolio-level goals) established pursuant to Section 16-111.5B?
   6.1. How should failure of any party to fulfill its Section 16-111.5B obligations be dealt with in the context of Section 16-111.5B EE goals, budgets, and affected supply requirements[17]?
   6.2. What are the consequences, if any, should an ex-post evaluation of an EE program or measure procured by the IPA pursuant to Section 16-111.5B fail to show the expected savings?
      - **Utilities are not subject to penalties for failure to achieve the annual Section 16-111.5B energy savings goal.[43]**

7. Can utilities and third party vendors adjust (EE program and portfolio) goals or budgets after the IPA order but prior to implementation reflecting changes in values and the market given the over one year time lag between RFP submission and implementation? If yes, please answer the following as well:
   7.1. Under what circumstances can the utilities and third party venders make such adjustments? Please be specific.
   7.2. What guidelines or rules should govern how such adjustments are made? Please be specific.
   7.3. What is the appropriate forum for review (*e.g.,* docketed proceeding, SAG) and approval (*e.g.,* docketed proceeding) of such adjustments, if any?
   7.4. Should previously approved EE programs that undergo goal or budget adjustments after approval be rescreened prior to implementation with revised cost-effectiveness estimates submitted to the IPA and the Commission? What should happen if the revised EE program goal (and budget) results in the EE program screening as cost-ineffective?
      - **Under the pay for performance contract, the ICC could authorize on a program basis, a maximum energy savings achieved and spending cap.[100C]**
      - **There is prudence accountability in a docketed proceeding but no docketed proceeding for savings goals is required per Section 16-111.5B.[66]**

[17] Please note that item (5) under subsection (a) of Section 16-111.5B states:
(5) Pursuant to paragraph (4) of subsection (d) of Section 16-111.5 of this Act, the Commission shall also approve the energy efficiency programs and measures included in the procurement plan, including the annual energy savings goal, if the Commission determines they fully capture the potential for all achievable cost-effective savings, to the extent practicable, and otherwise satisfy the requirements of Section 8-103 of this Act.
In the event the Commission approves the procurement of additional energy efficiency, it shall reduce the amount of power to be procured under the procurement plan to reflect the additional energy efficiency and shall direct the utility to undertake the procurement of such energy efficiency, which shall not be subject to the requirements of subsection (e) of Section 16-111.5 of this Act. The utility shall consider input from the Agency and interested stakeholders on the procurement and administration process.
220 ILCS 5/16-111.5B(a)(5).

C. Energy Efficiency Program Management

8. What type and amount of flexibility is allowed or appropriate for EE programs approved in an IPA procurement plan under Section 16-111.5B (for one year, and for multiple years, and flexibility between the Sections 16-111.5B and 8-103 EE portfolios)?
   8.1. For example, can or should resources be transferred between and among Section 16-111.5B EE programs in order to maximize cost-effective savings?
   8.2. Can or should resources be transferred between the Section 16-111.5B EE portfolio and the Section 8-103 EE portfolio in order to maximize cost-effective savings?
   - **Funds approved pursuant to Section 16-111.5B could not be spent on EE programs that were not approved in the procurement plan docket.[29]**
   - **The Commission may authorize on a program basis an expected spending level and the spending level cap.[100D]**

D. Cost-Effectiveness of Energy Efficiency Programs and Measures

9. What criteria of cost-effectiveness is appropriate for EE programs and measures procured by the IPA pursuant to Section 16-111.5B?
   - **The Total Resource Cost ("TRC") test should be calculated at the program or measure level.[102]**
   - **Cost-ineffective programs should be dropped during the procurement plan proceeding.[90C]**

10. What is the meaning of 220 ILCS 5/16-111.5B(a)(3)(D)-(E) in terms of which statistics or cost-effectiveness tests should be used to comply with each of the two requirements? Please be specific.

    (D) Analysis showing that the new or expanded cost-effective EE programs or measures would lead to a reduction in the overall cost of electric service.

    (E) Analysis of how the cost of procuring additional cost-effective EE measures compares over the life of the measures to the prevailing cost of comparable supply.

    10.1. How should the additional information required of the utilities in the IPA's procurement of EE programs and measures under Section 16-111.5B(a)(3)(D)-(E) be used? For example, should this additional information be used to exclude EE programs from IPA consideration?
    - **Section 16-111.5B(a)(3)(D) can be interpreted as the Utility Cost Test ("UCT").[105]**
    - **Section 16-111.5B(a)(3)(D) should be calculated for each program.[107]**
    - **Section 16-111.5B(a)(3)(E) can be interpreted as the Total Resource Cost ("TRC") test.[110]**
    - **The Commission should determine how the additional information provided pursuant to Section 16-111.5B(a)(3)(D)-(E) should be used (i.e., litigate).[113]**

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.09

Referring to page 52 of Ameren Ex. 1.1R and AIC Resp. to Staff DR JLH 1 Attachments_Goerss DWP 54-55, does AIC believe it is appropriate for evaluation funds to be expended on developing support for an evaluator's new NTG methodology?

RESPONSE

Prepared By: Keith E. Goerss
Title: Assistant Manager, Energy Efficiency
Phone Number: 309-677-5708

Page 52 of Ameren Ex. 1.1 (2nd Rev.) refers to maintaining the model whereby EMV is contracted with the utility while ensuring EMV independence, especially for the purposes of providing and coordinating data and access to program implementers for ease of evaluation. AIC supports the independence of the evaluator, including its choice of NTG methodology. As stated:

> "In addition to maintaining the use of ordered contract language AIC also proposes that the evaluator provide an annual written report to the Commission detailing the degree to which it has been allowed to conduct itself in an independent manner in regards to performing its evaluation activities in Illinois." (page 54).

AIC is unable to identify "Staff DR JLH 1 Attachments_Goerss DWP 54-55". However, AIC assumes the data request pertains to Resp. to Staff DR JLH 1.04 Attachments_Goerss DWP 54-55 where the independent evaluators justified their decision to employ the Revenue Neutral Model which ultimately Staff prevented from being employed by directing the independent evaluator not to proceed to use the evaluator's chosen method.

AIC objects to the use of the term "new" in the request (an evaluator's new NTG methodology) since it is vague. However as stated in the evaluator's memorandum to AIC and Staff (see JLH 3.09 Attach), the independent evaluator explains that even current NTG methods are questionable:[1]

[1] Also, as identified by AIC in the Plan 3 document, Ameren Exhibit 1.1 (2nd Rev.), page 57, which states, "In essence, there exist voluminous sources which conclude that the validity of NTG values is questionable. The very

> "Any new method will face scrutiny and questions. As Navigant points out, "a new approach bears a burden of proof (p. 4 Navigant memo)." We agree and appreciate the time spent by ICC staff as well as Navigant to provide some critical review of this new method. **Of course, the burden of proof also exists for approaches that are currently in use, and we believe that current methods have failed to meet this burden** for upstream programs. We developed the Revenue Neutral method due to the methodological weaknesses of existing methods." (emphasis added, page 1)

AIC's concern is less about whether the EMV funds are used to reasonably determine if a method is "new" or used to defend whether methods they choose to use are appropriate, but rather the ability of the evaluator to make independent decisions on all matters including what methods they choose to employ.

premise that a person can accurately ascertain and articulate what they would have done in the absence of a program is flawed and it is unreasonable to reward or penalize a program for such a high degree of subjectivity."

MEMORANDUM

TO: Karen Kansfield and Jonathan Jackson, Ameren Illinois Utilities
Jennifer Hinman and Tom Kennedy, ICC

FROM: Opinion Dynamics Evaluation Team

DATE: March 2, 2012

RE: Response to ICC Recommendations for Ameren Evaluation Plan

This memo provides our response to the comments and recommended changes to Ameren's PY4-PY6 Evaluation Plan provided by Staff of the Illinois Commerce Commission (ICC). The evaluation team held an in-person meeting in Springfield on 2/16/12 where we covered the evaluation tasks planned across the three program years by program. Present were the evaluation team as well as Ameren and ICC staff. We received comments via an email from Staff on 2/21/12 that highlighted 11 points and detailed 42 comments / suggested changes within an attached document.

Overall, we have adopted many of the detailed comments/suggested changes and shifted budgets around to accommodate the Staff preference for customer intercepts in the spring of 2012. Because the evaluation team's independent opinion for the timing of the residential lighting research differs from the ICC request, we now spend time discussing our differences.

We understand that part of the current requests stem from a need for statewide consistency, and as such, our team is planning to add lighting intercepts in PY4, PY5, and PY6 based on ICC requests. However, as recommended by our QA/QC consultant, we are documenting our independent opinions prior to this change to ensure transparency in the planning process. We are happy to discuss this issue future if necessary.

Background

Per the evaluation contract, the evaluation team is required to perform an impact assessment (which we interpret to mean obtaining a new NTGR) for lighting at least once over the course of the three year period (ideally in time for Ameren to use in their Plan 3 filing, thus by March of 2013). Based on best practices, our evaluation team believes that NTG research should be conducted when the market is not in flux. Given the current 2007 Energy Independence and Security Act (EISA) regulations, our expectation is that the market will be in flux for the next three years. Specifically, EISA requires that most screw based light bulbs become approximately 28% more energy efficient over the period 2012 through 2014. EISA requirements will take effect in phases, beginning with 100-W equivalents in 2012 (with enforcement of the EISA standards eliminated through at least September 2012 per the federal spending bill approved in December 2011), 75-W equivalents in 2013, and 60- and 40-W equivalents in 2014.

Given: (1) the state of the market, (2) the need to conduct research at least once over the course of the three year period, and (3) the desire to have this early enough to inform the next cycle, our team recommends conducting research in the Fall of 2012 (closer to the enforcement date for 100-W equivalents) so that the market would have time to pass through most of the existing stock of bulbs.

We also recommend revisiting the requirement for intercepts in PY6, and instead base this decision on the state of the market at that time. If PY6 intercepts are necessary to update the PY5 estimates due to market change, we recommend conducting them in the fall of 2013.

Per ICC comments, our team has been requested to conduct in-store intercepts each year over the three year cycle. Limitations of any PY4 research, and our rationale for conducting research in the Fall rather than the Spring of 2012 are described below.

Limitations of PY4 NTG Research for Residential Lighting

Given the current planning cycle, conducting PY4 NTG research for residential lighting would require the evaluation team to field this effort in March/April/May 2012. Due to the timing, the use of any PY4 is more limited than we would like. Any data that the evaluation team collects in March/April/May is only relevant to half of the program year, if that, given the changing state of the market. NTG research conducted now should not be applied to bulbs sold prior to January 2012 since the EISA regulation was proposed for January 1, 2012 (enforced post-September 2012). Since the market is in such a state of flux, the research could only reasonably be applied any collected NTG value to bulbs sold post January 2012. The NTG estimate only applies to a very limited slice of time in PY4 when EISA regulated bulbs may or may not be available to consumers.

Our expert opinion is that due to the fact that we are proposing to conduct intercepts in the Fall of PY5 (less than 6 months after the proposed timing for PY4 intercepts), the PY4 intercepts are not a wise use of evaluation funds for Ameren. We understand that the decision for other utilities with larger evaluation budgets may be different, but the funds for Ameren are limited and additional costs for intercepts will mean fewer data collection efforts for other programs. The request for PY4 intercepts requires a larger investment in NTG research and the decision has research implications for other research efforts.

Why the Fall if 2012 Rather than Spring of 2012 for Customer Intercepts

With the implementation of EISA, the timing of intercepts could impact the results. As stated earlier, EISA regulations for different incandescent wattages go into effect at the beginning of each year from 2012 through 2014, with 100-watt bulbs affected in 2012. The timing of when the regulations go into effect is less important than when the regulated product becomes unavailable to consumers. The regulations do not ban sales of traditional 100-watt incandescent bulbs; just imports of them so that products that are already in the U.S. can be sold. It will take some time to sell through existing inventory so it is likely that the regulations will not affect consumers until later in the year.

The results of intercepts conducted at the beginning of a calendar year could be quickly outdated. We feel customer intercepts should be done in the fall of each calendar year during the EISA phase in, particularly, if those results will be applied to programs prospectively.

The Fall is also considered a time when more lighting purchases are made, thus allowing us to represent the market better with our research efforts. Seasonal differences in purchase volume also impact the cost of the research. Generally, more bulbs are sold during the fall as hours of daylight drop and people are indoors more and start turning on lamps for longer periods of time. It can be more efficient to conduct intercepts during the fall when more bulbs are being purchased.

We were also planning to use the intercept research effort to collect information in the stores. While we are in the stores, we will record the presence and type of program marketing materials and conduct a brief shelf survey of available lighting products. We are particularly interested in the presence of alternatives to the bulbs that have been phased out by EISA. These products are more likely to be present later in the year as old inventory of regulated products are sold through.

A Final Note

Our team understands the need to be consistent with other evaluators. As such, our plan is to field instruments that are consistent with other evaluation teams; however, as an independent evaluation firm, we feel strongly that the need for consistency is less important than the need for high quality data. We do not anticipate any difficulties in fielding consistent data collection efforts that are of high quality; however, we will continue to make sure that all research collected under our contract meets the needs of our contract while also considering statewide priorities. Where we are asked to have statewide coordination take precedence over looking specifically at the Ameren portfolio, we will document for transparency and may proceed as requested.

Next we provide a table with our responses to the 11 points, followed by our responses to each of the 42 comments / recommended changes.

Staff Suggestion	Evaluation Team Response	Justification for Response
1. Remove Top Line Sales Approach for Residential Lighting	We will remove this approach	While we have removed this approach, we believe it has value and plan to use any contingency funds available at the end of PY4 to perform this small task.
2. Conduct In-Store Customer Intercepts for Residential Lighting to examine NTG, res/non-res split, and leakage	We will perform PY4 customer intercepts	See above discussion
3. Conduct NTG analyses for Residential Lighting, Custom, and Prescriptive programs each year	We will adopt this suggestion for residential lighting across all years. We will not adopt this for the custom and prescriptive programs in PY4 and will consider a NTGR for lighting measures in the custom and prescriptive programs for PY6.	We agree that the EISA changes will affect the linear fluorescent market when it comes into effect in PY5. We had planned a full net analysis in PY5 for the prescriptive and custom programs already. For PY6, we will consider performing additional net analysis on the lighting end uses only for the prescriptive and custom programs. We need to perform the PY5 research first to assess how this may be affecting choices made.
4. Write final site reports and NTG summaries for at least the largest custom projects	We will write site reports / NTG summaries for up to 10 sites	
5. Remove Treatment and Control Group Survey for Behavior Modification for PY4	We have removed this survey for PY4	
6. Remove Non-Participant survey for Appliance Recycling Program for PY4	We have removed this survey for PY4	
7. Reduce number of participants surveyed for REEP for PY4	We will not adopt this suggestion	
8. Remove site visits for Retro-commissioning Program for PY4	We have removed the four planned site visits.	
9. We suggest reducing the following program evaluation budgets for PY4: Behavior Modification, Appliance Recycling, REEP, and Retro-commissioning.	We have reduced the budgets for Behavior Modification, Appliance Recycling and Retro-Cx, but not REEP.	To enable performing PY4 customer intercepts for residential lighting and additional write ups for custom sites.

Staff Suggestion	Evaluation Team Response	Justification for Response
10. We suggest increasing the following program evaluation budgets for PY4: Residential Lighting and Custom.	We have increased both budgets	
11. Coordinate with other utilities' evaluation teams. Page 23 of the Ameren Illinois ODC Plan 2 Evaluation Services Contract states: "• Review the energy efficiency program Plans submitted by all Illinois utilities. Meet and consult with all other Illinois evaluators (for ComEd, Nicor, Integrys and DCEO) in an ongoing manner to determine to what extent similar methodologies and timelines can be employed for Illinois efforts. It is expected that efforts will be made towards implementing a statewide Residential Lighting evaluation methodology. • In partnership with evaluators for other Illinois utilities (gas and electric), make every effort to employ consistent methodologies for identical programs throughout Illinois." http://www.icc.illinois.gov/downloads/public/edocket/307434.pdf	We will coordinate with other evaluation teams.	

We have attached the 42 detailed comments / suggested changes from staff in the next section, along with our responses.

N	Program	Recommendation / Question	Response	Reason for Response
1	Custom	Increase Budget	Yes	We will increase the budget to allow for writing site reports / NTG summaries for up to 10 sites
2	Custom	Coordinate with other utilities (Kris Bradley and Josh Arnold called out)	We will coordinate	While we will discuss our approaches with other efforts in the state, we cannot guarantee that the approaches will be identical due to differences in evaluation budget and program design.
3	Custom	Add Participant Survey to PY4 and assess NTG	No	There is no reason to perform additional NTG. The program has had a relatively consistent NTGR over the last three years.
4	Custom	Ensure fully nested sample of NTGR with onsite sample	See 3.	We are not performing a NTG survey in PY4. For PY5, when we do plan to perform this research, we will make every effort to obtain the responses from our onsite sample in our telephone survey for NTGR, but cannot state with certainty that each customer will be willing to talk with us.
5	Custom	Will an effort be made to include some staffing grant participants in the onsite sample?	No	The onsite sample is based on energy savings. To the extent that a staffing grant participant is included in the stratified sample, they will be included. However, we do not plan to sample to assure that they are included.
6	Custom	Write final site reports for the largest projects (all tier 1) and for projects that receive the highest and lowest realization rates (to the extent that funds allow) from the tier 2 sampling strata onsite projects	Yes	
7	Lighting	Do not use retailer interviews for estimation of NTGR ("Corporate buyers self reports for NTG are notoriously unreliable")	Yes	This is a PY5 process activity, not a NTG activity.
8	Lighting	Add customer intercepts for each program year and use them for the net impact approach	Yes	See above discussion.

N	Program	Recommendation / Question	Response	Reason for Response
9	Lighting	Use customer intercepts to assess res/nonres split and leakage rates for gross impact approach	Yes	
10	Lighting	Expand the previous in-home survey to include market research components that can help us understand aspects at least related to the behavior modification program and the appliance recycling program. With respect to the appliance recycling program there is a need to better understand those customers with secondary fridges/freezers and what it would take ($) to encourage them to get rid of the secondary fridge/freezer through the program.	We will discuss other possible information to collect with our team and include as feasible	
11	Lighting	Obtain suggestions from all residential program leads for useful information to gather during the in-home survey	We will discuss other possible information to collect with our team and include as feasible	
12	Lighting	Coordinate with ComEd lead	We will coordinate	While we will discuss our approaches with other efforts in the state, we cannot guarantee that the approaches will be identical due to differences in evaluation budget and program design.
13	Lighting	Increase budget	Yes	We increased the PY4 budget to perform the PY4 intercepts.
14	Lighting	There may be an in-service rate deemed as part of the TRM	Noted	
15	Lighting	Remove topline sales effort	Yes	While we have removed this approach, we believe it has value and plan to use any contingency funds available at the end of PY4 to perform this small task.
16	Standard	Coordinate with other utility evaluation efforts (Kevin Grabner and Josh Arnold called out)	We will coordinate	While we will discuss our approaches with other efforts in the state, we cannot guarantee that the approaches will be identical due to differences in evaluation

N	Program	Recommendation / Question	Response	Reason for Response
				budget and program design.
17	Standard	Add NTG into PY5 and PY6 as "significant changes in the lighting market are occurring"	Yes for PY5, Considering for PY6	We will perform NTG for the Standard program in PY5. For PY6, we will consider performing additional net analysis on the lighting end uses only for the prescriptive and custom programs. We need to perform the PY5 research first to assess how this may be affecting choices made.
18	Standard	Comment - Prefer NTG by measure-type over a single NTGR	Noted	
19	Standard	Is 100 calls necessary for 90/10 precision for the Direct Install effort?	Yes	We agree that this number may not be required for 90/10 precision, depending on the specific results we are looking for. At a minimum, we would need 70 responses. We will closely watch our responses to determine if the additional 30 planned completes are needed.
20	Standard	Does PY5 NP survey include spillover estimates?	Yes	
21	HVAC	From later emails – drop GSHP and ASHP for metering	Possibly	Total metered will be the same, just what we meter will depend on final outcome of Ameren's decision regarding GSHP and ASHP and expected participants.
22	Behavior Mod	Drop PY4 survey and use for lighting intercepts	Yes	Will drop PY4 survey (move budget to either intercepts or custom)
23	Behavior Mod	Coordinate with other utilities (Bill Provencher called out)	We will coordinate	While we will discuss our approaches with other efforts in the state, we cannot guarantee that the approaches will be identical due to differences in evaluation budget and program design.
24	Behavior Mod	Reduce budget	Yes	
25	ARP	Coordinate with other utilities (Jennifer Fagan called out)	Yes	We discussed the approach with ComEd's evaluation contractor. The methods for

N	Program	Recommendation / Question	Response	Reason for Response
				estimating NTG are similar. ComEd's contractor does not plan a non-participant survey, but does plan market actor interviews, which we do not due to budget limitation. Our evaluation will also include comparison of refrigerator type to ComEd (e.g. what types of measures are being recycled in terms of age of equipment and to review variation with metered data).
26	ARP	Drop NP telephone survey	Yes	
27	ARP	Add Sears (n=1) to market actor interviews	Yes	We will include SEARS in our sample to call
28	ARP	Reduce budget	Yes	
29	HEP	Coordinate with other utilities (Mark Thornsjo and Josh Arnold called out)	We will coordinate	While we will discuss our approaches with other efforts in the state, we cannot guarantee that the approaches will be identical due to differences in evaluation budget and program design.
30	Moderate Income	No comments / recommendations	-	
31	Multi-family	Does common area lighting come out of the MF budget or standard program budget?	MF Budget	
32	Multi-family	What % of savings for the MF program is a result of common area lighting?	-	The PY3 evaluation indicated that common area lighting was 9% of the overall savings from the program.
33	Multi-family	HOU should probably be investigated during these interviews with property managers and during the onsite audits for the common area lighting	Yes	This will occur with interviews with property managers.
34	Multi-family	Coordinate on net approach with other utilities (Josh Arnold called out)	We will coordinate	While we will discuss our approaches with other efforts in the state, we cannot guarantee that the approaches will be identical due to differences in evaluation budget and program design.
35	REEP	Coordinate with other utilities (Mohit Singh-Chhabra and Paul Wozniak called out)	We discussed this program with Mohit	ComEd's evaluation plan has not been written yet, however it appears that

N	Program	Recommendation / Question	Response	Reason for Response
			and Jeff Erickson.	products being promoted through this program are different (ComEd – refrigerators and clothes washers), while Ameren IL (Room AC, dehumidifier, water heaters, smart strips). While we will discuss our approaches with other efforts in the state, we cannot guarantee that the approaches will be identical due to differences in evaluation budget and program design.
36	REEP	Reduce participant surveys from 210 to 90. Perform 30 on AC units, 30 on thermostats and a random sample of 30 for the rest of the projects	No	We will keep all 210 because the NTG values will be very different and cost savings are minimal from reducing number of completes due to the fixed costs associated with designing and analyzing the survey.
37	REEP	It would be useful to obtain some behavioral items - for example thermostat usage/set point for heating and cooling in comparison to previous use – is thermostat set higher or lower in comparison to purchase and why? Customer room C usage before (if any) and after	Yes	We will explore including behavioral items in the survey, but cannot guarantee their inclusion.
38	REEP	Reduce budget	No	See reasons above regarding reducing participant surveys.
39	RNC	No comments / recommendations	-	
40	NRNR	No comments / recommendations	-	
41	Retro-Cx	Remove site visits in PY4 and shift funds to Custom Program NTGR and site reports in PY4 – perform engineering desk review only for gross impacts in PY4	Yes	We will remove PY4 site visits will conduct an engineering desk review only.
42	Retro-Cx	Reduce budget	See 41.	

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.10

Referring to references of market transformation in Ameren Ex. 1.1R (e.g., page 45), please describe in detail the manner in which AIC attempts to determine whether the markets it is serving have been transformed when determining whether to discontinue measures, adjust incentive levels, or make other program adjustments. Please provide historical documentation related to market transformation actually occurring for relevant energy efficiency measures within the AIC service territory and please explain how AIC responded to such information during implementation of its programs historically. Please be specific and provide dates where available. Please provide a list of impacted energy efficiency measures for which market transformation has occurred since the inception of AIC's energy efficiency programs.

RESPONSE

Prepared By: Richard J. Hackner
Title: Principal, Midwest Region Manager
Phone Number: 608-273-0182

The only reference to the term "market transformation" is included on page 45 of Ameren Exhibit 1.1 (2nd Rev.) and is as follows: "Developing an educated and quality program ally network is a key element to creating market transformation. It is evident when the portfolio provides an attractive incentive for a robust program; the program allies will market the program to the customers, making the customers aware of the energy savings opportunity." The term market transformation in the context of this reference was for the purposes of explaining why it is more effective (in achieving energy efficiency) to provide the program ally with the incentive as opposed to providing the incentive directly to the consumer. It is not appropriate to misconstrue this reference as meaning that Ameren Illinois uses market transformation as a dispositive test for program success.

As opposed to being an end state, market transformation is a continual process that seeks to break down barriers to energy efficiency adoption, moving energy efficiency adoption toward a "business as usual" state for a market. In many cases, total market transformation may never be achieved. There are many variables and information sources that give indications that market transformation is occurring, including, but not necessarily limited to, changes in codes/standards, EM&V reports, technical potential studies and the Statewide TRM update process.

For the Business program, there have been any number of program delivery and measure incentive/eligibility criteria changes that have been made since the program began in 2008. However, none of these changes could be categorized as having been done only because a particular market had been transformed.

Prepared By: Wade A. Morehead
Title: Program Manager, CSG
Phone Number: 309-740-7044

For the residential portfolio, refer to the response provided by Rich Hackner regarding market transformation in this context. The only specific instance of market transformation being a primary reason for a measure change in the residential portfolio was the discontinuation of the rebate for dehumidifiers. During PY3, it became evident that few stores were stocking dehumidifiers that were not ENERGY STAR certified; there was rarely a less efficient option available to customers in the store. While this does not mean that total market transformation occurred, the incentive for this measure was discontinued.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.12

Referring to references of market transformation in Ameren Ex. 1.1R (e.g., page 45), does AIC use evaluation estimated NTG ratio values in any form when reviewing whether market transformation has occurred in AIC's service territory when determining whether to discontinue measures, adjust incentive levels, or make other program adjustments? Please explain in detail the manner in which AIC uses such information.

RESPONSE

Prepared By: Richard J. Hackner
Title: Principal, Midwest Region Manager
Phone Number: 608-273-0182

The only reference to the term "market transformation" is included on page 45 of Ameren Exhibit 1.1 (2nd Rev.) and is as follows, "Developing an educated and quality program ally network is a key element to creating market transformation. It is evident when the portfolio provides an attractive incentive for a robust program; the program allies will market the program to the customers, making the customers aware of the energy savings opportunity." The term market transformation in the context of this reference was for the purposes of explaining why it is more effective (in achieving energy efficiency) to provide the program ally with the incentive as opposed to providing the incentive directly to the consumer. It is not appropriate to misconstrue this reference as meaning that Ameren Illinois uses market transformation as a dispositive test for program success.

As opposed to being an end state, market transformation is a continual process that seeks to break down barriers to energy efficiency adoption, moving energy efficiency adoption toward a "business as usual" state for a market. In many cases, total market transformation may never be achieved. There are many variables and information sources that give indications that market transformation is occurring, including, but not necessarily limited to, changes in codes/standards, EM&V reports, technical potential studies and the Statewide TRM update process.

For the Business program, there have been any number of program delivery and measure incentive/eligibility criteria changes that have been made since the program began in 2008. Estimated NTG values cannot be identified as a singular reason, but are one of many variables that are considered when we have eliminated measures and revised programs.

Prepared By: Wade A. Morehead
Title: Program Manager, CSG
Phone Number: 309-740-7044

For the residential portfolio, refer to the response above provided by Rich Hackner regarding market transformation in this context. There have been no specific changes to measures, incentives, or programs that directly resulted from market transformation being implied by NTG ratio values.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.13

Referring to references of market transformation in Ameren Ex. 1.1R (e.g., page 45), please describe in detail how AIC uses evaluation research concerning spillover when determining whether market transformation has occurred.

RESPONSE

Prepared By: Richard J. Hackner
Title: Principal, Midwest Region Manager
Phone Number: 608-273-0182

The only reference to the term "market transformation" is included on page 45 of Ameren Exhibit 1.1 (2nd Rev.) and is as follows: "Developing an educated and quality program ally network is a key element to creating market transformation. It is evident when the portfolio provides an attractive incentive for a robust program; the program allies will market the program to the customers, making the customers aware of the energy savings opportunity." The term market transformation in the context of this reference was for the purpose of explaining why it is more effective (in achieving energy efficiency) to provide the program ally with the incentive as opposed to providing the incentive directly to the consumer. It is not appropriate to misconstrue this reference as meaning that Ameren Illinois uses market transformation as a dispositive test for program success.

As opposed to being an end state, market transformation is a continual process that seeks to break down barriers to energy efficiency adoption, moving energy efficiency adoption toward a "business as usual" state for a market. In many cases, total market transformation may never be achieved. There are many variables and information sources that give indications that market transformation is occurring, including, but not necessarily limited to, changes in codes/standards, EM&V reports, technical potential studies and the Statewide TRM update process.

For the Business program, there have been a number of program delivery and measure incentive/eligibility criteria changes that have been made since the program began in 2008. Spillover information cannot be identified as a singular reason, but is one of many variables that are considered when we have eliminated measures and revised programs.

Prepared By: Wade A. Morehead
Title: Program Manager, CSG
Phone Number: 309-740-7044

For the residential portfolio, refer to the response provided above by Richard Hackner regarding market transformation in this context. There have been no specific changes to measures, incentives, or programs that directly resulted from market transformation being implied by spillover research.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.24

Referring to pages 41 and 54 of Ameren Ex. 1.1R, for each energy efficiency program proposed in Plan 3, please describe in detail the manner in which participant spillover could occur during the Plan. Please be specific and define who the "participant" (e.g., contractor, residential customer) is for each program and the energy efficiency measures that should qualify as spillover for a given program.

RESPONSE

Prepared By: Wade A. Morehead
Title: Program Manager, CSG
Phone Number: 309-740-7044

Defining and measuring spillover is the purview of program evaluators. AIC holds the position that a proper assessment of net-to-gross should consider both free ridership and spillover effects.

Prepared By: Richard J. Hackner
Title: Principal, Midwest Region Manager
Phone Number: 608-273-0182

Defining and measuring spillover is the purview of program evaluators. AIC holds the position that a proper assessment of net-to-gross should consider both free ridership and spillover effects.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.25

Referring to pages 41 and 54 of Ameren Ex. 1.1R, for each energy efficiency program proposed in Plan 3, please describe in detail the manner in which non-participant spillover could occur during the Plan. Please be specific and define who the "non-participant" is for each program and the energy efficiency measures that should qualify as spillover for a given program.

RESPONSE

Prepared By: Wade A. Morehead
Title: Program Manager, CSG
Phone Number: 309-740-7044

Defining and measuring spillover is the purview of program evaluators. AIC holds the position that a proper assessment of net-to-gross should consider both free ridership and spillover effects.

Prepared By: Richard J. Hackner
Title: Principal, Midwest Region Manager
Phone Number: 608-273-0182

Defining and measuring spillover is the purview of program evaluators. AIC holds the position that a proper assessment of net-to-gross should consider both free ridership and spillover effects.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.26

Please refer to pages 41 and 54 of Ameren Ex. 1.1R. If a participating customer claims they installed what they believe to be an energy efficient measure since participating in a particular AIC program, does AIC believe this customer's claims should be quantified as spillover even if AIC does not offer incentives for the particular measure the customer installed? Please provide AIC's rationale for its response.

RESPONSE

Prepared By: Wade A. Morehead
Title: Program Manager, CSG
Phone Number: 309.740.7044

Defining and measuring spillover is the purview of program evaluators. AIC holds the position that a proper assessment of net-to-gross should consider both free ridership and spillover effects.

Prepared By: Richard J. Hackner
Title: Principal, Midwest Region Manager
Phone Number: 608-273-0182

Defining and measuring spillover is the purview of program evaluators. AIC holds the position that a proper assessment of net-to-gross should consider both free ridership and spillover effects.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.27

Referring to pages 54 through 57 of Ameren Ex. 1.1R, please provide AIC's recommended methodologies (including survey instruments and specific formulas for estimating NTG and its subcomponents) for calculating free-ridership, participant spillover, and non-participant spillover for each energy efficiency program for Plan 3.

RESPONSE

Prepared By: Keith E. Goerss
Title: Assistant Manager, Energy Efficiency
Phone Number: 309-677-5708

As indicated in the Act in Section 8-103(f)(7):

"Provide for an annual **independent** evaluation of the performance of the cost-effectiveness of the utility's portfolio of measures…" (emphasis added)

As indicated in the Act in Section 8-104(f)(8):

"Provide for… an annual **independent** review, an annual independent review, and a full **independent** evaluation of the 3-year results of the performance…" (emphasis added)

And as per the Plan 2 order evaluator contract language includes the term:

"…direct Ameren to terminate the evaluator, if the Commission determines the evaluator is unable or unwilling to provide an **independent** evaluation;" (emphasis added)

As indicated, the evaluator should independently determine the methodologies for calculating factors for the NTG value. While any party can provide suggestions, an independent evaluator should ultimately determine the method in order to retain independence.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.31

Referring to page 41 of Ameren Ex. 1.1R, AIC defines NTG as consisting of three factors, including a "Realization Rate," which is defined in part as including the installation rate of a group of measures. Is it AIC's proposal that the deemed NTG also include a realization rate factor?

RESPONSE

Prepared By: Keith E. Goerss
Title: Assistant Manager, Energy Efficiency
Phone Number: 309-677-5708

No. A second revised version of the Ameren Ex. 1.1 of the Plan was filed on October 10, which reflects the following:

Program cost-effectiveness is based on program "net savings" – savings that are attributable directly to a program after netting out non-program effects. Net savings are accounted for in the calculation by multiplying gross program savings by what is known as the NTG ratio. The NTG ratio is the ratio of the verified net savings for a program to the verified gross savings. The NTG ratio includes the following two~~hree~~ factors, which are the primary drivers in the difference between net and gross savings:

(1) Free Ridership – defined as the portion of customers who would have implemented an efficiency measure even in the absence of a program incenting it.

(2) Free Drivership, or Spillover – defined as the portion of customers who adopt a measure that is promoted by a program after having been influenced by the program, but without taking the program incentive.

~~(3) Realization Rate – defined as the installation rate of a group of measures, or the portion of measures purchased, which are actually correctly installed.~~

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.33

Referring to page 41 of Ameren Ex. 1.1R and the definition of savings verification on page 12 of the IL-TRM Policy Document, please explain AIC's position with respect to whether its definition of realization rate
in its Plan is consistent with the realization rate referenced on page 12 of the IL-TRM Policy Document.

RESPONSE

Prepared By: Keith E. Goerss
Title: Assistant Manager, Energy Efficiency
Phone Number: 309-677-5708

AIC's position is that its Plan, as revised on October 10, is consistent with IL-TRM Policy Document.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.35

Please state whether it is the Company's position that the independent evaluators are responsible for estimating cost-effectiveness on an ex post basis per 220 ILCS 5/8-103(f)(7) and 220 ILCS 5/8-104(f)(8).

a) If yes, does AIC agree to file such ex post cost-effectiveness analysis in this docket when available?
b) If no, who does AIC believe is responsible for performing such ex post cost-effectiveness analysis? Please explain why.

RESPONSE

Prepared By: Keith E. Goerss
Title: Assistant Manager, Energy Efficiency
Phone Number: 309-677-5708

Ameren Illinois objects to this data request to the extent it calls for a legal position or conclusion. AIC's legal positions will be set forth in its briefs. As a matter of policy, it is not the Company's position that "the independent evaluators are responsible for estimating cost-effectiveness on an ex post basis," but rather an independent evaluation of the cost-effectiveness needs to be performed and that can be done when the utility performs a cost-effectiveness analysis that is evaluated by an independent evaluator.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.37

Please state whether AIC proposes to use simulation modeling rather than the IL-TRM for claiming savings from any measures during Plan 3. If so, please list the programs, measures, and simulation modeling software that will be used. For each measure, please provide the savings, inputs, and cost-effectiveness results from using the simulation modeling and from using the IL-TRM. Please indicate whether AIC has requested deeming of savings resulting from such simulation modeling in its Plan or whether the program savings will be adjusted by the evaluator as it deems appropriate.

RESPONSE

Prepared By: Keith E. Goerss
Title: Assistant Manager, Energy Efficiency
Phone Number: 309-677-5708

AIC is not proposing to use simulation modeling at this time.

Ameren Illinois Company's
Response to ICC Staff Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Data Request Response Date: 10/11/2013

JLH 3.11

Referring to references of market transformation in Ameren Ex. 1.1R (e.g., page 45), does AIC use customer/trade-ally survey findings from NTG-related evaluation research when reviewing whether market transformation has occurred in AIC's service territory when determining whether to discontinue measures, adjust incentive levels, or make other program adjustments? Please explain in detail the manner in which AIC uses such information.

RESPONSE

Prepared By: Richard J. Hackner
Title: Principal, Midwest Region Manager
Phone Number: 608-273-0182

The only reference to the term "market transformation" is included on page 45 of Ameren Exhibit 1.1 (2nd Rev.) and is as follows: "Developing an educated and quality program ally network is a key element to creating market transformation. It is evident when the portfolio provides an attractive incentive for a robust program; the program allies will market the program to the customers, making the customers aware of the energy savings opportunity." The term market transformation in the context of this reference was for the purposes of explaining why it is more effective (in achieving energy efficiency) to provide the program ally with the incentive as opposed to providing the incentive directly to the consumer. It is not appropriate to misconstrue this reference as meaning that Ameren Illinois uses market transformation as a dispositive test for program success.

As opposed to being an end state, market transformation is a continual process that seeks to break down barriers to energy efficiency adoption, moving energy efficiency adoption toward a "business as usual" state for a market. In many cases, total market transformation may never be achieved. There are many variables and information sources that give indications that market transformation is occurring, including, but not necessarily limited to, changes in codes/standards, EM&V reports, technical potential studies and the Statewide TRM update process.

Typically, the independent evaluators do not provide the survey results from the NTG evaluations. However, the independent evaluators provide process improvement recommendations based on survey results. See JLH 3.11 Attach 1 and 2 for copies of the

implementer reports regarding the PY4 process recommendations indicating program changes being made as a result.

Prepared By: Wade A. Morehead
Title: Program Manager, CSG
Phone Number: 309.740.7044

For the residential portfolio, refer to the response provided by Richard Hackner above.

SAIC/GDS Response to ODC Recommendations Ameren Illinois Efficiency Business Programs

Program Year 4

March 21, 2013

Date: **March 21st, 2013**

To: **Ameren Illinois**

From: **SAIC**

Re: **Response to ODC PY4 Recommendations for Ameren Illinois Commercial and Industrial Programs**

SAIC and GDS Associates (GDS), appreciate the recommendations provided by Opinion Dynamics Corporation ("ODC") in their Ameren Illinois program evaluation reports for the 2011-2012 program year; "Commercial and Industrial Program Portfolio: PY4." Our team has reviewed the recommendations and appreciates the opportunity to provide a summary of the status of the recommendations made for each program area.

Key recommendations in regards to the three PY4 evaluation documents for Custom, Standard and RCx programs include the following:

IMPACT AND PROCESS EVALUATION OF 2011 (PY4) AMEREN ILLINOIS COMPANY COMMERCIAL AND INDUSTRIAL CUSTOM ENERGY EFFICIENCY PROGRAM

- **Continue the staffing grant program offering:**

  Status: We fully intend to continue the Staffing Grant Program assuming funds are available. We have offered it again in PY5 and are planning to offer it in PY6.

- **Explore the feasibility of providing technical assistance:**

  Status: We feel that we do provide technical assistance as it relates to program process. What we have encountered as the main problem in this area is some customers expect the EA to develop the actual savings estimates that we would then turn around and review - and we should not be doing that. We feel they should be working with their contractor/consultant (which the staffing grant pays for) to develop energy savings estimates.

  However, we are putting other support vehicles in place to help customers. We recently (11/13/12) put on a PEM (Practical Energy Management) training session with 22 customers attending. Nearly half of which were PY5 Staffing Grant participants. We offered the training a second time on 2/12/13 with 18 customers attending. This training is specifically tailored to help customers develop their own energy management plans and we think this will help to alleviate this issue.

  Additionally, we are evaluating other assistance options that can be offered by the program to support smaller customers. One such method is by utilizing auto-submit applications for lighting. Once we move to auto-submit, most lighting that had previously been custom (requiring energy savings calculations and a custom application) will be quite simple to submit and obtain pre-approval.

  We value this recommendation and will continue to evaluate and implement other ways that we can provide assistance, especially to smaller customers.

- **Our interviews with participating contractors indicate that many potential allies have not been convinced that it is worth the time and effort to become a registered ally:**

Status: We obviously would like to convince those that feel this way there is merit to becoming a Program Ally. The steady increase of registered Program Allies over the past program years would seem to portray this is not a widespread feeling amongst contractors. Our institution of a more robust registered ally bonus offering in PY5 is also a new marketing method we are using to get contractors to register as program allies.

However, any further documentation ODC can provide with specific issues seen as roadblocks by contractors would be appreciated so we can specifically address those issues.

- **We also asked respondents to rate their satisfaction with various aspects of the staffing grant offering (see Table 10). The application form received lower mean satisfaction scores than the final review process or the grant award process.**

  Status: The PY5 Staffing Grant application was streamlined and many things were clarified/explained thereby making this application much more customer friendly. SAIC will continue to look for additional methods to simplify and streamline this application for PY6.
- **Another comment we heard from one particular participant was that pre-inspections occurred too soon after the grants were awarded.**

  Status: This only makes sense if this comment came from ADM as the scope of their staffing grant projects were not fully developed until their consultant was on-site. All other customers had fairly good definition of their projects early on. The intent of the pre-inspection is to understand and document existing conditions/equipment.

- **Our interviews also revealed that smaller customers found the Custom project approval process difficult and their experience affected their likelihood to request staffing grants. Providing technical assistance to recipients with less experience and limited staff may help ensure that they are able to design custom projects that qualify for incentives.**

  Status: We believe this is the same issue as addressed earlier. We will make all attempts to assist customers in understanding and completing any program application process, but we cannot develop the energy savings estimate that we would then turn around and approve.

- **We followed up with respondents who indicated that they were dissatisfied with the program in general. Dissatisfaction with the program was mainly attributed to the application process being too long, complicated, or unclear (cited by 10 of the 16 ~~contractors~~contractors, who indicated dissatisfaction with some element of the program,).**

  Status: PY5 application forms have been extensively streamlined and we are currently working on an auto-submit feature for lighting

IMPACT AND PROCESS EVALUATION OF 2011 (PY4) AMEREN ILLINOIS COMPANY COMMERCIAL AND INDUSTRIAL STANDARD ENERGY EFFICIENCY PROGRAM

- **Update the assumed in-service rate for green nozzles: The program should assume a removal rate of at least 10% (an overall installation rate of 90%) for the green nozzles distributed through the Standard Program. Research on this offering in PY2, found similar rates of installation, and as a result, the program included an installation rate of 82% in its PY3 tracking data.**

  Status: Agreed. The program will utilize a 90% RR for PY5.

- **Educate free lighting kit recipients about bulb replacement options: Research with recipients of the PY4 free lighting kit indicate that many AIC customers request the kits, but hesitate to install the new bulbs in place of existing ones. As a result, program staff should consider developing literature to accompany the bulbs that explains the benefits of replacing incandescent bulbs with CFLs or LEDs even if the existing bulbs are still operational. Additional information on LEDs and their use in commercial applications may also be helpful to customers given that a small number of survey respondents noted that they were unsure where to install LEDs or what the best application was for their business.**

  Status: There was an email sent to the majority of the kit recipients inviting them to a free webinar that detailed the importance of installing their bulbs immediately and also covered the basics of LED technology and optimum placement/installation of LED lamps. Additionally there was a flyer contained in every kit that stressed the importance of installing the lamps immediately to begin receiving energy savings.

  However, SAIC completely agrees that education & training should be connected with free equipment offers and SAIC will strive to continually enhance the education & training that is provided associated with free equipment offers in the future.

<u>RETRO-COMMISSIONING</u> PROGRAM EVALUATION REPORT INCLUDING: COMPRESSED AIR, COMMERCIAL BUILDINGS, HEALTHCARE, AND LEAK SURVEY AND REPAIR PROGRAM

- **Recommendation 1: Add a table to the database to track each measure related to the project so that the database can be used to track measures implementation and identify common recommended measures or measures that perhaps should be recommended more universally or deemed at a future date. The measure table should link to the project table based on project number and should include savings and status fields for each stage of the project.**

  Status: We agree that tracking these projects at a measures level will provide clarity on which measures were identified in the survey, which were implemented, and which were verified. Our technical review team will incorporate this approach as we close out PY5 projects. Starting in PY6, we will update the functionality of the program database to include a measures table which provides the measure number, description, and savings and tracks each measure through the survey, implementation, and verification phases.

- **Recommendation 2: Screen projects for eligibility more effectively to ensure cost-effective participation with high net savings.**

  Status: The screening tool which was developed in PY4 has been quite effective in identifying strong candidate projects for the healthcare and commercial buildings offering and screening out projects which fall short of program requirements. The eligibility requirements for each of the four program offerings were established in an effort to ensure that submitted applications represent a cost effective incentive investment for the program and a high probability of successful project completion. We have found that these eligibility benchmarks have served the program well, but we do find situations where some flexibility is warranted to accept a project which may fall short of one or more of the eligibility benchmarks. In cases where our technical review team recommends that an exception be made an eligibility benchmark, this will clearly be documented and justified as a note in the project file.

  Specific to healthcare and commercial buildings projects, exceptions to the minimum facility age requirement of 5 years will only be considered after confirmation that the facility systems are beyond the warranty period. Also, relative to healthcare and commercial buildings projects, exceptions will only be considered for the 100,000 square foot minimum size requirement for facilities whose energy utilization index (EUI) Btu/sf/year exceeds industry averages for the facility type.

- **Recommendation 3: AIC should consider issuing a template report with required sections and elements of data and analysis required for each section. This would encourage more standardization among reports to include critical data and organization that facilitates internal program review and evaluation and may reduce our missing critical information. AIC should consider providing default calculation parameters when measurements are not made and the RSP must apply assumptions. The evaluation team suggests the following standardizations:**

  - **Issuing parameters for motor and VFD efficiency, chiller and DX cooling efficiency by vintage, boiler and steam distribution efficiency, motor loading based on application and motor size, and affinity law exponents.**

  - **Establishing a clear priority for measured data used in calculations, followed by equipment-specific performance curves, generic performance curves, and finally program defaults.**

  - **Including performance curves in the report or electronically in submitted calculations.**

  Status: The retro commissioning applications for compressed air, healthcare, commercial buildings, and industrial refrigeration include an outline of the elements which are expected in the implementation plan/retro commissioning survey report. We will work to improve our technical review process in the future to ensure that all of these elements are provided in each survey report. As part of the original program design for these offerings, we elected to use this outline approach as opposed to dictate a format to the RSPs through a template report. This approach was largely taken from a practical standpoint due to the fact that these RSPs have established their own reporting

structures, calculation tools, etc over a number of years. Asking them to use a standardized template report creates a significant amount of additional work for the RSPs. We will continue to explore opportunities for improvements in content and analysis, but we do not feel that migration to a template report is a practical solution.

- **Recommendation 4: Encourage RSPs to use more transparent calculations like spreadsheets or, at a minimum, include electronic input files for simulations when they are used for estimating savings. Require submitting electronic versions of calculations. Consider issuing template calculators for common measures.**

  Status: Similar to our response to Finding 3, we do not believe that template calculations are a practical solution for these programs. RSPs have developed their own data logging, modeling, and energy savings calculations tools over a number of years and it would require significant additional work for them to adopt a set of template calculators. We will work with RSPs to ensure that calculations are more transparent and accessible going forward.

CSG Response to
EM&V Recommendations
Ameren Illinois Efficiency Programs
Program Year 4

April 4, 2013

Submitted by:
Conservation Services Group
50 Washington Street
Westborough, MA 01581
(508) 836-9500

Date: **April 4, 2013**

To: **Opinion Dynamics Corporation and The Cadmus Group**

From: **Keith Martin, Keith Goerss, Ken Woolcutt, Karen Kansfield—Ameren Illinois**
Bruce Teal, Larry Brown—Conservation Services Group

Re: **Response to Cadmus PY4 Recommendations for Ameren Illinois Residential Programs**

The Ameren Illinois Efficiency Team and their residential energy efficiency program implementer, Conservation Services Group ("CSG"), appreciates the recommendations provided by Opinion Dynamics Corporation ("ODC") and The Cadmus Group ("Cadmus") in their Ameren Illinois program evaluation reports for the 2011 – 2012 program year. Ameren Illinois and CSG have seriously contemplated the recommendations and appreciate the opportunity to provide a summary of the status of the recommendations made for each program:

Home Energy Reports (HER)

AIC and CSG might consider the Behavioral Modification Program as an avenue to boost savings in other programs through targeted marketing.

Special promotions messaging for other programs have recently (PY5) been delivered via the HER. We will continue to test the waters in this area. Some programs such as Home Energy Performance do tend to be a better fit for this type of marketing than others. Heavy marketing of programs in the reports may lead to a larger percentage of "double-dipped" savings which will cannibalize the HER savings. Promoting general energy efficiency and homeowner education have also been effective uses of the HER as a marketing channel.

AIC, CSG, and Opower should continue to monitor the energy use of customers dropped from the program, specifically those in Expansion Groups 2 and 3.

At this point there has not been a statistically significant volume of participants removed from the program after receiving the reports for a long enough duration to adequately measure persistence. Given the need for cost-efficient savings, the program cannot afford to drop such a group for measuring persistence alone. OPower has provided persistence data from other programs that has been reviewed.

Lighting and Appliance

Track all the data necessary to calculate program savings in one location.

The program database for PY6 will include fields for lumen output, base wattage, efficient wattage, and hours of use as well as a designation of the bulb as standard or specialty use.

Attempt to increase sales of specialty CFLs to increase CFL socket saturation.

Specialty bulb sales are more a function of available sockets than they are a percentage of bulbs sold. While the percentage of specialty bulbs has been greater during PY5 than during PY4, the nominal quantity of specialty bulbs is roughly the same. (The total number of bulb sales is less, which has resulted in a larger percentage.) There is an indication that significant sales lift can be realized by increasing the incentive for specialty bulbs. During PY6, the incentive levels will be adjusted to determine the appropriate level necessary to achieve sales of 400,000 specialty bulbs.

Closely monitor the impact of program incentives versus EISA on CFL purchases.

Applied Proactive Technologies (APT, the implementation subcontractor) tracks and maintains sales figures as a function of bulb price to determine price elasticity as a result of incentive level for various retailers. To date, there has been no indication of the reduced price elasticity that would be expected if EISA was having a

significant effect on the market. APT will continue to monitor this so appropriate adjustments can be made if/when an effect is detected.

Explore the market for LED incentives. At the same time, provide customers with guidance about what to look for when purchasing LEDs.

Several LED lamps are currently offered through the online store. We have determined this to be the best option for limited production. The ActOnEnergy.com redesigned website now provides more opportunities for customer education. For instance, there is a Resources section on the lighting page that refers customers to LumenNow.org for additional information about CFLs, halogen incandescents and LEDs.

Residential Energy Efficient Products (REEP)

Contractors should be included in the program.

Working mainly through the HVAC program, an awareness campaign to recruit suppliers and program allies to deliver rebated products to AIC customers is currently underway and will continue.

AIC should focus on explaining benefits from the programmable thermostat and power strip.

The education provided with lighting clinics will be expanded to include smart power strips and programmable thermostats. Rebate forms will also be revised at reprint to include information regarding the proper use of these products.

Develop sales tools and effective training.

Information regarding efficient products will continue to be offered during lighting clinics, when applicable. Existing POP materials are continually assessed for effectiveness and revised, if needed. Additional POP materials will be considered but are likely to be cost-prohibitive for a program of this scale. APT will continue to train retail personnel on the efficient products and their benefits.

Refrigerator/Freezer Recycling

We recommend AIC continue to deploy current marketing strategies with the exception of the retail partnership.

Current marketing strategies will be continued, including the retail partnership (see below for explanation of retail partnership strategy).

Including an indicator of a nonprofit referral in the tracking database would allow more accurate assessment of the impact.

We will add a field to the program database, retroactive to the beginning of PY5, to indicate which units were associated with a nonprofit referral.

AIC should carefully consider the relative benefits of continuing the retail partnership.

The low percentage of units provided by the retail partnership with Sears was primarily due to the fact that it was not in effect until the last four months of the program year. During PY5, 2% of units have been provided through this partnership. Impact on the part-use factor is a concern and will be examined as we consider the relative benefits of this partnership and decide whether to continue.

HVAC

Emphasize On Bill Financing (OBF).

On Bill Financing was rolled out to the HVAC program ally network during PY5. Five meetings were conducted to explain the new program year incentives and the OBF process. Bob Groegler from AFC First

was a co-presenter at the meeting. Marketing of OBF to the allies has continued throughout PY5. In addition, the OBF program has been featured on inserts for this and other programs as well as on ActOnEnergy.com.

Consider Quality Installation (QI).

The significant cost of implementing a Quality Installation requirement (extensive staff and contractor training, installation assistance, quality control, quality assurance, project tracking, customer incremental cost, etc.) does not make it a feasible option at this time. However, QI will remain a consideration for future program years.

Multifamily

While there are eight participating trade allies, the program is primarily dependent on one trade ally for the Major Measures Component.

The Major Measures component of the Multifamily program is open to all qualified home performance contractors with BPI-certified personnel. Energy Masters has been able to outperform the others by deploying their sales staff throughout the AIC service territory, taking advantage of economies of scale, and leveraging the program incentives to offer retrofit work at very low cost to the property owners. All participating contractors are capable of mimicking this strategy if they choose to do so.

Thought has been given to implementing a reservation system that may include limits on the percentage of work that any one contractor could submit. One challenge to this method is the lighter volume that is able to be handled by the smaller contractors. Most of the eight participating allies also perform work in the Home Energy Performance program as their main source of business. Energy Masters business model is exclusive to multifamily work. Given the quality of their product and their willingness to work within the guidelines of the program, we feel it is more of a benefit than a risk to have this contractor doing a majority of the work.

Total project costs for Major Measures projects should be collected, tracked, and monitored.

This information is currently available on the invoice which is required to be submitted with the Incentive Application. A field for Total Project Cost will be added to the program database for PY6.

Participation across program components was low, with only seven unique customers participating in multiple program components in PY4.

To date, the program has used the In-Unit component to engage properties and initiate energy efficiency work. They are then encouraged to participate in one of the other program components. There has been little participation in the Common Area Lighting rebates and the Major Measures component is more successful when marketed directly by the program allies, which has resulted in little cross-participation.

The program has made greater efforts to market directly across program components, generating leads from Major Measures projects for the In-Unit program. This has been a key source of leads during PY5. In addition, some Common Area Lighting measures have been moved to a direct install delivery, allowing program staff the opportunity to better drive production of those measures with In-Unit participation.

If programmable thermostats are offered at no cost through the program, AIC and CSG should ensure that adequate tenant education is offered.

Property staff is trained on programming the thermostats, and all thermostats are programmed during installation. The thermostat packaging, owner's manual and operation instructions are left with the tenants. A one-page leave-behind is also being developed to further explain how to use the programmable feature of the new thermostats to save energy.

Home Energy Performance (HEP)

Consider increasing marketing and outreach efforts, particularly targeting efforts. The ESHP pilot is a targeted approach to achieving higher electricity savings. The HEP Program can also consider additional ways to target customers to achieve electricity savings.

- ***Continue to leverage existing targeting efforts.***

Direct mail and bill inserts promoting the HEP program have been targeted to electric-heat customers in prior years. During PY5, this has continued and, using the same strategy employed for the ESHP pilot, the HEP program has increased its targeting efforts to increase the share of electric savings.

Other marketing and outreach has been purposefully limited during PY5 as the HEP program has experienced significant demand for shell measure incentives. As a result, all electric and gas incentives will be exhausted and goals will be achieved or exceeded with the current trajectory. As PY6 approaches, mailing lists will be refreshed using the most refined targeting criteria and outreach efforts will be scaled up according to the level of production allowed within the PY6 budget.

Consider opportunities to improve the conversion rate for both HEP and ESHP.

- ***Consider following up with phone calls and/or mailers to those participants who have not followed up with program allies after six months.***

Conversion rates have improved considerably during PY5, exceeding 20% for the program year to date, as energy advisors have gained experience and received sales training. However, due to the high demand for incentives, efforts to increase this further have been limited during the latter half of the program year to prevent creating more demand than can be accommodated within the program budget. There are plans to conduct greater outreach to previous audit customers in an effort to stimulate more conversion during PY6.

Consistently flag heating fuel type for all project types.

Heating and cooling system types are currently tracked on the Incentive Application for every project. Fields will be added to the PY6 program database to track and report this data.

Moderate Income

Opportunities exist to improve satisfaction with the work conducted as well as the amount of time taken to schedule a consultation from receipt of application.

Efforts have been made by project coordinators to provide additional communication with both homeowners and contractors as to expectations and plans as well as to verify satisfaction with the homeowner upon test out. Through consistent communication with the homeowners as well as contractors it is expected that satisfaction will improve. As to time to schedule a consultation from receipt of application, the "pipeline" of customers is monitored closely to prevent a large backlog of applicants. . . This can be challenging as response is not based only upon marketing efforts, but also word of mouth—which is the primary mode of customer engagement. . . Still, the program strives to service homeowners in a timely fashion and set realistic expectations of time until service.

Savings values by end-use type rather than rolling the value into an end-use category for shell measures.

Heating and cooling system types are currently tracked on the Incentive Application for every project. Fields will be added to the PY6 program database to track and report this data.

Revised faucet aerator savings values.

The tracking database for PY4 included the contractually-required ex ante savings value. This value has been updated for PY5 based on the algorithm in the statewide TRM.

Program Allies also offered several suggestions for improving the program:
Incorporate additional measures.

Rim joist insulation was added during PY5. Plans are that crawl space and basement wall insulation will be added for PY6.

Include comfort measures.

These measures tend to increase energy use and will therefore not be added. In addition, the need for a humidifier is greatly reduced, if not eliminated, by reducing the whole house air leakage rate.

Hire more auditors.

Given budget limitations, the current team of two project coordinators is sufficient to complete the number of projects planned for the desired size of this program. There are no plans to increase capacity in this regard. When there is need for additional manpower due to a backlog of projects, personnel from the HEP program will provide assistance to the project coordinators in terms of work inspection and diagnostic testing.

Provide faster payments.

Scheduling the final test-out after completion of work and staggered schedules when there are two contractors (insulation and HVAC) required for the project are the primary reasons for occasional delays in payment. Ongoing efforts to streamline the process and shorten the time between the completion of contractor work and issuance of final payment will continue. Participating contractors tell program staff that the time lag between project completion and payout has been greatly reduced during the latter half of PY4 and into the current program year.

ENERGY STAR® New Homes

Increase targeted marketing.

Since PY3 we have been using online keyword search engine marketing as the prime marketing initiative for the New Homes program. It targets online users in the downstate Illinois area who are searching for any number of phrases that relate to building a new home, especially one that is "energy efficient." We have input thousands of key phrases to ensure that we capture those seeking to build an energy efficient home. When one of these key phrases is put into one of many popular online search engines, the user gets a link an a short description of the program, such as "ActOnEnergy ENERGY STAR New Homes." This link takes the user to the New Homes page where they learn about the program. This is the most precise way to target customers seeking to build a new energy-efficient home. It is also very cost-efficient, since we only pay for "clicks" – e.g., we only pay if the user clicks on our link.

Assist HERS raters in becoming better communicators.

Program paperwork has been simplified a great deal since program launch. Currently, the rater only needs to submit two forms for each project, a Project Enrollment Agreement to reserve incentives and a Data Collection Form to record the finished project and apply for payment of incentives. However, there are ways in which the process can be more streamlined and submission of documents made easier. One task of the new focus group will be to ascertain ways to improve the paperwork and processes.

Rater allies are occasionally offered bonuses to speed up the paperwork process and spur increased production. The bonuses have been somewhat effective in the past, but there is a risk that these temporary bonuses could "train" the rater allies to delay submission of projects until the program offers a bonus for production. To avoid this effect, we are considering allocating a small portion (~$100) of the incentive for each project to go directly to the rater ally upon completion.

Program staff regularly works with raters to assist them in better engaging builders. Most of these meetings are one-on-one and the ad hoc solutions are based on the strengths and needs of the individual rater. Going forward, this assistance will be more formalized. Broader solutions, sales pitches, and training will be offered to the rater allies as a group in addition to individual assistance.

Provide support for the transition to ES 3.0.

The transition to ENERGY STAR V3 has been a significant challenge for the program, but there are signs that the new construction market is starting to adopt the new standards. To date, 49 homes have been certified under V3 and processed through the program. However, the program will continue to offer support to builders, raters, and HVAC contractors to increase the market penetration of certified homes.

To this end, two days of training have been scheduled for mid-May 2013 to educate program allies about V3 requirements, teach them how to sell the value proposition of ENERGY STAR homes, and suggest best practices for implementation into their business offerings. We have considered offering V3 training specific to HERS raters, but most have already received this training from their respective providers.

The biggest obstacle for the transition to V3 has been the requirement for HVAC contractors to acquire a credential from an HVAC Quality Installation and Training Oversight Organization (H-QUITO). The high initial cost of this credential is the primary reason more contractors have not followed through in getting it. The program is currently conducting outreach to HVAC contractors interested in working on ENERGY STAR homes and will be offering reimbursement of a portion of the initial cost of the credential as well as free online training specific to the V3 checklists and processes. In addition, a training class focused on HVAC system design and installation in compliance with V3 requirements will be offered during the summer of 2013.

	Electric NTG			Gas NTG	
Program	**Measure Description**	**Value**	**Source**	**Value**	**Source**
Res Lighting	Standard bulbs	0.83	*AIC PY4 Lighting Section 4.2.4 Net Impacts*	N/A	N/A
	Specialty bulbs	0.83	*AIC PY4 Lighting Section 4.2.4 Net Impacts*	N/A	N/A
Appliance Recycling	Refrigerators	0.64	*AIC PY4 Appliance Recycling Report Table 19*	N/A	N/A
	Freezers	0.65	*AIC PY4 Appliance Recycling Report Table 19*	N/A	N/A
	Window AC Units	1.00	*AIC PY4 Appliance Recycling Report Table 19*	N/A	N/A
Multi-Family	In-Unit Measures	1	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts*	1	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts*
	Common Area Measures	0.8	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts*	0.8	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts*
	Major Measures	N/A	N/A	N/A	N/A
	Air Sealing	1	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts Table 6*	1	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts Table 6*
	Attic Insulation	0.93	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts Table 6*	0.93	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts Table 6*
	Wall Insulation	0.93	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts Table 6*	0.93	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts Table 6*
	Programmable Thermostat	0.87	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts Table 6*	0.87	*AIC PY4 Multi-Family Report Section 3.1.2 Net Impacts Table 6*
Home Energy Performance	Home Energy Performance (Spillover only applied to Program Level NTG)	0.92	*AIC PY4 HEP Report Table 25*	0.81	*AIC PY4 HEP Report Table 25*
HVAC	HVAC Elec Measures(ASHPs, CACs and GSHPs)	0.59	*AIC PY4 HVAC Report Section 4.2.2 Net Impacts*	N/A	N/A
	Gas Furnace	N/A	N/A	1.01	*AIC PY4 HVAC Report Section 4.2.2 Net Impacts*
	Gas Boiler	N/A	N/A	1.02	*AIC PY4 HVAC Report Section 4.2.2 Net Impacts*
Home Energy Report	All Savings	1	*No NTG Impact Evaluation. Savings determined by billing analysis*	1	*No NTG Impact Evaluation. Savings determined by billing analysis*
Efficient Products (REEP)	All Measures	0.82	*AIC PY4 REEP Report Table 18*	0.9	*AIC PY4 REEP Report Table 18*
Moderate Income	All Measures	1	*AIC PY4 Moderate Income Report Table 21*	1	*AIC PY4 Moderate Income Report Table 21*
ES New Homes	All Measures	0.8	*AIC PY4 Energy Star New Homes Report Table 8*	0.8	*AIC PY4 Energy Star New Homes Report Table 7*
Prescriptive	Core Program(FR+SO)	0.67	*AIC PY4 C&I Standard Report Table 46*	0.96	*AIC PY4 C&I Standard Report Table 46*
	Online Store	0.83	*AIC PY4 C&I Standard Report Table 44*	N/A	N/A
	Green Nozzle	0.92	*AIC PY4 C&I Standard Report Table 44*	0.89	*AIC PY4 C&I Standard Report Table 44*
Custom	All Measures	0.75	*AIC PY4 C&I Custom Report Table 29*	0.75	*AIC PY4 C&I Custom Report Table 29*
Retro-Commissioning	Project Level	0.95	*AIC PY4 RCx Report Table 9*	0.95	*AIC PY4 RCx Report Table 9*

Ameren Illinois Company's
Response to Natural Resources Defense Counsel Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Revised Response Date: 10/14/2013

NRDC 2.26R

Regarding the Residential HVAC program described beginning on page 87 of Exh. 1.1:

a. Can customers get both HVAC and RNC incentives for the same project? If not, how does AIC assure that participants won't attempt to access both programs for the same project?
b. How does AIC determine whether a participant is equipment replacement or natural replacement? With significantly greater incentives, how will AIC assure that contractors don't routinely categorize customers whose equipment has failed as equipment replacement?
c. Why does AIC feel that it is appropriate to provide incentives for lower tier CAC equipment for each of the three plan years rather than phasing out lower tier equipment in favor of higher efficiency?

RESPONSE

Prepared By: Wade A. Morehead
Title: Program Manager, CSG
Phone Number: 309.740.7044

See NRDC 2.26 Attach 1 and 2, provided with the original response dated October 4.

a. Customers may receive incentives from either program but not both. The ENERGY STAR New Homes program realizes savings based on the overall energy use of the home, including any and all efficiency upgrades. Allowing contractors to earn incentives for high efficiency HVAC in addition to this would lead to double-counting of savings. AIC will assure participants do not access both programs by referencing applications to the ENERGY STAR New Homes with previously processed applications to the HVAC program to verify that incentives have not been paid for the HVAC equipment.
b. To qualify for Early Retirement (ER) incentives, the existing equipment must be functioning and have an efficiency rating less than program requirements, which is 10 SEER for electric equipment and 75% AFUE for gas equipment. If the AFUE rating cannot be determined, equipment must be at least 30 years old to qualify. Contractors must submit a reservation request through an online intake form for an ER project and wait up to 2 business days to receive a reservation confirmation before proceeding. This two-day window allows program staff to inspect certain projects at random to verify equipment eligibility. This program performs verification inspections on at least 10% of ER reservation requests.
c. The lowest tier of CAC equipment reflects the minimum ENERGY STAR efficiency rating for this climate zone. This efficiency level is significantly greater than the baseline in this market and therefore represents a distinct improvement over baseline. If the market begins to transform in such a way that the lowest tier no longer represents significant upgrade from baseline, Ameren Illinois would consider phasing it out. However, current conditions do not indicate when or if this market transformation may occur.

Ameren Illinois Company's
Response to Natural Resources Defense Counsel Data Requests
Docket No. 13-0498
Approval of the Energy Efficiency and Demand-Response Plan
Pursuant to 220 ILCS 5/8-103 and 220 ILCS 5/8-104
Revised Response Date: 11/19/2013

NRDC 3.01R

The TRM states that only 69.5% of CFLs that are purchased through the Company's residential retail lighting program can be assumed to be providing savings in the year in which they are purchased. 15.4% are assumed to begin providing savings in the following year and 13.1% are assumed to begin providing savings two years after purchase.

a) Please complete the following table, using actuals for PY5 (recognizing that they may have not been officially verified yet) and forecasts for PY6 through PY9. Note that the term "rebated" refers to any financial incentives, including upstream incentives, which the Company provided. Savings numbers should include net savings (i.e. including NTG adjustments). Note also that there are no columns for PY10 and PY11, though some savings from PY8 and PY9 activities would necessarily be claimed in those years.

	PY5	PY6	PY7	PY8	PY9
Total Number of CFLs Rebated					
MWh Savings from all CFLs that will ultimately be installed (i.e. using the TRM's 98.0% lifetime in-service rate – recognizing that not all these savings can be claimed immediately)					
MWh savings that can be claimed from units rebated in the year in which they were rebated (i.e. using the TRM's 69.5% first year in service rate)					
MWh savings that can be claimed from units rebated the previous year (i.e. using the TRM's 15.4% second year installation rate)					
MWh savings that can be claimed from units rebated two years ago (i.e. using the TRM's 13.1% third year installation rate)					
Total MWh savings that can be claimed (i.e. the sum of the three previous rows)					

b) If the values in the last row for PY7 through PY9 are different than those included in the Company's plan for the residential lighting program please explain why.

RESPONSE

Prepared By: Andrew Cottrell
Title: Principal Consultant, Applied Energy Group
Phone Number: 732-447-1358

	PY7	PY8	PY9
Total Number of CFLs Rebated	2,525,000	2,525,000	2,525,000
MWh Savings from all CFLs that will ultimately be installed (i.e. using the TRM's 98.0% lifetime in-service rate – recognizing that not all these savings can be claimed immediately)	26,858.296	24,416.633	21,974.970
MWh savings that can be claimed from units rebated in the year in which they were rebated (i.e. using the TRM's 69.5% first year in service rate)	19,676.926	17,888.115	16,099.303
MWh savings that can be claimed from units rebated the previous year (i.e. using the TRM's 15.4% second year installation rate)	0	3,880.460	3,527.691
MWh savings that can be claimed from units rebated two years ago (i.e. using the TRM's 13.1% third year installation rate)	0	0	3,300.911
Total MWh savings that can be claimed (i.e. the sum of the three previous rows)	19,676.926	21,768.574	22,927.904

Values in the last row match PY7-PY9 program savings values in the revised Plan 3 filing submitted September 17, 2013.

Prepared By: Keith E. Goerss
Title: Assistant Manager, Energy Efficiency
Phone Number: 309-677-5708

CFL carryover savings are not yet known for bulbs installed during PY5-6 since those evaluation reports are not yet completed and savings values are dependent on NTG values which are uncertain due to the IL stakeholder group not yet resolving the application of the IL NTG Framework.

Following are the carryover savings provided for PY4 per the EMV reports. Furthermore, carryover savings are provided as gross values by EMV due to future carryover savings being subject to the NTG value for the year the bulb is installed.[1] AIC notes that final savings values are subject to the anticipated Final Orders in the ICC savings dockets.

[1] Pages 24-25 of the PY4 EMV report, Exhibit 1.0 attached to this data request.

Table 15. PY4 Residential Lighting Sales Yearly Gross Impacts

Measure	Energy (MWh)			Demand (MW)		
	PY4	PY5	PY6	PY4	PY5	PY6
Standard CFLs	140,714	29,616	24,654	14.75	3.115	2.59
Specialty CFLs	10,983	1,382	1,174	1.32	0.17	0.14
LEDs	0.81	0	0	0.00009	0	0
Total	**151,698**	**30,998**	**25,828**	**16.07**	**3.27**	**2.73**

IMPACT AND PROCESS EVALUATION OF AMEREN ILLINOIS COMPANY'S RESIDENTIAL LIGHTING PROGRAM (PY4)

Final

Prepared for:

AMEREN ILLINOIS COMPANY

Prepared by:

OPINION DYNAMICS

1999 Harrison Street
Suite 1420
Oakland, CA 94612
(510) 444-5050

www.opiniondynamics.com

Contact: Mary Sutter, Vice President of Energy Evaluation

December 2012

NAVIGANT Michaels engineering

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

1. EXECUTIVE SUMMARY

This report presents results from the evaluation of the PY4 (June 2011 to May 2012) Residential Lighting Program. The Residential Lighting Program is designed to increase awareness and usage of ENERGY STAR® (ES) lighting among residential customers. The program is aimed at an eventual transformation of the residential lighting market in AIC territory. The expected savings from this program is 33% of the overall portfolio of electric savings and 0% of portfolio therm savings (including both residential and commercial).

To support the evaluation, we conducted in-depth interviews with program staff, reviewed program data and program materials, conducted participating retailer interviews, an in-home lighting study, and an in-home customer survey.

Impact Results

Ameren Illinois Company's (AIC) Residential Lighting Program sold a total of 4,370,576 bulbs in PY4, exceeding both its original and revised bulb sales goals. The original sales goal of 3.2 million bulbs was increased to 4.3 million to ensure that overall PY4 portfolio goals were met. The vast majority of bulbs sold (94%) were standard CFLs sold through the markdown program. The webstore sold a very small number of bulbs though it did sell the first LEDs discounted through the program.

Table 1. Bulb Sales by Type and Sales Channel

Bulb Type	Markdown	Webstore	Total
Standard CFL	4,097,905	1,047	4,098,952
Specialty CFL	270,933	673	271,606
LEDs	0	18	18
Total	**4,368,838**	**1,738**	**4,370,576**

AIC chose to begin applying the 2012 Statewide TRM installation rate method in PY3, which spreads program savings out over the three years it takes for customers to install all the program bulbs they purchased. As a result, PY4 savings are comprised of bulbs sold in PY3 and installed in PY4 in addition to bulbs sold in PY4 and installed in PY4. A portion of PY4 savings will be applied in future years to PY5 and PY6.

As shown in Table 2, the program achieved 15.4 MW in net demand savings and 145.7 MWh in net electric savings.

Table 2. PY4 Residential Lighting Program Net Impacts

	Ex Ante Net Impacts		Ex Post Net Impacts	
	MW[a]	MWh	MW	MWh
Residential Lighting Program	--	141,892	15.36	145,737
			Net Realization Rate	*1.03*

[a] Conservation Services Group (CSG), the implementer, is not required to track demand savings.

Note: Realization Rate = Ex Post Value / Ex Ante Value.

The Residential Lighting Program's realization rate for PY4 net energy savings is 1.03. Ex post savings are different from ex ante savings for several methodological reasons:

- The program savings method assumes that 100% of program sales are installed in residential spaces. Our evaluation assumes that 3% of bulbs are installed in commercial spaces that have greater hours of use.
- The program savings method assumes residential bulbs are used for 854 hours a year. The evaluation applied the 2012 Statewide TRM hours of use assumptions, which specify 938 hours for residential spaces and 3,198 for miscellaneous commercial spaces.
- The evaluation applied the 2012 Statewide TRM banked savings method whereas the program tracking used a single installation rate of 93%.

Process Results

The Residential Lighting Program ran smoothly in PY4 according to program staff and participating retailers. Implementation staff credited excellent performance of and communication between the various implementers involved in the program as crucial to the success of the program. Additionally, participating retailers are satisfied with the program and its processes. Retailers expressed a clear understanding of the program and excellent lines of communication with their field representatives.

AIC relied primarily on in-store marketing to promote the program. The program supplied participating retailers with a number of different types of point-of-purchase materials. The program's field representatives conducted a number of in-store product demonstrations with customers and trainings with retailers. All retailers reported receiving and using POP sales materials from their field representative. All of the retailers found the signage and materials useful—one retailer suggested that in the future, the program could provide large signage for placement outside the store.

CFL penetration and saturation are significantly higher in 2012 compared to 2010. Our in-home lighting study found that 93% of AIC homes have at least one CFL installed compared to 87% of homes in 2010. CFLs are installed in 33% of light sockets in the average home in 2012 compared to 25% in 2010.

Given current levels of CFL socket saturation, opportunity remains for additional savings from a residential lighting program that targets both standard and specialty bulbs. CFLs are installed in 41% of standard sockets compared to 18% of specialty sockets. Though CFL saturation is higher in standard than specialty sockets, the average home has nearly 2.5 times as many standard sockets as specialty sockets. We estimate that there are an additional 15.6 million standard sockets and 9.8 million specialty sockets that could be filled with CFLs or LEDs.

Despite the potential for additional savings from energy efficient lighting, it will be important to monitor purchase behavior in light of the Energy Independence and Security Act (EISA) regulations going into effect in the coming years. Awareness of EISA is currently relatively low, with slightly over half of customers aware of the regulations. When EISA is explained, a majority of customers say they will purchase CFLs to fill sockets now filled with EISA-impacted bulbs. Few report that they will purchase lower or higher wattage incandescents or the new EISA compliant halogens. Likewise, few report that they will stockpile 75-watt bulbs in anticipation of their phase out in 2013. Our in-home lighting study also found little evidence of actual stockpiling of 100-watt and 75-watt incandescents, the first two wattages impacted by EISA. Program savings could be adversely impacted in the next few years if EISA is the main driver of increased CFL usage.

Recommendations

Within this context, we offer the following recommendations for program improvement.

- **Track all the data necessary to calculate program savings in one location.** The official program tracking database does not contain all the information necessary to calculate program savings. Base wattage and lumens are not tracked. The 2012 Statewide TRM also requires type of bulb (e.g., specialty, standard) and type of specialty (e.g., globe, reflector). The savings calculations in the new TRM are much more complex. Including all necessary data in the tracking database would aid in program tracking and evaluation.

- **Attempt to increase sales of specialty CFLs to increase CFL socket saturation.** Although the program discounts a large number of specialty CFL products, only 6% of bulbs sold through the program are specialty CFLs. Specialty CFL saturation lags behind standard CFLs. Price is still a barrier to purchase for discounted specialty CFLs given the bulbs' higher regular retail price. AIC may want to consider increasing incentives on specialty CFLs to attract customers who will not purchase such an expensive bulb.

- **Closely monitor the impact of program incentives versus EISA on CFL purchases.** EISA has changed the products available to customers. After providing customers information about the different bulbs they could purchase to replace 100-watt incandescents, most said they would purchase CFLs and not switch to a different wattage incandescents or EISA-compliant halogens. The information we provided to customers included purchase price and operating cost. If EISA ends up being the main driver of CFL sales, program net savings will be adversely impacted. If customers are accurately self-reporting their purchase intentions, the program may need to reconsider incenting EISA-regulated bulbs. The majority of program sales are 60-watt equivalent CFLs so the impact on program savings will not be until PY7.

- **Explore the market for LED incentives. At the same time, provide customers with guidance about what to look for when purchasing LEDs.** Interest in LEDs is currently low due to the high costs of the bulbs, but as costs come down, the bulbs would be a viable alternative to CFLs in some applications. It is important for early adopters of LEDs to be happy with their purchase. Early adopters of CFLs were disappointed in the product, in part because the early products had problems. A large number of LEDs are entering the market and not all of them have the same capabilities. In addition, dimmable LEDs are not compatible with all dimmers, which is also true of dimmable CFLs. Customers may be disappointed with the performance of these products given their higher cost. AIC should consider providing customers with information about LEDs and their different applications.

2. INTRODUCTION

This report presents results from the PY4 evaluation of the AIC Residential Lighting Program. The Residential Lighting Program is designed to increase awareness and usage of ENERGY STAR® (ES) lighting among residential customers. The program is aimed at an eventual transformation of the residential lighting market in AIC territory. The program seeks to increase awareness of energy efficient lighting and its benefits through marketing and outreach efforts at participating retailers, the AIC website, and the mass media. The program partners with retailers and lighting manufacturers to sell ES lighting at a discount to bring the cost closer to less efficient lighting options on the market. The discounts encourage customers who are reluctant to pay full price for ES lighting to choose energy efficient over standard lighting.

The Residential Lighting Program was launched in August 2008 and is implemented by Conservation Services Group (CSG) with subcontractors Applied Proactive Technologies (APT) and Energy Federation, Incorporated (EFI). In PY4, sales goals for the program were originally set at 3.2 million units, and were increased to 4.3 million during the year. This evaluation reviews the program's performance in PY4, which began in June 2011 and ended in May 2012.

3. EVALUATION METHODS

3.1 DATA SOURCES AND ANALYTICAL METHODS

The assessment of the fourth year of the Residential Lighting Program included both process and impact analyses. The table below summarizes the activities performed by the evaluation team in support of the PY4 evaluation.

Table 3. Summary of Evaluation Methods

Task	PY4 Impact	PY4 Process	Forward Looking	Details
Program Staff In-Depth Interviews	√	√		Gathered detailed information on the step-by-step operational conditions and implementation efforts to gain an understanding of program design and delivery
Program Data Review	√			Verified program-reported savings
Program Materials Review		√		Reviewed program implementation plan and marketing and outreach materials
Participating Retailer Interviews		√		Conducted structured interviews with participating retailers to gather insights into program processes, program marketing and training, and retailer satisfaction
In-Home Lighting Study	√	√	Used to calculate spillover	Completed 226 lighting audits. Collected information on the quantity and type of lighting in use and in storage in customers' homes.
In-Home Customer Survey	√	√		Conducted a survey with home lighting audit participants on past and future lighting purchase behavior

3.1.1 PROCESS ANALYSIS

Program Staff In-Depth Interviews

As part of our analysis, the evaluation team interviewed the program managers from AIC, CSG, APT, and EFI about their roles in the Residential Lighting Program, program processes, and day-to-day program administration. Topics addressed included marketing, data management and tracking, quality assurance, and program incentives.

Review of Program Materials and Data

The evaluation team conducted an extensive review of all program materials and data available, including the program implementation plan, marketing materials, field reports, and tracking databases.

Participating Retailer Interviews

The evaluation team completed interviews with top-selling lighting retailers and retail locations from PY4. We completed 10 interviews overall. For the three top-selling retailers, we completed interviews with managers or department heads at two different locations. For the next four top-selling retailers, we completed one interview at a single location. In all cases, the evaluation team spoke with the staff member who had the closest contact with APT field representatives in PY4. These individuals were either store managers or lighting/electrical department managers.

During the interviews, we explored the effectiveness of the program processes, retailer satisfaction with various components of the program, and any suggestions or desires on the part of the retailer for possible program changes in future years. We also asked retailers to assess, to the best of their ability, the impact of the program on sales of products covered by the program. Not all interviewed individuals were able to provide information on all questions asked. In most cases, the store managers had a better sense of the overall impacts and effects of the program than department heads.

In-Home Lighting Study

As part of the PY4 evaluation, we conducted in-home audits of the lighting installed and in storage in 226 homes in AIC service territory.[1] We completed 26 audits in the homes of customers who participated in the 2010 in-home study. A detailed lighting study of this nature provides the most accurate "snapshot" of the number, type, and location of residential lighting products. As part of this evaluation, we use the study results to assess the current compact fluorescent lamp (CFL) market and future program potential. We compare the results of this 2012 study with an in-home study conducted for AIC in 2010.[2]

In-Home Customer Survey

As part of the in-home lighting study, we asked participants to complete a short survey addressing past and future lighting purchasing behaviors and awareness of lighting market-related factors such as EISA. Before completing the survey, participants were asked to read a brief summary of incandescent, halogen, CFL, and LED bulbs, including information on cost per bulb, cost to use a bulb per year, and bulb life. The estimated costs provided to respondents were regular retail prices for all products at the time of the survey.

[1] The target sample size was selected to ensure we achieved 90% confidence and 10% precision for estimates of CFL penetration and saturation. Because these numbers can be highly variable across the population, we completed more audits than we felt were likely necessary to ensure the study met the target confidence and precision levels.

[2] The Cadmus Group, *Lighting Net-to-Gross Addendum—Multistate Study*. Prepared for Ameren Illinois, March 4, 2011.

3.1.2 IMPACT ANALYSIS

Gross Impacts

Before conducting the impact analysis, the evaluation team reviewed the methods the program uses to track savings as part of its database. We also reviewed the methods used in past evaluations. The program calculates gross savings using per unit electric savings values as outlined by the Illinois Commerce Commission in the Order for docket 10-0568. The basis for the values is the following formula:

Per Unit kWh Savings = Delta Watts/1000 * Hours of Use (HOU)

Where:

Delta Watts = Base Wattage[3] – CFL Wattage

HOU = 854[4]

Though the program targets residential customers, it cannot prevent commercial customers from purchasing bulbs at participating stores. Previous evaluations estimated that 3% of bulbs were sold to commercial customers and used different hours of use for bulbs sold to residential and commercial customers.[5] In our calculation of per unit kWh savings, we apply the same assumptions regarding the percentage of bulbs sold to residential and commercial customers. We apply the hours of use (HOU) assumptions from the 2012 Statewide TRM:

HOU = 938 for residential customers

HOU = 3198 for commercial customers[6]

The program calculates gross savings using the following formula:

Ex Ante Gross kWh Savings = Per Unit kWh savings * Number of Units Sold

As was done with previous evaluations of this program, we modify this formula by including an installation rate because only a portion of the bulbs purchased in PY4 will actually be installed in PY4:

[3] The base wattage for each CFL wattage is from the fixed values in ICC Order Plan 2 docket 10-0568 filed December 9, 2011.

[4] The hours of use for residential CFLs is from the fixed values in ICC Order Plan 2 docket 10-0568 filed December 9, 2011

[5] The Cadmus Group, *L&A Program Addendum #3*. Prepared for Ameren Illinois, May 10, 2011.

[6] In an addendum to the PY2 Residential Lighting evaluation, the Cadmus Group used the commercial HOU estimated for the ComEd PY1 Small C&I Intro Kit for the 3% of bulbs purchased by commercial customers. The same HOU value was used by Ameren Missouri. The Cadmus Group, *L&A Program Addendum #3*. Prepared for Ameren Illinois, May 10, 2011.

Realized Gross kWh Savings = Per Unit kWh savings * Number of Units Sold * Installation Rate (ISR)

The installation rate is calculated using the method outlined in the 2012 Statewide Technical Reference Manual (TRM). AIC chose to begin use of the method in PY3 to ease the transition to PY5 when the new method must be used. The method assumes that 2% of program CFLs will never be installed, but the remaining 98% will be installed over a three-year period. Installation rates also vary by bulb type with lower first-year installation rates for standard CFLs compared to specialty CFLs and fixtures. The program sold a small number of medium screw-based LEDs through the webstore. The 2012 TRM only contains first-year installation rates for LED downlights ranging from 0.95 to 1.00. Given the high cost of these bulbs, we chose to use an installation rate of 1.00 for the small number of LED bulbs purchased in PY4. Table 4 presents the three-year installation rates by bulb type presented in the TRM and used in this evaluation:

Table 4. 2012 TRM Residential CFL Installation Rates

Bulb Type	First Year	Second Year	Third Year	Final
Standard CFLs	69.5%	15.4%	13.1%	98%
Specialty CFLs	79.5%	10.0%	8.5%	98%
CFL Fixtures	87.5%	5.7%	4.8%	98%
LEDs (medium screw-based)	100%	--	--	100%

Because AIC began using this new ISR method in PY3, PY4 savings will include savings from sales made in both PY4 and PY3. For example, total program savings due to the sale of standard CFLs will comprise 69.5% of savings from sales in PY4 and 15.4% of savings from sales made in PY3.

The evaluation team calculated demand savings using the method outlined in the 2012 Statewide TRM:

Per Unit kW Savings = Delta Watts/1000 * ISR * Waste Heat Demand Factor (WHFd) * Summer Peak Coincidence Factor (CF)

Where:

Delta Watts = Base Wattage[7] – CFL Wattage

ISR = 2012 TRM (see Table 4)

WHFd = 1.11

CF = 9.5% (standard CFLs, general specialty, LEDs)

The 2012 TRM provides coincidence factors for different specialty CFL types ranging from 0.081 to 0.184. Our calculation of demand savings for specialty CFLs applies the value appropriate for each bulb type.

Table 5 summarizes the source of the data and assumptions used in the calculation of gross energy and demand savings.

[7] The base wattage for each CFL wattage is from the fixed values in ICC Order Plan 2 docket 10-0568 filed December 9, 2011.

Table 5. Sources Information for Gross Savings Inputs

Gross Savings Input	Source
Program Sales	PY4 Program Tracking Database
Base Watts	ICC Order Plan 2 docket 10-0568 filed December 9, 2011
CFL Watts	PY4 Program Tracking Database
Hours of Use	. 2012 Illinois Statewide Technical Reference Manual
Installation Rate	2012 Illinois Statewide Technical Reference Manual
Waste Heat Demand Factor	2012 Illinois Statewide Technical Reference Manual
Summer Peak Coincidence Factor	2012 Illinois Statewide Technical Reference Manual

Net Impacts

Consistent with the ICC Order for Docket 10-0568 dated December 21, 2010, we did not update the net-to-gross ratio (NTGR) for the Residential Lighting Program in PY4. We use the NTGR in both the PY2 and PY3 evaluations. This value is the average of the results from two studies. The multi-state study used a comparison approach and collected data on CFL usage and purchases from a number of states with varying levels of lighting program maturity, including some states with no programs at all. The results were used to estimate a model-predicting program NTGR. The NTGR from this study was 0.75. The second study was conducted in PY2 and consisted of retailer reports of program influence on CFL sales. The NTGR ratio from this study was 0.91. We averaged the two study results to produce a final NTGR of 0.83, which we used in both PY2 and PY3.

3.2 Sampling and Survey Completes

3.2.1 In-Home Lighting Study

As part of the PY4 evaluation, we conducted in-home audits of lighting in use and in storage in 226 homes in AIC service territory. We recruited participants via the telephone. We drew a stratified simple random sample from the AIC residential customer database in which we divided customers into eight geographic regions. The regional divisions make it easier to conduct the study from a logistical standpoint and also ensure that the study participants were representative of the entire AIC service territory. The number of target visits in each region was proportionate to the region's contribution to the overall AIC customer population.

Within each of the eight regions, we drew a simple random sample of customers of sufficient size to recruit twice as many customers as we needed to complete the target number of visits. We over recruit because when customers are called back, a few days after initially agreeing to participate, approximately half ultimately agree to the site visit. For this study, we recruited 430 customers for a visit and eventually completed 226.

AIC conducted an in-home lighting study with 92 customers in 2010. We attempted to complete re-audits with as many of these customers as possible. Thirty-five of the customers initially agreed to an audit and we completed audits with 26 of these previous participants.

Table 6. Completed In-Home Lighting Study Survey Points

Respondent Type	Population	Sample Frame	Soft Recruits	Completes
New Participants	1,056,441	8,992	395	200
Previous Participants	92	92	35	26
Total	**1,056,533**	**9,084**	**430**	**226**

4. RESULTS AND FINDINGS

This section presents the process and impact findings from the PY4 evaluation of the Residential Lighting Program.

4.1 PROCESS FINDINGS

4.1.1 PROGRAM DESIGN AND IMPLEMENTATION

Based on interviews with program implementation staff, the Residential Lighting Program ran smoothly in PY4. Despite increasing program goals during the year—from an initial level of 3.2 million bulbs to 4.3 million bulbs—to compensate for performance in other programs, the program exceeded the goal for number of bulbs sold. Implementation staff credited excellent performance of and communication between the various implementers involved in the program as crucial to the success of the program.

Managers at retailers participating in the program, by and large, expressed a clear understanding of the program and excellent lines of communication with their field representatives. All managers felt that they had been kept up-to-date regarding changes to products and incentive levels. Two retailers suggested providing incentives for LED bulbs.

4.1.2 PROGRAM DATA

The program provided tracking data for both retailer and online sales. The data provided was complete and accurate. However, not all fields necessary to calculate program savings were tracked in the files we received. The tracking data provided the CFL wattage of each SKU sold and the gross and net kWh for each stock-keeping unit (SKU). The tracking database did not provide the base wattage used in the calculation of savings. The program provided the formula used to calculate savings in the program database. Using this formula, we could back out the base wattage from the data provided.

The base wattage equivalencies provided in ICC Order Plan 2 docket 10-0568 filed December 9, 2011, requires the use of lumen output for some CFL wattages, and the tracking did not contain lumens. For example, a 13-watt CFL that produces less than 800 lumens is equivalent to a 40-watt incandescent while a 13-watt CFL that produces greater than or equal to 800 lumens is equivalent to a 60-watt incandescent. For CFL wattages that required lumen output, we had to conduct online searches to ensure the appropriate base wattage was used in the program savings calculations.

The program has not traditionally tracked CFL type (standard or specialty) or specialty type (e.g., globe, reflector). This information is necessary to calculate savings using the installation rate method established by the 2012 Statewide TRM as well as the 2012 TRM formula for demand savings. Though the 2012 TRM does not go into effect until PY5, AIC chose to use the installation rate method beginning in PY3, and we used the 2012 TRM to calculate demand savings. The program was able to provide CFL type based on its updated tracking system in use for PY5, but we had to determine the type of specialty bulb using product descriptions and online searches.

4.1.3 Program Marketing, Outreach, and Training

In PY4, the Residential Lighting Program was promoted in a variety of ways. While TV and other mass media marketing did not directly address the program, general AIC marketing did include images of compact fluorescent light bulbs and general energy efficiency messages. It is worth noting that one of the retailers we spoke with specifically mentioned AIC's general consumer marketing as being excellent.

Primary marketing of the program took place via point-of-purchase (POP) sales materials used at participating retailers. All retailers reported receiving and using POP sales materials from their field representative—most of them reported that they left it up year-round, or at the very least, whenever they had product covered by the program in stock. All retailers also reported that they would tend to place these materials and associated product in a prominent location in the store to more quickly draw customer attention. All of the retailers found the signage and materials useful—one retailer suggested that in the future, the program could provide large signage for placement outside the store.

APT also held 93 in-store events at top-selling retailers aimed at promoting the program, including representatives using "light bars" to demonstrate various bulbs, passing out educational materials, and direct customer contact. Five of the ten retailers we spoke to specifically remember an in-store event having taken place in their store. APT records indicate that these stores did have one or more events in PY4, and that those who did not remember an event were, except in one case, correct that no events were held at their stores. Those retailers reporting events also found them to have spurred a marked sales increase.

The field representatives associated with the program also typically train store staff on CFLs and how to best promote them, and provide a brief overview of how the program works from the consumer's standpoint. Nine of the ten retailers interviewed remembered at least an informal training. The managers and department heads interviewed indicated that typically only a single manager was trained and was expected to pass information along to other staff. One retailer did express a desire for more staff to be trained more formally. Retailers expressed a great deal of satisfaction with the field representatives when it came to providing program information and updates as needed.

4.1.4 Energy Efficient Lighting Awareness and Usage

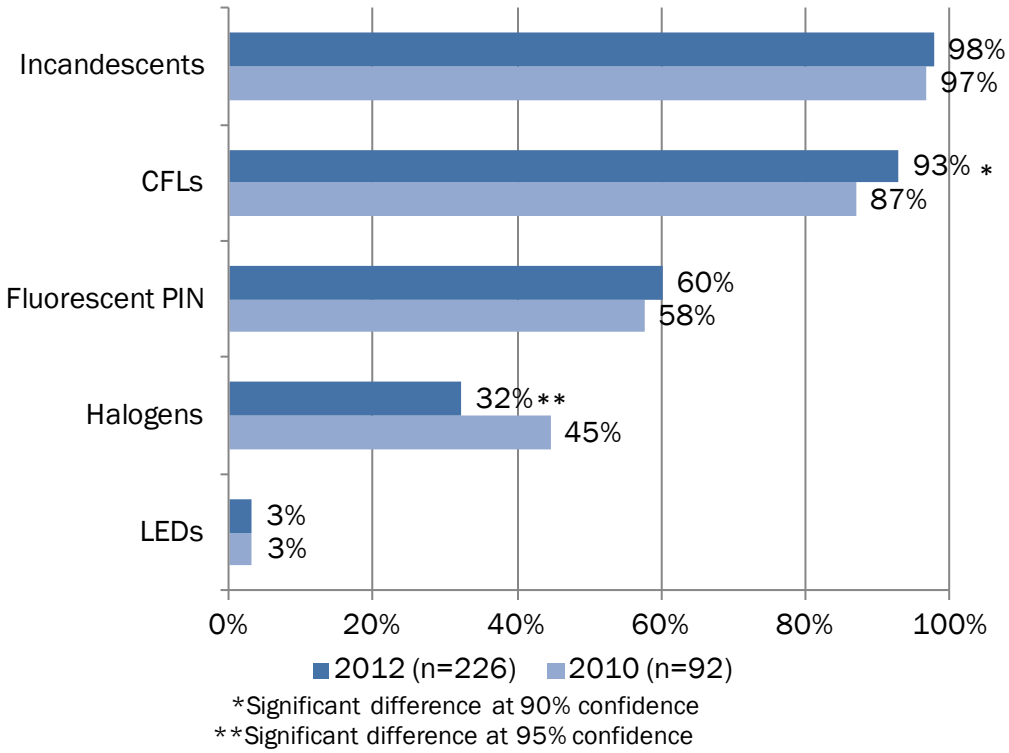
As part of recruiting for the on-site visits, we asked respondents questions about their awareness of CFL light bulbs. Most respondents (84%) reported having heard of CFLs. After we described the bulbs to those who were unaware of them, most recognized the bulbs, bringing total awareness to 97%.

The penetration rates from the in-home baseline study show that consumers are more than just aware of CFLs; they are actually using them (see Figure 1). Our in-home lighting audit found that 93% of homes had at least one CFL installed, which is a significant increase from the 87% of homes with CFLs in 2010.[8] Similar to 2010, we found a handful of customers (2%) who did not have any incandescents installed. Significantly fewer homes had halogen bulbs installed in 2012 compared to

[8] The confidence and precision of the 2012 estimate of CFL penetration is 90% +/-3%.

2010 (32% compared to 45%).[9] Though the 2012 in-home survey showed 51% of customers are aware[10] of LEDs, hardly any customers are using them. Only 3% of homes had an LED installed in 2012, which is the same as 2010. Most of these homes had a specialty or pin-based LED installed. Only two homes in 2012 had a new medium screw-based LED installed.

Figure 1. Lighting Penetration Rates



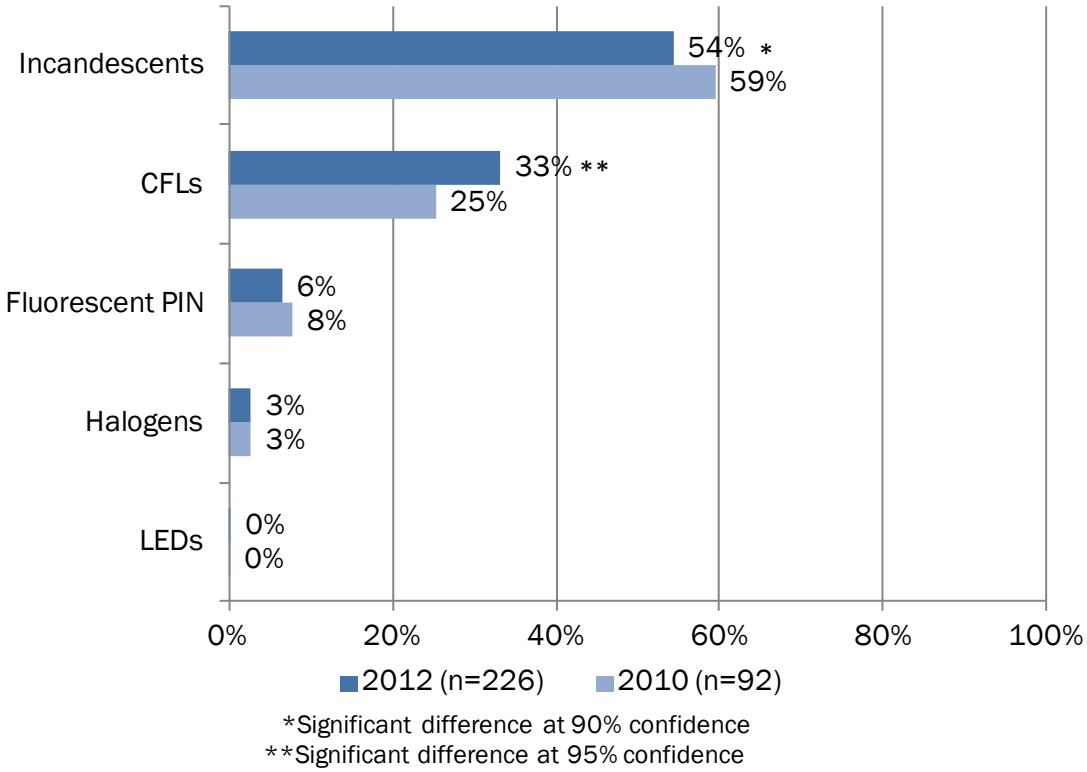
Though nearly all homes have at least one CFL installed, the majority of sockets in 2012 do not contain the most efficient bulb possible, either a CFL or LED. CFLs comprise 33% of bulbs installed in the average home in AIC service territory and LEDs are less than 1% (see Figure 2). Just over half are incandescents (54%) and less than one in ten are fluorescent pin (6%). The remainder are halogens (3%).

[9] Though the difference in halogen penetration is statistically significant, the difference may be due, in part, to differences in data collection. The 2012 data collection instrument collected the same information as the 2010 instrument. However, different teams conducted the audit and different training instructions may have been given. It is possible that the audit teams used different definitions of halogen bulbs, which is a technology that may be more difficult to identify.

[10] Respondents reporting "very familiar" or "somewhat familiar" on a 4 point scale ranging from "not at all familiar" to "very familiar."

While only one-third of sockets in the average home contain a CFL, CFL saturation is significantly higher compared to 2010 when only 25% of sockets contained a CFL.[11] As might be expected, incandescent saturation has declined over the past two years.

Figure 2. Lighting Saturation Rates



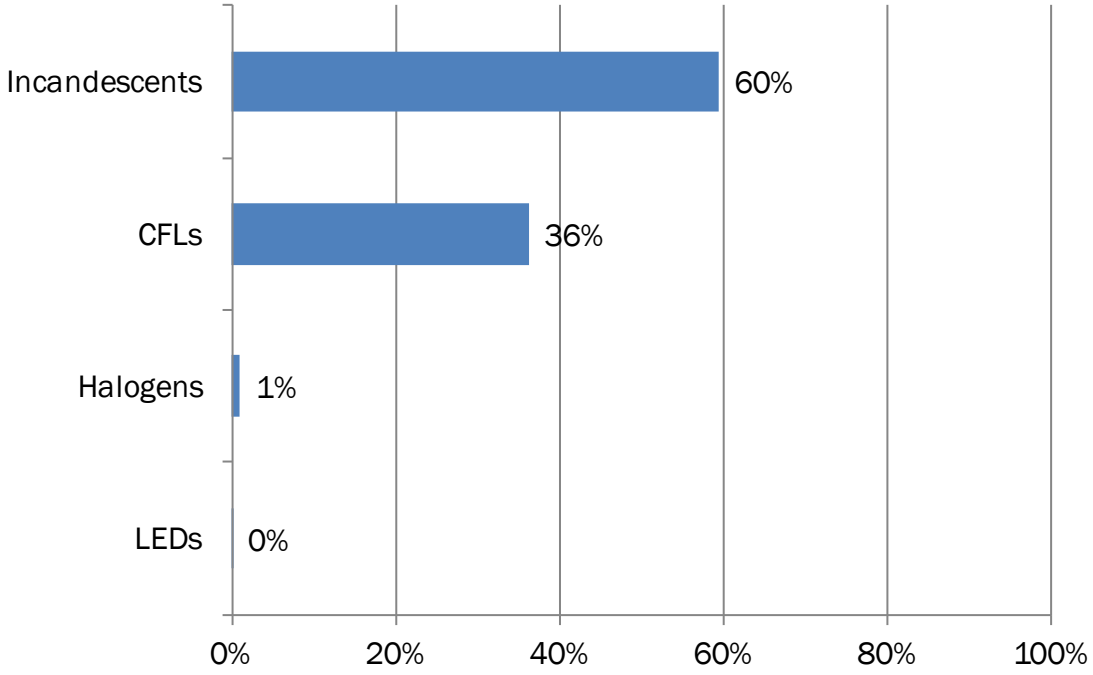
*Significant difference at 90% confidence
**Significant difference at 95% confidence

The Residential Lighting Program only incents screw-based CFLs and not pin-based so it would be more appropriate to examine socket saturation of screw-based bulbs only. The numbers are similar, but with slightly higher saturation rates for both incandescents (60%) and CFLs (36%) than when we examined all sockets (see Figure 3). Halogens are installed in only 1% of screw-based sockets and LEDs are in less than 1%.[12]

[11] The confidence and precision of the 2012 estimate of CFL saturation is 90% +/-8%.

[12] Reviewer Note: At this time, we have some questions about the 2010 data that we are working to resolve with Cadmus in advance of presenting further comparisons of the 2012 and 2010 studies. The data presented in the remainder of this section only include results from the 2012 study.

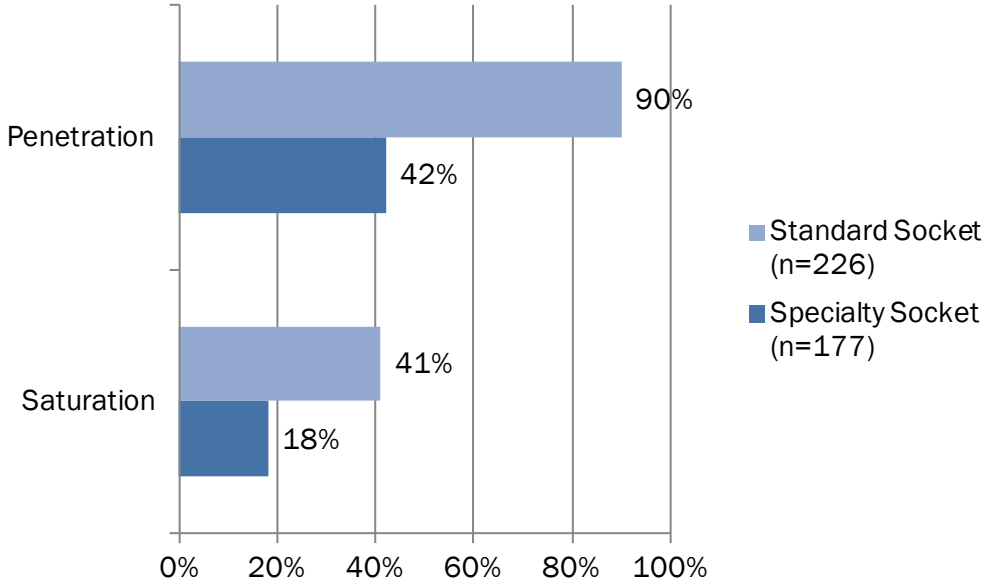
Figure 3. Socket Saturation Rates for Screw-Based Sockets



The program provides incentives for both standard and specialty CFLs. The in-home audits collected data on a socket-by-socket basis so that we can examine CFL saturation by socket type.[13] When we compare CFL penetration and saturation in standard versus specialty sockets, we see that standard CFLs are in more homes and more sockets than specialty CFLs. All homes have a socket that could take a standard CFL, and 90% of homes had at least one standard CFL installed and 41% of the standard sockets contained CFLs. Fewer homes (78%) had a socket that required a specialty bulb. Of these homes, 42% had a CFL installed and only 18% of the specialty sockets in these homes contained a CFL.

[13] Our definition of specialty CFLs matches that of the program. A specialty CFL is any CFL with a glass covering, or a spiral CFL that is dimmable or 3-way. A specialty socket was defined as one that had a specialty bulb of any technology installed (i.e. incandescent, CFL, etc.). A standard socket is one that had a standard bulb of any technology installed. Though the resident could, in the future, install a standard bulb in a specialty socket and vice versa, our analysis assumes the resident has chosen the most appropriate bulb for the socket and will continue to use the same type of bulb.

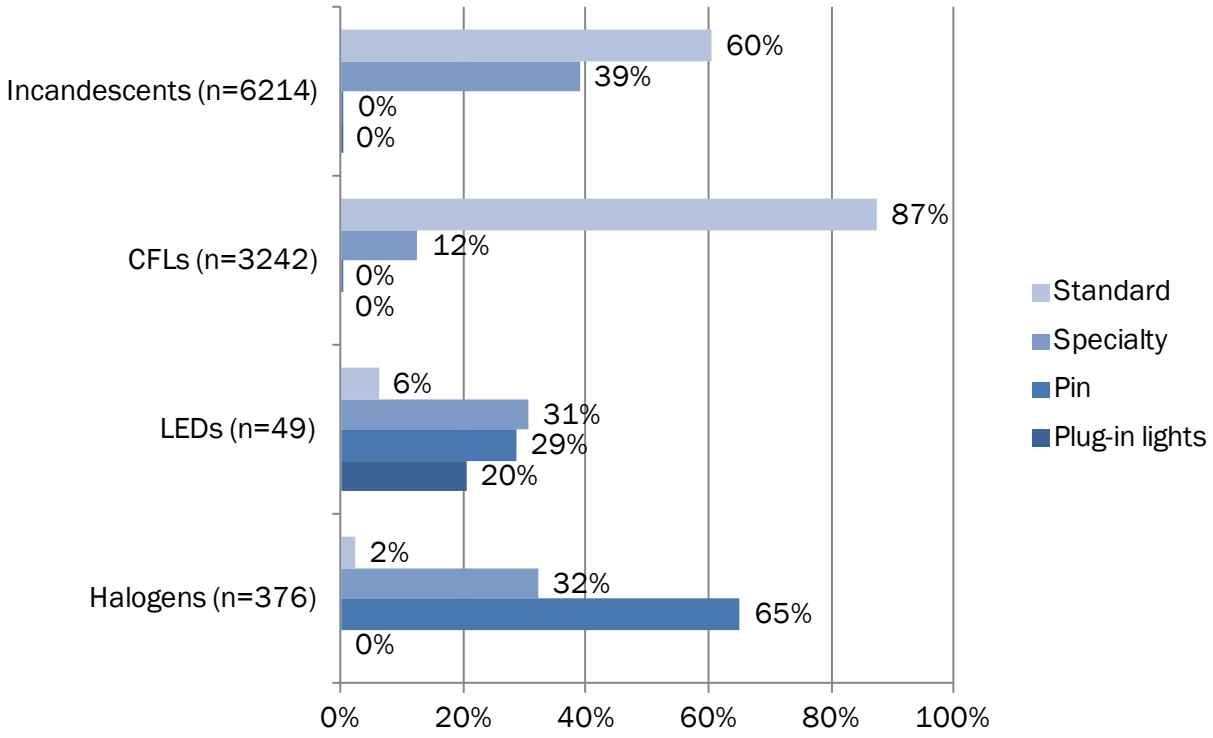
Figure 4. CFL Penetration and Saturation by Socket Type



Customers have been slower to adopt specialty CFLs and some of the new lighting technologies may be more attractive to them as they become more widespread. To understand the types of bulbs (i.e. incandescent, CFL, halogen, LEDs) consumers are using in different socket types (i.e. standard, specialty, pin), we calculated socket saturation by bulb type for each technology (see Figure 5). Of all incandescents installed, 60% are in standard screw-based sockets, 39% are in specialty screw-based sockets, and less than 1% are in pin-based sockets or are plug-in lighting. Residents are installing CFLs in the same types of sockets as incandescents, and are much more likely to be replacing standard bulbs than specialty bulbs: nearly nine in ten CFLs installed (87%) were standard, screw-based bulbs.

Until very recently, LEDs and halogens have not been available for standard screw-based sockets. As a result, most of these bulb types are installed in sockets that require a screw-based specialty bulb or a pin bulb (see Figure 5). Since halogens and LEDs are now available for standard and specialty screw-based sockets, these results provide a good baseline for these technologies as they are entering the market.

Figure 5. Socket Saturation for Different Technologies by Bulb Type



Finally, CFL usage is not associated with many demographic factors (see Table 7). Homeowners are more likely to use CFLs than renters but they do not have a greater proportion of their sockets filled with CFLs. We found little difference in CFL usage by income or education.

Table 7. CFL Penetration & Saturation by Demographic Characteristics

Demographic Characteristics	CFL Penetration	CFL Saturation
Home Ownership		
Own (n=153) (A)	97%[B]	33%
Rent (n=73) (B)	85%	33%
Household Income		
Less than $40,000 per year (n=103) (A)	91%[C]	39%
$40,000 to less than $75,000 per year (n=61) (B)	92%[C]	31%
$75,000 or more per year (n=46) (C)	100%	26%
Education		
High school graduate or less (n=63) (A)	92%	36%
Some college (n=76) (B)	92%	36%
College grad or more (n=86) (C)	95%	29%
Home Size		
Less than 1,500 sq. ft. (n=120) (A)	92%	33%
1,500 or more sq. ft. (n=53) (B)	98%	32%
Unknown home size (n=53) (C)	91%	35%
Total (n=226)	**93%**	**33%**

Note: Letters indicate the figure is significantly different from the other group at the 90% level.

4.1.5 The Future of Lighting Programs in AIC Territory

CFL penetration and saturation in AIC territory have increased since 2010—from 87% to 93% and 25% to 33%, respectively. Nearly every home has at least one CFL installed, and two of five standard sockets contain a CFL. Penetration and saturation of specialty CFLs still lags behind though. Given the relatively high level of CFL usage and the changes in the lighting market due to EISA and technological advances, it is important to examine the remaining market for an efficient lighting program and customer response to market changes.

Remaining Efficient Lighting Potential

The evaluation team estimated the number of standard and specialty screw-based sockets that currently have a less efficient bulb installed and thus could still be retrofitted with a more efficient option. Table 8 provides the inputs to the socket potential estimates. It is unrealistic to expect 100% socket saturation of efficient lighting, but 90% is more reasonable and the target of these estimates.

With 1,056,533 households in AIC territory, we estimate that nearly 19 million standard sockets and more than 11 million specialty sockets do not have the most efficient lighting technology installed.

While specialty CFLs have lower socket saturation, the number of potential sockets for standard CFLs is higher than it is for specialty CFLs due to the larger number of standard sockets in homes. The technology used to fill these sockets does not need to be CFLs; it could be LEDs as the technology continues to advance and prices fall. The results show that both standard and specialty bulbs should be considered for future program incentives.

Table 8. Remaining Socket Potential for Energy Efficient Lighting

Socket Type	% of Households with Socket	Average Number of Sockets per Household	Estimated Total Sockets in AIC Territory [a]	Per-Home CFL Saturation by Type [b]	Estimated Socket Potential [c]
Standard	100%	30.4	32,118,603	41%	15,583,946
Specialty	78%	12.9	13,629,276	18%	9,788,546

[a] Calculated by multiplying the total number of households in AIC territory (1,056,533) by the average number of sockets of the type.

[b] Based on the mean per-home saturation of CFLs in sockets that can take each bulb type (i.e., standard bulb saturation in standard sockets, specialty bulb saturation in specialty sockets).

[c] Based on a target of 90% socket saturation.

Future Lighting Purchase Behavior

While we were in customers' homes conducting the audit, we asked participants to fill out a paper survey about their current and future lighting purchases and factors that might influence those purchases. The survey provided respondents with pictures of different types of bulbs, their cost to purchase, cost to operate, and bulb life. The costs were regular retail prices so respondents were initially evaluating CFLs at non-program pricing.[14]

Fifty-five percent of respondents to the in-home survey reported that they were aware of the EISA legislation that phases out incandescent light bulbs over time. Awareness of EISA does not vary much across a variety of demographic factors, although homeowners are more aware (59%) than non-homeowners (48%).

After being asked about this legislation, respondents were asked what they planned to do the next time they need to purchase a 100-watt incandescent bulb, which was phased out in 2012. Over three quarters (78%) of respondents indicated that they planned to purchase a CFL bulb the next time they needed to purchase a 100-watt light bulb. Only 6% of respondents said they would use a higher or lower wattage incandescent, and only 2% of respondents said they would purchase the new EISA-compliant halogen bulbs. Ten percent of respondents do not use 100-watt bulbs so they are not impacted by the first round of EISA regulations.

Future purchase plans are correlated with current CFL usage. Those who plan to purchase a CFL bulb the next time they need a 100-watt incandescent have CFLs in 37% of their light sockets. Those who plan to purchase an incandescent or EISA-compliant halogen have CFLs in 17% of their sockets, which is significantly lower.

[14] The home survey results have a maximum confidence and precision of 90% +/- 5% for the entire sample. Analysis of subgroups will have lower precision.

Table 9. Likely Substitutes for 100W Bulbs

Response	% of Respondents (n=174)
CFL bulb	78%
Do not use 100W bulbs	10%
Lower wattage incandescent bulb	4%
Higher wattage incandescent bulb	2%
LED bulb	4%
Halogen bulb	2%

Respondents who said they would purchase something other than a CFL were asked if they would purchase one if the price were 50% less ($1.25 per bulb) than the bulb information first provided in the survey ($2.50 per bulb). Three-quarters of them said the price drop would cause them to purchase a CFL instead, bringing the total number to 87% who will purchase a CFL in place of a 100-watt incandescent.

Looking forward to next year's phase-out of 75-watt incandescent bulbs, we asked respondents if they planned to stock up on 75-watt incandescent bulbs before the phase-out went into effect. Three quarters (75%) of respondents indicated that they were unlikely[15] to do so. Only 9% said they were very likely to stock up on 75-watt incandescents.[16]

A survey question can only measure what a customer *might* do in the future in terms of stockpiling incandescents. Our in-home audit data provide evidence of what they *actually have* done. We collected data on the storage rates of 100-watt and 75-watt incandescents. There is little evidence that AIC customers are stockpiling EISA-regulated incandescents based on the lighting storage data. Slightly over half of homes (55%) had any incandescents in storage. When we examined the wattage, we found that 29% of homes had 100-watt incandescents in storage and 9% had 75-watts in storage. Of all incandescents in storage, 100-watts made up 11% while 75-watts made up 10%.[17] The market share of 100-watt and 75-wattt incandescents prior to EISA (2007) was 21% and 19% respectively.[18] Customers actually had fewer of these wattages in storage than were sold in the market.

[15] Respondents reporting "not at all likely" or "not very likely" on a 4 point scale ranging from "not at all likely" to "very likely".

[16] As part of the in-home audit, we recorded the number of 100-watt and 75-watt incandescents in storage.

[17] The largest number of 100-watts in storage was 10 in a home that had a total of 25 incandescents in storage. This home had only 4 75-watt incandescents in storage.

[18] Pamela Horner, *Lighting Manufacturer Perspectives on Residential Lighting Efficiency.* Prepared for Residential Lighting Efficiency Status & Policies, Integrated Energy Policy Report and Energy Efficiency Committees Joint Workshop. Sacramento, CA. California Energy Commission, June 19, 2007. Cited in: Seth Craigo-Snell, *The U.S. Replacement Lamp Market, 2010-2015, and the Impact of Federal Regulations on Energy Efficiency Lighting Programs*, APT White Paper, August 2010.

We also compared the storage rates of 100-watt and 75-watt incandescents of customers who were aware of EISA to those who were unaware. If a customer is unaware of EISA, the presence or number EISA-regulated incandescents in storage cannot be evidence of stockpiling. We found no significant difference in 100-watt and 75-watt storage rates by EISA awareness.

If EISA ends up being the main driver of CFL sales, program net savings will be adversely impacted. If customers are accurately self-reporting their purchase intentions, the program may need to reconsider incenting EISA-regulated bulbs. As we show in the next section, the majority of program sales are 60-watt equivalent CFLs so the impact on program savings will not be until PY7.

The survey also asked questions about future purchase of LEDs. Twenty-eight percent of respondents indicated that after having read the information about LEDs that was provided with the in-home survey, they were very likely to purchase an LED light bulb in the next year. Those respondents who indicated otherwise primarily cited cost (62%) as the major factor. Other factors cited were a preference for CFLs (6%), a lack of knowledge of LEDs (6%), poor quality of light (4%), and an inability to get LEDs that performed desired functions (e.g., dimming, specialty sockets). We asked all respondents what they would be willing to pay for an LED bulb. The median value for willingness-to-pay for an LED bulb was only $5, though more than a third of respondents (37%) did indicate that they were willing to pay $10 or more for an LED bulb.

4.2 IMPACT RESULTS

4.2.1 PROGRAM DATA VERIFICATION

We verified program participation by examining the product sales data for product eligibility and time of sale. Our review of the program tracking data found that all product sales were made during the eligible time period for eligible products. We also examined the program data to ensure that the appropriate base wattage was used to calculate program savings for each product. We were able to confirm the program used the appropriate base wattage for all SKUs except one. The program used 102 watts instead of 100 for one SKU.. The evaluation team used 100 watts as the base wattage for this SKU in its calculation of ex post gross savings. This SKU only accounted for 290 bulbs sold in PY4; thus, the difference between program tracked savings (ex ante gross) and evaluation calculated savings (ex post gross) is minimal.

4.2.2 PROGRAM PARTICIPATION

The program sold a total of 4,370,576 bulbs in PY4, exceeding both its original and revised bulb sales goals. The vast majority of bulbs sold (94%) were standard CFLs sold through the markdown program. The webstore sold a very small number of bulbs though it did sell the first LEDs discounted through the program.

Table 10. Bulb Sales by Type and Sales Channel

Bulb Type	Markdown	Webstore
Standard CFL	4,097,905	1,047
Specialty CFL	270,933	673
LEDs	0	18
Total	**4,368,838**	**1,738**

Sales primarily took place through big box retailers and do-it-yourself stores—97% of total bulb sales went through one of these store types (Table 11). Discount stores, a new program retailer type in PY4, make up much of the remaining sales through the program.

Table 11. Bulb Sales by Retailer Type

Retailer Type	Total Bulb Sales	% of Total Bulb Sales
Big Box	2,820,055	65%
DIY	1,412,077	32%
Discount	94,707	2%
Independent Hardware	31,139	1%
Grocery	10,350	< 1%
Online Store	1,738	< 1%
Drug Store	510	< 1%
Total	**4,370,576**	**100%**

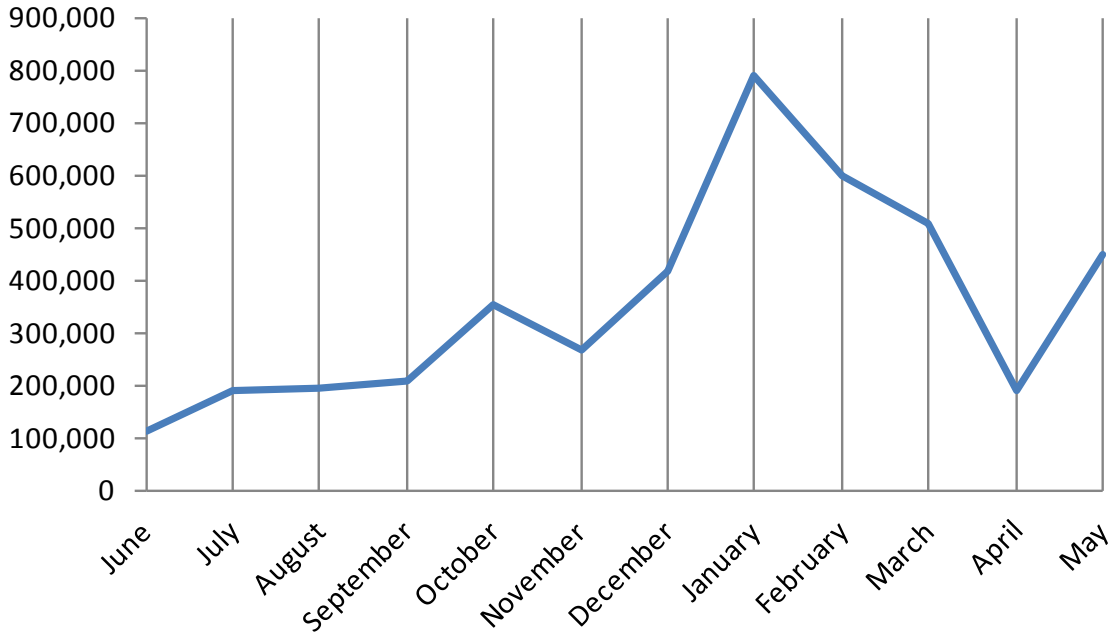
A large majority of CFLs sold (82%) were in the 12-18 watt range, which is equivalent to a 60-watt incandescent. EISA impacts 60-watt equivalent bulbs in 2014. The 2012 Statewide TRM adjusts baseline wattages one year after EISA takes effect for a given wattage. So the large majority of program sales will not be affected by EISA baseline adjustments until PY7. Starting in PY5, the baseline will drop for 100-watt equivalents, which made up 9% of PY4 sales. Next up are 75-watt equivalents in PY6, which made up only 5% of program sales. The impact of EISA on program savings should be relatively minor until PY7 (2014–2015).

Table 12. Program Bulb Sales by Wattage

CFL Wattage Range	Incandescent Equivalent	Number	Percent
7	25	1,099	<1 %
9	34	3,331	<1 %
9-11	40	194,652	4%
12-18	60	3,560,578	82%
18-28	75	199,929	5%
23-33	100	396,702	9%
30	125	208	<1 %
39-42	150	8,559	<1 %
55-65	200	3,780	<1 %

Bulb sales were steady for the first half of the program year. The program ran promotions that increased the incentive on some products. The promotional pricing had the intended effect of increasing sales beginning in October. Sales peaked in January then dropped back to earlier levels in April when prices returned to their earlier levels.

Figure 6. Program Bulb Sales by Month



4.2.3 Gross Impacts

Table 13 outlines the ex ante and ex post gross savings from sales of efficient lighting made during PY4. The Residential Lighting Program's gross realization rate for PY4 sales is 1.18.

Table 13. PY4 Residential Lighting Sales Ex Ante and Ex Post Gross Savings

	Ex Ante Gross Impacts		Ex Post Gross Impacts	
	MW[a]	MWh	MW	MWh
Residential Lighting Program	--	183,587	22.,89	216,282
PY4 Sales Gross Realization Rate 1.18				

[a] Conservation Services Group (CSG), the implementer, is not required to track demand savings.

Note: Realization Rate = Ex Post Value / Ex Ante Value.

Ex post gross savings are higher than ex ante gross savings due to methodological differences in how the program and our evaluation calculates gross savings:

- The program savings method assumes that 100% of program sales are installed in residential spaces. Our evaluation assumes that 3% of bulbs are installed in commercial spaces that have greater hours of use.
- The program savings method assumes residential bulbs are used for 854 hours a year. The evaluation applied the 2012 Statewide TRM hours of use assumptions, which specify 938 hours for residential spaces and 3,198 for miscellaneous commercial spaces.

Table 14 provides the calculation details for ex post gross savings from sales of efficient lighting in PY4 by bulb type. The per unit values and total gross energy savings would apply if 100% of bulbs sold in PY4 were installed in PY4.

Table 14. PY4 Residential Lighting Sales Ex Post Gross Impacts

Measure	Verified Participation	Per Unit Energy Impact	Total PY4 Sales Gross Energy (MWh)	Per Unit Demand Impact	Total PY4 Sales Gross Demand (MW)
Standard CFLs	4,098,952	49.3	202,466	.0052	21.23
Specialty CFLs	271,606	50.86	13,815	.0061	1.66
LEDs	18	45.02	0.81	.0051	0.00009
Total	**4,370,576**	**49.49**	**216,382**	**.0052**	**22.89**

[a] Total gross impacts are based on the application of deemed fixed savings values to verified participation numbers.

Because some bulbs sold are put in storage for later installation, an installation adjustment factor is required to calculate gross savings achieved in PY4. We used the 2012 Statewide TRM method that banks savings from PY4 sales for application in future years. Table 15 provides the savings values from sales made in PY4 that are achieved in PY4 and the savings that will be achieved in PY5 and PY6. As discussed earlier, the 2012 TRM method assumes that 98% of CFLs will be installed within three years and 2% of bulbs will never be installed. Therefore, if one were to sum the yearly savings across the three years in Table 15, the total will not equal the total PY4 gross savings in Table 14.

In addition, the 2012 TRM requires an adjustment in baseline savings for EISA-impacted bulbs. Beginning in PY5, the baseline for 100-watt equivalent CFLs drops to 72 watts, and in PY6 the baseline wattage for 75-watt equivalent CFLs drops to 53 watts. We have made the appropriate adjustments to the banked savings for 100-watt equivalent CFLs sold in PY4 that will be installed in PY5 and PY6. We have made similar adjustments for 75-watt equivalent CFLs sold in PY4 that will be installed in PY6.[19]

[19] Some specialty reflector bulbs also fall under EISA regulations. The 2012 TRM does not require a baseline adjustment for these specialty bulbs. For this evaluation we followed the 2012 TRM guidelines and did not adjust the baseline wattages for these specialty bulbs. If the TRM is updated in 2013 to reflect EISA's impact on specialty reflectors, we will need to adjust PY5 and PY6 banked savings for a handful specialty bulb SKUs sold in PY4.

Table 15. PY4 Residential Lighting Sales Yearly Gross Impacts

Measure	Energy (MWh)			Demand (MW)		
	PY4	PY5	PY6	PY4	PY5	PY6
Standard CFLs	140,714	29,616	24,654	14.75	3.115	2.59
Specialty CFLs	10,983	1,382	1,174	1.32	0.17	0.14
LEDs	0.81	0	0	0.00009	0	0
Total	**151,698**	**30,998**	**25,828**	**16.07**	**3.27**	**2.73**

AIC chose to begin the application of the 2012 Statewide TRM installation rate method in PY3. Therefore, PY4 achieved ex post gross savings in Table 16 is the result of sales made in PY3 but installed in PY4 and sales made in PY4 and installed in PY4. Ex ante gross savings incorporates the program tracking installation rate of 93%.

Table 16. PY4 Residential Lighting Program Achieved Gross Impacts

Sales Year – Install Year	Ex Ante Gross Energy (MWh)	Ex Post Gross Energy (MWh)	Ex Post Gross Demand(MW)
PY3 – Year 2	--	23,889	2.44
PY4 – Year 1	170,736	151,698	16.07
Total PY4 Gross Savings	**170,736**	**175,587**	**18.51**
PY4 Achieved Gross Realization Rate		*1.03*	

[a] CSG is not required to track demand savings.

Note: Realization Rate = Ex Post Value / Ex Ante Value.

The Residential Lighting Program's realization rate for PY4 achieved gross energy savings is 1.03. Ex post savings are different from ex ante savings for several methodological reasons. As noted earlier, ex post gross savings are higher than ex ante gross savings because:

- The program savings method assumes that 100% of program sales are installed in residential spaces. Our evaluation assumes that 3% of bulbs are installed in commercial spaces that have greater hours of use.

- The program savings method assumes residential bulbs are used for 854 hours a year. The evaluation applied the 2012 Statewide TRM hours of use assumptions, which specify 938 hours for residential spaces and 3,198 for miscellaneous commercial spaces.

Both ex post gross and ex post ante savings decrease with the application of an installation rate. The drop in ex post gross savings is greater than that for ex ante achieved savings because:

- The evaluation applied the 2012 Statewide TRM banked savings method whereas the program tracking used a single installation rate of 93%.

4.2.4 NET IMPACTS

We applied the most recent evaluation estimated NTGR of .83 to calculate PY4 ex post net savings. As discussed earlier, the NTGR was estimated in PY2 and used in the evaluation of both PY2 and PY3 sales. Program-tracked net savings used the same NTGR.

Table 17. PY4 Residential Lighting Program Net Energy Impacts

	Ex Ante Net Impacts		Ex Post Net Impacts	
	MW[a]	MWh	MW	MWh
Residential Lighting Program	--	141,892	15.36	145,737
			Net Realization Rate	*1.03*

[a] CSG is not required to track demand savings.

Note: Realization Rate = Ex Post Value / Ex Ante Value.

The Residential Lighting Program's realization rate for net energy savings is 1.03. The difference between ex ante and ex post net savings is due to the reasons cited above in the discussion of gross savings.

4.3 INPUTS FOR FUTURE PROGRAM PLANNING

The in-home lighting study is a task that spans PY4 and PY5. The data collection began in late PY4 and was completed in early PY5. For PY5, we will conduct additional analyses of the lighting study that will provide an updated CFL installation rate, program spillover, CFL usage by room type, and additional comparisons of the 2010 and 2012 study results. We will provide AIC with a memo outlining these results in late 2012.

A. APPENDIX: DATA COLLECTION INSTRUMENTS

Participating Retailers Interview Guide

Retailer Interview Guide FINAL 090512.

In Home Audit Recruiter, Auditor Instrument, and Home Owner Survey

AIU Lighting Study Recruiter FINAL 0515

AIU Home Study Auditor Instrument Fl

AIU Home Study Home Owner Survey

B. APPENDIX - IMPLEMENTATION MODEL

The evaluation team created an implementation model for the Residential Lighting Program evaluated in PY4. An implementation model is a graphic presentation of the intervention—what occurs and who undertakes the functional activities of the program. The model is displayed using a multi-level Visio document that has various functions in its rows, and key stakeholders and populations in the columns. We determined the functions, stakeholders, and processes through a review of the available program documentation and further refined them based on interviews with program staff. This model does not attempt to assess the effects of the program.

The model is organized by function and the stakeholders involved.

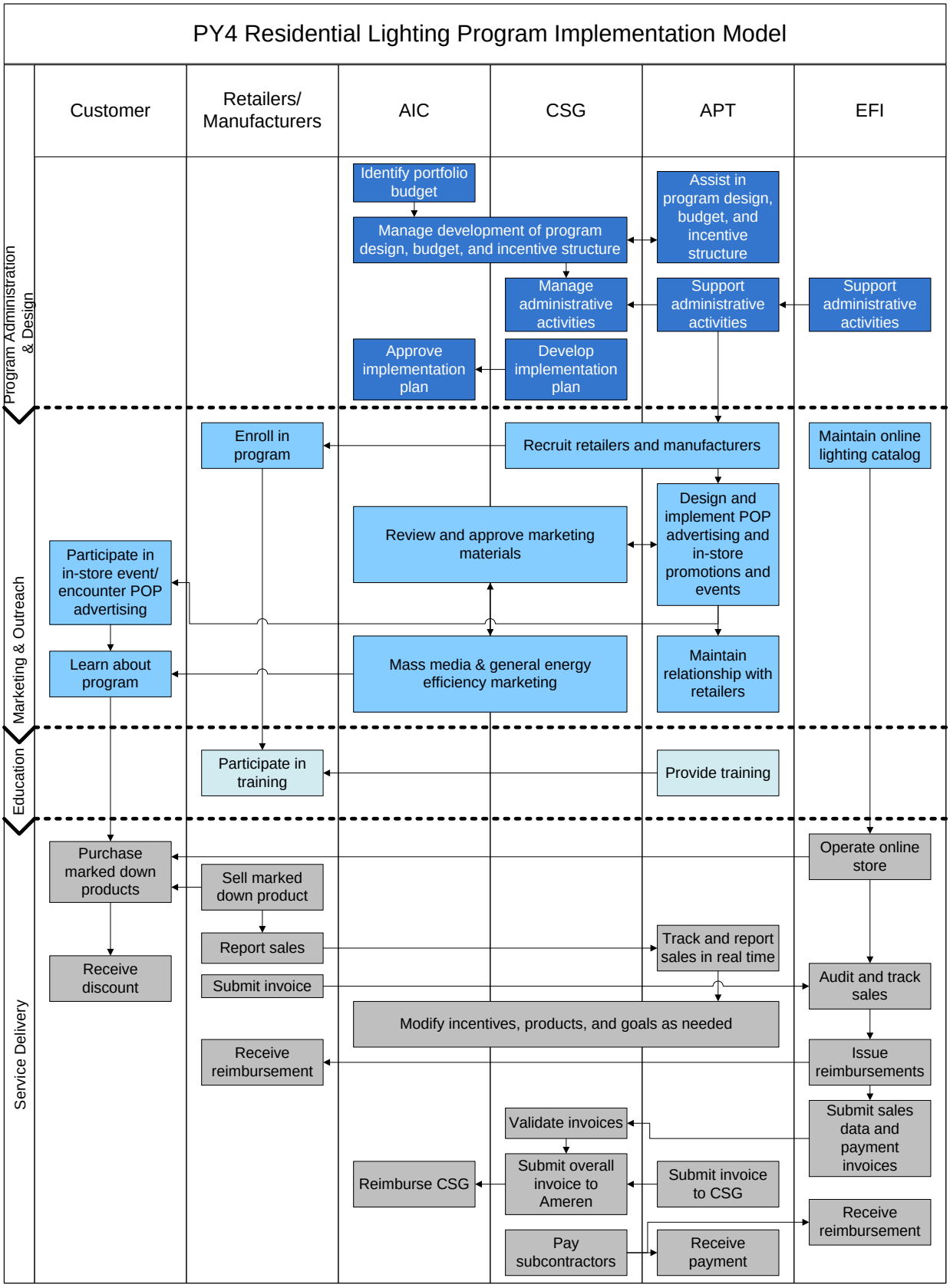
- **Functions** represent the discrete functions inherent to the program. These functions include program administration and design, marketing and outreach, education, service delivery, and evaluation. Service delivery encompasses activities that are directed towards intervention recipients and, for this model, is a catchall for any activity not included in the other functions.
- **Stakeholders** include the various providers who are involved in program delivery or receive program services. Stakeholders include AIC customers, retailers and manufacturers of efficient lighting, Conservation Services Group (CSG), Applied Proactive Technologies (APT), Energy Federation, Inc. (EFI) and AIC.

For the Residential Lighting Program, key program functions include:

- **Program Administration and Design**: CSG and APT work together to establish the program design, budget, and incentive structure, while AIC reviews and accepts proposed program features.
- **Marketing & Outreach**: CSG and APT work together to recruit retailers to participate in the program. APT is the primary provider of marketing and outreach to customers via point of purchase marketing materials. AIC and CSG approve these materials. AIC and CSG also conduct general energy efficiency marketing to AIC customers. EFI maintains an online lighting store where customers can purchase discounted lighting. However, the site is not actively marketed to customers. Customers may come upon the site while visiting the AIC website.
- **Education**: APT is the main driver and implementer of the program's education efforts—training retailers participating in program delivery.
- **Service Delivery (Customer Facing):** For the customer, the service delivery process is very simple—they purchase a marked down product and receive savings at the time of sale, with no further action required.
- **Service Delivery (Rebate Processing)**: Retailers and manufacturers delivering the product to customers track sales and submit data to both APT and EFI. APT receives raw sales data, used to track the program progress in "real time." EFI receives invoices that they review to ensure they are consistent with program requirements and are correct, and then rebate retailers for the markdowns. EFI then invoices CSG, which reviews sales figures and invoices AIC for the final reimbursement.
- **Service Delivery (QA/QC):** Both EFI and CSG review invoices and sales figures as needed before the final invoice is delivered to AIC. All program parties are in close contact as needed

to address issues.

Below we provide the Residential Lighting Program implementation model.


PY4 Residential Lighting Program Implementation Model
Customer
Retailers/ Manufacturers
AIC
CSG
APT
EFI
Program Administration & Design
Marketing & Outreach
Education
Service Delivery
Identify portfolio budget
Assist in program design, budget, and incentive structure
Manage development of program design, budget, and incentive structure
Manage administrative activities
Support administrative activities
Support administrative activities
Approve implementation plan
Develop implementation plan
Enroll in program
Recruit retailers and manufacturers
Maintain online lighting catalog
Design and implement POP advertising and in-store promotions and events
Review and approve marketing materials
Participate in in-store event/ encounter POP advertising
Learn about program
Mass media & general energy efficiency marketing
Maintain relationship with retailers
Participate in training
Provide training
Purchase marked down products
Sell marked down product
Operate online store
Receive discount
Report sales
Track and report sales in real time
Submit invoice
Audit and track sales
Modify incentives, products, and goals as needed
Receive reimbursement
Issue reimbursements
Validate invoices
Submit sales data and payment invoices
Reimburse CSG
Submit overall invoice to Ameren
Submit invoice to CSG
Receive reimbursement
Pay subcontractors
Receive payment