Department for Energy Development and Independence

Stimulating Energy Efficiency in Kentucky

KENTUCKY'S ACTION PLAN FOR ENERGY EFFICIENCY

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THE KENTUCKY DEPARTMENT FOR ENERGY DEVELOPMENT AND INDEPENDENCE
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FOREWORD

Kentucky's Action Plan for Energy Efficiency (Action Plan or Plan) was prepared by the Midwest Energy Efficiency Alliance (MEEA) with the Kentucky Energy and Environment Cabinet's (EEC) Department for Energy Development and Independence (DEDI). This Action Plan is a key deliverable in the three-year *Stimulating Energy Efficiency in Kentucky* (SEE KY) process and fulfills the "Phase One" requirements under DEDI's cooperative agreement with the United States Department of Energy (U.S. DOE), Award No. DE-EE0004440.

MEEA and DEDI would like to thank all of the individuals, organizations, corporations and governmental entities (referred to generally as the "stakeholders") that provided feedback throughout the SEE KY process on the many opportunities for expanding Kentucky's energy efficiency efforts. Without this dedicated group of stakeholders, the Action Plan would not have been possible.

ABOUT THE AUTHORS AND PROJECT TEAM

DEDI's mission is to improve the quality and security of life for all Kentuckians by creating efficient, sustainable energy solutions and strategies; by protecting the environment; and by creating a base for strong economic growth. DEDI is a department of the EEC.

MEEA is a non-profit membership organization whose mission is to promote energy efficiency policy and practices through research and analysis and by engaging a cross-section of entities who are interested in energy efficiency. MEEA's members include utilities, manufacturers, academic research institutions, State and local governments and advocates in 13 Midwestern states. MEEA is DEDI's contractor, tasked with managing the SEE KY stakeholder process and developing the Action Plan.

Smith Management Group (SMG) is a Kentucky consulting firm with extensive experience in energy production, regulatory requirements and utility rates and consumption issues. SMG is MEEA's subcontractor, providing local technical expertise during the stakeholder process as well as facilitation of the collaborative meeting series.

The American Council for an Energy-Efficient Economy (ACEEE) is a nonprofit organization that provides technical analysis, advising and collaboration to advance energy efficiency. ACEEE provided research and analyses of Kentucky's energy efficiency landscape via additional technical assistance funding received directly from U.S. DOE.

SUMMARY OF FINDINGS

This Action Plan is the resulting document from "Phase One" of DEDI's three-year SEE KY grant through the U.S. DOE.

In October 2010, DEDI embarked on the SEE KY project to develop recommendations for Kentuckians to further energy efficiency efforts already underway in the Commonwealth and to spur more significant investment in efficiency. *The ultimate goal of the project is to achieve one percent annual electric savings in Kentucky through energy efficiency*. Per DEDI's cooperative agreement with U.S. DOE, this goal will be measured via savings in the electricity sector only; savings realized from natural gas energy efficiency programs will be complimentary and additional to the annual electric savings goal. Otherwise, DEDI was given discretion to work with stakeholders on how progress towards the one percent savings goal will be calculated.[1]

This Action Plan sets out specific measures (referred to as "*action items*") that were recommended by stakeholders as essential to carrying out the SEE KY one percent annual savings goal. Action items are the result of a comprehensive series of meetings with stakeholders in Kentucky over the last two years. The action items are framed in planning terms, e.g. persons/organizations responsible for implementation, resource requirements, potential allies, potential roadblocks, etc. Identifying funding sources for many action items will be challenging, and will be dependent on Kentucky's economy moving forward, the legislative climate, and annual budget allocations. In addition, given that each action item has its own unique challenges, a subset of items function as a call for work groups to address a specific issue. Additional study and stakeholder collaboration is needed to identify concrete solutions and timelines for implementation, which will then replace these initial action items.

It should be noted that the actions discussed in this Plan are voluntary and/or may require legislative action; the stakeholders, for the most part, had little appetite for mandatory measures. Throughout the SEE KY process, stakeholders also stressed the importance of incorporating only those action items that have significant economic potential and are the most likely to capture Kentucky's capacity for energy savings. Further, because the action items were devised collaboratively, they reflect recommendations from the very individuals that are most affected by energy efficiency programs and policies in Kentucky – and thus have the most at stake.

As with any process involving multiple stakeholders, a variety of opinions and views were brought to the discussions. This plan attempts to capture the key themes that developed during the SEE KY process but the reader should be aware that not all participants agreed with each recommendation in this plan. Thus, mention of specific individuals or organizations should not be construed to mean that those individuals or organizations endorsed every action listed in this plan.

The following section summarizes how the action items are organized in this plan.

[1] The agreed-upon approach to measuring Kentucky's progress toward the one percent goal is described in action item A.1.

ACTION ITEMS OVERVIEW

Note: Short-term = Less than 1 year; Near-term = 1-3 years; Long-term = 3-4 years

ALL SECTORS

Short-term

A.1. ***Measure statewide energy efficiency targets using electric utility data reported voluntarily to DEDI***

A.2. ***Create a peer exchange mechanism specifically for gas and electric utilities to share information, experiences and best practices***

A.3. ***Condition State funding on minimum energy efficiency outcomes taking into account life cycle costs***

Near-term

A.4. ***Focus on robust education and training programs tailored to each consumer sector***

A.5. ***Convene a work group to evaluate effects of utility rate design on energy efficiency incentives***

Long-term

A.6. ***Assist Kentucky's governmental and municipal utilities to develop a voluntary suite of energy efficiency programs***

RESIDENTIAL SECTOR

Short-term

R.1. ***Support Kentucky Home Performance to increase market penetration***

Near-term

R.2. ***Improve residential housing stock via utility and community-sponsored weatherization***

Long-term

R.3. ***Improve the energy efficiency of residential buildings through consistent implementation of residential building energy codes***

R.4. ***Increase innovative energy efficiency financing options, such as on-bill financing***

R.5. ***Provide incentives for energy efficiency retrofits in residential rental property***

R.6. ***Develop an advisory group to address options for replacing inefficient manufactured homes***

Legislative Recommendations

R.7. ***Expand existing State-provided energy efficiency incentives***

COMMERCIAL SECTOR

Near-term

C.1. ***Expand access to low-cost financing for private commercial entities***

C.2. ***Recapitalize the Kentucky Green Bank for public buildings***

C.3. ***Promote energy efficiency via a "lead by example" approach to State-owned facilities***

Long-term

C.4. ***Improve the energy efficiency of commercial buildings through consistent implementation of commercial building energy codes***

C.5. ***Devise creative incentives for commercial rental property***

Legislative Recommendation

C.6. ***Expand State energy efficiency incentives***

INDUSTRIAL SECTOR

Near-term

I.1. ***Establish a revolving loan fund for industrial energy efficiency improvements***

I.2. ***Convene a work group to discuss the application of the DSM Statute's opt-out provision***

Long-term

I.3. ***Encourage Kentucky's industries to voluntarily share energy efficiency performance data and best practices***

Legislative Recommendation

I.4. ***Modify existing State-level incentives to encourage investment in energy efficiency***

FEDERAL ACTION ITEMS

F.1. ***USDOE should work with US DHS to evaluate how FEMA funds are provided for home rebuilding or replacement in the wake of natural disasters, and consider requiring that new structures be built better than code (e.g. ENERGY STAR).***

F.2. ***US DOE should take a lead role in working with US DHHS to enhance the delivery of energy efficiency and conservation solutions to citizens served by LIHEAP and Weatherization programs.***

F.3. ***US DOE needs to assume a lead role in working with other federal agencies (USDA, HUD, EPA) that offer federal infrastructure programs and grants for cities and states to set energy efficiency standards as a condition of awards.***

F.4. ***US DOE should coordinate with HUD to improve energy efficiency standards for manufactured homes that are appropriate for various climate zones.***

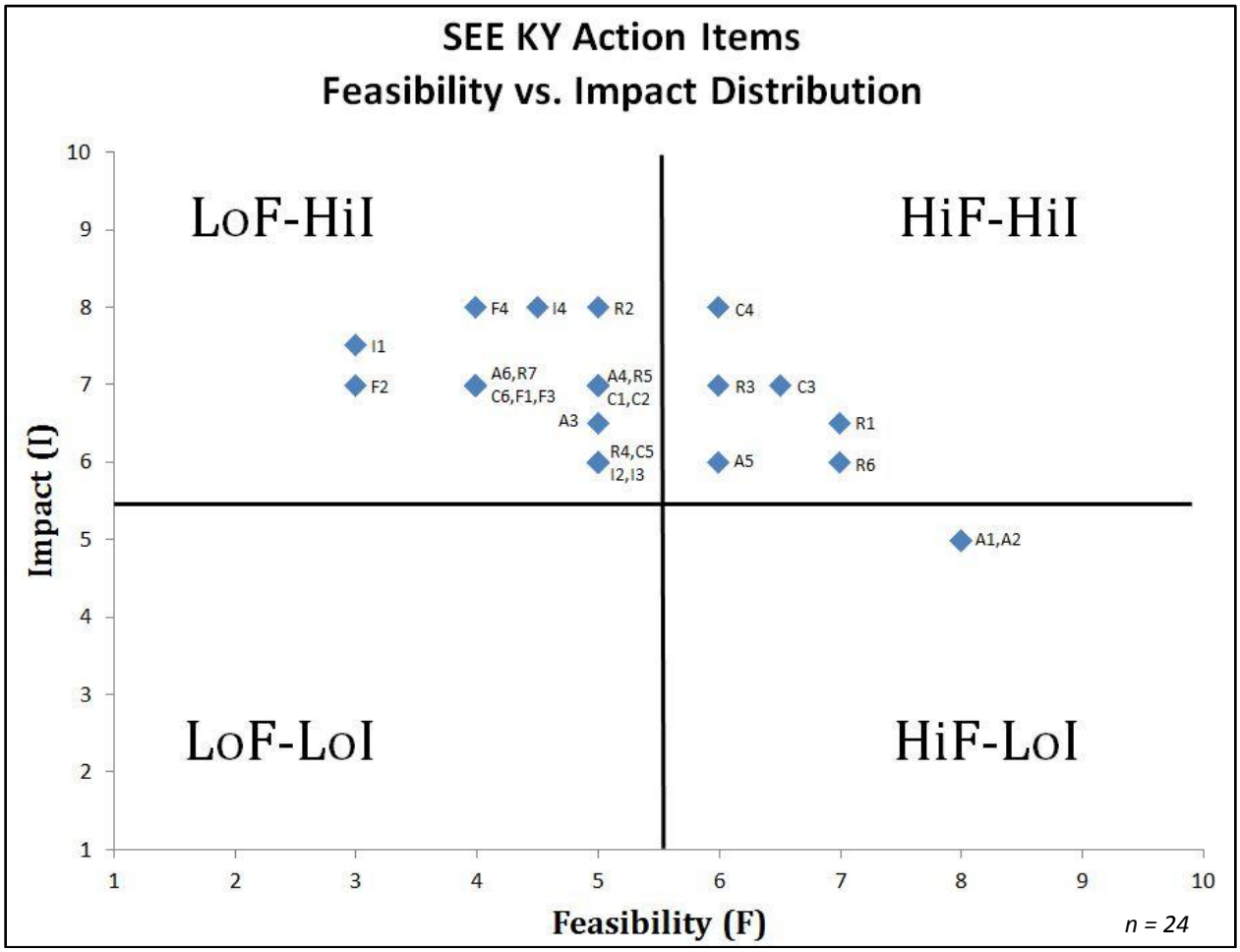
IMPACT & FEASIBILITY CHART

As a part of the development of this Action Plan, approximately 80 stakeholders that participated in SEE KY were given the opportunity to comment on the plan itself and provide a ranking on each of the individual action items. Stakeholders were asked to rank each action item based on two criteria, as defined below:

- **Feasibility** – Score indicates the extent of resources (money and/or people) that would be required to carry out a particular action item and/or the degree to which political considerations may impede its implementation.
- **Impact** – Score indicates the potential for energy savings (either short-term or long-term) with a particular action item.

Once all the action items were ranked by individuals, the median was determined. The following chart is a graphical representation of the median of 24 rankings for all action items presented in this plan. Action items fall into one of four quadrants, indicating their combined feasibility and impact. The following categories are intended help guide implementation and planning:

- High feasibility/High impact (HiF-HiI)
- Low feasibility/High impact (LoF-HiI)
- High feasibility/Low impact (HiF-LoI)
- Low feasibility/Low impact (LoF-LoI)



The chart shows that the median rankings from all stakeholders placed all but two action items above the mid-point for potential impact on energy savings. This is an encouraging sign indicating that, taken as a whole, stakeholders believe that the nearly all of action items proposed in this plan are of value to pursue. Not surprisingly, the Federal Action Items scored lower on the Feasibility scale, while A.1 (voluntary utility data reporting) and A.2 (utility DSM peer exchange forum) were determined to be highly feasible, but with less of an impact on energy savings overall than other action items.

INTRODUCTION

THE ROLE OF KENTUCKY'S ACTION PLAN FOR ENERGY EFFICIENCY

This Action Plan sets out specific action items intended to further energy efficiency efforts that have been underway in the Commonwealth of Kentucky for at least two decades. During that time, a host of entities and initiatives have championed energy efficiency in Kentucky, including the following:

- Governor Steve Beshear, in his 2008 plan entitled *Intelligent Energy Choices for Kentucky's Future: Kentucky's 7-Point Strategy for Energy Independence* (Governor's Energy Strategy) which identified energy efficiency as the leading strategy;
- The Kentucky General Assembly through its passage of the 1994 Demand Side Management Statute (DSM Statute);[2] the 2007 Incentives for Energy Independence Act (also known as House Bill 1) and House Bill 2, 2008 Session;[3]
- Several of Kentucky's electric utilities who have offered demand side management programs as a service to their customers – in some cases for over 20 years – despite the absence of a statutory directive requiring them to do so;[4]
- The Kentucky Public Service Commission (PSC) in its 2008 report to the General Assembly concerning the ways in which efficiency programs are administered in Kentucky;[5]
- DEDI and U.S. DOE through the three-year grant that made SEE KY possible, and the numerous stakeholders in the SEE KY process who have participated in extensive one-on-one meetings, collaborative sessions and work groups;
- DEDI's history with American Recovery and Reinvestment Act (Recovery Act) funds and (to a lesser extent) Federal State Energy Program formula dollars; and
- EEC's 2011 *Climate Action Plan*, addressing Kentucky's strategy to minimize climate change while becoming more efficient, more energy independent and spurring economic growth.[6]

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[2] *See* KRS 278.285. The DSM Statute allows utilities to recover energy efficiency and demand side management (DSM) program costs through a customer surcharge mechanism, as long they meet certain cost-effectiveness requirements. The Statute does not, however, expressly authorize the PSC to direct utilities to implement particular programs.

[3] *See* KRS 154.27-010 to 154.27-090 (House Bill 1) and KRS 141.435 to 141.437 (House Bill 2). These bills created, among other things, an array of tax credits for energy efficiency investments in residential and commercial property.

[4] Over the last two decades Kentucky's utilities have increased their demand side management program budgets exponentially. Compare, for example, Kentucky's total program budget of $2.2 million reported in 2008, which increased to over $48 million in 2011. *See*, http://www.cee1.org/ee-pe/2008/us_electric.php; *see also*, http://www.cee1.org/files/CEE%20AIR%20Data%20Tables%202011.pdf (citing data at p. 11). Kentucky's utilities have also recently made significant commitments to efficiency programming and targets. *See, e.g.*, Duke Energy Kentucky's 2011 Integrated Resource Plan (IRP), pp. 22-23 (listing DSM programs and articulating a goal of reducing total peak energy consumption by 22 MW across all programs by 2017), available at: http://psc.ky.gov/PSCSCF/2011%20cases/201100235/20110701_Duke%20Energy_Application%20and%20Petition.pdf; East Kentucky Power Cooperative's 2012 IRP, pp. 4-6, 73-110 (discussing DSM programs and a complimentary peak energy consumption reduction goal of approximately 50 MW over a 5 year period), available at: http://psc.ky.gov/pscscf/2012%20cases/2012-00149/20120420_EKPC_Integrated%20Resource%20Plan.pdf; Big Rivers Electric Corporation's 2010 IRP, pp. ii and Section 8 (citing plan to launch $1M in DSM programming, with expected savings of a cumulative 14 MW reduction in winter peak demand and a 10 MW reduction in summer peak demand by 2025), available at: http://psc.ky.gov/pscscf/2010%20cases/2010-00443/20101115_Big%20Rivers_IRP.pdf.

[5] *See* 2007 2d Extra. Sess. Ky. Acts ch. 1, sec. 50. As part of House Bill 1, the General Assembly directed the PSC to consider the ways in which efficiency programs are administered in Kentucky. The resulting report identified a number of high priority energy efficiency issues for Kentucky to address – from consumer education to alternative rate structures – many of which are parallel with feedback received during the SEE KY process. Notations are made where recommendations in that report parallel SEE KY action items. The report is available at: http://psc.ky.gov/agencies/psc/industry/electric/hb1report.pdf.

[6] *See* http://www.kyclimatechange.us/.

This Action Plan has been developed during the SEE KY process through stakeholder engagement over a period of two years and builds on decades of Kentucky's energy efficiency efforts. The actions described herein are those which were judged by stakeholders to have: the greatest potential of succeeding; positive impacts on Kentucky's economic outlook; and the highest feasibility for capturing the State's significant energy savings potential. Though several of the action items are still in flux and will require additional stakeholder engagement to define their paths forward, to the extent possible an implementation plan is identified for each recommendation in this Plan.

This Action Plan is a living document which will evolve as actions are completed and new actions are identified as useful, compelling and necessary to achieving Kentucky's efficiency goals. As new opportunities appear, they will be added to the Plan. DEDI will periodically review action items, revise them as necessary and will release an updated Action Plan as progress occurs.

It is also important to recognize that the Action Plan is not merely a roadmap for governmental efforts; rather it describes a continuing collaborative effort that will include feedback and commitments by stakeholders from across the Commonwealth and across businesses, government, advocacy groups and utilities. As noted previously, this collaborative effort will involve work groups to identify concrete solutions for specific issues, which will then replace these initial action items.

The action items that follow are divided into four major sections that address each of Kentucky's energy-consuming rate classes: (1) *all sectors*; (2) *residential*; (3) *commercial*; and (4) *industrial*. Actions are then further organized by the expected timeframe for completion: those that have the potential to be accomplished in the *short-term* (less than one year); in the *near-term* (between one and three years); and in the *long-term* (between three and four years). Some actions items may be addressed legislatively. In addition, the plan includes recommendations that concern energy efficiency activities at the federal level and thus have ramifications for all states.

Key actions recommended in this Plan include:

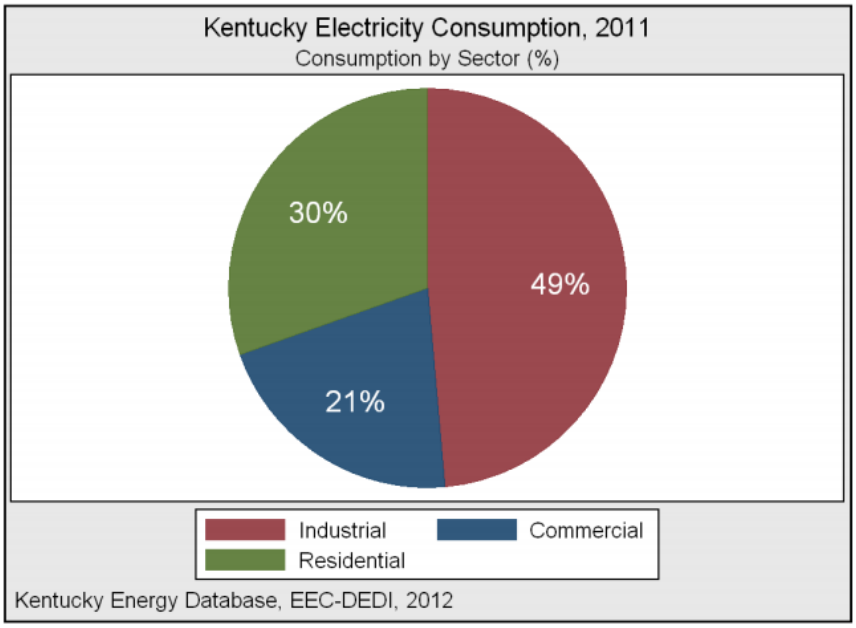
- A simple mechanism to track energy gains from utility-run efficiency programs;
- Creation of a peer exchange for utilities to share information and experiences;
- Providing forums for robust education and training to all rate classes;
- Expanding current State-run programs, such as Kentucky Home Performance;
- Increasing State-level energy efficiency incentives for industrial, commercial and residential sectors;
- Addressing the stock of energy inefficient manufactured homes in Kentucky; and
- Uniform compliance with residential and commercial building energy codes.

The description of each action item also includes the genesis of the idea and how it was shaped by stakeholder input, likely champions for the effort and a list of tasks, resources and a proposed timeline for completion.

THE GOVERNOR'S ENERGY STRATEGY AND THE SEE KY PROCESS

This Action Plan is the main document resulting from the SEE KY process and is the primary means of achieving both the goals of that process and the energy efficiency goals articulated five years ago in the Governor's Energy Strategy.

The Governor's Energy Strategy articulated seven key ways to ensure Kentucky's energy security, create jobs and maintain low-cost, reliable energy into the future.[7] It identified energy efficiency as the first and foremost vehicle to accomplish this objective.[8] In the long-term, the Governor set out a goal to offset a cumulative 18 percent of Kentucky's projected 2025 total energy demand through efficiency, 16 percent of which should come from reductions in natural gas and electric utility use.[9] The Energy Strategy described energy efficiency as the fastest, cleanest, most cost-effective and most secure way to meet Kentucky's growing energy demands.[10] Investing in efficiency is particularly vital as energy rates rise. Even though Kentucky enjoys the fourth lowest electricity rates in the nation,[11] in the last decade residential prices rose by 57 percent; commercial prices by 53 percent; and industrial prices by 68 percent; at the same time, Kentucky's energy intensity, per capita, is among the highest in the nation.[12] This high usage, combined with rising rates, make it even more vital that Kentucky ramp up its energy efficiency efforts in the coming years. Another driving factor in Kentucky is the high proportion of industrial electricity consumption, representing 49 percent of the State's total electricity usage.



One of the key objectives of the SEE KY process is to develop recommendations for Kentuckians to use efficiency to mitigate rising energy costs. Moreover, SEE KY is complimentary to and is a means to advance the energy efficiency recommendations in the Governor's Energy Strategy.[13] For

[7] The complete Governor's Energy Strategy is available: http://energy.ky.gov/resources/Pages/EnergyPlan.aspx.
[8] *See* Strategy #1 of the Governor's Energy Strategy: Improve the Energy Efficiency of Kentucky's Homes, Buildings, Industries and Transportation Fleet, available at: http://energy.ky.gov/Energy%20Plan/Strategy%201%20Improve%20the%20energy%20efficiency%20of%20Kentucky%27s%20homes,%20buildings,%20industries%20and%20transportation%20fleet.pdf.
[9] The remaining 2% will come from transportation energy efficiency programs and vehicle fuel economy initiatives, which are not discussed in this Action Plan. *Id.*, p. 23.
[10] *See id.*, p. 13.
[11] In 2011, at $0.071 per kWh, Kentucky had the 4th lowest electricity prices in the United States after the coal and hydroelectric states of Idaho, Wyoming, and Washington. Source: Kentucky Energy Database, EEC-DEDI, 2012 (derived from 2011 U.S. Energy Information Administration [EIA] data).
[12] Kentucky Energy Profile 2012. Source: Kentucky Energy Database, EEC-DEDI, 2012 (derived from 2011 U.S. Energy Information Administration [EIA] data).
[13] The Governor's Energy Strategy identified ways Kentucky could achieve the 16% savings goal by 2025, several of which SEE KY has incorporated in some fashion into this Action Plan. For example, the Strategy recommended aggressive education, outreach and marketing to support all of Kentucky's energy efficiency activities. *Supra*, n. 8,

example, the SEE KY process's one percent annual electric savings goal paves the way for achieving the Governor's 16 percent energy efficiency goal (the mechanism for realizing these dual goals is set out in *Appendix D*). It is important to note that while the energy efficiency goal in the Governor's Energy Strategy includes both gas and electric savings, the SEE KY goal contemplates electric savings only; savings realized in the natural gas sector will be additional to the one percent savings goal. As a result, all mention of utilities in this Action Plan refers to electric, unless stated otherwise.

The SEE KY process consists of two phases:

- In **Phase One**, the primary tasks were to gather stakeholder feedback on both the opportunities and barriers to expanded efficiency in Kentucky and to generate an implementation plan to reach statewide energy savings goals. This Action Plan is the resulting implementation document from Phase One.
- In **Phase Two**, the main goal will be to carry out action items that are ripe for implementation and to continue to work with stakeholders on items still in process.

DEDI contracted MEEA in February 2011 to manage the stakeholder process and develop the Action Plan to accomplish the project goals. MEEA thereafter sub-contracted with SMG for local technical expertise and meeting facilitation.[14] The project team also coordinated their work with ACEEE, which provided research and analyses of Kentucky's energy efficiency landscape.

The stakeholder engagement process in Phase One was vital in shaping each action item set out in this Action Plan. A complete list of stakeholder participants is attached as *Appendix A* and a summary of key milestones in the process are attached as *Appendix B*. A list of ACEEE's reports referenced in the stakeholder process is provided in *Appendix C*. *Appendix D* provides a description of the methodology that will be used to measure and track progress on the one percent goal.

PROFILE OF ENERGY SERVICE IN KENTUCKY

Electricity in Kentucky is provided to customers by one of the following types of entities: (1) retail electric suppliers that are regulated by the PSC; (2) un-regulated municipally owned utilities; or (3) the Tennessee Valley Authority (TVA) (also un-regulated) and its associated distributors within the Commonwealth. Furthermore, each electric supplier has the exclusive right to serve the customers within its territory.

Electric suppliers that are regulated by the PSC fall into two categories: The first includes investor-owned utilities and rural electric cooperatives. There are three investor-owned utilities in Kentucky: Duke Energy Kentucky (Duke), American Electric Power/Kentucky Power (AEP), and Louisville Gas & Electric/Kentucky Utilities (LG&E). Each of these companies generates or purchases the power required to meet its respective customers' electricity demands. There are 19 rural electric cooperatives that are regulated by the PSC. Sixteen of these jointly own and purchase power from East Kentucky Power Cooperative (EKPC). The remaining three jointly own and purchase power from Big Rivers Electric Corporation (Big Rivers). A "distribution" cooperative typically receives power from its respective "generation and transmission" cooperative at a substation in the distributor's service territory.

There are five rural electric cooperatives and 10 municipal utilities that purchase all of their electricity from TVA. These cooperatives and municipalities then resell and distribute electricity to

Strategy #1 of Governor's Energy Strategy, pp. 21-23, 26. This was one of the leading stakeholder recommendations in SEE KY, and as a result is applied broadly to each energy-consuming sector (*see* action item A.4 herein).

[14] MEEA and SMG's involvement in the project will conclude in September of 2013, at which point DEDI will continue to work with stakeholders across Kentucky to implement the remaining action items.

customers within their service territories. Separately, TVA also directly serves several large industrial customers within Kentucky.

Additionally, there are 18 municipal electric suppliers that do not receive electricity from TVA. These municipal utilities either self-generate electricity—by owning and/or operating generating facilities—or purchase power from various sources. In the case of purchased power, a municipality may negotiate a guaranteed delivery of electricity from an investor owned utility or independent power producer, or purchase electricity on the market for distribution within its service area.

ACTION ITEMS

This Action Plan is the key document by which Kentucky will implement recommendations made throughout the SEE KY process. Stakeholder feedback confirms that there is significant untapped potential in Kentucky to capture greater energy savings through efficiency. The Action Plan serves as a means to capitalize on that potential.

The actions discussed in this Plan are voluntary; the stakeholders, for the most part, had little appetite for mandatory measures. Because this was a collaborative process involving the many diverse opinions of stakeholders representing, at times, conflicting interests, it was essential to find common ground and focus on action items that are the most economically and politically viable for Kentucky. While the Action Plan incorporates feedback from non-jurisdictional utilities, the resulting action items apply primarily to jurisdictional utilities, particularly regarding regulatory and statutory issues. Notations are made where that is not the case.

A. ACTION ITEMS FOR ALL SECTORS

Of the many recommendations MEEA and DEDI received throughout the stakeholder process, several applied broadly to Kentucky as a whole, regardless of rate class. This section includes the following recommendations which apply to all sectors:

Short-term

A.1. ***Measure statewide energy efficiency targets using electric utility data reported voluntarily to DEDI***

A.2. ***Create a peer exchange mechanism specifically for gas and electric utilities to share information, experiences and best practices***

A.3. ***Condition State funding on minimum energy efficiency outcomes taking into account life cycle costs***

Near-term

A.4. ***Focus on robust education and training programs tailored to each consumer sector***

A.5. ***Convene a work group to evaluate effects of utility rate design on energy efficiency incentives***

Long-term

A.6. ***Assist Kentucky's governmental and municipal utilities to develop a voluntary suite of energy efficiency programs***

Short Term Recommendations (Less Than 1 Year)

A.1. *Measure statewide energy efficiency targets using electric utility data reported voluntarily to DEDI*

Background and Stakeholder Observations

Regular tracking of the performance of energy efficiency programs across Kentucky is essential to evaluate progress towards the State's energy efficiency goals. As discussed above, this Action Plan complements the Governor's 16 percent efficiency goal as a voluntary statewide target to reduce energy consumption by one percent annually through energy efficiency.[15] Stakeholders throughout the SEE KY process have expressed support for this goal as a pragmatic means of moving

[15] As mentioned previously, the Governor's Energy Strategy articulates an 18 percent cumulative energy savings goal by 2025 for Kentucky, 16 percent of which will be attributed to reductions in energy consumption in the electric and natural gas sectors, with the remaining 2 percent coming from transportation energy efficiency programs. *Supra*, n. 8, Strategy #1 of Governor's Energy Strategy, p. 23. This 2 percent will not be discussed in the Action Plan.

Kentucky's energy efficiency efforts forward. Rigorously documenting and evaluating the impacts of energy efficiency programs in Kentucky is also imperative if utilities, regulatory staff and other stakeholders are to understand program performance.[16] This action item provides a two-part process to accomplish these goals that will include data collection and analysis.

Kentucky's DSM statute (KRS 278.285) does not require any particular reporting of yearly energy savings data from ratepayer-funded programs, other than what is minimally necessary to establish cost-effectiveness when a program is first proposed. In addition, many of the programs provided by Kentucky's electric cooperatives have not been developed under the DSM Statute.[17] As a result, stakeholders expressed concern that there is no consistent method to determine how well utility-run programs are performing, or how to measure progress towards statewide goals.

The project team discussed this issue with stakeholders at several points during the collaborative meeting series and an agreement was developed with many of Kentucky's utilities to voluntarily report energy efficiency program performance data to the State on an annual basis.

Implementation Plan

The project team's plan for implementing this action item is two-fold:

1. Participating utilities will annually report to DEDI a set of performance metrics for their energy efficiency and demand side management program suites.
2. DEDI will use these metrics to calculate progress on an annual basis towards Kentucky's energy efficiency goals.

The implementation plan for the data *collection* component of this action item is as follows:

1. ***WHO/WHAT*** – Participating utilities currently include LG&E, AEP, Duke, EKPC, Big Rivers and TVA.
    a) DEDI will act as the organizer and repository of the data, as well as the database manager.
    b) The participating utilities will be responsible for reporting annual data to DEDI in an agreed-upon format. A summary table of each utility's current level of commitment to voluntarily submit data, including rate classes and reporting due dates, is attached to this Action Plan as *Appendix D*.
    c) While the PSC has no defined role in data collection in this area, PSC staff has been highly supportive of this effort.

2. ***ACTION STATUS*** – There is agreement among the participating utilities to report program data. The utilities will report data concurrent with their annual DSM reporting obligations to the PSC. EKPC and TVA, who do not provide DSM reports to the PSC, will report data at or near the time they typically report to EIA. The only tasks left to be accomplished are:

[16] This action item parallels Recommendation No. 3 in the PSC's 2008 report, which suggested that Kentucky consider adopting recognized measurement and verification guidelines. *See* PSC Report, p. 26, available at: http://psc.ky.gov/agencies/psc/industry/electric/hb1report.pdf.

[17] Rather than participate in the DSM Statute's cost recovery mechanism, Kentucky's electric cooperatives file their programs through the PSC's tariff procedure and incorporate any associated costs into their base electric rates instead of through a customer surcharge.

a) Running a pilot phase with a sample set of data submitted prior to official launch; Two utilities have made attempts to pull the data and use the template and will provide feedback to DEDI;
b) Final discussions on definitions for each reporting metric and other wrap-up issues will be addressed in early 2013;
c) Ensuring that data are entered fully and accurately each year.

The project team does not expect this action item to require additional budget allocations. DEDI expects to use internal staff it already employs to manage the database and to troubleshoot any reporting issues.

The implementation plan for the data *analysis* component of this action item is as follows:

1. ***WHO*** – DEDI will use data to calculate progress toward annual goals and summarize findings.
2. ***WHAT*** – The data will be reviewed and analyzed as follows on an annual basis (a detailed summary of the data analysis approach is attached as *Appendix D*):
    a) The SEE KY goal incrementally ramps up initially in 2012-2014, to an annual one percent goal from 2015 through 2025.
    b) Percent savings will be calculated by taking the annual cumulative electric energy use reduced as a result of energy efficiency programs, compared to the preceding three year average total electricity consumption.[18] Percent savings will be measured in MWh for electric savings; MW of demand reduction will also be tracked.
    c) While specific natural gas targets will not be set, annual savings will nonetheless be tracked (Mcf) as with electric savings.
    d) In communicating progress toward annual goals, DEDI will generate four separate energy savings values each year:
        i. Residential energy savings, as compared with total residential consumption (average preceding 3 years);
        ii. Commercial energy savings, as compared with total commercial consumption (average preceding 3 years);
        iii. Industrial energy savings (where available), as compared with total industrial consumption (average preceding 3 years); and
        iv. Total energy savings, as compared with total energy consumption (average preceding 3 years).

3. ***ACTION STATUS*** – In process; data compilation will began in early 2013, using 2012 data; analysis will follow collection each year.

It is important to note that performance data from industrial programs will be limited, as EKPC, Duke and TVA are the only participating utilities who offer programs for that sector. EKPC and TVA build all energy efficiency program costs into their base rates. In contrast, the investor-owned utilities use the DSM Statute as a means to recover energy efficiency program costs through each rate class. The DSM Statute allows industrial customers with energy intensive processes to opt out entirely from participating in DSM programs, which every industrial customer in these utilities' service territories has taken advantage of.[19] Consequently, industrial customers do not pay a DSM surcharge on their energy bills and in turn their utility does not offer them efficiency programs.

[18] This approach is similar to energy savings goal calculation methods used in several neighboring states, including Indiana (*see* IURC Cause No. 42693, Phase II), and Ohio (*see* Ohio Revised Code 4928.66 *et seq.*; S.B. 221).
[19] *See* KRS 278.285(3).

Industries and manufacturers who participate in the stakeholder process have shown little interest in changing this opt-out provision.

Thus, the database will be unable to capture enough data to provide a clear, accurate picture of efficiency-related energy savings across the industrial sector. DEDI plans to work with individual manufacturers to gather data on a voluntary basis (action item I.3), but in the absence of statewide participation, it will unfortunately not be representative of all industrial efficiency activities. Rather, these data will serve the limited purpose of providing anecdotal evidence of worthy industrial self-direct accomplishments.

A.2. *Create a peer exchange mechanism specifically for gas and electric utilities to share information, experiences and best practices*

Background and Stakeholder Observations

This action item encourages transparency through sharing of best practices and educational opportunities *among* utilities in a structured setting. One of the most effective ways of improving utility-run energy efficiency programs is an open exchange of information. Most of Kentucky's large utilities currently participate in a quarterly group called the *Utility Energy Efficiency Working Group* that is open to a variety of stakeholders, including advocates and energy consumers. During the SEE KY process stakeholders suggested that because the *Utility Energy Efficiency Working Group* includes participants from a wide variety of backgrounds and experiences, it may prevent utilities from digging deep into program design and implementation and thus improving the way they run their programs. One solution could be to augment or replace this group with a *utility-specific* peer exchange.

Implementation Plan

1. ***WHO*** – Successful implementation of this action item will require a dedicated work group consisting of jurisdictional electric and gas utilities, as well as the non-jurisdictional municipal utilities to evaluate and design the on-going peer exchange.
    a) The work group may request that the PSC participate, as well as have an occasional role in the peer exchange once implemented.
    b) DEDI will facilitate the work group as needed.

2. ***WHAT*** –
    a) In tailoring a peer exchange that is the most effective for Kentucky's utilities and energy landscape, the work group will review models in other states, such as Missouri, Iowa and Illinois, where each peer meeting spans one or more days and participants dig deep into the details of program selection, design, cost-effectiveness, implementation, data analysis and ratepayer participation.
    b) The work group will determine which elements of model approaches are applicable for Kentucky, if any, and will develop specific parameters, goals, funding structure and a meeting schedule for the resulting peer exchange.
    c) In the event a peer exchange is initiated, some means of sharing information among participants will be implemented.
    d) The work group will also evaluate funding options for any resulting peer exchange.

3. ***ACTION STATUS*** – In process; self-selection of work group participants and review of models will begin in early 2013. The work group's main goal will be to provide a proposal

for a Kentucky-specific peer exchange and the launch of the peer exchange within six months after development.

A.3. *Condition State funding on minimum energy efficiency outcomes taking into account life cycle costs*

Background and Stakeholder Observations

The Commonwealth is the administrator to a number of grant and loan funds scattered among numerous State agencies designed to help fund infrastructure, achieve environmental compliance, provide for safe and affordable housing, among other things. Many of these funds have potential long-term energy cost implications that can, and do, impact taxpayers. Stakeholders have shared anecdotes of State funds being used to build or remodel a public facility, for example, only to turn around and have to do another retrofit on the facility very shortly thereafter because of the high energy costs. There have even been instances of public facilities being built, then left unused because the budget could not support operational costs, primarily for energy. Kentucky already requires State government to consider life cycle costs when making purchases. However, for many grant or loan programs, there are no similar requirements.

Implementation Plan

1. ***WHO, WHAT*** – A work group consisting of key representatives from State agencies that administer grant and loan funds will be convened to look into attaching minimum energy efficiency outcomes for State funding opportunities and make recommendations to the Governor's Office for consideration. This action item will require an inventory of all grant and loan fund programs that have potential energy and energy cost implications.

2. **ACTION STATUS** – Action item not yet in process.

Near Term Recommendations (1 - 3 Years)

A.4. *Focus on robust education and training programs tailored to each consumer sector*

Background and Stakeholder Observations

Stakeholders throughout the SEE KY process stressed that the backbone of any effective energy efficiency program suite is a robust, coordinated outreach and marketing campaign. Similarly, the Governor's Energy Strategy identified public information campaigns as vital to achieving Kentucky's energy efficiency goals.[20] Outreach and education are critical on two levels: 1) to help Kentuckians learn about the benefits of energy efficiency; and 2) to provide information on the array of products and services available to help them reduce their energy consumption. This sentiment was also echoed in the PSC's 2008 report to the General Assembly.[21]

[20] *Supra*, n.8, Strategy #1 of Governor's Energy Strategy, pp. 21 and 26.
[21] The report recommended that greater efforts be made to make ratepayers aware of energy conservation and DSM programs, and suggested that utilities leverage relationships with educational institutions, nongovernmental organizations and community organizations to accomplish this. *Supra*, n. 16, PSC Report, p. 30 (Recommendation #7).

While there appears to be consensus that education is one of the most important aspects of an effective statewide energy efficiency approach, many stakeholders indicate that it can also be the most vexing. Part of the challenge in developing an effective outreach and education campaign is that each rate class consumes information in a different way. Within the rate classes, further divisions occur, such as low and middle income in the residential sector, small and large business owners in the commercial sector and small, medium and heavy manufacturers in the industrial sector. Stakeholders indicate that a custom education approach should be tailored to the needs and habits of each of these distinct classes-within-classes. To complicate matters further, ratepayer-funded energy efficiency education programs are often controversial in Kentucky; energy savings can be difficult to attribute to these programs, thus posing cost-effectiveness challenges.

The challenge for Kentucky, therefore, is to work on a multi-faceted and wide-ranging approach for each consumer sector. The ultimate goal will be to increase energy consumers' knowledge of basic energy efficiency principles and help them make educated decisions about their energy consumption.

Implementation Plan

In the Governor's Energy Strategy, the State committed to conducting a vigorous and ongoing public energy efficiency awareness and education program that will support its energy efficiency goals.[22] This action item is an extension of that original commitment. At the same time, it is important to note that the success of this action item is dependent on ongoing partnerships and collaboration with Kentucky's State agencies (in addition to DEDI), energy service providers, utilities, community organizations, advocates and universities and technical colleges. More than any other recommendation in this Action Plan, education and outreach will require the participation of stakeholders.

1. ***WHO/ WHAT*** –
    a) Many of the stakeholders involved in the SEE KY process already participate in forums (either public or in an invitation-only format) that are ripe for dissemination of energy efficiency-related information across Kentucky. These forums include annual and semi-annual statewide and local conferences, media events, forums hosted by State agencies or private entities, as well as the current *Utility Energy Efficiency Working Group*, each utility's energy efficiency collaborative and the proposed utility-specific Peer Exchange (*see* action item A.2). Existing educational opportunities will also be leveraged, including the industrial peer exchange, and utilizing the Kentucky Manufacturing Assistance Center and the Kentucky Industrial Assessment Center housed at the University Of Kentucky College Of Engineering.[23]
    b) Stakeholders will use these existing processes and forums as a means to share and widely disseminate information on energy efficiency, including both basic principles and State and utility program offerings and the potential for models, best practices and program innovation moving forward.
    c) The goal of this approach will be to provide a coordinated marketing and education campaign, using existing channels and trusted entities who already deliver this kind of information. As necessary, information will be tailored to the distinct needs and habits of the targeted ratepayers/audience.

[22] *Supra*, n. 8, Strategy #1 of Governor's Energy Strategy, p. 26.
[23] In February 2012, the U.S. Department of Energy began funding an Industrial Assessment Center for Kentucky, housed at the University of Kentucky at its Power and Energy Institute of Kentucky, part of the College of Engineering. *See* http://www.engr.uky.edu/power/kiac/. The DOE's IAC program trains university engineering students to conduct energy audits at industrial sites. *See* http://www1.eere.energy.gov/manufacturing/tech_deployment/iacs.html.

d) Successful implementation of this action item will require the participation of a diverse cross-section of stakeholders to add substance to the marketing and outreach approach and improve the quality and breadth of efficiency education in Kentucky. DEDI will participate in and provide support and facilitation, as needed. Participants should include:
   i. Utilities (investor-owned, electric cooperatives and municipal utilities) and utility advocacy groups;
   ii. Representatives of and advocates for Kentucky's residential energy consumers (the Community Action Agencies, low-income housing advocates, home builders, housing retailers and housing associations);
   iii. Representatives of and advocates for Kentucky's commercial energy consumers (trade associations, trade publications, State and local business chambers, etc.);
   iv. Representatives of and advocates for Kentucky's industrial energy consumers (Kentucky Pollution Prevention Center, State and local business chambers, Kentucky Association of Manufacturers and other trade associations and technical consultants);
   v. Contractors, installers, technical consultants and other individuals that deliver energy efficiency services;
   vi. The university system, including local community and technical colleges;
   vii. The PSC;
   viii. The Attorney General's Office.

ACTION STATUS – In process. Parameters, timeline, agenda and goals for the forums will be developed in collaboration with participants following the release of this Action Plan.

A.5. *Convene a work group to evaluate effects of utility rate design on energy efficiency incentives*

Background and Stakeholder Observations

In the Governor's Energy Strategy, the DEDI committed to collaborate with the PSC to evaluate energy rate design and ratemaking alternatives to enhance the impact of cost-effective energy efficiency programs in Kentucky. [24] Similarly, during the SEE KY process, stakeholders – primarily electric cooperatives and their distribution members – made clear that rate design is one of the most important issues determining the degree to which they can invest in efficiency. The PSC has started hearing and ruling on these issues in Kentucky. In early 2012, the PSC approved a request by Owen Electric Cooperative to gradually alter its rate structure, aimed at maintaining financial stability while stepping up efforts to encourage its customers to reduce energy usage.[25] Other stakeholders vigorously oppose this approach to rate design, indicating that there is no quantifiable data that it will create an incentive for energy efficiency and the effects may be disproportionately borne by low income and elderly ratepayer.

[24] *Supra*, n. 8, Strategy #1 of Governor's Energy Strategy, p. 28.
[25] *See* Case No. 2011-00037, PSC Order available at: http://psc.ky.gov/pscscf/2011%20cases/2011-00037/20120229_PSC_ORDER.pdf.

Implementation Plan

Given conflicting stakeholder feedback on rate design and its capacity to create incentives for greater energy efficiency in Kentucky, an open forum on this topic will be held. While feedback on rate design was collected from utility and ratepayer advocates during the SEE KY collaborative process, DEDI has yet to fully engage a diverse range of stakeholders specifically on this topic.

1. ***WHO*** – This action item will be carried out in collaboration with Kentucky's utilities, the PSC, Office of the Attorney General and a diverse selection of stakeholders. As necessary, experts from within and outside Kentucky will be involved to provide technical assistance in the discussion.

2. ***WHAT*** – A work group, or a series of forums, will be created to discuss the pros and cons of employing alternative rate design as a means to deliver cost-effective energy efficiency to Kentuckians.

3. ***ACTION STATUS*** – Action item not yet in process.

Long Term Recommendations (3-4 Years)

A.6. *Assist Kentucky's governmental and municipal utilities to develop a voluntary suite of energy efficiency programs*

Background and Stakeholder Observations

While the investor-owned utilities and electric cooperatives provide energy efficiency services and programs to a large percentage of Kentuckians, a similar coordinated effort by Kentucky's governmental and municipal utilities may have the potential to open similar programs for the remaining ratepayers. There are 27 municipalities in Kentucky that either self-generate or purchase power from various sources, including the ten that TVA serves. Municipal utilities are locally owned and operated utilities that are governed by city officials or independent utility boards appointed by city officials. Thus, these utilities are not regulated by the PSC in Kentucky. Several municipal utilities participate in energy efficiency programs. This action plan offers a voluntary suite for those utilities that may want to begin offering similar programs.

Several municipal representatives have indicated that they may be interested in providing efficiency services to their customers, possibly via a voluntary, comprehensive approach to turnkey efficiency programs across municipal utility service territories. To accomplish this, they have proposed convening a Municipal Utility Energy Efficiency Advisory Group to gain expertise in developing the efficiency suite.

Implementation Plan

DEDI has committed to assist in this effort and to leverage its relationships with jurisdictional utilities to provide technical assistance for interested municipal utilities during the program design process. The development of a utility Peer Exchange (*see* action item A.2) should also be instrumental in supporting this initiative.

1. ***WHO*** – This action item will be carried out by DEDI in voluntary collaboration with interested municipal utilities, as well as with the Kentucky Municipal Utility Association. The members of the Peer Exchange (*see* action item A.2), when and if organized, will also collaborate with the Municipal Utilities to assist in developing programs suitable to those organizations.

2. ***WHAT*** –
    a) The Municipal Utility Energy Efficiency Advisory Group will invite DEDI and other entities to provide expertise and support, as needed. This support may include some or all of the following:
        - Educational materials (model approaches, best practices) for review by municipal utilities, to support program development, including information on "Quick Start" programs;
        - Guidelines and best practice approaches in developing clear, consistent evaluation, measurement and verification guidelines for municipal utility-run energy efficiency programs; and
        - Templates and best practices in data reporting and storage, as essential elements to tracking energy efficiency performance data.

3. ***ACTION STATUS*** – In process. In addition to the Advisory Group described in this action item, interested municipal utilities may voluntarily participate in the utility Peer Exchange, when and if developed under action item A.2.

R. RESIDENTIAL SECTOR RECOMMENDATIONS

Kentucky's residential sector accounts for nearly 30 percent of the State's total electricity consumption (ranking Kentucky 6th nationally in terms of residential electricity consumption per capita) and 25 percent of its total natural gas use.[26] All of the Commonwealth's investor-owned utilities and electric cooperatives, as well as TVA, offer energy efficiency programs with varying incentives and rebates for Kentucky homes. Stakeholder feedback also indicates that some residential efficiency programs offer the biggest bang for a ratepayer's buck and that participation levels are highest among this rate class as well.

While the residential sector overall is well-served with regard to efficiency programs, stakeholders indicate that more could be done to target specific energy uses and increase focus on certain programs within this sector. The following action items lay out the specific areas where Kentucky should increase its efficiency efforts in the coming years:

Short-term
R.1. ***Support Kentucky Home Performance to increase market penetration***
Near-term
R.2. ***Improve the residential housing stock via utility and community-sponsored weatherization***
Long-term
R.3. ***Improve the energy efficiency of residential buildings through consistent implementation of residential building energy codes***
R.4. ***Increase innovative energy efficiency financing options, such as on-bill financing***
R.5. ***Provide incentives for energy efficiency retrofits in residential rental property***
R.6. ***Develop an advisory group to address options for replacing inefficient manufactured homes***
Legislative Recommendations
R.7. ***Expand existing State-provided energy efficiency incentives***

Short Term Recommendations (Less Than 1 Year)

R.1. *Support Kentucky Home Performance to increase market penetration*

Background and Stakeholder Observations

Kentucky Home Performance (KHP) is a residential efficiency retrofit program that was launched in November 2010 as a new statewide Home Performance with ENERGY STAR program.[27] It uses whole home analysis and a certified professional contractor network to provide a market-based system of incentives and technical support for energy efficiency upgrades to existing single family homes. Over the course of 20 months, KHP retrofitted more than 1,000 homes in Kentucky. On March 15, 2012, the Environmental Protection Agency awarded KHP the national ENERGY STAR Partner of the Year.

Stakeholder feedback during the SEE KY process indicates that KHP is a valuable component of the residential efficiency programs in Kentucky. The program began in 2010 leveraging funds from the Recovery Act. Following the expenditure of 2012 Recovery Act funds, a small amount of carry-

[26] *See* DEDI's Kentucky Energy Profile 2011, available at: http://energy.ky.gov/Documents/Kentucky_Energy_Profile_2011.pdf (electricity consumption is broken down by sector at pages 8-10, 23, 29).
[27] *See* http://www.kyhomeperformance.org.

over dollars were allocated for the establishment of a KHP loan fund and one year of program administration. In December 2012, Kentucky Housing Corporation, the entity that administers KHP, was awarded $3 million by DEDI, as part of TVA's 2011 settlement agreement with the U.S. Environmental Protection Agency.[28] The grant will fund nearly three years of KHP program operations and will focus on owner-occupied, single-family energy efficiency loans ranging from $1,000-$25,000 per home.

Implementation Plan

The Kentucky Housing Corporation will continue to increase market penetration by KHP across Kentucky. Now that funding is secure through 2015, staff can focus on coordinating KHP with existing residential weatherization and retrofit programs in Kentucky to expand its reach and scope.

1. ***WHO/WHAT*** – This action item will be carried out by KHP staff, the Kentucky Housing Corporation, with support from DEDI and other stakeholders as necessary.
    a) The Kentucky Housing Corporation will work to increase KHP's market penetration across the State.
    b) Kentucky Housing Corporation will also coordinate its efforts with utilities to evaluate potential partnerships between KHP and utility residential efficiency retrofit programs.

2. ***ACTION STATUS*** – Administrative program funding is secured through 2015 with program income being generated to keep the loan fund capitalized for some years to come.

Near Term Recommendations (1 - 3 Years)

R.2. *Improve residential housing stock via utility and community-sponsored weatherization*

Background and Stakeholder Observations

KHP is part of a larger suite of programs aimed at improving the energy efficiency of Kentucky's housing stock. Other programs that focus on making existing homes more efficient are also essential to realizing the significant energy savings potential in the residential sector.

For example, many utility stakeholders indicate that their residential efficiency programs are among their most cost-effective, as well as the most popular in terms of participation. These programs are critical to improving the overall efficiency of a home. Every jurisdictional utility in Kentucky offers some form of weatherization to its residential customers. In addition, Kentucky's Community Action Agencies offer the Kentucky Weatherization Assistance Program (KY WAP), the Commonwealth's primary vehicle of home weatherization for low-income residents serving each of the 120 counties.[29] KY WAP is funded annually by allocations from U.S. DOE; in 2009 efforts were ramped up as a result of a considerable funding supplement via the Recovery Act. As of April 2012, the KY WAP reverted back to lower than pre-Recovery Act funding levels.

[28] *See* press release at: http://kentucky.gov/Pages/Activity-Stream.aspx?viewMode=ViewDetailInNewPage&eventID={267B01B3-0959-4A7A-B0CE-A1B3A773DC6D}&activityType=PressRelease.
[29] *See* https://www.kyhousing.org/page.aspx?id=2327.

Implementation Plan

1. ***WHO***
   a) Community Action Kentucky (CAK) will be the lead in carrying out this action item, with support from DEDI and other stakeholders as necessary.
   b) As with action item A.4, successful implementation of this action item will require the participation of a diverse cross-section of stakeholders. DEDI will participate in and provide support and facilitation, as needed. Additional participants should include:
      i. Utilities, including investor-owned, electric cooperatives and municipal utilities (discussions will focus on potential partnerships and/or coordination with KY WAP and utility residential efficiency retrofit programs);
      ii. Representatives of and advocates for Kentucky's residential energy consumers (the Community Action Agencies and other low-income housing advocates, home builders, housing retailers and housing associations, including: Kentucky Homebuilders Association, Kentucky Housing Corporation, Kentucky Manufactured Housing Institute, Federation of Appalachian Housing Enterprises, Frontier Housing, Kentucky Habitat for Humanity, Bluegrass ASHRAE and the Kentucky Chapter of the US Green Building Council;
      iii. Contractors, installers, technical consultants and other individuals that deliver energy efficiency services, to educate them on proper procedures for installing energy efficiency equipment and thereby maximizing benefits to their clients;
      iv. The university system, including local community and technical colleges;
      v. The PSC; The Attorney General's Office.

2. ***WHAT*** – Stakeholder feedback indicates that Kentucky should strive to support and expand these programs on a parallel track to KHP. The expansion of effective residential programs in Kentucky is also dependent on the dissemination of information on basic energy efficiency, as well as increasing current program offerings.
   a) Thus, this action item will parallel A.4 above and will use currently-existing forums to encourage discussion across a wide range of stakeholders on residential energy efficiency opportunities and possibilities for innovation, as well as review of best practices and models in other jurisdictions. The goal will be to coordinate among all residential efficiency programs and ensure that progress made through Recovery Act funding is maintained into the future.
   b) Participants will also be encouraged to address energy efficiency matters over which the federal government has primary control. This reflects stakeholder feedback related to the Federal Emergency Management Agency's (FEMA) post-disaster rebuilding approach, as well as how funds are apportioned via the Low Income Home Energy Assistance Program (LIHEAP) (*see* action items F.1 and F.2 below).

3. ***ACTION STATUS*** – Action item not yet in process. Parameters, timeline, agenda and goals for the forums will be developed in collaboration with participants following the release of this Action Plan.

Long Term Recommendations (3-4 Years)

R.3. *Improve the energy efficiency of residential buildings through consistent implementation of residential building energy codes*

Background and Stakeholder Observations

Another vital element of improving Kentucky's housing stock, and thus capitalizing on significant energy savings potential, is ensuring compliance with residential building energy codes statewide. The residential energy codes were updated January 2012 and became effective October 2012.

Adequate resources for residential inspections and compliance are critical to achieving the full savings potential from new building energy codes. The Kentucky Department for Housing, Buildings and Construction (DHBC) is responsible for statewide compliance with energy codes related to all buildings systems, except where there are delegated local jurisdictions. As such, there is a mosaic of State and local jurisdictions performing energy code permitting and inspection of energy code activities. Relative to residential energy code compliance capacity in the State's jurisdiction, DHBC currently performs whole-building energy code inspections on all multi-family residential units, but only has sufficient resources to employ inspectors for heating, ventilation, and air conditioning (HVAC) on single family units, meaning that some home components go un-inspected. This work is being funded via inspection fees. The State's jurisdiction covers roughly half of the geographic area of Kentucky, but represents some of the less populous areas; the remainder by local jurisdictions.

Critically, many counties across the State have no local code inspection of any kind. This is something some stakeholders have advised is needed to protect the health, safety, and financial well-being of consumers across the State. Finding local resources to hire additional inspectors is sorely needed to ensure energy code compliance.

Implementation Plan

DHBC and DEDI will seek funding to increase the State's capacity for compliance activities for all residential building energy code components not currently covered by inspections or permits. DHBC projects that the HVAC inspection fees it now uses to fund HVAC energy code inspection is sufficient to eventually fund additional HVAC inspectors.

1. ***WHO*** –
   a) The lead coordinator for this action item is yet to be determined. DHBC will necessarily need to be involved; DEDI will provide support as requested and needed.
   b) As necessary, the DHBC will seek the feedback and assistance of representatives of and advocates for Kentucky's housing organizations and representatives of home builders and residential energy consumers, including but not limited to: Kentucky Homebuilders Association, Kentucky Housing Corporation, Kentucky Manufactured Housing Institute, Federation of Appalachian Housing Enterprises, Frontier Housing, Kentucky Habitat for Humanity, Bluegrass ASHRAE, Kentucky Association of Counties, and the Kentucky Chapter of the US Green Building Council.
   c) The work group may also seek feedback from utilities, particularly where DHBC and utilities may be able to partner to fund residential building energy code compliance activities and thus enhance energy savings in utility service territories.

2. ***WHAT*** –
   a) The work group will work with housing stakeholders as needed, to identify opportunities to expand statewide energy codes inspection, and to identify additional sources of funding for inspectors.
   b) Avenues to secure code inspectors in non-jurisdiction areas of the State will be pursued.
   c) Supplementary energy code activities will also be evaluated, including: providing ongoing training and/or continuing education credits to inspectors, builders, and contractors; holding regional information sessions on current residential building energy codes and updates; and funding compliance surveys.
   d) The work group will explore potential residential building energy code collaboratives, where stakeholders (utilities, homebuilders, State agencies – including DEDI) come together on a regular basis in a structured forum to explore common interests around energy code adoption and compliance.
   e) The work group will work with utilities via a utility Peer Exchange, when and if formed (action item A.2), to evaluate how utilities can benefit from collaborating on residential building energy code compliance activities.

ACTION STATUS – Action item in process.

R.4. *Increase innovative energy efficiency financing options, such as on-bill financing*

Background and Stakeholder Observations

Access to low-cost upfront financing for energy efficiency improvements is critical to success in the residential sector. Creative financing options are currently being piloted in Kentucky and stakeholders generally indicate support to expand these options in the future. A key initiative is the How$martKY pilot, an on-bill financing program currently managed by the Mountain Association for Community Economic Development (MACED) and offered by four of EKPC's distribution cooperative members.[30] On-bill financing allows a homeowner to have energy-efficient improvements installed in their residence. These measures are paid for by the electric cooperative using capital provided through a line of credit from MACED to the cooperatives. Participating cooperatives recover their investment through a charge added to the monthly bill. The efficiency improvements and monthly charge are structured such that the homeowner has an immediate net positive cash flow – that is, the now-reduced utility bill plus the retrofit payment will not exceed 90 percent of the original utility bill. MACED is currently gathering data on the performance of homes retrofitted through How$martKY. In addition, as part of a DEDI grant program that also provided funding for KHP through 2015, MACED received a grant award of $300,000 to support How$martKY.[31] The funds provided will enable MACED to perform 150 energy efficient retrofits in area residences, saving an estimated 825 MWh/year of electricity, representing more than $90,000 a year of savings on participating customers' utility bills.

Some electric cooperative stakeholders indicate that they would like to pursue this on-bill financing model for Kentucky's energy consumers in the future. In addition, other utilities and some housing

[30] *See* http://www.maced.org/howsmart-overview.htm.
[31] *Supra,* n. 33.

advocates are interested in exploring mechanisms beyond on-bill financing. That said, the success or applicability of this approach will be dependent upon a number of motivating factors among the various utilities and utility types, e.g. IOUs vs. coops.

While this recommendation for on-bill financing is presented for the residential sector, there may be opportunities to utilize this model for commercial or industrial sectors as well.

Implementation Plan

1. ***WHO/WHAT*** – DEDI will provide support, as needed, for MACED as it expands How$martKY in Kentucky. This support will include sharing information on the How$martKY model when opportunities arise, as well as encouraging collaboration with additional utility partners. Additional creative funding models will be explored as appropriate. MACED and DEDI will continue to encourage support for and adoption of the How$martKY program.

2. ***ACTION STATUS*** – Given the Action item is in process, there are aspects of this approach that are both near-term and long-term. There is still a need to market the program to utilities that have yet to adopt this approach and there is an on-going need to raise capital for financing.

R.5. *Provide incentives for energy efficiency retrofits in residential rental property*

Background and Stakeholder Observations

Rental housing presents a particularly tough challenge to carrying out residential energy efficiency retrofits. Renters are reluctant to pay for improvements to property they do not own and, in turn, owners have little motivation to make efficiency improvements to property when they don't pay the energy bills. As a result, stakeholders – particularly utilities and housing advocates – would like to create a mechanism to incent landlords to make rental units more efficient, while providing the benefit of lower energy bills to renters.

Implementation Plan

1. ***WHO*** – Creative options for addressing inefficient rental property will be explored via a work group made up of interested stakeholders.
    a) DEDI will identify an agency or organization who will organize and facilitate the work group. DEDI will serve as a member of the work group and will provide support as resources allow.
    b) Representatives of and advocates for Kentucky's residential ratepayers, including rental associations, the League of Cities and those representing landlords and tenants will be participants in the work group.
    c) This work group may also be organized as a sub-group of a utility Peer Exchange, when and if created (*see* action item A.2) and/or the existing *Utility Energy Efficiency Working Group*.
    d) This work group's activities will be coordinated with, and informed by, the National Association of State Energy Officials, Southeast Region, initiative entitled "Advancing Multifamily Energy Efficiency Policies and Programs." This initiative proposes to engage stakeholders to address policy and program barriers to improve

energy performance and comfort of the region's multifamily building stock. Successful models from other states will be examined for suitability to Kentucky and the region.

2. ***WHAT*** –
   a) Stakeholders have expressed interest in investigating mechanisms where both landlord and tenants would receive some of the benefits from energy efficiency investments. The work group will review existing programs and models in other states.
   b) Work group participants will be responsible for determining whether models in other states may be applicable to Kentucky, as well as the parameters for any resulting Kentucky-specific approach. Incentive funding options will be reviewed, including allocations from utility-run DSM program budgets, State budgets and federal funding.

3. ***ACTION STATUS*** – Action item not yet in process.

R.6. *Develop an advisory group to address options for replacing inefficient manufactured homes*

Background and Stakeholder Observations

Kentucky's residential sector includes a significant stock of energy inefficient manufactured homes. Housing advocates estimate that manufactured homes account for 13.6% of Kentucky's residential stock. Stakeholders have indicated two classes of concern relative to manufactured housing: (1) use of resistance heat in new units complying with U.S. Department of Housing and Urban Development (HUD) codes; and (2) Kentucky's extensive stock of very energy inefficient and costly pre-1976 manufactured homes. These manufactured homes, of which there are over 85,000 in Kentucky (13,500 in EKPC's territory alone), were built prior to HUD regulations that set minimum standards for energy efficiency. They are so inefficient that it is not cost-effective to retrofit them in a manner that will yield meaningful cost savings. Thus, residents living in pre-1976 manufacture homes would not be good candidates for weatherization programs, such as KHP or KY WAP, thereby leaving them limited resources for making their homes more efficient. Similarly, newer manufactured units with resistance heat are extremely inefficient and costly for their occupants.

Ultimately, stakeholders indicated that there are two main barriers to increasing the efficiency of manufactured housing in Kentucky. The first is the difficulty with moving energy efficient manufactured homes onto the market. There is currently no consumer demand because of a lack of understanding of the long-term energy cost savings; and retailers do not offer them because of lack of demand and concern over customer confusion. The second is lack of access to low-cost financing to retrofit or replace these homes. Energy efficient manufactured homes are currently available in Kentucky, but appropriate financing is not.[32] Many lenders refuse to treat manufactured homes as part of the real estate, even when the home buyer owns the land on which the home is placed. This prevents buyers from qualifying for financing in the mainstream housing finance market. And while some of Kentucky's housing organizations, such as Frontier Housing[33] and (more recently through

[32] *See, e.g.*, homes offered through NextStep, http://www.nextstepus.org/homesoverview.htm.
[33] For a description of Frontier Housing's pre-1976 replacement program, and a case study, visit: http://www.frontierhousing.org/Kelly.htm.

the TVA grant dollars) Next Step,[34] offer subsidies to help defray the cost of replacing these homes with newer, more efficient models, stakeholders report that more needs to be done to address these barriers.

Another parallel concern voiced during the SEE KY process relates to manufactured housing installation. Even where a resident is successful in replacing their manufactured home with a more efficient model, stakeholders indicate that housing installers are not always fully trained on proper installation procedures. Proper installation is critical to achieving the maximum level of energy efficiency performance in a manufactured home, thereby making the occupant's investment worthwhile. In 2010, Kentucky passed a bill requiring 100% inspection of all manufactured homes installed.[35] Stakeholders have suggested supporting DHBC's efforts by seeking additional funding to increase the number of inspectors within the agency. In cooperation with the Manufactured Housing Section of Building Code Enforcement within the DHBC, the Kentucky Manufactured Housing Institute (KMHI) provides training opportunities around the State and online to meet the requirements of becoming a Certified Installer or Certified Manager.[36] Stakeholders have recommended expanding these efforts.

Implementation Plan

Stakeholders suggest convening an advisory group to develop recommendations for creating a more favorable environment in Kentucky to replace these homes on a larger scale, and to provide enhanced training for installers.

1. ***WHO*** – The advisory group will be organized either by DEDI or a third party.
    a) Participants will include utilities that serve low-income communities, representatives of Kentucky's manufactured housing retailers and installers, and representatives of both landlords and tenants of manufactured housing developments.
    b) Other low-income housing advocates and financing institutions will be included, as well as State and Federal legislators.

2. ***WHAT*** –
    a) The advisory group will be responsible for determining whether program models in other states may be applicable to Kentucky, as well as the parameters for any resulting Kentucky-specific approach. Stakeholders have suggested a number of options such as:
        i. A pilot for manufactured home replacements that would build a case for true energy savings potential and stimulate market transformation, and thus spur attractive financing options by lending institutions;
        ii. Increase tax incentives for energy efficient manufactured homes at the manufacturer, retailer, and/or purchaser levels;
        iii. Supporting DHBC in providing more resources for manufactured housing inspection across Kentucky; and
        iv. Additional incentives for contractor training on energy efficiency measures to ensure proper installation, as well as possible penalties following improper installation.

[34] *Supra,* n. 33.
[35] *See* KRS 227.57 (5) ("The installation of a new manufactured home shall be inspected under subsection (3) of this section").
[36] *See* http://dhbc.ky.gov/bce/mmh/Pages/default.aspx.

b) Budget: The advisory group will review, and ideally identify, adequate funding sources for a pilot, incentives, and training options.

ACTION STATUS – Action item not yet in process.

Legislative Recommendations (2013/2014 Sessions)

R.7. *Expand existing State-provided energy efficiency incentives*

Background and Stakeholder Observations

In addition to the residential energy efficiency programs offered by utilities and the State, there are a number of existing State-level tax credits that provide incentives to homebuilders and homeowners to invest in energy efficiency. House Bill 2 was passed in 2008 following the release of the Governor's Energy Strategy and included several tax credit provisions aimed at increasing the uptake of energy efficiency measures in Kentucky homes.[37] For residential homeowners, total tax credits are capped at $500 per taxpayer and cover products such as insulation, windows, doors and various HVAC and water heating measures.[38] Credits of up to $800 are also available for homebuilders that construct a new ENERGY STAR site-built home and $400 for a vendor who sells an ENERGY STAR manufactured home.[39]

While these tax credits have been useful in raising awareness and interest in energy efficiency, they have proven insufficient to significantly stimulate Kentucky's energy efficiency market.[40] As a result, stakeholders in the SEE KY process recommend expanding the current credits.[41] This is consistent with EEC's commitment in the Governor's Energy Strategy to identify new tax incentives that will further enhance energy efficiency in the Commonwealth.[42] EEC estimates that doubling these credits would stimulate demand in the residential housing market for energy assessments and equipment installations and would help homeowners manage their energy bills.

Expanded House Bill 2 credits would also benefit KHP and existing utility-run energy efficiency programs. Because participants have the option of applying these credits to equipment purchased through the KHP or any utility-financed program,[43] doubling the credits would likely increase participation in those programs.

Implementation Plan

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[37] *See* http://energy.ky.gov/Programs/Documents/HB2TaxCreditsTableSummary.pdf (for a summary of the energy efficiency and renewable tax credits). The full bill can be viewed at http://www.lrc.ky.gov/record/08RS/HB2/SCS1.doc

[38] House Bill 2 also sets out parallel credits for commercial efficiency, which are discussed in action item C.6 below.

[39] *See* House Bill 2, 2008 Session, KRS 141.435 to 141.437, Section 13, subsection (2)(b) (manufactured housing incentive).

[40] Memorandum entitled *ENERGY STAR home and ENERGY STAR manufactured home credits claimed for Fiscal Year ending 6/30/11* from Regina Ritchey, Supervisor, Tax Credits Section, Dept. of Revenue, to Robert Sherman, Director of LRC, November 30, 2011 ; *see also* Memorandum entitled *Energy Efficiency Products Credits claimed for Fiscal Year ending 6/30/11* from Regina Ritchey, Supervisor, Tax Credits Section, Dept. of Revenue, to Robert Sherman, Director of LRC, November 30, 2011.

[41] A similar recommendation was made in the PSC's 2008 report to the General Assembly. There, the PSC expressed support for the use of rebate or financing programs, though in the context of utility-run programs. *Supra*, n. 16, PSC Report, p. 31 (Recommendation #8).

[42] *Supra*, n. 7, Strategy #1 of Governor's Energy Strategy, p. 25.

[43] *See* http://www.kyhomeperformance.org/UtilityPartners.aspx.

Kentucky should expand these and other State-level tax incentives to encourage increased energy efficiency in the residential sector.

1. ***WHO/WHAT*** –
   a) This action item will be primarily carried out by DEDI in collaboration with the Kentucky Cabinet for Economic Development, the Office of the State Budget Director and the Department of Revenue.
   b) As necessary, DEDI will seek the feedback and assistance of representatives of and advocates for Kentucky's housing organizations and representatives of home builders and residential energy consumers.
   c) These entities will identify opportunities to expand House Bill 2 credits and other State-level incentives as applicable

2. ***ACTION STATUS*** – Action pending.

C. COMMERCIAL SECTOR RECOMMENDATIONS

Kentucky's commercial sector buildings account for 21 percent of the State's total electricity use and 17 percent of its total natural gas use.[44] As with the residential sector, the commercial sector holds significant energy savings potential for Kentucky. Nearly all of the Commonwealth's jurisdictional utilities, and TVA, offer programs with varying incentives for energy efficiency retrofits to commercial buildings. At the same time, stakeholder feedback indicates that this sector remains underserved with regard to effective efficiency programs and that more could be done to capitalize on untapped savings potential.

In addition to the vital need for education and training in the commercial sector as discussed in action item A.4 above, the following are the highest priority stakeholder recommendations to address this sector:

Near-term
C.1. ***Expand access to low-cost financing for private commercial entities***
C.2. ***Recapitalize the Kentucky Green Bank for public buildings***
C.3. ***Promote energy efficiency via a "lead by example" approach to State-owned facilities***
Long-term
C.4. ***Improve the energy efficiency of commercial buildings through consistent implementation of commercial building energy codes***
C.5. ***Devise creative incentives for commercial rental property***
Legislative Recommendation
C.6. ***Expand State energy efficiency incentives***

Near Term Recommendations (1 - 3 Years)

C.1. *Expand access to low-cost financing for private commercial entities*

Background and Stakeholder Observations

Energy efficiency retrofits for the commercial sector are cash intensive and as a result access to upfront capital is critical for success. The largest end-uses in commercial buildings are heating, cooling and lighting – representing over half of commercial site energy consumption[45] and requiring significant investments to upgrade. While KHP (action item R.1 above) and the Green Bank of Kentucky (action item C.3 below) both have revolving loan programs for, respectively, private homes and State government buildings, there is no such program to provide low-cost loans to owners of private commercial buildings. As a result, stakeholders recommended that Kentucky explore creative sources of funding for these energy users, specifically keyed to energy efficiency improvements and verified savings.

[44] *See* DEDI's Kentucky Energy Profile 20101 available at: http://energy.ky.gov/Documents/Kentucky_Energy_Profile_2011.pdf (electricity consumption is broken down by sector at pages 8-10, 23, 29).

[45] American Council for an Energy Efficient Economy. March 2012. Technical Assistance Program: Energy Efficiency Cost-Effective Resource Assessment for Kentucky, page 7. Available at: http://energy.ky.gov/Programs/SEE%20KY/March%202012%20Meeting/KY%20Econ%20Potential%20Analysis%20-%20FINAL%20DRAFT.pdf.

Implementation Plan

1. ***WHO*** –The main challenge in implementing this action item will be identifying a funding source to capitalize the revolving loan program. A work group will be convened to address options to provide upfront energy retrofit financing for the commercial sector.
   a) DEDI will identify an agency or organization who will organize and facilitate the work group. DEDI will serve as a member of the work group and will provide support as needed.
   b) Additional work group members will be invited to participate, such as representatives from Kentucky's commercial sector which may include the Kentucky Chamber of Commerce, Commerce Lexington, Louisville Energy Alliance, Building Owners and Managers Association, Northern Kentucky Chamber of Commerce, Greater Louisville Inc. and Bluegrass ASHRAE. Given that this action item has positive implications for economic development in Kentucky, DEDI and representatives from the Cabinet for Economic Development, as well as individual commercial energy consumers where possible, will be included.

2. ***WHAT*** –
   a) Participants will review funding models and evaluate their appropriateness for Kentucky. During SEE KY's breakout and interim work group sessions, stakeholders reviewed a number of innovative approaches – both here in Kentucky and in other states – to address this financing hurdle. These approaches include:
      i. Appropriating an existing $80 million bond authorization that the General Assembly approved in 2008 as part of House Bill 2 to retrofit State and commercial buildings;[46]
      ii. The Greater Cincinnati Energy Alliance's *Building Performance Program* that uses public and private investments to offer market rate financing to upgrade commercial buildings with energy efficiency measures[47]
      iii. Pennsylvania's use of State funds to invest in low-risk energy efficiency loans to homeowners and businesses, with a rate of return for the State retirement system;[48]
      iv. Connecticut's C-PACE (Connecticut Property Assessed Clean Energy) program financing model for energy efficiency in the commercial real estate industry;[49] and
      v. On-bill financing, similar to action item R.4 for the residential sector.
   b) Representatives from Kentucky's commercial sector will determine which elements of model approaches are applicable to Kentucky and will develop specific parameters, a funding structure and data verification procedures for any resulting approach.
   c) The work group may also conduct a survey of this sector through the local business chambers, as well as interviews with utilities and individual commercial entities, to assess interest in a loan model and in energy efficiency programming in the first place.

3. ***ACTION STATUS*** – Action item not yet in process.

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[46] *See* http://www.lrc.ky.gov/record/08RS/HB2/SCS1.doc (Sections 27 and 28).
[47] *See* http://www.greatercea.org/commercial; *see also* http://www.building-cincinnati.com/2012/08/energy-alliance-wins-national-award-for.html.
[48] *See* http://www.keystonehelp.com/.
[49] *See* http://www.cleanenergyfinancecenter.org/wp-content/uploads/Whitepaper_CT_PACE_Final_01-15-13.pdf

C.2. *Recapitalize the Kentucky Green Bank for public buildings*

Background and Stakeholder Observations

Access to low-cost financing for energy efficiency improvements is as critical to success in public facilities as it is in private commercial buildings. In 2009, the Kentucky Finance and Administration Cabinet (FAC) established the Green Bank of Kentucky's revolving loan fund to promote energy efficiency in State buildings.[50] The Green Bank was originally capitalized by a $14 million Recovery Act grant from DEDI and has provided low interest loans to fund energy savings performance contracts (ESPC) in State buildings. To date, all loans have been made and the bank has funded nine ESPCs representing over 50 State buildings and in excess of 2,000,000 conditioned square feet. The Green Bank will be replenished as the first set of loans is repaid over the next 10-12 years, with a new slate of funds for ESPC projects as funds accumulate. However, further recapitalization of the Green Bank is necessary to meet demand for these loans in State government.

Implementation Plan

1. ***WHO/WHAT*** – The FAC and DEDI will be responsible for carrying out all tasks necessary to implement this action item. The challenge for Kentucky is to identify ways to further capitalize the Green Bank. DEDI and the FAC will work together to determine viable methods to identify additional capital for the Green Bank.

2. ***ACTION STATUS*** – Action item not yet in process.

C.3. *Promote energy efficiency via a "lead by example" approach to State-owned facilities*

Background and Stakeholder Observations

Kentucky's investment in the Green Bank is part of a greater overall effort to promote energy efficiency via leadership by State Government. In 2008, the Governor's Energy Strategy challenged Kentucky's State agencies to establish a leadership role by focusing on improving the energy efficiency of public buildings.[51] State and local government facilities, such as government offices, schools and hospitals, represent unique opportunities for Kentucky to implement and ramp up energy efficiency practices while also saving taxpayer dollars. Focusing on energy efficiency in public buildings is also a powerful marketing tool to encourage consumers, local governments and the private sector to follow the State's example.

Kentucky State Government has provided this example in a number of ways. In the last few years, Kentucky has disbursed over $68 million in Recovery Act funding for 26 energy efficiency programs statewide.[52] Even in the post-Recovery Act era, Kentucky continues this role. EEC recently

[50] Visit http://finance.ky.gov/initiatives/greenbank/Pages/default.aspx for more information.
[51] *Supra*, n. 8, Strategy #1 of Governor's Energy Strategy, pp. 21-24.
[52] *See generally*:
http://energy.ky.gov/Pages/agri.aspx; http://energy.ky.gov/Pages/industrial.aspx;
http://energy.ky.gov/Pages/Residential.aspx; http://energy.ky.gov/Pages/schoolprojects.aspx;

received US DOE funding to launch the Local Government Energy Retrofit Program (LGERP), a self-sustaining, public facilities energy retrofit program that will assist local governments in reducing energy consumption via energy savings performance contracting.[53] In addition to retrofitting existing State- and locally-owned buildings, Kentucky used a $3.65 million energy management grant from Recovery Act funds to develop the Commonwealth Energy Management and Control System, which provides several layers of information to better manage State utility bills and identify energy savings opportunities to help preserve taxpayers' dollars, to date generating about $800,000 energy savings annually.[54]

In December of 2012, several State and local entities also received DEDI grant funding.[55] Among those entities is the Department for Local Government, which was awarded $1.2 million to support continuation of the Energy Efficiency and Conservation Block Grant that provides funding to local governments for programs that reduce energy consumption, greenhouse gas emissions and utility costs for local governments. Kentucky School Boards Association was also awarded $700,000 to support the School Energy Managers Project in school districts in and adjacent to the TVA service counties. In addition, Fayette County Public Schools received an award to complete live energy monitoring at their facilities. These recent awards will provide further opportunities for State and local governments and schools to promote energy leadership for the rest of Kentucky.

Implementation Plan

Kentucky should explore these and other options to continue to provide energy efficiency leadership at the State level.

1. ***WHO*** – DEDI and FAC will be responsible for implementing this action item. DEDI will have the overall lead and other State and local agencies may be involved as necessary.

2. ***WHAT*** –
   a) State Government should aggressively pursue the requirements and goals outlined in legislation and the Governor's Energy Strategy, including improving the energy efficiency of State-supported facilities and the fleet fuel efficiency of State-owned vehicles.[56]
   b) DEDI will be responsible for finding new opportunities that will increase the adoption of energy efficiency into Kentucky's economy, including financing opportunities such as the Green Bank and LGERP.
   c) Successful implementation of this action item may also require State budget appropriation. Thus, the project team may address legislative approaches in upcoming legislative sessions.

3. ***ACTION STATUS*** – Action item in process, ongoing.

http://energy.ky.gov/StimulusPrograms/Pages/Utilities.aspx;
http://energy.ky.gov/Pages/StateGovernmentBuildings.aspx;
See also, Energy and Environment Cabinet, 2011 Annual Summary, available at:
http://energy.ky.gov/resources/Annual%20Summaries/annual%20summary%20without%20calendar%203-8-12.pdf
(report re Recovery Act projects at page 10).

[53] *See* http://migration.kentucky.gov/Newsroom/governor/20120709energyassistancegrant.htm.

[54] *See* http://kyenergydashboard.ky.gov/.

[55] *Supra,* n. 33.

[56] *Supra*, n. 7, Strategy #1 of Governor's Energy Plan, pp. 23-24.

Long Term Recommendations (3-4 Years)

C.4. *Improve the energy efficiency of commercial buildings through consistent implementation of commercial building energy codes*

Background and Stakeholder Observations

Similar to the residential sector, another vital element of improving Kentucky's commercial building stock is ensuring that commercial building energy codes are in compliance statewide. The Commonwealth's commercial building energy codes were last updated in March of 2011, and compliance was effective the following June. The DHBC performs full energy code plan review and on-site inspections for all commercial buildings. However, because of the mosaic of jurisdictions for permitting, plan reviews, and inspections performed at the local level, there are varying levels of compliance activities across the State.

Implementation Plan

The DHBC and DEDI will seek additional resources for statewide inspection of commercial building components.

1. ***WHO*** –
   a) The lead for this action item has yet to be determined, and will be primarily carried out by a work group, with support from DHBC and DEDI.
   b) As necessary, the work group will seek the feedback and assistance of representatives of and advocates for Kentucky's commercial building sector and local code jurisdictions.
   c) The work group will collaborate with the Kentucky Association of Counties, Kentucky League of Cities and utilities to evaluate and quantify how utilities can participate in and benefit from funding commercial building energy code activities in each utility service territory.

2. ***WHAT*** –
   a) The work group, including DEDI, DHBC and commercial building stakeholders, will identify opportunities to expand statewide energy codes compliance capacity, and to identify additional funding sources for inspectors and plan reviews.
   b) Supplementary energy code activities will also be evaluated, including: providing ongoing training and/or continuing education credits to inspectors, builders, and contractors; holding regional information sessions on current codes and updates; funding compliance surveys for new buildings.
   c) DHBC and DEDI will explore potential ongoing commercial building energy code collaboratives.
   d) DEDI will also collaborate with DHBC and utilities to evaluate potential for partnerships to improve energy code compliance capacity.

ACTION STATUS – Action item in process, ongoing.

C.5. *Devise creative incentives for commercial rental property*

Background and Stakeholder Observations

As with Kentucky's residential rental units, incenting commercial energy efficiency retrofits is difficult because commercial owners have little incentive to invest in energy efficiency retrofits where tenants pay the energy bills. As a result, stakeholders would like to create a mechanism to incent landlords to make commercial property more efficient, while providing the benefit of lower energy bills to tenants.

Implementation Plan

1. ***WHO*** – Creative options for addressing inefficient commercial rental property will be explored via a work group.
   a) DEDI will identify an agency or organization who will organize and facilitate the work group. DEDI will serve as a member of the work group and will provide support as needed.
   b) Representatives of and advocates for Kentucky's commercial ratepayers, including those representing landlords and tenants, will be participants in the work group. DEDI will participate and provide support as needed.

2. ***WHAT*** –
   c) Kentucky will explore programs or policies that reduce the split incentive inherent in making commercial rental property more efficient.
   d) Participants will review existing programs and models in other states.
   e) Work group participants will be responsible for determining whether models in other states may be applicable to Kentucky, as well as the parameters for any resulting Kentucky-specific approach. Incentive funding options will be reviewed, including allocations from utility-run DSM program budgets, state budgets and federal funding.

3. ***ACTION STATUS*** – Action item not yet in process.

Legislative Recommendations (2013/2014 Sessions)

C.6. *Expand State energy efficiency incentives*

Background and Stakeholder Observations

In addition to credits aimed at the residential housing sector, House Bill 2 (2008 Regular Session) also provides credits to reduce up-front energy efficiency costs for commercial businesses.[57] Each incentive is capped at $500 and covers equipment such as energy-efficient interior lighting systems, HVAC and hot water mechanical systems. While these current tax credits have been useful, only 16

[57] *See* http://energy.ky.gov/Programs/Documents/HB2TaxCreditsTableSummary.pdf (summary of HB2 energy efficiency and renewable tax credits). The full bill can be viewed at http://www.lrc.ky.gov/record/08RS/HB2/SCS1.doc.

were claimed by Kentucky's commercial entities in fiscal year 2011 – which has not significantly stimulated the commercial energy efficiency market.[58]

Similar to House Bill 2's residential credits, therefore, stakeholders recommend an expansion of commercial credits. This is particularly vital for commercial entities, given stakeholder feedback indicating that the commercial sector is under-served with regard to energy efficiency programs and financing.

Implementation Plan

Kentucky should expand this and other State-level tax incentives to encourage increased energy efficiency in the commercial sector.

1. ***WHO/WHAT*** –
   a) This action item will be primarily carried out by DEDI in collaboration with the Kentucky Cabinet for Economic Development and the Office of the State Budget Director.
   b) DEDI will seek the feedback and assistance of representatives of and advocates for Kentucky's commercial entities, where possible, in identifying opportunities to expand House Bill 2 credits and other State-level incentives.

2. ***ACTION STATUS*** – Action is pending.

[58] Memorandum entitled *Energy Efficiency Products Credits claimed for Fiscal Year ending 6/30/11* from Regina Ritchey, Supervisor, Tax Credits Section, Dept. of Revenue, to Robert Sherman, Director of LRC, November 30, 2011.

I. INDUSTRIAL SECTOR RECOMMENDATIONS

Similar to the commercial sector, stakeholder feedback indicates that Kentucky's industrial community is underserved with respect to energy efficiency programs and services. While the DSM Statute empowers the utilities to use residential and commercial ratepayer dollars to fund efficiency programs, no such dollars exist for the lion's share of industrial customers. As noted above, the DSM Statute allows Kentucky's industries to opt out from contributing to the ratepayer-funded DSM pool.[59] Consequently, there are no dollars to draw from and, as a result, most utilities do not offer programs to this sector. Currently, there is little support among Kentucky's large industries to change the opt-out provisions. EKPC, TVA and Big Rivers offer industrial efficiency programs, because they build the programs into their base rate, with no surcharge. Duke, which has a relatively low industrial load, recently launched a program (approved under the DSM Statute) providing incentives for their small commercial and industrial customers to install high-efficiency equipment.[60]

Given the large percentage of industrial energy usage in Kentucky, the industrial sector offers huge opportunities for energy efficiency programming. Manufacturing is the largest sector in Kentucky's economy, in 2010 accounting for 18 percent of the Gross State Product,[61] nearly half of its electricity use and nearly half of its natural gas use.[62] This sector also faces mounting pressures with increasing energy rates and environmental compliance costs. Energy efficiency is one way to reduce these pressures: it will render Kentucky's manufacturers more competitive; allow them to retain their workforce; increase productivity; and assure that these industries remain in the State and thus continue to contribute to the economy. Thus, while several barriers exist, addressing this sector is critical to reducing overall energy use in Kentucky and realizing statewide goals.

The challenge for Kentucky is to look beyond traditional funding structures to encourage industry to invest in efficiency, while exploring the underlying statutory barriers that prevent comprehensive efficiency programs from becoming a reality. The action items discussed below begin to address this challenge and recommend the following:

Near-term

I.1. ***Establish a revolving loan fund for industrial energy efficiency improvements***

I.2. ***Convene a work group to discuss the application of the DSM Statute's opt-out provision***

Long-term

I.3. ***Encourage Kentucky's industries to voluntarily share energy efficiency performance data and best practices***

Legislative Recommendation

I.4. ***Modify existing State-level incentives to encourage investment in energy efficiency***

[59] *See* KRS 278.285(3).

[60] See psc.ky.gov/order_vault/Orders.../201200495_04112013.pdf.

[61] Economy.com 2012

[62] *See* DEDI's Kentucky Energy Profile 2012 available at: http://energy.ky.gov/Documents/Kentucky_Energy_Profile_2012.pdf (electricity consumption is broken down by sector at pages 8-10, 23, 29). In a national context, the industrial sector's significance in the consumption of electricity is much greater in Kentucky than in most other states. An average national electricity portfolio apportions just 25 percent of total electricity use to the industrial sector, compared with nearly 50 percent in Kentucky.

Near Term Recommendations (1 - 3 Years)

I.1. *Establish a revolving loan fund for industrial energy efficiency improvements*

Background and Stakeholder Observations

Similar to the commercial and residential sectors, access to upfront capitol is one of the key factors crucial for successful energy efficiency investment in Kentucky's industrial sector. Stakeholders have stressed this fact throughout the SEE KY process and indicate that in the absence of utility-run programs, low interest loans will be necessary for industries to make significant strides in energy efficiency.

Implementation Plan

1. ***WHO*** – This action item will be carried out via a work group organized by representatives of and advocates for Kentucky's industries, which could include the Kentucky Association of Manufacturers, Kentucky Chamber of Commerce, Commerce Lexington, Northern Kentucky Chamber of Commerce, Greater Louisville Inc. and the Kentucky Pollution Prevention Center. Given that this action item has positive implications for economic development in Kentucky, representatives of the Cabinet for Economic Development and individual industries will be included, where possible.

2. ***WHAT*** –
   a) The main challenge in implementing this action item will be to identify sources of initial funding for a revolving loan program. During SEE KY's breakout and interim work group sessions, stakeholders reviewed a number of innovative approaches in other states to addressing this financing hurdle, including those described in action item C.1 above. Kentucky should explore these and other options to provide upfront funding for energy efficiency retrofits.
   b) Representatives from Kentucky's industries will determine which elements of model approaches are applicable for Kentucky and will develop specific parameters, funding structure and data verification procedures for any resulting approach.
   c) As necessary, this industrial work group will coordinate with the parallel work group for the commercial sector identified in action item C.1. Similar funding sources and/or approaches may be identified and the work groups may involve some of the same participants.
   d) The work group may also conduct a survey of this sector through the local business chambers, as well as interviews with utilities and individual industries, to assess interest in a revolving loan model and in energy efficiency programming in the first place.
   e) Successful implementation of this action item may require complimentary legislation, or State budget appropriation.

3. ***ACTION STATUS*** – Action item not yet in process.

I.2. *Convene a work group to discuss the application of the DSM Statute's opt-out provision*

Background and Stakeholder Observations

As noted previously, while many stakeholders agree that there is great potential for reducing industrial energy use in Kentucky, the DSM Statute contains an opt-out provision that prevents utilities from establishing comprehensive efficiency programs for this sector. There is little support among Kentucky's large energy-using industries (typically considered "5 MW or above" manufacturers) to change the opt-out provision. Larger manufacturers tend to already have staff and resources available to initiate energy efficiency efforts and thus do not feel they would benefit from utility-run programs. At the same time, stakeholders acknowledge that smaller manufacturers (typically considered below the "5 MW" energy use category) often need additional technical support and would benefit from coordinated programs.

The SEE KY process is not the first time this dichotomy has arisen. Similar observations were made in the PSC's 2008 report to the Kentucky General Assembly.[63] The report suggested that rules governing industrial customer exclusion from the DSM Statute be clarified, standardized and uniformly applied. This recommendation was based in part on feedback received from participating utilities, industrial representatives, the Office of the Attorney General, and environmental advocates, indicating support for a self-certification element to the opt-out provision (i.e., that industrial customers who seek to opt out of the DSM Statute make a showing of their own energy efficiency efforts before they are allowed an exemption).

Implementation Plan

Given the wealth of diverse – and often conflicting – feedback received on this issue during the SEE KY process, a work group composed of a cross section of energy stakeholders will be developed to explore how Kentucky can continue to meet the needs of its industries while providing equitable solutions for all rate classes.

1. ***WHO*** –
   a) This action item will be carried out by a work group organized in collaboration with representatives from the following:
      i. Kentucky's industrial representatives, including the Kentucky Association of Manufacturers, Kentucky Industrial Utility Customers, Kentucky Chamber of Commerce, Commerce Lexington, Northern Kentucky Chamber of Commerce, Greater Louisville Inc. and the Kentucky Pollution Prevention Center. DEDI will also participate to assist and support the work group.
      ii. Individual industries, where possible;
      iii. Jurisdictional utilities that participate in the DSM Statute, including LG&E, AEP and Duke Kentucky;
      iv. Environmental organizations;
      v. The Office of the Attorney General; and
      vi. The PSC.

[63] *Supra*, n. 16, PSC's 2008 report to the General Assembly (Recommendation No. 5).

2. ***WHAT*** –
   a) Work group participants will review the opt-out provision, as well as the PSC's parallel 2008 report, and make recommendations on the provision.
   b) A facilitator from among the participants will be selected by the participants and a schedule and scope of work will be developed through collaboration.

3. ***ACTION STATUS*** – Action item not yet in process.

Long Term Recommendations (3-4 Years)

I.3. *Encourage Kentucky's industries to voluntarily share energy efficiency performance data and best practices*

Background and Stakeholder Observations

As noted previously, tracking energy efficiency gains in each of Kentucky's rate classes is essential to evaluating progress towards the State's energy efficiency goals. This is particularly important for the industrial sector, given that it is the largest consumer of Kentucky's energy resources.[64] This sector is unique among Kentucky's rate classes, however, because little is known statewide about industrial energy efficiency performance. While the utilities collect ample performance data on residential and commercial programs (and will begin voluntarily reporting this data to DEDI in 2013), the industrial sector's ability to opt out from the DSM Statute means that many utilities lack parallel performance data for their industrial customers. Industrial data is collected in a limited manner in conjunction with EKPC and TVA's industrial programs, but not enough to paint an accurate picture statewide. Energy efficiency service entities and universities, such as the Kentucky Pollution Prevention Center, collect performance data on industrial clients, but this is not similarly scalable to the State as a whole.

Stakeholders are concerned that this lack of data leaves most of Kentucky's efficiency efforts unaccounted for. Thus, in measuring progress toward statewide savings goals, DEDI will be unable to accurately estimate energy savings attributable to industry.

Implementation Plan

Given overwhelming stakeholder feedback rejecting mandatory measures, DEDI will work to establish a voluntary reporting mechanism to collect data from industries on energy efficiency performance and best practices. This effort will be complimentary to the utilities' voluntary reporting efforts described in action item A.1.

1. ***WHO*** – This action item will be carried out primarily by DEDI, in collaboration with representatives of industries and entities providing technical support to the industrial sector. Similar to the project team's plan for implementing the utility reporting mechanism, DEDI will act as the organizer and repository of the data.

2. ***WHAT*** – A multi-pronged approach will be developed to collect performance data for this industry. DEDI will:

[64] *Supra*, n. 70.

a) Collect annual data from each participating utility that runs industrial programs, through the voluntary reporting mechanism outlined in action item A.1 above. A summary table of each utility's current level of commitment to voluntarily submit data, including rate classes and reporting due dates, is attached to this Action Plan as *Appendix D*.
b) Work with industry representatives and manufacturers on an individual basis to gather data.
c) Leverage other action items included in this Action Plan, such as the revolving loan fund for industrials recommended in action item I.1 above and the expanded State-level incentives in action item I.4 below, to collect data from industries that participate in those funding opportunities.
d) Request that entities providing grants and technical assistance to Kentucky's industries provide anonymous performance data for participating industries.
e) Use these metrics to estimate progress on an annual basis towards the Governor's energy goal, as it applies to the industrial sector. While this calculation will not be representative of savings across the sector, DEDI anticipates that it will, in time, improve as the pool of participating industry grows. Collection of data adequate to calculate progress will depend on the level of voluntary participation by Kentucky's industries and the other entities outlined above.
f) Assess whether a third party entity is more appropriate to manage industrial data, given confidentiality or trade secret concerns that may be implicated.

3. ***ACTION STATUS*** – Action item not yet in process. Specific timeframes for utility data reporting are set out in *Appendix D*.

Legislative Recommendations (2013/2014 Sessions)

I.4. *Modify existing State-level incentives to encourage investment in energy efficiency*

Background and Stakeholder Observations

As noted above, very few utilities in Kentucky offer energy efficiency programs to their industrial customers and there are even fewer incentives available at the State level. Given that utility-sponsored industrial programs are unlikely to increase in the short term, stakeholders in the SEE KY process suggest that Kentucky focus on expanding current State-level financial incentives. This approach will benefit Kentucky's industries several ways: through reduced energy bills; increased competitiveness at the national and local level; and retention of a highly skilled and paid workforce that often provides the economic backbone for entire communities. There is also great potential for small and medium industries in particular to benefit from State-level incentives, since they tend to have far more limited internal resources to invest in efficiency, coupled with heavy competition for whatever capital dollars do exist. Stakeholders indicate that increasing access to State-level incentives will also mean quicker cost recovery – a factor that often determines whether efficiency projects will be carried out in the first place.

Implementation Plan

The Kentucky Reinvestment Act (KRA) currently provides tax credits and partial reimbursement of investment dollars to Kentucky's manufacturers that incur at least $2.5 million in capital costs and that maintain at least 85 percent employment of their workforce. Stakeholders have suggested

carving out a separate and distinct incentive tier in the KRA that lowers this investment threshold, applicable only to energy efficiency investments. This separate tier would be directed at small to medium size industries that were previously ineligible for the KRA because they were unable to meet the original expenditure requirement.

Kentucky should explore this and other options to expand State-level tax incentives to encourage increased energy efficiency in the industrial sector.

1. ***WHO* / WHAT** –
   a) DEDI will primarily carry out this action item in collaboration with the Kentucky Cabinet for Economic Development and the Office of the State Budget Director.
   b) As necessary, DEDI will seek the feedback and assistance of representatives of and advocates for Kentucky's industries to identify opportunities to expand the KRA and other State-level incentives as applicable.

2. ***ACTION STATUS*** – Revisions to the KRA are pending.

F. RECOMMENDATIONS AT THE FEDERAL LEVEL

The remaining action items in this Plan were derived from stakeholder feedback concerning energy efficiency matters over which the federal government has primary control. Thus, none of the stakeholders involved in SEE KY can directly implement actions related to these recommendations. Instead, DEDI requests that U.S. DOE and other appropriate federal agencies consider these action items as essential to furthering energy efficiency efforts in Kentucky. If addressed, they may also benefit efforts in other states to develop comprehensive energy efficiency program and policy suites.

Recommendations

Stakeholders during the SEE KY process provided feedback on energy efficiency issues related to FEMA's post-disaster rebuilding approach, as well as to how funds are apportioned via LIHEAP.

F.1. ***USDOE should work with US DHS to evaluate how FEMA funds are provided for home rebuilding or replacement in the wake of natural disasters, and consider requiring that new structures be built better than code (e.g. ENERGY STAR).***

Several participants in the SEE KY residential working groups and breakout sessions have witnessed post-disaster rebuilding efforts in Kentucky and are concerned that FEMA could do more to use disaster assistance to leverage energy efficiency to the benefit of the disaster victims.

F.2. ***US DOE should take a lead role in working with US DHHS to enhance the delivery of energy efficiency and conservation solutions to citizens served by LIHEAP and Weatherization programs.***

Participants in the residential working groups were also concerned that LIHEAP provides a disincentive for homeowners to invest in energy efficiency upgrades and thus allows inefficient dwellings to perpetuate. The US DOE needs take a fresh look at how these services are provided and consider if the current model is appropriate, ideally with the assistance of the United States Department of Health and Human Services (US DHHS). As currently delivered, at least in some states, the resources are segregated in separate silos, preventing the optimal delivery of services.

F.3. ***US DOE should assume a lead role in working with other federal agencies (USDA, HUD, EPA) that offer federal infrastructure programs and grants for cities and states to set energy efficiency standards as a condition of awards.***

Stakeholders also commented that when any federal funding supports the construction of new or replacement buildings they should be built to a higher energy efficiency standard. Buildings and construction programs supported by the US Department of Agriculture (USDA), HUD and the US Environmental Protection Agency (EPA) would be priority candidates for establishing such standards.

F.4. *US DOE should coordinate with HUD to improve energy efficiency standards for manufactured homes that are appropriate for various climate zones.*

Given the serious energy inefficiency and high utility costs associated with manufactured homes across the nation, as discussed in action item R.6, HUD should review the manufactured housing codes. The problem in rural Kentucky is exacerbated by manufactured housing equipped with resistance heating units. While resistance heating is code-compliant, low income homeowners typically cannot afford the associated high electric bills in cold winters. In fact, several utilities in Kentucky offer incentives to replace these heating systems, to both reduce peak demands and ease the burden of high bills for manufactured housing residents. This issue is ripe for HUD's review. Manufactured housing codes that consider more efficient heating systems, while also accounting for the effects in different climate zones, would be a first step in addressing high energy bills in the low income sector.

APPENDIX A - COMPLETE LIST OF SEE KY STAKEHOLDER PARTICIPANTS

Note: *This list identifies organizations, and their representatives, that participated in one or more phases of the SEE KY project's stakeholder series. It includes participants who provided both formal and informal feedback during one-on-one and/or small group meetings that took place from February through November 2011, as well as attendees at any of the three meetings held in the collaborative series from December 2011 through July 2012.*

UTILITIES AND ASSOCIATIONS	REPRESENTATIVE(S)
Atmos Energy	Len Matheny
Big Rivers Electric Corporation	Roger Hickman, Russ Pogue
Big Sandy Rural Electric Cooperative	David Estepp, Jeff Prater
Blue Grass Energy	Roy Honican, Mike Williams, Barry Drury
Columbia Gas	Herb Miller, Judy Cooper
Duke Energy Kentucky	Trisha Haemmerle, Kevin Bright, Tasha Davis
East Kentucky Power Cooperative	Jeff Hohman, Scott Drake
Farmers Rural Electric Cooperative Corporation	Bill Prather, Chuck Bishop
Frankfort Plant Board	Jim Carter
Jackson Purchase Energy Corp.	Izell White
Kenergy	David Hamilton
Kentucky Association of Electric Cooperatives	Dennis Cannon
Kentucky Municipal Utility Association	Annette Dupont-Ewing
Kentucky Power / American Electric Power	Ranie Wohnhas, E.J. Clayton
Louisville Gas & Electric / Kentucky Utilities	David Huff, Michael Hornung, Rick Lovekamp, Chuck Schram, Lonnie E. Bellar
Meade County Rural Electric Cooperative	Tim Gossett
Owen Electric Cooperative	Mark Stallons, Mike Cobb
Owensboro Municipal Utilities	Sonya Dixon
Tennessee Valley Authority	Carl Seigenthaler, Tim Hughes, Sara Davasher, Frank Rapley, Bryan Moneymaker, Brent Powell

HOUSING ORGANIZATIONS/ASSOCIATIONS	REPRESENTATIVE(S)
Bluegrass ASHRAE	Grant Page
Federation of Appalachian Housing Enterprises	Vonda Pynter
Frontier Housing	Josh Trent, Sherry Farley
Kentucky Habitat for Humanity	Mary Shearer, Ginger Watkins
Kentucky Homebuilders Association	Bob Weiss, Laurent Rawlings
Kentucky Housing Corporation	Rick McQuady, Rick Boggs, Andrew Isaacs
Kentucky Manufactured Housing Institute	Betty Whittaker, Erica Klimchak
Next Step	Stacey Epperson, Kelley Hancock
US Green Building Council, KY Chapter	Grant Page, Paul Kaplan

INDUSTRY, COMMERCIAL ENTITIES, AND ASSOCIATIONS	REPRESENTATIVE(S)
Arkema, Calvert City Plant	Dwight Stoffel
Big Ass Fans	Christian Tabler
Century Aluminum	David Whitmore, Ryan Neel
C.I.Agent Solutions	Tom Downs
Commerce Lexington, Inc.	Tyler Campbell, Gina Greathouse
Distillers' Association	Eric Gregory
Dow Chemical	Jana Zigrye
General Electric	Leanne Monsove, Earl Jones
Greater Louisville, Inc.	Carmen Hickerson, Tim Corrigan
Kentucky Association of Manufacturers	Greg Higdon
Kentucky Chamber	Chad Harpole
Kentucky Corn Growers' Association / Small Grain Growers' Association	Laura Knoth
Kentucky Farm Bureau	Brian Alvey
Kentucky Industrial Utility Customers	David Boehm
Kentucky Retail Federation	Gay Dwyer
KROGER Engineering and Maintenance Services	Bryan Handy
Lexmark	Paul Ackerman
Link-Belt Lexington	Paul Zink, James Bowman, Bob Jones
Logan Aluminum	Russ Hendrick
NACCO Materials Handling Group	Rodney Wilson
National Federation of Independent Business	Tom Underwood
Northern Kentucky Chamber of Commerce	Steve Stevens
Owl Inc.	Martin Slicemaker
Rio Tinto Alcan	Pam Schneider, David Whitmore
SECAT	Denis Ray
SemiCon Associates	Roger Leet
Sustainable Business Ventures	Bobby Clark
Toyota Motor Manufacturing, Kentucky	David Absher
Zeon Chemicals	Tom Herman

ADVOCATES	REPRESENTATIVE(S)
Office of the Attorney General	Jennifer Hans, Dennis Howard, Larry Cook
KY Conservation Committee	Art Williams
Community Action Kentucky	Rob Jones, Michael Moynahan
Goodwill Industries of Kentucky	Roland Blahnik
Greater Cincinnati Energy Alliance	Chris, Jones, Jeremy Faust
Community Action Council for Lexington-Fayette, Bourbon, Harrison, and Nicholas Counties	Jack Burch, Charlie Lanter
Kentuckians for the Commonwealth	Steve Wilkins
KY Green Party	Geoff Young
Mountain Association for Community Economic Development	Peter Hille, Kristin Tracz
Sierra Club	Rick Clewett, Wallace McMullen, Susan Lambert

EDUCATIONAL/RESEARCH INSTITUTIONS AND ASSOCIATIONS	REPRESENTATIVE(S)
Kentucky Community & Technical College System	Billie Hardin
Kentucky School Boards Association	Ron Willhite
University of Louisville's Kentucky Pollution Prevention Center	Cam Metcalf, Richard Meisenhelder, Lissa McCracken

STATE AND LOCAL GOVERNMENT AGENCIES/CABINETS/ ASSOCIATIONS	REPRESENTATIVE(S)
Cabinet for Economic Development	Holland Spade, Tim Back
Dept. of Housing, Buildings and Construction	Comm. Ambrose Wilson
Kentucky League of Cities	Joe Ewalt
Kentucky Public Service Commission	Comm. Linda Breathitt, Comm. Jim Gardner, Jeff DeRouen, Aaron Greenwell, John Rogness, Gretchen Gillig, Talina Matthews
Lexington Downtown Development Authority	Jeff Fugate
Lexington-Fayette Urban County Government	Susan Bush, James Bush, Tom Webb
Lieutenant Governor's Office	Madeline Abramson
Louisville Department of Public Works and Assets	Christy Dooley
Louisville Metro Economic Growth & Innovation	Maria Koetter
Pikeville, Economic Development and Energy Projects	Charles Carlton

LEGISLATIVE	REPRESENTATIVE(S)
Legislative Research Council	D. Todd Littlefield, Sarah Kidder
Kentucky House of Representatives	Rep. Rocky Adkins, Chief of Staff Tom Dorman Rep. Leslie Combs Rep. Jim Gooch Rep. Keith Hall
Kentucky State Senate	Senator Brandon Smith

APPENDIX B – OVERVIEW OF THE SEE KY STAKEHOLDER PROCESS

ONE-ON-ONE MEETINGS, FEBRUARY TO OCTOBER 2011

The first part of SEE KY's stakeholder engagement process focused on identifying and building relationships with stakeholders interested in energy efficiency issues across the Commonwealth. Between February and October 2011, DEDI and MEEA held individual meetings across Kentucky to evaluate the efficacy of current efficiency efforts, as well as to determine where the opportunities for improvement lie and what barriers exist. SMG was a vital member of the project team during this phase, as they provided local knowledge of the energy landscape and introductions to stakeholders who were essential to the process.

The early portion of the stakeholder process focused on representatives of utilities, manufacturers and industry, commercial energy consumers, local business chambers and trade organizations, housing associations, agriculture, the advocacy community, the Office of the Attorney General, the PSC and members of the Kentucky General Assembly. A complete list of stakeholder participants is attached to this Action Plan as *Appendix A*. Each individual and organizational stakeholder had their own perspective on energy efficiency, which added great value to the collaborative process. Not everyone agreed on every issue, but there was overwhelming consensus that efficiency has an important role in Kentucky's energy future.

THE COLLABORATIVE MEETING SERIES, DECEMBER 2011 TO JULY 2012

While individual meetings with stakeholders continue intermittently through the present day, by December of 2011 the project team largely wrapped up the one-on-one meeting phase and launched a three-meeting series of collaborative sessions. The goal of this series was to finalize the program and policy recommendations that are now included in this Action Plan. In organizing content and messaging, a list of "key findings" was compiled, consisting of stakeholder feedback gathered over the previous 10 months. During the series, the stakeholders worked through each key finding in a collaborative format, eventually crafting actionable recommendations to propel Kentucky towards achieving its energy efficiency goals. Work groups were also convened between Meetings 1 and 2, to move more complex issues down the road prior to each collaborative session.

A summary of the key issues discussed with stakeholders in the collaborative sessions is provided below, as well as the evolution of these issues throughout the process. Some recommendations initially made during the one-on-one meetings were later rejected in the collaborative sessions, while still others were added and eventually evolved into action items.

Collaborative Meeting 1

The first meeting of the collaborative series (Meeting 1) was held on December 2nd, 2011, during which approximately 70 stakeholders participated. During the morning session, the project team provided context on the energy efficiency regulatory scheme in Kentucky, as well as an overview of current utility and State-run efficiency programs. The project team then presented the list of key findings gathered from the one-on-one meeting phase, followed by a breakout series focusing on residential issues, industrial efficiency and the DSM Statute. The day also included remarks from representatives of Toyota Motor Manufacturing Kentucky, the Arkansas Public Service Commission and the Regulatory Assistance Project's Director of US Programs. Minutes from Meeting 1 and a list of participants are available on the DEDI website at http://energy.ky.gov/Programs/Pages/InterimGroups.aspx.

While stakeholders provided many diverse opinions during this session, there was surprisingly consistent feedback on a number of issues relating to energy efficiency:

- **First**, in regard to the *residential sector*, stakeholders largely agreed that improving Kentucky's housing stock should be a main focus of efficiency efforts moving forward. Barriers to this currently include inconsistent compliance with the housing code, the difficulty in effectively reaching consumers, the challenges in offering incentives to improve rental property where landlords do not pay the energy bill, and the significant stock of energy inefficient manufactured homes in Kentucky.
- **Second**, in regard to *Kentucky's DSM Statute*, the majorities of investor-owned utilities – both gas and electric – believe that the statute, as written, is favorable to their customers and would like to see the current language preserved.
- **Third**, stakeholder feedback revealed that the DSM Statute allows KY's *industrials* to opt out from participating in industrial energy efficiency programs and, as a result, the investor-owned utilities do not offer programs for this sector. At the same time, there is little support in the industrial and manufacturing community to change the opt–out provision.
- **Fourth**, in discussing *energy efficiency savings goals* the majority of participants did not favor a legislated Energy Efficiency Resource Standard. Instead, there was support for statewide voluntary goals, such as those articulated in the Governor's Energy Strategy and the SEE KY initiative's one percent voluntary savings goal, rather than mandated standards.

Work groups were also convened following Meeting 1 (called "Interim Sessions"), to discuss regulatory process improvement (particularly the DSM Statute program approval process), industrial and commercial efficiency issues and opportunities for more effective residential and low income energy efficiency programs. Minutes from the Interim Sessions and a list of participants are available on the DEDI website at http://energy.ky.gov/Programs/Pages/InterimGroups.aspx.

Collaborative Meeting 2

The second meeting of the collaborative series (Meeting 2) was held on March 22, 2012 and involved many of the same stakeholders present at Meeting 1. The main objectives of Meeting 2 were to take the basic concepts introduced at Meeting 1 and incorporate more discussion of best practices from surrounding states. The project team framed these best practices as potential strategies that could be tailored to Kentucky's unique energy landscape. As a result of participant feedback following Meeting 1, the project team also organized Meeting 2 to focus primarily on small breakout sessions, including a set of three sessions in the morning and a complimentary set in the afternoon. The project team also included a mid-afternoon session to provide stakeholders with varying perspectives on the future of energy efficiency in Kentucky, including representatives from the PSC, the Office of the Attorney General and the Kentucky Association of Manufacturers. Minutes from Meeting 2 and a list of participants are available on the DEDI website at http://energy.ky.gov/Programs/Pages/SEE-KY.aspx.

The project team received a wealth of feedback during Meeting 2's breakout-heavy sessions, yet several common themes emerged:

- **First**, in regard to *measuring progress toward the statewide goals* in the Governor's Energy Strategy, the project team had learned over the stakeholder process that the DSM Statute does not dictate any particular requirements for reporting performance data from utility-run energy

efficiency programs. Access to basic annualized performance data from each utility in Kentucky is essential for DEDI to measure progress towards both the Governor's and the SEE KY initiative's efficiency goals. This issue was discussed during breakout sessions at Meeting 2, though stakeholders did not initially reach consensus on how it could be resolved. The project team's approach has evolved recently, as several Kentucky utilities have agreed to voluntarily provide performance data to DEDI on an annual basis.

- **Second**, there was general consensus that *large industrial consumers* tend to have enough expertise and capital to implement efficiency on their own, whereas *smaller to medium industries* could benefit from utility-run DSM programs, both from an incentive and technical expertise standpoint.
- **Third**, stakeholders expressed widespread concern that the *commercial sector* is under-served with regard to effective energy efficiency programs. Some of the many suggestions for rectifying this included more robust education and marketing programs for this sector, increasing financial incentives and funding opportunities, improving Kentucky's commercial building stock and consistent implementation of the commercial building code.
- **Fourth**, in the *residential sector* stakeholders agreed that there is vital need for more education and marketing programs, segmented by income levels. In addition, focus was placed on efficiency programs aimed at *improving the residential housing* stock at all income levels. There was also desire among a proportion of stakeholders to further innovative funding programs, such as on-bill financing, in Kentucky's middle and low income communities.

Rather than hold Interim Sessions following up on each of the breakout sessions in Meeting 2, after this meeting the project team took a more pragmatic approach and picked a few distinct issues to delve deeply into before returning for the third and final meeting of the collaborative series. DEDI and MEEA reviewed the findings and stakeholder feedback gathered from Meetings 1 and 2, and prioritized a list of potential action items. The project team then opted to focus their efforts on the data collection issue. Between April and July of 2012, the project team worked with utilities to devise a data reporting system that will enable DEDI to measure progress toward statewide savings goals – which has never before been done in Kentucky.

Collaborative Meeting 3

The final meeting of this collaborative series (Meeting 3) was held on July 31, 2012 and was attended by a record number of stakeholders. Minutes from Meeting 3 and a list of participants are available on the DEDI website at http://energy.ky.gov/Programs/Pages/SEE-KY.aspx. The goal of Meeting 3 was to provide a forum to discuss the action items that resulted from over a year of stakeholder feedback and collaborative meetings. The project team focused on articulating how the action items, and the Action Plan as a whole, were tailored to reflect the issues that stakeholders felt were most feasible to achieve the Governor's energy efficiency goals and to position Kentucky as a leader in energy efficiency in the national arena. Meeting 3 also featured remarks from newly-appointed Commissioner to the Kentucky PSC, Linda Breathitt, and a preview of each main policy and program option included in the Action Plan.

Stakeholders were encouraged to continue to provide feedback on the action items through the fall and to review the Action Plan in detail prior to its official release. Please note that a new version will be released regularly to reflect evolving action items, timelines and approaches. The stakeholders listed in *Appendix A* will be asked to continue to participate in small work groups and provide other feedback throughout implementation and evolution of the Action Plan.

APPENDIX C – REFERENCE DOCUMENTS USED IN THE STAKEHOLDER PROCESS

ACEEE TECHNICAL ASSISTANCE AND ANALYSES

Over the course of its involvement in the SEE KY process, ACEEE produced a series of resource guides for national models and local analyses as a technical accompaniment to the stakeholder process. In collaboration with DEDI, ACEEE released four reports intended to educate stakeholders and provide context on Kentucky's energy landscape, efficiency potential and current savings, and applicable elements of best practice approaches in other states. These reports are posted on the DEDI website for reference at http://energy.ky.gov/Programs/Pages/SEE-KY.aspx. DEDI briefed stakeholders and facilitated questions and answers on the reports during Meeting 2.

Report #1, entitled *Kentucky Electricity and Natural Gas Price and Consumption*,[65] models the expected increase in electricity prices and consumption in the residential, commercial and industrial classes through 2030.

Report #2, entitled *Energy Efficiency Cost-Effective Resource Assessment for Kentucky*,[66] provides the maximum, "best case scenario" energy savings that could be achieved through energy efficiency in each of Kentucky's main rate classes through 2030.

Report #3, entitled *Assessment of Utility Program Portfolios,*[67] surveyed utility-run energy efficiency portfolios in ten states (Arkansas, Georgia, Illinois, Indiana, Iowa, Michigan, North Carolina, Ohio, Pennsylvania and Tennessee) and provided the corresponding energy savings realized where available.

Report #4, entitled *Assessment of Utility Program Portfolios in Kentucky,*[68] analyzed the performance of a select set of Kentucky's existing utility-run energy efficiency programs, evaluated their effectiveness and compared them to other states' programs. The analysis included a review of program savings and costs for programs offered by Duke, AEP, LG&E and TVA in the 2008 - 2010 program years.

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[65] Full document available at: http://energy.ky.gov/Programs/SEE%20KY/Dec%202,%202011%20Meeting/ACEEE%20Price-Consumptin%20Forcast%208_09_11_B.pdf (last visited November 6, 2012). Fact Sheet available at: http://energy.ky.gov/Programs/SEE%20KY/Dec%202,%202011%20Meeting/Summary%20Price%20Consumption%20Forecast_FINAL.pdf (last visited November 6, 2012).

[66] Full document available at: http://energy.ky.gov/Programs/SEE%20KY/March%202012%20Meeting/KY%20Econ%20Potential%20Analysis%20-%20FINAL%20DRAFT.pdf (last visited November 6, 2012). Fact Sheet available at: http://energy.ky.gov/Programs/SEE%20KY/March%202012%20Meeting/03_16_2012_ACEEE%20Economic%20Potential%20fact%20sheet%203.pdf (last visited November 6, 2012).

[67] Full document available at: http://energy.ky.gov/Programs/SEE%20KY/March%202012%20Meeting/ACEEE%20Utiilty-Program%20Analysis%20Report.pdf (last visited November 6, 2012). Fact Sheet available at: http://energy.ky.gov/Programs/SEE%20KY/March%202012%20Meeting/03_16_2012_ACEEE%20State%20comparison%20fact%20sheet%202.pdf (last visited November 6, 2012).

[68] Full document available at: http://energy.ky.gov/Programs/SEE%20KY/July%202012%20Meeting/KY%20Utility%20Program%20Analysis-FINAL_7-2-12.pdf (last visited November 6, 2012). Fact Sheet available at: http://energy.ky.gov/Programs/SEE%20KY/March%202012%20Meeting/03_16_2012_ACEEE%20Ky%20Utility%20Program%20fact%20sheet%204.pdf (last visited November 6, 2012).

APPENDIX D – UTILITY DATA REPORTING COMMITMENTS AND TIMELINES

METHOD FOR MEASURING GOAL

II. Energy Savings Goals

- Requirement of Grant– "Under this Area of Interest, DOE is seeking applications from states and groups of states to achieve an annual minimum target electricity savings of one percent through energy efficiency. Should a state decide to address them, natural gas and transportation fuel savings should be additional to the minimum one percent electricity savings."

- Governor's Goal (7-Point Strategy, 2008) – "Energy efficiency will offset at least 18 percent of Kentucky's projected 2025 energy demand." The Governor's efficiency goal includes all fuels (gas, electricity, etc.) and sectors (residential, commercial, industrial and transportation) so will be tracked in Btu.

III. Mechanism – Statewide electricity efficiency target, via voluntary utility participation and annual reporting of energy cost, use and savings data. Goal will be measured in terms of efficiency programs (MWh) and demand reduction (MW).

IV. Expression of Target – Percentage annual cumulative electric energy use reduction as a result of energy efficiency programs, compared to the preceding three year average total electricity sales.

Notes - Specific natural gas targets will not be set, but annual savings may be tracked (mcf) on the same path as electric savings (MWh) in DEDI's database. Likewise, electricity demand reduction (MW) will be tracked as well.

V. Calculation

Efficiency Savings will be reported as cumulative energy efficiency, as illustrated in the following *example (Note*: The table below is for illustration purposes only and assumes a DSM program that has been in existence since 2007, and all efficiency measures installed have a life of greater than five years.)

Year	Total Sales	DSM Energy Savings
2012	S_{12}	$C_{12} = I_{12} + C_{11}$
2011	S_{11}	$C_{11} = I_{11} + C_{10}$
2010	S_{10}	$C_{10} = I_{10} + C_{09}$
2009	S_{09}	$C_{09} = I_{09} + C_{08}$
2008	S_{08}	$C_{08} = I_{08} + C_{07}$
2007	S_{07}	$C_{07} = I_{07}$

- *Formula example for 2012:* % Energy Savings = $C_{12} / [(S_{11} + S_{10} + S_{09})/3 + C_{12}]$

- *Where:*
  - ***S***## = *Total* ***S****ales of energy (MWh) for a given year*
  - ***I***## = ***I****ncremental energy savings achieved through DSM programs for a given year as a result of new enrollments or measure installations*
  - ***C***## = ***C****umulative energy savings achieved through DSM programs for a given year as a result of new enrollments or measure installations, plus carry-forward energy savings from previous year's enrollments or measure installations.*

- *Reported Values* – DEDI will generate four separate energy savings values each year:
  i. Residential energy savings, as compared with total residential consumption (average of preceding 3 years).
  ii. Commercial energy savings, as compared with total commercial consumption (average of preceding 3 years).
  iii. Industrial energy savings, as compared with total industrial consumption (average of preceding 3 years).
  iv. Total energy savings, as compared with total energy consumption (average of preceding 3 years).

- *Practical Considerations*
  i. Some utilities will report on a calendar year (Jan 1 through Dec 31), some on a federal fiscal year (Oct 1 through Sep 30) and others will report on state fiscal year (Jul 1 through Jun 30) (see table below).
  ii. The first measured year will be 2012.
  iii. The total energy sales baseline will be expressed as a three year average, based on the preceding three years and will be recalculated on a rolling basis each year. This method will serve to normalize data for a number of factors (e.g., new or lost economic growth, extreme weather changes, etc.). The first baseline period will be 2009-2011.
  iv. For all utility data reported, energy savings data will be cumulative to the beginning of program operation.
  v. However, energy savings will be cumulative only as far back as the effective useful life of the program measures installed, e.g. if a CFL program has been in existence for 20 years, but the CFL's have an assumed life of five years, the energy savings will only accumulate back as far as five years.
  vi. All utilities will be covered in any final summary report of data; absence of data will appear as zero activity.
  vii. Because each utility has a different history with DSM programs and each has a different database for tracking these data, it is important to note that not all utilities will show a fair representation of energy savings. For example: At least one utility has been running programs for nearly 20 years; however, they only have data going back about five years. Another utility is only just beginning their DSM programs, so has no history of energy savings to accumulate/compound over time. Yet another utility has a fair amount of data going back in time, but because of the way their data tracking has

evolved over the years, they have less confidences in their older data and may chose not to use the older data. All these factors conspire to underscore that comparing energy savings among utilities is not something that can be easily or fairly done. As time goes by, and more consistency of data is compiled, some of the data issues may recede, but there are still other issues making comparisons difficult, such as market and demographic differences in service areas.

viii. In the same vein, some utilities report net energy savings and others report gross energy savings to the Energy Information Administration. So, the entire data set for all utilities will likely be a mix of net vs. gross energy savings data. As such, any data summaries or comparison will require care and clear qualification.

RAMP UP OF ANNUAL TARGETS

Annual targets ramp up in 2012-2014, to an annual one percent goal from 2015 through 2025, according to the following schedule:

Calendar Year	Incremental Electric Consumption Reduction	Cumulative Electric Consumption Reduction
2012	0.2%	0.2%
2013	0.3%	0.5%
2014	0.5%	1%
2015	1%	2%
2016	1%	3%
2017	1%	4%
2018	1%	5%
2019	1%	6%
2020	1%	7%
2021	1%	8%
2022	1%	9%
2023	1%	10%
2024	1%	11%
2025	1%	12%

Note: Natural gas consumption reductions will be added to make up the remainder of 2025 goal.

UTILITY DATA REPORTING COMMITMENTS AND TIMELINES

Utility	Residential Data	Commercial Data	Industrial Data	Reporting Period	Year 1 Report Date	Report Date After Year 1	Net vs. Gross Energy Savings*
LG&E/ KU	✓	✓	N/A	Calendar Year	April 30	April 30	Net
Duke	✓	✓	✓	State Fiscal Year (July 1 to June 30)	April 30	Dec. 31	Net
AEP	✓	✓	N/A	Calendar Year	April 30	April 30	Net*
EKPC	✓	✓	✓	Calendar Year	April 30	April 30	Net*
TVA	✓	✓	✓	Fed. Fiscal Year (Oct. 1 to Sept. 30)	April 30	Dec. 31	Gross
Big Rivers	✓	✓	N/A	Calendar Year	April 30	April 30	Net
Municipal Utilities							

* Indicates net vs. gross energy savings data as reported to the Energy Information Administration. Net energy savings takes into account "free riders" only.