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# **Unlocking the Power of Energy: A Comparative Study of Energy Efficiency Portfolio Standards in Illinois and Massachusetts**

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Harvard Kennedy School

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# Unlocking the Power of Energy

A Comparative Study of Energy Efficiency Portfolio Standards in Illinois and Massachusetts

March 2013

Harvard Kennedy School of Government

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## Table of Contents

|  |           |
|--|-----------|
| <b>Executive Summary</b> .....   | <b>1</b>  |
| <b>I. Background</b> .....   | <b>4</b>  |
| I.A. EEPS Funding and Spending .....   | 5         |
| I.B. Why Low-Income Programs?.....   | 6         |
| <b>II. State Program Descriptions</b> .....  | <b>11</b> |
| II.A. EEPS in Illinois .....   | 11        |
| EEPS Spending Caps in Illinois.....  | 13        |
| EEPS and the Illinois Department of Commerce and Economic Opportunity .....                  | 13        |
| II.B. EEPS in Massachusetts .....  | 14        |
| <b>III. Analysis</b> .....   | <b>20</b> |
| III.A. EEPS Spending Caps .....  | 22        |
| III.B. Coordination and Consolidation .....  | 26        |
| III.C. Residential Rebates .....   | 31        |
| III.D. Low-Income Sector Spending .....  | 35        |
| III.E. Complementary Policies .....  | 46        |
| <b>Conclusion</b> .....  | <b>49</b> |
| Appendix A: One-Page Summary of Findings and Recommendations for Illinois .....              | 54        |
| Appendix B: ACEEE Map of Sates with EEPS, 2012.....  | 55        |
| Appendix C: 1970-2011 Average Retail Price of Electricity and Natural Gas (IL, MA, USA)..... | 55        |
| Appendix D: Massachusetts Energy Efficiency Awards and Honors .....                          | 57        |
| Appendix E: Electricity Energy Efficiency Program Funding Sources (MA) .....                 | 60        |
| Appendix F: Mass Save Logo .....   | 60        |
| Appendix G: Illinois DCEO Low-Income Retrofit Maximum Grant Amounts .....                    | 60        |
| Appendix H: Map of Sates with Gas and Electric Decoupling Policies, 2012 .....               | 61        |
| Appendix I: 2000-2030 Illinois and Massachusetts Population Projections .....                | 62        |
| Appendix J: 2010-2015 Massachusetts EEPS Budget .....  | 62        |
| Appendix K: 2008-2013 Illinois EEPS Budgets .....  | 63        |
| Appendix L: 2010-2015 Massachusetts Annual and Lifetime EEPS Fuel Savings .....              | 65        |
| Appendix M: 2008-2013 Illinois Annual EEPS Fuel Savings.....                                 | 68        |
| Appendix N: 2011-2013 Illinois DCEO EEPS Budget.....   | 70        |

|   |    |
|---|----|
| Appendix O: 2011-2013 Illinois DCEO EEPS Fuel Savings ..... | 72 |
|---|----|

## List of Figures

|  |    |
|--|----|
| Figure 1: EEPS Funding Structure.....  | 6  |
| Figure 2: Average Year of House Construction, USA .....                                    | 11 |
| Figure 3: Rental Rate by Household Income, USA (2009) .....                                | 11 |
| Figure 4: Number of Ratepayers in Illinois, by Major Utility Company.....                  | 18 |
| Figure 5: Number of Ratepayers in Massachusetts, by Major Utility Company.....             | 18 |
| Figure 6: Illinois EEPS Budget by Sector .....   | 19 |
| Figure 7: Massachusetts EEPS Budget by Sector .....  | 19 |
| Figure 8: Statewide EEPS Budgets .....   | 21 |
| Figure 9: EEPS Six-Year Electricity Savings Per Capita .....                               | 21 |
| Figure 10: EEPS Six-Year Gas Savings Per Capita .....                                      | 22 |
| Figure 11: EEPS Spending and Rate Caps .....   | 24 |
| Figure 12: EEPS Annual Electricity Savings Per Capita .....                                | 25 |
| Figure 13: EEPS Annual Natural Gas Savings Per Capita.....                                 | 25 |
| Figure 14: % of Residential Sector EEPS Budget Spent on Rebates.....                       | 34 |
| Figure 15: Massachusetts Lifetime EEPS Electricity Savings (Residential Sector) .....      | 34 |
| Figure 16: Massachusetts Lifetime EEPS Natural Gas Savings (Residential Sector) .....      | 35 |
| Figure 17: Low-Income Sector EEPS Spending vs. Energy Consumption .....                    | 43 |
| Figure 18: Average Year of House Construction .....  | 43 |
| Figure 19: Rental Rate by Household Income, Midwest Census Region (2009) .....             | 44 |
| Figure 20: Rental Rate by Household Income, Northeast Census Region (2009).....            | 44 |
| Figure 21: EEPS Low-Income Sector Budgets .....  | 45 |
| Figure 22: % of Residential Electricity Saved due to Low-Income Sector EEPS Programs ..... | 45 |
| Figure 23: % of Residential Natural Gas Saved due to Low-Income Sector EEPS Programs ..... | 45 |

## List of Tables

|   |    |
|---|----|
| Table 1: Electric and Gas Annual EEPS Savings Targets in Illinois .....             | 16 |
| Table 2: Electric and Gas EEPS Annual Savings Targets in Massachusetts .....        | 16 |
| Table 3: 2011-2013 DCEO Energy Efficiency Spending in Illinois.....                 | 16 |
| Table 4: 2008-2013 EEPS Budget in Illinois by Sector (\$ Millions).....             | 17 |
| Table 5: 2010-2015 EEPS Budget in Massachusetts by Sector (\$ Millions).....        | 17 |
| Table 6: Illinois EEPS Utility Spending Caps as a Percentage of Annual Revenue..... | 24 |
| Table 7: Illinois Energy Efficiency Program Offerings.....                          | 29 |
| Table 8: Massachusetts Energy Efficiency Program Offerings.....                     | 31 |
| Table 9: 2011-2013 DCEO Low-Income Sector Spending in Illinois.....                 | 43 |

# Executive Summary

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Changing the way American citizens, families, and businesses use and conserve electricity and natural gas is an essential component of the nation's energy future. Creating a more efficient energy system involves public policies that incentivize customers to commit to demand-side technologies and behaviors. Successful policies have the ability to curb the country's energy usage, drastically reduce carbon emissions, help mitigate the economic effects of volatile fuel prices, create jobs, and reduce energy expenditures for customers.

Today, a large driver of demand-side energy efficiency policies comes in the form of state-level Energy Efficiency Portfolio Standards (EEPS)—also known as Energy Efficiency Resource Standards (EERS). This report focuses on Illinois and Massachusetts and each state's experience with its EEPS. Specifically, the report analyzes key components of the widely successful Massachusetts model to inform Illinois policymakers and energy efficiency advocates as they continue to shape the future of their state's EEPS. Massachusetts, which has been pursuing statewide energy efficiency since the 1970s, can provide valuable lessons to Illinois in its more recent statewide commitment.

As Illinois policymakers, utility companies, and members of the Energy Efficiency Stakeholder Advisory Group (SAG) continue to shape the state's evolving EEPS, they will undoubtedly face important choices that affect utility companies' ability and incentive to meet ever-increasing savings targets. This report analyzes several questions that Illinois will need to address concerning the future of its EEPS. Specifically, Section I provides an overview of EEPS policies and the rationale for their design and adoption across the country. Next, Section II offers in-depth look at the history and structure of the EEPS in Illinois and Massachusetts. Finally, Section III presents key questions to Illinois policymakers and stakeholders, describes research findings in Illinois, and describes best practices from Massachusetts to help inform these proposed questions.

Based on personal interviews with industry experts, extensive literature review, in-depth analysis of utility budgets and program designs, and review of energy legislation and regulation, this report researches the following conclusions concerning Illinois' EEPS:

1. EEPS spending caps are currently preventing electric utilities from reaching progressively ambitious savings targets. The caps will also likely inhibit natural gas utilities in the future as they exhaust "low-hanging fruit" efficiency opportunities and need to strive for savings that are increasingly more difficult to achieve.
  - Recommendation: Increase or remove spending caps. To protect customers from exorbitant rate hikes, a third party (possibly comprised of SAG members) should review rate impacts associated with the EEPS plan and provide recommendations to the Illinois Commerce Commission (ICC) which holds ultimate approval authority.

2. Decentralized EEPS programming left to individual utilities is leading to lower cost effectiveness, greater customer confusion, missed savings opportunities, and inefficient allocation of utility resources.
  - Recommendation: Use SAG to formally establish program coordination and consolidation across fuel type, among utility companies and stakeholders, and throughout marketing and outreach efforts.
  - Recommendation: Create working groups in SAG to explore relevant research EEPS areas and establish official best practices. In Massachusetts, these groups include: Residential Management Committee, C&I Management Committee, Evaluation Management Committee, Bill Impact Working Group, and Low-Income Best Practices Working Group.
3. Illinois is inefficiently allocating its residential energy efficiency program funding by disproportionately favoring “unconditional” rebates—that is, those rebates that are not tied to any sort of home energy audit.
  - Recommendation: Shift a greater portion of unconditional rebate funds into a “whole-house” approach in which utilities only offer rebates and other financial incentives to households upon the completion of a home energy audit. The approach should be fuel blind, seeking savings regardless of fuel source.
4. Current low-income sector spending in Illinois is inadequate and does not account for these households’ unique obstacles such as: larger energy burdens, older housing stock, a high proportion of renters, a greater amount of non-energy benefits to society, and lack of upfront capital needed to take advantage of residential sector EEPS programming.
  - Recommendation: Form a network of low-income EEPS program providers to formalize best practices, simplify decision making and coordination, and increase cost effectiveness.
  - Recommendation: Increase low-income sector spending and cost effectiveness. Possible sources of additional funding may include: the funds that become available due to greater program cost effectiveness resulting from the recommendations outlined in this report as well as by reducing EEPS public sector programming, which is currently receiving 6% more funding than statutorily mandated. Greater cost-effective use of funds may include: expansion of Percentage of Income Payment Plan (PIPP) as well as creative on-bill financing mechanisms that use alternate underwriting criteria and/or tie low interest rate loans to the utility meter rather than to individual ratepayers.
5. Lack of utility decoupling and performance incentive policies are prohibiting utilities from reaching their full savings potential.
  - Recommendation: Pursue decoupling of utility revenue from sales and establish modest performance incentives based on clear, quantifiable savings goals. Utilities should include expected performance incentives in EEPS plans. Performance incentives should undergo

rate impact analysis by a third party (possibly a SAG working group) and require approval from SAG and ICC.

The future of Illinois' EEPS is promising. As the state continues to prioritize its dedication to energy efficiency, the program delivery infrastructure will undoubtedly expand and become more specialized and proficient. The findings and recommendations outlined in this report borrow from Massachusetts' historical commitment to efficiency to provide Illinois policymakers and relevant stakeholders with the necessary framework for ensuring the state achieves the greatest amount of sustainable energy savings in the most cost effective way.

# I. Background

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National discourse surrounding energy policy in the United States often revolves around supply-side management. When it comes to natural gas and electricity, supply-side discussions typically focus on the method, delivery, fuel type, quantity, and location of the nation's power generation. However, often missing from the mainstream national discourse is investment in energy efficiency—a powerful resource that has the ability to curb the country's energy usage, drastically reduce carbon emissions, help mitigate the economic effects of volatile fuel prices, create jobs, and reduce energy expenditures for individuals, families, and businesses. In fact, increasing the efficiency of energy delivery and consumption in the United States has the potential to offset 50% or more of the country's expected load growth by 2025.<sup>a</sup> Regardless of the future design of the nation's energy system, a robust investment in energy efficiency will be fundamental for minimizing wasteful and costly inefficiencies in the United States.

Since the oil crises and soaring energy prices of the 1970s, utility companies have been encouraging consumers to conserve energy through a variety of incentives and subsidies.<sup>b</sup> These incentive mechanisms—which were quite modest and simplistic at first—have evolved over the years and have led to unprecedented investment in energy efficiency. Improving the ways in which energy is produced, delivered, and consumed provides economic and social benefits for utility companies and customers alike. For example, with the cost-savings from investment in electric efficiency consistently estimated at a range of 2.5 to 3.0 cents per kilowatt hour (60-75% less than the cost of generating a kilowatt hour from a newly constructed, conventional power plant), utilities are starting to prioritize creating a more efficient energy system.<sup>c</sup>

Today, most states that have made a serious commitment to energy efficiency have done so through an Energy Efficiency Portfolio Standard (EEPS)—also known as an Energy Efficiency Resource Standard (EERS). While there is some variation among state policies, an EEPS—imposed either through legislation or regulation—typically sets a binding savings target that requires utility companies to reduce a specified percentage of energy consumption through investments in customer energy efficiency programs. An EEPS can apply to electric utilities or natural gas utilities or both. According to the American Council for an Energy Efficient Economy (ACEEE) policy research group, 24 states have adequately implemented electric EEPS policies and 13 states have developed EEPS policies for natural gas as of September 2012 (Appendix B).<sup>d</sup> Such savings targets are usually expressed as a percentage of sales of kilowatt hours (kWh) for electric utilities and therms for natural gas utilities.

Most states require utilities to meet these goals on an annual basis (such as requiring 2% incremental savings in energy consumption per year), while other states' savings targets are set cumulatively over a multi-year period (such as requiring 6% cumulative savings in energy consumption over three years). By insisting that utilities produce quantifiable energy savings, an EEPS treats energy efficiency as a real “resource” for utilities that is just as valuable as supply-side investments.

In the current absence of a comprehensive federal energy efficiency policy, an EEPS specifically targets utility companies at the state level. EEPS policies have been crucial in encouraging and incentivizing utility companies to invest in more efficient delivery systems and, even more so, in promoting more

efficient energy usage among consumers. For instance, states that have currently implemented an EEPS will account for 225,000 gigawatt hours (GWh) in electricity savings alone by 2020—equivalent to the 2010 electricity consumption of Maryland, Washington, and Minnesota combined.<sup>e</sup> EEPS programs, which nearly always undergo rigorous cost-benefit tests, have repeatedly proven their cost effectiveness nationwide.<sup>f</sup>

## **I.A. EEPS Funding and Spending**

While funding sources for EEPS policies vary somewhat by state, the overwhelming majority comes from system benefit charges (**Figure 1**). A system benefit charge is essentially an energy efficiency fee that is charged to ratepayers—often as a line item on their utility bill—based on either a flat fee or percentage of energy consumption or both. It is similar in concept to an energy sales tax that utilities collect from consumers and put into a common funding pool that they then spend on energy efficiency measures in buildings, homes, and, at times, on improved energy delivery infrastructure.

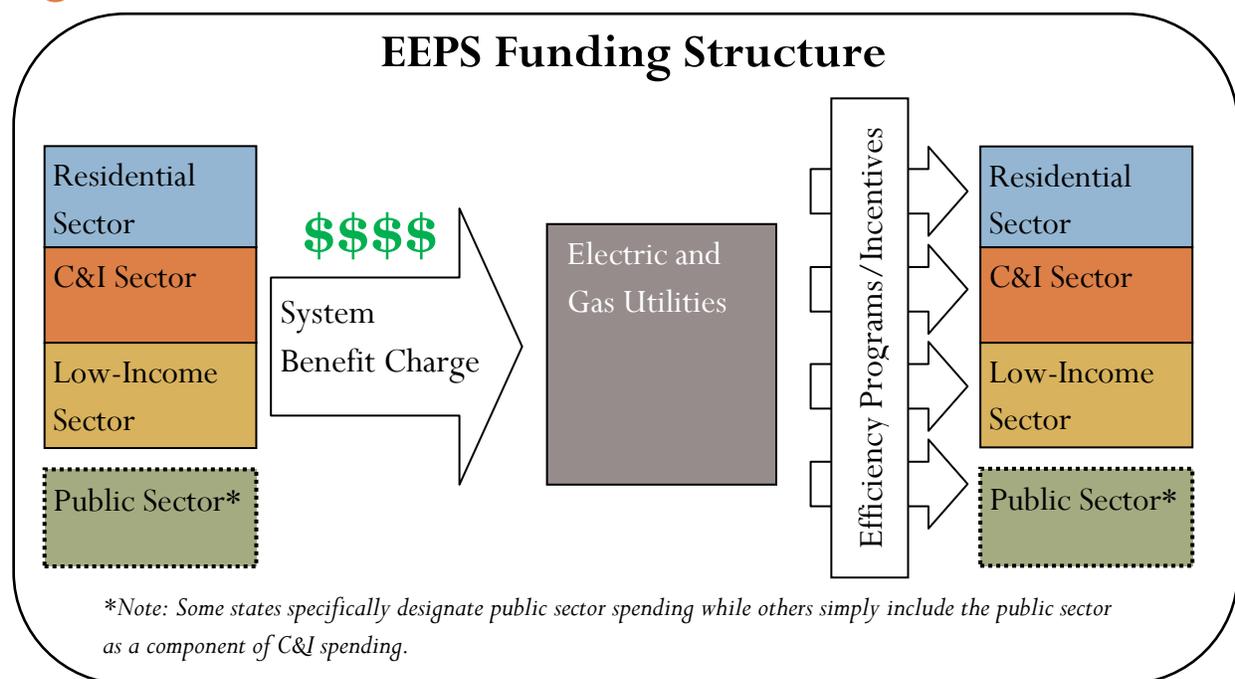
Some variation exists among states, but utility companies typically collect EEPS funds and allocate efficiency measures according to the following sectors: residential, commercial and industrial (C&I), and low-income. Some states also use EEPS funds to finance energy efficiency in the public sector and may present public sector spending as its own budgetary category. Distinctions between the sectors reflect the unique energy needs, financial ability, and consumption patterns faced by each group of ratepayers.

Utility companies across the country use their EEPS funds to finance a wide variety of programs. Common EEPS spending and incentive mechanisms include:

- Rebates on energy efficiency appliances and installations
- Energy audits for homes and businesses
- Behavior change and customer education programs that seek to encourage conservation
- Direct installation of new energy efficient appliances and technologies
- Retrofit and maintenance of existing appliances and equipment
- Appliance recycling programs that strive to remove outdated, inefficient devices from homes and businesses

In order to keep costs down and help protect consumers from exorbitant rate hikes in their energy bills due to system benefit charges, some states put a cap on the amount utilities can collect through such fees. For example, legislation may restrict the system benefit charge to no more than 1% of the amount paid by ratepayers during the previous year. In this case, customer utility bills are permitted to increase by a maximum of 1% due to the system benefit charge. Though such caps protect consumers, they also tend to inhibit the success of energy efficiency programs by greatly restricting the amount of money that utilities can collect and allocate to such efforts.

Figure 1



## I.B. Why Low-Income Programs?

While reasons for designating EEPS funds to specifically target the residential and C&I sectors may seem intuitive, the need to separate low-income sector programming from the general residential sector may be less apparent. This separation is due to the unique challenges often faced by low-income households. Furthermore, because EEPS programs are financed through a system benefit charge that is applied to all utility bills regardless of the ratepayer's income, reserving a portion of those funds for the low-income sector strives to ensure that these communities are at least being reimbursed proportional to the amount they are paying into the EEPS funding pool through such fees.

Low-income households are distinct in that they lack the immediate, upfront capital necessary to take advantage of most EEPS residential sector programs. Non-low-income residential programs typically require a co-payment from the customer before the utility company will fund the installation of energy efficient measures in the home. For example, a utility may agree to cover 50% of the cost of new attic insulation or may require a \$20 co-payment from the consumer for a home energy audit.

Similarly, low-income households often lack the upfront capital necessary to take advantage of residential energy efficiency rebates, which are a common EEPS offering among utility companies across the country. Utilities tend to deliver rebates to customers in two ways: "downstream" and "upstream." Downstream rebates are more traditional and involve a customer purchasing energy efficiency equipment at full price, installing it, applying for a rebate, and receiving a rebate check in the mail. Upstream rebates involve the installing contractor, distributor, or equipment manufacturer receiving the rebate directly instead of the purchasing customer. Upstream rebates are designed to encourage distributors to stock the most energy efficient equipment and offer it to consumers at a more competitive price.

Co-payments and rebates, which are quite common when it comes to residential sector EEPS program offerings, are often prohibitively expensive for low-income households. Even if a rebate is fairly generous or a co-payment is relatively low, a low-income person often lacks the upfront capital necessary to make the investment in energy efficiency despite its long term cost-savings potential.

As such, EEPS programs that specifically target the low-income sector seek to overcome these barriers by offering energy efficiency retrofits and upgrades to income qualifying homes at little or no cost. By doing so, utilities seek to ensure that low-income residents are at least reimbursed proportional to the amount they are paying into the ratepayer-funded EEPS program offerings.

### **Additional Benefits from Low-Income Programs**

Utility-sponsored low-income energy efficiency programs use utilities' access and availability of capital rather than relying on community based organizations and low-income customers, which tend to be more limited. Though equitable reimbursement for system benefit charges is certainly important motivation for specifically designating EEPS funding for low-income sector programming, it is by no means the only reason for such investments. In fact, some argue that, in addition to providing the low-income sector with funding that is proportional to its system benefit charge payments, utilities should also offer modest subsidies to account for unique barriers and benefits associated with energy efficiency upgrades in these types of homes. Such barriers and benefits include:

- ***Percentage of Income.*** Low-income households spend a much larger percentage of their income on energy than wealthier homes. According to ACEEE, an average household in the United States spends 4% of income on home energy costs, while low-income families at or below 150% of the poverty line spend 17% of their annual income on energy.<sup>g</sup> This burden becomes more pronounced as households struggle to accommodate rising and volatile fuel prices.
- ***Age and Quality of Housing Stock.*** Low-income families in the United States tend to live in older, more inefficient homes (**Figure 2**). Although wealthier homes tend to use more energy, they also typically use it more efficiently. Consumption in low-income homes is much more inefficient given the age and state of the sector's housing stock (i.e. poor insulation, outdated heating and cooling systems, dilapidated building envelope, inefficient appliances and fixtures, obsolete water heating and delivery, etc.). Therefore, although wealthier homes may tend to use more total energy, there are often considerably large gains to be made in low-income homes in terms of addressing inefficient consumption. Allocating utility resources to target the most *inefficient* users rather than those that consume the most energy *overall* is more in line with the ultimate goal of removing inefficiencies from the energy system.
- ***Rental vs. Homeownership.*** In addition to living in older homes, low-income households are more likely to be renters than homeowners. In the United States, 55% of those living at or below 150% of the poverty line are renting while only 24% of those living above this threshold are renters (**Figure 3**).<sup>h</sup>

In contrast with homeowners who have complete control over how and when energy efficiency measures are installed, renters routinely encounter the infamous “split-incentive” problem—a market failure whereby neither the property owner nor the tenant has an incentive to invest in energy efficiency. The “split incentive” occurs when the tenant, not the property owner, is responsible for paying a property’s utility bills. In this case, the property owner has no incentive to finance energy efficiency upgrades since he/she does not reap the benefits of lower utility bills. Likewise, tenants are less likely to invest in expensive energy efficiency upgrades since they do not own equity in the home and may not recoup their capital investment during a one or two year lease.

Since low-income families are more likely to be renters, they suffer from the “split incentive” problem more often than an average residential customer. Moreover, these families’ lack of disposable income exacerbates the problem making energy efficiency improvements even more unlikely. Thus, energy efficiency incentives should directly address these constraints that disproportionately affect the low-income sector.

- ***Benefits for Property Owners.*** Providing financial support for energy efficiency to low-income tenants also benefits building property owners by reducing tenant turnover rates. Low-income people are more likely to need to relocate involuntarily due to lack of financial flexibility and are also more likely to face eviction due to missed rental payments. For example, a study of more than 600,000 low-income residents in New York found that 27% had fallen behind on their rent payments in the last year and 18% had their utilities shut off.<sup>i</sup>

Property owner expenses due to high tenant turn over (marketing, recruitment, cleaning of the unit, lost revenue from rent payments, etc.) can be substantial, equivalent to several months’ rent.<sup>j</sup> Using utility energy efficiency programs to reduce energy bills for low-income tenants can also have a considerable impact on property owner profits.

- ***Disproportionate and Preventable Free-ridership.*** When it comes to energy efficiency incentives and subsidies, the term “free rider” refers to those customers who would install energy efficiency measures without any financial incentive, but they receive an incentive anyway.<sup>k</sup> For example, retail appliance rebates—whether delivered upstream or downstream—are available to all customers regardless of their willingness or ability to pay.

Several studies have attempted to analyze the willingness and ability to pay for energy efficiency across different groups of household income. Researchers at the National Renewable Energy Laboratory found that the willingness to pay for energy efficiency among low-income residents was 16% below the national average, emphasizing the need for additional subsidies for low-income households.<sup>l</sup> Similarly, researchers at the University of Tennessee have found that low-income residents are less willing to purchase Energy Star appliances due to income restraints.<sup>m</sup> Likewise, a Stanford University study not only found that low-income customers are less willing to purchase Energy Star appliances, but these households are also less aware of the benefits associated with the Energy Star brand and certification system.<sup>n</sup> Such findings highlight the importance of low-income subsidies in light of the sector’s unique barriers to investment in energy efficiency.

Some argue that energy efficiency free-ridership is not a problem since the benefits (such as the reduced need for new energy supply and market transformation) outweigh the societal costs (using money collected from ratepayer fees to provide incentives to those who do not need them). Furthermore, some say, identifying such free riders can be difficult among such a large, diverse market of consumers.

This argument correctly points out that a certain amount of free-ridership is permissible and, at times, unavoidable. However, using innovative program design to minimize such free-ridership when possible is ultimately a good thing that leads to greater cost effectiveness. By limiting the number of free-riders, utilities can make the most of their incentives by targeting customers who need them the most. For example, some utilities require customers to undergo an energy audit in order to receive such incentives. Doing so ensures that the most essential and cost-effective measures are installed in the home or business.

Alternatively, retail appliance rebates, which are popular delivery mechanisms among utilities nationwide, are poorly targeted and thus actually encourage free-ridership. As stated previously, even with the help of such rebates, energy efficiency measures often remain prohibitively expensive for low-income customers. Encouraging free-ridership not only provides funds to those who do not need them, but also diverts funds from those who need the most assistance.

- ***Reduced Non-payment.*** Supporting low-income energy efficiency programs not only benefits customers but also utilities. Aside from the obvious economic benefit of reducing ratepayer demand for energy, funding low-income programs also makes sense from an administrative standpoint. Because of their economic constraints, low-income customers tend to have the highest rate of non-payment of utility bills. By making energy more affordable through efficiency measures, utilities reap the benefits associated with lower credit and collection costs, avoided service shut-off costs, reduced uncollectible account write-offs, and improved customer relations.<sup>9</sup> Utility financing for low-income weatherization can lead to upwards of 25% reduction in utility bills and average arrearage reduction of \$60 to \$150 annually depending on the market price of natural gas.<sup>p</sup>

In addition, low-income support also benefits those states that allow their utilities to pursue full cost recovery. In Illinois, for example, when customers do not pay their energy bills, utilities are permitted to “recover” the foregone revenue the following year by raising rates on all of their customers. In these cases, reducing low-income non-payments may not benefit utilities directly since they are able to recoup the lost revenue, but it certainly benefits the ratepayer community as a whole by keeping energy bills lower.

- ***Benefits for Government and Society.*** In addition to providing financial and administrative advantages to utility companies, low-income energy efficiency programs also benefit most levels of government in their efforts to maximize societal wellbeing in a cost-effective manner. For example, governments benefit from reduced demand for low-income fuel assistance programs; diminished demand for non-fuel-related low-income assistance programs; reduced chance of injury, illness, and death associated with unsafe heating practices; reduced risk of illness and death associated with utility shut-offs due to

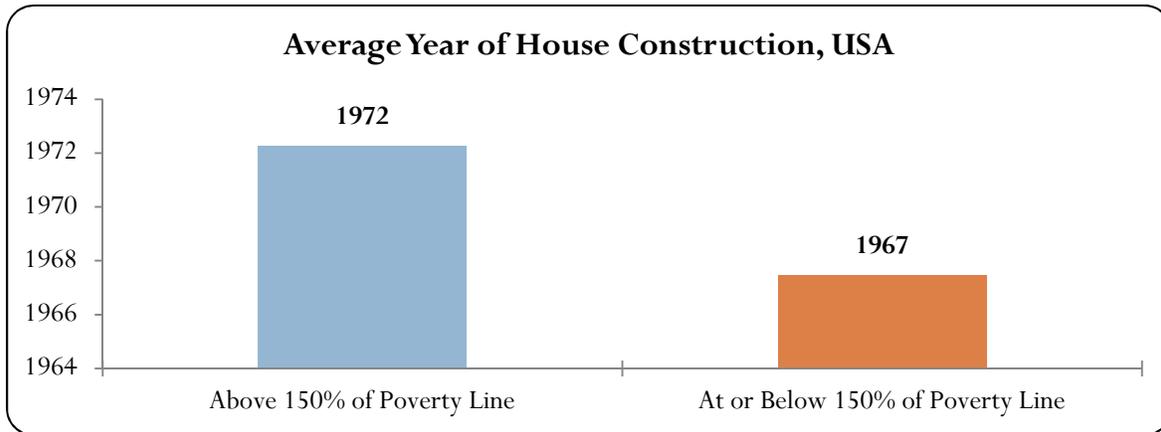
non-payment during times of extreme weather (especially for elderly customers); and lower rates of homelessness associated with unaffordable housing situations.<sup>q</sup> Studies examining causes of homelessness report that 15-35% of homeless individuals cite inability to afford living accommodations as the primary reason for their homelessness.<sup>r</sup> Easing this burden is surely in the best interest of governments.

- ***Avoided Foregone Revenue of Discounted Rates.*** In some states, utilities offer special reduced utility rates for low-income customers. For example, the state of Massachusetts currently offers a discount of approximately 25% on gas and electric utility bills to customers at or below 60% of the state median income level. By reducing the amount of energy consumed in these homes through energy efficiency measures, these discounted rates (that is, foregone utility revenues) are also reduced.<sup>s</sup>
- ***Consolidated Efforts Lead to Deeper Savings.*** Often, utility-sponsored low-income programs—such as those offered as part of an EEPS—partially leverage government funds and infrastructure in their delivery. Some utilities use their funds to “piggyback” on the federally-funded Weatherization Assistance Program (WAP), an initiative that provides funds to state governments to weatherize low-income homes. In order to administer the program, state governments typically distribute WAP funds to a network of local, private or public Community Action Agencies (CAA) that target qualifying households with weatherization improvements at little or no cost.<sup>t</sup> Annual energy savings from WAP, which average \$437 per household, can have a substantial impact for residents living on fixed incomes.<sup>u</sup> Combining WAP funding with utility energy efficiency funding leads to even greater savings.

Consolidating government and utility resources not only leverages funding to achieve deeper savings, but it also combines the state’s infrastructure and the utility’s experience with marketing and client outreach. By doing so, governments and utilities are able to target low-income homes in a way that would not be possible if each entity approached the homes individually.

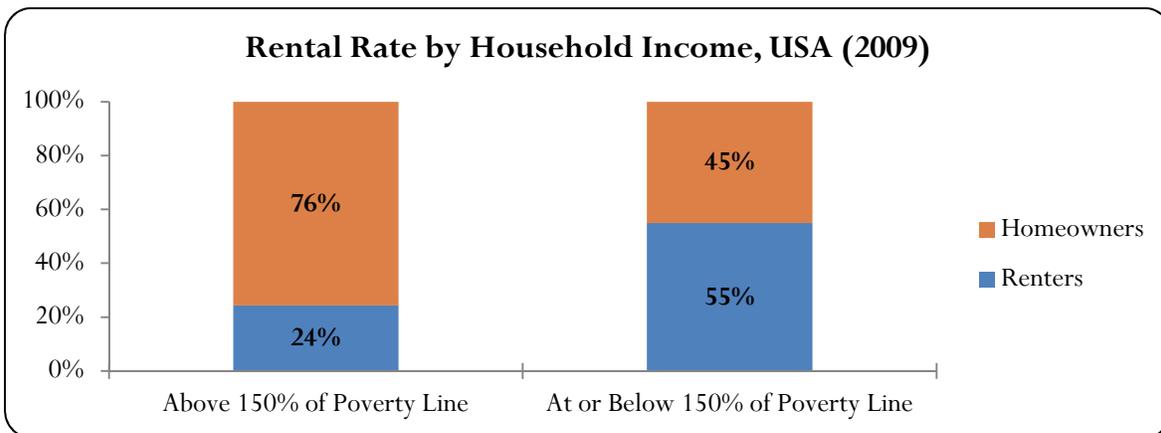
The opportunity to combine state- and utility-sponsored energy efficiency programs in this way is unique to the low-income sector. Greater utility support for low-income programming can exponentially increase deeper savings and cost effectiveness.

**Figure 2**



*Source: US Energy Information Administration, 2009 Residential Energy Consumption Survey (RECS) Microdata*

**Figure 3**



*Source: US Energy Information Administration, 2009 Residential Energy Consumption Survey (RECS) Microdata*

## II. State Program Descriptions

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### II.A. EEPS in Illinois

Prior to 2007 legislation, utility and state commitment to energy efficiency in Illinois was relatively small. This lack of investment was largely due to the price of electricity in Illinois from the 1980s to the early 2000s, which was kept relatively low due in part to the state’s access to large coal deposits and heavy investment in nuclear power (Appendix C).<sup>v</sup> However, in the early 2000s, the rapidly rising price of energy—particularly electricity—highlighted the need for a statewide conservation effort.

In July 2007, the state legislature established the Illinois Power Agency Act (IPAA) through Public Act 95-0481, calling for dramatic expansion of the state’s energy efficiency programs and the creation of an EEPS. IPAA calls on the state’s electric and natural gas investor-owned utilities (**Figure 4**) to work with the Illinois Department of Commerce and Economic Opportunity (DCEO) to meet incremental annual energy-savings targets based on the amount of sales the previous year.<sup>w</sup> The legislation requires electricity reductions of 0.2% beginning in 2008, ramping up to 2.0% in 2015 and thereafter. Similarly, it calls for natural gas reductions of 0.2% beginning in 2011, increasing to 1.0% in 2015 (**Table 1**).

The IPAA statute obliges utility companies to administer their own programming for the residential and C&I sectors, while DCEO is charged with implementing low-income and public sector programs. The statute requires utilities to give approximately 25% of statewide EEPS funding to DCEO to administer the low-income and public sector programs.

In addition, IPAA mandates utilities to file an energy efficiency and demand-response plan with the Illinois Commerce Commission (ICC) every three years. Furthermore, IPAA led to the creation of the Illinois Energy Efficiency Stakeholder Advisory Group (SAG), comprised of 18 members representing utilities, ICC staff, DCEO, environmental advocates, energy efficiency program administrators, and energy efficiency consultants. SAG provides input in the drafting of the EEPS savings targets and also provides oversight for utility compliance with the targets.<sup>x</sup> Although SAG does not convene formal subcommittees that research and share best practices, the group does provide an informal environment for collaboration and sharing of best practices among stakeholders.<sup>y</sup> While SAG provides a platform for recommendations, oversight, and somewhat informal collaboration, the ICC has ultimate approval authority when it comes to utility regulation and savings targets.<sup>z</sup>

The fact that Illinois utility energy efficiency efforts prior to the 2007 legislation had been relatively small and highly decentralized was both beneficial and inhibitory in terms of EEPS implementation. Unlike states such as Massachusetts, California, New York, Vermont, and Connecticut that had pursued energy efficiency policies for decades before adopting an EEPS, such policies were relatively new in Illinois. In addition to lacking the widespread political and societal support for energy efficiency that existed in states with more experience, Illinois utilities could not quickly mobilize established infrastructure in pursuit of its EEPS savings goals. Moreover, due mostly to political constraints, decoupling policies—which break the link between utility sales and revenues—and shareholder incentive policies—which financially reward utilities for successful implementation of energy efficiency plans—were also absent in Illinois as the state began to ramp up its energy efficiency efforts. Both of these policy tools have been instrumental in incentivizing energy efficiency in those states with longstanding programs and could have greatly benefited Illinois’ EEPS.

Although Illinois lacked some useful infrastructure and policies during its EEPS adoption, the state’s efficiency goals remain ambitious and have led to over \$1 billion in EEPS spending (**Table 4** and **Figure 6**). In fact, the absence of a consistent and large-scale energy efficiency policy prior to the established EEPS savings targets meant that utilities had much to gain from previously unexploited efficiency opportunities. In contrast to states with well-established programs that had already installed many of the easiest efficiency measures prior to establishing an EEPS, Illinois had much more readily available “low-hanging fruit” opportunities from which to draw its savings.

## EEPS Spending Caps in Illinois

In addition to laying out savings targets, IPAA legislation places a cap on the amount of EEPS funds utilities are allowed to collect from ratepayers. As described previously in Section I.A., because EEPS programs are funded through ratepayer system benefit charges, such statutory spending caps are meant to protect customers from exorbitant rate hikes. Though such caps are certainly not unheard of, they are a distinguishing component of Illinois' EEPS. The state's electric and natural gas utilities are currently permitted to spend a maximum of approximately 2% of their annual revenue on EEPS programs.

While spending caps are important for protecting consumers from rate hikes, setting limits on the amount utilities are permitted to collect and spend on EEPS programming also inhibits program performance. Meeting progressively higher savings targets becomes increasingly difficult with spending caps that remain constant after 2011 and 2012 for gas and electric utilities respectively. Most Illinois utility program administrators agree that once the spending caps are reached, the annual savings will not be met.<sup>aa</sup>

## EEPS and the Illinois Department of Commerce and Economic Opportunity

In Illinois, each utility company is responsible for managing its own energy efficiency programs for the residential and C&I sectors in its service area—typically with the use of contractors. However, utilities do not manage their own low-income and public sector efficiency programming. Instead, Illinois statute requires utilities to transfer approximately 25% of their EEPS funds to the state's Department of Commerce and Economic Opportunity (DCEO) to oversee energy efficiency in these sectors (**Table 3**). With the allocated EEPS funds and through the combined savings from its efficiency programs, DCEO is expected to achieve approximately 20% of the total EEPS natural gas savings target and 15% of the electric savings.<sup>bb</sup> Using these EEPS funds, DCEO administers the following as mandated by Illinois legislation:

- **Low-Income Sector Energy Efficiency Programs.** The statute requires that the amount of EEPS funds put towards low-income programs must be “proportionate to the share of total annual utility revenues in Illinois from households at or below 150% of the poverty level.”<sup>cc</sup> DCEO's low-income programs target households at or below 80% of area median income.
- **Public Sector Energy Efficiency Programs.** This includes municipal, K-12 schools, community colleges, universities and State of Illinois and federal facilities. Illinois legislation requires that at least 10% of statewide EEPS funding (40% of DCEO's EEPS budget) be put towards public sector efficiency programs.
- **Market Transformation Energy Efficiency Programs.** These programs are designed to ensure the short-term success of the EEPS as well as set the groundwork for more ambitious future savings targets. The goal of the market transformation program is “to educate energy professionals and strategic energy decision-makers so that they have the skills and information needed to implement effective energy efficiency strategies.”<sup>dd</sup> For example, as part of its Market Transformation programming, DCEO uses

EEPS funds to subsidize energy efficiency training programs for “all groups related to the design, building, rehab, operation, and maintenance of all types of buildings and industrial process improvements.”<sup>ec</sup> Trainings include programs for commercial builders, residential home builders, and energy code trainings, among others.

- ***Breakthrough Technology Energy Efficiency Programs.*** EEPS legislation calls for providing a budget for breakthrough technologies. DCEO is responsible for assessing the appropriateness of emerging electric and gas technologies for use by utilities in future EEPS planning and similar energy conservation programming. To do this, DCEO works closely with utility companies and SAG to test new and emerging products to determine their reliability, serviceability, and cost effectiveness.

## **II.B. EEPS in Massachusetts**

Unlike Illinois which lacked consistent energy efficiency policies and programs prior to adoption of its EEPS, Massachusetts had been pursuing energy efficiency for decades before embracing an EEPS. Energy industry experts and policy analysts have consistently praised Massachusetts’ programming. During 2010-2012 alone, Massachusetts energy efficiency programs received 40 awards acknowledging the state’s success and commitment to innovation (see Appendix D). These awards include regional and national recognition from the US Environmental Protection Agency (EPA), National Energy Education Development Project (NEED), Association of Energy Services Professionals, and National Energy Solution Center among others. In 2012, Massachusetts ranked number one for the second consecutive year in ACEEE’s annual evaluation of state energy efficiency policies placing the state in the top five ranking for the last five years.<sup>ff</sup>

Energy efficiency in Massachusetts began in earnest during the oil crises of the 1970s.<sup>gg</sup> Amid rising energy prices, the state became a forerunner in a national effort to move towards greater energy efficiency. Massachusetts was especially motivated given the state’s lack of fossil fuel and nuclear resources.<sup>hh</sup> In response to these economic pressures, energy efficiency in Massachusetts grew out of several statutory and regulatory initiatives of the late 1970s and early 1980s including the Integrated Resource Planning (IRP) process. IRP requires utilities to include demand-side energy efficiency resources in their planning processes. Efficiency efforts in Massachusetts continued through the late 1990s but were somewhat less imperative due to more stable energy prices (Appendix C). Although these early energy efficiency initiatives lacked specific savings targets and standards, they set the groundwork for a cohesive, statewide commitment to efficiency.

Massachusetts’ EEPS emerged from the state’s 2008 Green Communities Act (GCA), which set some of the most ambitious savings targets in the country (**Table 2**). Massachusetts’ EEPS has led to an unprecedented amount of over \$3.5 billion in EEPS spending over six years—more than triple EEPS spending in Illinois (**Table 5** and **Figure 7**).

The GCA directs all state electric and natural gas utility companies<sup>1</sup> (**Figure 5**) to develop energy efficiency plans requiring that they “provide for the acquisition of all available energy efficiency and demand

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<sup>1</sup> Note: Cape Light Compact is technically a municipal aggregator and not a true utility. Because of this distinction, the expression “program administrators” is often used in Massachusetts in place of “utility.” However, to prevent

reduction resources that are cost-effective or less expensive than supply.”<sup>ii</sup> In other words, utilities are expected to achieve all available energy efficiency opportunities before purchasing power from nearby plants to accommodate growing demand. Achieving annual savings of 2.6% for electric and 1.15% for natural gas by 2015 is especially impressive given the state’s long history of energy efficiency and the fact that utilities had already exploited many of the easier “low-hanging fruit” efficiency opportunities prior to EEPS legislation.

As in Illinois, the GCA established a stakeholder advisory group known as the Energy Efficiency Advisory Council (EEAC) comprised of 11 voting members with representatives from commercial, industrial, residential, and low-income sectors as well as from state offices, environmental advocacy groups, and officials from the utility-run efficiency programs. In contrast with Illinois’ somewhat ad hoc exchange of research and best practices within SAG, EEAC has created formal working groups to explore relevant research areas and establish official best practices. These working groups include: Residential Management Committee, C&I Management Committee, Evaluation Management Committee, Bill Impact Working Group, and Low-Income Best Practices Working Group. Such collaborative efforts have led to a great deal of program consolidation and coordination.

EEAC is chaired by a representative from the Department of Energy Resources division of the state’s Office of Energy and Environmental Affairs. As is the case in Illinois, Massachusetts’ GCA requires all utilities to submit an EEPS budget and strategic plan every three years as well as an annual progress report to EEAC for review. After its review, EEAC passes all budgets and plans to the Department of Public Utilities for final approval.

Like Illinois, Massachusetts’ EEPS programs are primarily funded by a ratepayer system benefit charge that typically appears as a line item on customers’ utility bills. While natural gas programs are funded entirely by this fee, funding for electric utilities is slightly more complex. Approximately 91% of funding for electric EEPS programs comes from a combination of a traditional, flatrate system benefit charge of 2.5 mills (\$0.0025) per kWh and what is known as the Energy Efficiency Reconciliation Factor—essentially an additional system benefit charge that is applied as a percentage of the customer’s usage rather than as a flat fee. Utilities can periodically adjust the Energy Efficiency Reconciliation Factor to ensure that they are recuperating all EEPS spending from ratepayers. Other minor sources of electric EEPS funding in Massachusetts come from the Regional Greenhouse Gas Initiative (RGGI) auction proceeds and revenues from the forward capacity market administered by Independent System Operator-New England. Though Massachusetts utilities have a slightly more diverse funding pool than Illinois, the amount that does not come from ratepayer system benefit charges (or the comparable Energy Efficiency Reconciliation Factor) accounts for less than 10% of overall funding—a fairly insignificant portion. For purposes of comparison, EEPS programs in both states are funded almost entirely through system benefit charges (Appendix E).

Unlike Illinois which designates the DCEO to manage all low-income and public sector EEPS programs, Massachusetts’ does not directly incorporate state agencies in the administration of energy efficiency programming. When it comes to the public sector, utilities bundle public programs with the C&I sector. In contrast with Illinois which requires that at least 10% of state EEPS funding go to DCEO for

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confusion among readers, this report uses the term “utility” as it applies to Massachusetts to refer to traditional utilities as well as Cape Light Compact.

energy efficiency support for the public sector, Massachusetts requires no such minimum investment threshold for public programming.

On the other hand, all low-income sector programs in Massachusetts are administered by the Low-Income Energy Affordability Network (LEAN). LEAN is comprised of 23 member agencies and has been essential to the state’s widely successful low-income programs. The group allows low-income program administrators to share best practices and provide a coherent, highly coordinated effort to customers.

**Table 1**

| Electric and Gas Annual EEPS Savings Targets in Illinois <sup>jj</sup> |      |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|------|
|  | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Electric   | 0.2% | 0.4% | 0.6% | 0.8% | 1.0% | 1.4% | 1.8% | 2.0% |
| Gas  | -    | -    | -    | 0.2% | 0.4% | 0.6% | 0.8% | 1.0% |

**Table 2**

| Electric and Gas EEPS Annual Savings Targets in Massachusetts <sup>kk</sup> |      |       |       |       |       |       |       |
|---|------|-------|-------|-------|-------|-------|-------|
|   | 2009 | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  |
| Electric  | 1.0% | 1.4%  | 2.0%  | 2.4%  | 2.5%  | 2.55% | 2.6%  |
| Gas   | -    | 0.63% | 0.83% | 1.15% | 1.07% | 1.13% | 1.15% |

**Table 3**

| 2011-2013 DCEO Energy Efficiency Spending in Illinois <sup>ll</sup> |                      |                    |                              |
|---|----------------------|--------------------|------------------------------|
|   | Total Budget         | % of DCEO Spending | % of Statewide EEPS Spending |
| Public Sector   | \$137,522,292        | 59.5%              | 16.3%                        |
| Low-Income Sector   | \$59,885,470         | 25.9%              | 7.1%                         |
| Market Transformation   | \$25,983,210         | 11.2%              | 3.1%                         |
| Breakthrough Tech   | \$7,715,555          | 3.3%               | 0.9%                         |
| <b>TOTAL</b>  | <b>\$231,106,527</b> | <b>100.0%</b>      | <b>27.4%</b>                 |

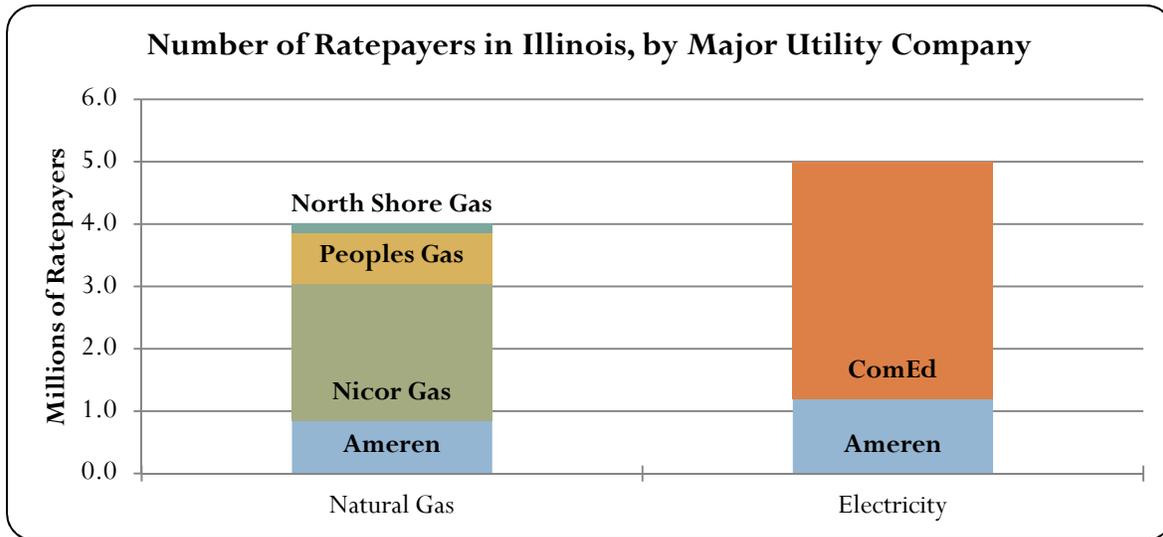
**Table 4**

| 2008-2013 EEPS Budget in Illinois by Sector (\$ Millions) <sup>mm</sup> |               |               |                |                |                |                |                  |             |
|---|---------------|---------------|----------------|----------------|----------------|----------------|------------------|-------------|
|   | 2008          | 2009          | 2010           | 2011           | 2012           | 2013           | Total            | %           |
| C&I   | \$15.6        | \$36.3        | \$58.5         | \$101.9        | \$117.3        | \$129.0        | \$458.6          | 43.6%       |
| • Electric  | \$15.6        | \$36.3        | \$58.5         | \$87.9         | \$93.7         | \$97.9         | \$389.9          | -           |
| • Natural Gas   | -             | -             | -              | \$14.0         | \$23.6         | \$31.1         | \$68.7           | -           |
| Residential   | \$13.8        | \$33.0        | \$51.6         | \$75.8         | \$85.3         | \$96.4         | \$355.9          | 33.4%       |
| • Electric  | \$13.8        | \$33.0        | \$51.6         | \$54.9         | \$52.0         | \$49.4         | \$254.7          | -           |
| • Natural Gas   | -             | -             | -              | \$20.9         | \$33.3         | \$47.0         | \$101.2          | -           |
| Public (DCEO)   | \$5.3         | \$11.1        | \$17.2         | \$41.3         | \$46.1         | \$50.5         | \$171.5          | 16.1%       |
| • Electric  | \$5.3         | \$11.1        | \$17.2         | \$32.5         | \$32.8         | \$33.0         | \$131.9          | -           |
| • Natural Gas   | -             | -             | -              | \$8.8          | \$13.3         | \$17.5         | \$39.6           | -           |
| Low-Income (DCEO)   | \$3.2         | \$6.6         | \$10.3         | \$18.4         | \$20.0         | \$21.5         | \$80.0           | 7.5%        |
| • Electric  | \$3.2         | \$6.6         | \$10.3         | \$14.6         | \$14.6         | \$14.6         | \$63.9           | -           |
| • Natural Gas   | -             | -             | -              | \$3.8          | \$5.4          | \$6.9          | \$16.1           | -           |
| <b>TOTAL</b>  | <b>\$37.9</b> | <b>\$87.0</b> | <b>\$137.6</b> | <b>\$237.4</b> | <b>\$268.7</b> | <b>\$297.4</b> | <b>\$1,066.0</b> | <b>100%</b> |

**Table 5**

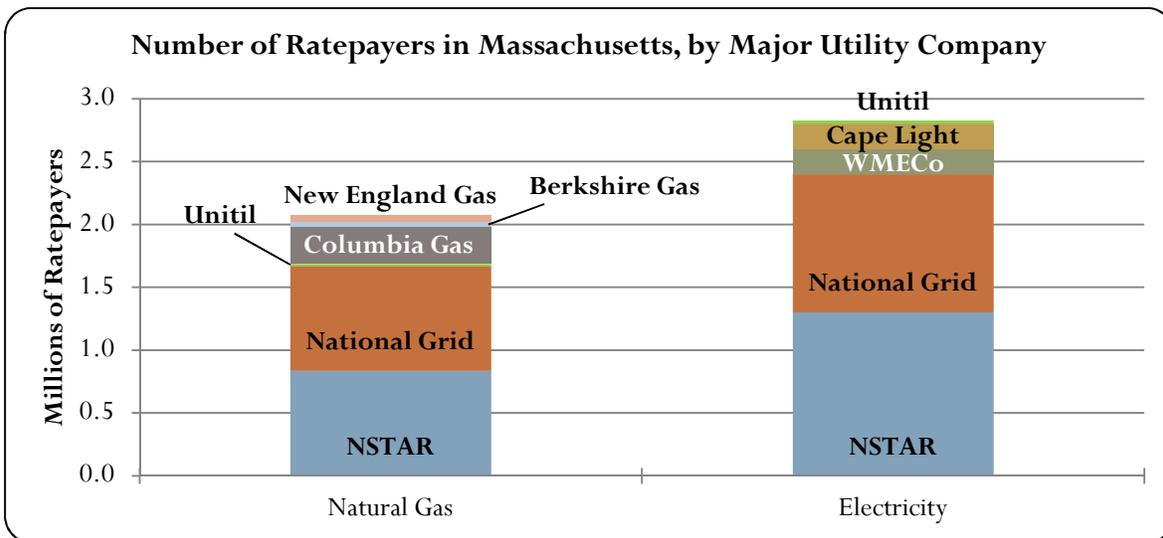
| 2010-2015 EEPS Budget in Massachusetts by Sector (\$ Millions) <sup>nn</sup> |                |                |                |                |                |                |                  |             |
|--|----------------|----------------|----------------|----------------|----------------|----------------|------------------|-------------|
|  | 2010           | 2011           | 2012           | 2013           | 2014           | 2015           | Total            | %           |
| C&I and Public   | \$169.6        | \$275.4        | \$361.6        | \$323.1        | \$330.0        | \$344.4        | \$1,804.1        | 50.8%       |
| • Electric   | \$150.1        | \$248.4        | \$324.3        | \$273.9        | \$278.2        | \$290.9        | \$1,565.8        | -           |
| • Natural Gas  | \$19.5         | \$27.0         | \$37.3         | \$49.2         | \$51.8         | \$53.5         | \$238.3          | -           |
| Residential  | \$135.7        | \$175.7        | \$211.2        | \$238.0        | \$249.4        | \$259.8        | \$1,269.8        | 35.8%       |
| • Electric   | \$92.0         | \$116.1        | \$140.3        | \$153.2        | \$162.5        | \$171.0        | \$835.1          | -           |
| • Natural Gas  | \$43.7         | \$59.6         | \$70.9         | \$84.8         | \$86.9         | \$88.8         | \$434.7          | -           |
| Low-Income (LEAN)  | \$50.5         | \$66.7         | \$85.1         | \$88.5         | \$90.9         | \$94.9         | \$476.6          | 13.4%       |
| • Electric   | \$34.4         | \$45.7         | \$58.1         | \$54.1         | \$54.9         | \$56.9         | \$304.1          | -           |
| • Natural Gas  | \$16.1         | \$21.0         | \$27.0         | \$34.4         | \$36.0         | \$38.0         | \$172.5          | -           |
| <b>TOTAL</b>   | <b>\$355.8</b> | <b>\$517.8</b> | <b>\$657.9</b> | <b>\$649.6</b> | <b>\$670.3</b> | <b>\$699.1</b> | <b>\$3,550.5</b> | <b>100%</b> |

**Figure 4**



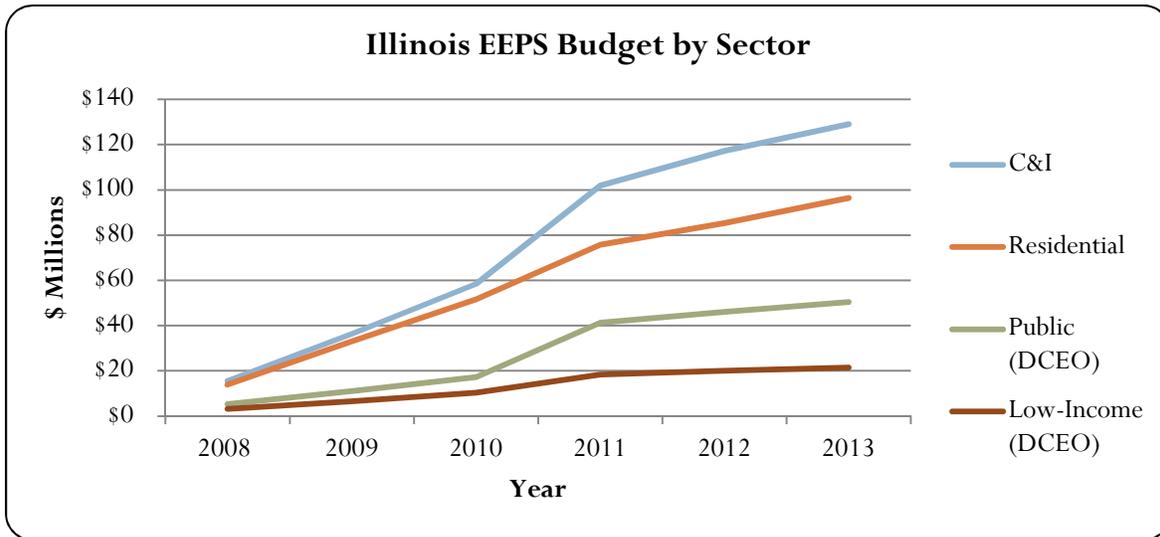
*Sources:* (1) North Shore Gas, [www.northshoregasdelivery.com](http://www.northshoregasdelivery.com). (2) People Gas, [www.peoplesenergy.com](http://www.peoplesenergy.com). (3) Nicor Gas, [www.nicor.com](http://www.nicor.com). (4) Commonwealth Edison, [www.comed.com](http://www.comed.com). (5) Ameren Illinois, [www.ameren.com/sites/aiu/Pages/Home.aspx](http://www.ameren.com/sites/aiu/Pages/Home.aspx).

**Figure 5**



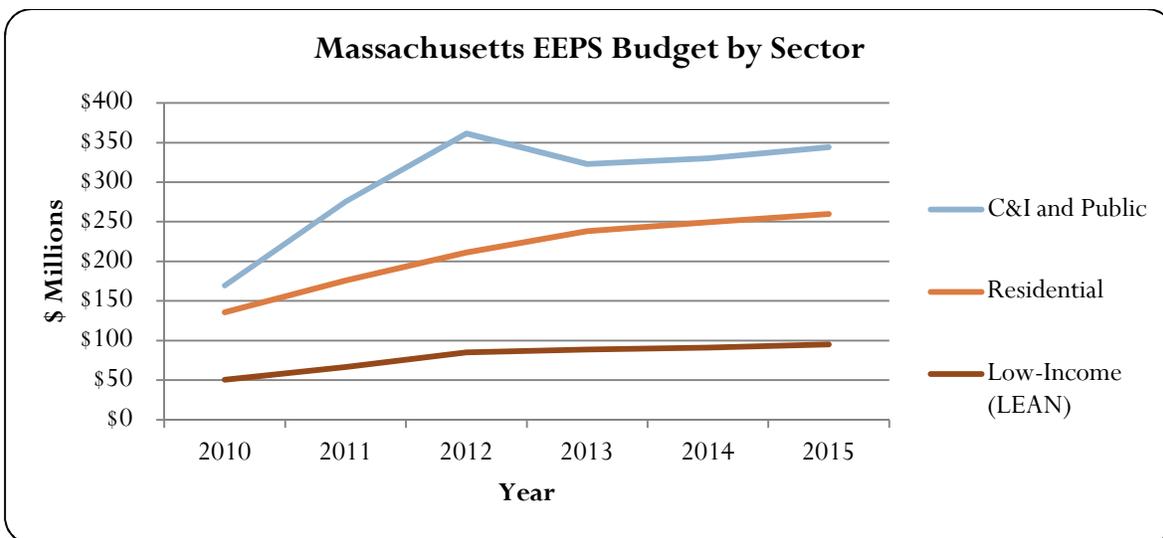
*Sources:* (1) New England Gas, [www.negasco.com](http://www.negasco.com). (2) Berkshire Gas [www.berkshiregas.com](http://www.berkshiregas.com). (3) Columbia Gas, [www.columbiagas.com](http://www.columbiagas.com). (4) Unitil, [www.unitil.com](http://www.unitil.com). (5) National Grid, [www.nationalgridus.com/Massachusetts](http://www.nationalgridus.com/Massachusetts). (6) NSTAR, [www.nstar.com](http://www.nstar.com). (7) Cape Light, [www.capelightcompact.org](http://www.capelightcompact.org). (8) Western Massachusetts Electric Company, [www.wmeco.com](http://www.wmeco.com).

**Figure 6**



*Sources: (1) Illinois Electric Utilities Three-Year Energy Efficiency Plans 2008-10, 2011-13. (2) Illinois Natural Gas Utilities Three-Year Energy Efficiency Plans 2011-13. (3) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13.*

**Figure 7**



*Source: Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

# III. Analysis

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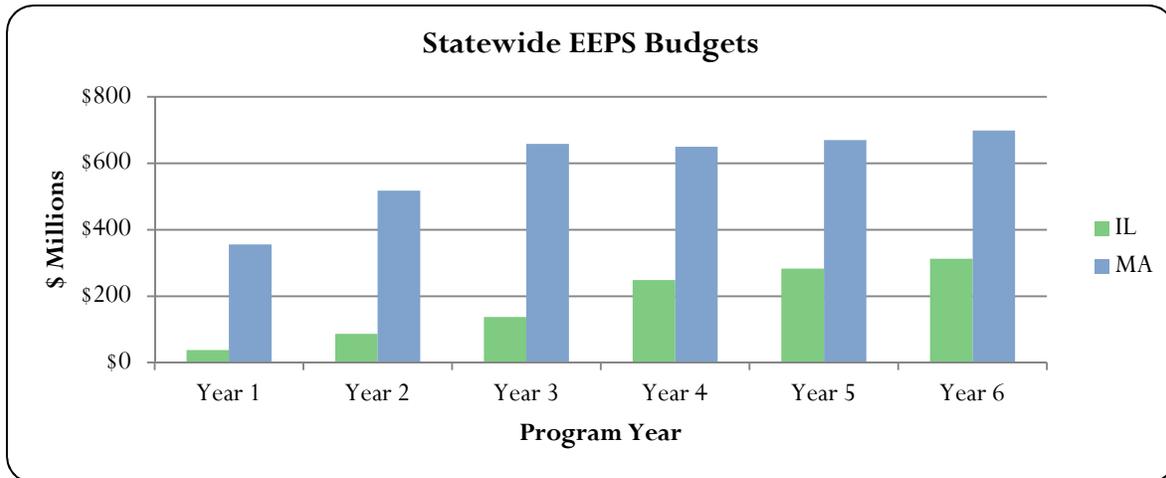
Given the notoriety surrounding Massachusetts' EEPS policies and program design, the state's long history of energy efficiency undoubtedly holds valuable lessons and best practices. While the rapid ramp-up of Illinois' EEPS and its ambitious savings targets are no small feat, the state can certainly learn from the decades of knowledge and experience in Massachusetts. As Illinois' EEPS continues to mature and evolve, so too will the strategies of policymakers, utility companies, contractors, and other stakeholders as they continue to strive for programs that not only create a more efficient energy system but do so in the most cost-effective manner possible.

The Massachusetts EEPS budget of \$3.5 billion over six years is triple that of Illinois (**Figure 8**). Given Massachusetts' larger EEPS budget, it may come as no surprise that its EEPS programs have been more effective and are reaching more ambitious savings targets. Yet, while this is certainly true to an extent, it is not the full story. Not only are Massachusetts utilities spending more overall than those in Illinois, but they are also spending their funds more efficiently, achieving much greater EEPS energy savings per capita (**Figure 9** and **Figure 10**).

This section provides a comparative analysis of both states' EEPS to determine some key elements in the Massachusetts' model. It uses these important lessons about the Massachusetts' experience to inform the ongoing evolution of the EEPS in Illinois. The section highlights five questions that Illinois policymakers and stakeholders should consider as they shape the future Illinois' EEPS and borrows strategies from Massachusetts to formulate recommendations. Specifically, this section analyzes the following questions:

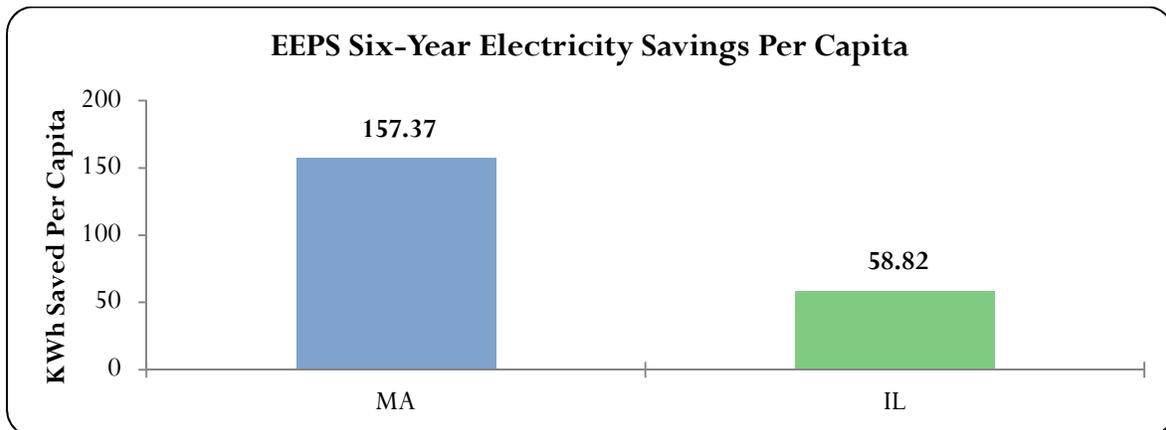
- Should Illinois consider removing or altering its EEPS spending caps?
- How can Illinois improve the administration of EEPS programming through program consolidation and coordination?
- What is the future role of residential sector energy efficiency rebates in Illinois?
- Should Illinois consider increasing its low-income sector EEPS spending?
- How can complementary energy efficiency policies such as utility decoupling and utility performance incentives bolster EEPS programming in Illinois?

**Figure 8**



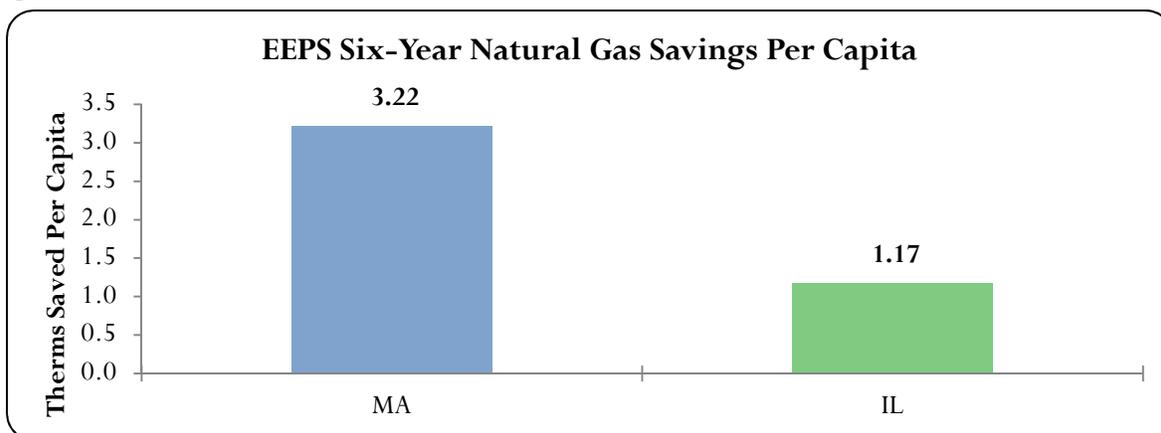
*Sources: (1) Illinois Electric Utilities Three-Year Energy Efficiency Plans 2008-10, 2011-13. (2) Illinois Natural Gas Utilities Three-Year Energy Efficiency Plans 2011-13. (3) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (4) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

**Figure 9**



*Sources: (1) US Census Bureau, Population Division, Interim State Population Projections, 2005. (2) Illinois Electric Utilities Three-Year Energy Efficiency Plans 2008-10, 2011-13. (3) Illinois Natural Gas Utilities Three-Year Energy Efficiency Plans 2011-13. (4) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (5) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

**Figure 10**



*Sources: (1) US Census Bureau, Population Division, Interim State Population Projections, 2005. (2) Illinois Electric Utilities Three-Year Energy Efficiency Plans 2008-10, 2011-13. (3) Illinois Natural Gas Utilities Three-Year Energy Efficiency Plans 2011-13. (4) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (5) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

### III.A. EEPS Spending Caps

#### Question addressed

Should Illinois consider removing or altering its EEPS spending caps?

#### Finding

EEPS spending caps in Illinois are inhibiting utilities from reaching their progressively more ambitious savings targets. **Figure 11** shows the shrinking gap between EEPS budgets in Illinois and the spending caps. This gap is particularly problematic given the state’s increasingly ambitious savings targets. Illinois spending caps stagnate at approximately 2% of annual sales (**Table 6**) meaning that utilities are expected to achieve increasingly difficult savings targets without allowing for increased spending.

As noted in **Figure 12**, EEPS electricity savings per capita in Illinois began to plateau in Program Year 4 (2011) and actually begin to decline in Program Year 5 (2013). This is in stark contrast with Massachusetts which has seen steadily increasing electricity savings since adopting an EEPS.

Although natural gas savings per capita in Illinois continue to grow, this savings rate will likely slow as utilities exhaust easier “low-hanging-fruit” opportunities and must strive for savings that are increasingly more difficult to achieve (**Figure 13**). Though Massachusetts annual gas savings seems to plateau at 3.69 therms per capita in the state’s most recent EEPS strategic plan (0.4 more therms per capita than Illinois), the accomplishment remains informative for Illinois for two reasons. First, as stated previously, Massachusetts utilities have already realized many of the easier “low-hanging-fruit” savings in the decades prior to adopting an EEPS. The fact that the state maintains such a high level of per capita savings despite this fact is impressive. Second, in contrast with Illinois gas utilities which have only released three-year

savings projections, Massachusetts savings projections span six years. The release of Illinois' 2014-2016 EEPS electric and natural gas strategic plans at the end of 2013 will provide a more accurate picture of natural gas efficiency programs given that adjustments and changes in programming are likely to occur in the updated plan.

## Approach in Massachusetts

In contrast with Illinois, which caps on the amount utilities are allowed to spend on EEPS programs in order to protect customers from exorbitant system benefit charges (see Section I.A.), Massachusetts utilities have no such spending cap. As the Massachusetts Department of Public Utilities recently explained, “[The] Department declines to set a pre-determined bill impact standard or cap, stating that the Department’s review is not mechanical, and it will use its judgment and expertise to consider bill impacts; also, a cap is inconsistent with the requirement of the [Green Communities Act] to achieve all available cost-effective energy efficiency.”<sup>oo</sup>

Instead of imposing a spending cap, Massachusetts statute requires utilities to obtain approval from the Department of Public Utilities regarding the amount of EEPS funding they plan to collect through ratepayer system benefit charges.<sup>pp</sup> To assess expected energy bill impacts associated with ratepayer fees, utility representatives, state agencies, consumer advocates, and other interested stakeholders have formed the Bill Impact Working Group. The Working Group conducts an in-depth analysis of short- and long-term costs and benefits of proposed EEPS three-year plans and submits the report to the Department of Public Utilities to aid in the decision-making process. While the Working Group’s recommendations are non-binding, its analysis attests to the diligence and collaboration devoted to ratepayer protection in the state.

Although the process for approving ratepayer fees in Massachusetts does not provide the same amount of strict consumer protection that exists in Illinois, the increased flexibility in spending and continuous assessment of the need for ratepayer funding allows Massachusetts utilities to reach their ambitious savings targets more easily. Furthermore, the approval process provides safeguards against unreasonable rate increases by incorporating collaboration with consumer advocate agencies in the Bill Impact Working Group and by requiring final rate approval from Department of Public Utilities.

## Recommendation and Feasibility for Change in Illinois

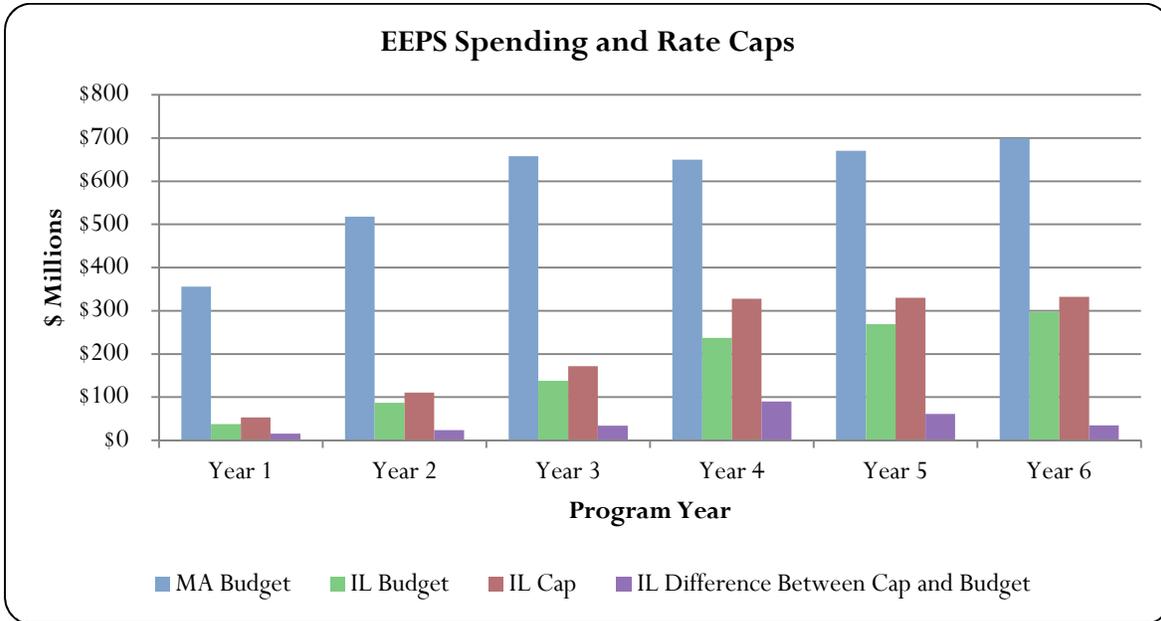
Advocating for complete removal of spending caps in Illinois is no small pursuit. Reopening the legislation to implement this correction means that stakeholders will also have the opportunity to push for additional statutory modifications to EEPS policies. Allowing for the possible drastic restructuring of such a large piece of legislation is risky given the uncertainty of negotiation outcomes.

However, removing, altering, or circumventing the spending caps should remain a high priority for energy efficiency advocates. If the opportunity arises to alter the caps, Illinois may want to borrow lessons from the Massachusetts model. That is, in order to protect customers from exorbitant rate hikes, a third party (possibly comprised of SAG members) should review rate impacts associated with the EEPS plans and provide recommendations to the Illinois Commerce Commission which holds ultimate approval authority.

**Table 6**

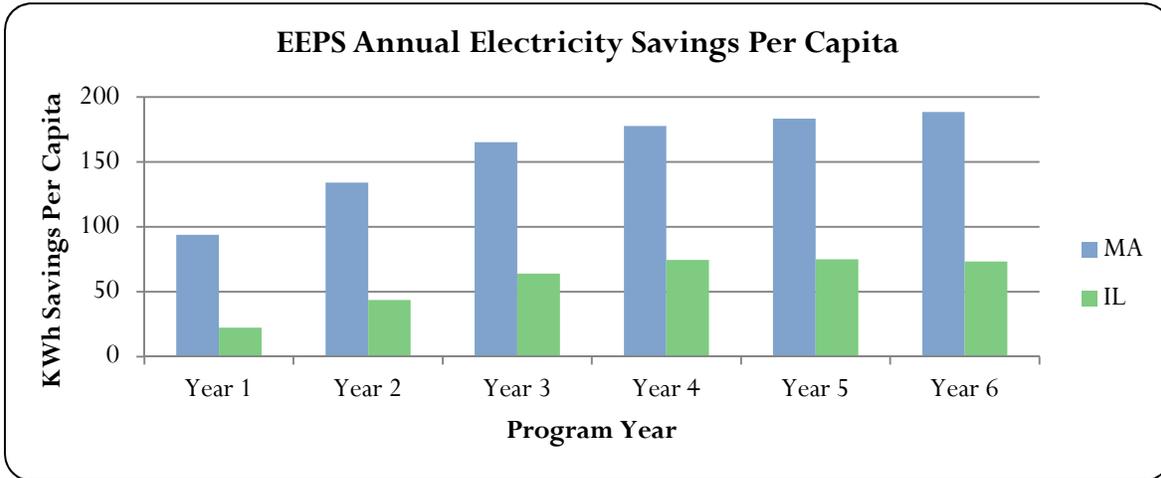
| Illinois EEPS Utility Spending Caps as a Percentage of Annual Revenue <sup>49</sup> |      |      |      |      |      |        |        |        |
|---|------|------|------|------|------|--------|--------|--------|
|   | 2008 | 2009 | 2010 | 2011 | 2012 | 2013   | 2014   | 2015   |
| Electric  | 0.5% | 1.0% | 1.5% | 2.0% | 2.0% | 2.015% | 2.015% | 2.015% |
| Gas   | -    | -    | -    | 2.0% | 2.0% | 2.0%   | 2.0%   | 2.0%   |

**Figure 11**



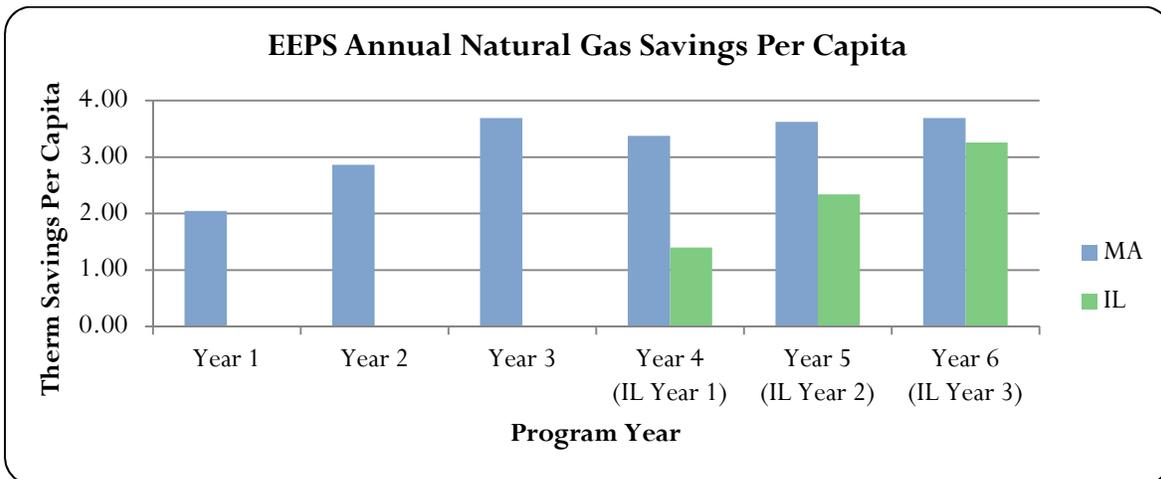
*Sources: (1) Illinois Electric Utilities Three-Year Energy Efficiency Plans 2008-10, 2011-13. (2) Illinois Natural Gas Utilities Three-Year Energy Efficiency Plans 2011-13. (3) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (4) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

**Figure 12**



*Sources: (1) US Census Bureau, Population Division, Interim State Population Projections, 2005. (2) Illinois Electric Utilities Three-Year Energy Efficiency Plans 2008-10, 2011-13. (3) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (4) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

**Figure 13**



*Sources: (1) US Census Bureau, Population Division, Interim State Population Projections, 2005. (2) Illinois Natural Gas Utilities Three-Year Energy Efficiency Plans 2011-13. (3) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (4) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

## III.B. Coordination and Consolidation

### Question Addressed

How can Illinois improve the administration of EEPS programming through program consolidation and coordination?

### Finding

The Illinois EEPS lacks sufficient program consolidation and coordination. This is leading to lower cost effectiveness, greater customer confusion, missed savings opportunities, and inefficient allocation of utility resources.

Presently, each Illinois utility is responsible for administering its own residential and C&I energy efficiency programs, while DCEO manages the public and low-income sectors. Under the current system, utilities do not pool resources and funding. The most recent three-year EEPS plans detail 27 different residential programs and 25 different C&I programs offered throughout the state by electric and gas utilities (**Table 7**). In contrast, as described in greater detail below, Massachusetts' utilities offer just two residential programs and two C&I programs through increased consolidation and coordination (**Table 8**).

Offering so many programs without coordinated messaging and objectives is not only confusing for consumers, but it also leads to an inefficient allocation of resources as utilities redundantly fund and administer similar programs. In the same way, offering a hodgepodge of independently managed efficiency programs tends to target single efficiency measures and often fails to take a holistic “fuel blind” approach that strives to increase the overall efficiency of the building regardless of its fuel source. Shifting to a fuel blind approach where possible would greatly increase energy savings.

### Approach in Massachusetts

Both natural gas and electric utilities in Massachusetts have been increasingly moving towards greater program coordination and consolidation in a variety of ways. Doing so has allowed for more flexibility as to what incentives and upgrades can be offered to customers. Likewise, incentives and installations can be better tailored to target the deepest savings in the individual home or commercial building. The following forms of streamlining and consolidation in Massachusetts have increased flexibility to address changing market conditions; allowed for pooled resources and reduced administrative costs, thereby improving program cost-effectiveness through economies of scale; reduced customer confusion; and potentially reduced the need for mid-term modifications:<sup>rr</sup>

- **Coordination Across Fuel Types.** Natural gas and electric utilities are increasingly collaborating in order to more efficiently administer savings programs by using a more holistic, fuel blind approach.

Coordination across fuel types permeates the EEPS planning process in Massachusetts. For example, in 2009 gas and electric utilities individually submitted their 2010-2012 utility strategic plans. However, the more recent 2013-2015 plan is a single document—a joint effort that represents “a relationship among [utilities], which includes sharing of ideas and best practices and is a critical component of the [utilities’] successful delivery of energy efficiency to date.”<sup>ss</sup> The

remarkable working relationship is complemented by bi-weekly meetings among gas and electric utilities that allow program administrators to collaborate and share best practices.

- ***Consolidation of Program Offerings.*** Coordinating across fuel types has allowed utilities to consolidate their program offerings to present a more unified, statewide portfolio. Instead of having each utility offer and administer a hodgepodge of programs across the state, the Massachusetts' model brings all of the state's utility companies together to decide on a handful of broad program offerings, map out strategies to implementation for each sector, and decide on specific goals for sub-categories of customers within each sector.

In the low-income sector, Massachusetts utilities have combined single and multi-family programs into a solitary "Low-Income Retrofit" program. The Low-Income Energy Affordability Network (LEAN) has been invaluable in administering low-income sector programs. The group allows low-income program administrators to share best practices and provide a coherent, highly coordinated effort to customers.

In the C&I sector, utilities house a wide variety of programs under two umbrella categories: "New Construction" and "Retrofit." Within each of these categories, utilities jointly specify outreach and incentive strategies as well as goals for customer segments within the C&I sector (e.g. municipalities, multi-family commercial housing, compressed air, etc.). Unlike the DCEO's administration of the public sector programs in Illinois, public sector EEPS is a sub-category of C&I in Massachusetts.

In the residential sector, utilities have consolidated all programs into either "Residential Whole House" or "Residential Products." Within "Residential Whole House," they have segmented advertising and incentives that specifically target single family, multi-family, and new construction customers. "Residential Products" describes upstream and downstream rebates and how they will be applied and offered for several categories of energy efficiency (e.g. hot water, space heating, space cooling, Energy Star products, etc.).

Consolidating EEPS programs in Massachusetts has improved cost effectiveness, allowed for pooled resources among utilities, and minimized customer confusion about efficiency program offerings. By examining the sector as a whole instead of focusing on many individual programs designed to target certain savings goals within the sector, Massachusetts is better able to allocate funds on a project-by-project basis. Furthermore, measuring cost effectiveness at the sector level allows for more flexible spending as the costs of less cost-effective measures can be offset by greater cost effectiveness of other measures when the sector is measured as a whole.

- ***Improved Internal Communication.*** In addition to creating the Massachusetts' Energy Efficiency Advisory Council (EEAC), the state formed formal working groups and committees that meet regularly, exchange ideas and best practices, and inform EEAC discussions and decisions. These groups, which work closely with EEAC but are independent entities, include: Residential Management Committee, C&I Management Committee, Evaluation Management Committee, Bill Impact Working Group, and Low-Income Best Practices Working Group. Each group contains

representatives from utilities, contractors, EEAC, and other interested stakeholders. The meetings provide the opportunity for more focused collaboration “covering all elements of planning, implementation, and evaluation, including discussions related to best practices for reaching goals.”<sup>tt</sup>

Similarly, formal meetings comprised entirely of utility representatives meet in-person on a bi-weekly basis in addition to collaborating through *ad hoc* discussions and unofficial phone conferences. These private meetings give utility company decision makers the opportunity to share best practices and consolidate ideas taken from conversations with other stakeholders.

Through such coordination, individual utilities are afforded appropriate flexibility to try unique initiatives and strategies that can be evaluated and adopted by other utilities. The meetings also allow them to collaborate on all aspects of the three-year plan and energy efficiency programming encouraging them to “share and analyze planning and implementation successes and challenges, and benefit from shared knowledge and...expertise.”<sup>uu</sup>

- ***Coordinated Marketing.*** The cohesive force behind the aforementioned efforts of increased EEPS coordination and collaboration in Massachusetts is the statewide “Mass Save” branding and website. This instrumental component of Massachusetts’ EEPS has the goal of “educating audiences about the need for and benefits of energy efficiency...and driv[ing] Massachusetts residents to participate in sponsored energy efficiency programs.”<sup>vv</sup>

The Mass Save statewide brand is applied to nearly all utility programs regardless of fuel source or contractor. Through concerted marketing, utilities are able to establish a trusted brand that consumers recognize as synonymous with utility energy efficiency programs. The brand has played an important role in establishing a highly visible culture in which Massachusetts residents recognize energy efficiency as the new norm.

Moreover, in addition to preventing customer confusion among a hodgepodge of efficiency program offerings, the single brand, along with the creation of the Mass Save website, has greatly facilitated program consolidation among utilities. Furthermore, the statewide brand has led to increased customer participation as outreach campaigns present a universal message that can also be tailored to appeal to individual customer needs (Appendix F).

## Recommendation and Feasibility for Change in Illinois

Illinois is making strides towards increased program coordination. In its most recent three-year plan, ComEd announced that it will be partnering with Nicor and Integrys (comprised of North Shore and Peoples Gas Utilities) natural gas companies to combine some of its electric program offerings into a “co-delivered” format.<sup>ww</sup> While this is certainly a step in the right direction, Illinois utilities should pursue statewide coordination across fuel types as much as possible in order to solidify a more holistic, fuel blind strategy. Given the developing partnership among ComEd, Nicor, and Integrys, this goal seems highly feasible in the near future.

On the other hand, though program coordination appears quite feasible, consolidation of program offerings in Illinois may be more difficult. While utilities have a history of working together, agreeing on a handful of simplified program offerings, goals, and strategies will take some time given that program

management has been highly decentralized since adoption of the EEPS. Utilities may be reluctant to halt their individual programs and negotiate a combined approach given the administrative burdens of designing and managing new programs. However, energy efficiency advocates should certainly keep this strategy in mind as they continue to strive for a successful EEPS in Illinois.

Illinois should consider adopting Massachusetts’ model by forming sector-specific working groups that span across utilities, contractors, and stakeholders. Many of the important stakeholders already come into contact on a regular basis through the Stakeholder Advisory Group (SAG) and other more informal interactions, and such a model would merely provide structured conversations and clearly defined expected outcomes. Additionally, it would greatly aid the SAG’s planning processes and ensure that the evolution of Illinois’ EEPS is thoughtfully structured in a cohesive manner. This is highly feasible given the formal and informal networks of stakeholders that already exist in Illinois. Designating working groups with clear objectives could be done through legislation or through informal means such as a SAG agreement.

In the same way, given the unique challenges of the sector, low-income program administrators should consider using the LEAN structure not only to share best practices but also improve low-income program coordination. Such a group could build on the loosely formed Community Action Agency (CAA) network that already exists in Illinois by providing a formal platform for collaboration. For these reasons, implementation of this aspect of the Massachusetts’ model seems highly feasible and highly advisable in Illinois.

Lastly, borrowing the “Mass Save” coordinated marketing strategy in Illinois seems highly feasible. There are minor administrative burdens such as website and branding development. However, presenting customers with a cohesive image of energy efficiency and creating a one-stop shop for efficiency information can greatly facilitate outreach efforts. This is especially true if Illinois utilities adopt other coordination strategies described previously. In that case, the outward branding is merely a reflection of internal administrative collaboration.

**Table 7**

| <b>Illinois Energy Efficiency Program Offerings</b> |                                  |                      |                 |                    |
|---|----------------------------------|----------------------|-----------------|--------------------|
| <b>Sector</b>                                       | <b>Energy Efficiency Program</b> | <b>Administrator</b> | <b>Electric</b> | <b>Natural Gas</b> |
| <b>Residential</b>                                  | Lighting                         | Ameren               | ✓               |                    |
|   | Energy Efficient Products        | Ameren               | ✓               | ✓                  |
|   | HVAC Program                     | Ameren               | ✓               | ✓                  |
|   | Appliance Recycling              | Ameren               | ✓               | ✓                  |
|   | Home Energy Performance          | Ameren               | ✓               |                    |
|   | Energy Star New Homes            | Ameren               | ✓               | ✓                  |
|   | Multi-Family Program             | Ameren               | ✓               | ✓                  |
|   | Behavior Modification            | Ameren               | ✓               | ✓                  |
|   | Moderate Income                  | Ameren               | ✓               | ✓                  |

|                                  |                                |          |   |   |
|----------------------------------|--------------------------------|----------|---|---|
| Residential (cont.)              | Demand Response                | Ameren   | ✓ | ✓ |
|                                  | Lighting                       | ComEd    | ✓ |   |
|                                  | Home Energy Reports            | ComEd    | ✓ |   |
|                                  | Appliance Recycling            | ComEd    | ✓ |   |
|                                  | Residential CACES              | ComEd    | ✓ |   |
|                                  | Multi-Family Home Performance  | ComEd    | ✓ |   |
|                                  | Appliance Rebate               | ComEd    | ✓ |   |
|                                  | Single-Family Home Performance | ComEd    | ✓ |   |
|                                  | New Construction               | ComEd    | ✓ |   |
|                                  | Heating & Appliance Incentive  | Nicor    |   | ✓ |
|                                  | Single-Family Retrofit         | Nicor    |   | ✓ |
|                                  | Multi-Family Retrofit          | Nicor    |   | ✓ |
|                                  | Elementary Education           | Nicor    |   | ✓ |
|                                  | Behavioral Energy Savings      | Nicor    |   | ✓ |
|                                  | Prescriptive Rebates           | Integrys |   | ✓ |
|                                  | Home Energy Reports            | Integrys |   | ✓ |
| Multi-Family Direct Install      | Integrys                       |          | ✓ |   |
| Residential Whole House Retrofit | Integrys                       |          | ✓ |   |
| C&I                              | Custom Incentive               | Ameren   | ✓ | ✓ |
|                                  | Standard Incentive             | Ameren   | ✓ | ✓ |
|                                  | Retro-Commissioning            | Ameren   | ✓ | ✓ |
|                                  | New Construction               | Ameren   | ✓ | ✓ |
|                                  | Prescriptive                   | ComEd    | ✓ |   |
|                                  | Custom                         | ComEd    | ✓ |   |
|                                  | Retro-Commissioning            | ComEd    | ✓ |   |
|                                  | New Construction               | ComEd    | ✓ |   |
|                                  | Midstream Incentives           | ComEd    | ✓ |   |
|                                  | Compressed Air                 | ComEd    | ✓ |   |
|                                  | Small Business Direct Install  | ComEd    | ✓ |   |
|                                  | Energy Efficiency RFP          | ComEd    | ✓ |   |
|                                  | C&I CACES                      | ComEd    | ✓ |   |
|                                  | Commercial Real Estate         | ComEd    | ✓ |   |
|                                  | Data Center Efficiency         | ComEd    | ✓ |   |
|                                  | Business Incentive             | Nicor    |   | ✓ |
|                                  | Custom Incentive               | Nicor    |   | ✓ |
|                                  | Economic Redevelopment         | Nicor    |   | ✓ |
|                                  | Retro-Commissioning            | Nicor    |   | ✓ |
| Small Business Direct Install    | Nicor                          |          | ✓ |   |

|             |   |          |   |   |
|-------------|---|----------|---|---|
| C&I (cont.) | New Construction                                | Nicor    |   | ✓ |
|             | Prescriptive Rebates                            | IntegrYS |   | ✓ |
|             | Custom Rebates                                  | IntegrYS |   | ✓ |
|             | Retro-Commissioning                             | IntegrYS |   | ✓ |
|             | Small Business Efficiency                       | IntegrYS |   | ✓ |
| Low-Income  | Low-Income Retrofit                             | DCEO     | ✓ | ✓ |
|             | New Construction                                | DCEO     | ✓ | ✓ |
|             | Public Housing Authority Efficient Living       | DCEO     | ✓ | ✓ |
| Public      | Prescriptive                                    | DCEO     | ✓ | ✓ |
|             | Custom  | DCEO     | ✓ | ✓ |
|             | New Construction                                | DCEO     | ✓ | ✓ |
|             | Retro-Commissioning Program                     | DCEO     | ✓ | ✓ |
|             | Lights for Learning                             | DCEO     | ✓ |   |
|             | Municipal Energy Efficiency Aggregation Program | DCEO     | ✓ | ✓ |

**Table 8**

| Massachusetts Energy Efficiency Program Offerings |                           |               |          |             |
|---|---------------------------|---------------|----------|-------------|
| Sector  | Energy Efficiency Program | Administrator | Electric | Natural Gas |
| Residential                                       | Residential Whole House   | All Utilities | ✓        | ✓           |
|   | Residential Products      | All Utilities | ✓        | ✓           |
| C&I and Public                                    | C&I New Construction      | All Utilities | ✓        | ✓           |
|   | C&I Retrofit              | All Utilities | ✓        | ✓           |
| Low-Income  | Low-Income Whole House    | LEAN          | ✓        | ✓           |

### III.C. Residential Rebates

#### Question Addressed

What is the future role of residential sector energy efficiency rebates in Illinois?

#### Finding

Illinois is inefficiently allocating its residential energy efficiency program funding by disproportionately favoring broad, “unconditional” rebates—that is, those rebates that are not tied to any sort of home energy audit. The state is greatly invested in downstream and upstream rebates (see Section I.B. for description of these rebate types), which are often seen as a quick way to bring down prices of

energy efficiency upgrades and equipment. In doing so, they seek to incentivize consumers to purchase energy efficiency products that they would not have purchased without the subsidized price.

Such heavy investment in these rebates during the early years of EEPS implementation is understandable given Illinois' relative inexperience in statewide energy efficiency efforts and its lack of program delivery infrastructure. As is sometimes the case during the infancy of EEPS policies, at the time of legislation utilities in Illinois were more focused on ramping up their programs than creating a complex administrative network.

However, as shown in **Figure 14**, funding of unconditional rebates remains high in Illinois (44% of the 2015 residential sector budget). Instead of putting such a large portion of residential EEPS funds into unconditional rebates, Illinois utilities should consider making more rebates conditional upon the completion of a utility-sponsored home energy audit.

Residential energy efficiency rebates are widely available to customers in Illinois but do not take into account a person's willingness or ability to pay for energy efficiency. By not accounting for these important factors, such rebates tend to encourage excessive and preventable free-ridership, subsidizing customers who would have made the purchase without such price incentives in place. Furthermore, despite reduced prices and long term cost savings, such rebates rarely lower prices enough to appeal to customers with fixed incomes who cannot readily afford the upfront capital necessary to purchase the energy efficient product. Encouraging free-ridership not only provides funds to those who do not need them, but also diverts funds from those who need the assistance most.

Additionally, unconditional residential rebates are poorly targeted and fail to tailor financial incentives to a resident's most inefficient energy devices and features. For example, a homeowner may purchase several subsidized compact fluorescent light bulbs (CFL) in an effort to save electricity, but his/her home may also contain a grossly outdated and inefficient central air conditioning system—perhaps unbeknownst to the owner. In such cases, tailoring financial incentives to encourage a system replacement or retrofit is clearly a better investment of energy efficiency funds than broad rebates that fail to take a “whole-house” approach to maximizing deep, long-term savings.

## Approach in Massachusetts

Massachusetts utilities have been steadily moving their residential programs away from poorly targeted, unconditional rebates to a more comprehensive “whole-house” approach (**Figure 14**). Under a “whole-house” approach, utilities only offer rebates and other financial incentives to households upon the completion of a home energy audit. Such audits are “fuel blind,” meaning that they do not target specific fuel savings, such as natural gas or electricity, but instead strive to increase the overall efficiency of the dwelling regardless of its fuel source. For example, such an audit may lead to the installation of CFL bulbs (electric savings) and a new heating system (natural gas savings) in a single home.

Greater emphasis on a whole-house approach echoes Massachusetts' overall residential strategy of “Deeper, then Broader,” savings. This strategy concentrates on achieving the maximum amount of long-term, *deep* savings in a single home before *broadening* the scope of the program to target additional participants. To do this, all efficiency installations are considered cost-effective when measured as a package. By bundling measures that surpass the cost-effectiveness threshold with those that are less cost effective when considered on their own, utilities are able to include installations that maximize lifetime

savings. The alternative is to focus more on individual measures that are cost effective, which leaves the most expensive projects for later years when EEPS targets will be more difficult to achieve. By prioritizing *deep* savings over *broad* participation, Massachusetts utilities ensure the greatest level of lifetime savings upon program expansion.

In the residential sector alone, this strategy is expected to produce lifetime savings<sup>2</sup> of 10,978.72 GWh of electricity and 706,489,843 therms of natural gas (**Figure 15** and **Figure 16**). That is equivalent to a reduction of approximately 12.5 million short tons of carbon dioxide emissions or comparable to the annual greenhouse gas emissions from 2.4 million passenger vehicles.<sup>xx</sup>

By increasingly requiring energy audits as a precondition for receiving rebates and by applying a “Deep, then Broad” savings strategy to the whole-house approach, utilities and expert auditors are able to tailor the incentive amount and installation measures to the individual home. By doing so, they ensure that the most appropriate upgrades are installed to achieve the deepest savings and maximize cost effectiveness.

## Recommendation and Feasibility for Change in Illinois

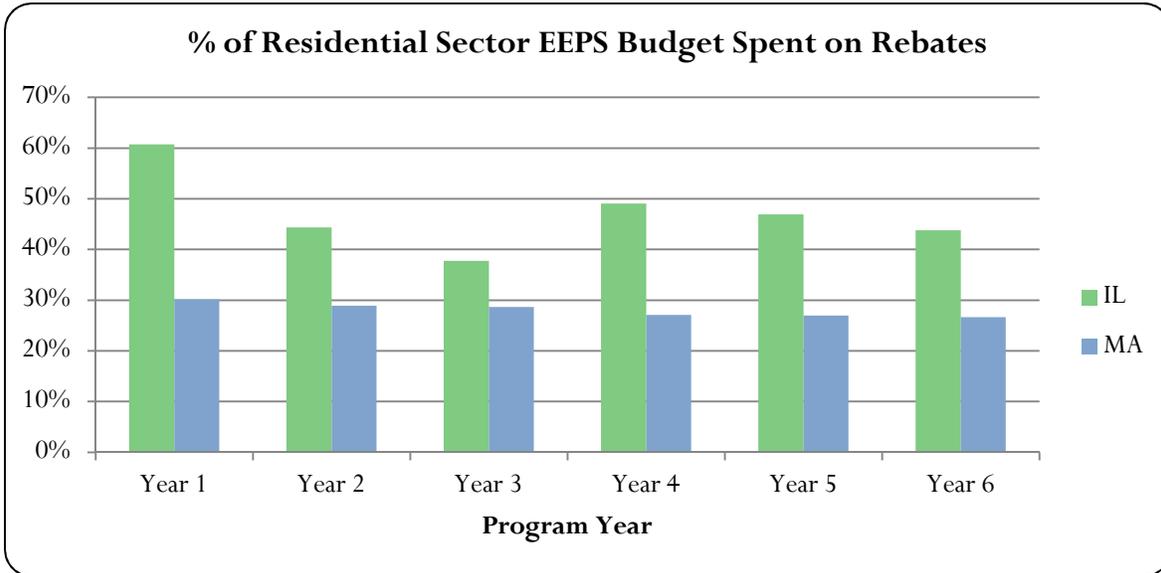
Unconditional residential rebates are an important component of most EEPS programs and are an effective way to broadly incentivize customers to invest in efficiency. However, as EEPS programs mature, they should seek consolidated incentive mechanisms that are better tailored to target the deepest, most enduring savings. If Illinois diverted a greater percentage of residential energy efficiency funding toward rebates that were conditional upon completion of a whole-house energy audit, utilities could strive to ensure that customers were making the most appropriate and cost-effective use of the subsidies.

This recommendation is moderately feasible. On the one hand, it calls for shifting funds from one program to another and therefore requires no additional revenue to administer, which makes it more palatable politically. On the other hand, although utilities and their contractors have the existing infrastructure to pursue this recommendation, it will likely require an expansion of this infrastructure. While this is certainly feasible, it may take some time to restructure and expand efficiency program offerings.

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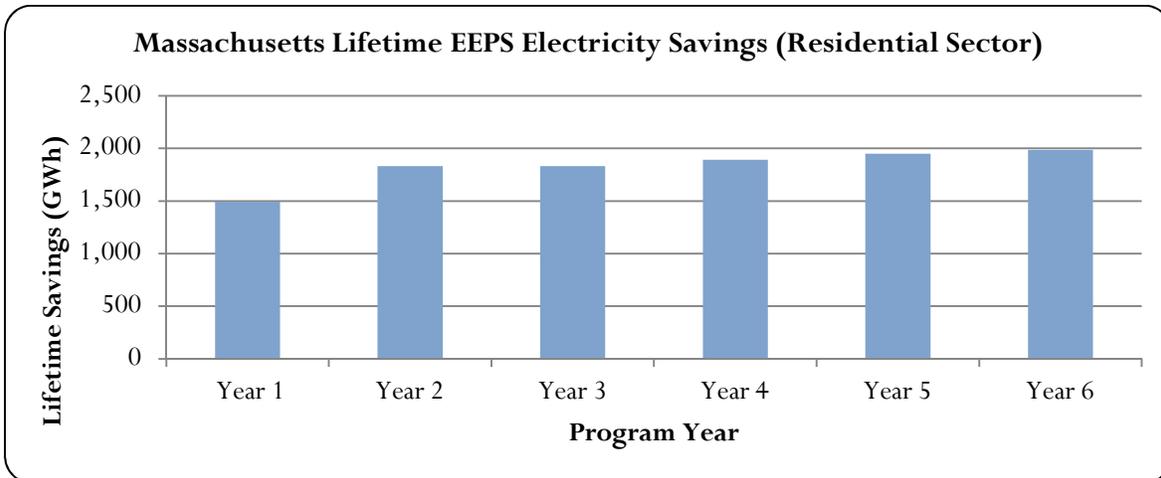
<sup>2</sup> According to EEAC, “Lifetime savings refer to the sum total of savings over the entire life of an efficiency measure. For example, a CFL that saves 50 kWh per year and lasts 5 years will have lifetime savings of 250 kWh.”

**Figure 14**



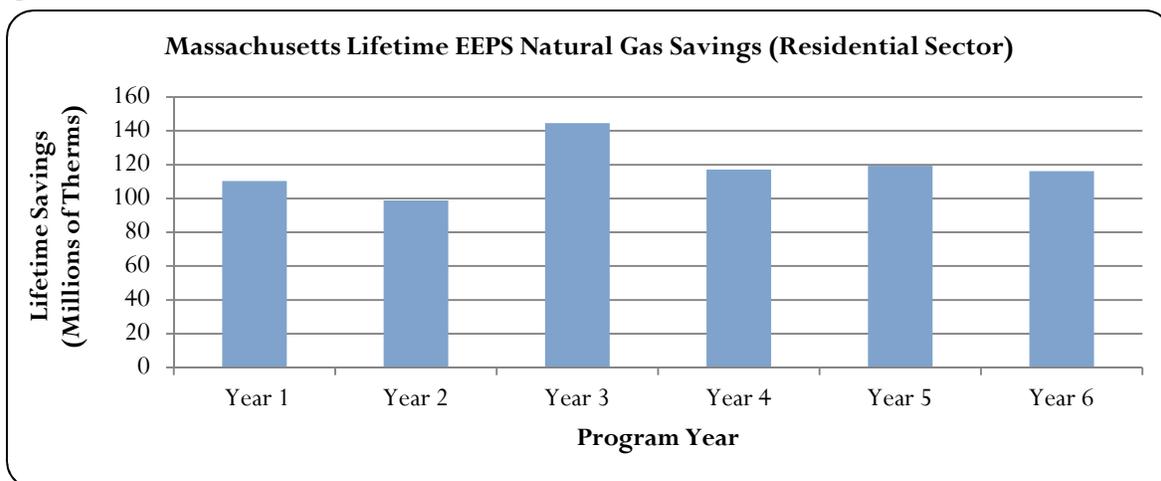
*Sources: (1) Illinois Electric Utilities Three-Year Energy Efficiency Plans 2008-10, 2011-13. (2) Illinois Natural Gas Utilities Three-Year Energy Efficiency Plans 2011-13. (3) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (4) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

**Figure 15**



*Source: Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

Figure 16



Source: Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.

### III.D. Low-Income Sector Spending

#### Question Addressed

Should Illinois consider increasing its low-income sector EEPS spending?

#### Finding

Illinois utilities are under-investing in the low-income sector.<sup>3</sup> Although they appear to be fulfilling statutory requirement in that funding is proportionate to the share of total annual utility revenues from households at or below 150% of the poverty line, utilities are failing to provide any sort of additional subsidy (**Figure 17**). By merely reimbursing—and not subsidizing—these households, Illinois utilities are not accounting for the unique characteristics associated with the low-income sector including:

- **Large energy burdens.** According to ACEEE, an average household in the United States spends 4% of income on home energy costs, while low-income households at or below 150% of the poverty line spend 17% of their annual income on energy.<sup>yy</sup> This national trend is even more pronounced in Illinois where the average non-low-income household spends between 4% and 6% of their income on utility costs while low-income households spend 21% to more than 30%.<sup>zz</sup> Providing energy assistance to the low-income sector has a much greater effect on household budgets and ability to invest in efficiency.

<sup>3</sup> Note: For the purposes of this report, the term “low-income” refers to those households that fall below 150% of the federal poverty line as determined by the US Department of Health and Human Services.

- **Older housing stock.** Residents whose income is at or below 150% of the poverty line tend to live in older, more inefficient homes. In Illinois, the average low-income person’s house is nine years older than those living above 150% of the poverty line (**Figure 18**). This difference in housing age is almost double the national average.
- **Below average rate of homeownership.** As described in Section I.B., renters often face unique barriers to investment in energy efficiency. Most notably, this includes the infamous “split incentive” dilemma between tenants and property owners. In the Midwest, households at or below 150% of the poverty line are more than five times as likely to be renters rather than homeowners when compared to non-low-income residents (**Figure 19**).
- **Non-energy benefits.** As detailed in Section I.B., there are numerous non-energy societal benefits associated with investing in low-income energy efficiency programs including lower renter turnover rates for property owners, diminished demand for government energy assistance, and reduced rates of homelessness associated with unaffordable housing situations. Furthermore, it reduces non-payment of utility bills among low-income households. In Illinois, utilities are allowed to recover foregone revenue due to non-payment by increasing rates for other customers. Thus, making it easier for low-income households to pay their bills on time benefits the rest of society through lower utility rates.
- **Lack of upfront capital.** Low-income households are often unable to take advantage of residential sector programs due to their lack of available, upfront capital. This is especially true in Illinois given the state’s heavy investment in residential energy efficiency rebates (see Section III.C.). Given households’ fixed income constraints and the previously mentioned unique characteristics associated with the sector, Illinois should consider bolstering its low-income EEPS programming.

### **A Closer Look at DCEO’s Low-Income Programs**

The only source of utility-funded programs that specifically target low-income energy efficiency in Illinois is the EEPS programming administered by the Department of Commerce and Economic Opportunity (DCEO). In its 2011-2013 EEPS strategic plan, DCEO allocated \$59.9 million to its low-income sector programming or about 26% of its EEPS budget (**Table 9**).

In large part, DCEO uses its allocated EEPS funds to expand existing low-income energy assistance programs rather than create new ones. DCEO leverages EEPS financing to administer the following low-income programs throughout the state:

- **Residential Retrofit Energy Efficiency Program.** This program leverages funds and programs currently offered by state agencies, local governments, affordable housing developers, and other entities that administer weatherization or other low-income home improvement programs. By leveraging the additional EEPS funds from DCEO, these existing programs can achieve a greater level of savings from their spending.

A significant portion of Retrofit funding (about 30% in 2011) is typically directed towards the federally funded Illinois Home Weatherization Assistance Program (IHWAP). IHWAP was established in response to the federal Energy Conservation and Production Act of 1976. The Act created the US Department of Energy's Weatherization Assistance Program (WAP), which provides states with federal funds in order to administer weatherization projects in low-income homes.<sup>aaa</sup> DCEO has directed IHWAP since 1977, funding 36 local Community Action Agencies (CAAs) throughout the state that administer the program. Under the more recent EEPS statute, DCEO uses a portion of the supplemental EEPS funds from utilities to expand the existing IHWAP program and infrastructure. Weatherization measures typically include: air-sealing, wall/ceiling insulation, and inspection and tuning of heating and hot water systems.<sup>bbb</sup>

In addition to using funds to expand IHWAP, the Retrofit program has leveraged EEPS funds to provide grants to other organizations that administer low-income home improvements including: Illinois Housing Development Authority (IHDA), the federally funded Community Development Assistance Program (CDAP), Delta Institute, and the Chicago Bungalow Association. These non-weatherization programs tend to focus more on providing incentives for installation and repair of energy equipment in the home. They cover items such as efficient refrigerators, heat pumps, air conditioners, furnaces, and water heaters (see Appendix G for full listing of measures and incentives).<sup>ccc</sup>

- ***Energy Efficient Affordable Housing Construction Program (EEAHCP)***. EEAHCP has existed in Illinois since 1988. The program provides energy efficiency grants to for-profit and non-profit affordable housing developers. EEAHCP grants are offered only for new multi- and single-family construction and for substantial, “gut-rehab” projects on existing multi- and single-family homes. The grants focus on insulation, air sealing, ventilation, and high-efficiency heating, hot water, and air conditioning. DCEO uses its utility-sponsored EEPS funds to expand the coverage of EEAHCP grants for such projects.
- ***The Efficient Living Illinois Public Housing Program***. The Efficient Living Program targets building managers of the 84 low-income Public Housing Authority (PHA) buildings throughout Illinois that are serviced by the five utilities participating in the state's EEPS. The Efficient Living Program works closely with the US Department of Housing and Urban Development (HUD) to provide grants for energy upgrades in residential units and other incentives for common areas on PHA buildings.

## Approach in Massachusetts

In Massachusetts, the partnership between low-income assistance and energy efficiency efforts predates the adoption of its EEPS by over 30 years. As is the case with the state's general commitment to energy efficiency, support for low-income households grew out of the Integrated Resource Planning (IRP) process of the late 1970s and early 1980s.<sup>ddd</sup> The IRP process, which was adopted with vocal advocacy from the state's environmentalist lobby, encouraged utilities to designate resources for demand-side energy efficiency, including support for the low-income sector.

Moreover, the Department of Public Utilities further declared its endorsement for low-income energy efficiency in 1979 when it approved discounted utility rates for the low-income customers.<sup>ccc</sup> At the time, the declaration was fairly progressive and demonstrates the state's deep support for energy assistance in the low-income sector. The reduced rates, which provide a discount of approximately 25% on gas and electric utility bills to customers at or below 60% of the state median income level, still exist today.<sup>fff</sup>

Amid discussions of federal energy assistance spending cuts of the mid-1990s, low-income advocates in Massachusetts recognized the growing need for securing additional program funding directly from ratepayers. Due to the absence of a statewide energy efficiency policy, ratepayer-funded low-income programming was negotiated one at a time between individual utilities and social service agencies in each territory. Social service agencies first garnered support from the upper-level managers at the largest utility companies, and then approached smaller utilities.<sup>ggg</sup>

An invaluable factor in securing funds for low-income programming in Massachusetts was the enthusiastic support of upper-level managers and CEOs of large utilities such as John Rowe, then with New England Electric System, and Tom May from Boston Edison (NSTAR).<sup>hhh</sup> They embraced the idea that their utility companies had a social responsibility to improve the surrounding community in addition to the responsibility to provide reliable power to residents.<sup>iii</sup>

With the vital support of larger utility companies, social service agencies began negotiations with smaller utilities stressing that energy efficiency support for low-income households was a wise investment because it made energy bills more affordable and benefited all ratepayers. Advocates argued that by making it easier for low-income households to pay their bills on time and remain connected to the electric grid and gas pipeline, utilities were reducing their own financial and administrative burdens through reductions in arrearages, bad debt expense, disconnect and reconnect costs, and fixed costs of the utility system.<sup>jjj</sup>

In 1997, statewide funding for energy efficiency support for low-income households in Massachusetts was officially secured through legislation that stated: "low-income residential demand-side management and education programs shall be implemented through the low income weatherization and fuel assistance program network and shall be coordinated with all [electric and] gas distribution companies in the Commonwealth with the objective of standardizing implementation."<sup>kkk</sup>

The statute led to the creation of the Low-Income Energy Affordability Network (LEAN). LEAN is comprised of 23 member agencies charged with coordinating all energy efficiency low-income programs in Massachusetts and has been essential to the state's widely successful low-income programs. In addition to meeting periodically and representing low-income interests in utility regulatory negotiations, LEAN combines federal programs like WAP and LIHEAP with utility funds to ensure efficient coordination of programming. Benefits of LEAN include:<sup>lll</sup>

- Elimination of redundant and duplicative services among providers
- Meeting the statutory goal of standardizing program implementation
- Simplified administrative problem-solving that relies heavily on the exchange of best practices from across the state
- Regular meetings among LEAN members mean that statewide issues need only be addressed once
- Relatively easy statewide application of best practices where appropriate

- Simplified representation in proceedings before the Department of Telecommunications and Energy and the Division of Energy Resources
- In Massachusetts, electric and gas utility service territories partially overlap in many places, and electric and gas territories partially overlap with low-income agency territories. Thus, it is possible for one low-income agency to be working in the territories of several utilities. LEAN allows for simplified coordination among overlapping service territories.
- Contracts are made directly between LEAN member agencies and utilities. This is somewhat unique and has been very successful in streamlining implementation costs and procedures in Massachusetts.

### **Structure of Low-Income Energy Assistance in Massachusetts' EEPS**

Given the substantial infrastructure and support for low-income energy efficiency programming in Massachusetts, the development of the low-income component of the state's EEPS was relatively straightforward. In contrast with Illinois statute which declares that low-income sector EEPS programs should be "proportionate to the share of total annual utility revenues in Illinois from households at or below 150% of the poverty level" but does not state a specific funding amount, Massachusetts statute requires at least 10% of statewide EEPS electricity funding and at least 20% of statewide EEPS natural gas funding be reserved for the low-income sector.<sup>mmmm</sup> In large part, the EEPS programs utilize pre-existing LEAN programming to administer these benefits.

Not only is Massachusetts spending more than Illinois on its low-income sector programs (**Figure 21**), but it also doing so more efficiently. In fact, low-income sector EEPS programs in Massachusetts are achieving over eight times more electric and natural gas savings than those in Illinois (**Figure 22** and **Figure 23**). Clearly the Massachusetts experience of low-income energy efficiency programs holds valuable lessons for Illinois policymakers, utility companies, and program administrators.

Since the adoption of its EEPS, Massachusetts utilities have funded the following low-income support programs:

- ***Low-Income New Construction ("LINC") Core Initiative.*** LINC strives to increase the efficiency of low-income homes at the time of construction. The program targets those involved in new construction decisions including but not limited to homebuilders, developers, architects, contractors, and homebuyers. Utilities require construction projects to undergo review from the Home Energy Rating System (HERS). HERS works closely with the Energy Star certification system and has a statewide infrastructure comprised of trained Energy Raters that are able to evaluate new construction proposals. A HERS Rater reviews construction plans and makes at least two site visits to ensure the building is efficiently designed and built. Building owners have the option of choosing one of five different incentive packages. The owner can opt for an incentive bundle that applies to a set of standard, prescriptive energy efficiency measures or choose to apply for incentives that are tiered according to the HERS energy efficiency rating—the higher the rating, the larger the incentive.

In contrast, Illinois' EEAHCP program requires no such audit or tiered incentive system tied to a rating system.

- **Low-Income Single Family Core Initiative.** The Single Family Core Initiative implements cost-effective, energy efficiency products and services directly for residential customers living in one-to-four-unit dwellings in which at least 50% of the occupants are at or below 60% of the state median income level. The initiative leverages all applicable revenue streams and piggybacks on the state’s federally funded WAP program. The program generally requires no co-payment from participating customers and is consistent with Massachusetts’ comprehensive, whole-house approach.<sup>nnn</sup>

Like Illinois, Massachusetts uses EEPS funds to augment its WAP programs (known as “IHWAP” in Illinois). In contrast, Illinois only puts a portion of its Retrofit funds towards its IHWAP program. The remaining portion, which is significant, is given to NGOs and property owners to administer weatherization or other low-income home improvement programs.

- **Low-Income Multi-Family Retrofit Core Initiative.** The Low-Income Multi-Family Retrofit Core Initiative leverages all applicable revenue streams and provides cost-effective, residential energy efficiency improvements that benefit income-eligible occupants and owners of multi-family buildings with five or more attached units. Energy efficiency products and services are implemented directly in the dwellings of low-income eligible customers living in multi-family facilities, in which at least 50% of the occupants are at or below 60% of the state median income level. Utilities provide up to 100% of the cost-effective project with established caps based on projected savings.<sup>ooo</sup>

According to the Massachusetts 2013-2015 Statewide EEPS Electric and Gas Energy Efficiency Plan, utilities plan to consolidate the Low-Income Single Family Retrofit and Low-Income Multi-Family Retrofit Programs into a single Low-Income Retrofit Program in order to increase efficiency and flexibility to meet customers’ needs.<sup>ppp</sup> This speaks to the high level of program coordination described in Section III.B.

## Recommendation and Feasibility for Change in Illinois

In addition to using energy efficiency programs to reimburse low-income ratepayers for the amount they are paying into the EEPS spending pool, Illinois utilities should consider increasing low-income funding to provide modest subsidies that account for the unique characteristics associated with the sector, including larger energy burdens, older housing stock, a disproportionately high number of renters, greater amount of non-energy benefits to society, and lack of upfront capital.

Increased funding is typically a hot button issue when it comes to social welfare programs in general. In the case of Illinois’ low-income EEPS offerings, this is especially true given the constrained utility spending caps. While there is no easy solution for securing more EEPS funding for the low-income programs, efficiency advocates in Illinois should consider one or more of the following strategies to aid in this objective:

- **Funds from Restructuring.** Pursuing some or all of the recommendations in this report should increase EEPS cost effectiveness and free up funds for additional low-income support. Shifting away from unconditional residential rebates, coordinating and consolidating EEPS program

offerings, and advocating for the expansion or elimination of utility spending caps should lead to more efficient use of resources. This is especially true when these strategies are implemented in tandem. Savings from lower administration costs and improved program execution can be applied to the low-income sector.

- **Overfunding the Public Sector.** In its 2011-2013 EEPS electric and natural gas strategic plan, DCEO budgeted nearly 60% of its funds for public sector programming.<sup>999</sup> That is just over 16% of statewide EEPS spending over the three-year period. This allocation of 16% is well above its statutory mandate to allot “a minimum of 10% of the [statewide] portfolio of cost-effective energy efficiency measures” for the public sector.<sup>1000</sup> Advocates may want to cite this discrepancy in arguing for diverting a portion of excessive public sector spending to the low-income sector.
- **Expansion of PIPP.** Illinois may want to consider using EEPS funds to expand the widely successful Percentage of Income Payment Plan (PIPP), which is a modernization of the federal LIHEAP energy assistance program. Under PIPP, qualifying low-income customers agree to pay a percentage of their income (typically 6%) toward their utility bill, and the remaining balance is covered by LIHEAP funds up to a maximum amount of \$150 per month (\$1,800 annually). In contrast, the traditional LIHEAP program offers a lump sum to aid qualifying low-income homes with energy bills. Traditional lump-sum LIHEAP benefits are typically lower than the potential benefits offered by PIPP.<sup>1001</sup>

PIPP has been praised in Illinois for expanding benefits to low-income households while also ensuring that ratepayers maintain a minimum level of accountability by agreeing to pay a portion of their own utility bill.<sup>1002</sup> Using EEPS funds to expand PIPP benefits and administrative capacity could leverage the infrastructure already in place, decrease bill non-payment rates, and ease the energy burden of low-income households.

Unfortunately, one drawback of the PIPP program is that it does not directly decrease energy consumption. However, Illinois program administrators are currently developing a customer education and behavior change component of PIPP that may aid this goal.<sup>1003</sup> Similarly, utilities could utilize PIPP in conjunction with other EEPS offerings that not only seek to reduce the energy burden of low-income households but also reduce their overall consumption.

- **On-Bill Financing.** Many states have begun utilizing on-bill financing (OBF) to incentivize residential energy efficiency upgrades. OBF allows customers to borrow money for energy efficiency investments and repay the loan as a line item on their utility bill. OBF programs typically have extremely low default rates of 0% to 2% and leverage the fact that most households highly prioritize paying their utility bills.<sup>1004</sup>

There are several commonly cited barriers to offering OBF to low-income households. First, a significant portion of low-income individuals have low or non-existent credit scores. Second, traditional OBF does not address the split incentive problem. That is, low-income tenants

may remain unlikely to take advantage of OBF since payback on the investment may exceed the length of their lease.

To mitigate the first barrier of low credit scores, states including New York and Oregon have successfully used alternative underwriting criteria such as utility bill payment history.<sup>www</sup> If the payment history is strong, a household can still participate. To skirt the split-incentive problem, Kansas has followed in the footsteps of other states that tie the OBF loan to the meter rather than the ratepayer.<sup>xxx</sup> Similarly, many states allow utilities to reserve all or some of the energy cost savings to help repay the initial financing.

There are unique opportunities for using EEPS to help finance OBF programs. In New York, utilities have used system benefit charge funds to buy down OBF interest rates to 0% so qualifying low- and middle-income households are not inhibited from participating.<sup>yyy</sup> Utilities can use EEPS funds not only as program capital but also as means for minimizing risk to investors by enhancing the quality of customer credit. These funds can be used to create reserves that help mitigate the risk associated with default.<sup>zzz</sup>

Illinois utilities are currently piloting an OBF program. Though it faces some administrative barriers, the fact that the state is beginning to develop program infrastructure and is currently reviewing its processes provides an open window for possible reform.

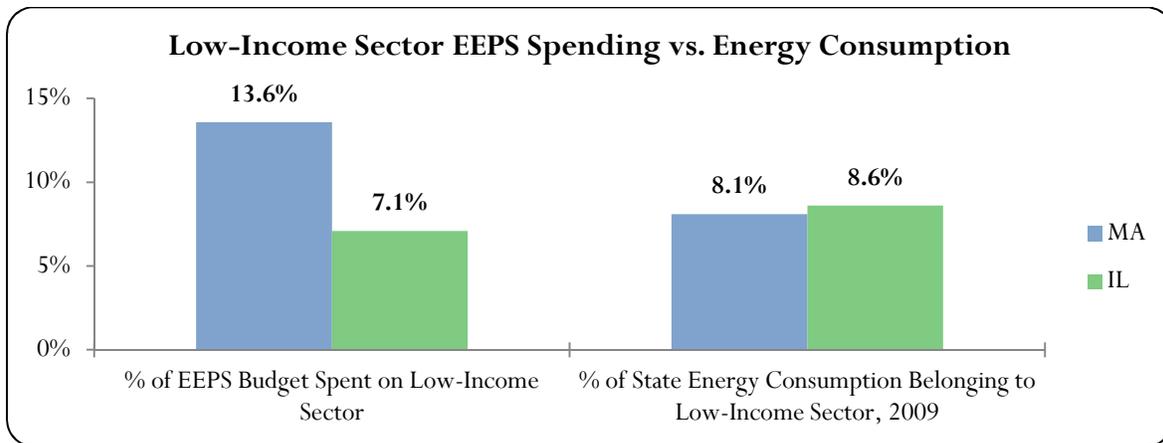
Additional recommendations for improving the administration of low-income energy efficiency plans in Illinois include:

- ***Low-Income Program Network.*** Illinois low-income program administrators should consider creating a formal network similar to that of LEAN in Massachusetts. Doing so would free up funds by helping to identify program inefficiencies and redundant service offerings in addition to encouraging the sharing of best practices and helping to create a cohesive advocacy and lobbying message.
- ***Minimum Spending Threshold.*** If the opportunity arises, low-income advocates may wish to lobby for setting a minimum EEPS spending threshold for low-income programs. Current legislation merely requires low-income sector funding to be proportional to the level of revenues collected from households at or below 150% of the poverty line. On the other hand, Massachusetts sets a minimum threshold requiring utilities to use at least 10% of electricity funds and 20% of natural gas funds on the low-income sector. Advocates should be cautious about reopening Illinois legislation to make such a change; doing so will allow other parties to lobby for additional amendments. However, Illinois advocates should be aware of this option should the opportunity for change arise.

**Table 9**

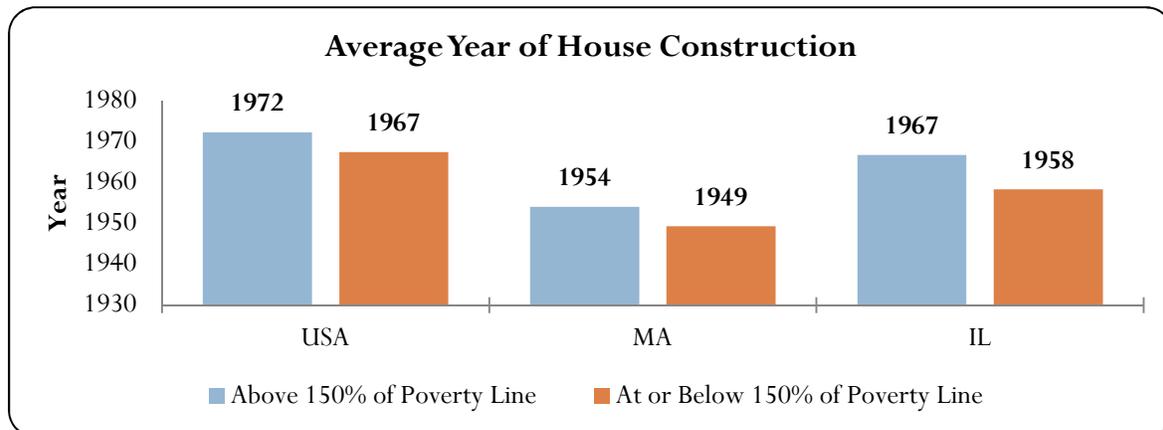
| 2011-2013 DCEO Low-Income Sector Spending in Illinois <sup>aaaa</sup> |                     |                                 |                    |                              |
|---|---------------------|---------------------------------|--------------------|------------------------------|
|   | Total Budget        | % of Low-Income Sector Spending | % of DCEO Spending | % of Statewide EEPS Spending |
| Retrofit  | \$31,945,074        | 53.3%                           | 13.8%              | 3.8%                         |
| EEAHCP  | \$15,185,242        | 25.4%                           | 6.6%               | 1.8%                         |
| Efficient Living (PHA)  | \$12,755,154        | 21.3%                           | 5.5%               | 1.5%                         |
| <b>TOTAL</b>  | <b>\$59,885,470</b> | <b>100.0%</b>                   | <b>25.9%</b>       | <b>7.1%</b>                  |

**Figure 17**



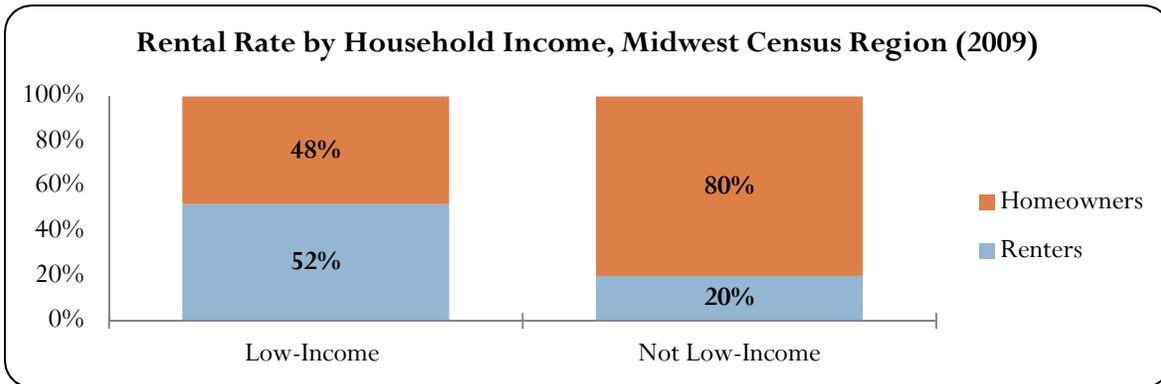
*Sources: (1) US Energy Information Administration, 2009 Residential Energy Consumption Survey (RECS) Microdata. (2) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (3) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

**Figure 18**



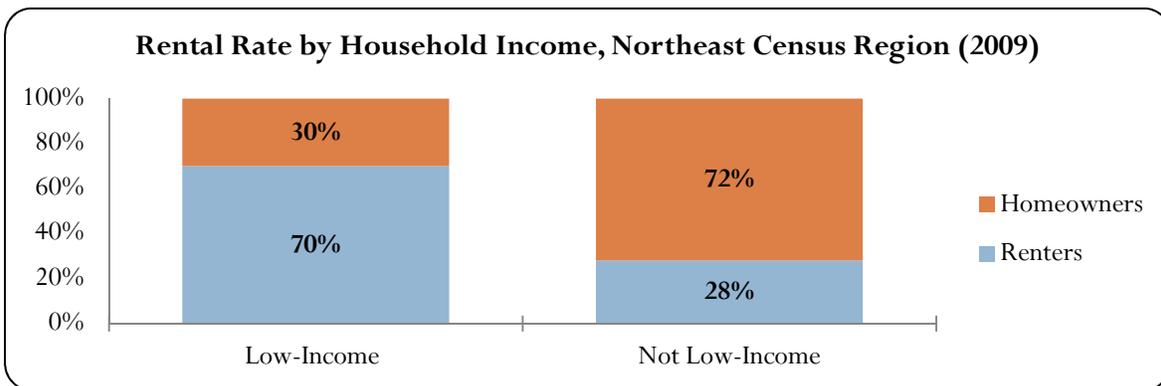
*Source: US Energy Information Administration, 2009 Residential Energy Consumption Survey (RECS) Microdata.*

**Figure 19**



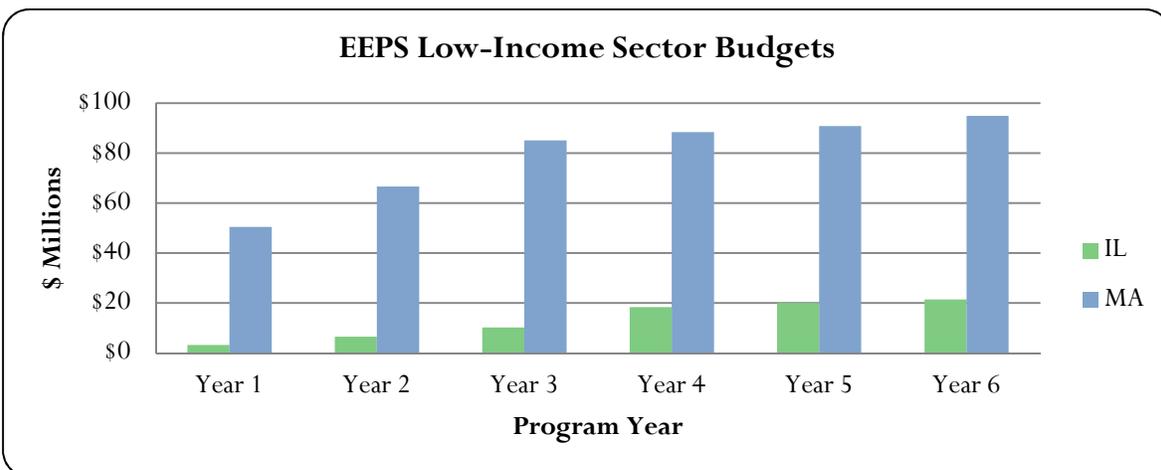
*Source: US Energy Information Administration, 2009 Residential Energy Consumption Survey (RECS) Microdata.*

**Figure 20**



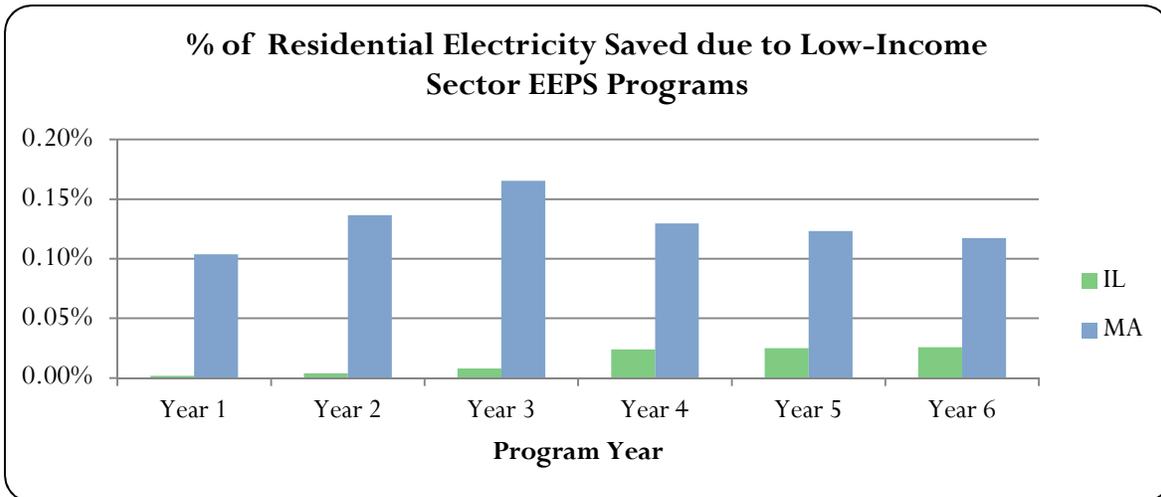
*Source: US Energy Information Administration, 2009 Residential Energy Consumption Survey (RECS) Microdata.*

**Figure 21**



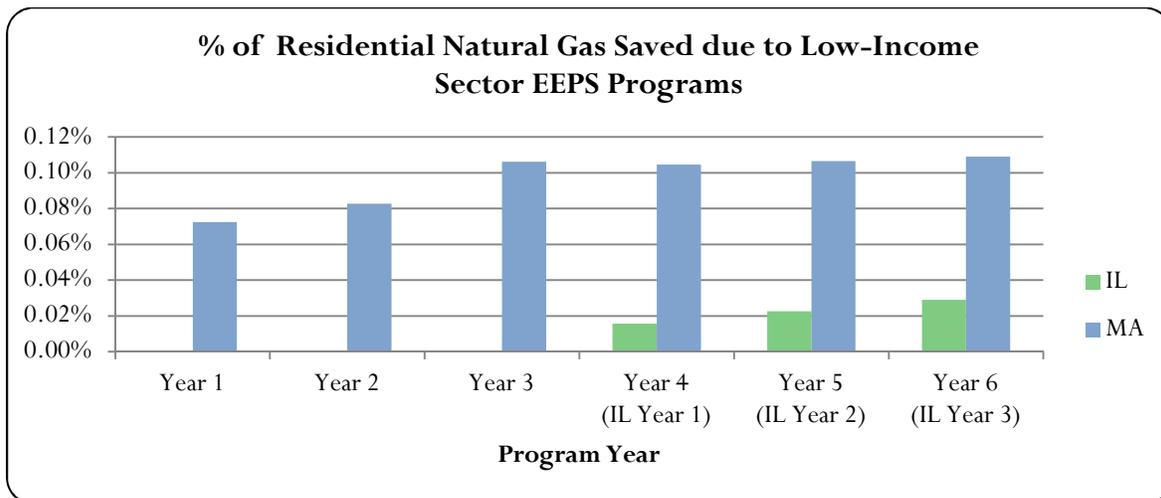
*Sources: (1) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (2) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

**Figure 22**



*Sources: (1) US Energy Information Administration Residential Sector Energy Consumption Estimates, Selected Years, 1960-2010, Illinois and Massachusetts (2011-2015 projected). (2) DCEO Three-Year Energy Efficiency Plans 2008-10, 2011-13. (2) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

**Figure 23**



*Sources: (1) US Energy Information Administration Residential Sector Energy Consumption Estimates, Selected Years, 1960-2010, Illinois and Massachusetts (2011-2015 projected). (2) DCEO Three-Year Energy Efficiency Plan 2011-13. (2) Massachusetts Joint Statewide Three-Year Energy Efficiency Plans 2010-12, 2013-15.*

## III.E. Complementary Policies

### Question Addressed

How can complementary energy efficiency policies such as utility decoupling and utility performance incentives bolster EEPS programming in Illinois?

#### **Finding:**

Complementary energy efficiency policies such as utility decoupling and performance incentives would greatly benefit Illinois as the state pursues its EEPS savings targets.

- ***Utility Decoupling.*** Utility decoupling is a regulatory mechanism that breaks the link between utility revenues and sales. Without such a policy in place, utilities have a strong disincentive for investments in energy efficiency since reductions in energy usage would mean declining utility revenue (and therefore profits). There are a variety of approaches to developing decoupling mechanisms that remove this link but also ensure utilities make a reasonable profit. Most states use the revenue authorized in the utility's last general rate case as a basis for determining future revenue and allow for adjustments for specific cost changes or according to a formula. Another common approach is to calculate revenue on a per-customer account basis rather than as a single dollar amount. It is important to note that decoupling alone does not *incentivize* utilities to invest in energy efficiency. But rather, the mechanism removes the *disincentive* for such investments.

To date, 25 states allow decoupling for natural gas utilities, electric utilities, or both (Appendix H).<sup>bbbb</sup> A recent report that examined more than 1,200 rate adjustments found that most decoupling rate adjustments led to only slight deviation from retail rates—plus or minus 2%.<sup>cccc</sup>

In February 2008, the Illinois Commerce Commission Docket No. 07-0241/07-0242 approved a three-year decoupling pilot (with possible renewal) for North Shore and Peoples Gas Utilities—two companies collectively known as Integrys. In keeping with the national trend, the pilot project has led to only a slight deviation from retail rates (under 1% difference).<sup>dddd</sup>

- ***Performance Incentives.*** While decoupling strives to remove the disincentive for investing in energy efficiency, performance incentives strive to incentivize this investment under the argument that investor-owned utility companies—which are expected to deliver capital returns to shareholders—should be allowed to receive a return on their investment in energy efficiency that is comparable to rates of return for supply side investments such as new power plant construction. Performance incentives are typically collected from ratepayers. Essentially, the incentives use ratepayer funds to pay utility companies for pursuing energy efficiency. To date, 28 states allow performance incentives for natural gas utilities, electric utilities or both.<sup>cccc</sup>

Performance incentives are widely used by states—sometimes in conjunction with decoupling—and are structured in a variety of ways. Two of the most common approaches are:

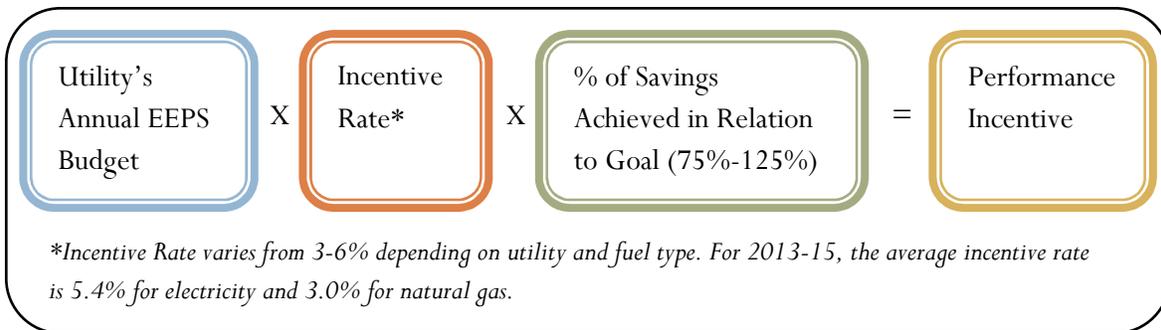
- **Target Incentives:** These are typically applied in states that have established energy savings targets—typically through an EEPS. Target incentives reward utilities for meeting designated savings targets. Utilities that meet their savings targets are allowed to recoup a percentage of their energy efficiency program costs from ratepayers the following program year.<sup>ffff</sup>
- **Shared Savings Incentives:** In this case, utilities are allowed to share a designated percentage of the net cost savings from energy efficiency upgrades with ratepayers. For example, if an energy efficiency installation produced 150% in cost savings for customers, utilities would be allotted 10% of this net savings while the ratepayer keeps the remaining portion.<sup>gggg</sup>

Illinois currently has no performance incentive mechanism in place. The lack of performance incentive limits Illinois' EEPS efforts in two ways. First, utility companies may not be as ambitious in pursuing savings targets without an incentive to meet or exceed them. Second, without such an incentive, utility companies are tempted to focus their primary efficiency efforts on easy-to-reach populations.<sup>hhhh</sup> Naturally, this tends to exclude harder-to-reach customers such as small businesses and low-income residents. Performance incentives help to counteract this tendency by motivating utility companies to creatively target all customer sectors.

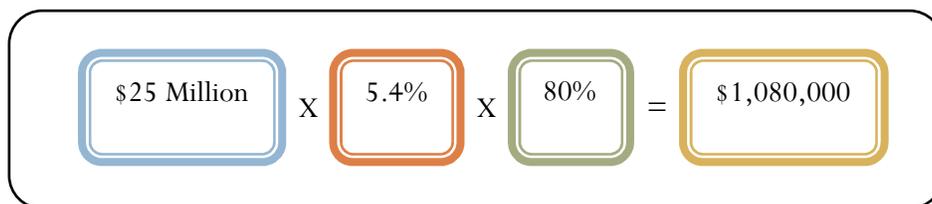
## Approach in Massachusetts

The following policies in Massachusetts have been instrumental in incentivizing utility companies to strive for deeper and broader savings:

- **Utility Decoupling.** In conjunction with the issuance of the 2008 Green Communities Act (GCA), the Massachusetts Department of Public Utilities Order, Docket No. 07-50, called for full decoupling of both electric and natural gas utilities. Under decoupling in Massachusetts, utility revenue is based on an estimate of how much it costs to operate the company and maintain distribution systems rather than the amount of energy sales. These costs are adjusted periodically during rate proceedings. If utilities overestimate the cost of operation, customers receive a refund on their utility bills. On the other hand, if utilities underestimate these costs, they reconcile the difference through ratepayer surcharges.<sup>iiii</sup>
- **Performance Incentives.** The GCA calls for financial incentives to encourage utilities to reach their energy efficiency targets. In order to qualify for an incentive, utilities must meet a minimum threshold of 75% of their savings target. A utility does not receive additional performance incentives for energy savings above 125% of its established goal. Incentives are based on the following formula:<sup>jjjj</sup>



According to this formula, the incentive for an electric utility that budgets \$25 million for EEPS in 2013 but only achieves 80% of its expected kWh savings targets—which is still above the 75% minimum threshold—would receive the following incentive based on the 5.4% average incentive rate for electric utilities:



The Department of Public Utilities states that performance incentives are to be kept as low as possible in order to mitigate rate impacts; they are to be based on clear, quantifiable savings goals; and the incentive guidelines are to be consistent across all electric and gas utilities where possible.<sup>kkkk</sup> Such incentives complement decoupling, which strives to remove the *disincentive* for investment in energy efficiency but does little to actually *incentivize* such investments. These performance incentives have been instrumental in mobilizing utility resources for energy efficiency.<sup>llll</sup>

## Recommendation and Feasibility for Change in Illinois

Pursuing implementation of decoupling and performance incentive mechanisms is no small task. Though both policies would greatly support Illinois' energy efficiency programming (especially when administered in tandem), the high level of political capital currently required may be a barrier. In fact, although the environmentalist action group Natural Resource Defense Council (NRDC) has made decoupling a high priority on its national lobbying agenda, it has avoided pursuing the policy in Illinois due to the antagonistic political climate.<sup>mmmm</sup>

Similarly, the Illinois Attorney General and consumer advocacy groups, both of which have been quite influential in negotiating the state's EEPS policies, remain skeptical about allowing adoption of performance incentives due to possible customer rate impacts.<sup>nnnn</sup> Bearing this in mind, advocates should stress that well-administered performance incentives lead to higher levels of energy efficiency cost savings for customers that may help offset any rate increases.

Despite these challenges, it is important that energy efficiency advocates in Illinois understand the important role that these tools have played in Massachusetts and keep them in mind as the state's EEPS continues to mature. As energy efficiency programs continue to develop in Illinois and as the political climate evolves, efficiency advocates may wish to promote such policy changes in the future.

## Conclusion

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Through adoption of an EEPS, Illinois has made a bold commitment to statewide energy efficiency. Its EEPS will not only help to curb the state's energy usage, but it will also drastically reduce carbon emissions, help mitigate the economic effects of volatile fuel prices, create jobs, and reduce energy expenditures for customers. In order to reap these benefits in the most cost-effective, sustainable manner possible, Illinois policymakers, utility companies, and energy efficiency stakeholders will need to make key decisions about the ongoing development of the state's EEPS. By using lessons from Massachusetts' historical leadership and exemplary EEPS programming to inform a strategy that meets the unique needs and political reality of Illinois, policymakers have the opportunity to secure an efficient, effective, and reliable, energy future for the state.

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<sup>a</sup> US Environmental Protection Agency, *National Action Plan for Energy Efficiency Vision for 2025: A Framework for Change*, November 2008, ES–2, <http://www.epa.gov/eeactionplan>.

<sup>b</sup> Seth Nowak et al., *Energy Efficiency Resource Standards: State and Utility Strategies for Higher Energy Savings* (ACEEE, 2011), 2, <http://www.aikencolon.com/assets/images/pdfs/IECC/maryland/u113.pdf>.

<sup>c</sup> *Ibid.*, 3.

<sup>d</sup> Ben Foster and Suzanne Watson, *2012 State EERS Policy Brief* (ACEEE, September 2012), 1, <http://aceee.org/files/pdf/policy-brief/state-eers-summary-0912.pdf>.

<sup>e</sup> *Ibid.*

<sup>f</sup> Michael Sciortino et al., *Energy Efficiency Resource Standards: A Progress Report on State Experience* (ACEEE, 2011), 12, <http://www.aikencolon.com/assets/images/pdfs/IECC/maryland/u112.pdf>.

<sup>g</sup> ACEEE, "Energy Efficiency and Economic Opportunity Fact Sheet," n.d., 1, <http://www.aceee.org/sector/local-policy>.

<sup>h</sup> US Energy Information Administration (EIA), "2009 Residential Energy Consumption Survey (RECS) Microdata," accessed October 8, 2012, <http://www.eia.gov/consumption/residential/data/2009/index.cfm?view=microdata>.

<sup>i</sup> Chester Hartman and David Robinson, "Evictions: The Hidden Housing Problem," *Housing Policy Debate* 14, no. 4 (2003): 466.

<sup>j</sup> Don Hynek, Megan Levy, and Barbara Smith, "Follow the Money": *Overcoming the Split Incentive for Effective Energy Efficiency Program Design in Multi-family Buildings* (ACEEE, 2012), 6–141, <http://www.aceee.org/files/proceedings/2012/data/papers/0193-000192.pdf>.

<sup>k</sup> Stephen Heins, "Energy Efficiency and the Specter of Free-ridership: Is a Kilowatt Saved Really a Kilowatt Saved?," *Sustainable Facility* (2006): 1.

<sup>l</sup> Stephen Grover and B. Babiuch, "Pay Now, Save Later: Using Conjoint Analysis to Estimate Consumers' Willingness to Pay for Energy Efficiency," *Consumer Behavior and Non-Energy Effects Proceedings of 2000 ACEEE Summer Study on Energy Efficiency in Buildings* (2000): 8.147.

<sup>m</sup> David O. Ward, "Consumers' Willingness to Pay for Energy Labels on Household Appliances," *Master's Thesis, University of Tennessee* (2010): 32, [http://trace.tennessee.edu/utk\\_gradthes/669/](http://trace.tennessee.edu/utk_gradthes/669/).

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- <sup>n</sup> Sébastien Houde, *How Consumers Respond to Product Certification: A Welfare Analysis of the Energy Star Program* (Stanford University, 2011), 27, <https://wpcarey.asu.edu/CEESP/events/upload/01-11-Houde.pdf>.
- <sup>o</sup> Kevin Monte de Ramos, *Poverty & the Public Utility: Building Shareholder Value Through Low-income Initiatives* (Tulsa, Okla.: PennWell Corporation, 2005), 62–70; Jerrold Oppenheim and Theo MacGregor, “The Massachusetts Model for Low-Income Energy Service Delivery” (presented at the Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability Workshop, Durham, North Carolina, 2011), 12, <http://www.democracyandregulation.com/>.
- <sup>p</sup> Martin Kushler, Dan York, and Patti Witte, “Meeting Essential Needs: The Results of a National Search for Exemplary Utility-funded Low-income Energy Efficiency Programs” (ACEEE, 2005), 45, <http://aceee.org/research-report/u053>.
- <sup>q</sup> Monte de Ramos, *Poverty & the Public Utility*, 76–95.
- <sup>r</sup> Hartman and Robinson, “Evictions,” 469.
- <sup>s</sup> Oppenheim and MacGregor, “The Massachusetts Model for Low-Income Energy Service Delivery,” 12.
- <sup>t</sup> Jerrold Oppenheim and Theo MacGregor, *Coordination Between Utility and DOE Low-Income Weatherization: What Do Public Utility Commissioners Need to Know?* (Democracy and Regulation and Oak Ridge National Laboratory, 2002), 4, <http://www.democracyandregulation.com/detail.cfm?artid=19>.
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- <sup>x</sup> *Illinois Stakeholders Advisory Group Energy Efficiency Report to the Commission*, June 9, 2010, 1, [http://ilsag.org/periodic\\_reports](http://ilsag.org/periodic_reports).
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- <sup>z</sup> Anne McKibbin, CNT Energy (Policy Director), Personal correspondence, February 16, 2013.
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- <sup>ff</sup> Ben Foster et al., *The 2012 State Energy Efficiency Scorecard* (ACEEE, October 2012), <http://www.aceee.org/research-report/e12c>.
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- <sup>ii</sup> Massachusetts General Law c. 25, § 21(b)(1), 2008, <http://www.malegislature.gov/>.
- <sup>jj</sup> Public Utilities Act § 220 ILCS 5/8-104 (Natural Gas Utilities); § 220 ILCS 5/8-103 (Electric Utilities).
- <sup>kk</sup> Electric and Natural Gas Utilities of Massachusetts, *2013-2015 Massachusetts Joint Statewide Three-Year Electric and Gas Energy Efficiency Plan*, November 2012, 12, <http://www.ma-eeac.org>.
- <sup>ll</sup> Illinois Department of Commerce and Economic Opportunity (DCEO), *2011-2013 Integrated Natural Gas and Electricity Energy Efficiency Portfolio Plan: Amended Program Revisions to Comply with Final Order*.

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<sup>mmm</sup> Ameren and ComEd Electric Utilities of Illinois, *2008-2010 Three-Year Electric Energy Efficiency Plans*, 2007; Individual Electric and Gas Utilities of Illinois, *2011-2013 Three-Year Electric and Natural Gas Energy Efficiency Plans*, 2010.

<sup>nnn</sup> Electric Utilities of Massachusetts, *2010-2012 Massachusetts Joint Statewide Three-Year Electric Energy Efficiency Plan*, 2009, <http://www.ma-eeac.org>; Electric and Natural Gas Utilities of Massachusetts, *2013-2015 Massachusetts Joint Statewide Three-Year Electric and Gas Energy Efficiency Plan*.

<sup>ooo</sup> Mass Save, "Summary of January 31 DPU Orders Relating to EERS Plans: Presentation to the EEAC," February 12, 2013, 16, <http://www.ma-eeac.org>.

<sup>ppp</sup> Massachusetts Energy Efficiency Guidelines DPU 08-50-D Order on Bill Impacts, 2012, <http://www.env.state.ma.us/dpu/docs/electric/08-50/101912dpuord.pdf>.

<sup>qqq</sup> Public Utilities Act § 220 ILCS 5/8-104 (Natural Gas Utilities); § 220 ILCS 5/8-103 (Electric Utilities).

<sup>rrr</sup> Electric and Natural Gas Utilities of Massachusetts, *2013-2015 Massachusetts Joint Statewide Three-Year Electric and Gas Energy Efficiency Plan*, 112.

<sup>sss</sup> *Ibid.*, 11.

<sup>ttt</sup> *Ibid.*, 24.

<sup>uuu</sup> *Ibid.*

<sup>vvv</sup> *Ibid.*, 231.

<sup>www</sup> Commonwealth Edison (ComEd), *Commonwealth Edison Company's 2011 - 2013 Energy Efficiency and Demand Response Plan*, October 2010, 11.

<sup>xxx</sup> US Environmental Protection Agency, "Greenhouse Gas Equivalencies Calculator: Clean Energy US EPA," accessed February 5, 2013, <http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>.

<sup>yyy</sup> ACEEE, "Energy Efficiency and Economic Opportunity Fact Sheet," 1.

<sup>zzz</sup> Illinois Attorney General, "Percentage of Income Payment Plan (PIPP) Fact Sheet," July 2009, <http://www.illinoisattorneygeneral.gov>.

<sup>aaa</sup> Illinois Department of Commerce and Economic Opportunity (DCEO), *Illinois Home Weatherization Assistance Program 2010 State Plan*, April 23, 2009, 3.

<sup>bbb</sup> *Ibid.*, 7.

<sup>ccc</sup> Illinois Department of Commerce and Economic Opportunity (DCEO), "2012 Residential Retrofit Grant Application," June 2012, 9.

<sup>ddd</sup> Jerrold Oppenheim and Theo MacGregor, "Sectoral Activities Programme: Democracy and Public-private Partnerships," 2004, 3, <http://www.democracyandregulation.com>.

<sup>eee</sup> Oppenheim and MacGregor, "The Massachusetts Model for Low-Income Energy Service Delivery," 2.

<sup>fff</sup> Community Resources Information, Inc., "Utility and Telephone Discounts in Massachusetts," *MassResources.org*, accessed December 4, 2012, <http://www.massresources.org/utility-discounts.html>.

<sup>ggg</sup> Elliott Jacobson, Action, Inc. and LEAN, Personal interview, January 16, 2013.

<sup>hhh</sup> *Ibid.*

<sup>iii</sup> Henry Lee, Harvard Kennedy School of Government (Professor of Public Policy).

<sup>jjj</sup> Jerrold Oppenheim, Democracy and Regulation and LEAN, Personal interview, January 11, 2013.

<sup>kkk</sup> Massachusetts General Law c. 25, sec. 19; St. 1997, c. 164, sec 3, 2008, <http://www.malegislature.gov/>.

<sup>lll</sup> Oppenheim and MacGregor, "Sectoral Activities Programme: Democracy and Public-private Partnerships," 10; Elliott Jacobson, Action, Inc. and LEAN.

<sup>mmmm</sup> Electric and Natural Gas Utilities of Massachusetts, *2013-2015 Massachusetts Joint Statewide Three-Year Electric and Gas Energy Efficiency Plan*, 90.

<sup>nnnn</sup> *Ibid.*, 180.

<sup>oooo</sup> *Ibid.*, 185.

<sup>pppp</sup> *Ibid.*, 22.

<sup>qqqq</sup> Illinois Department of Commerce and Economic Opportunity (DCEO), *2011-2013 Integrated Natural Gas and Electricity Energy Efficiency Portfolio Plan: Amended Program Revisions to Comply with Final Order*.

<sup>rrrr</sup> Public Utilities Act § 220 ILCS 5/8-104 (Natural Gas Utilities); § 220 ILCS 5/8-103 (Electric Utilities).

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- <sup>sss</sup> Mindy Browning, Embarras River Basin Agency, Inc. (Assistant LIHEAP Coordinator), Personal interview, December 21, 2012.
- <sup>ttt</sup> Ibid.
- <sup>uuu</sup> Yami Newell, Citizens Utility Board (CUB) (Community Technology Liaison), Personal interview, December 18, 2012.
- <sup>vvv</sup> Catherine J. Bell, Steven Nadel, and Sara Hayes, “On-Bill Financing for Energy Efficiency Improvements,” *ACEEE* (2011): 3, <http://psb.vermont.gov/sites/psb/files/orders/2012/2012-3/6c.%20Exh.%20Pet.-JJP-3.pdf>.
- <sup>www</sup> Ibid., 9, 23.
- <sup>xxx</sup> Ibid., 14.
- <sup>yyy</sup> Ibid., 12.
- <sup>zzz</sup> Ibid., 5.
- <sup>aaaa</sup> Illinois Department of Commerce and Economic Opportunity (DCEO), *2011-2013 Integrated Natural Gas and Electricity Energy Efficiency Portfolio Plan: Amended Program Revisions to Comply with Final Order*.
- <sup>bbbb</sup> Sara Hayes, “New Report Finds Utilities Don’t Need a Free Lunch, a Cup of Coffee Will Do,” *ACEEE*, accessed January 11, 2013, <http://aceee.org/blog/2013/02/new-report-finds-utilities-dont-need->.
- <sup>cccc</sup> Pamela Morgan, *A Decade of Decoupling for US Energy Utilities: Rate Impacts, Designs, and Observations* (Graceful Systems, LLC, February 2013), 3, <http://switchboard.nrdc.org/blogs/rcavanagh/decouplingreportMorganfinal.pdf>.
- <sup>dddd</sup> Ibid., 26.
- <sup>eeec</sup> Hayes, “New Report Finds Utilities Don’t Need a Free Lunch, a Cup of Coffee Will Do.”
- <sup>ffff</sup> ACEEE, “Incentivizing Utility-Led Efficiency Programs: Performance Incentives,” *American Council for an Energy Efficient Economy*, 2012, <http://aceee.org/sector/state-policy/toolkit/utility-programs/performance-incentives>.
- <sup>gggg</sup> Ibid.
- <sup>hhhh</sup> Snuller Price and Richard Sedano (Lawrence Berkeley National Laboratory), “Total Resource Cost (TRC) Test and Avoided Costs: Public Utilities Commission of Ohio Workshop,” August 5, 2009, 25.
- <sup>iiii</sup> Environment Northeast, “Bringing Decoupling to Massachusetts: Department of Public Utilities Final Order, Docket 07-50,” July 16, 2008, 1, [http://www.environment.org/public/resources/pdf/MA\\_Decoupling\\_Order\\_ENE\\_Summary\\_Summer\\_2008.pdf](http://www.environment.org/public/resources/pdf/MA_Decoupling_Order_ENE_Summary_Summer_2008.pdf).
- <sup>jjjj</sup> EEAC Consultants, “2013-2015\_ Energy Efficiency Plans: \_Performance Incentive \_Mechanism,” July 23, 2012, 8.
- <sup>kkkk</sup> Massachusetts Energy Efficiency Guidelines DPU 08-50-A, 2009, <http://www.ma-eeac.org/docs/DPU-filing/08-50-A%20Order.pdf>.
- <sup>llll</sup> Massachusetts General Law c. 25, § 21(b)(2), “*A Plan Shall Include... (v) a Proposed Mechanism Which Provides Performance Incentives to the Companies Based on Their Success in Meeting or Exceeding the Goals in the Plan;...*”, 2008, <http://www.malegislature.gov/>.
- <sup>mmmm</sup> Anne McKibbin, CNT Energy (Policy Director), Personal correspondence, November 26, 2012.
- <sup>nnnn</sup> Anne McKibbin, CNT Energy (Policy Director), Personal correspondence, January 17, 2012.

### Appendix A

- 1** EEPS spending caps are currently preventing electric utilities from reaching progressively ambitious savings targets. The caps will also likely inhibit natural gas utilities in the future as they exhaust “low-hanging fruit” efficiency opportunities and need to strive for savings that are increasingly more difficult to achieve.

  - **Recommendation:** Increase or remove spending caps. To protect customers from exorbitant rate hikes, a third party (possibly comprised of SAG members) should review rate impacts associated with the EEPS plan and provide recommendations to ICC which holds ultimate approval authority.
- 2** Decentralized EEPS programming left to individual utilities is leading to lower cost effectiveness, greater customer confusion, missed savings opportunities, and inefficient allocation of utility resources.

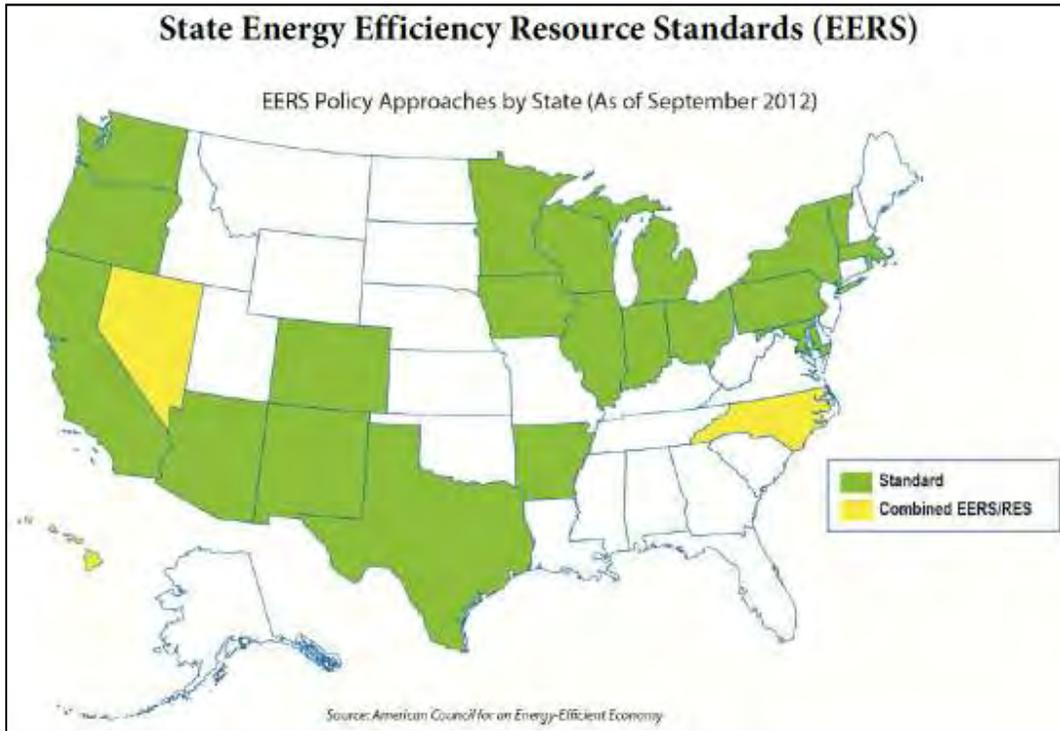
  - **Recommendation:** Use SAG to formally establish program coordination and consolidation across fuel type, among utility companies and stakeholders, and throughout marketing and outreach efforts.
  - **Recommendation:** Create working groups in SAG to explore relevant research EEPS areas and establish official best practices. In Massachusetts, these groups include: Residential Management Committee, C&I Management Committee, Evaluation Management Committee, Bill Impact Working Group, and Low-Income Best Practices Working Group.
- 3** Illinois is inefficiently allocating its residential energy efficiency program funding by disproportionately favoring “unconditional” rebates—that is, those rebates that are not tied to any sort of home energy audit.

  - **Recommendation:** Shift a greater portion of unconditional rebate funds into a “whole-house” approach in which utilities only offer rebates and other financial incentives to households upon the completion of a home energy audit. The approach should be fuel blind, seeking savings regardless of fuel source.
- 4** Current low-income sector spending in Illinois is inadequate and doesn’t account for obstacles like: larger energy burdens, older housing stock, a high proportion of renters, a greater amount of non-energy benefits to society, and lack of upfront capital needed to take advantage of residential sector EEPS programming.

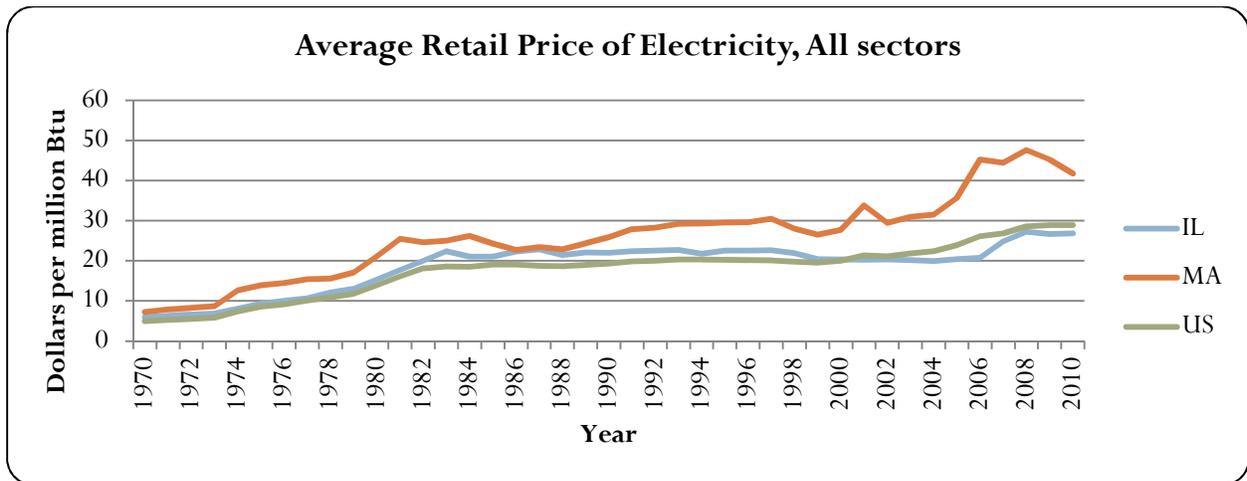
  - **Recommendation:** Form a network of low-income EEPS program providers to formalize best practices, simplify decision making and coordination, and increase cost effectiveness.
  - **Recommendation:** Increase low-income sector spending and cost effectiveness. Possible sources of additional funding may include: the funds that become available due to greater program cost effectiveness resulting from the recommendations outlined in this report as well as by reducing EEPS public-sector programming, which is currently receiving 6% more funding than statutorily mandated. Greater cost-effective use of funds may include: expansion of Percentage of Income Payment Plan (PIPP) as well as creative on-bill financing mechanisms that use alternate underwriting criteria and/or tie low interest rate loans to the utility meter rather than to individual ratepayers.
- 5** Lack of utility decoupling and performance incentive policies are prohibiting utilities from reaching their full savings potential.

  - **Recommendation:** Pursue decoupling of utility revenue from sales and establish modest performance incentives based on clear, quantifiable savings goals. Utilities should include expected performance incentives in EEPS plans. Performance incentives should undergo rate impact analysis and require approval from SAG and ICC.

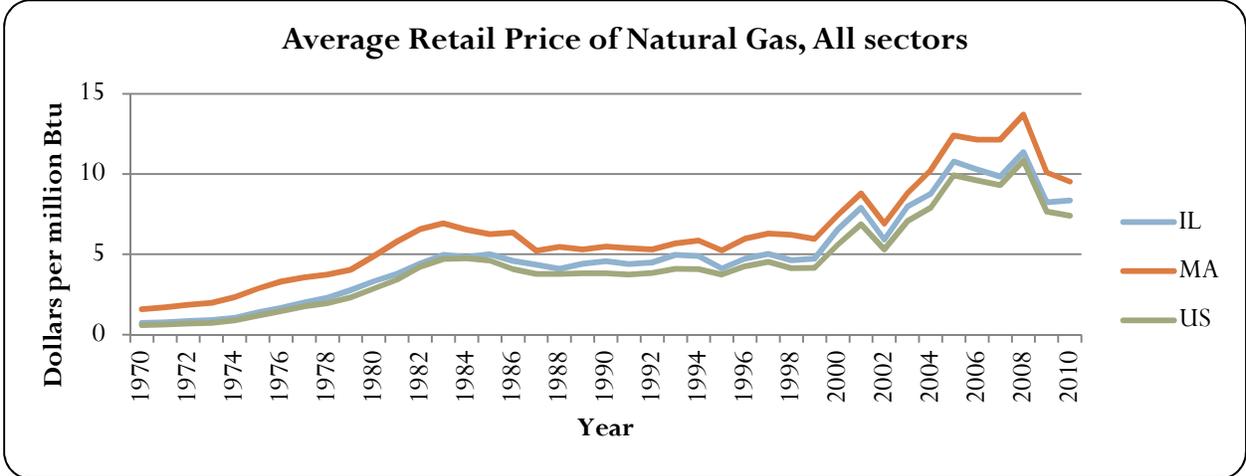
## Appendix B: ACEEE Map of States with EERS, 2012



## Appendix C: 1970-2011 Average Retail Price of Electricity and Natural Gas (IL, MA, USA)



*Source: US Energy Information Administration, 1970-2011 Annual Electricity Prices.*



*Source: US Energy Information Administration, 1970-2011 Annual Natural Gas Prices.*

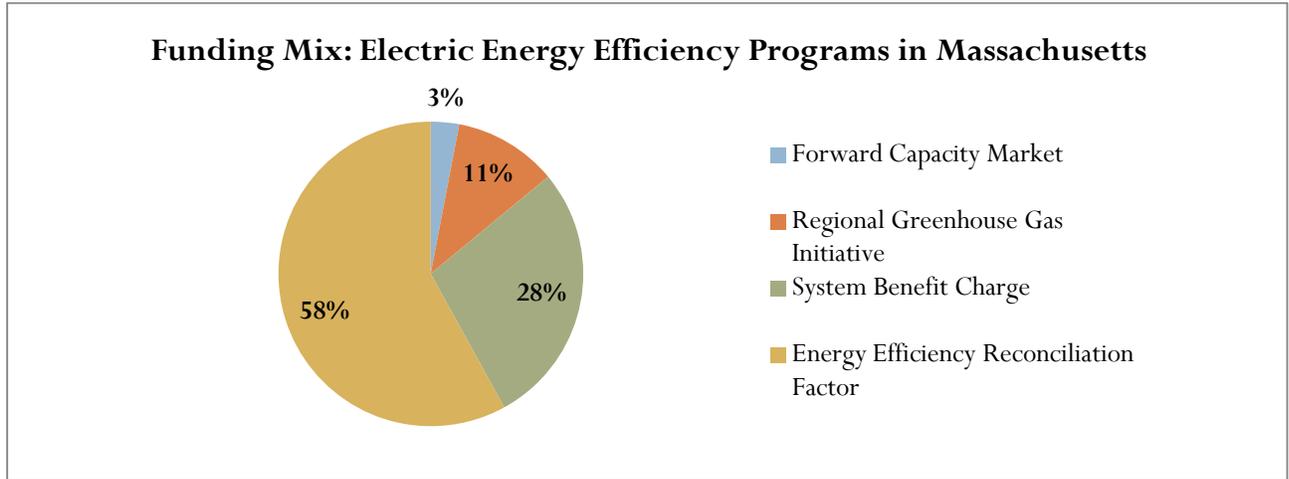
## Appendix D: Massachusetts Energy Efficiency Awards and Honors

| Year | Award  | Reason  | Awarded to   |
|------|--|---|--|
| 2010 | US Environmental Protection Agency                     | ENERGY STAR® Homes Leadership in Housing Award  | Joint Management Committee (“JMC”) (New Homes working group)                     |
| 2010 | US Environmental Protection Agency                     | ENERGY STAR® Award for Sustained Excellence for Energy Efficiency Program Delivery              | National Grid  |
| 2010 | US Environmental Protection Agency                     | ENERGY STAR® Award for Sustained Excellence for Energy Efficiency Program Delivery              | Northeast Energy Efficiency Partnerships (“NEEP”) (with electric PAs recognized) |
| 2010 | National Energy Education Development Project (“NEED”) | National and State Senior Level School of the Year  | Sandwich High School and Cape Light Compact (“CLC”)                              |
| 2010 | NEED   | National and State Elementary Level School of the Year Finalist                                 | Eastham Elementary School and CLC  |
| 2010 | NEED   | State Middle School of the Year   | Cape Cod Lighthouse Charter School and CLC                                       |
| 2010 | NEED   | State Senior Level School Finalist  | Nauset Regional High School and CLC  |
| 2010 | Publicity Club of New England Bell Ringer Awards       | Publicity Club of New England Bell Ringer Awards  | National Grid  |
| 2010 | Platts 2010 Global Energy Awards                       | Energy Efficiency Program of the Year Energy Supplier, Finalist for Home Energy Reports Program | National Grid  |
| 2011 | Mayors Climate Protection Center                       | Honorable Mention - Best Practices 2011 Climate Award   | City of New Bedford (New Bedford Community Retrofit Program)                     |

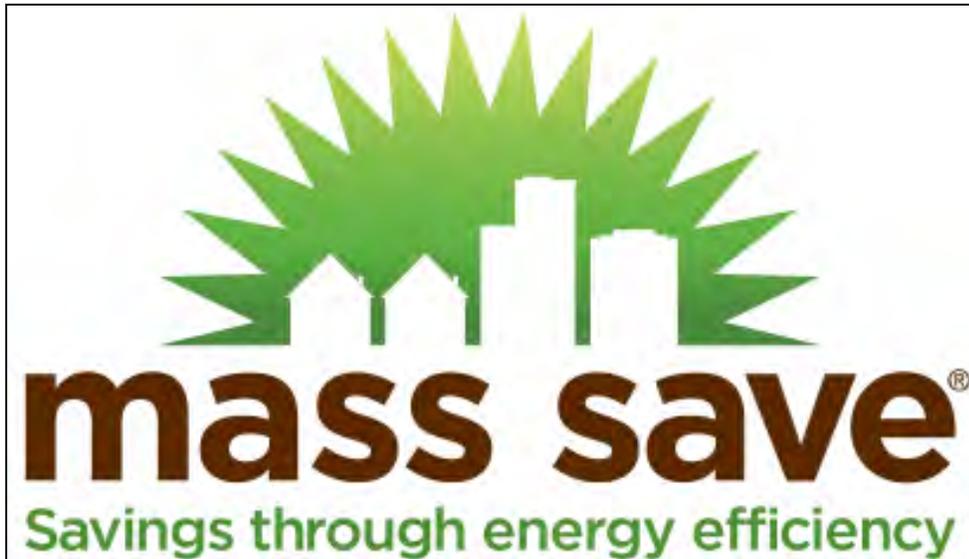
| Year | Award  | Reason   | Awarded to                                |
|------|--|--|---|
| 2011 | US Environmental Protection Agency               | ENERGY STAR® for Homes Leadership in Housing Award                                       | JMC                                       |
| 2011 | Association of Energy Services Professionals     | Outstanding Achievement in Marketing and Communications                                  | Mass Save Statewide                       |
| 2011 | American Council for an Energy-Efficient Economy | Massachusetts ranked number one in the nation for energy efficiency                      | Commonwealth of Massachusetts             |
| 2011 | US Environmental Protection Agency               | ENERGY STAR® Award for Excellence in ENERGY STAR® Promotion                              | National Grid                             |
| 2011 | US Environmental Protection Agency               | ENERGY STAR® Award for Sustained Excellence for Energy Efficiency Program Delivery       | NEEP (with electric PAs recognized)       |
| 2011 | PowerGrid International Award                    | Best Energy Efficiency/ Demand Response Project of the Year, Home Energy Reports Program | National Grid                             |
| 2011 | ESource  | Best Business Ad   | Mass Save Statewide                       |
| 2011 | NEED   | National and State Special Project of the Year   | Harwich Community Learning Center and CLC |
| 2011 | NEED   | National Senior Level Rookie School of the Year  | Boston Latin and NSTAR                    |
| 2011 | NEED   | State Elementary School of the Year and National Finalist                                | Eastham Elementary School and CLC         |
| 2011 | NEED   | State Senior Rookie Finalist   | Cape Cod Academy and CLC                  |
| 2011 | NEED   | State Senior School Finalist   | Nauset Regional High School and CLC       |
| 2011 | Interstate Renewable Energy Council              | Renewable Energy Innovation Award  | CLC Energy Education Programs             |
| 2011 | MA Association of Science Teachers               | Science Educator of the Year-Barnstable County   | CLC Education Staff                       |
| 2012 | American Council for an Energy-Efficient Economy | Massachusetts ranked number one in the nation for energy efficiency                      | Commonwealth of Massachusetts             |
| 2012 | US Environmental Protection Agency               | ENERGY STAR® Award for Sustained Excellence for Energy Efficiency Program Delivery       | Northeast Retail Products Initiative      |
| 2012 | US Environmental Protection Agency               | ENERGY STAR® for Homes Leadership in Housing Award                                       | JMC                                       |

| Year | Award                                | Reason  | Awarded to                                  |
|------|--------------------------------------|---|---|
| 2012 | US Environmental Protection Agency   | ENERGY STAR® Award for Sustained Excellence in Energy Efficiency Program Delivery | JMC   |
| 2012 | AESP                                 | Outstanding Achievement in Residential Program Design & Implementation            | NSTAR's Community Based Outreach Initiative |
| 2012 | National Energy Solutions Center     | Award for Partnership with Smith College  | Columbia Gas of Massachusetts               |
| 2012 | National Energy Solutions Center     | Award for partnership with Mary Immaculate Nursing and Restorative Center         | Columbia Gas of Massachusetts               |
| 2012 | US Environmental Protection Agency   | ENERGY STAR® Award for Excellence in ENERGY STAR® Promotion                       | National Grid                               |
| 2012 | "e" inc.                             | 2012 Planet Protector Award   | NSTAR Electric - Residential Education      |
| 2012 | NEED                                 | Senior Level Rookie of the Year National and State                                | Acton Boxborough High School & NSTAR        |
| 2012 | NEED                                 | Senior Level Finalist - National & State  | Boston Latin School & NSTAR                 |
| 2012 | NEED                                 | National and State Special Projects of the Year                                   | Harwich Community Learning Center and CLC   |
| 2012 | NEED                                 | State Senior Finalist   | Sandwich High School and CLC                |
| 2012 | NEED                                 | State Junior School of the Year   | Bourne Middle School and CLC                |
| 2012 | NEED                                 | State and National Elementary School of the Year                                  | Eastham Elementary School and CLC           |
| 2012 | NEED                                 | State Elementary Rookie of the Year   | Forestdale School and CLC                   |
| 2012 | Tools of Change peer selection panel | Smart Home Energy Monitoring Pilot Designated a Landmark Case Study               | Cape Light Compact                          |

## Appendix E: Electricity Energy Efficiency Program Funding Sources (MA)



## Appendix F: Mass Save Logo



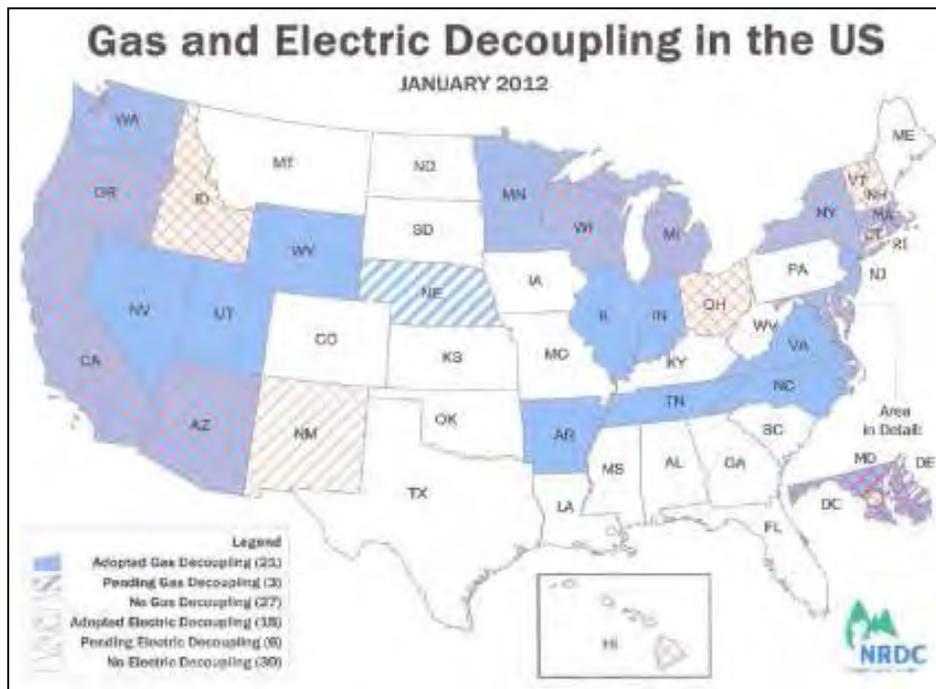
## Appendix G: Illinois DCEO Low-Income Retrofit Maximum Grant Amounts

| Electric Saving Measure                      | Grant Amount |
|--|--------------|
| ENERGY STAR rated refrigerator               | \$700        |
| ENERGY STAR rated fluorescent light fixtures | \$95/fixture |
| CFL Installation                             | \$5/lamp     |
| ENERGY STAR rated bathroom exhaust fan       | \$450        |
| ENERGY STAR rated dishwasher                 | \$550        |

|  |         |
|--|---------|
| SEER 14.5 central air conditioner w/ programmable thermostat   | \$3,100 |
| ENERGY STAR rated ceiling fan  | \$250   |
| ENERGY STAR rated room air conditioner (per window AC unit)  | \$400   |
| ENERGY STAR rated heat pump  | \$2,500 |
| Replace existing PSC motor with electronically commutated motor or equivalent advanced air handler                       | \$600   |
| Attic insulation and bypass air sealing  | \$1,200 |
| Wall insulation  | \$1,300 |
| Air leakage reduction of 30% with blower door guided sealing work  | \$400   |
| New electric water heater (minimum EFF 0.93), if all electric  | \$600   |
| ENERGY STAR rated natural gas water heater   | \$600   |
| High efficiency furnace with 92% AFUE or greater with electronically commutated motor or equivalent advanced air handler | \$1,500 |
| Boiler controls (for multi-family housing)   | *       |
| Steam system balancing (for multi-family housing)  | *       |
| Steam/hot water pipe insulation (for multi-family housing)   | *       |

*Source: Illinois DCEO Residential Retrofit Energy Efficiency Program Request for Applications, June 18, 2012.*

## Appendix H: Map of States with Gas and Electric Decoupling Policies, 2012



## Appendix I: 2000-2030 Illinois and Massachusetts Population Projections

| State | Census 2000 | ... | Projection 2008 | Projection 2009 | Projection 2010 | Projection 2011 | Projection 2012 | Projection 2013 | Projection 2014 | Projection 2015 | ... | Projection 2030 |
|-------|-------------|-----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----|-----------------|
| IL    | 12,419,293  | ... | 12,835,851      | 12,877,420      | 12,916,894      | 12,955,082      | 12,992,537      | 13,028,814      | 13,063,852      | 13,097,218      | ... | 13,432,892      |
| MA    | 6,349,097   | ... | 6,601,235       | 6,625,910       | 6,649,441       | 6,672,213       | 6,694,497       | 6,716,305       | 6,737,663       | 6,758,580       | ... | 7,012,009       |

Source: US Census Bureau, Population Division, Interim State Population Projections, 2000

## Appendix J: 2010-2015 Massachusetts EEPS Budget

| 2010-2012 Massachusetts EEPS Electricity Budget |               |        |               |        |               |        |                 |        |
|---|---------------|--------|---------------|--------|---------------|--------|-----------------|--------|
|   | 2010          | %      | 2011          | %      | 2012          | %      | TOTAL           | %      |
| Residential                                     | \$92,034,414  | 33.3%  | \$116,113,190 | 28.3%  | \$140,318,177 | 26.8%  | \$348,465,781   | 28.8%  |
| Residential Rebates                             | \$25,166,241  | 9.1%   | \$28,866,061  | 7.0%   | \$35,378,556  | 6.8%   | \$89,410,858    | 7.4%   |
| Low-income                                      | \$34,366,472  | 12.4%  | \$45,710,005  | 11.1%  | \$58,101,264  | 11.1%  | \$138,177,741   | 11.4%  |
| Low-Income New Construction                     | \$1,065,240   | 0.4%   | \$1,262,911   | 0.3%   | \$1,579,642   | 0.3%   | \$3,907,793     | 0.3%   |
| C&I   | \$150,143,440 | 54.3%  | \$248,352,797 | 60.5%  | \$324,323,012 | 62.0%  | \$722,819,249   | 59.8%  |
| TOTALS  | \$276,544,326 | 100.0% | \$410,175,992 | 100.0% | \$522,742,453 | 100.0% | \$1,209,462,771 | 100.0% |

| 2010-2012 Massachusetts EEPS Natural Gas Budget |              |       |              |       |              |       |               |       |
|---|--------------|-------|--------------|-------|--------------|-------|---------------|-------|
|   | 2010         | %     | 2011         | %     | 2012         | %     | TOTAL         | %     |
| Residential                                     | \$43,735,726 | 55.1% | \$59,569,916 | 55.4% | \$70,865,506 | 52.4% | \$174,171,148 | 54.1% |
| Residential Rebates                             | \$15,759,735 | 19.9% | \$21,901,957 | 20.4% | \$25,085,131 | 18.6% | \$62,746,823  | 19.5% |
| Low-income                                      | \$16,116,037 | 20.3% | \$20,950,131 | 19.5% | \$26,998,029 | 20.0% | \$64,064,197  | 19.9% |
| Low-Income New Construction                     | -            | -     | -            | -     | -            | -     | -             | -     |

|        |              |        |               |        |               |        |               |        |
|--------|--------------|--------|---------------|--------|---------------|--------|---------------|--------|
| C&I    | \$19,473,759 | 24.5%  | \$26,950,470  | 25.1%  | \$37,336,386  | 27.6%  | \$83,760,615  | 26.0%  |
| TOTALS | \$79,325,522 | 100.0% | \$107,470,517 | 100.0% | \$135,199,921 | 100.0% | \$321,995,960 | 100.0% |

| <b>2013-2015 Massachusetts EEPS Electricity Budget</b> |               |        |               |        |               |        |                 |        |
|--|---------------|--------|---------------|--------|---------------|--------|-----------------|--------|
|  | 2013          | %      | 2014          | %      | 2015          | %      | TOTAL           | %      |
| Residential  | \$153,238,206 | 31.8%  | \$162,494,057 | 32.8%  | \$170,956,663 | 33.0%  | \$486,688,926   | 32.5%  |
| Residential Rebates                                    | \$39,475,405  | 8.2%   | \$41,566,209  | 8.4%   | \$43,078,429  | 8.3%   | \$124,120,043   | 8.3%   |
| Low-Income   | \$54,136,213  | 11.2%  | \$54,923,052  | 11.1%  | \$56,912,443  | 11.0%  | \$165,971,708   | 11.1%  |
| C&I  | \$273,941,506 | 56.9%  | \$278,240,071 | 56.1%  | \$290,856,118 | 56.1%  | \$843,037,696   | 56.4%  |
| TOTALS   | \$481,315,925 | 100.0% | \$495,657,180 | 100.0% | \$518,725,224 | 100.0% | \$1,495,698,330 | 100.0% |

| <b>2013-2015 Massachusetts EEPS Natural Gas Budget</b> |               |        |               |        |               |        |               |        |
|--|---------------|--------|---------------|--------|---------------|--------|---------------|--------|
|  | 2013          | %      | 2014          | %      | 2015          | %      | TOTAL         | %      |
| Residential  | \$84,772,958  | 50.3%  | \$86,874,337  | 49.8%  | \$88,758,509  | 49.3%  | \$260,405,804 | 49.8%  |
| Residential Rebates                                    | \$25,062,380  | 14.9%  | \$25,591,811  | 14.7%  | \$26,071,653  | 14.5%  | 76,725,844    | 14.7%  |
| Low-Income   | \$34,409,368  | 20.4%  | \$35,928,797  | 20.6%  | \$37,844,460  | 21.0%  | \$108,182,625 | 20.7%  |
| C&I  | \$49,247,475  | 29.2%  | \$51,760,258  | 29.7%  | \$53,489,638  | 29.7%  | \$154,497,371 | 29.5%  |
| TOTALS   | \$168,429,801 | 100.0% | \$174,563,392 | 100.0% | \$180,092,607 | 100.0% | \$523,085,800 | 100.0% |

## Appendix K: 2008-2013 Illinois EEPS Budgets

| <b>2008-2010 Illinois EEPS Electric Budget</b> |              |              |              |               |
|--|--------------|--------------|--------------|---------------|
|  | 2008         | 2009         | 2010         | TOTAL         |
| ComEd TOTAL                                    | \$20,800,000 | \$51,700,000 | \$82,700,000 | \$155,200,000 |
| • Residential                                  | \$10,000,000 | \$24,300,000 | \$36,600,000 | \$70,900,000  |
| • Residential Rebates                          | \$7,200,000  | \$12,000,000 | \$14,200,000 | \$33,400,000  |
| • C&I  | \$10,800,000 | \$27,400,000 | \$46,100,000 | \$84,300,000  |

|                                |              |              |               |              |
|--------------------------------|--------------|--------------|---------------|--------------|
| Ameren TOTAL                   | \$8,597,263  | \$17,622,955 | \$27,443,464  | \$53,663,682 |
| • Residential                  | \$3,772,402  | \$8,749,985  | \$15,018,192  | \$27,540,579 |
| • Residential Rebates          | \$1,164,261  | \$2,646,047  | \$5,292,094   | \$9,102,402  |
| • C&I                          | \$4,824,861  | \$8,872,970  | \$12,425,272  | \$26,123,103 |
| DCEO TOTAL                     | \$8,512,686  | \$17,703,771 | \$27,444,805  | \$53,661,262 |
| • Public                       | \$5,320,429  | \$11,064,847 | \$17,153,003  | \$33,538,279 |
| • Low-Income                   | \$3,192,257  | \$6,638,924  | \$10,291,802  | \$20,122,983 |
| TOTALS (Utilities only)        | \$29,397,263 | \$69,322,955 | \$110,143,464 | \$29,397,263 |
| GRAND TOTAL (Utilities + DCEO) | \$37,909,949 | \$87,026,726 | \$137,588,269 | \$37,909,949 |

| <b>2011-2013 Illinois EEPS Electric Budget</b> |               |        |               |        |               |        |               |        |
|--|---------------|--------|---------------|--------|---------------|--------|---------------|--------|
|  | 2011          | %      | 2012          | %      | 2013          | %      | TOTAL         | %      |
| Residential                                    | \$54,913,230  | 27.6%  | \$52,019,435  | 25.5%  | \$49,355,078  | 24.0%  | \$156,287,743 | 25.7%  |
| C&I  | \$87,923,694  | 44.2%  | \$93,742,331  | 45.9%  | \$97,901,036  | 47.6%  | \$279,567,061 | 45.9%  |
| AC Cycling Program (ComEd)                     | \$355,000     | 0.2%   | \$1,028,000   | 0.5%   | \$896,000     | 0.4%   | \$2,279,000   | 0.4%   |
| Third Party Program (ComEd)                    | \$1,200,000   | 0.6%   | \$2,000,000   | 1.0%   | \$2,000,000   | 1.0%   | \$5,200,000   | 0.9%   |
| Residential Rebate TOTAL                       | \$28,418,864  | 14.3%  | \$24,899,610  | 12.2%  | \$19,540,145  | 9.5%   | \$72,858,619  | 12.0%  |
| • Residential Rebate Incentive                 | \$20,171,778  | 10.1%  | \$17,907,978  | 8.8%   | \$13,158,851  | 6.4%   | \$51,238,607  | 8.4%   |
| • Residential Rebate Admin                     | \$8,247,086   | 4.1%   | \$6,991,632   | 3.4%   | \$6,381,294   | 3.1%   | \$21,620,012  | 3.6%   |
| DCEO Total                                     | \$54,626,253  | 27.4%  | \$55,328,998  | 27.1%  | \$55,580,915  | 27.0%  | \$165,536,166 | 27.2%  |
| • Public                                       | \$32,148,576  | 16.2%  | \$32,796,321  | 16.1%  | \$33,003,238  | 16.0%  | \$97,948,135  | 16.1%  |
| • Tech Innovation                              | \$1,820,000   | 0.9%   | \$1,820,000   | 0.9%   | \$1,820,000   | 0.9%   | \$5,460,000   | 0.9%   |
| • Low-Income                                   | \$14,568,677  | 7.3%   | \$14,568,677  | 7.1%   | \$14,568,677  | 7.1%   | \$43,706,031  | 7.2%   |
| • Market Transformation                        | \$6,089,000   | 3.1%   | \$6,144,000   | 3.0%   | \$6,189,000   | 3.0%   | \$18,422,000  | 3.0%   |
| Admin Costs                                    | \$23,685,683  | 11.9%  | \$21,289,455  | 10.4%  | \$20,708,033  | 10.1%  | \$65,683,171  | 10.8%  |
| TOTALS   | \$199,018,177 | 100.0% | \$204,118,764 | 100.0% | \$205,733,029 | 100.0% | \$608,869,970 | 100.0% |

**2011-2013 Illinois EEPS Natural Gas Budget**

|                                | 2011         | %      | 2012         | %      | 2013          | %      | TOTAL         | %      |
|--------------------------------|--------------|--------|--------------|--------|---------------|--------|---------------|--------|
| Residential                    | \$20,943,139 | 42.1%  | \$33,314,280 | 42.2%  | \$46,975,939  | 44.0%  | \$101,233,358 | 43.0%  |
| C&I                            | \$13,985,943 | 28.1%  | \$23,600,947 | 29.9%  | \$31,070,049  | 29.1%  | \$68,656,939  | 29.2%  |
| AC Cycling Program (ComEd)     | -            | -      | -            | -      | -             | -      | -             | -      |
| Third Party Program (ComEd)    | -            | -      | -            | -      | -             | -      | -             | -      |
| Residential Rebate TOTAL       | \$8,777,780  | 17.7%  | \$15,120,557 | 19.2%  | \$22,639,233  | 21.2%  | \$46,537,570  | 19.8%  |
| • Residential Rebate Incentive | \$7,673,712  | 15.4%  | \$13,259,939 | 16.8%  | \$20,129,413  | 18.8%  | \$41,063,064  | 17.4%  |
| • Residential Rebate Admin     | \$1,104,068  | 2.2%   | \$1,860,618  | 2.4%   | \$2,509,820   | 2.3%   | \$5,474,506   | 2.3%   |
| DCEO Total                     | \$14,791,094 | 29.7%  | \$21,955,255 | 27.8%  | \$28,824,012  | 27.0%  | \$65,570,361  | 27.8%  |
| • Public                       | \$8,793,664  | 17.7%  | \$13,249,497 | 16.8%  | \$17,530,996  | 16.4%  | \$39,574,157  | 16.8%  |
| • Tech Innovation              | \$500,000    | 1.0%   | \$755,555    | 1.0%   | \$1,000,000   | 0.9%   | \$2,255,555   | 1.0%   |
| • Low-Income                   | \$3,813,190  | 7.7%   | \$5,420,653  | 6.9%   | \$6,945,596   | 6.5%   | \$16,179,439  | 6.9%   |
| • Market Transformation        | \$1,684,240  | 3.4%   | \$2,529,550  | 3.2%   | \$3,347,420   | 3.1%   | \$7,561,210   | 3.2%   |
| Admin Costs                    | \$942,824    | 1.9%   | \$1,068,995  | 1.4%   | \$1,169,471   | 1.1%   | \$3,181,290   | 1.4%   |
| TOTALS                         | \$49,720,176 | 100.0% | \$78,870,482 | 100.0% | \$106,870,000 | 100.0% | \$235,460,658 | 100.0% |

## Appendix L: 2010-2015 Massachusetts Annual and Lifetime EEPS Fuel Savings

| 2010-2012 Massachusetts Annual EEPS Electricity Savings (KWh) |             |        |             |        |               |        |               |        |
|---|-------------|--------|-------------|--------|---------------|--------|---------------|--------|
|   | 2010        | %      | 2011        | %      | 2012          | %      | TOTAL         | %      |
| Residential   | 152,491,000 | 24.4%  | 206,062,000 | 23.0%  | 261,385,000   | 23.6%  | 619,938,000   | 23.6%  |
| Residential Rebates   | 80,820,000  | 13.0%  | 93,636,000  | 10.5%  | 113,762,000   | 10.3%  | 288,218,000   | 11.0%  |
| Low-income  | 21,788,000  | 3.5%   | 28,950,000  | 3.2%   | 35,485,000    | 3.2%   | 86,223,000    | 3.3%   |
| Low-Income<br>New Construction                                | 429,000     | 0.1%   | 508,000     | 0.1%   | 693,000       | 0.1%   | 1,630,000     | 0.1%   |
| C&I   | 449,568,000 | 72.1%  | 660,367,000 | 73.8%  | 809,505,000   | 73.2%  | 1,919,440,000 | 73.1%  |
| TOTALS  | 623,847,000 | 100.0% | 895,379,000 | 100.0% | 1,106,375,000 | 100.0% | 2,625,601,000 | 100.0% |

| <b>2010-2012 Massachusetts Lifetime EEPS Electricity Savings (KWh)</b> |                |        |                |        |                |        |                |        |
|--|----------------|--------|----------------|--------|----------------|--------|----------------|--------|
|  | 2010           | %      | 2011           | %      | 2012           | %      | TOTAL          | %      |
| Residential  | 1,491,424,000  | 14.1%  | 1,831,887,000  | 14.2%  | 1,831,887,000  | 14.2%  | 5,155,198,000  | 14.2%  |
| Residential Rebates  | 759,029,000    | 7.2%   | 922,698,000    | 7.1%   | 922,698,000    | 7.1%   | 2,604,425,000  | 7.2%   |
| Low-income   | 390,966,000    | 3.7%   | 484,460,000    | 3.8%   | 484,460,000    | 3.8%   | 1,359,886,000  | 3.7%   |
| Low-Income<br>New Construction   | 4,619,000      | 0.0%   | 5,497,000      | 0.0%   | 7,348,000      | 0.0%   | 17,464,000     | 0.0%   |
| C&I  | 8,678,595,000  | 82.2%  | 10,599,588,000 | 82.1%  | 10,599,588,000 | 82.1%  | 29,877,771,000 | 82.1%  |
| TOTALS   | 10,560,985,000 | 100.0% | 12,915,935,000 | 100.0% | 12,915,935,000 | 100.0% | 36,392,855,000 | 100.0% |

| <b>2013-2015 Massachusetts Annual EEPS Electricity Savings (KWh)</b> |               |        |               |        |               |        |               |        |
|--|---------------|--------|---------------|--------|---------------|--------|---------------|--------|
|  | 2013          | %      | 2014          | %      | 2015          | %      | TOTAL         | %      |
| Residential  | 329,216,000   | 27.6%  | 364,244,000   | 29.5%  | 380,343,000   | 29.8%  | 1,073,804,000 | 29.0%  |
| Residential Rebates  | 176,608,000   | 14.8%  | 170,917,000   | 13.8%  | 171,251,000   | 13.4%  | 518,776,000   | 14.0%  |
| Low-income   | 28,782,000    | 2.4%   | 27,756,000    | 2.2%   | 26,795,000    | 2.1%   | 83,332,000    | 2.2%   |
| C&I  | 836,559,000   | 70.0%  | 844,268,000   | 68.3%  | 867,405,000   | 68.1%  | 2,548,232,000 | 68.8%  |
| TOTALS   | 1,194,557,000 | 100.0% | 1,236,268,000 | 100.0% | 1,274,543,000 | 100.0% | 3,705,368,000 | 100.0% |

| <b>2013-2015 Massachusetts Lifetime EEPS Electricity Savings (KWh)</b> |                |        |                |        |                |        |                |        |
|--|----------------|--------|----------------|--------|----------------|--------|----------------|--------|
|  | 2013           | %      | 2014           | %      | 2015           | %      | TOTAL          | %      |
| Residential  | 1,890,890,000  | 14.4%  | 1,948,146,000  | 14.7%  | 1,984,491,000  | 14.3%  | 5,823,526,000  | 14.5%  |
| Residential Rebates  | 1,296,012,000  | 9.9%   | 1,286,930,000  | 9.7%   | 1,297,495,000  | 9.4%   | 3,880,437,000  | 9.6%   |
| Low-income   | 264,621,000    | 2.0%   | 259,958,000    | 2.0%   | 254,194,000    | 1.8%   | 778,773,000    | 1.9%   |
| C&I  | 10,989,232,000 | 83.6%  | 11,056,228,000 | 83.4%  | 11,623,911,000 | 83.9%  | 33,669,371,000 | 83.6%  |
| TOTALS   | 13,144,743,000 | 100.0% | 13,264,332,000 | 100.0% | 13,862,596,000 | 100.0% | 40,271,670,000 | 100.0% |

| <b>2010-2012 Massachusetts Annual EEPS Natural Gas Savings (Therms)</b> |      |   |      |   |      |   |       |   |
|---|------|---|------|---|------|---|-------|---|
|   | 2010 | % | 2011 | % | 2012 | % | TOTAL | % |

|                     |            |        |            |        |            |        |            |        |
|---------------------|------------|--------|------------|--------|------------|--------|------------|--------|
| Residential         | 6,504,911  | 47.8%  | 9,233,555  | 48.4%  | 11,377,476 | 46.0%  | 27,115,942 | 47.2%  |
| Residential Rebates | 3,312,696  | 24.4%  | 4,649,034  | 24.3%  | 5,298,995  | 21.4%  | 13,260,725 | 23.1%  |
| Low-income          | 912,102    | 6.7%   | 1,083,764  | 5.7%   | 1,405,804  | 5.7%   | 3,401,670  | 5.9%   |
| C&I                 | 6,181,084  | 45.5%  | 8,779,986  | 46.0%  | 11,923,515 | 48.3%  | 26,884,585 | 46.8%  |
| TOTALS              | 13,598,097 | 100.0% | 19,097,305 | 100.0% | 24,706,795 | 100.0% | 57,402,197 | 100.0% |

| <b>2010-2012 Massachusetts Lifetime EEPS Natural Gas Savings (Therms)</b> |             |        |             |        |             |        |             |        |
|---|-------------|--------|-------------|--------|-------------|--------|-------------|--------|
|   | 2010        | %      | 2011        | %      | 2012        | %      | TOTAL       | %      |
| Residential   | 110,400,000 | 48.5%  | 98,800,000  | 35.6%  | 144,629,686 | 43.7%  | 353,829,686 | 42.3%  |
| Residential Rebates   | 40,529,945  | 17.8%  | 40,861,435  | 14.7%  | 36,624,898  | 11.1%  | 118,016,278 | 14.1%  |
| Low-income  | 18,900,000  | 8.3%   | 22,600,000  | 8.1%   | 25,421,030  | 7.7%   | 66,921,030  | 8.0%   |
| C&I   | 98,500,000  | 43.2%  | 156,300,000 | 56.3%  | 161,190,411 | 48.7%  | 415,990,411 | 49.7%  |
| TOTALS  | 227,800,000 | 100.0% | 277,700,000 | 100.0% | 331,241,127 | 100.0% | 836,741,127 | 100.0% |

| <b>2013-2015 Massachusetts Annual EEPS Natural Gas Savings (Therms)</b> |            |        |            |        |            |        |            |        |
|---|------------|--------|------------|--------|------------|--------|------------|--------|
|   | 2013       | %      | 2014       | %      | 2015       | %      | TOTAL      | %      |
| Residential   | 10,291,144 | 45.4%  | 11,608,186 | 47.6%  | 11,605,934 | 46.5%  | 33,505,264 | 46.5%  |
| Residential Rebates   | 2,152,649  | 9.5%   | 2,168,831  | 8.9%   | 1,956,370  | 7.8%   | 6,277,850  | 8.7%   |
| Low-income  | 1,397,743  | 6.2%   | 1,438,993  | 5.9%   | 1,486,017  | 6.0%   | 4,322,753  | 6.0%   |
| C&I   | 10,972,151 | 48.4%  | 11,353,951 | 46.5%  | 11,857,063 | 47.5%  | 34,183,165 | 47.5%  |
| TOTALS  | 22,661,038 | 100.0% | 24,401,130 | 100.0% | 24,949,014 | 100.0% | 72,011,182 | 100.0% |

| <b>2013-2015 Massachusetts Lifetime EEPS Natural Gas Savings (Therms)</b> |             |       |             |       |             |       |             |       |
|---|-------------|-------|-------------|-------|-------------|-------|-------------|-------|
|   | 2013        | %     | 2014        | %     | 2015        | %     | TOTAL       | %     |
| Residential   | 117,101,911 | 38.5% | 119,419,923 | 38.2% | 116,138,323 | 36.1% | 352,660,157 | 37.6% |
| Residential Rebates   | 40,529,945  | 13.3% | 40,861,435  | 13.1% | 36,624,898  | 11.4% | 118,016,278 | 12.6% |
| Low-income  | 27,514,929  | 9.1%  | 28,353,158  | 9.1%  | 29,325,641  | 9.1%  | 85,193,728  | 9.1%  |
| C&I   | 159,357,540 | 52.4% | 165,248,442 | 52.8% | 175,854,213 | 54.7% | 500,460,195 | 53.3% |

|        |             |        |             |        |             |        |             |        |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|
| TOTALS | 303,974,380 | 100.0% | 313,021,523 | 100.0% | 321,318,177 | 100.0% | 938,314,080 | 100.0% |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|

## Appendix M: 2008-2013 Illinois Annual EEPS Fuel Savings

| 2008-2010 Illinois Annual EEPS Electric Savings (KWh) |             |             |             |               |
|---|-------------|-------------|-------------|---------------|
|   | 2008        | 2009        | 2010        | TOTAL         |
| ComEd Total   | 168,503,000 | 323,498,000 | 466,297,000 | 958,298,000   |
| • Residential   | 86,448,000  | 155,457,000 | 200,429,000 | 442,334,000   |
| • Residential Rebates                                 | 75,909,000  | 126,349,000 | 148,332,000 | 350,590,000   |
| • C&I   | 82,055,000  | 168,041,000 | 265,868,000 | 515,964,000   |
| Ameren Total  | 62,808,000  | 126,273,000 | 190,853,000 | 379,934,000   |
| • Residential   | 16,907,000  | 42,406,000  | 75,458,000  | 134,771,000   |
| • Residential Rebates                                 | 10,086,000  | 22,923,000  | 45,485,000  | 78,494,000    |
| • C&I   | 45,901,000  | 83,867,000  | 115,395,000 | 245,163,000   |
| DCEO Total  | 54,571,415  | 109,715,723 | 167,514,982 | 331,802,120   |
| • Public  | 53,695,296  | 108,028,508 | 163,720,766 | 325,444,570   |
| • Low-Income  | 876,119     | 1,687,215   | 3,794,216   | 6,357,550     |
| TOTALS (Utilities only)                               | 231,311,000 | 449,771,000 | 657,150,000 | 1,338,232,000 |
| GRAND TOTAL (Utilities + DCEO)                        | 285,882,415 | 559,486,723 | 824,664,982 | 1,670,034,120 |

| 2011-2013 Illinois EEPS Annual Electric Savings (KWh) |             |       |             |       |             |       |               |       |
|---|-------------|-------|-------------|-------|-------------|-------|---------------|-------|
|   | 2011        | %     | 2012        | %     | 2013        | %     | TOTAL         | %     |
| Residential   | 388,902,000 | 40.3% | 339,495,000 | 34.8% | 312,966,000 | 32.8% | 1,041,363,000 | 36.0% |
| C&I   | 464,909,000 | 48.2% | 510,418,000 | 52.3% | 514,916,000 | 54.0% | 1,490,243,000 | 51.5% |
| AC Cycling Program (ComEd)                            | -           | -     | -           | -     | -           | -     | -             | -     |
| Third Party Program (ComEd)                           | -           | -     | 12,500,000  | 1.3%  | 12,500,000  | 1.3%  | 25,000,000    | 0.9%  |
| Residential Rebate TOTAL                              | 233,360,000 | 24.2% | 179,817,000 | 18.4% | 132,790,000 | 13.9% | 545,967,000   | 18.9% |
| • Residential Rebate Incentive                        | 233,360,000 | 24.2% | 179,817,000 | 18.4% | 132,790,000 | 13.9% | 545,967,000   | 18.9% |

|                            |             |        |             |        |             |        |               |        |
|----------------------------|-------------|--------|-------------|--------|-------------|--------|---------------|--------|
| • Residential Rebate Admin | -           | -      | -           | -      | -           | -      | -             | -      |
| DCEO Total                 | 111,317,016 | 11.5%  | 112,935,016 | 11.6%  | 114,034,561 | 11.9%  | 338,286,593   | 11.7%  |
| • Public                   | 89,903,983  | 9.3%   | 90,855,460  | 9.3%   | 91,349,229  | 9.6%   | 272,108,672   | 9.4%   |
| • Tech Innovation          | 3,123,120   | 0.3%   | 3,123,120   | 0.3%   | 3,123,120   | 0.3%   | 9,369,360     | 0.3%   |
| • Low-Income               | 11,789,913  | 1.2%   | 12,456,436  | 1.3%   | 13,062,212  | 1.4%   | 37,308,561    | 1.3%   |
| • Market Transformation    | 6,500,000   | 0.7%   | 6,500,000   | 0.7%   | 6,500,000   | 0.7%   | 19,500,000    | 0.7%   |
| Admin Costs                | -           | -      | -           | -      | -           | -      | -             | -      |
| TOTALS                     | 965,128,016 | 100.0% | 975,348,016 | 100.0% | 954,416,561 | 100.0% | 2,894,892,593 | 100.0% |

| <b>2011-2013 Illinois EEPS Natural Gas Savings (Therms)</b> |            |        |            |        |            |        |            |        |
|---|------------|--------|------------|--------|------------|--------|------------|--------|
|   | 2011       | %      | 2012       | %      | 2013       | %      | TOTAL      | %      |
| Residential   | 6,500,310  | 35.1%  | 10,676,910 | 34.6%  | 15,352,755 | 35.8%  | 32,529,975 | 35.2%  |
| C&I   | 6,282,212  | 34.0%  | 11,913,975 | 38.6%  | 16,880,601 | 39.3%  | 35,076,788 | 38.0%  |
| AC Cycling Program (ComEd)                                  | -          | -      | -          | -      | -          | -      | -          | -      |
| Third Party Program (ComEd)                                 | -          | -      | -          | -      | -          | -      | -          | -      |
| Residential Rebate TOTAL                                    | 3,209,165  | 17.3%  | 5,104,395  | 16.5%  | 7,279,783  | 17.0%  | 15,593,343 | 16.9%  |
| • Residential Rebate Incentive                              | 3,209,165  | 17.3%  | 5,104,395  | 16.5%  | 7,279,783  | 17.0%  | 15,593,343 | 16.9%  |
| • Residential Rebate Admin                                  | -          | -      | -          | -      | -          | -      | -          | -      |
| DCEO Total  | 5,720,447  | 30.9%  | 8,281,043  | 26.8%  | 10,698,102 | 24.9%  | 24,699,592 | 26.8%  |
| • Public  | 4,547,046  | 24.6%  | 6,708,732  | 21.7%  | 8,755,554  | 20.4%  | 20,011,332 | 21.7%  |
| • Tech Innovation   | 100,000    | 0.5%   | 149,876    | 0.5%   | 200,361    | 0.5%   | 450,237    | 0.5%   |
| • Low-Income  | 774,401    | 4.2%   | 1,123,435  | 3.6%   | 1,443,187  | 3.4%   | 3,341,023  | 3.6%   |
| • Market Transformation                                     | 299,000    | 1.6%   | 299,000    | 1.0%   | 299,000    | 0.7%   | 897,000    | 1.0%   |
| Admin Costs   | -          | -      | -          | -      | -          | -      | -          | -      |
| TOTALS  | 18,502,969 | 100.0% | 30,871,928 | 100.0% | 42,931,458 | 100.0% | 92,306,355 | 100.0% |

## Appendix N: 2011-2013 Illinois DCEO EEPS Budget

| 2011-2013 Illinois DCEO Electricity Budget        |                     |               |                     |               |                     |               |                      |               |
|---|---------------------|---------------|---------------------|---------------|---------------------|---------------|----------------------|---------------|
|   | 2011                | %             | 2012                | %             | 2013                | %             | TOTAL                | %             |
| Public Sector TOTAL                               | \$32,148,576        | 58.9%         | \$32,796,321        | 59.3%         | \$33,003,238        | 59.4%         | \$97,948,135         | 59.2%         |
| • Prescriptive                                    | \$18,102,210        | 33.1%         | \$18,603,289        | 33.6%         | \$18,743,539        | 33.7%         | \$55,449,038         | 33.5%         |
| • Custom  | \$7,466,667         | 13.7%         | \$7,613,333         | 13.8%         | \$7,680,000         | 13.8%         | \$22,760,000         | 13.7%         |
| • New Construction                                | \$1,443,347         | 2.6%          | \$1,443,347         | 2.6%          | \$1,443,347         | 2.6%          | \$4,330,041          | 2.6%          |
| • Retro-Commissioning Program                     | \$1,792,979         | 3.3%          | \$1,792,979         | 3.2%          | \$1,792,979         | 3.2%          | \$5,378,937          | 3.2%          |
| • Lights for Learning                             | \$529,112           | 1.0%          | \$529,112           | 1.0%          | \$529,112           | 1.0%          | \$1,587,336          | 1.6%          |
| • Municipal Aggregation                           | \$2,814,261         | 5.2%          | \$2,814,261         | 5.1%          | \$2,814,261         | 5.1%          | \$8,442,783          | 8.6%          |
| Tech Innovation TOTAL                             | \$1,820,000         | 3.3%          | \$1,820,000         | 3.3%          | \$1,820,000         | 3.3%          | \$5,460,000          | 3.3%          |
| Low-Income Sector TOTAL                           | \$14,568,677        | 26.7%         | \$14,568,677        | 26.3%         | \$14,568,677        | 26.2%         | \$43,706,031         | 26.4%         |
| • Retrofit  | \$8,444,289         | 15.5%         | \$8,444,289         | 15.3%         | \$8,444,289         | 15.2%         | \$25,332,867         | 15.3%         |
| • New Construction                                | \$3,336,070         | 6.1%          | \$3,336,070         | 6.0%          | \$3,336,070         | 6.0%          | \$10,008,210         | 6.0%          |
| • Public Housing Efficient Living (PHA)           | \$2,788,318         | 5.1%          | \$2,788,318         | 5.0%          | \$2,788,318         | 5.0%          | \$8,364,954          | 5.1%          |
| Market Transformation TOTAL                       | \$6,089,000         | 11.1%         | \$6,144,000         | 11.1%         | \$6,189,000         | 11.1%         | \$18,422,000         | 11.1%         |
| • Smart Energy Design Assistance Program (SEDAC)  | \$2,889,000         | 5.3%          | \$2,889,000         | 5.2%          | \$2,889,000         | 5.2%          | \$8,667,000          | 5.2%          |
| • Large Customer Energy Analysis Program (LEAP)   | \$444,000           | 0.8%          | \$444,000           | 0.8%          | \$444,000           | 0.8%          | \$1,332,000          | 0.8%          |
| • Building Industry Training and Education (BITE) | \$2,422,000         | 4.4%          | \$2,477,000         | 4.5%          | \$2,522,000         | 4.5%          | \$7,421,000          | 4.5%          |
| • Building Operator Certification (BOC)           | \$167,000           | 0.3%          | \$167,000           | 0.3%          | \$167,000           | 0.3%          | \$501,000            | 0.3%          |
| • Building Energy Code Compliance                 | \$167,000           | 0.3%          | \$167,000           | 0.3%          | \$167,000           | 0.3%          | \$501,000            | 0.3%          |
| <b>TOTALS</b>                                     | <b>\$54,626,253</b> | <b>100.0%</b> | <b>\$55,328,998</b> | <b>100.0%</b> | <b>\$55,580,915</b> | <b>100.0%</b> | <b>\$165,536,166</b> | <b>100.0%</b> |

| <b>2011-2013 Illinois DCEO Natural Gas Budget</b> |                     |               |                     |               |                     |               |                     |               |
|---|---------------------|---------------|---------------------|---------------|---------------------|---------------|---------------------|---------------|
|   | 2011                | %             | 2012                | %             | 2013                | %             | TOTAL               | %             |
| Public Sector TOTAL                               | \$8,793,664         | 59.5%         | \$13,249,497        | 60.3%         | \$17,530,996        | 60.8%         | \$39,574,157        | 60.4%         |
| • Prescriptive                                    | \$5,740,054         | 38.8%         | \$8,600,000         | 39.2%         | \$11,388,887        | 39.5%         | \$25,728,941        | 39.2%         |
| • Custom  | \$1,950,000         | 13.2%         | \$2,964,000         | 13.5%         | \$3,913,000         | 13.6%         | \$8,827,000         | 13.5%         |
| • New Construction                                | \$580,000           | 3.9%          | \$880,000           | 4.0%          | \$1,160,000         | 4.0%          | \$2,620,000         | 4.0%          |
| • Retro-Commissioning Program                     | \$350,000           | 2.4%          | \$525,000           | 2.4%          | \$695,000           | 2.4%          | \$1,570,000         | 2.4%          |
| • Lights for Learning                             | -                   | -             | -                   | -             | -                   | -             | -                   | -             |
| • Municipal Aggregation                           | \$173,610           | 1.2%          | \$280,497           | 1.3%          | \$374,109           | 1.3%          | \$828,216           | 1.3%          |
| Tech Innovation TOTAL                             | \$500,000           | 3.4%          | \$755,555           | 3.4%          | 1,000,000           | 3.5%          | \$2,255,555         | 3.4%          |
| Low-Income Sector TOTAL                           | \$3,813,190         | 25.8%         | \$5,420,653         | 24.7%         | \$6,945,596         | 24.1%         | \$16,179,439        | 24.7%         |
| • Retrofit  | \$1,555,546         | 10.5%         | \$2,211,109         | 10.1%         | \$2,845,552         | 9.9%          | \$6,612,207         | 10.1%         |
| • New Construction                                | \$1,225,144         | 8.3%          | \$1,741,444         | 7.9%          | \$2,210,444         | 7.7%          | \$5,177,032         | 7.9%          |
| • Public Housing Efficient Living (PHA)           | \$1,032,500         | 7.0%          | \$1,468,100         | 6.7%          | \$1,889,600         | 6.6%          | \$4,390,200         | 6.7%          |
| Market Transformation TOTAL                       | \$1,684,240         | 11.4%         | \$2,529,550         | 11.5%         | \$3,347,420         | 11.6%         | \$7,561,210         | 11.5%         |
| • Smart Energy Design Assistance Program (SEDAC)  | \$647,790           | 4.4%          | \$972,930           | 4.4%          | \$1,287,500         | 4.5%          | \$2,908,220         | 4.4%          |
| • Large Customer Energy Analysis Program (LEAP)   | \$129,540           | 0.9%          | \$194,560           | 0.9%          | \$257,470           | 0.9%          | \$581,570           | 0.9%          |
| • Building Industry Training and Education (BITE) | \$744,980           | 5.0%          | \$1,118,860         | 5.1%          | \$1,480,610         | 5.1%          | \$3,344,450         | 5.1%          |
| • Building Operator Certification (BOC)           | \$64,770            | 0.4%          | \$97,280            | 0.4%          | \$128,730           | 0.4%          | \$290,780           | 0.4%          |
| • Building Energy Code Compliance                 | \$97,160            | 0.7%          | \$145,920           | 0.7%          | \$193,110           | 0.7%          | \$436,190           | 0.7%          |
| <b>TOTALS</b>                                     | <b>\$14,791,094</b> | <b>100.0%</b> | <b>\$21,955,255</b> | <b>100.0%</b> | <b>\$28,824,012</b> | <b>100.0%</b> | <b>\$65,570,361</b> | <b>100.0%</b> |

## Appendix O: 2011-2013 Illinois DCEO EEPS Fuel Savings

| 2011-2013 Illinois DCEO Annual Electricity Savings (KWh) |            |       |            |       |            |       |             |       |
|--|------------|-------|------------|-------|------------|-------|-------------|-------|
|  | 2011       | %     | 2012       | %     | 2013       | %     | TOTAL       | %     |
| Public Sector TOTAL                                      | 89,903,983 | 80.8% | 90,855,460 | 80.4% | 91,349,229 | 80.1% | 272,108,672 | 80.4% |
| • Prescriptive   | 14,713,657 | 13.2% | 14,873,134 | 13.2% | 15,006,903 | 13.2% | 44,593,694  | 13.2% |
| • Custom   | 40,320,000 | 36.2% | 41,112,000 | 36.4% | 41,472,000 | 36.4% | 122,904,000 | 36.3% |
| • New Construction                                       | 5,558,640  | 5.0%  | 5,558,640  | 4.9%  | 5,558,640  | 4.9%  | 16,675,920  | 4.9%  |
| • Retro-Commissioning Program                            | 13,625,799 | 12.2% | 13,625,799 | 12.1% | 13,625,799 | 11.9% | 40,877,397  | 12.1% |
| • Lights for Learning                                    | 1,128,029  | 1.0%  | 1,128,029  | 1.0%  | 1,128,029  | 1.0%  | 3,384,087   | 1.0%  |
| • Municipal Aggregation                                  | 14,557,858 | 13.1% | 14,557,858 | 12.9% | 14,557,858 | 12.8% | 43,673,574  | 12.9% |
| Tech Innovation TOTAL                                    | 3,123,120  | 2.8%  | 3,123,120  | 2.8%  | 3,123,120  | 2.7%  | 9,369,360   | 2.8%  |
| Low-Income Sector TOTAL                                  | 11,789,913 | 10.6% | 12,456,436 | 11.0% | 13,062,212 | 11.5% | 37,308,561  | 11.0% |
| • Retrofit   | 5,057,900  | 4.5%  | 5,057,900  | 4.5%  | 5,057,900  | 4.4%  | 15,173,700  | 4.5%  |
| • New Construction                                       | 1,437,665  | 1.3%  | 2,104,188  | 1.9%  | 2,709,964  | 2.4%  | 6,251,817   | 1.8%  |
| • Public Housing Efficient Living (PHA)                  | 5,294,348  | 4.8%  | 5,294,348  | 4.7%  | 5,294,348  | 4.6%  | 15,883,044  | 4.7%  |
| Market Transformation TOTAL                              | 6,500,000  | 5.8%  | 6,500,000  | 5.8%  | 6,500,000  | 5.7%  | 19,500,000  | 5.8%  |
| • Smart Energy Design Assistance Program (SEDAC)         | 4,000,000  | 3.6%  | 4,000,000  | 3.5%  | 4,000,000  | 3.5%  | 12,000,000  | 3.5%  |
| • Large Customer Energy Analysis Program (LEAP)          | -          | -     | -          | -     | -          | -     | -           | -     |
| • Building Industry Training and Education (BITE)        | -          | -     | -          | -     | -          | -     | -           | -     |
| • Building Operator Certification (BOC)                  | 2,500,000  | 2.2%  | 2,500,000  | 2.2%  | 2,500,000  | 2.2%  | 7,500,000   | 2.2%  |
| • Building Energy Code                                   | -          | -     | -          | -     | -          | -     | -           | -     |

|               |             |        |             |        |             |        |             |        |
|---------------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|
| Compliance    |             |        |             |        |             |        |             |        |
| <b>TOTALS</b> | 111,317,016 | 100.0% | 112,935,016 | 100.0% | 114,034,561 | 100.0% | 338,286,593 | 100.0% |

| <b>2011-2013 Illinois DCEO Annual Natural Gas Savings (Therms)</b> |           |       |           |       |           |       |            |       |
|--|-----------|-------|-----------|-------|-----------|-------|------------|-------|
|  | 2011      | %     | 2012      | %     | 2013      | %     | TOTAL      | %     |
| Public Sector TOTAL  | 4,547,046 | 79.5% | 6,708,732 | 81.0% | 8,755,554 | 81.8% | 20,011,332 | 81.0% |
| • Prescriptive   | 2,846,874 | 49.8% | 4,256,545 | 51.4% | 5,624,925 | 52.6% | 12,728,344 | 51.5% |
| • Custom   | 840,000   | 14.7% | 1,282,400 | 15.5% | 1,685,000 | 15.8% | 3,807,400  | 15.4% |
| • New Construction   | 363,722   | 6.4%  | 546,267   | 6.6%  | 722,876   | 6.8%  | 1,632,865  | 6.6%  |
| • Retro-Commissioning Program                                      | 411,036   | 7.2%  | 480,975   | 5.8%  | 533,285   | 5.0%  | 1,425,296  | 5.8%  |
| • Lights for Learning  | -         | -     | -         | -     | -         | -     | -          | -     |
| • Municipal Aggregation  | 85,414    | 1.5%  | 142,545   | 1.7%  | 189,468   | 1.8%  | 417,427    | 1.7%  |
| Tech Innovation TOTAL  | 100,000   | 1.7%  | 149,876   | 1.8%  | 200,361   | 1.9%  | 450,237    | 1.8%  |
| Low-Income Sector TOTAL  | 774,401   | 13.5% | 1,123,435 | 13.6% | 1,443,187 | 13.5% | 3,341,023  | 13.5% |
| • Retrofit   | 154,455   | 2.7%  | 222,402   | 2.7%  | 282,753   | 2.6%  | 659,610    | 2.7%  |
| • New Construction   | 479,700   | 8.4%  | 701,617   | 8.5%  | 903,770   | 8.4%  | 2,085,087  | 8.4%  |
| • Public Housing Efficient Living (PHA)                            | 140,246   | 2.5%  | 199,416   | 2.4%  | 256,664   | 2.4%  | 596,326    | 2.4%  |
| Market Transformation TOTAL  | 299,000   | 5.2%  | 299,000   | 3.6%  | 299,000   | 2.8%  | 897,000    | 3.6%  |
| • Smart Energy Design Assistance Program (SEDAC)                   | 200,000   | 3.5%  | 200,000   | 2.4%  | 200,000   | 1.9%  | 600,000    | 2.4%  |
| • Large Customer Energy Analysis Program (LEAP)                    | -         | -     | -         | -     | -         | -     | -          | -     |
| • Building Industry Training and Education (BITE)                  | -         | -     | -         | -     | -         | -     | -          | -     |
| • Building Operator Certification (BOC)                            | 99,000    | 1.7%  | 99,000    | 1.2%  | 99,000    | 0.9%  | 297,000    | 1.2%  |
| • Building Energy Code   | -         | -     | -         | -     | -         | -     | -          | -     |

|               |           |        |           |        |            |        |            |        |
|---------------|-----------|--------|-----------|--------|------------|--------|------------|--------|
| Compliance    |           |        |           |        |            |        |            |        |
| <b>TOTALS</b> | 5,720,447 | 100.0% | 8,281,043 | 100.0% | 10,698,102 | 100.0% | 24,699,592 | 100.0% |