

EPA's Clean Power Plan: States' Tools for Reducing Costs and Increasing Benefits to Consumers

Analysis Group

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This report evaluates the Clean Power Plan – proposed by the U.S. Environmental Protection Agency on June 2, 2014 – from the perspective of how it might impact consumers. The report examines how states’ plans to control carbon emissions may affect owners of affected power plants, other market participants in the electric industry, and, in turn, consumers of electricity. The paper examines one particular carbon-control program – the Northeast states’ Regional Greenhouse Gas Initiative – that has been in operation for several years, to illustrate how such carbon-control compliance costs and benefits have evolved over the initial years of that program. The paper also reviews the normal ratemaking practices and other regulatory policies in states across the country that are designed to mitigate rate impacts of investments and program costs affecting production and delivery of power to consumers. The goal of the Report is to reflect on recent experience to outline the tools states have to control costs and increase consumer benefits as they develop their plans.

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1. EXECUTIVE SUMMARY

On June 2, 2014, the United States Environmental Protection Agency (EPA) released proposed rules to reduce emissions of carbon dioxide (CO₂) from existing fossil power plants. EPA's "Clean Power Plan" would require significant reductions in CO₂ emissions from the power sector, while also providing each state the flexibility to determine its preferred way to comply with the new requirements.

EPA's analysis indicates that although there will be costs to comply with the Clean Power Plan, such costs will be much lower than the benefits to public health and to the overall economy from lower CO₂ and other air emissions.¹

Some observers² have contended that consumers will experience net costs because, in those observers' view, overall compliance costs will outweigh economic and other benefits. EPA's analysis indicates that customers will see slightly higher electricity rates in the near term but lower electricity bills over the long run with the Clean Power Plan in place.

Based on our own analysis and experience, we believe that the impacts on electricity rates from well-designed CO₂-pollution control programs will be modest in the near term, and can be accompanied by long-term benefits in the form of lower electricity bills and positive economic value to state and regional economies.

There are sound reasons to be confident that customers can and will benefit from states' plans to lower the carbon intensity of their electric systems. First, and foremost, states have a long track record of using various regulatory and other policy tools to encourage utility programs and investments that minimize the cost of electric service, consistent with the myriad of public policies (tax, environmental, reliability, labor, and other areas of policy) that affect the provision of electricity. State officials (including utility regulators) are keenly focused on protecting electricity customers and will keep that objective front and center as they determine how to reduce CO₂ emissions.

Second, under the proposed Clean Power Plan, states will have the flexibility, experience and tools to prepare and implement State Plans that fit their circumstances, minimize costs of compliance, and provide benefits to customers. States can each put together the elements of plans well-suited to their state, and they'll have the ability to phase in changes over the 2020-2029 period in ways that accommodate smooth transitions. Although states differ in many ways – including their electric systems, their regulatory culture, and their electric industry structure – all states have programs,

¹ EPA has estimated that by 2020, compliance costs for the Clean Power Plan will fall in a range of \$4.3 billion to \$7.5 billion (2011\$). For context, total expenditures on electricity in 2012 were \$363.7 billion (2012\$). (Source: Energy Information Administration (EIA) 861 database on electric revenues.) EPA's cost analysis tracks "the net change in the annualized cost of capital investment in new generating sources and heat rate improvements at coal steam facilities, the change in the ongoing costs of operating pollution controls, shifts between or amongst various fuels, demand-side energy efficiency measures, and other actions associated with compliance." EPA's analysis of benefits examines the effect of lower demand leading to lower costs to consumers, along with the expected economic, health, safety and environmental benefits of the rule. See EPA, Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants (hereafter referred to as EPA RIA), June 2014, page ES-8, Table ES-10, and the Executive Summary more generally.

² See, e.g., Institute for 21st Century Energy (U.S. Chamber of Commerce), "Assessing the Impact of Potential New Carbon Regulations in the United States," May 2014.

policies and practices that will allow them to develop plans that align well with their different circumstances while still complying with the new CO₂ emission requirements. For example:

- States with vertically integrated utilities have mechanisms – including but not limited to integrated resource planning processes – for identifying least-cost compliance strategies. States have considerable experience and strong practical background in evaluating portfolios of supply and demand resources with costs and reliability in focus, and in encouraging long-term investments that minimize costs and maximize electricity consumer benefits.
- States with restructured electric industries can choose from a variety of market-based mechanisms that dovetail well with competitive retail and wholesale electric industry structures.
- Not surprisingly, in both areas, there will be continued opportunities in the future to use cost-effective energy-efficiency programs as part of states' CO₂ compliance strategies to help deliver significant benefits to customers and to local economies. Many states and utilities have deep experience in using energy efficiency as part of a least-cost utility resource plan or in competitive market contexts. Practices for design, implementation, administration, and evaluation of energy efficiency programs are readily transferable to states and utilities with less background in such programs. As the value of customer-side programs rises in the context of CO₂ compliance, states should expect to see more opportunities for cost-effective energy efficiency – and can use ratemaking tools to create incentives for utilities and others to pursue them.
- Additionally, many states are already introducing changes into their local utility systems to accommodate opportunities for customers to take actions – such as adopting energy efficient technologies in their buildings and operations – that will give customers the opportunity to be part of the solution in lowering carbon pollution from electricity production and use.

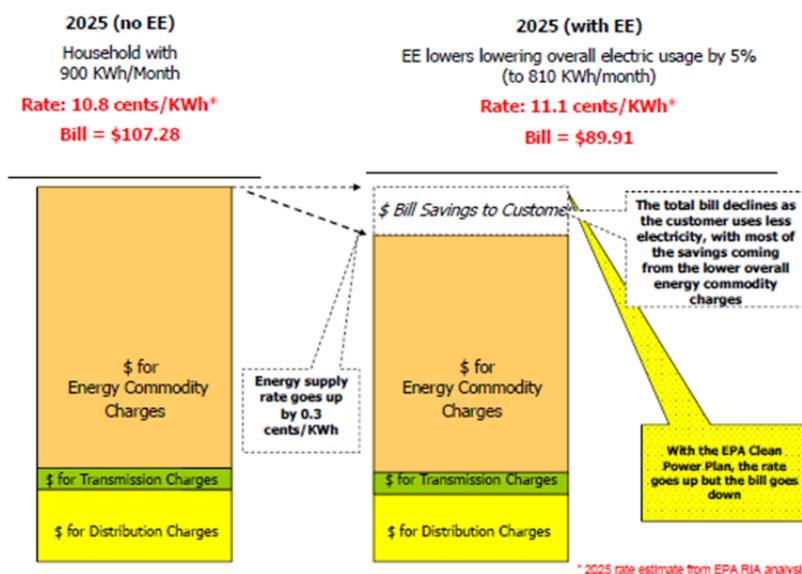
Third, market-based mechanisms offer unique opportunities to minimize costs while also reducing CO₂ emissions from existing power plants.

- States can implement such market-based programs within state boundaries. Moreover, states can work together – and with the stakeholders within each state – to develop and implement workable multi-state programs to control CO₂ emissions from existing power plants, in ways that fully preserve the rights of states in program design and administration. The EPA has not required states to develop their plans together, but the Clean Power Plan anticipates that many states may find it worthwhile to do so, in light of the way that electric systems and electrical resources are commonly shared across state boundaries.
- Such multi-state, market-based mechanisms to control CO₂ emissions can respect the practicalities of reliable electric system operations, and can be seamlessly integrated into both traditionally regulated and competitive electric industry settings.
- Pricing carbon – and this is likely true whether through a market-based mechanism or alternative compliance mechanisms – will help send efficient signals for new investment in resources (like zero-carbon technologies such as renewables and nuclear power plants, and in deeper energy efficiency measures) and for shifting power system operations toward power plants with lower carbon emissions.
- Market-based mechanisms – like the Regional Greenhouse Gas Initiative (RGGI) or California's cap-and-trade program – can provide opportunities for states to capture the economic value of

CO₂ emission allowances, and direct those revenues for consumer and public benefit. For example, in states with restructured electricity markets, states may choose to rely on methods to move CO₂ emission allowances into the market that avoid windfalls to owners of power plants. For the RGGI states, this has been accomplished through auctioning of CO₂ allowances. In other states (whether they have a traditional utility structure or a restructured market), another competitively neutral way to provide public/consumer benefits would be to allocate allowances for free to electric distribution utilities, who then can sell them to power generators and capture the revenues for consumers.

- Based specifically on our detailed analysis of states' experience with RGGI and the design of a wide array of programs that insulate lower-income consumers, we believe that the impacts on electricity *rates and bills* from well-designed CO₂-pollution control programs will be modest in the near term, especially for low-income customers. (See figure as example of the difference between rates and bills.³)

Illustrating the Impact of Energy Efficiency on Customer Rates versus Electric Bills



Fourth, states are well equipped through long-standing utility ratemaking principles, practices and programs to help protect low-income customers when electricity costs increase. Such tools include discounted rates and arrearage management plans, dedicated funding for low-income energy-efficiency and weatherization programs, utility-driven charitable contribution programs, one-time emergency assistance programs, LIHEAP funding for heating and utility bill assistance, and disconnect/shut-off protection policies. Among the many states we found to be offering targeted energy efficiency programs for low-income customers are Colorado, Florida, Georgia, Illinois, Maine, Maryland, Michigan, Missouri, Montana, North Carolina, Ohio, and Texas.

In the end, the states are in control. State environmental, energy and utility-regulatory agencies will tailor compliance approaches to their individual circumstances, and in doing so will play a significant role in driving down and managing the costs of Clean Power Plan compliance through their plans.

³ The difference between electricity *rates* and electricity *bills* is an important one in the context of many potential compliance approaches. In our prior analysis of the RGGI program, we found that while RGGI program costs initially had an increasing effect on electricity *rates*, the impact of energy efficiency investments (using RGGI allowance revenues) significantly reduced commercial and residential electricity use, placing downward pressure on *rates* over time, and combined with lower consumption, tended to generate on average much lower electricity *bills*. See: Paul Hibbard, Susan Tierney, Andrea Okie, Pavel Darling, "The Economic Impacts of the Regional Greenhouse Gas Initiative on Ten Northeast and Mid-Atlantic States," November 15, 2011 (hereafter referred to as the AG RGGI Report).

Those State Implementation Plans (or simply State Plans) will define the set of actions that will work together to reduce emissions from fossil power plants. The components of the State Plans will affect compliance costs and collateral benefits. And states' regulatory and ratemaking policies can influence how compliance actions undertaken by owners of power plants and other actors translate into increases or decreases in electricity rates and bills to different types of consumers. We note that EPA's Clean Power Plan is quite different from the more typical federal air regulations affecting emissions from fossil power plants. Normally, owners of such plants are responsible for determining how to comply with regulations through investments, changes in operations, or – in some cases – a decision to retire a plant. Here, the states themselves may end up taking the actions to reduce emissions (e.g., through energy efficiency programs or appliance-efficiency standards or continued pursuit of renewable resources, none of which are necessarily operated or paid for by owners of fossil power plants). If included in a State Plan, such elements would affect the operations and costs of some fossil power plants, but would do so indirectly rather than through an action specifically undertaken by an owner of a plant subject to the EPA's rules. And in turn, such policies adopted by a state could affect overall compliance costs passed through to electricity consumers – as well as the character of the benefits they receive through state actions under the Clean Power Plan.

Our report explains the practical mechanics of how compliance costs tend to be passed through to electricity consumers in competitive and traditional electricity systems. We also draw on recent experience among existing carbon-control programs already in operation in some states to illustrate how program design and state ratemaking policies can influence the distribution of cost and benefit outcomes to consumers. The bottom line, in our view, is that states have the means to help ensure that compliance costs are as low as possible – and to provide benefits to local economies.

How should we think about compliance costs in this context? To start with, controlling and reducing CO₂ will tend to increase the cost of doing business for many owners of affected plants, whether compliance is achieved through investments to increase a plant's efficiency, or through controls on a plant's operations that reduce its output (and associated revenues), and/or through the purchase of CO₂ allowances in a cap-and-trade program. Changes in plant operations (e.g., lower output, lower revenues from power sales) could also result from other components of a State Plan, for example, if a state were to include energy efficiency programs or renewable energy requirements or measures to retain existing nuclear plants as part of the power supply. These latter actions could lower the amount of power produced overall at fossil-fuel power plants, and help to offset potential costs associated with lowering the emissions from fossil-fuel power plants. States may choose to pursue these latter options because they could substantially help to lower the overall costs of compliance with the Clean Power Plan.

How could such compliance costs translate into impacts on consumers' electricity bills? This is a bit more complicated. In many parts of the U.S., there is not a straight line connecting the costs incurred by the owners of the power plants directly affected by EPA's Clean Power Plan, and the costs, benefits and state/regional economic impacts experienced by electricity consumers and other players in the electric industry. In fact, the relationship between power plant owners' compliance costs and consumers' prices will vary significantly, depending upon many factors (such as whether the local electric utility owns any power plants, or what things a state includes in its State Plan). For example:

- Approximately two-thirds of the nation's electricity customers live in regions where an independent grid operator runs a competitive power market. In these parts of the country –

including California, Texas, much of the Midcontinent region, the MidAtlantic area, and the Northeast – electricity customers pay prices based on the costs of the power plant operating on the margin in any hour, and thus do not necessarily reflect every dollar of compliance costs incurred by owners of all power plants. This results from the way that electricity prices arise in these markets (which we explain later in our report).

- Ten of the nation's states (California and the nine member states that participate in the Northeast/MidAtlantic region's RGGI program) already participate in a carbon cap-and-trade program, with compliance costs incurred by some – but not all – power producers already reflected in electricity prices.
- Across the country as a whole, approximately two-thirds of power is produced by electric utility companies (investor-owned utility companies, municipally owned utilities and electric cooperatives).⁴ In these contexts, state utility regulators and boards of public-power companies and cooperatives typically allow pass-through of costs and investments associated with environmental compliance activities. However, collection of these costs from customers usually requires least-cost planning processes and/or other cost-minimization steps as a condition of recovery, in order to maintain the incentives for efficient operations and investment, and to keep overall compliance costs low.

There clearly are a number of strategies that states can include in their State Plans to at least partially offset the impact of program costs on consumers. Experience demonstrates that some approaches can even generate net benefits to electricity customers and the larger state economy. An example of the latter is the RGGI states' auction of CO₂ allowances and use of the auction proceeds to support energy efficiency and customer bill credits; we have previously concluded in our detailed study of RGGI's first three years that it provided net benefits to customers and the economy of each participating state, and we update that prior analysis here to encompass over five years of experience with a CO₂ market-based trading program.⁵

There are other emission-credit trading approaches focused on consumer protection, cost mitigation or other objectives that could be adopted and implemented by states, such as the one proposed by the Clean Air Task Force (CATF). CATF's proposed mechanism would allow states "to mitigate retail electric rate impacts and protect all classes of electric ratepayers (industrial, commercial and residential) in all power markets by allowing for compensation to ratepayers...[and] to use a portion of the allowance allocations to compensate merchant coal generators for losses in asset value that may occur due to the program."⁶ In both of these approaches – one an actual program (RGGI), the other an alternative design – states' voluntary agreements to use a multi-state approach helps to keep

⁴ In more than half of the states, the local utility owns more than 70 percent of the power plant capacity. (Source: EIA 860 database for 2012.) Typically, state utility regulators in states with utilities that own power plants determine whether large capital investments at those plants are prudent, used and useful, and appropriate to be included in "just and reasonable" rates charged to customers. In many such states, the regulators review utilities' plans for capital investments at power plants are part of least-cost planning processes.

⁵ AG RGGI Report.

⁶ Conrad Schneider, "Power Switch: An Effective, Affordable Approach to Reducing Carbon Pollution from Existing Fossil-Fueled Power Plants," Clean Air Task Force, February, 2014, with accompanying technical analysis by Bruce Phillips, "Alternative Approaches for Regulating Greenhouse Gas Emissions from Existing Power Plants under the Clean Air Act: Practical Pathways to Meaningful Reductions," The NorthBridge Group, February 2014 (together, hereafter referred to as CATF Proposal).

compliance costs low and mitigate impacts on affected entities. EPA's own benefit/cost analysis also supports this conclusion.⁷

Finally, creative approaches by states to address potential compliance costs, mitigate impacts on all consumers, and achieve various policy objectives will all be layered on top of a deep level of commitment and practice states have in managing electric industry costs. States have many decades of experience with electricity rate design, program benefit and cost allocation, and compliance program planning and implementation that will help guide an equitable distribution of program costs and benefits, while protecting lower-income customers.

We hope that our report provides states with ideas for how they might apply their experience and expertise in preparing State Plans to lower overall compliance costs and provide economic benefits to consumers and to the local economy. We assume that as states begin to consider what to include in their plans (as many states have already begun), they will do so by convening stakeholder processes to identify and weigh options and by assuring that personnel from different relevant state agencies are involved in those discussions. (The experience of Illinois and several other Midwest states are a few great examples.)

Although EPA's Clean Power Plan anticipates that a state's air regulatory agency will be the entity to present a state's plan to the EPA, our experience in state government⁸ informs us of the value of ensuring that all relevant state agencies (utility regulators, state energy offices, climate policy advisors, consumer protection branches, in addition to state environmental regulators) participate fully in the development of State Plans. Given the differences that exist among states in terms of the scope and depth of agency authorities, skills, and expertise, and given the fact that EPA's Clean Power Plan will lead to policies that directly and indirectly affect operations of the electric system and consumer prices, bringing more and different points of view to the task will likely improve the quality, costs and benefits of State Plans. State utility regulators, for example, will have a critical role in assuring that implementation of the EPA requirements occurs in a least-cost fashion and in assuring a fair allocation of costs and benefits of such actions. State energy offices often also have responsibility for many aspects of electricity use in appliances and buildings, and in managing renewable programs.



⁷ “The proposed emission guidelines provide states with options for establishing standards of performance in a manner that accommodates a diverse range of state approaches. The proposed guidelines would also allow states to collaborate and to demonstrate emission performance on a multi-state basis, in recognition of the fact that electricity is transmitted across state lines, and local measures often impact regional EGU CO2 emissions.” EPA RIA, page ES-2, Table ES-4, and the Executive Summary more generally.

⁸ Paul Hibbard was recently Chairman of the Massachusetts Department of Public Utilities (DPU), and previously had worked in the state's air regulatory division. Sue Tierney previously served as Secretary of Environmental Affairs, Commissioner of the DPU, and senior economist at the energy office in Massachusetts, and was subsequently Assistant Secretary for Policy at the U.S. Department of Energy.

Our report describes our assessment of states' actual experience with RGGI, and of the larger body of ratemaking practices in states around the country through which regulators ensure fair and equitable rates to customers. In the latter, we examined a wide and diverse cross-section of states (covering half of the states in the U.S., as shown in the figure at the right), in order to point to the many tools available to states to manage the distribution of compliance costs and economic benefits among customers.

Clearly, State Plans approved by the EPA will create the framework for the industry's compliance with EPA's Clean Power Plan. How compliance plans are designed by the states will strongly affect the *magnitude* and *distribution* of costs and benefits among consumers, power plant owners, and the general economy. The regulatory practices for passing on costs to electricity consumers is also important, as it can influence the degree and allocation of program costs and benefits.

In the following sections, we discuss the analyses that allowed us to reach the conclusions noted above. Section 2 briefly summarizes EPA's proposed Clean Power Plan, and the role it anticipates for states in developing State Plans to control CO₂ emissions from existing power plants. We describe the wide range of compliance options available to states. In Section 3, we explain how different State Plan options may affect compliance costs, and how those costs may impact consumers' electricity rates and bills. Those impacts will vary across the country, due to several factors including: the different emission-reduction targets assigned to each state; the structure of the electric industry in the state (e.g., traditional utility-owned generation versus independent power production; vertically integrated utility operations versus wholesale competitive markets). We further highlight the importance of state program design on the economic benefits and costs of program implementation.

Section 4 reviews the experience of RGGI in the Northeast states, with RGGI being the long-running market-based CO₂ control program in the U.S. This discussion illustrates how a multi-state approach can operate seamlessly as part of the electric system, lead to efficient price signals affecting power plant dispatch, reduce emissions, and provide opportunities to control compliance costs and enhance benefits to consumers. Our review of RGGI's experience focuses on a recent economic analysis of the program, supplemented with a review of up-to-date data on continuing RGGI auctions and spending of allowance revenues.

Finally, in Section 5, we review state ratemaking practices and public policies that allow for fair cost recovery across all consumers, and for protecting low-income customers in particular. Appendix 1 provides more detail on EPA's proposed Clean Power Plan. Appendix 2 summarizes how RGGI states have used the proceeds from selling CO₂ allowances (e.g., to invest in energy efficiency programs, to provide a credit on customers' electricity bills and for other purposes including payments to the state's general fund). Appendix 3 compares state electricity revenues and spending on energy efficiency program by customer class, to illustrate how states can design those programs to support efficiency improvements for different types of customers. Appendix 4 provides case studies of electricity consumer-protection policies, to illustrate the tools currently in place in half of the states in the U.S.

2. EPA'S PROPOSED CLEAN POWER PLAN

On June 2, 2014, the U.S. EPA proposed rules to reduce CO₂ emissions from existing electric generating units (EGUs) through Section 111(d) of the Clean Air Act (CAA). The proposed rules, called the "Clean Power Plan," are anticipated to lower CO₂ emissions from the power sector by 30 percent relative to levels in 2005. Under the CAA, EPA establishes the target level of emission reductions for each state, and the states develop (and submit to EPA for approval) State Plans to meet EPA's requirements.

EPA's proposal sets state-specific standards, in terms of pounds of CO₂ allowed to be emitted per megawatt-hour (MWh) of electricity produced at affected facilities. In setting the standards applicable to each state's power plants, EPA used a standardized methodology based on assumptions about the amount of emissions reduction that could occur through investments and operational changes at affected power plants, through zero-carbon generating sources, and through energy efficiency. (EPA refers to these as the "building blocks."⁹) No state, however, is required to use all of those approaches.

States may choose from a wide variety of potential compliance mechanisms, actions and investments. Among the many options are: modifications at existing EGUs to increase their power-production efficiency; operating limits at EGUs; real or shadow prices on carbon emissions; carbon taxes; emission-averaging across power plants; participation in single state or multi-state market-based emission-trading programs; reliance on non-fossil alternatives, including ones that reduce demand through energy efficiency (and therefore reduce output at fossil plants), and others that retain/increase low/zero-CO₂ emitting resources (e.g., new renewable energy and existing or new nuclear capacity).

Each state's choice of what elements to include in its State Plan will affect compliance benefits and costs in that state. On the one hand, a State Plan could require investments to improve the efficiency of each power plant affected by the Clean Power Plan, along with other measures to cause some of the most-polluting plants to operate on a restricted basis. Based on what is known at present,

EPA's Proposed Clean Power Plan:

- State-specific targets to reduce CO₂/MWh produced at existing fossil-fuel power plants.
- Two compliance periods: 2020-2029 (averaging compliance over the decades, to meet an interim target) and another by 2030.
- State Plans to be submitted to EPA to show how the state and the power plants within it will comply with the targets.
- States have the flexibility to propose a wide variety of options in their plans, including actions that directly affect emissions from fossil power plants (EGUs) and actions that indirectly affect those EGUs' emissions (such as through energy efficiency, policies that encourage more investment in zero-carbon power generation technologies, or changes to electric transmission infrastructure).
- States may propose market-based mechanisms.
- States may join together for regional plans.
- States may use a "rate-based" approach (i.e., CO₂/MWh) or a "mass-based" approach (i.e., a total amount of CO₂ allowed to be emitted in the state, sometimes also called a CO₂ budget or cap).

⁹ The four building blocks EPA used to set state-specific emission-reduction targets reflect the potential to reduce emissions through:

- Improving operating efficiency or otherwise reducing CO₂/MWh at EGUs.
- Shifting output at power plants with high CO₂ emissions (e.g., at coal-fired units or inefficient gas/oil plants) through increased output at plants with lower CO₂ emissions per MWh generated (i.e., at natural-gas combined cycle (NGCC) units).
- Substituting output at fossil EGUs with retention or addition of output at zero-carbon generation (renewables and nuclear); and
- Reducing emissions from affected EGUs by lowering overall demand for electricity through additional energy efficiency.

however, this would not necessarily minimize overall compliance costs.¹⁰ On the other hand, using approaches that send appropriate CO₂-related price signals could help to minimize costs.

States may be able to layer on various approaches as part of their State Plans. For example, rather than requiring a certain average level of emissions at each plant, a state with vertically integrated utilities could decide to allow all of the plants owned by a particular company to average the emissions across its fleet. This might lead to retirements of some older and less efficient power plants, in exchange for allowing continued operation of coal-fired power plants that have recent investments in equipment to control mercury and other toxic emissions. States can determine how to adopt cost-sharing approaches so that those customers that benefit from such flexibility may share some of those benefits with customers of other electric companies needing to do more.

A state also could select market-based approaches that allow pursuit of the cheapest compliance options first (and thus produce a lower overall compliance cost) within that single state. And states may decide to enter into agreements with other states that establish an overall blended-average emissions cap, and allow owners of plants in multiple states to trade their emissions reductions so that on average, all plants in the relevant states achieve the average emission-reduction target.

Because states may choose from such a wide variety of potential compliance options, EPA's cost/benefit analysis estimated outcomes under a number of assumptions about how states would craft their plans. Based on these analyses, EPA concluded that potential costs will be more than offset by reduced demand (which would lower overall production costs to consumers) and by the expected economic, health, safety and environmental benefits of the rule.

Although projections of pollution program costs always rely on inherently uncertain information before a program actually goes into effect, prospective estimates of the costs of pollution-control regulations have historically exceeded actual program costs.¹¹ This tends to occur for several reasons, most notably the fact that it is difficult to anticipate in advance how technology innovation will occur, even if it is well understood that such innovation will likely occur in response to regulation.¹²

In this particular case, the EPA does not know now what specific actions individual states – or groups of states – will incorporate into their State Plans. The actual economic costs of the Clean Power Plan will depend strongly on the decisions that states make in developing and implementing their State Plans, industry's responses to these decisions, and the nature and pace of technological change driven by compliance activities. Additionally, state practices regarding review of utilities' compliance plans and recovery of costs related to them will affect the magnitude and distribution of consumers' costs. In all states – whether they have a vertically integrated or restructured electric industry – ratemaking practices can affect the impacts on different customer segments (including low-income customers).

¹⁰ See, for example: Joshua Linn, Erin Mastrangelo, and Dallas Burtraw, "Regulating Greenhouse Gases from Coal Power Plants under the Clean Air Act," Resources for the Future (RFF), February 2013; Dallas Burtraw, Joshua Linn, Karen L. Palmer, Anthony Paul, "The Costs and Consequences of Clean Air Act Regulation of CO₂ from Power Plants," RFF, January 2014.

¹¹ Winston Harrington, Richard Morgenstern, and Peter Nelson, "On the Accuracy of Regulatory Cost Estimates," RFF, 1999; Hart Hodges, "Falling Prices: Complying with Environmental Regulations Almost Always Less Than Advertised," Briefing Paper, Economic Policy Institute, 1997; Ruth Ruttenberg, "Not Too Costly After All," prepared for Public Citizen Foundation, February 2004.

¹² National Academy of Sciences, "America's Energy Futures Report, 2008, pages 97-102; International Energy Agency, "Experience Curves for Energy Technology Policy" (2000).

3. CONNECTING THE DOTS: EPA'S PROPOSAL AND POTENTIAL ECONOMIC IMPACTS ON ELECTRICITY CONSUMERS

EPA's proposed Clean Power Plan will have various positive and negative effects on consumers and the economy. In its benefit/cost analysis, EPA identified a number of potential economic impacts (positive and negative), including: (1) direct compliance costs incurred by owners of affected power plants (and passed along, in part, to electricity consumers); (2) expenditures on power production facilities with low or no carbon emissions; (3) expenditures on energy efficiency measures; (4) changes in the markets for fuels (e.g., coal, natural gas) used to produce electricity; (5) the expected direct and indirect social, economic, health and environmental benefits from mitigation of climate change; and (6) public health benefits from reduction in combustion of fossil fuels.¹³

Although the fundamental purpose of EPA's proposed control of CO₂ emissions is to obtain the benefits that come with avoiding climate change impacts (that is, capturing the impacts quantified in item (5) above), much attention will undoubtedly be focused on the proposal's implications for direct and indirect costs relating to items (1) through (4) above. (Unfortunately, many parties will overlook that expected impacts that produce public health benefits (6).) The close attention paid to direct and indirect economic impacts is inevitable given the importance the public places on near-term energy costs and economic productivity. Consequently, we summarize how compliance costs translate to economic impacts on electricity consumers.

There are a myriad of ways in which implementation of EPA's Clean Power Plan will shift the flow of dollars associated with the production and consumption of electricity over time, generating additional direct and indirect economic costs and economic benefits. The impacts will ripple through the electric sector in many ways, for example by:

- changing the costs to generate electricity at different power plants;
- changing the demand for different fossil fuels;
- prompting the retirement of some generating assets, the retention of some generating assets that would otherwise retire, and the addition of different electricity generation and storage resources than would otherwise occur;

¹³ EPA, RIA, Executive Summary. "The annual incremental cost is the projected additional cost of complying with the proposed rule in the year analyzed and includes the net change in the annualized cost of capital investment in new generating sources and heat rate improvements at coal steam facilities, the change in the ongoing costs of operating pollution controls, shifts between or amongst various fuels, demand-side energy efficiency measures, and other actions associated with compliance....[The costs] represent the estimated incremental electric utility generating cost changes from the base case, plus end-use energy efficiency program costs (paid by electric utilities) and end-use energy efficiency participant costs (paid by electric utility consumers)." EIA, RIA, Page ES-8. "Implementing the proposed guidelines is expected to reduce emissions of CO₂ and have ancillary emission reductions (i.e., co-benefits) of SO₂, NO₂, and directly emitted PM_{2.5}, which would lead to lower ambient concentrations of PM_{2.5} and ozone. The climate benefits estimates have been calculated using the estimated values of marginal climate impacts presented in the *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866*,...Also, the range of combined benefits reflects different concentration-response functions for the air pollution health co-benefits, but it does not capture the full range of uncertainty inherent in the health co-benefits estimates. Furthermore, we were unable to quantify or monetize all of the climate benefits and health and environmental co-benefits associated with the proposed emission guidelines, including reducing exposure to SO₂, NO_x, and hazardous air pollutants (e.g., mercury and hydrogen chloride), as well as ecosystem effects and visibility impairment. These unquantified benefits could be substantial, but it is difficult to approximate the potential magnitude of these unquantified benefits and previous quantification attempts have been incomplete." EIA, RIA, pages ES-9 and ES-10.

- changing the price of power passed along to electricity customers;
- altering the amount of electricity consumed by customers as a result of energy efficiency compliance investments;
- spurring or accelerating growth in emerging technologies and industries that address carbon emissions at power plants or that meet electricity demand through less carbon-intensive ways;
- accelerating consumer- and business-based investments in on-site conservation, load reduction, and behind-the-meter renewable generation technologies; and
- other impacts not understood or imagined today.

These impacts will introduce costs and benefits for different parts of the local and regional economies in ways that are challenging to predict with precision at the outset of the program. It is possible, though, to explore how such costs and benefits arise in different parts of the economy.

In the first instance, controlling and reducing CO₂ will tend to increase costs for owners of power plants affected by the rule. This is the part of the cost equation that usually gets the most attention in public discussions of environmental regulations: Compliance will increase the cost of doing business for affected plant owners in ways determined by a state's plan – e.g., through on-site investments to increase power plant efficiency or otherwise reduce plant emissions of CO₂, through company-wide costs incurred in an emissions averaging program, through the purchase of CO₂ allowances in a cap-and-trade program, or through payments associated with a carbon charge, fee or tax mechanism.

All else equal, power producers will attempt to pass along such costs in the prices they charge for generating electricity. In states where electric utilities own affected power plants, such costs will tend to be passed along to those utility's consumers through regulated rates as a pass-through of a variable expense, or as recovery of and a return on compliance capital investments. (That result will undoubtedly occur in the parts of the country where municipally owned utilities and electric cooperatives end up taking actions at the power plants that they own.¹⁴) In states where non-utility generators' costs are not part of a utility's rate base or expenses, but are recovered through competitive wholesale energy markets, generators will include such costs in their market offers but these compliance costs will only flow through to consumer prices if and to the extent an affected unit is actually setting the price of electricity.¹⁵

Changes in the cost of operating different types of power plants will affect their dispatch. In principle under the normal "economic dispatch" arrangement similar to those in power systems everywhere

¹⁴ This result is tied to the fact that municipal utilities do not have shareholders and must cover their costs through rates charged to consumers. For electric cooperatives, the members are both customers and shareholders, so the same result is true.

¹⁵ In competitive markets, there is not a one-to-one correspondence between costs incurred by owners of power plants and wholesale prices that are passed along to retail electricity customers. For example: in circumstances when the CO₂ compliance cost per MWh for an inefficient coal unit is higher than for an efficient, natural gas combined cycle unit, the degree to which the CO₂ control program increases the price of electricity in a given hour is a direct function of the extent to which a unit is setting the price of electricity (the "marginal" unit). In an hour when a non-emitting unit is marginal and setting the price of electricity, the impact on electricity price of the program in that hour is zero. But conversely, in hours when the least-efficient coal unit is setting the price of electricity, the CO₂ program would affect the marginal electricity price. Over the course of the year, the extent to which the CO₂ compliance expense (on producers) leads to increases in electricity prices in organized wholesale competitive markets is a function of the extent to which (and how often) CO₂-emitting resources are on the margin and setting the price of electricity. The impact on electricity costs over the course of the year is in turn a function of this impact on electricity prices and the extent to which – through consumer choice or program investments (in energy efficiency or renewable energy) – the CO₂ program leads to a reduction in electricity consumption.

around the country, the grid operator (e.g., the utility for a vertically integrated power system, or the independent system operator in an ‘organized’ wholesale market) schedules plants to operate so as to minimize the overall cost of production on the system. If it becomes more expensive to generate power at a particular coal plant due to a State Plan’s elements, then the grid operator will turn to a cheaper source of power (e.g., a gas-fired combined cycle). (This could happen in a number of ways, consistent with economic-dispatch principles: for example, the cost to operate the coal plant could rise because it faces a new price on carbon (e.g., through a state tax on carbon, or through the need to purchase CO₂ emission allowances, or through use of a ‘shadow’ price on carbon applied in the dispatch equation) or because it has a new constraint on its ability to operate (e.g., through a change in that plant’s operating permit to limit its output over the course of a year.)¹⁶ The extent to which this occurs will depend on a region’s resource mix and its demand over all hours of the year. Under the standards proposed by EPA, it is likely that some of the more efficient coal-fired power plants will be able to continue to produce power relatively inexpensively for some time, and they will continue to be dispatched.

Nevertheless, as these changes occur in the relative costs to produce power from different plants, there will be shifts in the electric system. (These have been anticipated by EPA in its application of the “building block” methodology used to set state-specific CO₂ targets.) Some plants may retire; others will operate less; others will operate more. Other zero-carbon-emitting plants that tend to be dispatched whenever their fuel supply is available (e.g., nuclear power plants; wind turbines; solar panels) may not see significant changes in output.

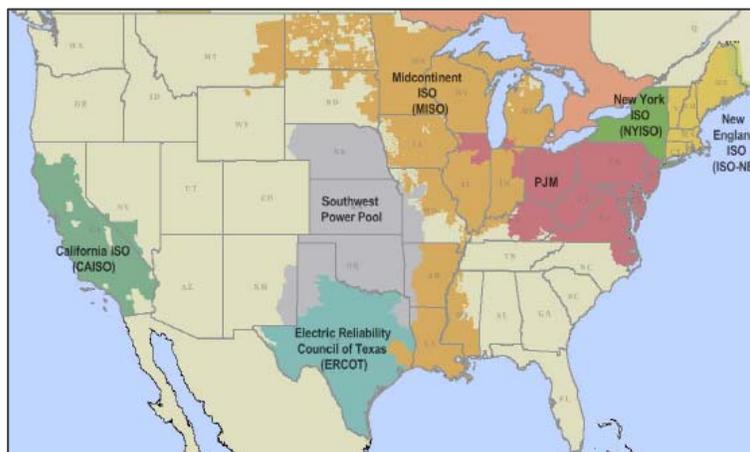
There is not a direct line, however, connecting the changes in costs incurred by owners of power plants and the actual costs, benefits and state/regional economic impacts experienced by consumers or other economic actors (e.g., fuel suppliers, owners of non-fossil power plants).

For example, among electric industry participants, some plant owners will face higher costs and/or lose revenues, while others will gain revenues and market opportunities. Older CO₂-emitting assets that have operated profitably for many decades may no longer be able to do so. But newer, more efficient and lower-emitting fossil-fired units will tend to operate more. In some parts of the country (e.g., the Rockies, or in the Southeast), some of those changes will occur within a single utility’s own power plant portfolio. In addition, depending upon how states design their State Plans, those changes could also arise across the power plants owned in different states by that single utility (such as might occur in the Southeast states).

In states where the power plants operate as part of single state or regional ‘organized’ power market (shown in the colored areas of the map below), those shifts in output could occur among facilities owned by different power plant owners. How they shift will be influenced by the design of those states’ State Plans, and the resulting approaches to compliance selected by owners of affected EGUs.

¹⁶ We are aware of real-world examples of several of these approaches: For example, in the RGGI states, power generators’ offer prices into the energy markets administered by regional transmission organizations (i.e., in the ISO New England market, in the New York ISO market, and in Maryland and Delaware, which are part of the PJM wholesale market), reflect a price on carbon through the generators’ inclusion of the opportunity cost of carbon as part of its energy offer price. In Massachusetts, some gas-fired power plants with dual-fuel capability have limits in their air permits that allow them to be dispatched (on oil) no more than the equivalent of 30 days at full output. In each case, the grid operator incorporates these factors into its economic dispatch that includes these generating units.

Given the market-based structure of the wholesale electric systems in these regions, there are strong rationales for State Plans to include market-based mechanisms for controlling carbon emissions. Such approaches could be a single-state or multi-state cap-and-trade program (e.g., like California's or in the Northeast/MidAtlantic states) or a carbon tax (being considered in some regions in the Pacific Northwest), or a dispatch shadow-price approach (also under discussion in some states in the Midwest).



In wholesale markets where state plans lead to some form of a price on carbon, owners of plants with lower CO₂/MWh emission rates will likely increase their output to the extent they can. The changing market price relationships will affect the economic opportunities and profits for existing or emerging electricity market participants – some positively, and some negatively. (See the text box below.)

In addition to the fact that not all compliance costs are passed on to consumers, the way a program is designed and implemented can actually deliver additional program cost reductions. For example, to the extent that State Plans directly or indirectly increase utilities and/or consumers' investments in

Compliance Cost Impacts on Owners of Assets in "Organized" Competitive Wholesale Markets:

Assume an hour when an efficient, natural gas combined cycle power plant is the last one dispatched to meet load, and thus sets the price paid to all generating units operating in that hour. Assume too that the plant operates in a state with a State Plan that includes some form of price on its carbon emissions (as now occurs in the 9-state RGGI region). The price offered by the natural gas plant contains a variable cost, in dollars per MWh of generation, based on its opportunity cost related to its emissions of CO₂ in that hour (e.g., by purchasing allowances, paying a tax or fee). This will affect various power plant owners in the following ways:

- *The clearing natural gas-fired unit:* The unit that sets the clearing price will exactly recover its compliance cost, and the price increase for energy in the wholesale market will increase (relative to a no-carbon control program) by the cost of compliance for a natural-gas combined-cycle unit. All gas-fired units with similar heat rates will face similar circumstances. In effect, there may be little impact on profits for such asset owners.
- *Low/zero-emitting units:* Many renewable resources (such as wind and solar) have very low operating costs, and typically would be operating (or inframarginal) in the same hours as the gas plant above, and would receive energy market revenues roughly equal to the market price times MWh output. Since the price of energy is higher with the CO₂ price in effect, the profits for these low-emitting units are higher. Nuclear and hydro units would experience a similar effect on profits in this hour.
- *Inefficient coal-fired unit:* An inefficient coal unit faces a higher compliance cost than the gas unit in \$/MWh since it emits more tons of CO₂ per MWh. Yet the impact of the program increases electricity prices only by the \$/MWh compliance cost of the unit of the margin (e.g., the gas plant). Thus, the coal unit's costs increase more than its revenues, so the effect of the program is to decrease profits for this unit. A directionally similar impact would be felt by less efficient natural gas and oil units, to the extent they are operating.
- *Zero-emitting marginal unit:* In hours when the price of energy is set on the margin by a zero-emitting unit (e.g., renewables, nuclear, hydro) – not the typical occurrence – any operating fossil-fueled unit is receiving less profits (than the case without a carbon control requirement), and there is no price increase paid by consumers with respect to the carbon control program.

energy efficiency or technology-driven load control or behind-the-meter renewable technologies, the associated reduction in demand for power generation has the effect of lowering CO₂ compliance costs, or even producing net benefits for electricity customers. This is because reducing consumptions lowers a business or homeowner's electricity bill, and lowering *total system* demand in any hour will tend to reduce the clearing price for power for *all users* of electricity, whether they themselves invested in an energy efficiency measure or not. This creates opportunities for State Plans to incorporate elements that offset the cost impacts from other compliance actions.

The net effect of such considerations can strongly influence the impact of EPA's program on electricity costs over time.¹⁷ Depending upon the design of State Plans to include energy efficiency, any initial price increases experienced by electricity consumers may be more than offset over time by lower electricity bills. (EPA's benefit/cost analysis indicates that "average monthly electricity bills are anticipated to increase by roughly 3 percent in 2020, but decline by roughly 9 percent by 2030 because increased energy efficiency will lead to reduced usage."¹⁸ The CATF has proposed an approach to CO₂ compliance that would limit price impacts to no more than 2 percent.¹⁹ And in its recent analysis of the potential compliance strategies for ERCOT, the Brattle Group found that Texas could meet both resource adequacy and carbon-emissions reduction goals through a combination of increased reliance on gas-fired generation, demand-response, combined heat and power, and energy efficiency at inflation-adjusted prices that resembled those experienced in the 2010-2012 period.²⁰)

From the point of view of state or regional economies, the direct impact of compliance on producer profits and electricity consumer costs is still just one piece of the larger economic puzzle. All of the direct changes in costs, investments, and producer and consumer actions discussed above ripple through the economy in various ways. As the profits of the owners of affected units fall, for example, their spending in the economy drops (e.g., by perhaps deferring spending on operations and maintenance, or by reducing the disposal income of company shareholders), negatively affecting economic activity. The opposite impacts occur when other plants increase their output (e.g., greater demand for and production of natural gas in different regions of the country, with jobs and tax

¹⁷ For example, in the RGGI Report we found that: fossil generators' inclusion of CO₂ allowance prices in their offer price tended to change the order of dispatch of various power plants, and tended to increase electricity prices (by less than 1 percent) in the near term; encouragement of energy efficiency; also, the use of the proceeds from auctioning off CO₂ allowances to fund energy efficiency investments also altered the load profile, lowered overall demand, and in turn lowered electricity prices (because of avoiding the need to dispatch higher-priced supply on the margin). In these regions, the generation sector as a whole earned less revenues than they would have absent the RGGI program being in place. However, owners of low- and zero-carbon emitting plant gained substantial revenues, while fossil-fired units lost revenues. Since many of the zero-emitting facilities were new renewable generation assets within the affected states, the net effect of the program was to retain a greater share of generation sector revenues within the region, producing local economic benefits (on top of those provided by the local investments in energy efficiency measures).

¹⁸ EPA RIA, page ES-24.

¹⁹ The CATF Proposal would accomplish this through a combination of several things: providing states with the opportunity to use "mass-based, fossil boiler emission budgets" as an alternative to complying with an emission rate standard; allowing interstate emissions trading; offering states the ability to mitigate retail ratepayer and merchant coal impacts through free allowance allocations ("Giving states an emissions tonnage budget provides states with "free" allowance allocations, the value of which can be used to mitigate ratepayer impacts and compensate merchant coal generators for lost asset value." CATF Proposal, pages 4, 14.

²⁰ "In inflation-adjusted terms, prices in the Reference scenarios remain within the band observed between 2010 and 2012, from a low of about \$42/MWh to a high of about \$67/MWh under the strong carbon rule. Importantly, the inclusion of EE, DR, and CHP [energy efficiency, demand response and combined heat and power] in the Phase III scenario reduces the higher-priced carbon rule scenarios, as what would otherwise have been." See: Ira Shavel, Peter Fox-Penner, Jorgen Weiss, Ryan Hledik, Pablo Ruiz, Yingxia Yang, Rebecca Carroll, and Jake Zahniser-Word (The Brattle Group, "Exploring Natural Gas and Renewables in ERCOT, Part III: The Role of Demand Response, Energy Efficiency, and Combined Heat & Power," May 29, 2014, pages 6 and 77.

revenues associated with them; potentially greater need for new investment in pipelines, with construction jobs and equipment purchases associated with such infrastructure investment).

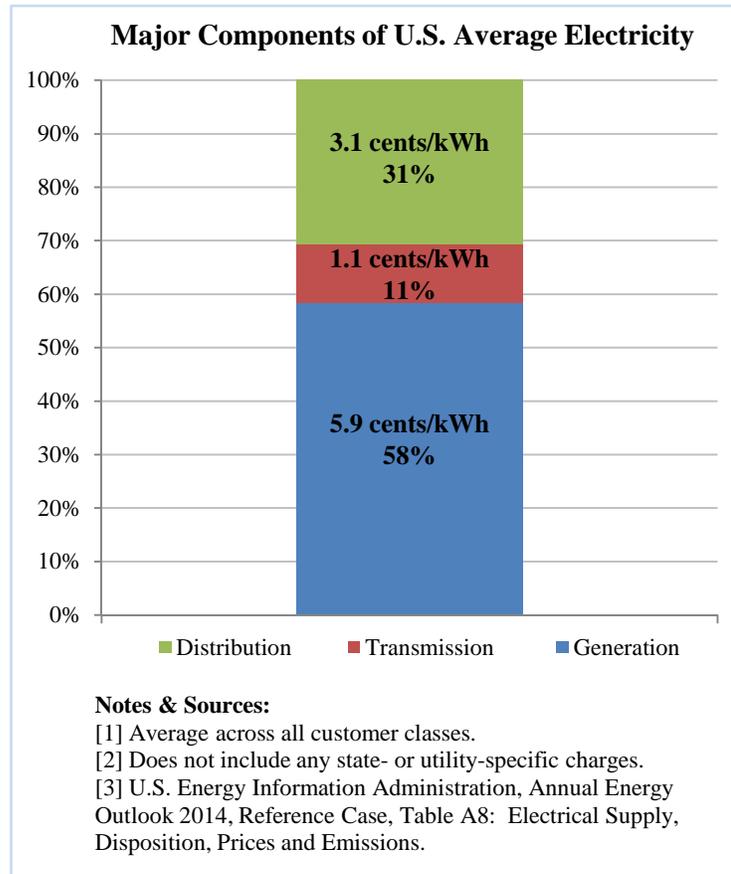
Also, where revenues rise for owners of power facilities with zero carbon emissions that previously were undervalued or not sufficiently compensated in electricity markets, an owner may be able to keep the plant open (e.g., a nuclear unit that may have been previously financially challenged) or add new capacity in the future (e.g., a new wind turbine or solar PV system, or an uprate at an existing hydro facility or nuclear plant). Those will have investment and job impacts in their regions.

Where energy efficiency is part of a State Plan, it will tend to increase economic activity in the local economy, through sales of efficient electric devices or insulation, and/or through jobs associated with audits, installations, and other parts of the energy-efficiency supply chain. In some communities, there will be gains in manufacturing of energy-efficient equipment.

On the consumer side, to the extent that program implementation increases electricity costs, consumers will tend to have less disposable income. There are tools that states can use to partially or entirely mitigate the impact of program costs on consumers, and in some cases actually generate consumer and broader net economic benefits. As we explain further below, State Plan designs that flow revenues back to electricity customers (e.g., through a credit on customers' electricity bills) can mitigate the impact of power supply price increases. Those that lead to increased investment in energy efficiency and lower consumption of electricity are particularly effective in lowering total customer payments for electricity and increasing disposable income (even if there are initial rate increases). Such income effects can increase economic benefits in local economies.

Although most discussions of the EPA's proposed Clean Power Plan will inevitably focus on costs of compliance, states should consider possible ways to design their State Plans to minimize those costs and increase the economic benefits of reducing CO₂ emissions from the power sector. Discussions and analyses that only address the former without paying attention to the latter will lead to incomplete assessments of the proposed Clean Power Plan's impact on consumers and the economy. A complete story on the impact of program implementation *on electricity consumers* must include a more review of the overall impact of the program on electricity market infrastructure and pricing dynamics, the investment of program revenues, the changing character of the electric industry (with much-greater investment by utilities, third parties and customers on the customer side of the meter) and the actions and response of electricity consumers. A complete story on the impact *on economic productivity and jobs* must follow how changes in investment and spending from the program – including producer costs/revenues, consumer income, and program investments – flow through the broader economic setting.

Finally, it is important to keep in mind that the impact of the Clean Power Plan on electricity prices – through increased costs at some power plants – is incomplete in the sense that it examines and over-emphasizes only one part of the electricity cost structure. A typical electricity bill includes other elements besides costs relating to electricity supply – namely, the costs to transmit and distribute electricity to the end user, and costs to manage power system operations and markets. Of the all-in price of electricity (on the basis of the national average cent/kWh), approximately 40 percent of the costs relate to the delivery (distribution and transmission) of electricity, and 60 percent relate to power production. Thus, for a 1-percent change in the price of electricity generation, there will be a smaller change (less than 1 percent) in the bottom-line price of electricity.



Also, where states include in their State Plans a variety of elements that encourage cost-effective energy efficiency, demand-response and renewable projects on customers' premises, these will tend to lower overall demand for power and in turn lower average cost of electricity supply.

4. PROGRAM DESIGN CONSIDERATIONS: REVIEW OF THE REGIONAL GREENHOUSE GAS INITIATIVE

Overview

How EPA's proposed Clean Power Plan ultimately impacts consumers and the economy will depend on many things: what a state includes in its plan, how that plan alters demand for electricity, how it affects infrastructure investment and power system operations, and so forth. Given the flexibility that EPA has afforded to the states in its proposed Clean Power Plan, the choices that states make in shaping their State Plans could (and no doubt will) have far-reaching implications not only for CO₂ emission reductions, but also for the cost of compliance. What those State Plans include also will affect the cost of electricity for the state's residents and businesses, and the overall impact of the program on the state's economic growth, employment, taxes and wages.

To illustrate the potential implications of program design and implementation, we have reviewed the experience of Northeast states in implementing RGGI, the nation's first CO₂ emission control program using a cap-and-trade approach. RGGI is now in its sixth year of operations. While it is a coordinated, multi-state market-based program for the control of CO₂ emissions from the power sector, the states' design for RGGI reserved a significant degree of implementation flexibility for each of the states participating in the program. From the outset, RGGI allowed each state to determine whether and how to allocate or auction emissions allowances to owners of power plants. Because the states implemented the program in various ways, the RGGI experience provides insights about the relationship between program design and outcomes for consumers and the economy.

In this section we summarize key elements of the RGGI program, discuss the findings and implications of a recent economic analysis of RGGI previously conducted by Analysis Group, review program design and spending changes implemented since the time of that prior report, and discuss implications for design considerations in the context of states' implementation of the proposed Clean Power Plan.

In focusing here on the RGGI story to illustrate how a multi-state, market-based approach has worked, we do not presume that other states would use this particular approach. We recognize that there are various other approaches that different states might use to align CO₂-emission reduction goals with electric system operations and distribution of benefits to consumers. RGGI's experience provides a workable example, from which other states can derive insights about how they might design approaches that work within their own electric-industry contexts.

RGGI Background and Overview

In 2009, ten Northeastern and Mid-Atlantic States began the Regional Greenhouse Gas Initiative as the country's first market-based program to reduce emissions of CO₂ from fossil-fueled power plants equal to or greater than 25 megawatts (MW) in size.²¹ The concept underlying the design of RGGI was that the participating states could reduce power plant emissions most efficiently (that is, at lowest

²¹ The ten states are Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. On May 26, 2011 New Jersey decided to withdraw from the RGGI program, and has not participated since the end of 2011.

cost) by introducing a price signal on carbon, and in so doing, cause the region's economic dispatch of power plants to reflect the cost of a tradable carbon-emission allowances along with the other more traditional variable costs of operating power plants (e.g., fuel, operations and maintenance).

Once the RGGI program was designed through a process involving state officials and industry participants over several years, each state that elected to join RGGI obtained authority to do so through its legislature and/or regulatory mechanisms. For example, RGGI developed a 'model rule' that outlined the core design elements of the program, and then each state adopted its own enabling authority to allow it to participate. This meant that the participating states did not need to adopt a formal interstate compact under federal law, while still allowing the participating states to establish a coordinated and common mechanism for incorporating a carbon price into their power-system dispatch and operations.

The program initially limited regional emissions to 188 million short tons of CO₂ annually across the then ten-state RGGI region. This regional cap was agreed-upon by the participating states and then apportioned to states based largely on CO₂ emissions from the affected sources, in accordance with state-specific allowance budgets that were agreed upon by the states.²²

The region-wide cap on total CO₂ emissions is the only ceiling on emissions.²³ In other words, an annual pool of emission allowances was created in an amount equivalent to the regional cap, and each state received a share of allowances that the state could then allocate to market participants. Once the allowances moved from the states' hands into the market, actual emissions in a state could be higher or lower than that state's original allowance allocation, as long as the total emissions were consistent with the cap.

In order to comply, every affected power plant must to surrender an allowance for every ton of CO₂ emissions it emits over the three-year period. (This process occurs at the end of each three-year compliance period, with the first being for the 2009-2011 period.)

As originally designed, the cap would decline by 2.5 percent per year beginning in 2015, to reach an overall reduction of 10 percent of CO₂ emissions by 2018. The states were free to decide how each state's allowances would be distributed or sold into the hands of power plant owners. In theory, each state could issue them to power plant owners for free, or could sell them into the market, or some combination of both approaches.

Ultimately, however, each RGGI state voluntarily decided to distribute the vast majority of CO₂ emission allowances through a common, centralized auction administered by the organization set up by states to run the program (RGGI Inc.). As a result, the owners of affected power plants have obtained CO₂ allowances by purchasing them through the initial auctions (held quarterly), or by

²² Thus, this would be different from a multi-state agreement where, under the proposed Clean Power Plan, the EPA established a CO₂-emissions-reduction target for each state, and then each cooperating state individually decided to: (a) coordinate its emissions reductions with other states, (b) convert its CO₂/MWh emission-rate target into an equivalent mass-based CO₂ target (e.g., a CO₂ emission budget or cap for each state), and then (c) establish mechanisms through which it would formerly adopt elements in its State Plan to effectuate the common, coordinated and multi-state CO₂-emission reduction program. We recognize that such an approach could work in the context of traditional investor-owned utilities that serve portions of several states and that operate as an integrated system, and/or in the context of multi-state competitive markets. See: Susan Tierney, "Greenhouse Gas Emission Reductions From Existing Power Plants Under Section 111(d) of the Clean Air Act: Options to Ensure Electric System Reliability," May 8, 2014.

²³ Under some circumstances, the regional cap could increase (i.e., if CO₂ allowance prices hit a particular dollar level, at which point the program would issue new allowances held in reserve for that purpose).

purchasing/transferring them in a secondary market once those allowances move into the system via the auction process.

Approximately 99 percent of allowances have been initially distributed via RGGI auctions. Participation in the auctions is open to any company or person meeting qualification requirements (e.g., financial security requirements), with a ceiling of 25 percent placed on purchases by a single buyer or group of affiliated buyers in each auction.

Proceeds from the quarterly auctions – which are determined by quantities sold and auction clearing price (subject to a reserve (floor) price) – are distributed to states, and states determine how to use the funds. Since the initial allowance auction took place at the end of 2008, and up through the most recent auction. As of June 4, 2014, total revenues from the sale of CO₂ allowances has amounted to \$1.4 billion. (See Appendix 2.)

The proceeds from the quarterly auctions have flowed through to the individual states in proportion to each state's share of the cap.

The use of auction proceeds has varied across the states and over time, consistent with the enabling state legislation, regulation, and policy. Examples of how the states used their share of the RGGI funds include:

- investment in energy efficiency programs,
- a credit on each customer's electricity bills,
- funding of state government operations through allocation to state general funds,
- investment in community-based installation of renewable or advanced power generation systems,
- education and job training programs, and
- other greenhouse gas reduction initiatives.

Additionally, a small portion of the proceeds have supported administrative costs for the RGGI program. As explained further below, the vast majority of RGGI funds have been reinvested in energy efficiency in part to mitigate the impact of the program on wholesale electricity prices and consumer electricity costs.

Analysis of RGGI's Economic Impacts

In late 2011, we published a report examining, among other things, the consumer cost and economic impacts of RGGI's implementation over its first three years (the first compliance period from 2009-2011).²⁴ The purpose of that report was to review program implementation, quantify the impact of the program on wholesale electricity markets (power prices, emissions trends, operations), review the various ways in which states reinvested allowance auction proceeds, examine impacts on customers' electricity prices, and estimate the economic impacts of program implementation on each of the RGGI states. The AG RGGI Report was designed to evaluate program performance in order to provide insights and observations that could be useful in evaluating past policy decisions and in the development of future policy design changes.

²⁴ AG RGGI Report.

In that report, we tracked the path of RGGI-related dollars through the supply chain: we observed the payments that owners of affected units made to purchase CO₂ allowances and how those allowances affected the prices at which those power plant owners were willing to sell power. We examined the implications of those allowance prices on changes in the production costs of different types of power plants, and then on their dispatch. We observed the changes in allowance prices in the quarterly auctions, along with the amounts of auction proceeds that went to each state after each auction. We tracked how each state chose to spend those proceeds over time. Where states spent auction proceeds to implement energy efficiency, we examined the types of programs they supported and the impacts of those programs on the demand for electricity over time. Our analysis relied on actual data on allowance pricing, actual fossil fuel prices, revenues, state disbursement and expenditures.

Using a comprehensive power sector production-cost model (GE MAPS), we compared the electric system's demand, power plant dispatch, emissions, and overall cost first using the "real world" conditions which represented the "with RGGI" scenario. We compared it to a "without RGGI" scenario in which we backed out the price of emissions allowances and the effect of investments of RGGI dollars in energy efficiency and renewable energy, and identified how this changed power plant dispatch, production costs, and emissions. Taking the results of the "with RGGI" and "without RGGI" analyses, we then modeled the impacts on the states' economies by using the IMPLAN input/output model. That latter analysis also examined the implications for different states' economies of their choices to use the RGGI auction proceeds for energy efficiency versus general-fund support versus credits on customers' electricity bills and other uses.

Our analysis reached the following conclusions about the states' implementation of RGGI during its initial three years of operation:²⁵

- RGGI produced in total \$1.6 billion in net present economic value (NPV) for the ten-state region, representing on average approximately \$33 per capita in net economic benefits (i.e., taking costs into consideration). The use of auction proceeds for public purposes (e.g., giving customers a credit on their electricity bill, paying for energy efficiency measures to help reduce consumers' electricity use and electricity bills) offset the modest increase in electricity prices associated with the RGGI program and led to myriad positive economic spillover effects. Examples included the increased purchasing power associated with lower electricity bills, the economic impacts of spending money to hire people to perform energy audits or install solar panels, and the benefits to businesses of increased sales of energy efficiency equipment). Our analysis reflected both direct spending benefits and indirect multiplier effects locally and regionally.
- The economic benefits resulted from the fact that when the states auctioned off the allowances (rather than giving them to power plant owners for free), the revenues from the program could be used for public benefit. This allowed states to retain associated revenues for public use, with outcomes that provided substantial fiscal, consumer, and environmental benefits. (Note that in the ten RGGI states, the electric industry was restructured over a decade ago, so that most power plants are not owned by electric utility companies. Had the states given away the allowances for free to the owners of power plants, the value of those allowances would have gone to the shareholders of those companies, rather than to consumers of electricity in competitive wholesale markets. This influenced the decisions of states to use an auction to move the allowances into the

²⁵ AG RGGI Report, pages 2-8.

hands of power plant owners, leaving the states with the opportunity to use the monetary value of those allowances for the public benefit.)

- Over the first three years, RGGI led to over 16,000 additional jobs (job-years) with each of the ten states showing net job additions. Jobs related to RGGI activities are located around the economy, with examples including engineers who perform efficiency audits, workers who install energy efficiency measures in commercial buildings, staff performing teacher training on energy issues, and other things.
- CO₂ allowances tended to increase electricity prices by less than 1 percent in the near term, but over time – as the RGGI states invested a substantial amount of the allowance proceeds on energy efficiency programs that led to lower electricity use – the program results in lower electricity prices and lower consumer payments for electricity. This resulted because the system avoided having to run some of the more expensive power plants, and thus lowered wholesale prices, plus consumers had lower electricity bills as demand went down. The analysis found reduced electricity expenditures equaling approximately \$1.1 billion over a ten-year period, reflecting an average savings of \$25 for residential consumers, \$181 for commercial consumers, and \$2,493 for industrial consumers. Consumers of natural gas and heating oil saved another \$174 million, because some of the energy efficiency programs had the collateral effect of lowering use of those other heating services
- Although owners of fossil-fuel power plant owners raised their prices to reflect the cost of having had to purchase CO₂ emission allowances (and thus most of these owners ended up recovering at least some of their RGGI compliance costs), over time the market for their product (i.e., sales of electricity) ended up being lower than it would have been without RGGI, because of the states' use of auction proceeds to fund energy efficiency and lower demand. Also, among power plants, those with zero or low carbon emissions (such as renewable facilities or nuclear plants) received financial benefit for this attribute through revenues in electric energy markets.
- The scope of RGGI's positive economic benefits varied by state and region, with those states investing the heaviest in energy efficiency realizing significantly higher economic benefits.
- The form of CO₂ controls – namely, a market-based program – worked seamlessly within the Northeast's wholesale electricity market structures and produced relatively efficient compliance costs in those markets.
- The states' use of allowance proceeds not only provided economic benefits, but also helped them meet a wide variety of social, fiscal, and environmental policy goals, such as assisting low-income customers, achieving advanced energy policy goals, addressing state and municipal budget challenges, and restoring wetlands. Even so, how allowance proceeds were used strongly affected their economic impacts, with energy efficiency investment standing out as the use with the highest local economic benefits. For example, use of RGGI dollars to invest in energy efficiency ended up lowering regional electrical demand, lowering electricity prices, and lowering all consumers' payments for electricity (not just those who installed energy efficiency measures). These savings on electricity bills flowed through the economy as increased consumer disposable income (from fewer dollars spent on energy bills), lower payments to out-of-state energy suppliers, and increased local spending or savings.

RGGI helped the Northeast states lower total fossil-fired power production and lower use of natural gas and oil for heating, thereby reducing the total dollars sent out of state for energy resources.

RGGI Program Developments Since the 2011 AG RGGI Report

Since the time we concluded our analysis of the first three years of the RGGI program, it has continued to evolve in several ways.

For example, the states undertook a comprehensive program review in 2012, examining program success and impacts, the effects of imports and emissions leakage, the integrity of the offset program, and whether additional reductions beyond 2018 should be implemented. That program review was completed in February 2013, and involved a comprehensive assessment of program design issues, a modeling of potential future RGGI program levels, CO₂ allowance prices, impacts on electricity prices and customer bills, and the region's economy.²⁶

Based on its review, the RGGI states made a number of technical changes and improvements designed to build on past experience and to strengthen the program moving forward, the most significant of which was the decision to reduce the 2014 regional CO₂ emission cap by 45 percent, from 165 million to 91 million tons, with an additional annual decline beyond that of 2.5 percent per year from 2015 to 2020.²⁷ The decision to reduce the cap reflected all states' positive association with program implementation and the environmental and economic benefits flowing from the program's first three years.

Overall, revenue generation through RGGI Auctions has remained strong, and states have continued to invest in ways that likely generate cost savings and economic benefits for residents and businesses. For example, in the initial period analyzed in the AG RGGI Report (2009 - 2011), RGGI collected and the states spent approximately \$620 million through allowance sales, across all current RGGI states.²⁸ In just the subsequent two years, states have already collected and spent approximately \$440 million, reflecting in particular an increase in allowance prices. See Figure 1.

²⁶ Program impacts were modeled under a fully vetted reference case as well as a number of key sensitivities related to natural gas prices, electricity demand, and changes to existing generation infrastructure.

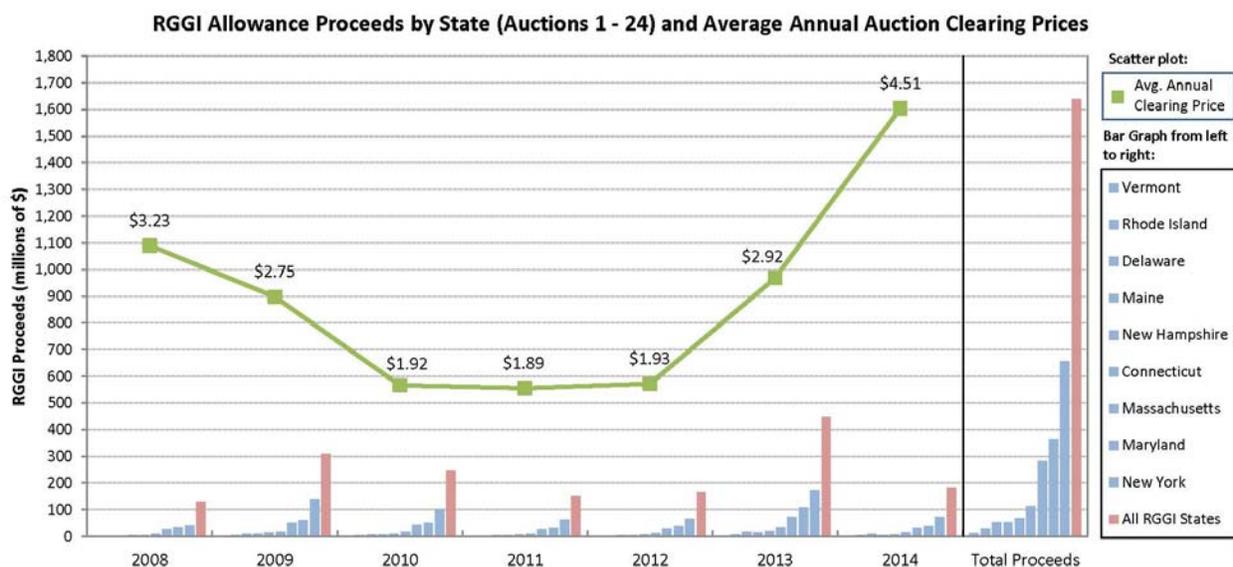
²⁷ Other changes included:

- Adjusting the CO₂ emissions cap to address the private bank of allowances held by participating entities, and the retirement of existing unsold 2012 and 2013 allowances;
- Instituting of a cost-containment reserve (CCR) of CO₂ allowances to help moderate price impacts, whereby CCR allowances would be made available for sale should the CO₂ allowance prices exceed certain pre-established price levels;
- Updating the RGGI offsets program, including a new forestry protocol;
- Requiring regulated entities to acquire and hold a portion of required allowances throughout each compliance period; and
- Committing to assessing tools to monitor for emissions associated with electricity imports and developing a mechanism to address such import emissions.

RGGI Inc., "RGGI States Propose Lowering Regional CO₂ Emissions Cap 45%, Implementing a More Flexible Cost-Control Mechanism," Press Release, February 7, 2013.

²⁸ For the purpose of consistency in our comparisons of the first and (to-date) second compliance periods, we exclude New Jersey from these values.

Figure 1



Notes: [1] Six states participated in the first auction (September 2008). [2] 2008 and 2014 values reflect proceeds from two auctions. Values for all other years reflect proceeds from four auctions.
Source: RGGI Inc.

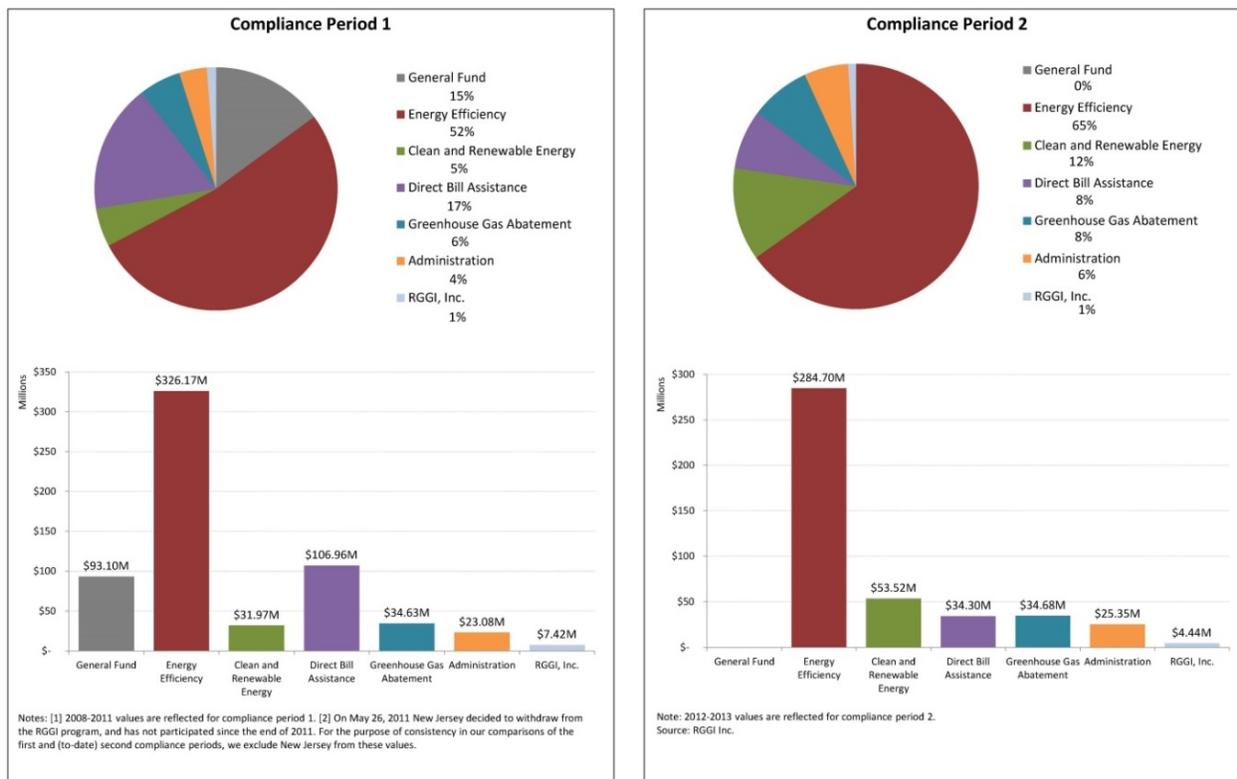
From 2009-2011 (Compliance Period 1), roughly half (52 percent) of allowance revenues across the region were invested in energy efficiency programs and measures. The other uses were: 17 percent for credits on electricity customers’ electricity bills (and primarily low-income consumers); 15 percent used to offset state budget challenges; 11 percent for either clean and renewable energy investments or CO₂ mitigation measures; and 5 percent to cover program administrative costs. See Figure 2.

More recently (in 2012-2013), the RGGI states have spent more of their auction proceeds on energy efficiency. Based on the insights we gained from the prior AG Study, we think that this will increase the overall economic benefits of the RGGI program. Based on those two most recent years (2012 and 2013), there has been a 25-percent increase in states’ spending on energy efficiency (most recently at 68 percent of the total auction revenues of approximately \$440 million), with additional increases in spending on clean and renewable energy (12 percent) and greenhouse gas abatement (8 percent), and no use of auction revenues for contribution to states’ general funds.²⁹ See Figure 2.

²⁹ Charts and values for all states’ spending in Compliance Period 1 and Compliance Period 2 (to-date) are contained in Appendix 1.

Figure 2

All RGGI States Proceed Spending (Excluding NJ)



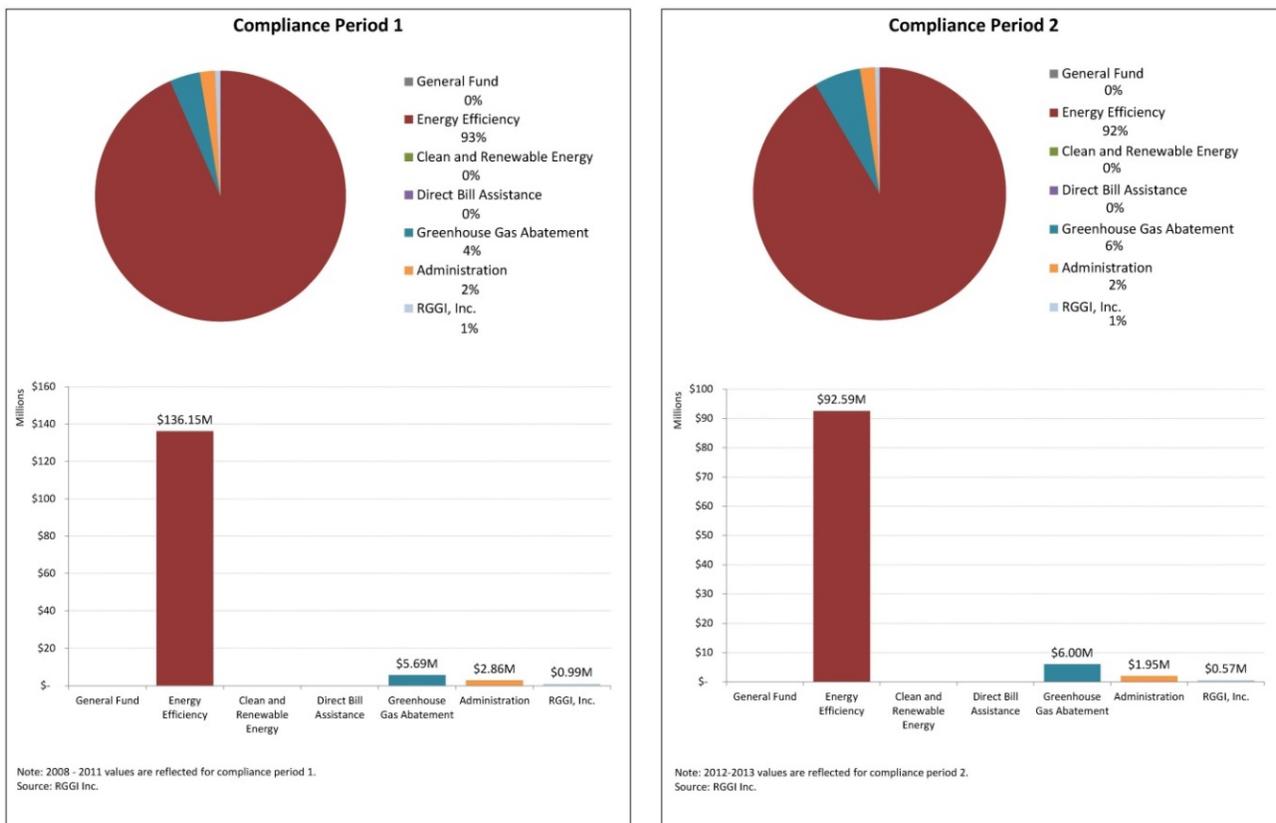
Across the RGGI region, about half of funds went to energy efficiency during first three years of the RGGI program (i.e., in Compliance Period 1). But in some states (especially in New England), virtually all allowance proceeds were spent in that category. For example, Massachusetts spent approximately 93 percent of auction revenues on energy efficiency in the first Compliance Period, and has essentially maintained that level of energy-efficiency spending over the past two years (92 percent). See Figure 3. For New England as a whole, Compliance Period 1 spending on energy efficiency amounted to approximately 89 percent of total auction revenues, with a similar level since that time (88 percent).

These factors had important implications for the level of state economic benefits derived from RGGI program implementation. We found that level of economic benefits (net economic value added, and jobs) per dollar of auction revenue spent was highest in those states in regions with the greatest level of reinvestment of auction proceeds on energy efficiency.

Therefore, all else equal, the recent trend in the second Compliance Period (2012-2013) towards use of auction proceeds for energy efficiency investment will lead to *increased* economic benefits across the RGGI states.

Figure 3

Massachusetts RGGI Proceed Spending



Implications for Clean Power Plan Compliance

The RGGI experience may provide important insights as states develop their State Plans and consider alternative compliance approaches. EPA’s Clean Power Plan invites states to explore market-based mechanisms and to attempt to participate in multi-state CO₂ reduction programs. One option for the states that now participate in RGGI would be to include this program as part of their State Plans.³⁰ In addition, other states could elect to join RGGI (with corresponding changes in the cap and the state budget allocations). Other states may elect to set up a single-state cap-and-trade program or establish a new one in concert with other states. Some states served by electric-utility affiliates of a single holding company could establish a cap on the emissions of that company’s power plants in the several states, and then allow it to operate its power plants (as now) as an integrated system, allowing the company to dispatch its plants economically with also taking system security as well as carbon emissions into account.

Insights from the RGGI experience are relevant for other states as they consider market-based approaches. But there are wider lessons for other approaches, as well. There are a number of

³⁰ We expect that the RGGI states would need to make technical changes in the RGGI program design, once the final Clean Power Plan is adopted by EPA, if some aspects of RGGI would not otherwise meet EPA’s requirements (e.g., as to the level of the cap, or the existence of a cost-containment mechanism that allows electric companies to purchase more allowances if prices hit a particular ceiling price).

potential additional compliance approaches and mechanisms suggested by EPA (or that states might develop on their own) that could involve the investment of compliance fees or charges on affected units that could operate in ways akin to market-based mechanisms. States can look at the RGGI experience to inform their own choices regarding these various ways to introduce some sort of real or shadow prices on carbon emissions from power plants.

We note, for example, the a number of observations, based on our review of the economic impacts of the RGGI program and our research on ratemaking policies of states:

- Market-based mechanisms offer important opportunities to minimize costs while also reducing CO₂ emissions from existing power plants.
- States can implement such market-based programs within state boundaries.
- Moreover, states can work together – and with the stakeholders within each state – to develop and implement workable multi-state programs to control CO₂ emissions from existing power plants, in ways that fully preserve the rights of each state.
- Such multi-state, market-based mechanisms to control CO₂ emissions can respect the practicalities of electric system operations, and can be seamless integrated into both traditionally regulated and competitive electric industry settings.
- States with vertically integrated utilities have other tools, including integrated resource planning processes, for identifying least-cost compliance strategies.
- Pricing carbon will help send efficient signals for new investment in resources (like zero-carbon technologies such as renewables, hydro facilities, and nuclear power plants, and in deeper energy efficiency measures) and for shifting power system operations toward power plants with lower carbon emissions. This result is likely true whether pricing carbon is accomplished through a market-based mechanism like RGGI or alternative compliance mechanisms.
- Market-based mechanisms – like RGGI or California’s cap-and-trade program – can also provide opportunities for states to capture the economic value of CO₂ emission allowances and direct those revenues for public and social benefit. In states with restructured electricity markets, states may choose to rely on methods to move CO₂ emission allowances into the market that avoid windfalls to owners of power plants. For the RGGI states, this has been accomplished through auctioning of CO₂ allowances. In other states (whether they have a traditional utility industry or a restructured market), another competitively neutral way to provide public/consumer benefits would be to allocate allowances for free to electric distribution utilities, who then can sell them to power generators and capture the revenues for consumers.³¹
- Including cost-effective energy-efficiency programs as part of states’ CO₂ compliance strategies can help deliver significant benefits to customers and to local economies. The RGGI states have used the proceeds from selling CO₂ allowances to produce such benefits while offsetting compliance costs. Many other states have experience in using energy efficiency as part of a least-cost utility resource plan. As electricity prices tend to rise with CO₂ compliance, states should

³¹ See, for example, Conrad Schneider, “Power Switch: An Effective, Affordable Approach to Reducing Carbon Pollution from Existing Fossil-Fueled Power Plants,” Clean Air Task Force, February, 2014, with accompanying technical analysis by Bruce Phillips, “ Alternative Approaches for Regulating Greenhouse Gas Emissions from Existing Power Plants under the Clean Air Act: Practical Pathways to Meaningful Reductions,” The NorthBridge Group, February 2014.

expect to see more opportunities for cost-effective energy efficiency – and can use ratemaking tools to create financial incentives for utilities to pursue them.

No matter what set of approaches a state considers including in its State Plan, state utility regulators will be in a position to weigh the cost implications of various programs and do what they can to encourage efficient and least-cost compliance options so as to minimize impacts on electricity consumers. This is discussed in Section 5, below.

5. FAIRNESS AND PROTECTION OF CONSUMERS

Overview

We know that potential electricity price impacts from the EPA's proposed Clean Power Plan will be the subject of intense attention: electricity costs can affect the competitiveness of businesses, particularly those engaged in energy-intensive activities, with implications for economic output and jobs. Increases and decreases in electricity rates and costs affect the disposable income of all residents, with ramifications tied to quality of life, ability to meet other financial obligations, and the degree of spending in the general economy. Lower-income individuals spend a disproportionate share of annual income on energy costs, and any increases in electricity costs to those customers can create genuine hardship, drawing away income that is otherwise needed for other basic necessities, and cost increases often lead to an increase in uncollected revenues for utilities.

Although there is not a direct relationship between program compliance costs and impacts on consumers' payments for electricity, it is still important to consider ways to minimize costs and protect consumers as much as possible from potential price increases. Careful attention to this issue can positively influence the design and implementation of State Plans. The lessons learned from the states' experience with RGGI program, for example, illustrate how the design and operations of that CO₂ reduction program led to net benefits for electricity customers and for those states' economies.

But state planning for implementation of CO₂ emission-control plans should not (and likely will not) stop with State Plan design. States can also use their long-standing experience in utility ratemaking principles and practices to ensure that the costs and benefits of CO₂ program compliance are distributed fairly among different types of customers. State can take steps to ensure that, to the maximum extent feasible, that compliance costs are minimized and that lower-income customers, in particular, are protected fairly.

In this context, states already have the tools to address and fairly manage the distribution of compliance program costs and benefits among customers. These tools are a standard part of ratemaking by state regulators around the country. We review these tools here, to remind states that in the end, these ratemaking issues will be part of how they roll out implementation of CO₂-control programs affecting their power industry and electricity consumers in their states.

In this section, we provide a brief overview of the legal and/or regulatory foundation for setting electricity rates, and consider how and to what extent public utility commissions (PUC) appear to manage investments in (and benefits of) energy efficiency programs and measures in that context. Second, we review how the federal government, states, and PUCs consider the specific challenges faced by lower-income consumers.

Our review of these issues is based on our prior experience and research into utility ratemaking, an understanding of relevant precedent and policies in most U.S. states, and the preparation of case studies for about half of the states in the U.S. The specific states



on which we focused (shown in shading on the map to the right) represent a diverse cross-section of states by geography (covering virtually every region of the U.S.), by electric industry structures (competitive, investor-owned utilities, municipal electric utilities, and electric cooperatives), by type of local economy (e.g., industrial, rural), and by power plant mix (e.g., dominated by coal, or gas, or hydro/nuclear, or more of a mix). We summarize our research and findings here, and include the individual state case studies in Appendix 4.

Electric Ratemaking to Allocate Costs and Benefits “Fairly and Equitably” (with a focus on energy efficiency programs)

Electric customers will pay for some of the costs of CO₂ compliance in a number of ways that are overseen by state utility regulators and/or boards of public power utilities. For example:

- In states where the utility owns fossil-fuel power plants directly affected by the proposed EPA Clean Power Plan and where consumers pay a ‘bundled’ price for power, consumers’ rates will reflect the utility’s compliance costs (as approved by state regulators/utility boards and consistent with least-cost ratemaking principles). States in this category include much of the Western states, the Plains states and Upper Midwest, the Southeast.
- In states with a restructured electric industry (e.g., Texas, Illinois, Ohio, the MidAtlantic and Northeast states), electricity customers that obtain power supply through default service offered by the distribution utility will pay electricity prices that reflect CO₂ compliance costs included in competitive power supplier purchases in wholesale electricity markets, which are regulated by the Federal Energy Regulatory Commission and to some degree are influenced by local state policies (e.g., for renewable energy).
- In states that choose to include energy efficiency as part of a State Plan, state PUCs (and in some instances, state efficiency providers) will play an important role in those programs.

In most states, utility regulators endeavor to set utility rates in a manner that allocates costs to those customers whose usage patterns cause the costs to be incurred in the first place. For example, customers whose usage tends to increase during peak periods when relatively expensive power-production costs occur tend to end up having rates that reflect those peaking power costs. Relatively arcane but important ratemaking methodologies to align rates with costs are the bread-and-butter of regulators’ ratemaking work.

Through general rate cases and other ratemaking proceedings, PUCs routinely evaluate utility investments and expenses, determine what portion of these should be borne by shareholders and what portion by customers, allocate such costs in a manner that approximates cost incurrence, and design the resulting rates so as to recover approved costs in a way that encourage efficiency in utility operations and management of costs.

The obligation of PUCs to fairly and equitably allocate investments and expenses of regulated utilities is typically encoded in law, regulations, policies, and/or judicial precedent. Guidance is sometimes prescriptive, and other times general, but for many decades public utility regulation has followed the obligation to allocate costs and benefits in a manner that follows this concept, often phrased as “fair and equitable,” “not unduly preferential,” “just and reasonable,” “non-discriminatory,” etc. Table 1 provides a sampling of legal or regulatory language included in the statutes and/or decisions of state PUCs. Appendix 4 contains more detailed summaries for the states included in our case studies.

Table 1

Summary of State Ratemaking Practices that Address Consumer Impact Equity and Fairness		
State	Bill or Recent Rate Case	Description
California	Public Utilities Code, Division 1, Part 1, Chapter 4, 739.6	"The commission shall establish rates using cost allocation principles that fairly and reasonably assign to different customer classes the costs of providing service to those customer classes, consistent with the policies of affordability and conservation."
Florida	Florida Statute Title XXVII, §§366.03	"In fixing fair, just, and reasonable rates for each customer class, the commission shall, to the extent practicable, consider the cost of providing service to the class, as well as the rate history, value of service, and experience of the public utility; the consumption and load characteristics of the various classes of customers; and public acceptance of rate structures."
Illinois	Illinois Statute 220 ILCS 5/1-102	"... the health, welfare and prosperity of all Illinois citizens require the provision of adequate, efficient, reliable, environmentally safe and least-cost public utility services at prices which accurately reflect the long-term cost of such services and which are equitable to all citizens" and that "variation in costs by customer class and time of use is taken into consideration in authorizing rates for each class."
Iowa	State of Iowa RPU-2013-0004 (Order Issued March 17, 2014)	Explaining a subrule related to new service, notes the provision "...is designed to insure that no customer receives any 'entitlement' to currently existing facilities, and that all customers pay their appropriate share of the utility's cost."
Massachusetts	Rate Case Order - Docket 11-01 (Dated August 1, 2011);	"The rate structure for each rate class is a function of the cost of serving that rate class and how rates are designed to recover the cost to serve that rate class. The Department has determined that the goals of designing utility rate structures are to achieve efficiency and simplicity as well as to ensure continuity of rates, fairness between rate classes, and corporate earnings stability."
Minnesota	Minnesota Statute § 216B.03	"Every rate made, demanded, or received by any public utility, or by any two or more public utilities jointly, shall be just and reasonable. Rates shall not be unreasonably preferential, unreasonably prejudicial, or discriminatory, but shall be sufficient, equitable, and consistent in application to a class of consumers."
New Mexico	NMSA 1978, §62-8-1	"Every rate made, demanded or received by any public utility shall be just and reasonable."
North Carolina	§62-1 and §62-133.8 Subs. h-4	"To provide just and reasonable rates and charges for public utility services without unjust discrimination, undue preferences or advantages..."
Texas	Chapter 25, Subchapter J, § 25.234 (effective July 5, 1999)	"Rates shall not be unreasonably preferential, prejudicial, or discriminatory, but shall be sufficient, equitable, and consistent in application to each class of customers, and shall be based on cost."

Specifically with respect to energy efficiency programs, PUCs typically consider fairness and equity considerations when approving utility spending on and collection of costs for energy efficiency programs and measures. However, although most states have some type of energy efficiency program operated by a utility (or a third-party energy efficiency entity, whose costs are paid for by electricity customers), ratemaking practices for “fairness and equity” in the design and implementation of energy-efficiency programs varies widely across the states. Typically, ratemaking and program design operate in parallel to assure a “fair and equitable” mix of energy efficiency programs and costs for different types of customers.

Table 2 presents for each state a breakdown of energy efficiency spending by rate class, compared to the overall level of revenues collected from rate classes to cover all utility costs. Appendix 3 contains a summary and state-specific charts showing energy efficiency spending and overall electric utility revenues by rate class.

We observe the following with respect to ratemaking practices and energy efficiency program design across the states:

- Most states have at least some experience with reviewing and approving expenditures for implementation of energy-efficiency programs and measures, across all rate classes, and many states have developed energy-efficiency programs and precedent over many years, even decades.
- In states with significant energy-efficiency expenditures, programs are implemented across all major customer classes.
- Across the country, the percentage of spending on energy efficiency is roughly equivalent to the breakdown of revenues collected from each customer class. As shown in Table 2, the average dollars spent on residential, commercial, and industrial rate classes for energy efficiency programs is roughly 46 percent, 40 percent, and 14 percent, respectively – which is close to the total revenues collected for overall utility service from each rate class (45 percent, 37 percent, and 18 percent, respectively).
- The types of energy-efficiency programs operated in a state vary across states. This may reflect, in part, that states have very different mixes and types of residential, commercial and industrial customers. It may also be due to the fact that in many states the energy savings benefits do not necessarily match the level of expenditures. For example, programs reaching large commercial and industrial customers may realize higher benefit/cost ratios than programs reaching smaller commercial and residential customers. In this case, the relative portion of total energy-efficiency spending may be smaller for large customers at the same time that total savings resulting from such spending are much higher.
- Even in states with a long history of having supported energy efficiency programs paid for in electricity customers’ rates, PUCs are still finding that there are cost-effective opportunities to get further electric system savings. As electricity prices change over time, additional cost-effective energy-efficiency opportunities also increase.

Table 2

**State Energy Efficiency Spending by Customer Class Compared to Revenues
2012**

State	Residential	Commercial	Industrial	Total
Alabama	\$9,172	\$4,625	\$24,131	\$37,928
Alaska	\$363	\$148	\$0	\$511
Arizona	\$65,678	\$70,216	\$409	\$136,303
Arkansas	\$18,670	\$9,834	\$40,696	\$69,200
California	\$488,578	\$559,873	\$144,861	\$1,193,312
Colorado	\$44,040	\$67,717	\$13,452	\$125,209
Connecticut	\$58,083	\$47,665	\$14,742	\$120,490
Delaware	\$1,860	\$0	\$0	\$1,860
District of Columbia	\$8,423	\$8,760	\$0	\$17,183
Florida	\$281,810	\$100,270	\$43,436	\$425,516
Georgia	\$30,794	\$13,128	\$11,344	\$55,266
Hawaii	\$2,328	\$4,555	\$185	\$7,068
Idaho	\$15,859	\$15,734	\$32,540	\$64,133
Illinois	\$78,368	\$75,671	\$2,658	\$156,697
Indiana	\$59,112	\$20,475	\$13,880	\$93,467
Iowa	\$45,851	\$25,852	\$51,943	\$123,646
Kansas	\$10,767	\$3,427	\$5,869	\$20,063
Kentucky	\$29,318	\$8,358	\$2,307	\$39,983
Louisiana	\$1,065	\$3	\$0	\$1,068
Maine	\$7,630	\$9,356	\$4,579	\$21,565
Maryland	\$161,184	\$66,413	\$280	\$227,877
Massachusetts	\$114,872	\$74,881	\$42,373	\$232,126
Michigan	\$71,543	\$63,338	\$11,008	\$145,889
Minnesota	\$78,367	\$94,601	\$52,695	\$225,663
Mississippi	\$3,725	\$1,567	\$5,052	\$10,344
Missouri	\$17,576	\$16,020	\$254	\$33,850
Montana	\$6,270	\$9,112	\$15	\$15,397
Nebraska	\$6,413	\$7,197	\$7,741	\$21,351
Nevada	\$20,013	\$15,461	\$0	\$35,474
New Hampshire	\$9,447	\$10,888	\$339	\$20,674
New Jersey	\$48,397	\$12,867	\$3,067	\$64,331
New Mexico	\$14,890	\$10,501	\$2,250	\$27,641
New York	\$116,235	\$338,506	\$31,836	\$486,577
North Carolina	\$84,693	\$55,883	\$12,510	\$153,086
North Dakota	\$8,263	\$9,618	\$1,998	\$19,879
Ohio	\$71,711	\$56,782	\$36,361	\$164,854
Oklahoma	\$26,155	\$12,118	\$1,866	\$40,139
Oregon	\$40,587	\$49,355	\$29,584	\$119,526
Pennsylvania	\$140,410	\$89,219	\$60,161	\$289,790

State	Residential	Commercial	Industrial	Total
Rhode Island	\$20,227	\$18,740	\$11,486	\$50,453
South Carolina	\$41,125	\$19,832	\$12,562	\$73,519
South Dakota	\$4,206	\$1,701	\$1,082	\$6,989
Tennessee	\$22,789	\$15,544	\$19,097	\$57,430
Texas	\$121,730	\$78,628	\$7,381	\$207,739
Utah	\$24,578	\$14,708	\$8,567	\$47,853
Vermont	\$14,474	\$19,346	\$0	\$33,820
Virginia	\$21,184	\$6,614	\$716	\$28,514
Washington	\$99,204	\$85,276	\$21,447	\$205,927
West Virginia	\$2,970	\$2,749	\$205	\$5,924
Wisconsin	\$40,351	\$30,600	\$46,831	\$117,782
Wyoming	\$1,784	\$1,762	\$1,288	\$4,834
Average Spending (%)	46%	40%	14%	
Average Rate Class Revenues (%)	45%	37%	18%	

Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

[3] "Average Spending (%)" shows the arithmetic mean of state percentages for EE revenues/costs by customer class.

[4] "Average Rate Class Revenues (%)" takes the sum of customer class revenues/costs from all states and divides by the total EE revenue/costs from all states.

Protecting Lower-Income Consumers

At least in the initial periods of CO₂-compliance programs, electricity prices are expected to increase slightly – with longer-term impacts reversing over time. (EPA's benefit/cost analysis estimates that "Average monthly electricity bills are anticipated to increase by roughly 3 percent in 2020, but decline by roughly 9 percent by 2030 because increased energy efficiency will lead to reduced usage."³²) Even modest increases in electricity costs can have a disproportionate impact in the budgets of lower-income customers.

States have many tools to address cost impacts on lower-income customers, and have been using various approaches for many years. In Appendix 4, state summaries contain detailed descriptions of various programs to assist low-income customers, including the Low Income Home Energy Assistance Program (LIHEAP), the use of special discounted electricity rates for low-income customers, arrearage forgiveness and arrearage management plans, utility-sponsored charitable assistance programs, and dedicated funds for the targeted implementation of comprehensive electric and gas energy-efficiency programs in low-income residences.

Two important findings emerge from our review of the various commitments states have made to protect low-income customers: First, there is widespread application of low-income assistance across the country. There is broad reliance on the federal LIHEAP program across states, and virtually all states have various programs to help low-income customers with electricity costs. These will tend to dampen the impacts of CO₂ compliance costs on these consumers' electricity bills; in fact, in some states the existence of capped rates for low-income customers could limit or even eliminate the effect of any potential compliance cost increases on low-income customers.

Second, among the states, there are various 'best-practice' low-income assistance approaches. States can draw lessons from each other's practices to design and administer programs to protect lower-income consumers. Examples drawn from the states included in Appendix 4 include the following:

- *LIHEAP Funding* for heating and utility bill assistance, and low-income home weatherization, administered by states with federal funding, at times supplemented with separate state funding;
- *Low-Income Rates*, providing fixed discounts or caps on the rates that may be charged eligible low-income customers;
- *Dedicated Funding for Low-Income Energy Efficiency Programs*, requiring utility spends or minimum contributions to the installation of energy-efficiency programs and measures in the building units or residences of low-income customers;
- *Arrearage Management*, providing for discounting, contributions towards, or elimination of utility bill amounts in arrears for customers meeting minimum program requirements (such as making installment payments or staying current on bills going forward);
- *Utility-Driven Charitable Contribution Programs*, encouraging contributions through utility bill stuffers to funds that help low-income customers pay energy bills;
- *Disconnect/shut-off Protection*, whereby PUCs require extensive processes be followed by utilities before low-income customers may be disconnected for lack of bill payment; and

³² EPA RIA, page ES-24.

- *Miscellaneous One-Time or Emergency Assistance Programs* instituted by states to help low-income customers maintain energy services, pay bills, or otherwise acquire service.

State Tools to Manage Potential Program Cost Impacts

States have various traditional ratemaking tools that will help them allocate costs related to CO₂ compliance in fair and equitable ways among customer classes. Additionally, states have considerable experience in designing energy efficiency programs to align program support with program benefits. Finally, states have deep experience in designing and using various mechanisms to protect lower-income customers.

States are well equipped through long-standing application of ratemaking principles and practices governing cost allocation fairness and equity, the pursuit of widely-distributed benefits from energy efficiency program implementation, and a comprehensive and diverse set of programs and policies recognizing and addressing the disproportionate impact of energy costs on low-income customers.

6. CONCLUSION

On June 2, 2014, the EPA released proposed rules to reduce emissions of CO₂ from existing fossil power plants. EPA's Clean Power Plan would require significant reductions in CO₂ emissions from the power sector, while also providing each state the flexibility to determine its preferred way to comply with the new requirements.

The costs associated with EPA's Clean Power Plan will likely be the focus of intense discussion in the coming months. EPA's analysis indicates that although there will be costs to comply with the Clean Power Plan, such costs will be much lower than the benefits to public health and to the overall economy from lower CO₂ and other air emissions. Yet others are suggesting that costs will outweigh benefits.

Clearly, State Plans approved by the EPA will create the framework for the industry's compliance with EPA's Clean Power Plan. How compliance plans are designed by the states will strongly affect the magnitude and distribution of costs and benefits among consumers, power plant owners, and the general economy. Regulatory practices for passing on costs to electricity consumers are also important, as they can influence the degree and allocation of program costs and benefits.

Based on our analysis and experience, we believe that the impacts on electricity rates from well-designed CO₂-pollution control programs will be modest in the near term, and can be accompanied by long-term benefits in the form of lower electricity bills and positive economic value to states' and regional economies.

We base our findings on the analysis conducted for this Report, in which we review the experience and expertise states have to prepare State Plans with a focus on lowering overall compliance costs and maximizing program economic benefits to consumers and to the states' economies.

There are sound reasons to be confident that customers will benefit from states' plans to lower the carbon intensity of their electric systems. First, and foremost, states have a long track record of using various regulatory and other policy tools to encourage utility programs and investments that minimize the cost of electric service, consistent with the myriad of public policies (tax, environmental, reliability, labor, and other areas of policy that affect the provision of electricity).

Second, under the proposed Clean Power Plan, states will have the flexibility, experience and tools to prepare and implement State Plans that fit their circumstances, minimize costs of compliance, and provide benefits to customers. Although states differ in many ways – including in terms of the electric systems, their regulatory culture, and their electric industry structure – all states have programs, policies and practices that will allow them to develop plans that align well with their different circumstances

Third, market-based mechanisms offer unique opportunities to minimize costs while also reducing CO₂ emissions from existing power plants. They can be done within a state or across a number of states. Pricing carbon in this way sends efficient, market-based signals for investment and operation of the electric system. Experience shows that such programs can be designed to achieve a number of state policy objectives, can lower electricity bills, and can deliver positive net economic benefits.

Fourth, states are well equipped through long-standing utility ratemaking principles and practices and implementation of energy programs to help protect low-income customers when electricity costs increase. Such tools include low-income rates and arrearage management plans, dedicated funding for low-income energy-efficiency and weatherization programs, utility-driven charitable contribution

programs, one-time emergency assistance programs, LIHEAP funding for heating and utility bill assistance, and disconnect/shut-off protection policies.

In the end, the states are in control. State energy, environmental and utility regulatory agencies will tailor compliance approaches to their individual circumstances, and in doing so will play a significant role in driving down and managing the costs of Clean Power Plan compliance through their plans. Those State Plans will define the set of actions that will work together to reduce emissions from fossil power plants. The components of the State Plans will affect compliance costs and collateral benefits. And states' regulatory and ratemaking policies can influence how compliance actions undertaken by owners of power plants and other actors translate into increases or decreases in electricity rates and bills to different types of consumers.

We are confident that, based on a long history of state policymaking focused on similar issues, and on the experience states have with a number of tools directly relevant to the task, states will successfully and fairly navigate implementation of EPA's Clean Power Plan.

APPENDICES

- 1. EPA's Proposed Clean Power Plan**
- 2. State Spending of RGGI Auction Proceeds**
- 3. State-Specific Data on Electricity Revenues and Energy Efficiency Spending**
- 4. State Case Study Summaries**

APPENDIX 1

EPA's Proposed Clean Power Plan

On June 2, 2014, EPA announced its proposed “Carbon Pollution Emission Guidelines for Existing Stationary Source: Electric Utility Generating Units” (or the Clean Power Plan) to reduce emissions from the power sector by 30 percent by 2030, when compared to emissions in 2005. The proposed regulation would reduce emissions from existing fossil-fuel power plants in the U.S.

On June 18, 2014, the U.S. EPA published its proposed rule to regulate carbon emissions from existing power plants in the Federal Register. This publication officially commenced a 120-day comment period on EPA’s proposed rule.

The proposal will be implemented through a state-federal partnership that is designed to provide each state with flexibility in meeting its specific goal. Under the partnership, EPA identifies a target level of emission reductions from power plants located in each state, and the states identify (in State Plans) their preferred path for controlling emissions in their state.

EPA’s proposal establishes each state’s emission reduction goals in two parts – an interim “reasonable progress” goal that states must meet on average over the ten-year period from 2020-2029, and a final goal that states must meet at the end of that period, by 2030. The ultimate 2030 standard is estimated to achieve CO₂ emissions reductions from the power sector of 30 percent from CO₂ emissions levels in 2005.

Each state’s goal is a rate for the future carbon intensity of that state, expressed in pounds of CO₂ per MWh. The EPA established a emission-reduction targets for each state using a methodology designed to reflect each state’s potential to reduce emissions, based on four “building blocks”:

- Reducing the carbon intensity of generation at individual affected EGUs through heat rate improvements;
- Reducing emissions from the most carbon-intensive affected EGUs in the amount that results from substituting generation at those EGUs with generation from less carbon-intensive affected EGUs (including NGCC units under construction);
- Reducing emissions from affected EGUs in the amount that results from substituting generation at those EGUs with expanded low- or zero-carbon generation; and
- Reducing emissions from affected EGUs in the amount that results from the use of demand-side energy efficiency that reduces the amount of generation required.

The emission intensity rate recognizes that CO₂ emissions are a function of both how efficiently they operate and how much they operate, and is calculated using a formula focused on four potential CO₂ emission reduction strategies, and state data related to each. EPA has requested comment on its approach, and in particular whether all four strategies should be considered, or just the first two.

The proposed rule would require states to submit State Plans to propose the combination of actions that the state and/or owners of affected power plants will take to reduce emissions. EPA has provided states a wide degree of flexibility in determining appropriate compliance pathways, taking into

consideration state-specific circumstances, opportunities, and objectives. Moreover, EPA will allow states to work individually or in groups, in order to capture potential opportunities for improved compliance efficiency and innovation, lower costs, and increased reliability.

EPA identified in its proposal – by way of example, not limitation – a number of measures states can choose to rely on in their State Plans, including:

- demand-side energy efficiency programs
- renewable energy standards
- efficiency improvements at plants
- co-firing or switching to natural gas
- transmission efficiency improvements
- energy storage technology
- retirements
- expanding renewables or nuclear
- market-based trading programs
- energy conservation programs

In addition to opening the door for states to work together on compliance, EPA has proposed to give states the option to convert the rate-based goal to a mass-based goal if they choose to in their State Plans. Adopting a mass-based goal would thus allow a state or group of states to cap their resulting quantity of CO₂ emissions and establish a joint trading program. This could allow states with existing cap-and-trade programs (such as California, or the current RGGI states) to adopt compliance strategies that rely upon a structure similar to the existing program. Moreover, it would allow other states to establish cap and trade programs, or join an existing one.

EPA's proposed schedule for filing and compliance would require submission of State Plans by June 30, 2016, with an opportunity for one-year extension if needed, or a two-year extension if needed to establish a multi-state plan. Once established, states would need to report progress at least every two years leading up to 2030.

The EPA is proposing to evaluate and approve state plans based on four general criteria:

1. The inclusion of enforceable measures that reduce EGU CO₂ emissions;
2. A projected achievement of emission performance equivalent to the goals established by the EPA, on a timeline equivalent to that in the emission guidelines;
3. Assurance that emission reductions will be quantifiable and verifiable; and
4. The inclusion of a process for biennial reporting on plan implementation, progress toward achieving CO₂ goals, and implementation of corrective actions, if necessary.

In addition, each state plan must follow the EPA framework regulations in the Code of Federal Regulations (CFR) at 40 CFR 60.23. The specific proposed components of states plans are:

- Identification of affected entities;
- Description of plan approach and geographic scope;
- Identification of state emission performance level;
- Demonstration that plan is projected to achieve emission performance level;
- Identification of emission standards;
- Demonstration that each emission standard is quantifiable, non-duplicative, permanent, verifiable, and enforceable;

- Identification of monitoring, reporting, and recordkeeping requirements;
- Description of state reporting;
- Identification of milestones;
- Identification of backstop measures;
- Certification of hearing on state plan; and
- Supporting material.

In its proposal, EPA describes how energy efficiency and renewable energy programs and investments could play a role in program compliance, and seeks comment on different approaches for providing such crediting or administrative adjustment of EGU CO₂ emissions rates for use of energy efficiency a compliance mechanism (as well as renewable energy or zero-carbon supply from nuclear power plants). EPA's proposal leaves the door open on energy efficiency as a compliance mechanism in the context of individual, portfolio, state-wide, or multi-state programs.

Key to the inclusion of energy efficiency as a compliance mechanism are mechanisms for monitoring and verification of energy savings, translation of savings into adjusted MWh or CO₂ emissions, and associated state reporting mechanisms. EPA has requested input on a number of factors related to the use of energy efficiency and renewable energy for compliance, and commits to the development of guidance documents related to these potential compliance mechanisms.

Finally, in its proposal and related documents, EPA reports on estimates of costs and benefits associated with program implementation under several options and scenarios related to compliance options, different regional and state approaches, and modeling sensitivities. As shown on "Table ES-10" from the EPA's Regulatory Impact Analysis (excerpted on the following page), EPA's estimates for 2030 implementation show significant net economic benefits. Additionally, EPA's analysis indicates that "Under Option 1 [which assumes states use a least-cost combination of the four building block strategies" in their State Plans], average nationwide retail electricity prices are projected to increase roughly 6 to 7 percent in 2020, and roughly 3 percent in 2030 (contiguous U.S.), compared to base case price estimates modeled for these same years. Average monthly electricity bills are anticipated to increase by roughly 3 percent in 2020, but decline by roughly 9 percent by 2030 because increased energy efficiency will lead to reduced usage." EPA RIA, page ES-24.

Table ES-10. Summary of Estimated Monetized Benefits, Compliance Costs, and Net Benefits for the Proposed Guidelines –2030 (billions of 2011\$) ^a

	Option 1– state	
	3% Discount Rate	7% Discount Rate
Climate Benefits ^b		
5% discount rate		\$9.5
3% discount rate		\$31
2.5% discount rate		\$44
95th percentile at 3% discount rate		\$94
Air pollution health co-benefits ^c	\$27 to \$62	\$24 to \$56
Total Compliance Costs ^d		\$8.8
Net Benefits ^e	\$49 to \$84	\$46 to \$79
Non-Monetized Benefits	Direct exposure to SO ₂ and NO ₂ 2.1 tons of Hg and 590 tons of HCl Ecosystem effects Visibility impairment	
	Option 1– regional	
	3% Discount Rate	7% Discount Rate
Climate Benefits ^b		
5% discount rate		\$9.3
3% discount rate		\$30
2.5% discount rate		\$44
95th percentile at 3% discount rate		\$92
Air pollution health co-benefits ^c	\$25 to \$59	\$23 to \$54
Total Compliance Costs ^d		\$7.3
Net Benefits ^e	\$48 to \$82	\$46 to \$77
Non-Monetized Benefits	Direct exposure to SO ₂ and NO ₂ 1.7 tons of Hg and 580 tons of HCl Ecosystem effects Visibility impairment	

^a All estimates are for 2030, and are rounded to two significant figures, so figures may not sum.

^b The climate benefit estimates in this summary table reflect global impacts from CO₂ emission changes and do not account for changes in non-CO₂ GHG emissions. Also, different discount rates are applied to SCC than to the other estimates because CO₂ emissions are long-lived and subsequent damages occur over many years. The SCC estimates are year-specific and increase over time.

^c The air pollution health co-benefits reflect reduced exposure to PM_{2.5} and ozone associated with emission reductions of directly emitted PM_{2.5}, SO₂ and NO_x. The range reflects the use of concentration-response functions from different epidemiology studies. The reduction in premature fatalities each year accounts for over 90 percent of total monetized co-benefits from PM_{2.5} and ozone. These models assume that all fine particles, regardless of their chemical composition, are equally potent in causing premature mortality because the scientific evidence is not yet sufficient to allow differentiation of effect estimates by particle type.

^d Total social costs are approximated by the illustrative compliance costs which, in part, are estimated using the Integrated Planning Model for the proposed option and a discount rate of approximately 5%. This estimate also includes monitoring, recordkeeping, and reporting costs and demand side energy efficiency program and participant costs.

^e The estimates of net benefits in this summary table are calculated using the global SCC at a 3 percent discount rate (model average). The RIA includes combined climate and health estimates based on these additional discount rates.

APPENDIX 2

State Spending of Regional Greenhouse Gas Initiative (RGGI) Auction Proceeds

Auctions 1-24 Proceeds Data								
State	2008	2009	2010	2011	2012	2013	2014	Total Proceeds
Vermont	\$1,304,590	\$2,347,481	\$2,049,464	\$1,265,682	\$1,317,244	\$3,366,456	\$1,423,902	\$13,074,820
Rhode Island	\$2,830,092	\$5,092,494	\$4,417,622	\$2,780,097	\$2,857,539	\$7,385,288	\$5,116,476	\$30,479,609
Delaware	\$2,555,209	\$8,943,843	\$7,359,526	\$5,040,617	\$5,791,702	\$16,193,082	\$8,964,611	\$54,848,590
Maine	\$5,627,664	\$9,618,944	\$8,297,597	\$5,195,051	\$5,507,367	\$14,064,063	\$5,255,018	\$53,565,703
New Hampshire	\$4,020,882	\$14,140,468	\$10,053,925	\$6,504,977	\$7,732,377	\$19,754,661	\$7,582,304	\$69,789,594
Connecticut	\$8,852,819	\$17,686,118	\$18,361,644	\$8,865,754	\$11,401,369	\$33,340,223	\$14,004,231	\$112,512,156
Massachusetts	\$28,176,794	\$50,918,303	\$44,134,380	\$27,161,704	\$28,530,599	\$73,955,401	\$31,729,052	\$284,606,234
Maryland	\$34,389,987	\$61,881,590	\$51,258,785	\$32,785,454	\$38,799,832	\$107,130,927	\$38,074,172	\$364,320,747
New York	\$41,986,904	\$138,691,813	\$101,593,966	\$62,606,377	\$65,707,560	\$172,779,777	\$72,488,802	\$655,855,199
All RGGI States	\$129,744,941	\$309,321,054	\$247,526,909	\$152,205,712	\$167,645,590	\$447,969,877	\$184,638,568	\$1,639,052,651

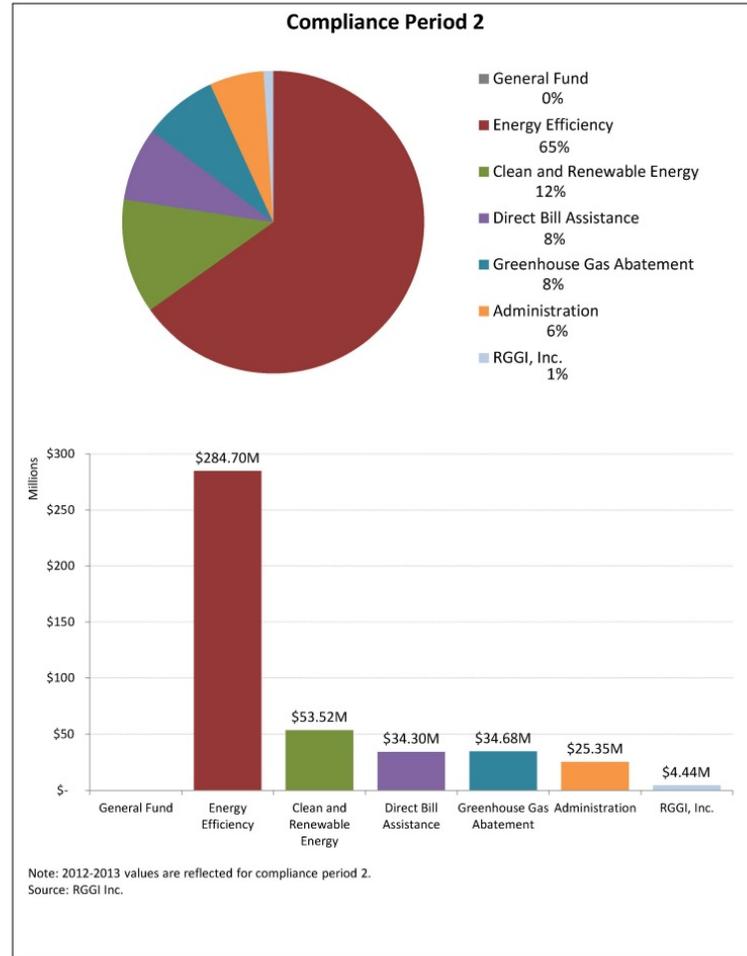
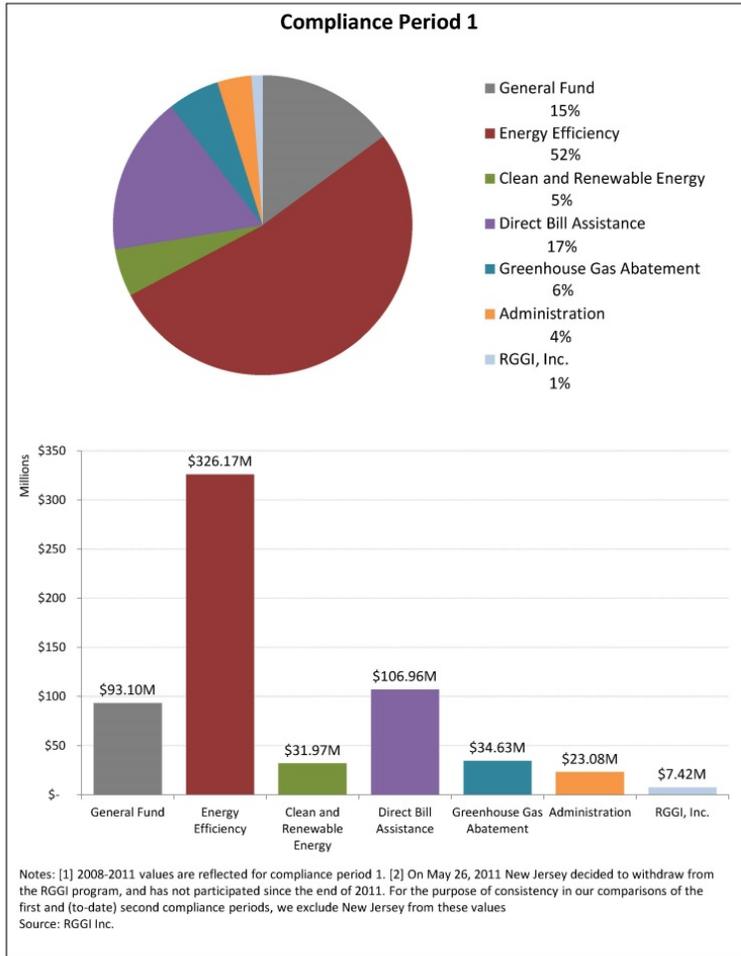
Notes: [1] Six states participated in the first auction (September 2008). [2] 2008 and 2014 values reflect proceeds from two auctions. Values for all other years reflect proceeds from four auctions.
Source: RGGI Inc.

RGGI Allowance Proceeds by State (Auctions 1 - 24) and Average Annual Auction Clearing Prices

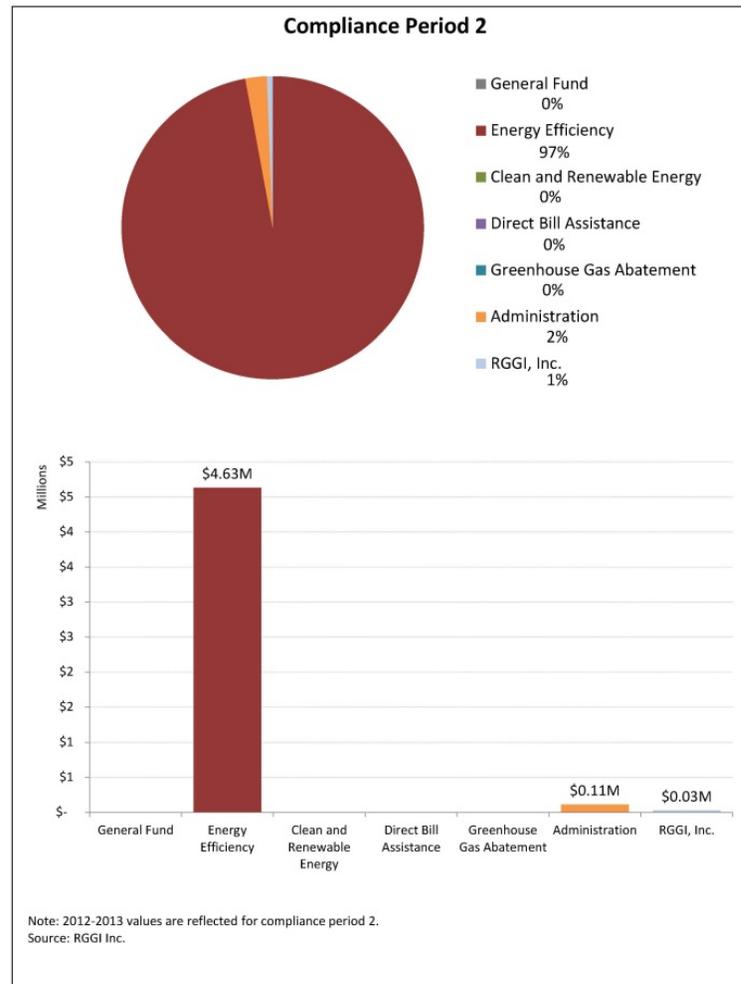
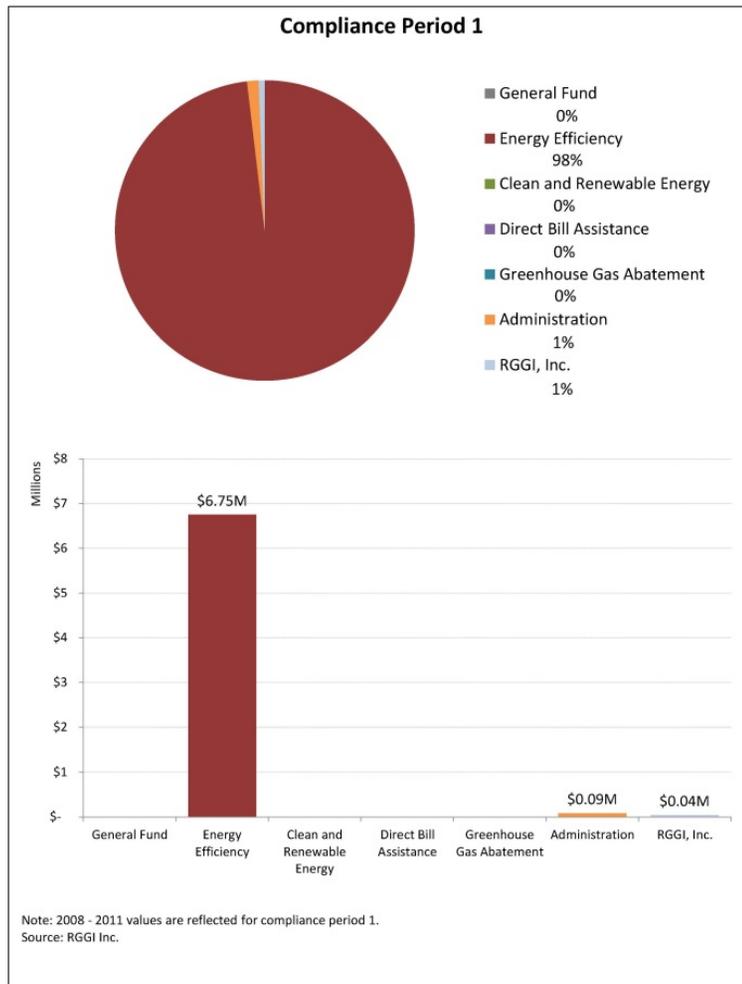


Notes: [1] Six states participated in the first auction (September 2008). [2] 2008 and 2014 values reflect proceeds from two auctions. Values for all other years reflect proceeds from four auctions.
Source: RGGI Inc.

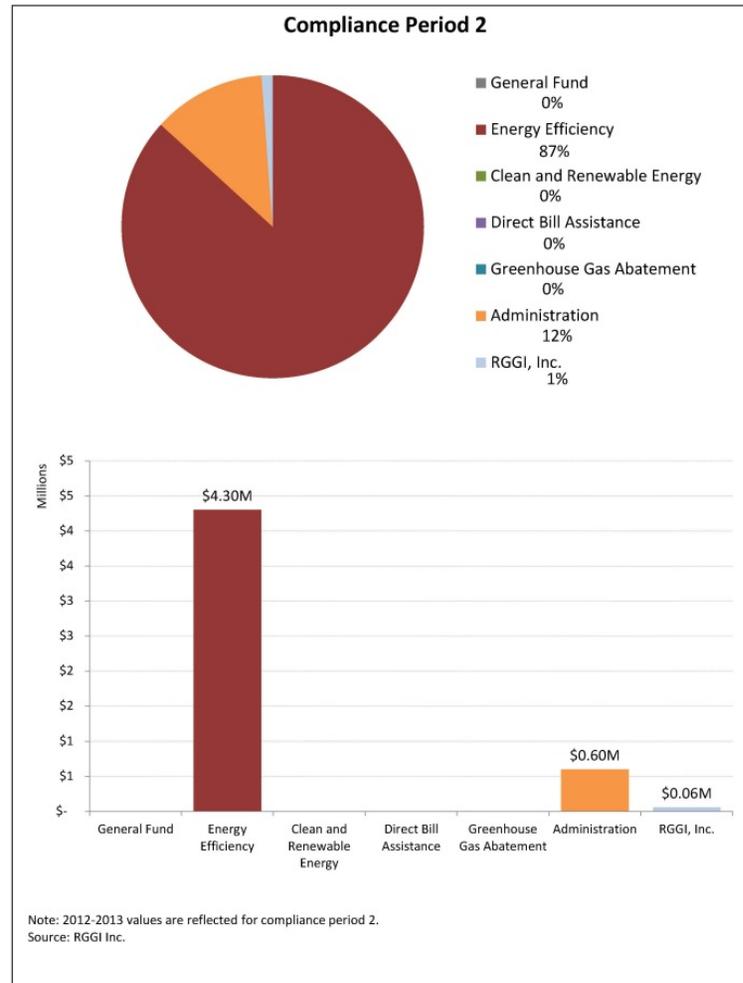
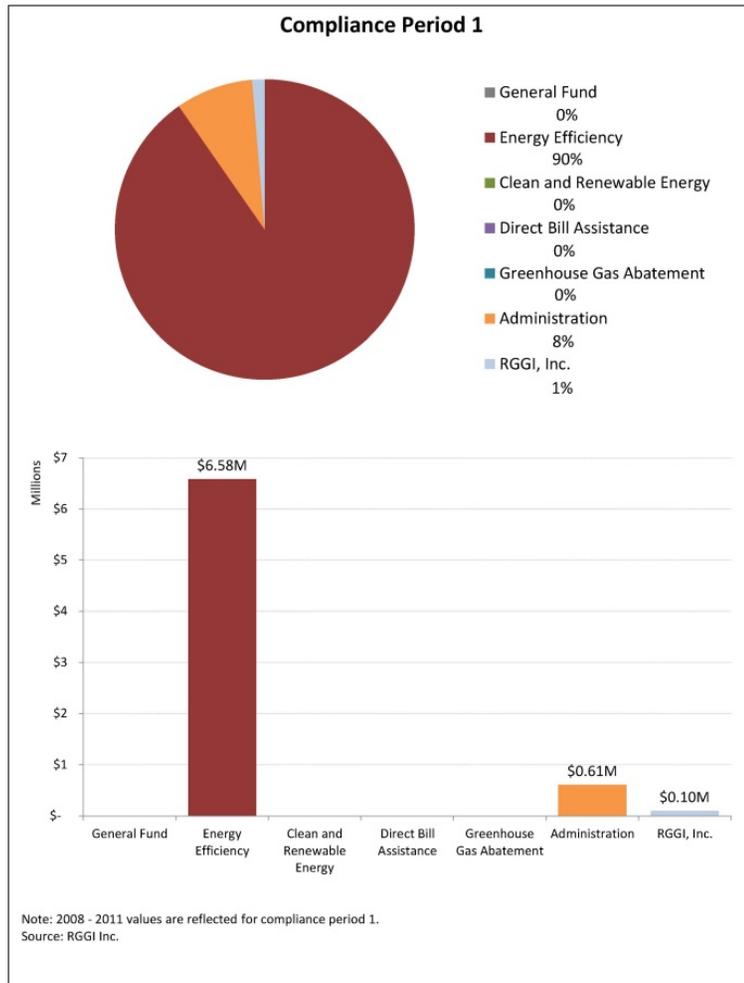
All RGGI States Proceed Spending (Excluding NJ)



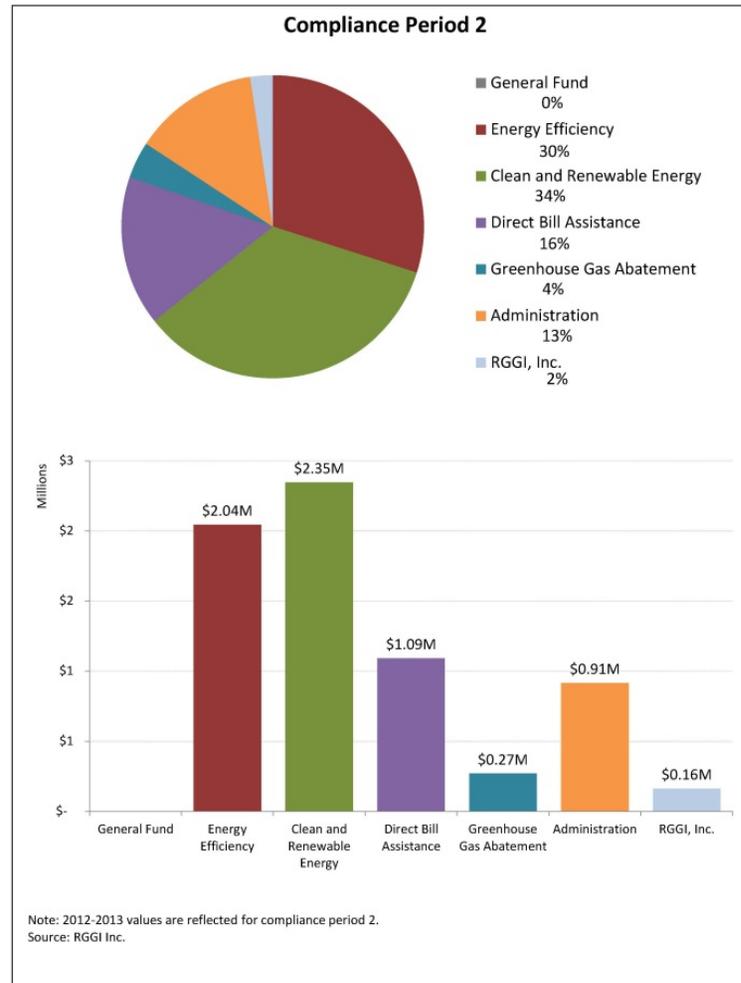
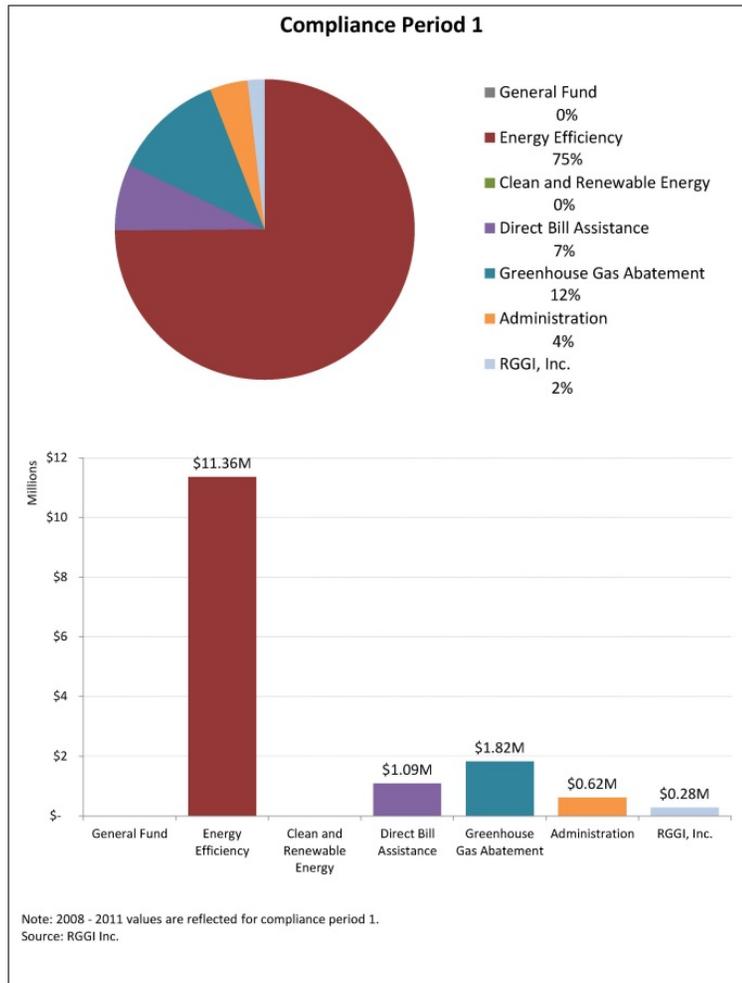
Vermont RGGI Proceed Spending



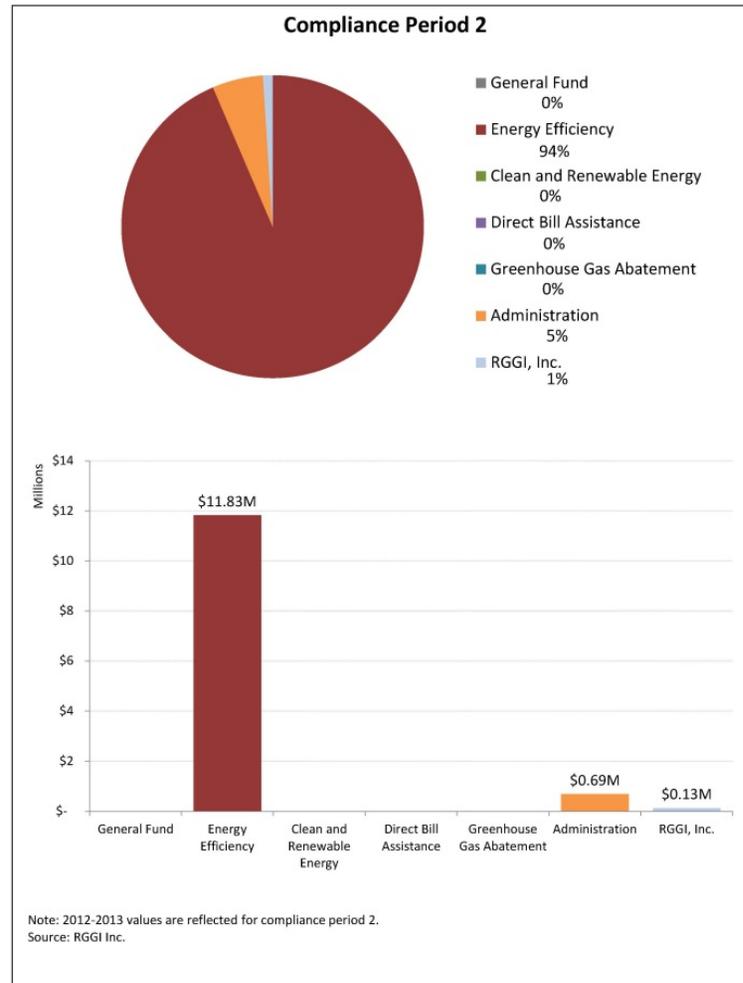
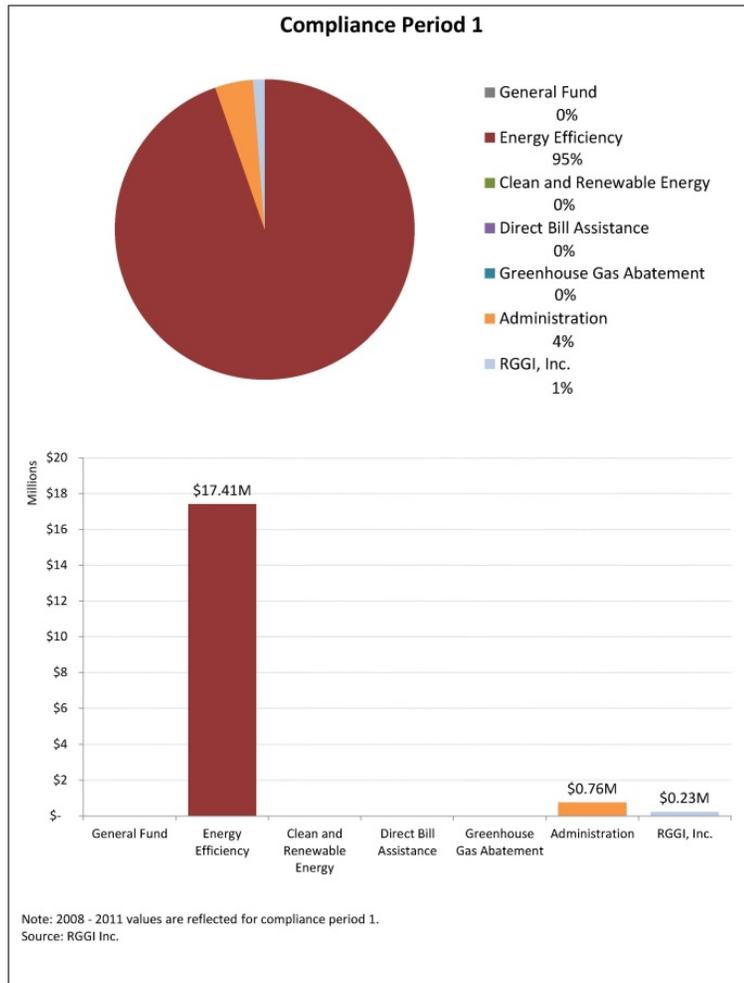
Rhode Island RGGI Proceed Spending



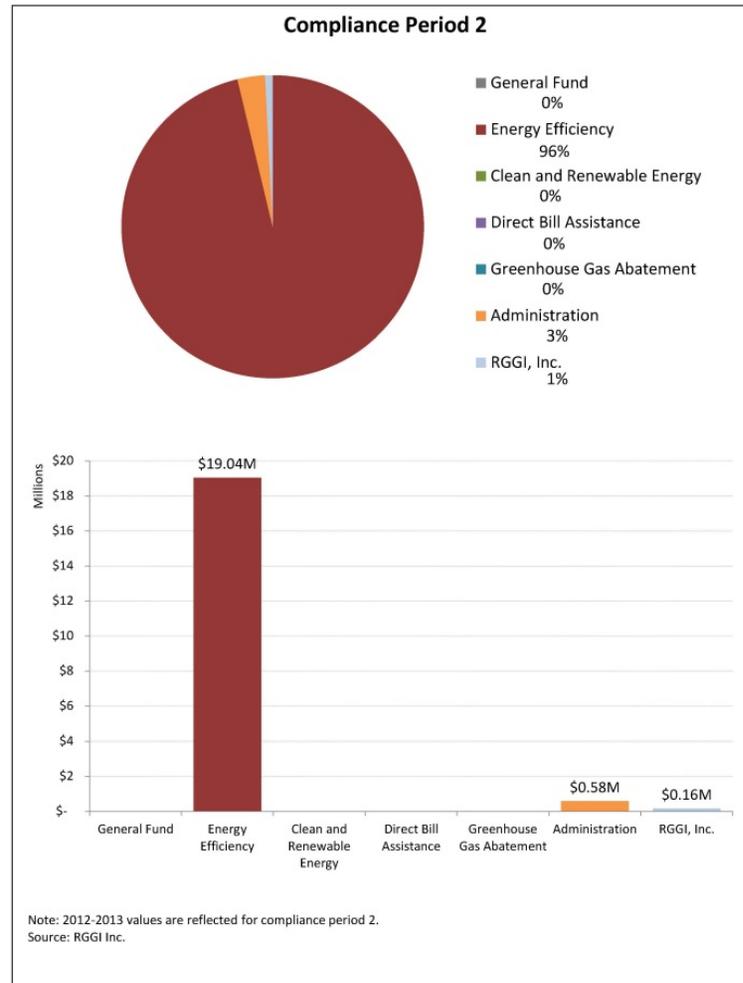
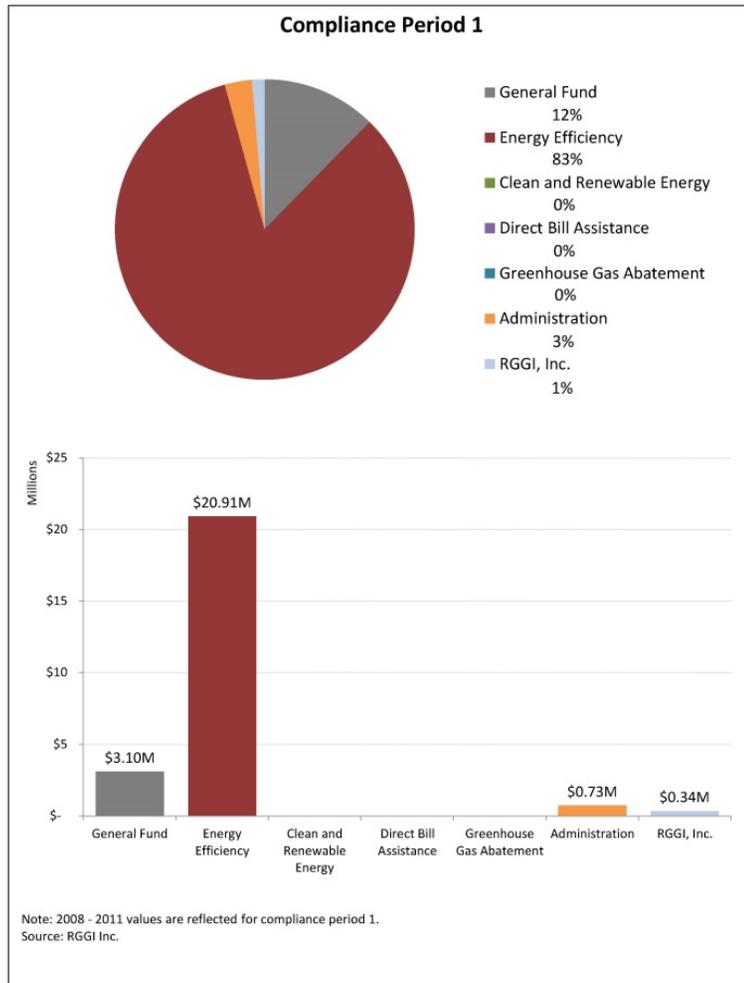
Delaware RGGI Proceed Spending



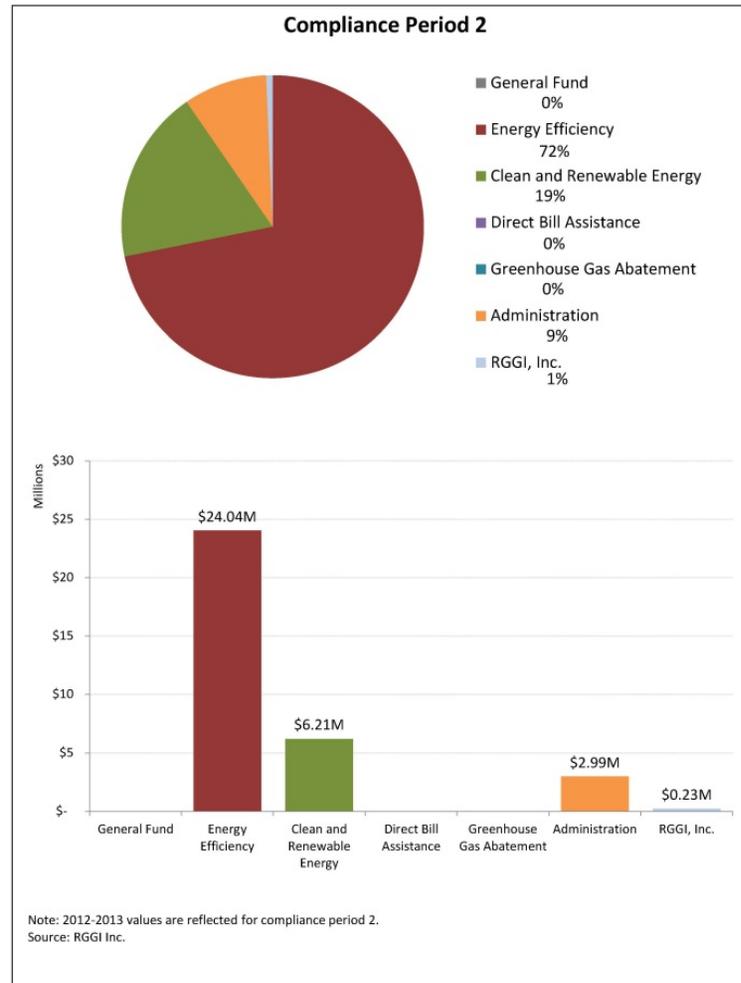
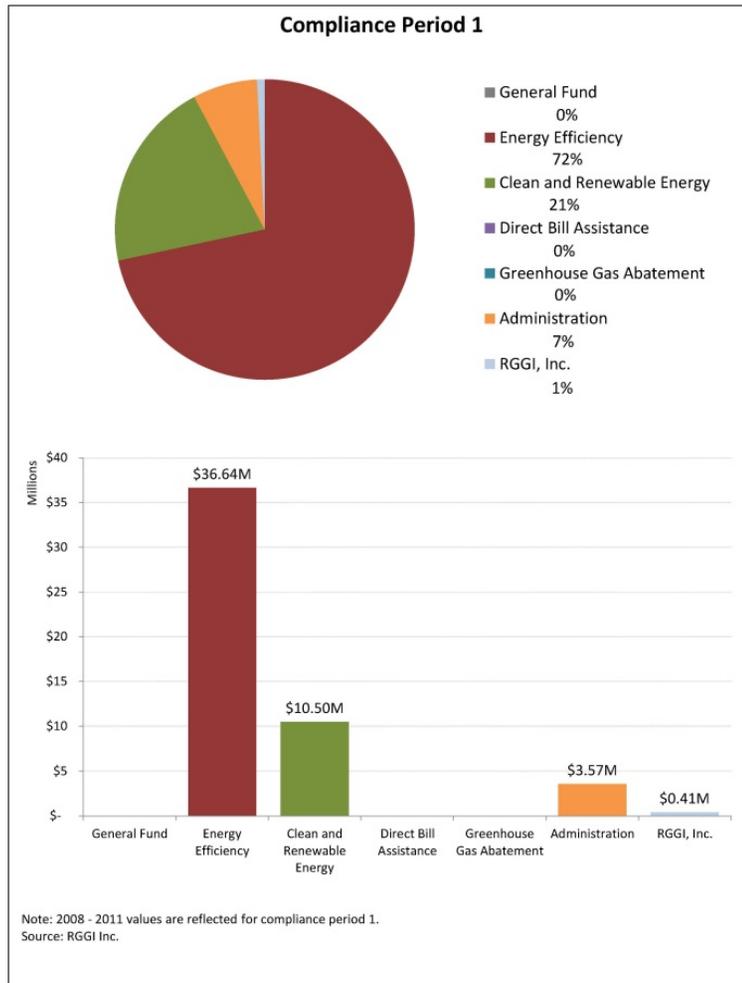
Maine RGGI Proceed Spending



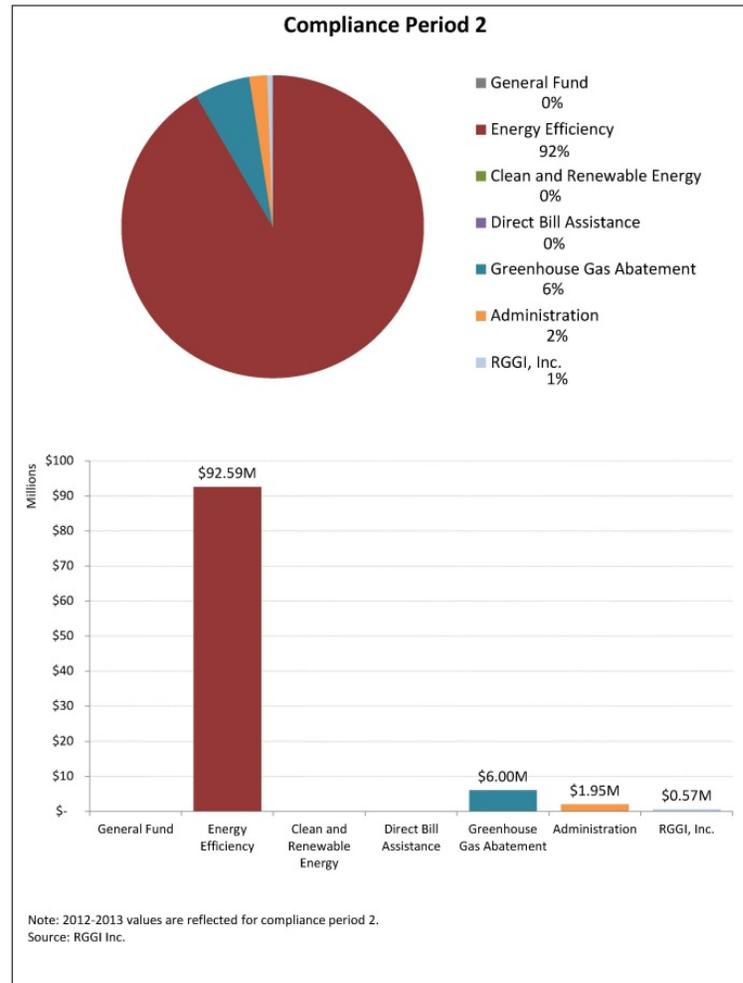
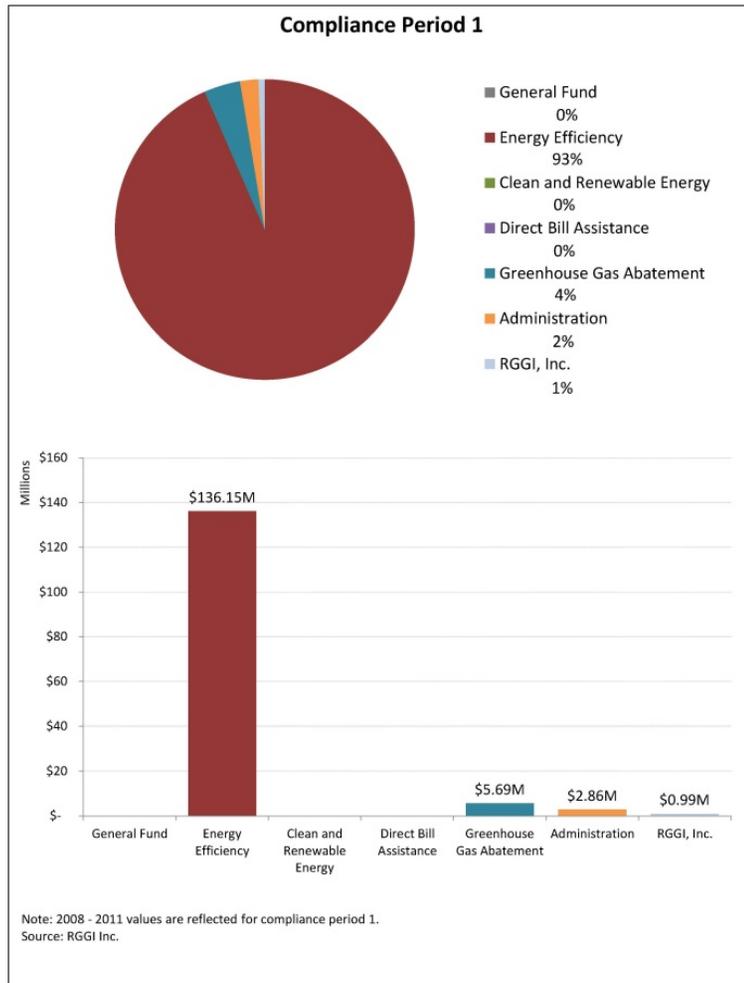
New Hampshire RGGI Proceed Spending



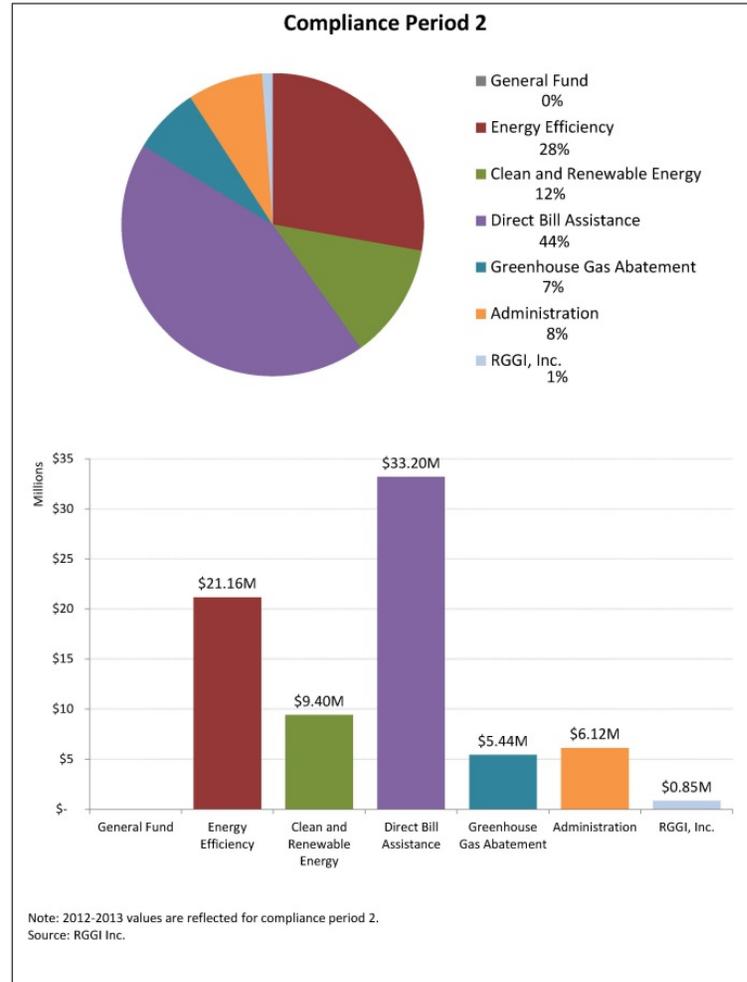
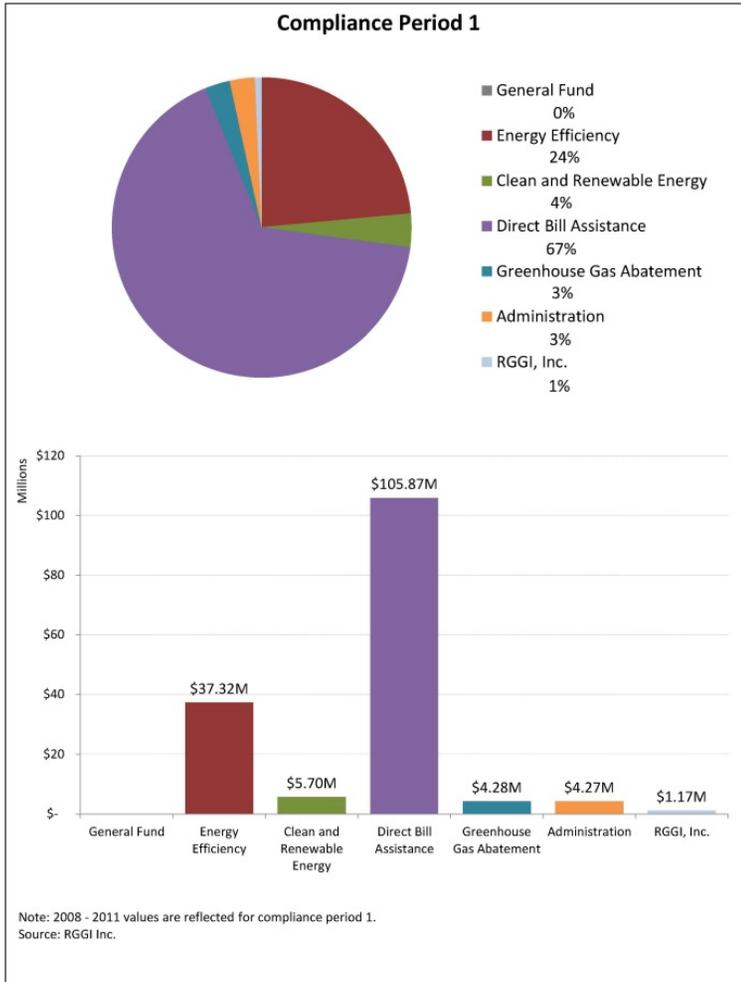
Connecticut RGGI Proceed Spending



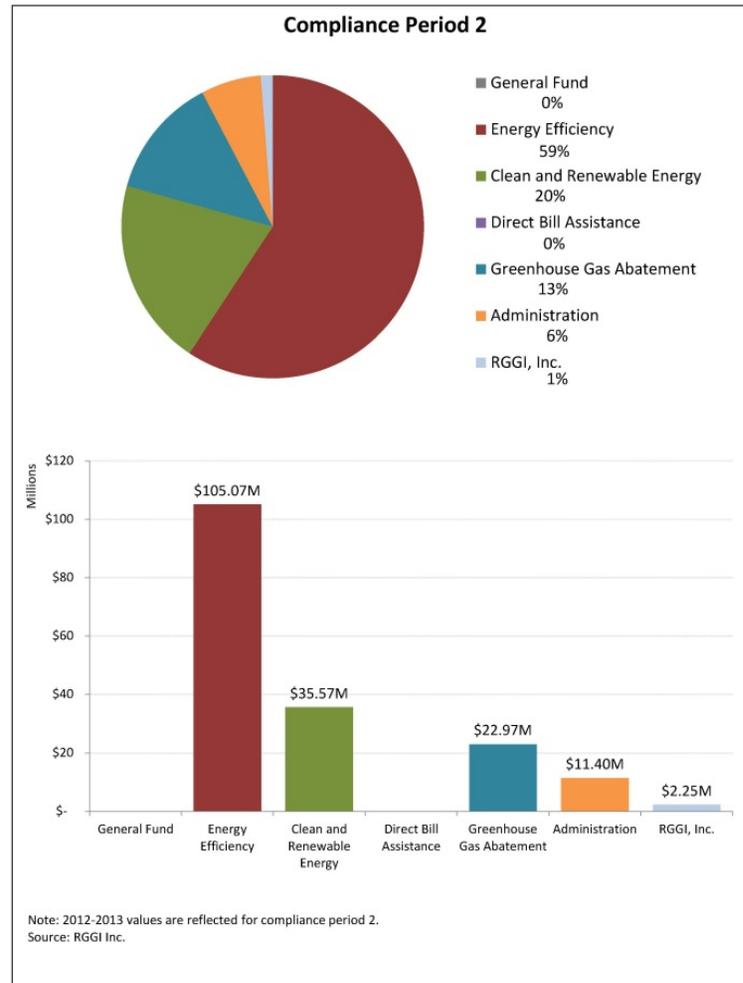
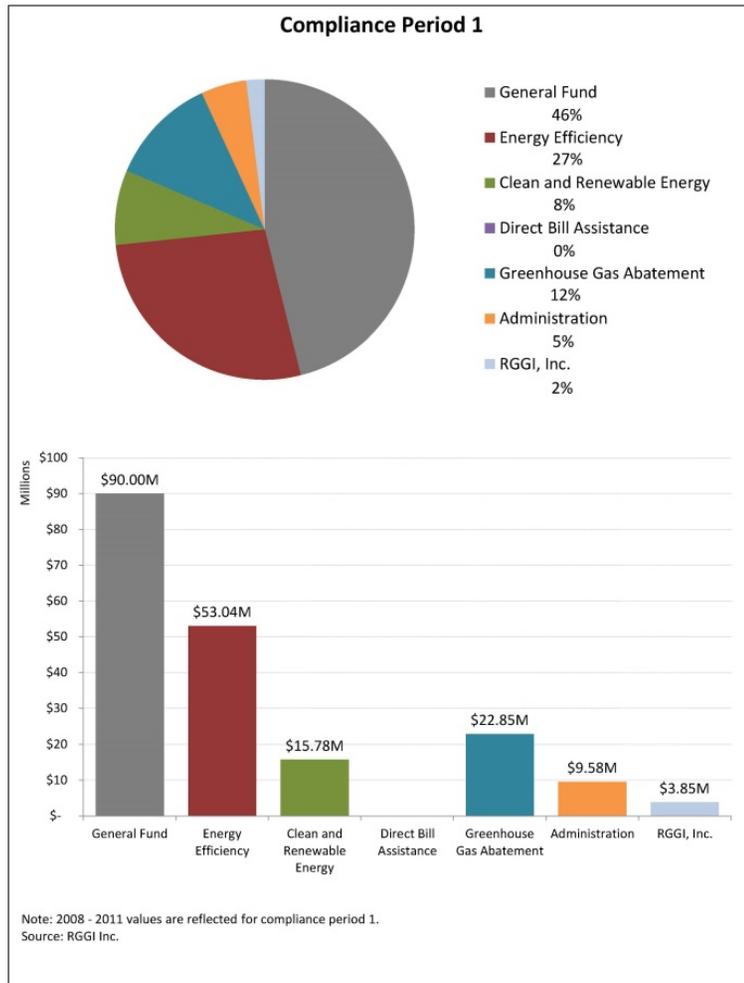
Massachusetts RGGI Proceed Spending



Maryland RGGI Proceed Spending



New York RGGI Proceed Spending



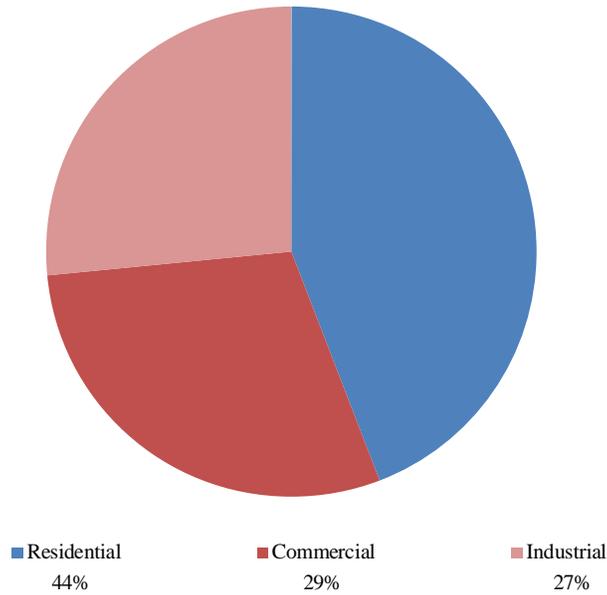
APPENDIX 3

State Electricity Revenues and Energy Efficiency Spending

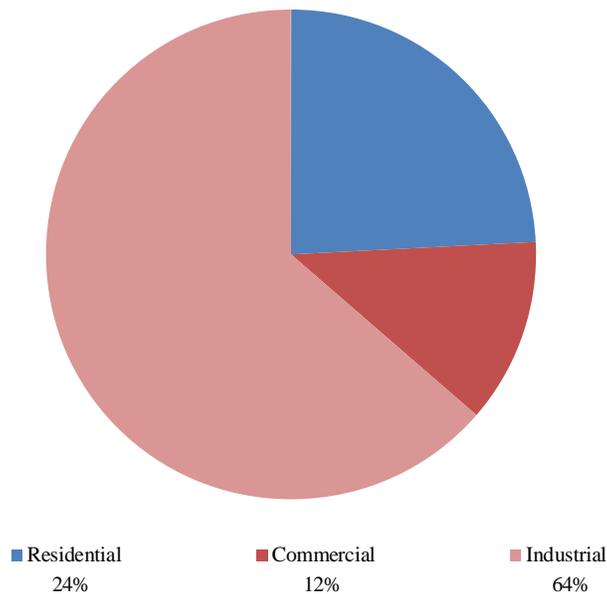
Alabama

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Alabama Electric Revenues by Customer Class



Alabama Energy Efficiency Spending by Customer Class



Notes & Sources:

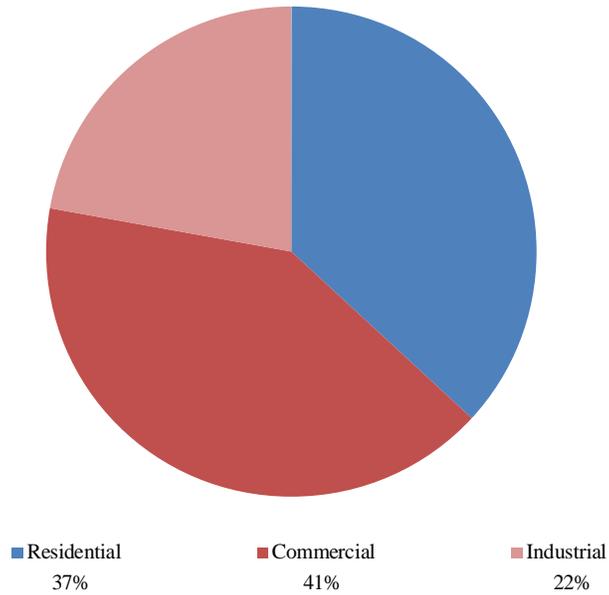
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

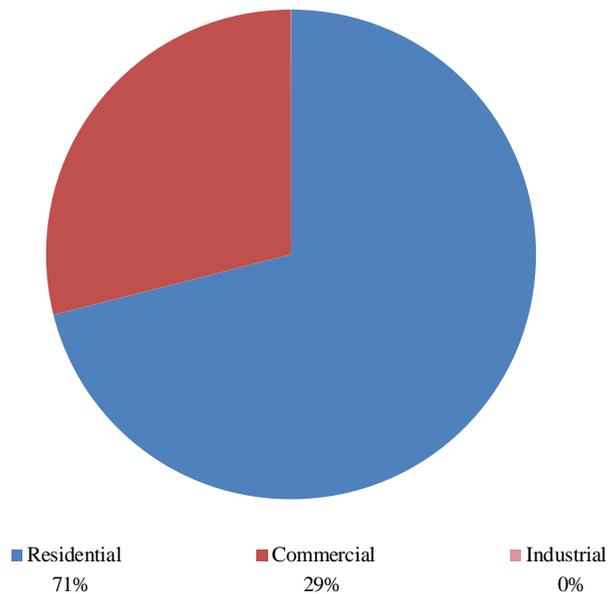
Alaska

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Alaska Electric Revenues by Customer Class



Alaska Energy Efficiency Spending by Customer Class



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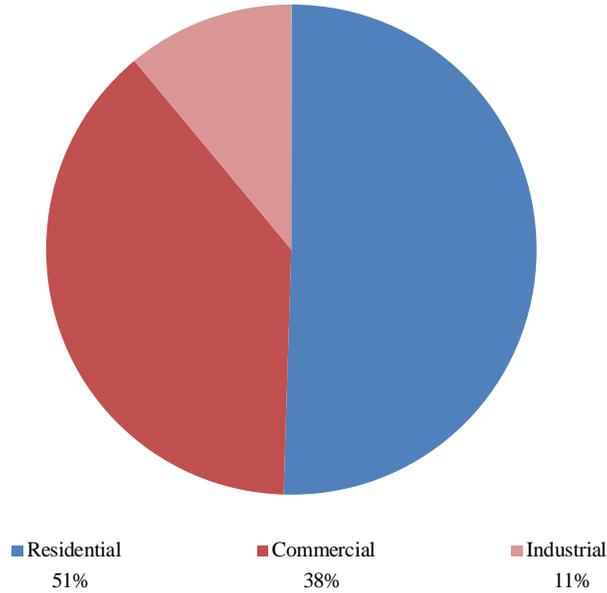
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

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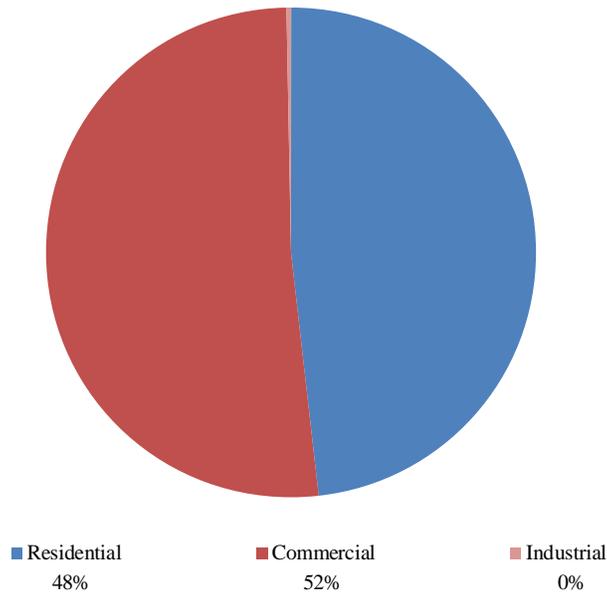
Arizona

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Arizona Electric Revenues by Customer Class



Arizona Energy Efficiency Spending by Customer Class



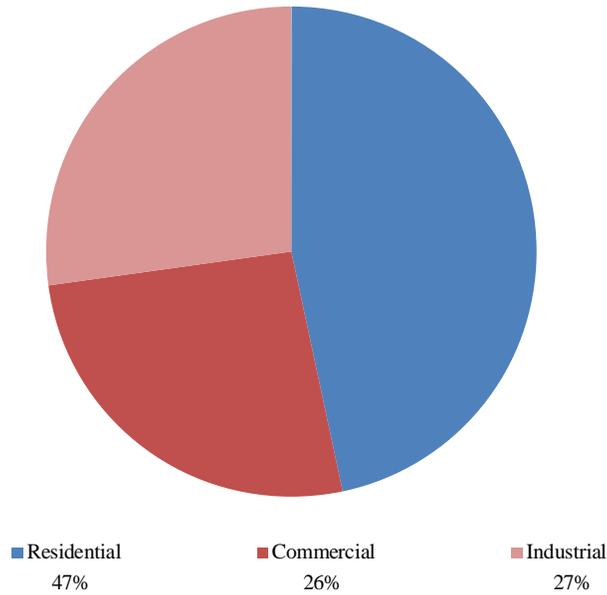
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[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

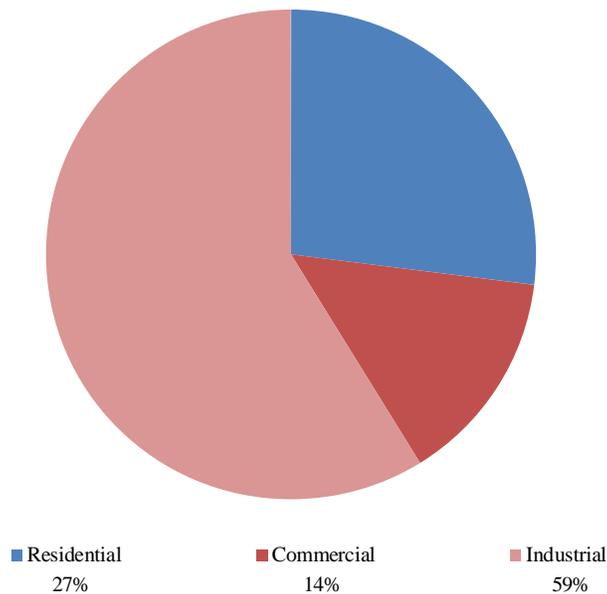
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Arkansas
Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Arkansas Electric Revenues by Customer Class



Arkansas Energy Efficiency Spending by Customer Class



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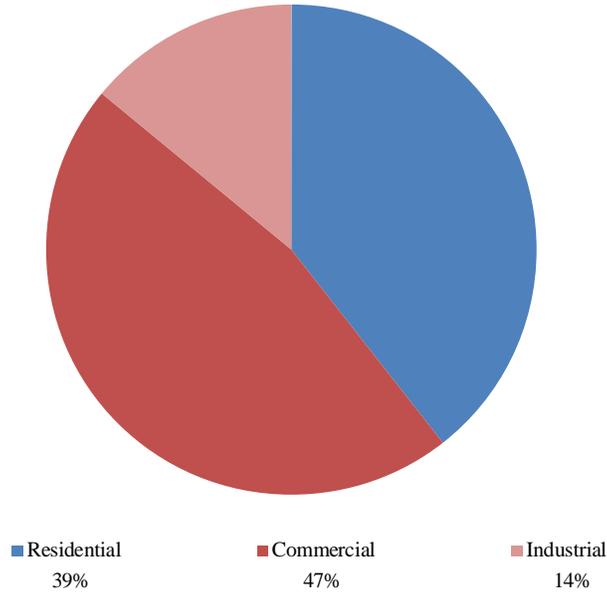
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

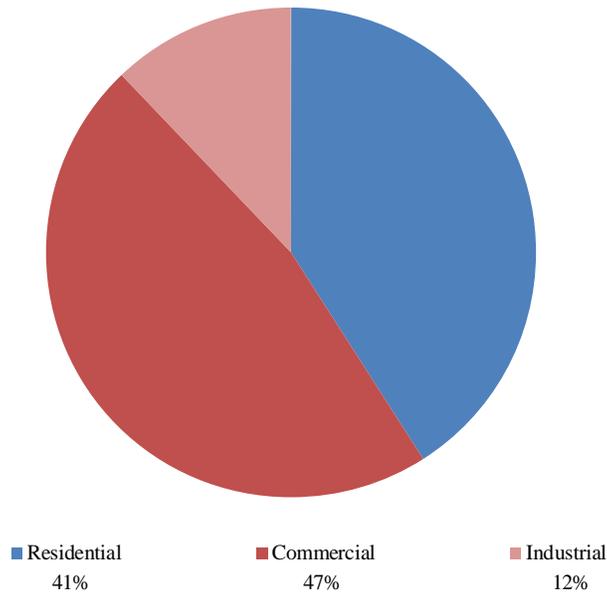
California

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

California Electric Revenues by Customer Class



California Energy Efficiency Spending by Customer Class



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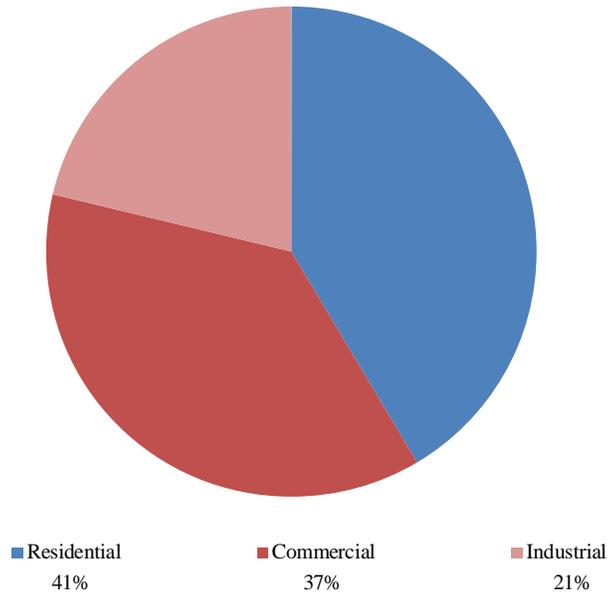
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

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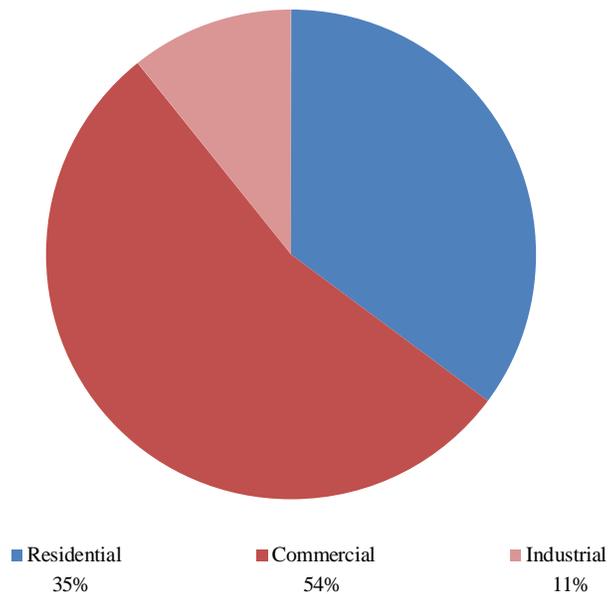
Colorado

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Colorado Electric Revenues by Customer Class



Colorado Energy Efficiency Spending by Customer Class



Notes & Sources:

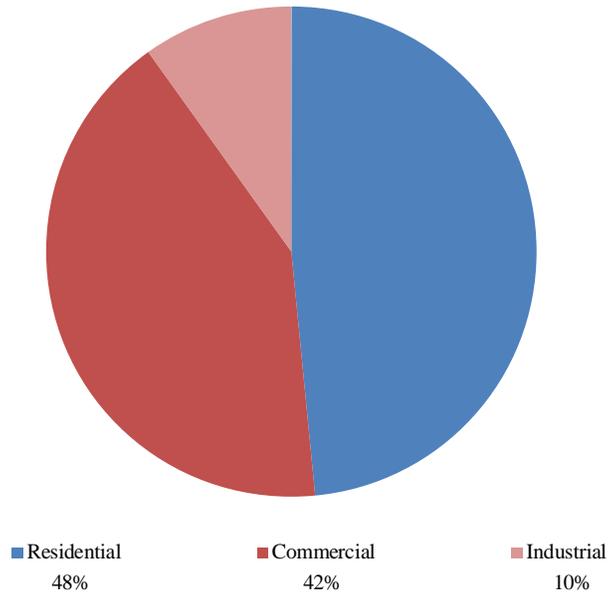
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

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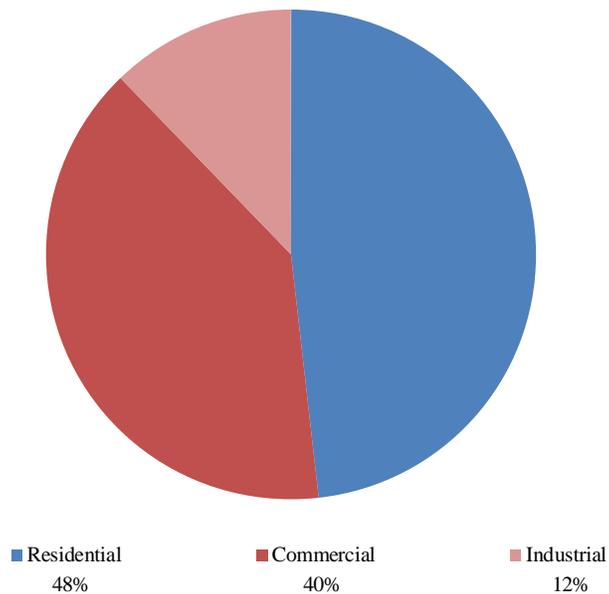
Connecticut

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Connecticut Electric Revenues by Customer Class



Connecticut Energy Efficiency Spending by Customer Class



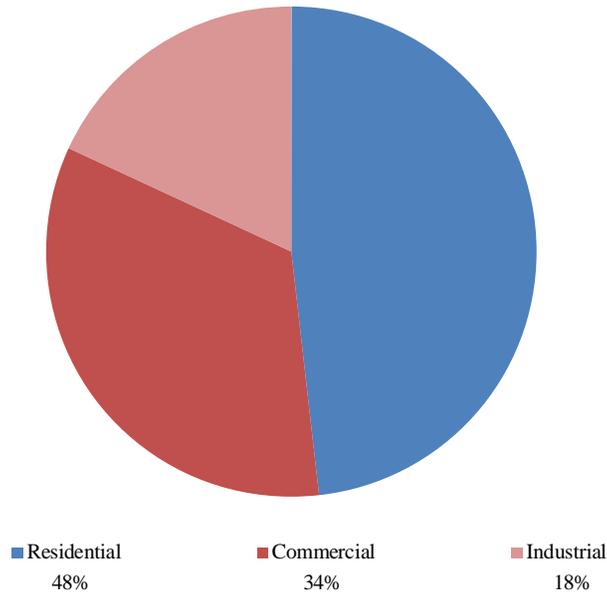
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

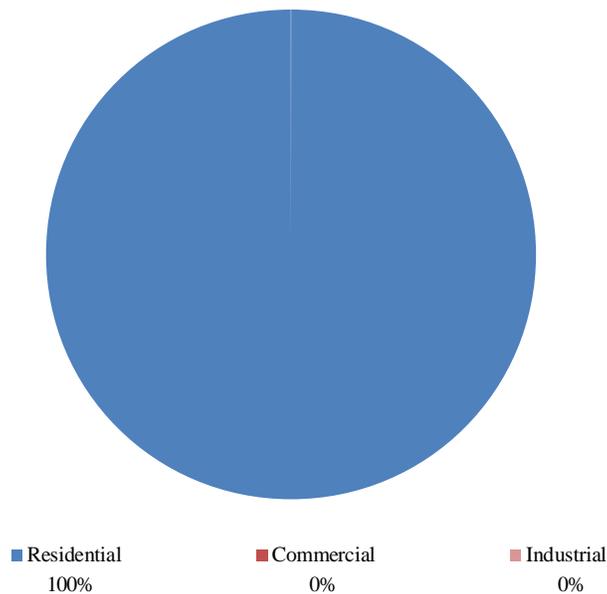
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Delaware
Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Delaware Electric Revenues by Customer Class



Delaware Energy Efficiency Spending by Customer Class



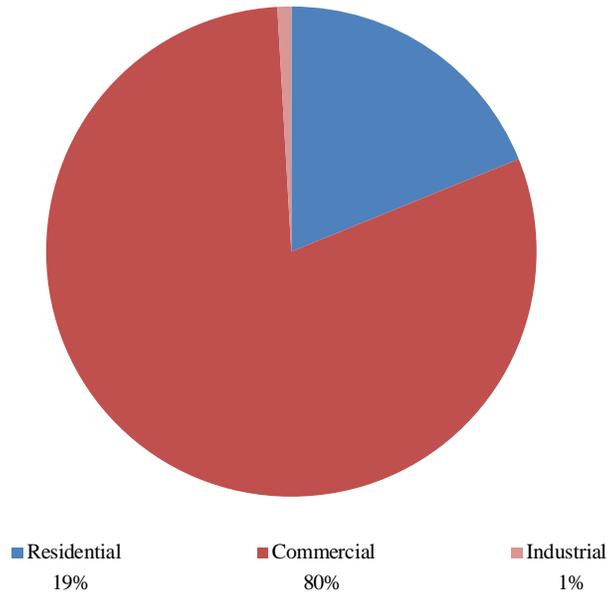
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

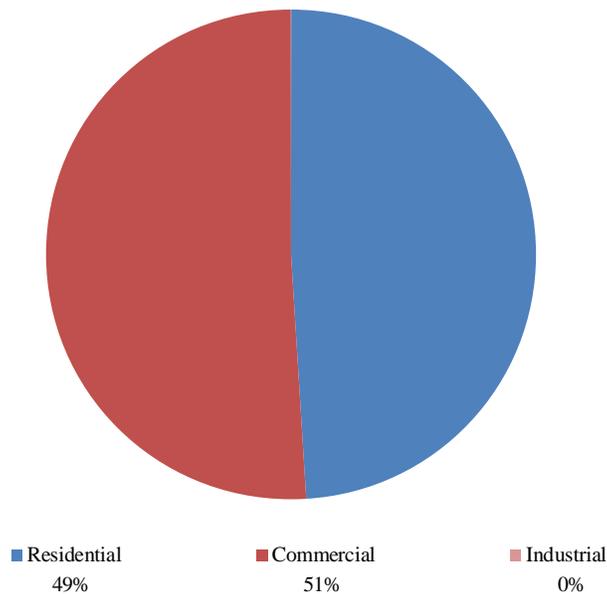
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

District of Columbia Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

District of Columbia Electric Revenues by Customer Class



District of Columbia Energy Efficiency Spending by Customer Class



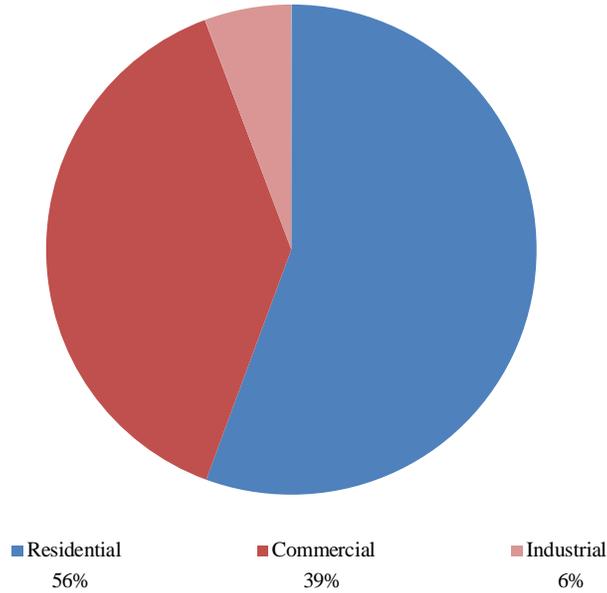
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

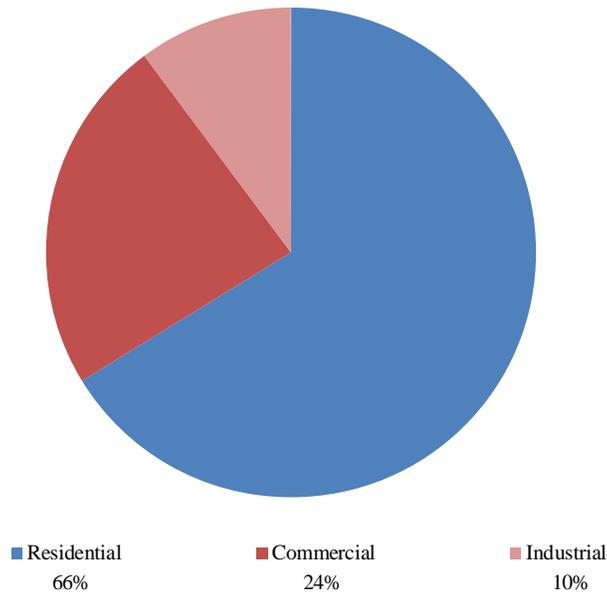
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Florida
Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Florida Electric Revenues by Customer Class



Florida Energy Efficiency Spending by Customer Class



Notes & Sources:

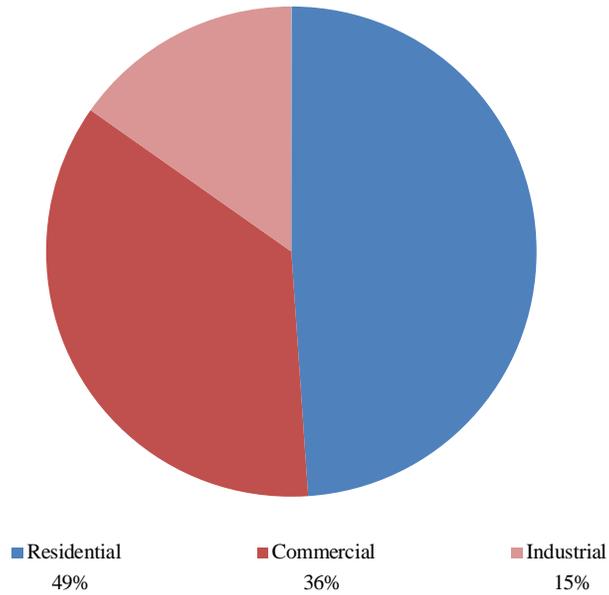
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

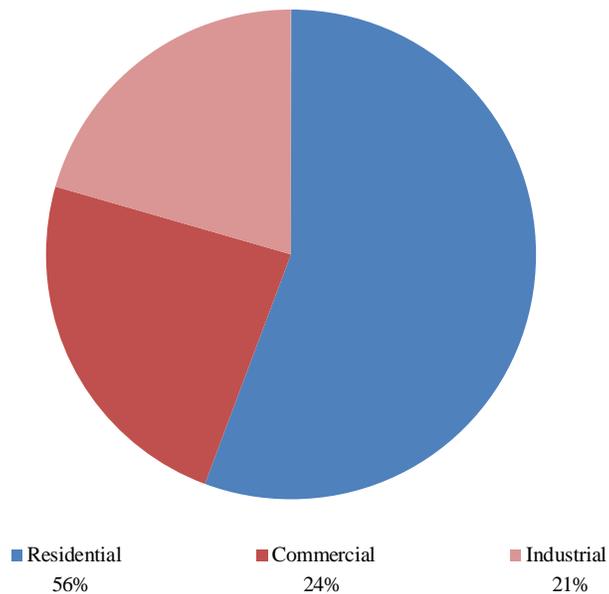
Georgia

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Georgia Electric Revenues by Customer Class



Georgia Energy Efficiency Spending by Customer Class



Notes & Sources:

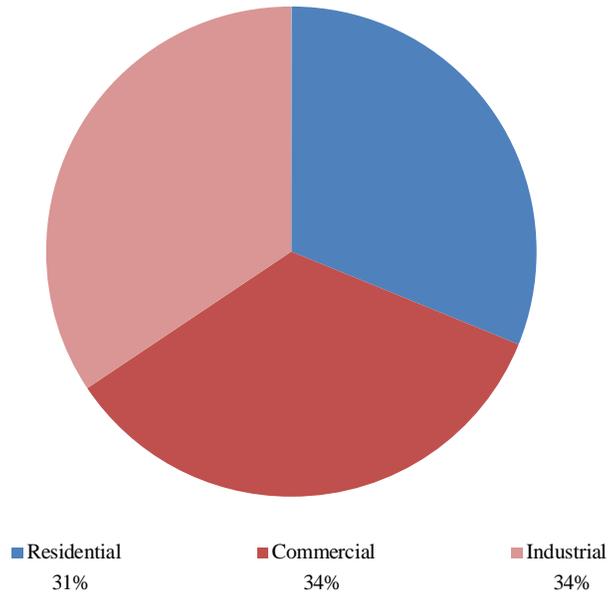
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

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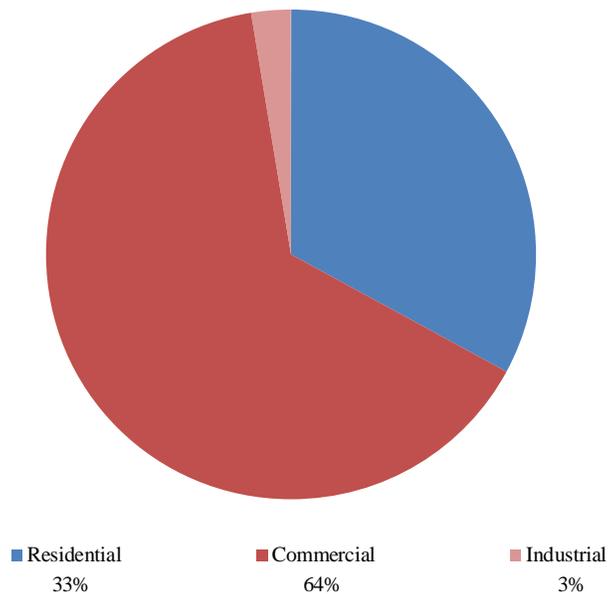
Hawaii

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Hawaii Electric Revenues by Customer Class



Hawaii Energy Efficiency Spending by Customer Class



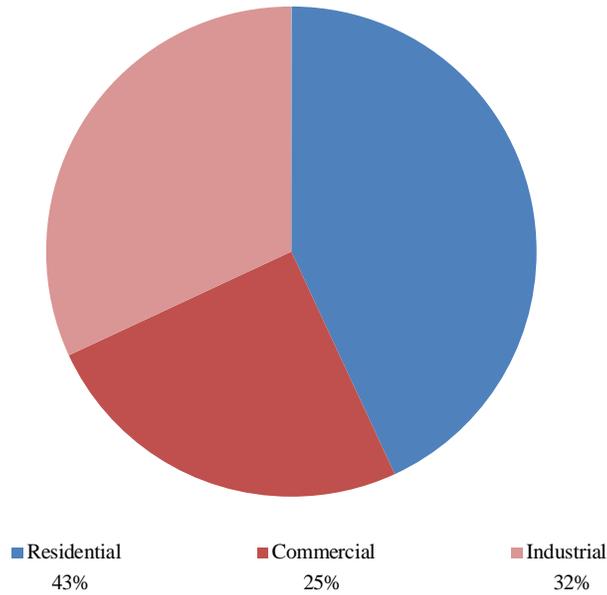
Notes & Sources:

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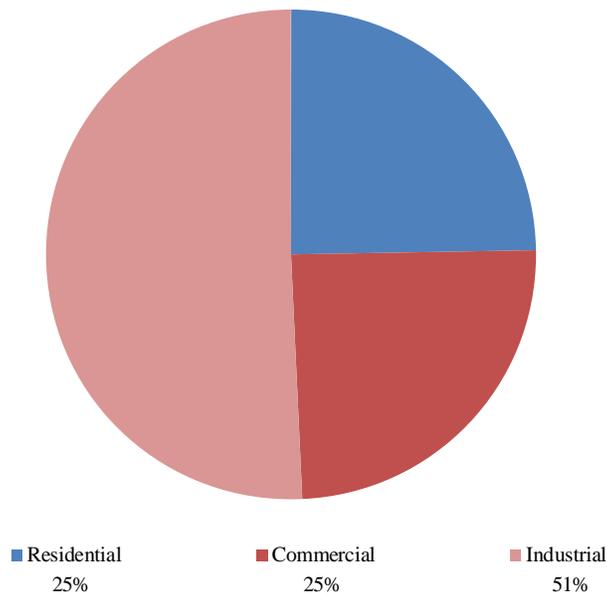
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Idaho
Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Idaho Electric Revenues by Customer Class



Idaho Energy Efficiency Spending by Customer Class



Notes & Sources:

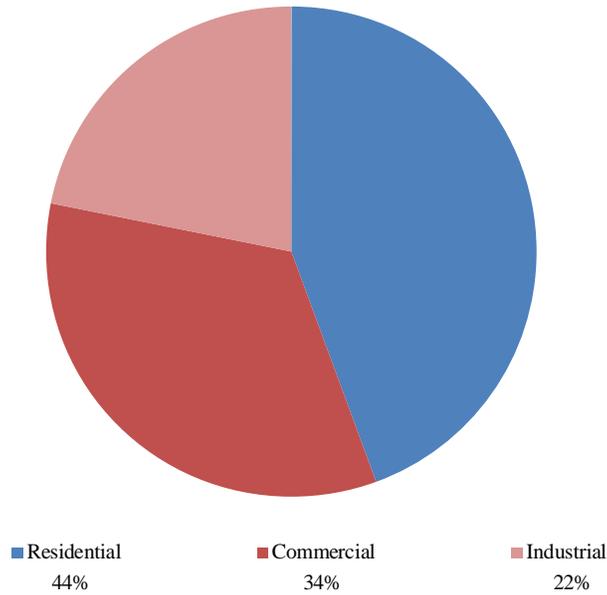
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

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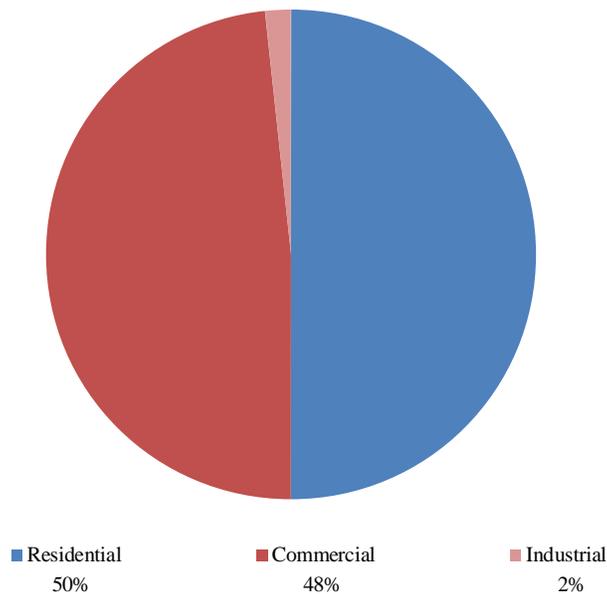
Illinois

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Illinois Electric Revenues by Customer Class



Illinois Energy Efficiency Spending by Customer Class



Notes & Sources:

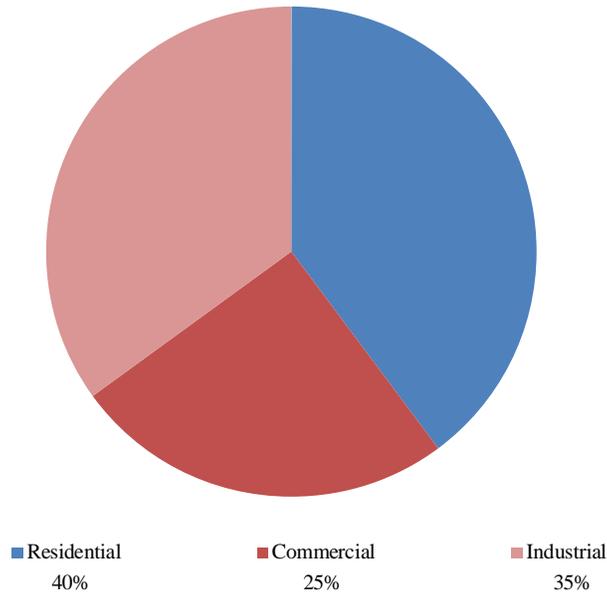
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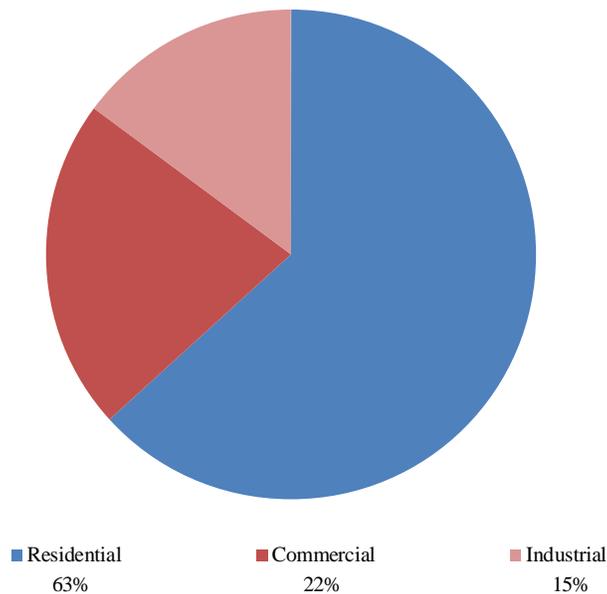
Indiana

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Indiana Electric Revenues by Customer Class



Indiana Energy Efficiency Spending by Customer Class



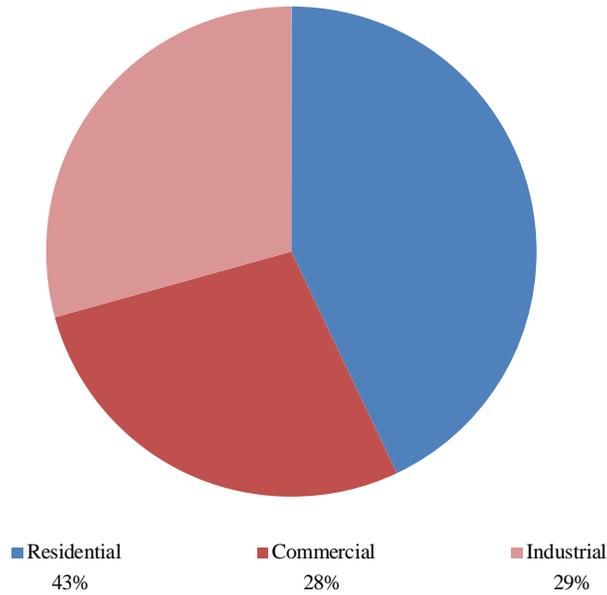
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

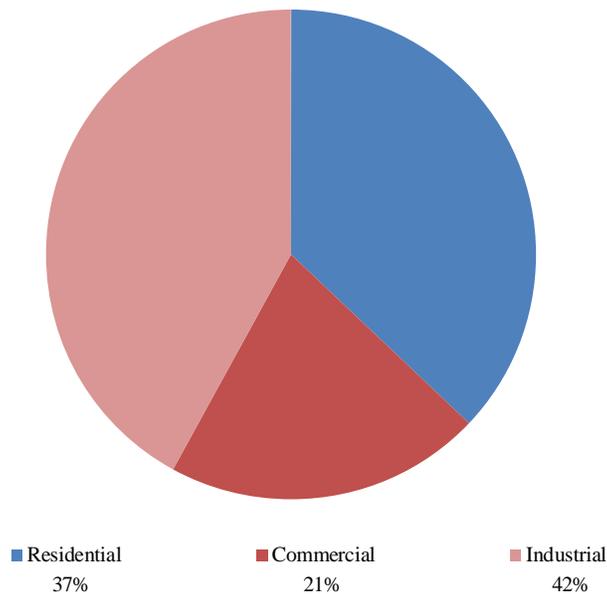
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Iowa Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Iowa Electric Revenues by Customer Class



Iowa Energy Efficiency Spending by Customer Class



Notes & Sources:

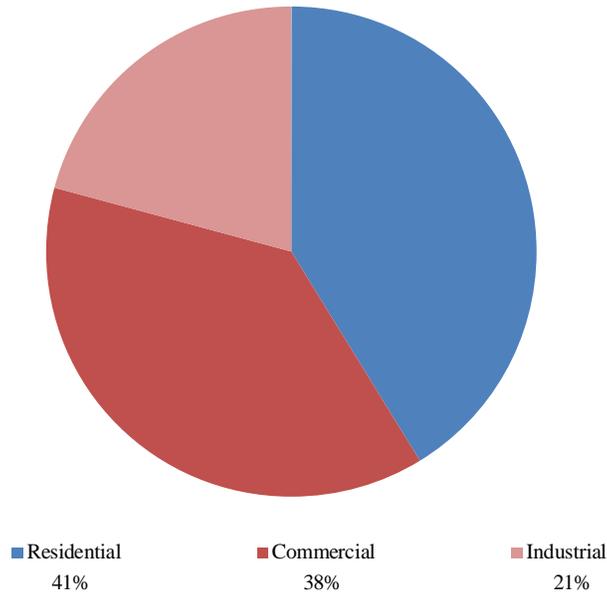
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

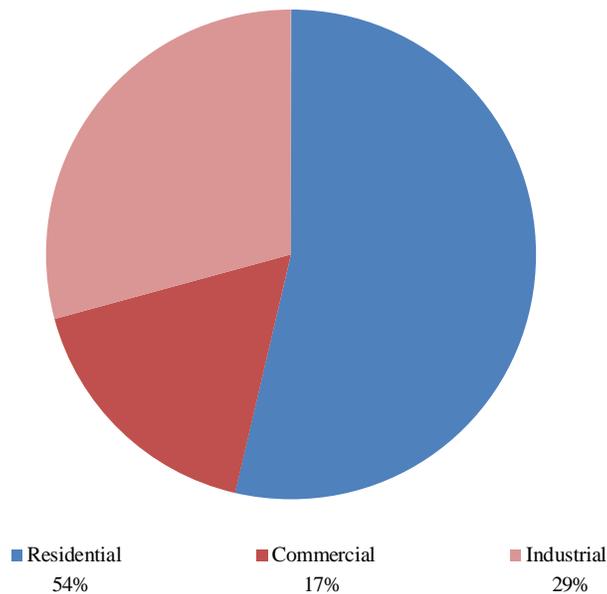
Kansas

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Kansas Electric Revenues by Customer Class



Kansas Energy Efficiency Spending by Customer Class



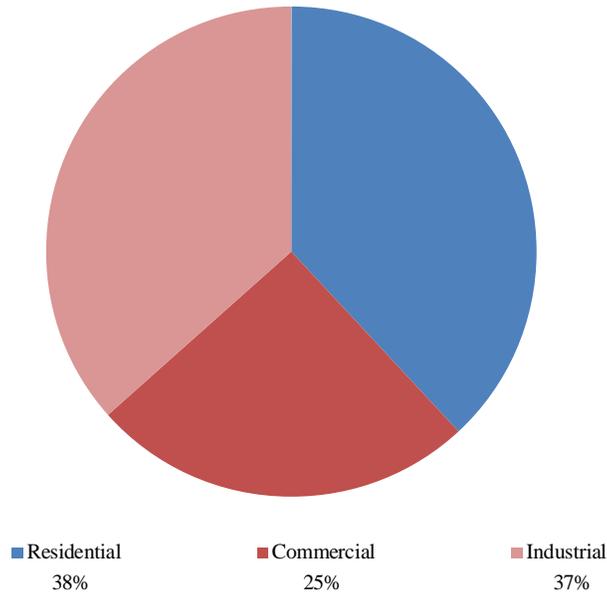
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

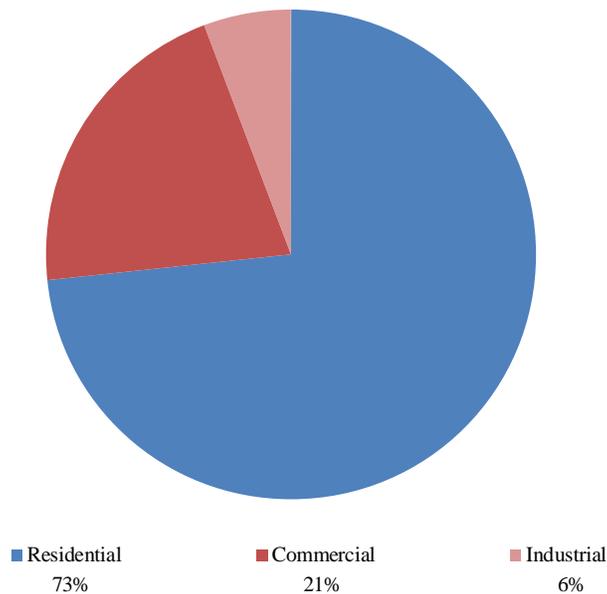
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Kentucky Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Kentucky Electric Revenues by Customer Class



Kentucky Energy Efficiency Spending by Customer Class



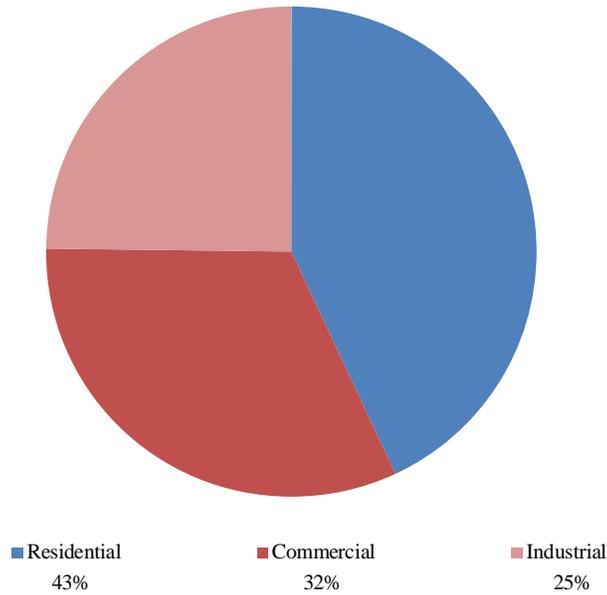
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

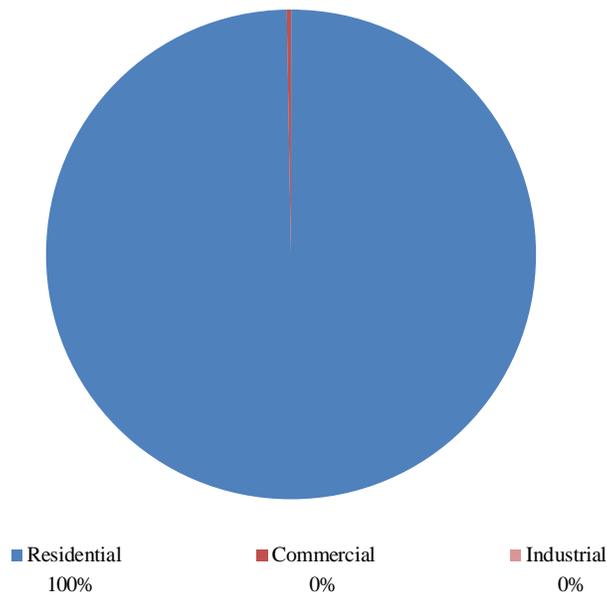
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Louisiana Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Louisiana Electric Revenues by Customer Class



Louisiana Energy Efficiency Spending by Customer Class



Notes & Sources:

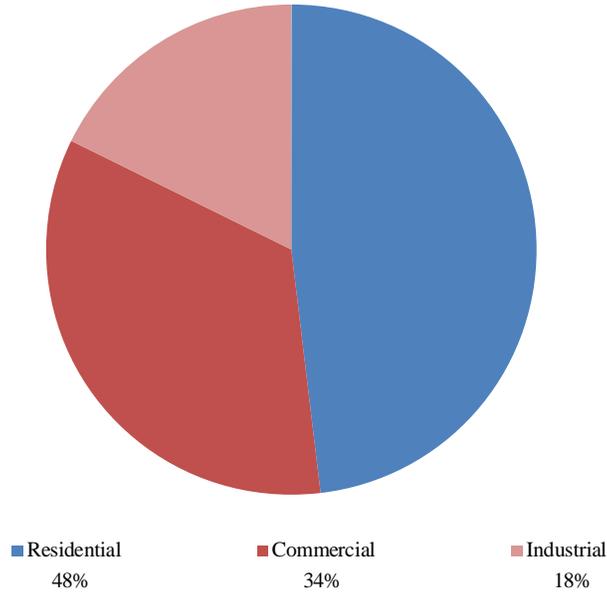
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

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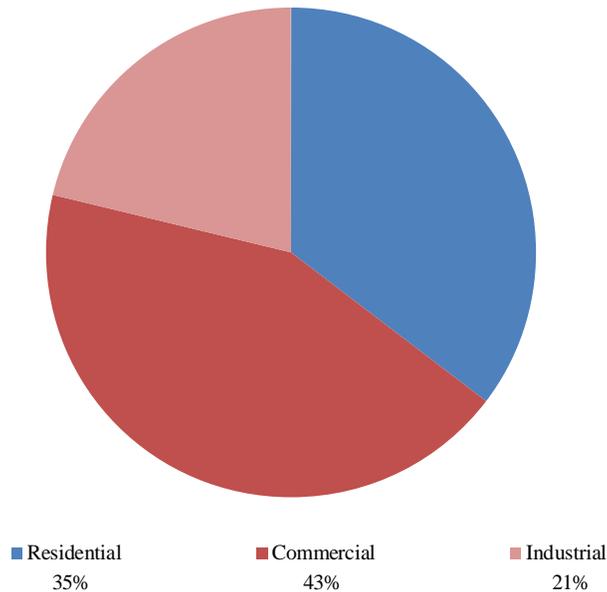
Maine

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Maine Electric Revenues by Customer Class



Maine Energy Efficiency Spending by Customer Class



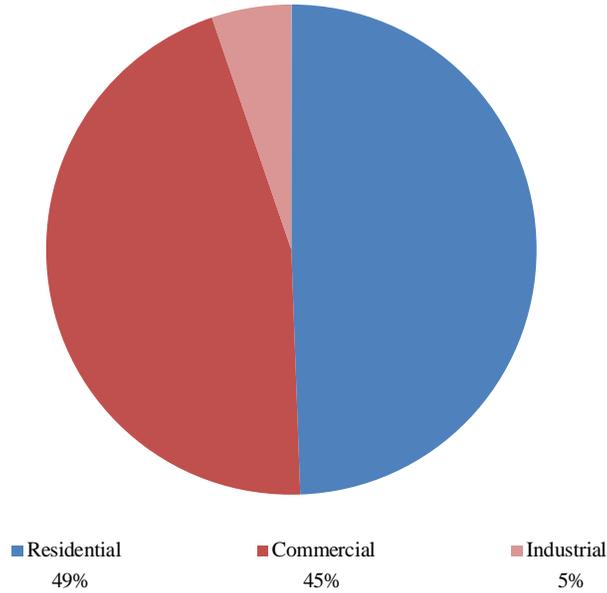
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

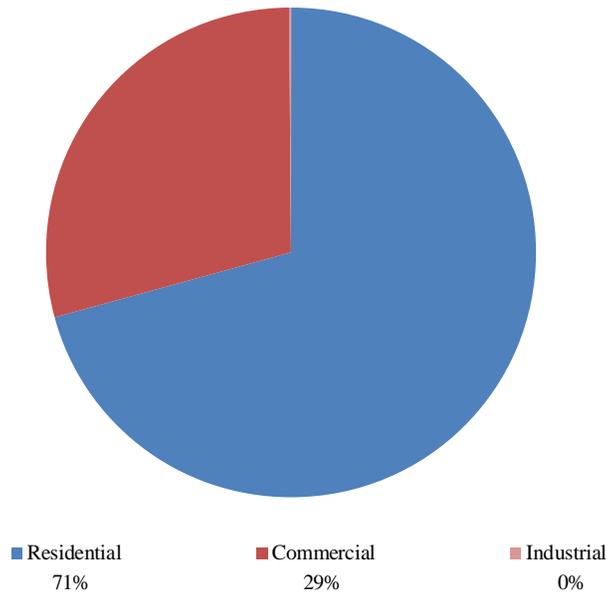
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Maryland Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Maryland Electric Revenues by Customer Class



Maryland Energy Efficiency Spending by Customer Class



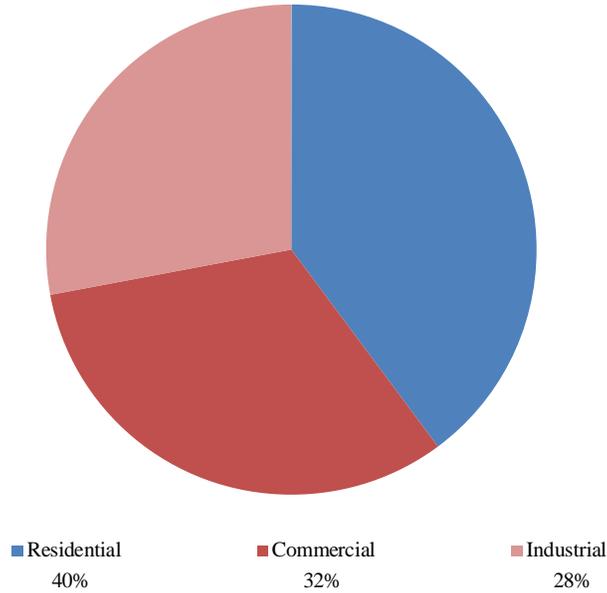
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

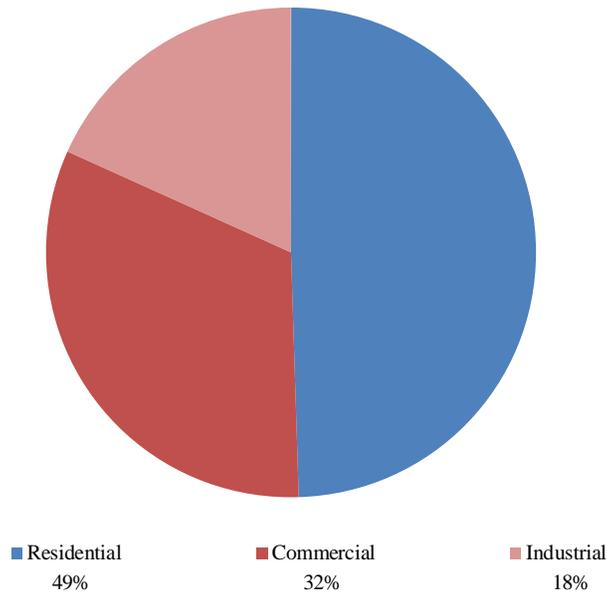
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Massachusetts Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Massachusetts Electric Revenues by Customer Class



Massachusetts Energy Efficiency Spending by Customer Class



Notes & Sources:

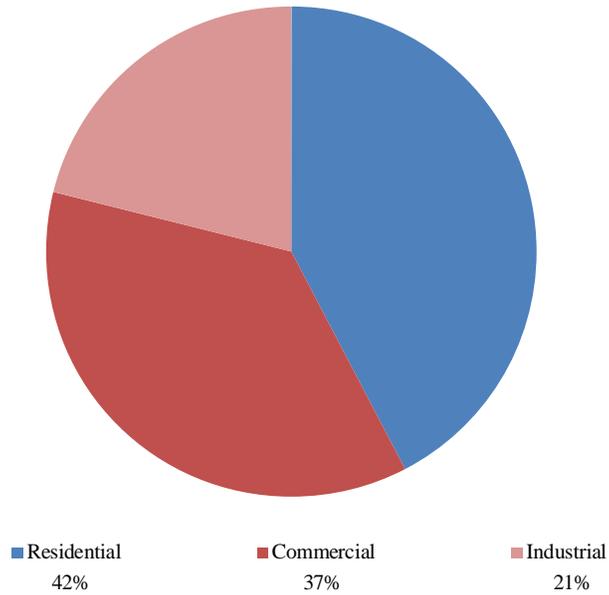
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

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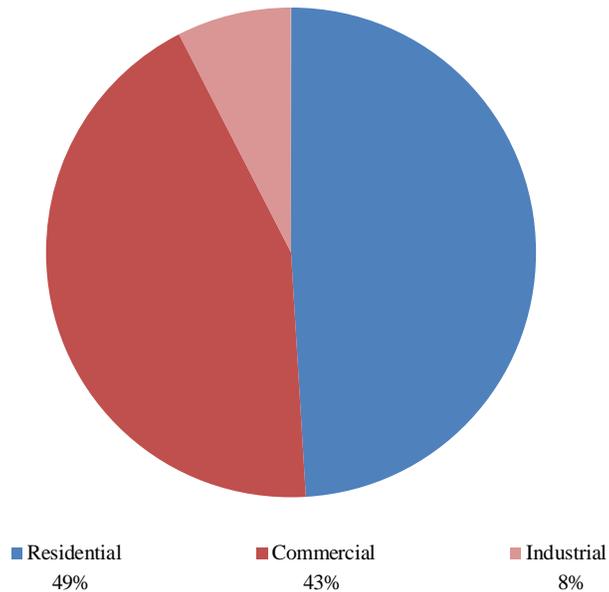
Michigan

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Michigan Electric Revenues by Customer Class



Michigan Energy Efficiency Spending by Customer Class



Notes & Sources:

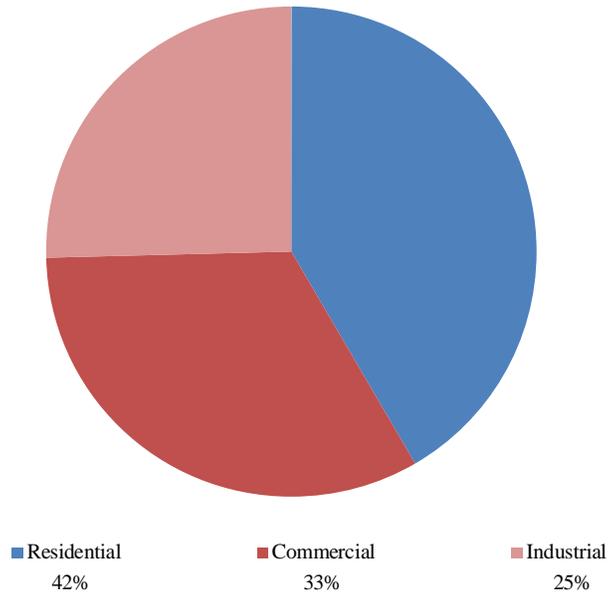
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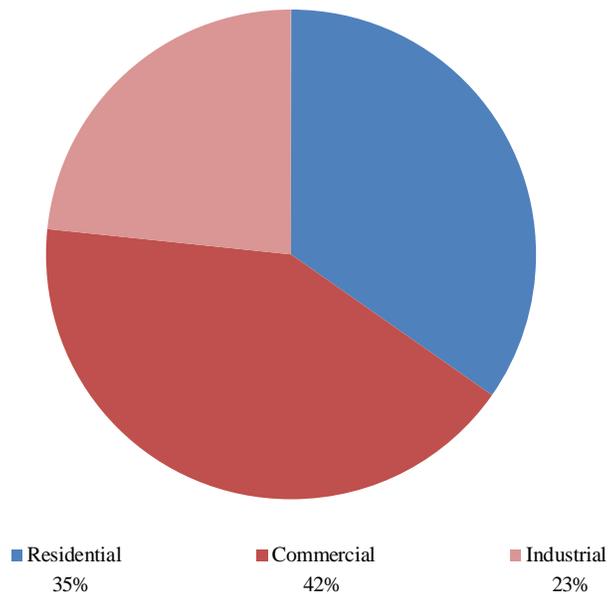
Minnesota

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Minnesota Electric Revenues by Customer Class



Minnesota Energy Efficiency Spending by Customer Class



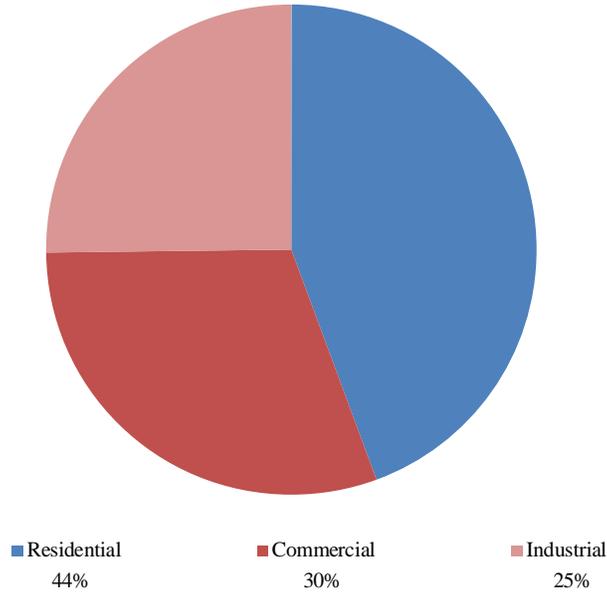
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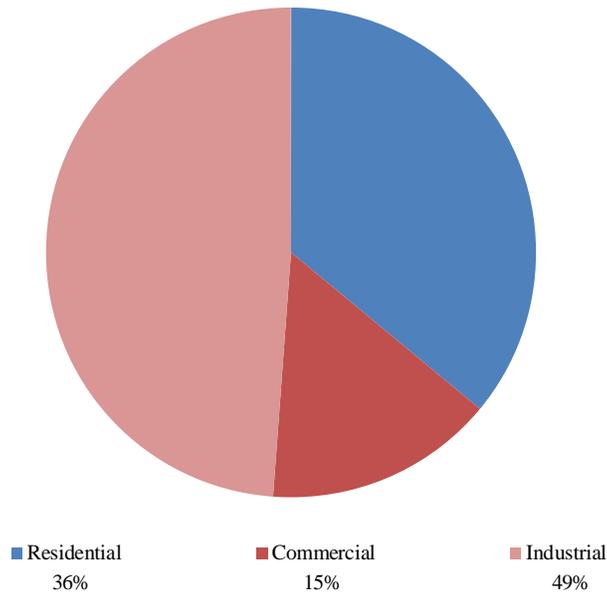
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Mississippi Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Mississippi Electric Revenues by Customer Class



Mississippi Energy Efficiency Spending by Customer Class



Notes & Sources:

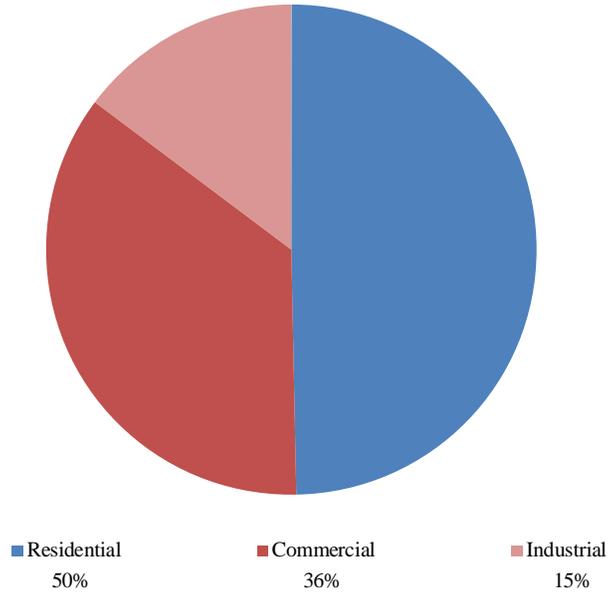
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

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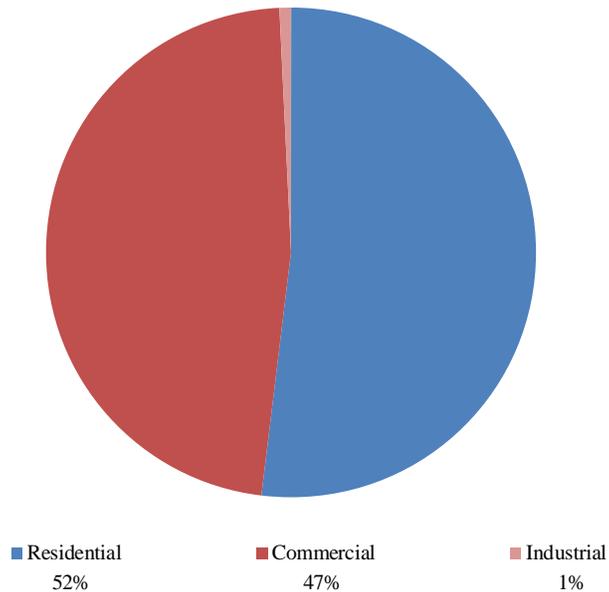
Missouri

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Missouri Electric Revenues by Customer Class



Missouri Energy Efficiency Spending by Customer Class



Notes & Sources:

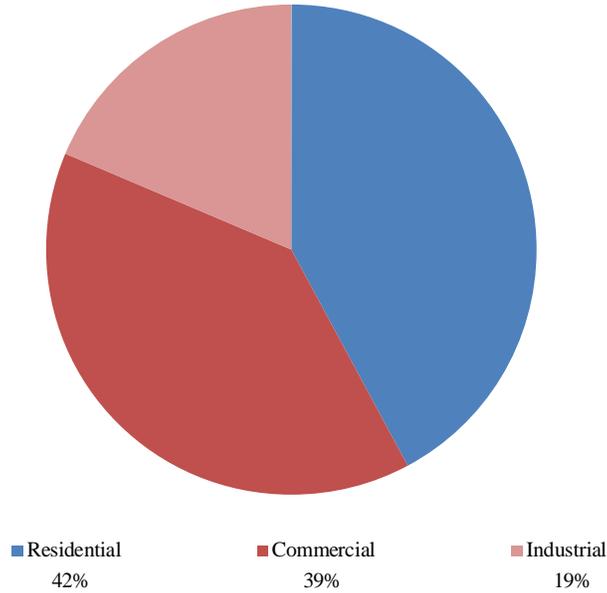
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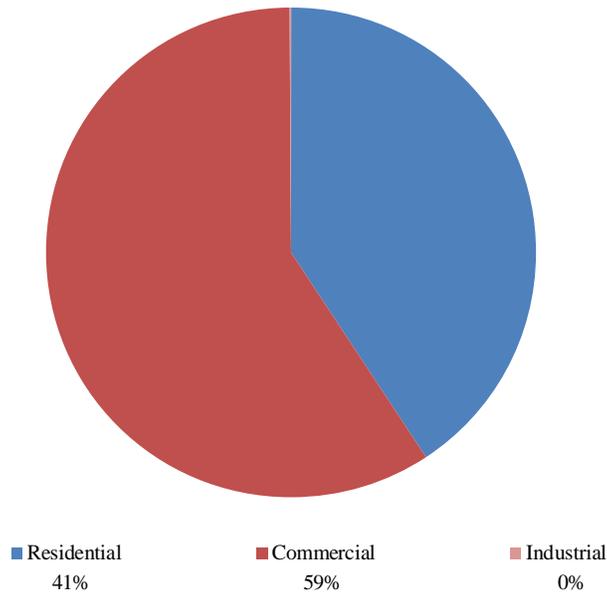
Montana

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Montana Electric Revenues by Customer Class



Montana Energy Efficiency Spending by Customer Class



Notes & Sources:

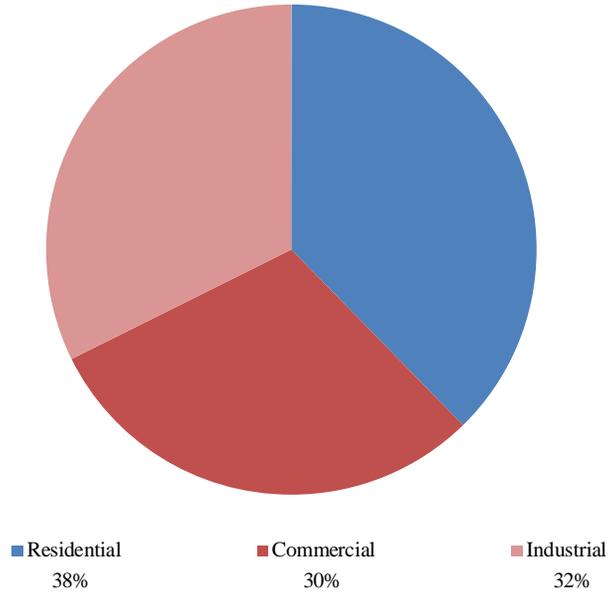
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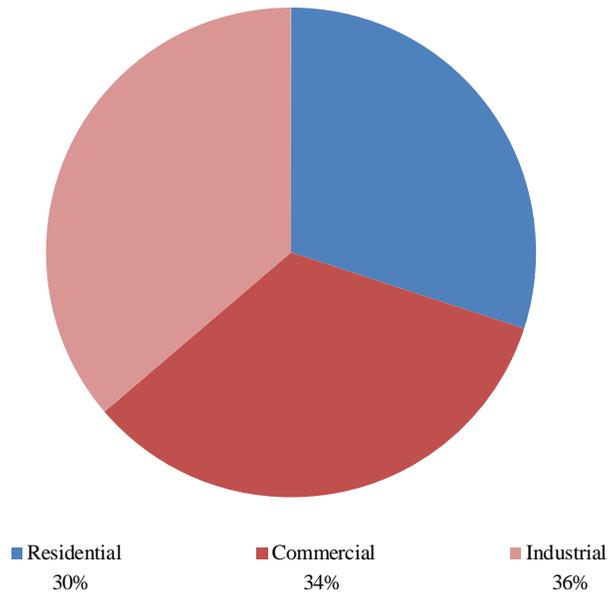
Nebraska

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Nebraska Electric Revenues by Customer Class



Nebraska Energy Efficiency Spending by Customer Class



Notes & Sources:

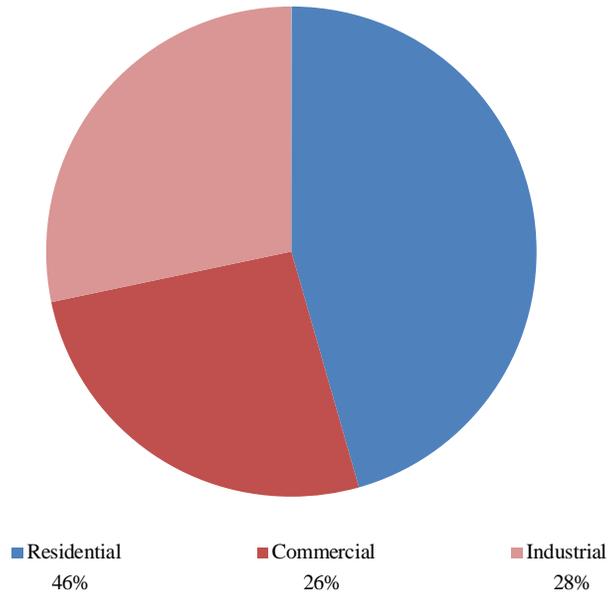
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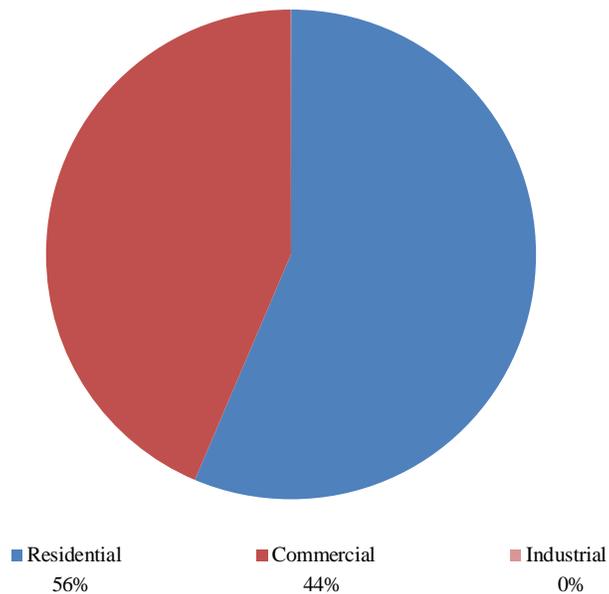
Nevada

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Nevada Electric Revenues by Customer Class



Nevada Energy Efficiency Spending by Customer Class



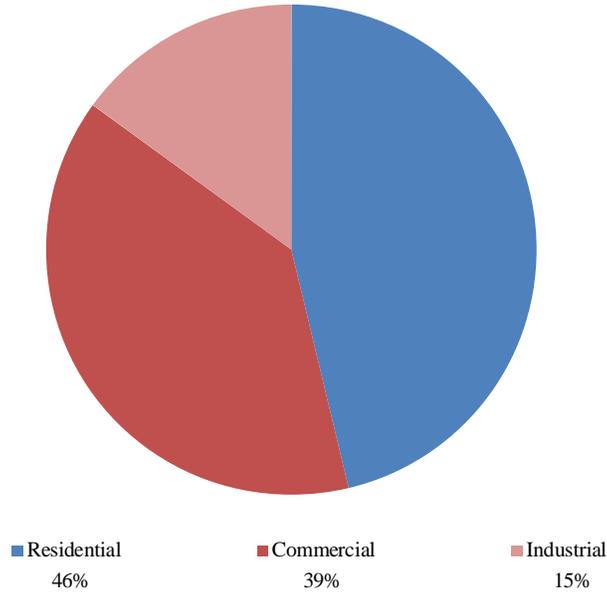
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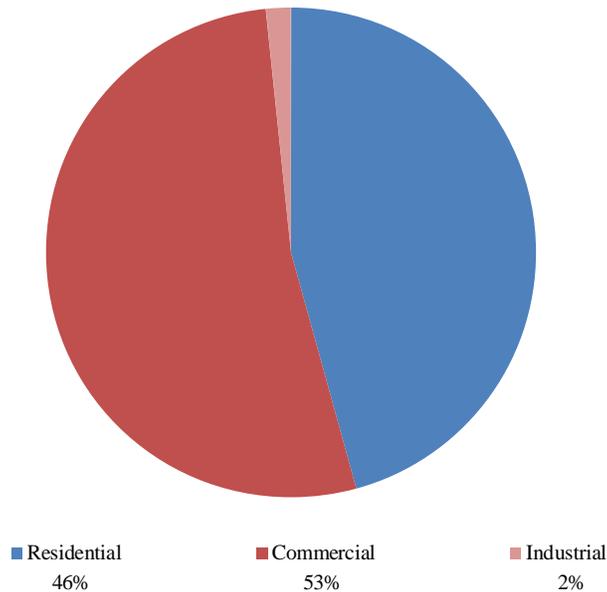
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

New Hampshire Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

New Hampshire Electric Revenues by Customer Class



New Hampshire Energy Efficiency Spending by Customer Class



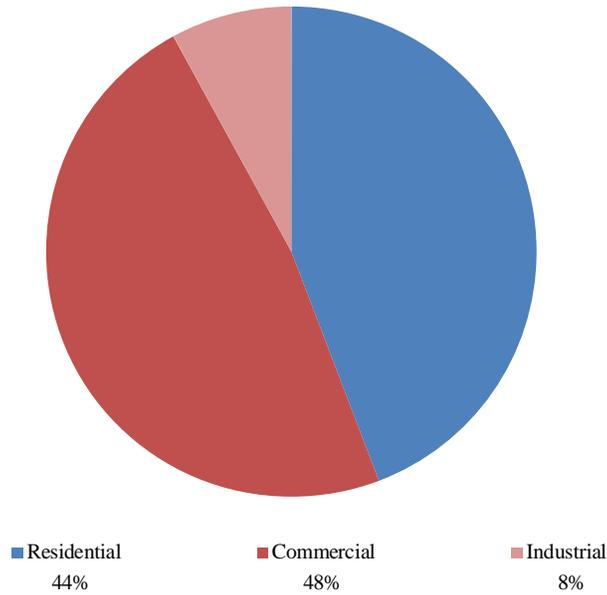
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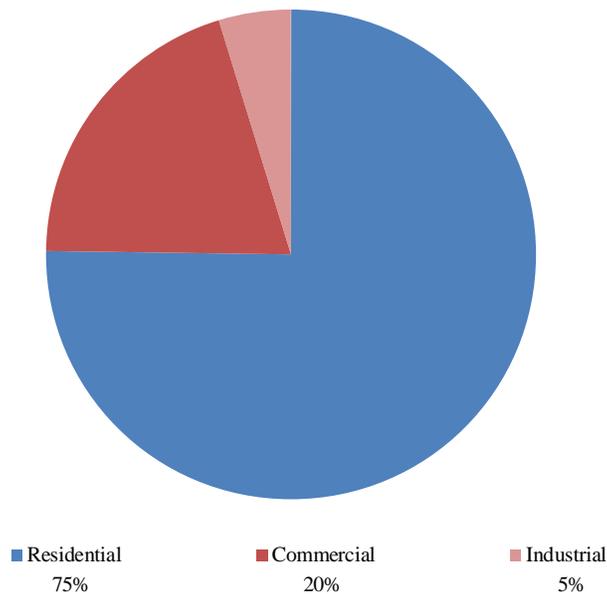
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

New Jersey Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

New Jersey Electric Revenues by Customer Class



New Jersey Energy Efficiency Spending by Customer Class



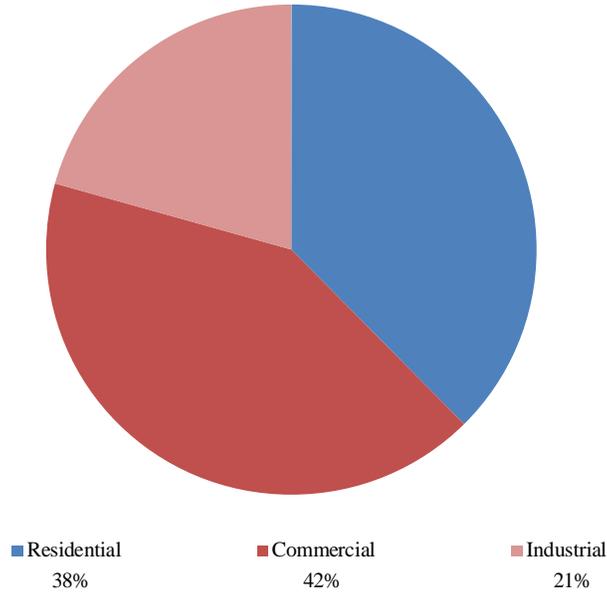
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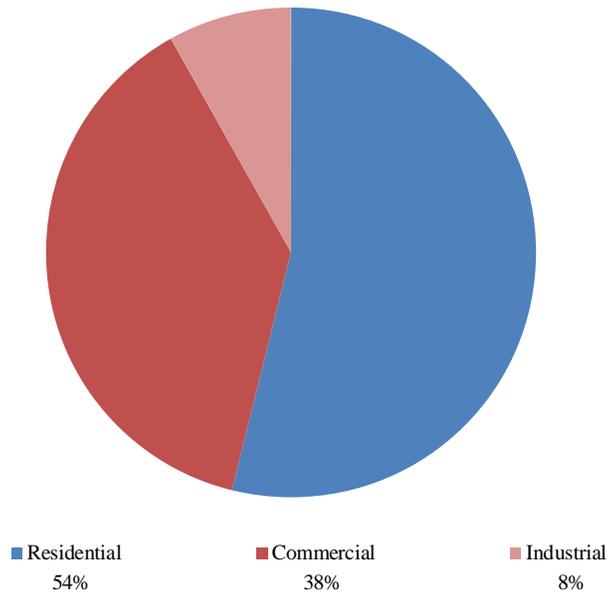
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

New Mexico Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

New Mexico Electric Revenues by Customer Class



New Mexico Energy Efficiency Spending by Customer Class



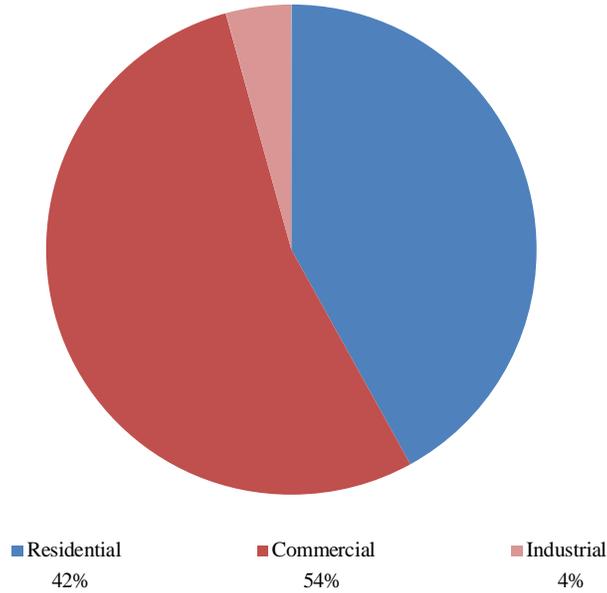
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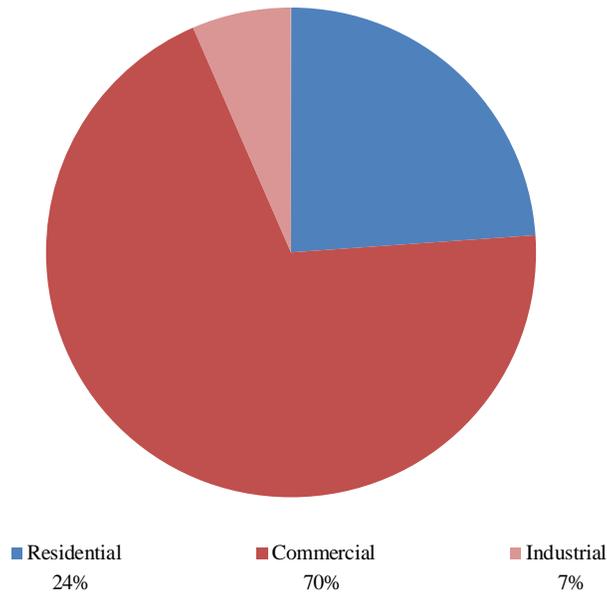
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

New York Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

New York Electric Revenues by Customer Class



New York Energy Efficiency Spending by Customer Class



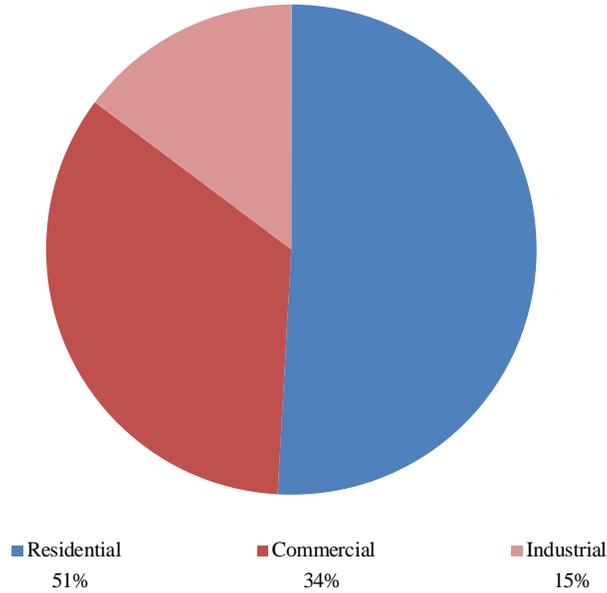
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

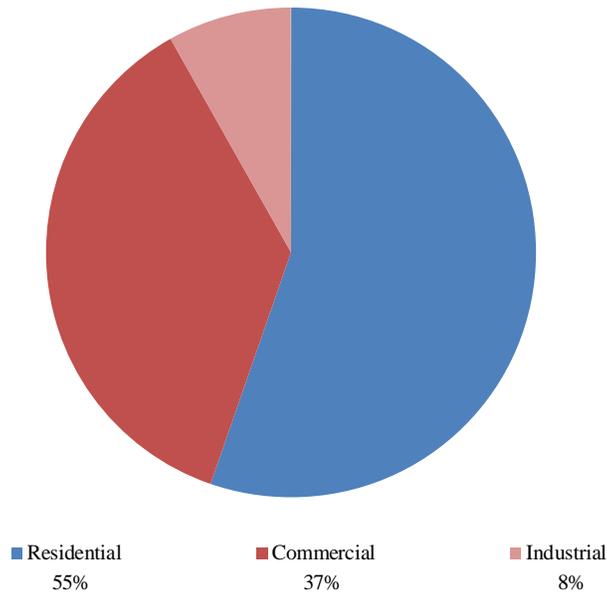
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

North Carolina Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

North Carolina Electric Revenues by Customer Class



North Carolina Energy Efficiency Spending by Customer Class



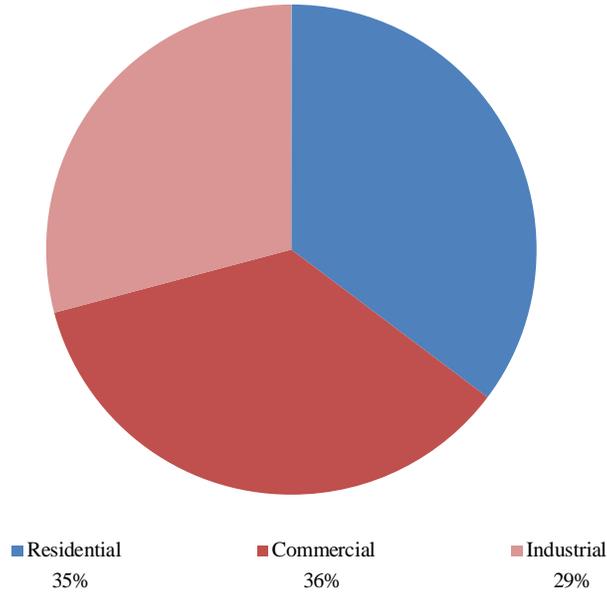
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

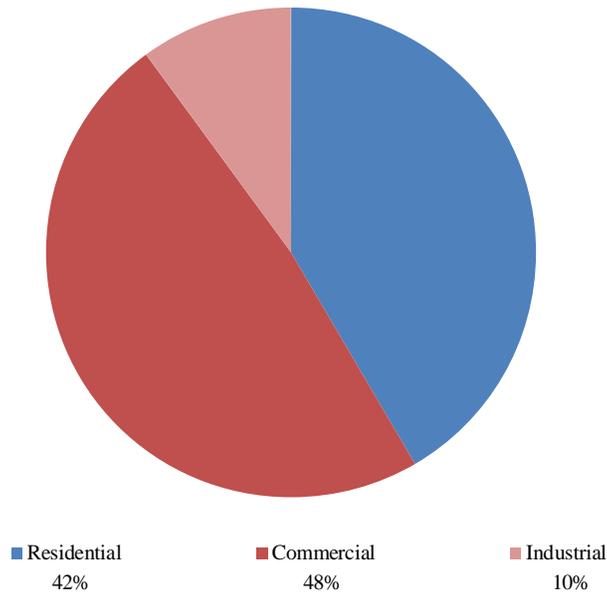
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

North Dakota Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

North Dakota Electric Revenues by Customer Class



North Dakota Energy Efficiency Spending by Customer Class



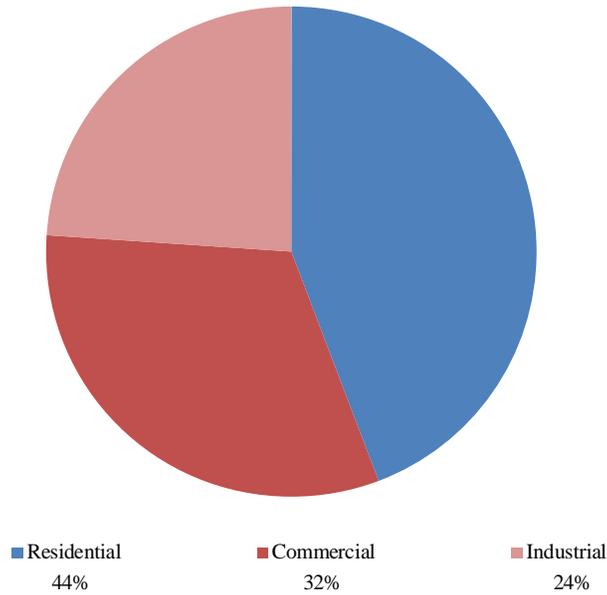
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

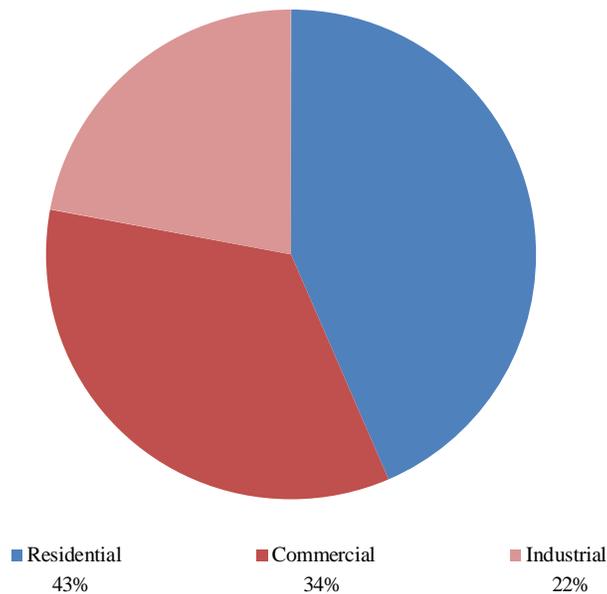
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Ohio Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Ohio Electric Revenues by Customer Class



Ohio Energy Efficiency Spending by Customer Class



Notes & Sources:

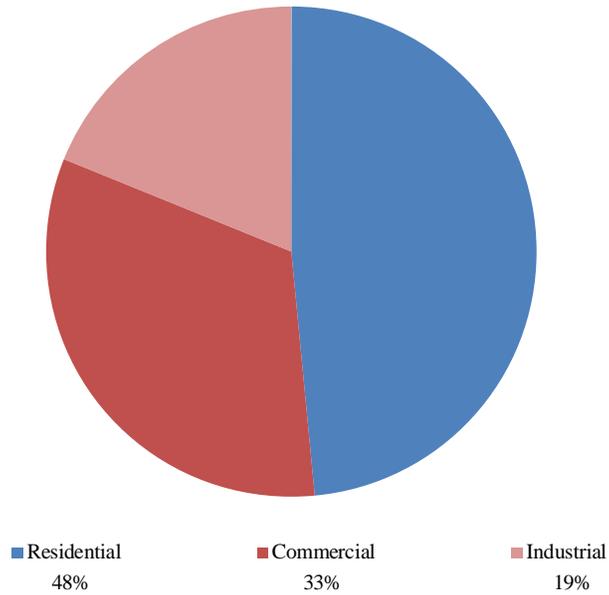
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

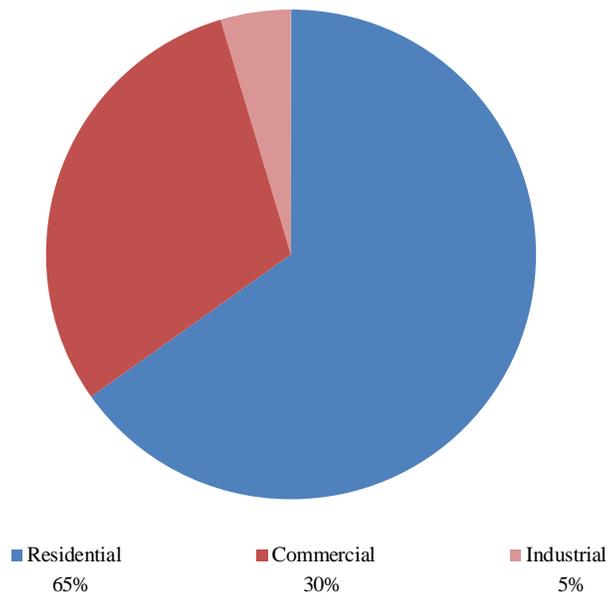
Oklahoma

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Oklahoma Electric Revenues by Customer Class



Oklahoma Energy Efficiency Spending by Customer Class



Notes & Sources:

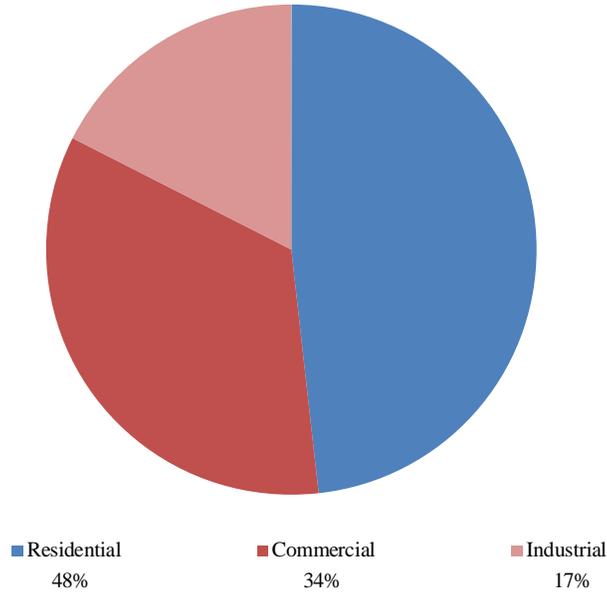
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

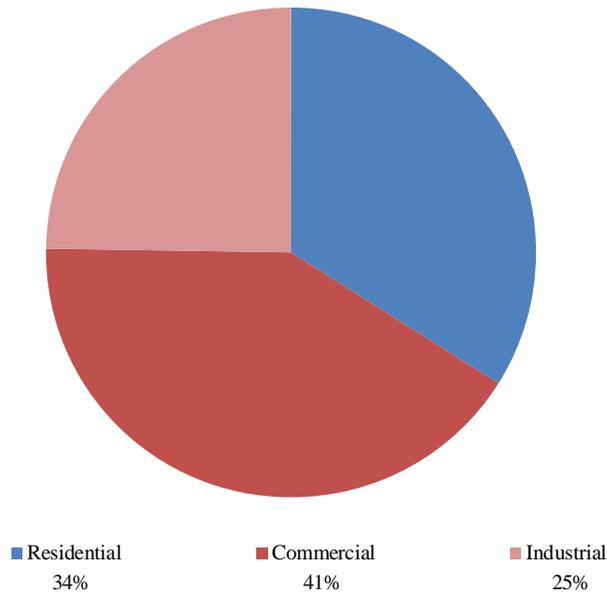
Oregon

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Oregon Electric Revenues by Customer Class



Oregon Energy Efficiency Spending by Customer Class



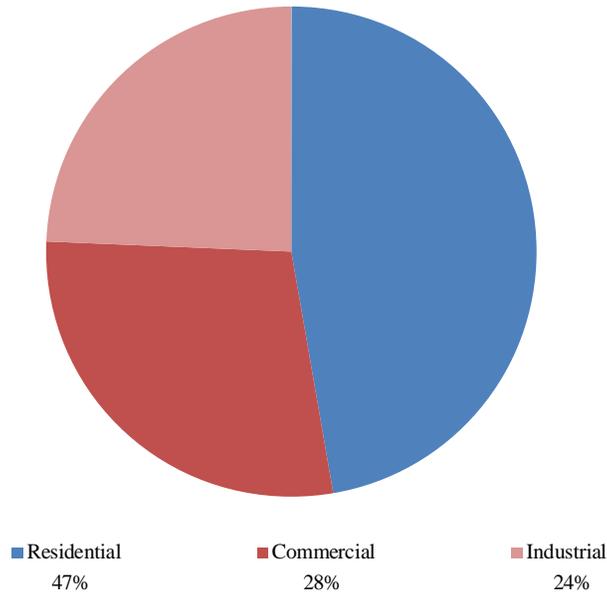
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

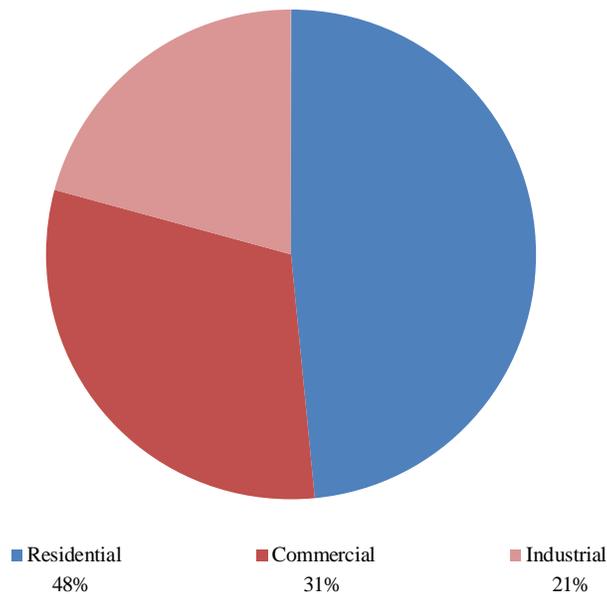
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Pennsylvania
Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Pennsylvania Electric Revenues by Customer Class



Pennsylvania Energy Efficiency Spending by Customer Class



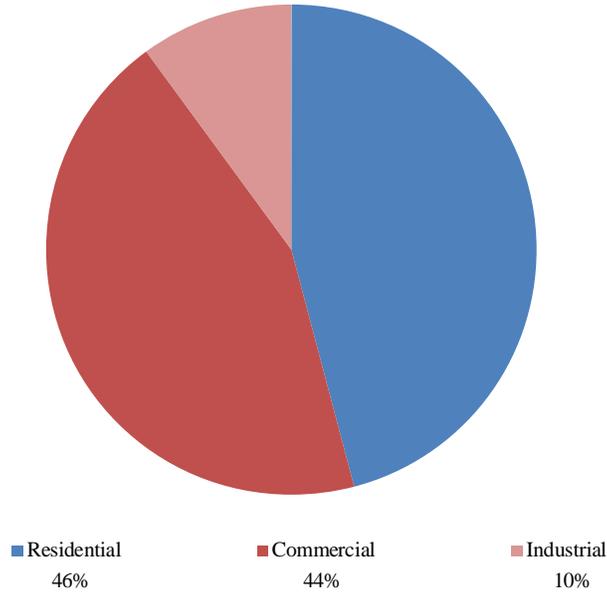
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

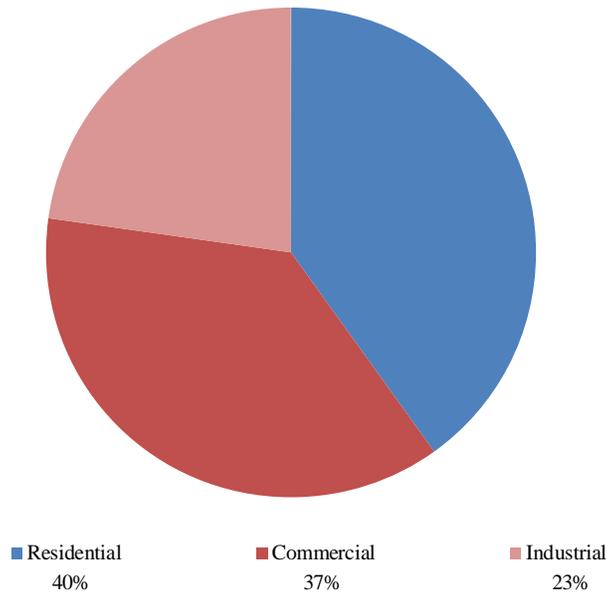
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Rhode Island Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Rhode Island Electric Revenues by Customer Class



Rhode Island Energy Efficiency Spending by Customer Class



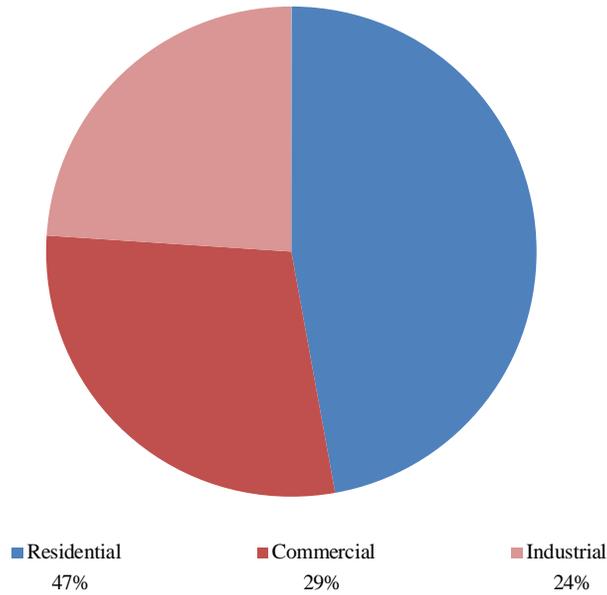
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

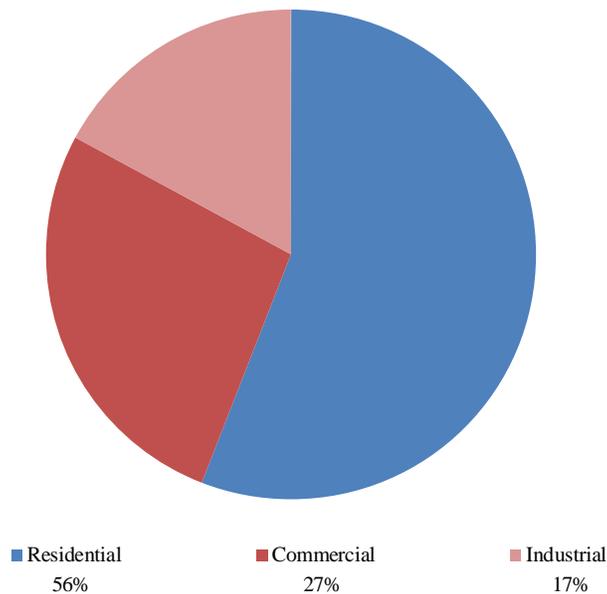
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

South Carolina Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

South Carolina Electric Revenues by Customer Class



South Carolina Energy Efficiency Spending by Customer Class



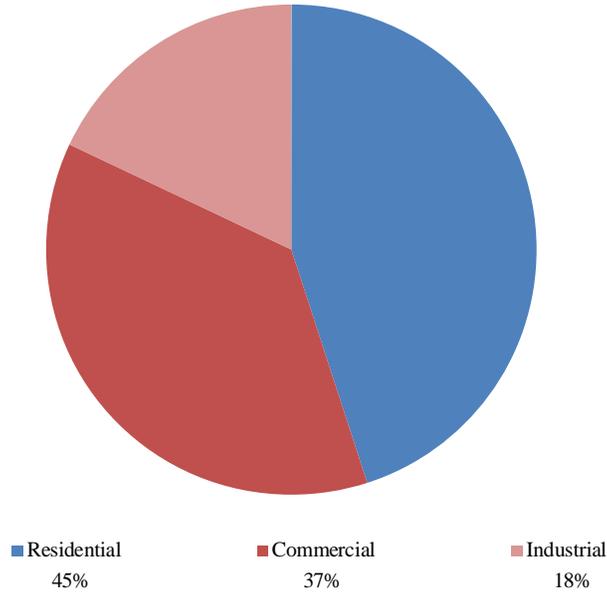
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

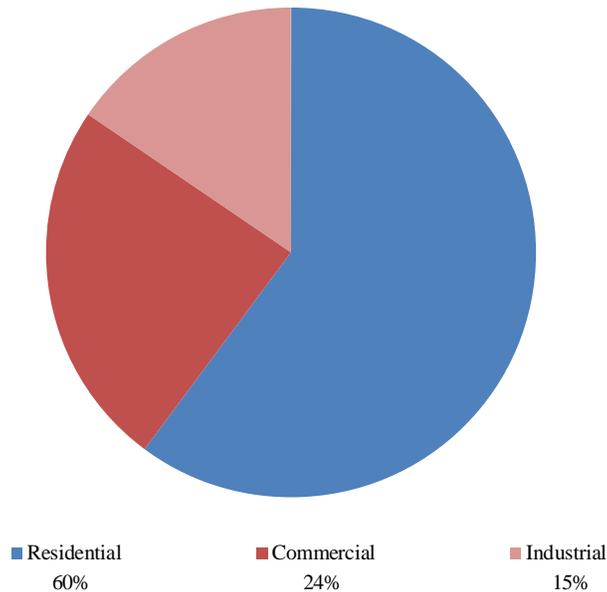
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

South Dakota Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

South Dakota Electric Revenues by Customer Class



South Dakota Energy Efficiency Spending by Customer Class



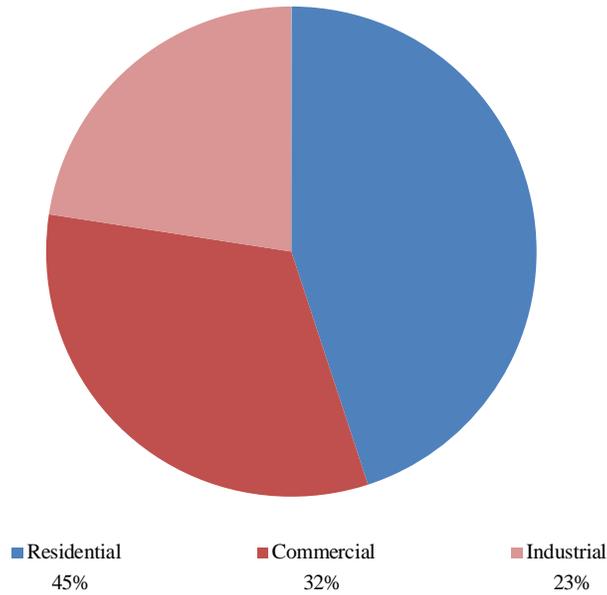
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

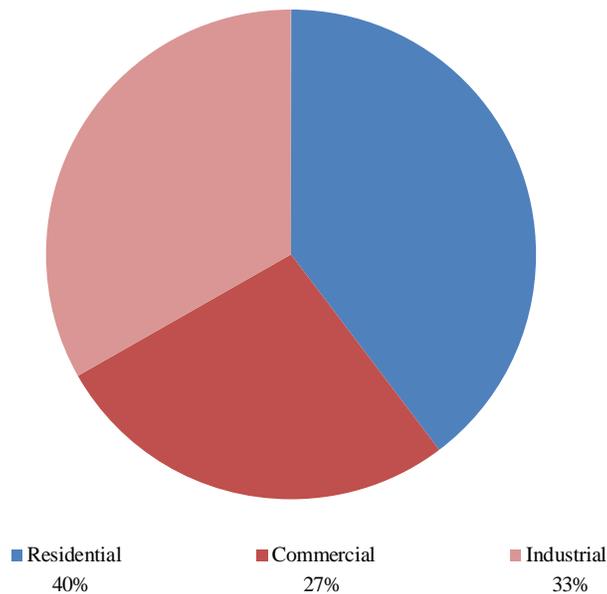
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Tennessee Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Tennessee Electric Revenues by Customer Class



Tennessee Energy Efficiency Spending by Customer Class



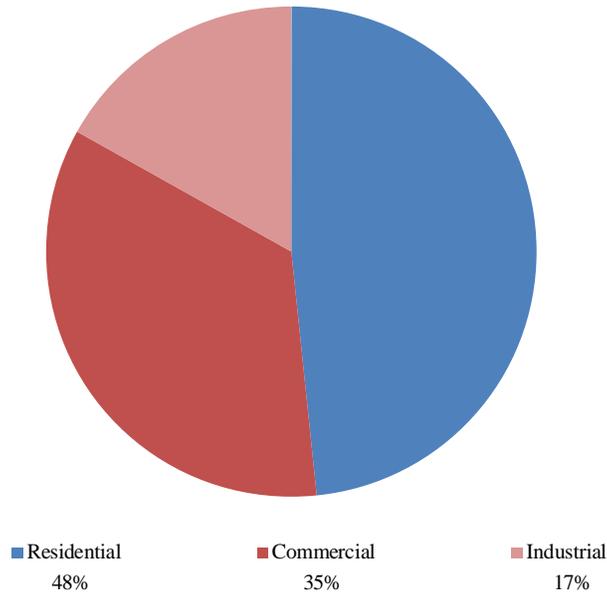
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

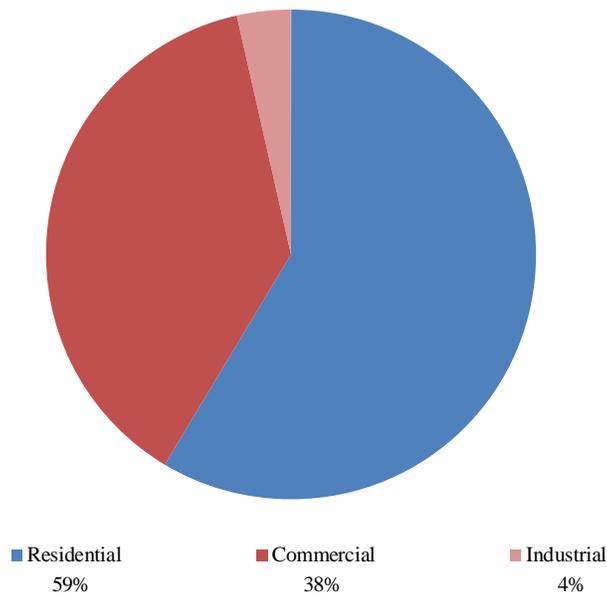
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Texas
Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Texas Electric Revenues by Customer Class



Texas Energy Efficiency Spending by Customer Class



Notes & Sources:

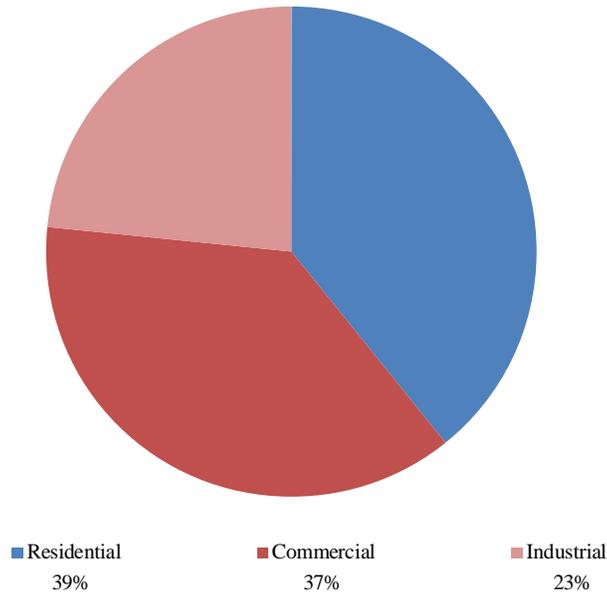
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

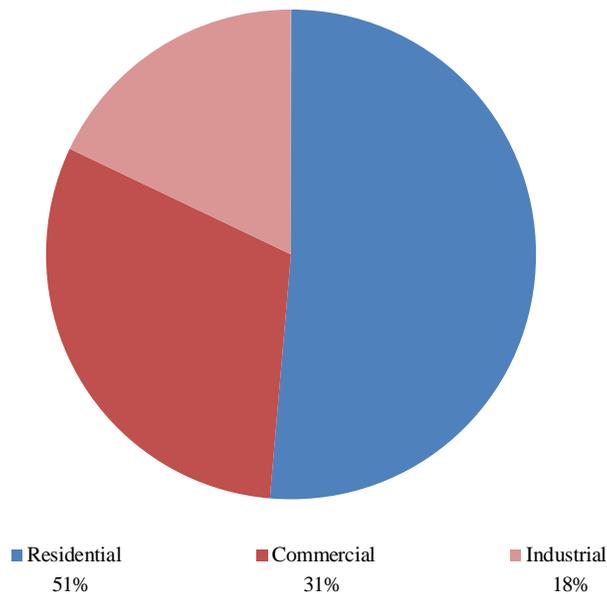
Utah

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Utah Electric Revenues by Customer Class



Utah Energy Efficiency Spending by Customer Class



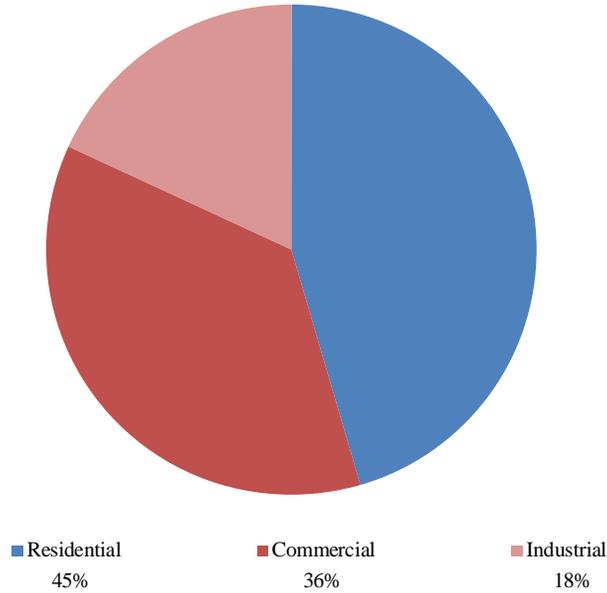
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

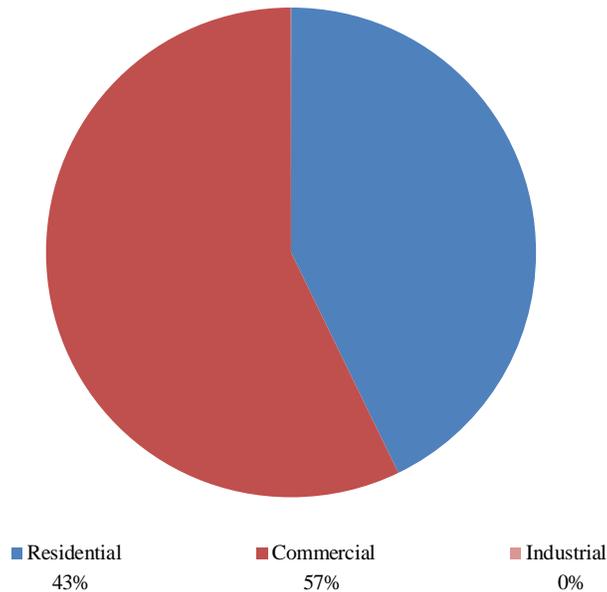
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Vermont Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Vermont Electric Revenues by Customer Class



Vermont Energy Efficiency Spending by Customer Class



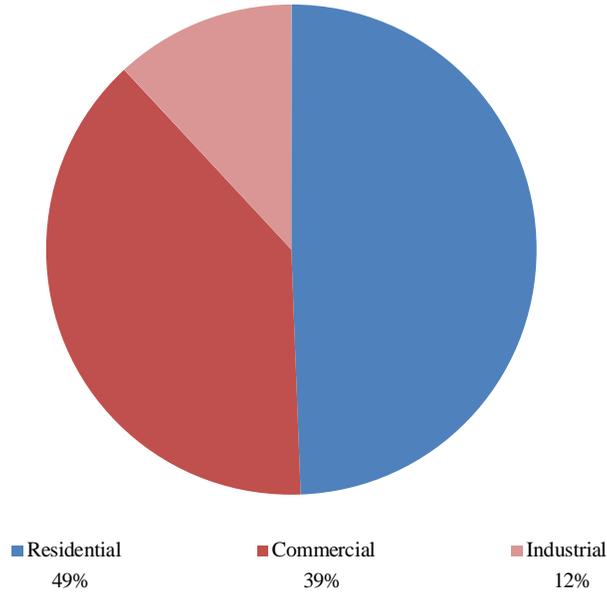
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

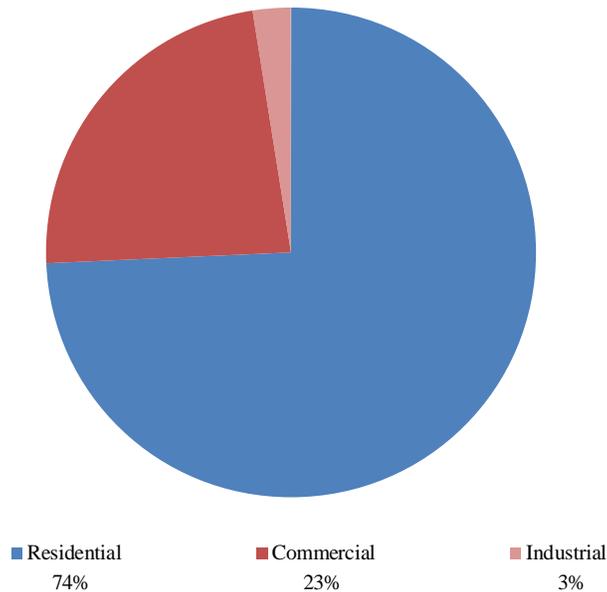
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Virginia
Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Virginia Electric Revenues by Customer Class



Virginia Energy Efficiency Spending by Customer Class



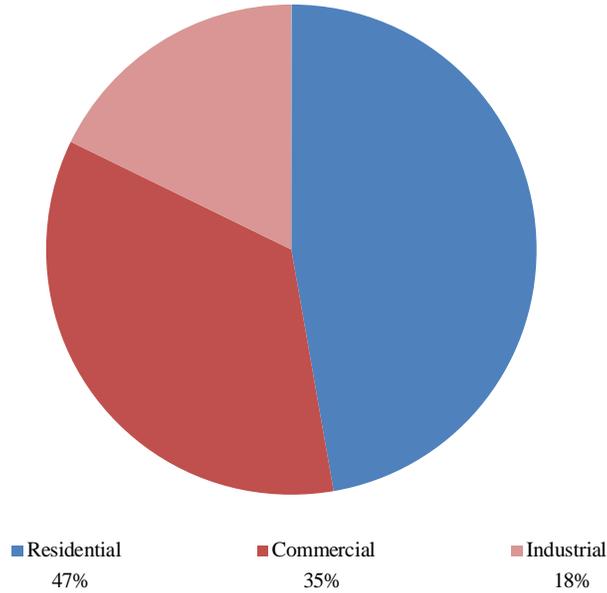
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

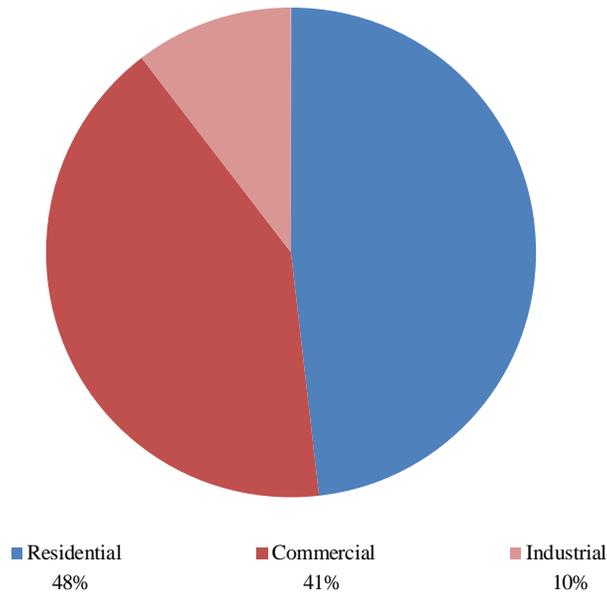
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Washington Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Washington Electric Revenues by Customer Class



Washington Energy Efficiency Spending by Customer Class



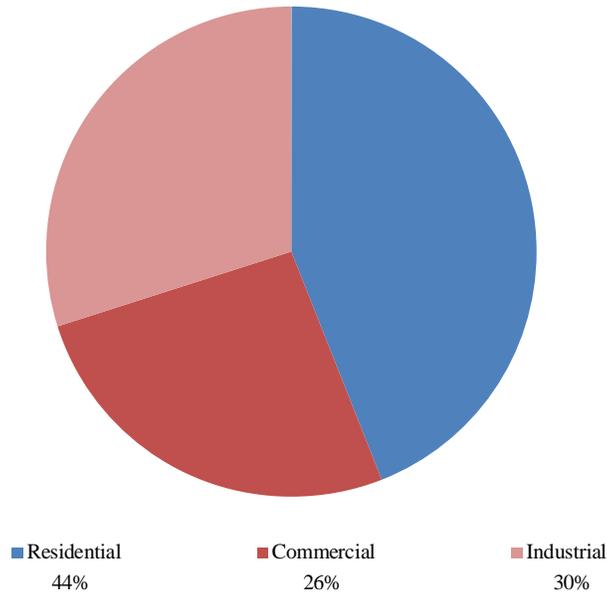
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

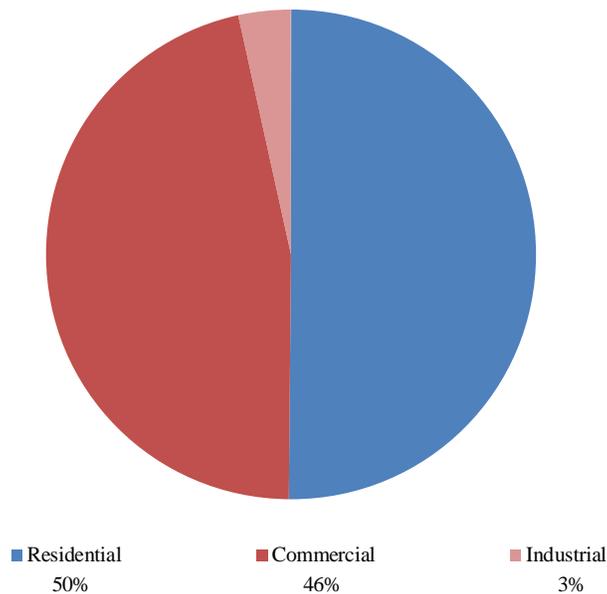
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

West Virginia Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

West Virginia Electric Revenues by Customer Class



West Virginia Energy Efficiency Spending by Customer Class



Notes & Sources:

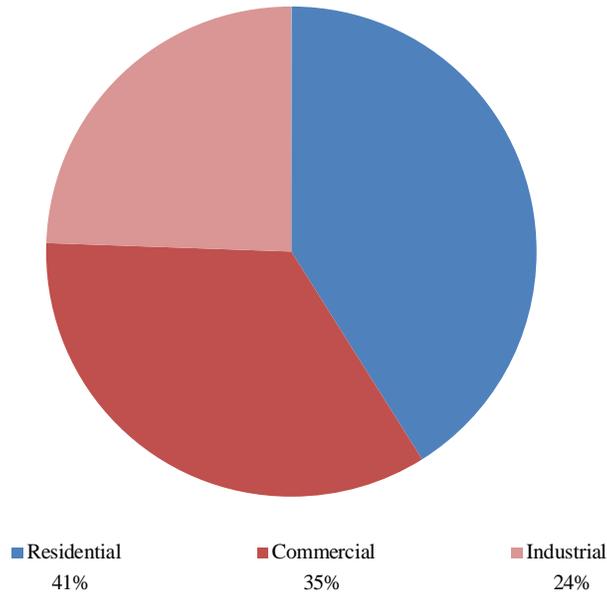
[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

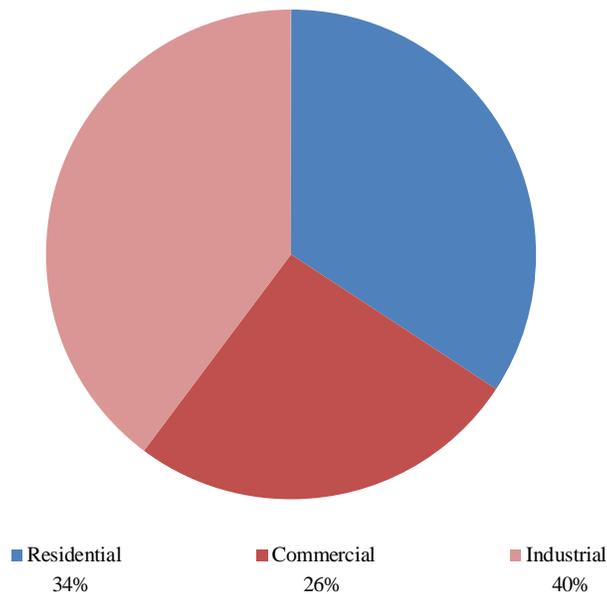
Wisconsin

Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Wisconsin Electric Revenues by Customer Class



Wisconsin Energy Efficiency Spending by Customer Class



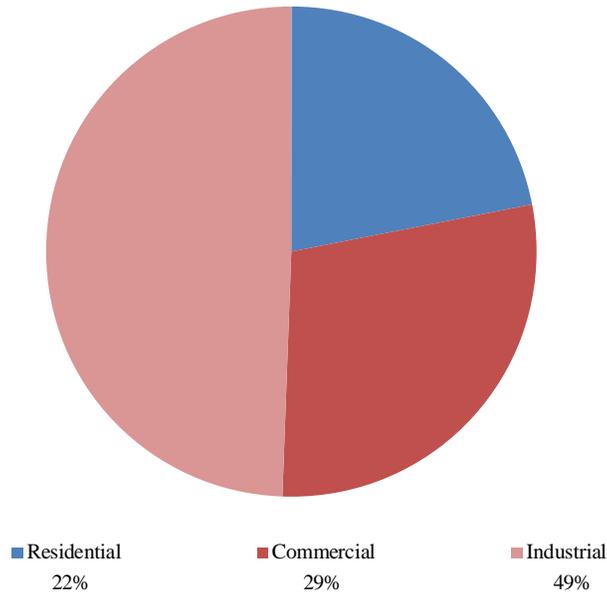
Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

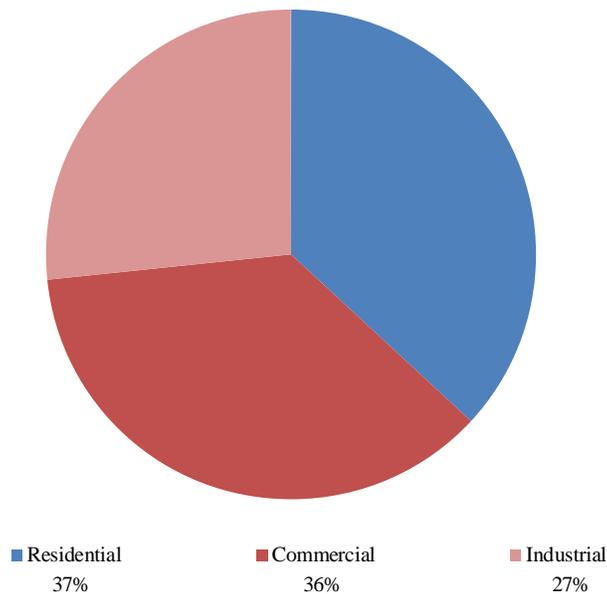
[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

Wyoming Comparison of Customer Class Electric Revenues and Energy Efficiency Spending by State (2012)

Wyoming Electric Revenues by Customer Class



Wyoming Energy Efficiency Spending by Customer Class



Notes & Sources:

[1] Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed May 10, 2014.

[2] Energy efficiency spending includes costs associated with both Energy Efficiency and Load Management Programs as reported in EIA data.

APPENDIX 4

State Case Studies (For the States Shown in Shading Below)



ARIZONA

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
 - Low-income considerations for DSM charges
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Commission has overseen the collection of system benefit charges for 15 years
 - Individual utilities administer their system benefit charges and related programs
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues from residential customers are spent in rough proportion to the dollars collected from that rate class
 - Energy efficiency spending in 2012 was 48% residential and 52% commercial
- **Protection of low-income customers**
 - Utilities must allocate a portion of demand side management (DSM) resources to low-income customers
 - Ratepayer-funded low-income programs totaled \$33.4 million toward rate assistance and \$3.9 million toward energy efficiency in 2012
 - Utilities offer rate assistance and energy efficiency programs
 - Charitable rate assistance programs also exist
 - LIHEAP funding in 2014: \$23,641,470

State ratemaking practices:

In Arizona, showing that rates are fair and reasonable across different customer classes is an important part of setting rates. In a recent Arizona Rate Case, Tucson Electric Power Company (TEP) used a Customer Class Cost of Service Study (CCCSS) to compare the reasonableness of the Settlement Agreement at issue. TEP argued that “the revenue allocation under the Settlement Agreement is equitable, while gradually moving towards matching customer classes to their actual costs.”¹

Arizona law states that all public service corporations that provide electric service to retail customers in Arizona must develop DSM programs for residential, non-residential, and low-income customers, which should be funded by a non-bypassable mechanism. The law states that funds should be collected “from residential customers and from non-residential customers proportionately to those customer classes to the extent practicable,” and that costs for low-income customers “shall be borne by all customer classes, except where a customer or customer class is specifically exempted by Commission order.”² Furthermore, the law states that affected utilities must “allocate a portion of DSM resources specifically to low-income customers.”³

¹ Arizona Corporation Commission Rate Case Docket E-01933A-12-0291, Docketed June 27, 2013.

² Arizona Administrative Code (AAC) R14-2-2401; AAC R14-2-2408.

³ AAC R14-2-2403.

Collection of energy efficiency (and other) public benefit revenues:

In 1999, the Arizona Corporation Commission ordered utilities to assess a non-bypassable system benefits charge on customers in order to fund low-income assistance, energy efficiency, and renewable resource programs. Oversight is provided by the Arizona Corporation Commission, while programs are administered by individual utilities.⁴

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Arizona in 2012 was distributed in the following way: 48% of spending was on residential customers and 52% was on commercial customers.⁵ Energy efficiency spending on residential customers is in rough proportion to the electric revenues collected from that rate class.⁶

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Arizona, funding for 2014 totaled \$23,641,470. Customers whose income is not greater than 60% of the state median income (or 150% of the Federal Poverty Level for households with 8 or more people) are LIHEAP-eligible. An estimated 28,781 households benefited from LIHEAP heating and cooling assistance in 2013. Eligible customers receive between \$75 and \$640 in heating and cooling benefits.⁷

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2012 lists a total of \$33.4 million in ratepayer funds dedicated toward low-income rate assistance, and \$3.9 million in ratepayer funds dedicated toward low-income energy efficiency.⁸ These numbers include totals from state- and utility-administered programs.

Many utilities offer utility-funded rate assistance programs and energy efficiency programs for low-income customers. Generally, utilities administer their rate assistance programs and contract with local community action agencies for their energy efficiency program. Examples of programs offered by Arizona Public Service are below:

- Arizona Public Service offers ratepayer assistance and crisis bill assistance funded by a volumetric “System Benefits Adjustment” on customers’ bills. Their Energy Support Program (ESP) offers up to 65% off on the cost of electricity for eligible low-income customers, and their Crisis Bill Assistance (CBA) offers up to \$400 per year for eligible customers with financial hardship. The CBA is administered by the Arizona Community Action Association. Funding in 2012 was \$18.2 million for ESP and \$254,000 for CBA.
- Arizona Public Service also offers an Energy Wise Low-Income Weatherization (EW) Program which is funded by an “Environmental Improvement Surcharge” paid by all non-low-income

⁴ “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010.

⁵ Percentages reflect EE and Load Management Program costs from EIA data.

⁶ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 4, 2012.

⁷ LIHEAP Clearinghouse Arizona Profile, available at <http://liheap.ncat.org/profiles/Arizona.htm>, accessed June 4, 2014.

⁸ LIHEAP Clearinghouse “2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency,” available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 4, 2014.

customers. Services include attic insulation, testing of heating and cooling equipment, and water efficiency measures, among other energy efficiency measures. Funding in 2012 for EW totaled \$2.12 million.⁹

In addition to ratepayer-funded programs, many utilities offer charitable rate assistance. For example, Trico Electric Cooperative, Sulphur Springs Valley Electric Coop, and Mohave Electric Coop all collected customer donations that go toward helping in-need customers pay their electric bills.¹⁰

⁹ LIHEAP Clearinghouse Arizona State Snapshot, available at <http://liheap.ncat.org/dereg/states/azsnapshot.htm>, accessed June 4, 2014.

¹⁰ LIHEAP Clearinghouse Arizona Profile, available at <http://liheap.ncat.org/profiles/Arizona.htm>, accessed June 4, 2014.

CALIFORNIA

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Commission has overseen the collection and spending of public benefit funding mechanisms for 18 years
 - Public benefit funding collected from all rate classes, and all customers within rate classes, on a volumetric basis
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected within rate classes
 - Energy efficiency spending in 2012 was 41% residential, 47% commercial, and 12% industrial
- **Protection of low-income customers**
 - Low-income rates and programs are protected with oversight of the Low-Income Oversight Board
 - Ratepayer-funded low-income programs totaled \$1.2 billion toward rate assistance and \$250 million toward energy efficiency in 2012
 - “The Big Four” IOUs, municipals and coops, and smaller utilities offer ratepayer funded rate assistance and energy efficiency programs
 - Utilities also offer rate assistance programs through charitable organizations
 - LIHEAP funding in 2014: \$153,591,640

State ratemaking practices:

Enacted in 1988, the California Public Utilities Code, Division 1, Part 1, Chapter 4, 739.6 states, “The commission shall establish rates using cost allocation principles that fairly and reasonably assign to different customer classes the costs of providing service to those customer classes, consistent with the policies of affordability and conservation.”¹ In addition to providing provisions relating to equity across customer classes, the PUC code also has provisions to protect conservation and energy efficiency efforts and to protect low-income customers. The PUC Division 1, Part 1, Chapter 4, 739.9 code states that when electric utilities alter their rates for residential customers, “The commission shall ensure that any approved charges do all of the following: (1) reasonably reflect an appropriate portion of the different costs of serving small and large customers. (2) Not unreasonably impair incentives for conservation and energy efficiency. (3) Not overburden low-income customers.”²

¹ California PUC Division 1, Part 1, Chapter 4, 739.6, effective June 28, 1988.

² California PUC Division 1, Part 1, Chapter 4, 739.9, effective January 1, 2014.

Collection of energy efficiency (and other) public benefit revenues:

California established its first public benefit fund in 1996. Called the Public Goods Charge (PGC), the fund was overseen by the California Public Utilities Commission (CPUC) and was non-bypassable. Proceeds from this fund went toward energy efficiency and low-income assistance programs which were administered by individual utilities and renewable energy and RD&D which were administered by The California Energy Commission.³ DSIRE reports that these rates varied by utility and customer type, but lists the following approximate charges: for Renewables, ~1.6 mills/kWh; for Efficiency, ~5.4 mills/kWh; and for RD&D, ~1.5 mills/kWh. Annual proceeds from the PGC toward renewables averaged \$65.5 million annually from 2008-10; for energy efficiency, \$228 million annually; and for RD&D, \$62.5 million annually.⁴

Legislation had extended collections from the PGC through 2011, but the California legislature did not pass any additional measures to fund the PGC beginning in 2012. In practice, however, the CPUC still has the authority to levy charges for a public benefits fund through the PUC code 381 which has no expiration date. Funds from the new Electric Program Investment Charge Fund (EPICF) will go toward renewable energy and RD&D projects. From 2010-2012, the CPUC approved the use of funds from the Procurement Energy Efficiency Balancing Account (PEEBA) to replace energy efficiency funds previously obtained through the PGC.⁵

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in California in 2012 was distributed in the following way: 41% of spending was on residential customers, 47% was on commercial customers, and 12% was on industrial customers.⁶ This is in rough proportion to the electric revenues collected from each rate class.⁷

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For California, funding for 2014 totaled \$153,591,640. Customers whose income is not greater than 60% of the state median income are LIHEAP-eligible. An estimated 194,189 households benefited from LIHEAP heat assistance in 2013. As an example, the average money spent on heating for LIHEAP customers in 2012 was \$424. In addition, 2012 customers could receive up to \$1,000 to deal with a crisis.⁸

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2012 lists a total of \$1.2 billion in ratepayer funds dedicated toward low-income rate assistance, and \$250

³ "Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities," published by the US DOE, March 2010.

⁴ California Public Benefits Fund Page, DSIRE database, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CA05R&re=1&ee=1, accessed June 4, 2014.

⁵ California Public Benefits Fund Page, DSIRE database, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CA05R&re=1&ee=1, accessed June 4, 2014.

⁶ Percentages reflect EE and Load Management Program costs from EIA data.

⁷ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 4, 2014.

⁸ LIHEAP Clearinghouse California Profile, available at <http://liheap.ncat.org/profiles/California.htm>, accessed June 4, 2014.

million in ratepayer funds dedicated toward low-income energy efficiency.⁹ These numbers include totals from state- and utility-administered programs.

California has several ratepayer funded low-income assistance programs that are administered by utilities with regulatory oversight. Participating utilities include the state's large Investor-Owned Utilities (IOUs) as well as several smaller utilities, and programs are funded through a "public purpose surcharge on all regulated utilities," in which all customers contribute, except for those who qualify for CARE (see below). Several of such programs are listed below:

- The California Alternate Rates for Energy (CARE) provides a 20% discount on gas and electric utility bills for qualifying low-income households. Funding from the state's largest utilities totaled \$1.2 billion in 2012.
- The Family Electric Rate Assistance Program provides an additional electric rate discount for qualifying low-income households for customers of the state's largest electric IOUs. Funding from these IOUs totaled \$11 million in 2012.
- The Energy Savings Assistance Program (formerly Low Income Energy Efficiency or LIEE) funds the "Repair and replacement of gas and electric heating and water heating systems, air conditioners and evaporative coolers, refrigerator and lighting upgrades, weatherization and energy efficiency education." Funding from the state's largest utilities totaled \$250.6 million in 2012.¹⁰

In addition to the above ratepayer funded utility-administered programs, smaller utilities and municipal utilities offer low-income rate assistance and energy efficiency programs. A few examples are below:

- Sacramento Municipal Utility District (SMUD) has several programs to help with rate assistance, including a payment program for overdue utility bills and the Energy Assistance Program Rate (EAPR) where qualifying customers can receive a discount of more than 30% on their energy bill. SMUD also offers a Medical Equipment Discount Rate for customers with high electric costs resulting from running medical equipment.
- Alameda Municipal Power's Energy Assistance Program (EAP) is an intervention program that provides a "one-year 25 percent electric rate reduction home energy audit," along with a replacement of certain appliances and weatherization for homes with electric heat. They also offer a Medical Discount Program for customers not benefitting from EAP that offers a 10% discount for customers running energy-intensive health devices.
- The Banning Electric Alternative Rate Program in the City of Banning is funded by the state-mandated electric public benefits charge and results in up to \$200 annual savings on eligible customers' electric utility bill.¹¹

⁹ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 4, 2014.

¹⁰ LIHEAP California State Snapshot, available at <http://liheap.ncat.org/dereg/states/casnapshot.htm>, accessed June 4, 2014.

¹¹ LIHEAP Clearinghouse California Profile, available at <http://liheap.ncat.org/profiles/California.htm>, accessed June 4, 2014.

Many utilities also offer charitable assistance, funded through organizations like the Salvation Army or through donations and subsidies from shareholders, employees, and/or customers. A few examples are listed below:¹²

- SMUD offers EnergyHELP which provides eligible low-income customers with up to \$200 in yearly assistance toward unpaid bills. This program is offered in conjunction with The Salvation Army, Sacramento Food Bank Services, Travelers Aid and Folsom Cordova Community Partnership.
- San Diego Gas and Electric's Neighbor to Neighbor program is subsidized by shareholders and employees and helps customers experiencing temporary financial hardship to pay their bills.
- Los Angeles Department of Water and Power offers rate assistance to low-income and unemployed elderly customers through funds collected from customers and city employees.

As an additional measure to protect low-income utility customers, the California legislature established the Low Income Oversight Board to advise the PUC on their low-income programs and to serve as a liaison between low-income customers and representatives.¹³

¹² LIHEAP Clearinghouse California Profile, available at <http://liheap.ncat.org/profiles/California.htm>, accessed June 4, 2014.

¹³ See the LIOB website, available at <http://www.liob.org/>, accessed June 4, 2014.

COLORADO

Summary

- **State ratemaking practices**
 - Fair and reasonable allocation of utility costs to customers
 - Equitable allocation of DSM costs to all customer classes
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Commission oversaw the collection and spending of funds collected from Xcel energy from 2004-2013
 - The City of Boulder collects funds from all customers, on a volumetric basis with varying rates based on customer class
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected within rate classes
 - Energy efficiency spending in 2012 was 35% residential, 54% commercial, and 11% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$5.47 million toward rate assistance and \$6.33 million toward energy efficiency in 2012
 - Utilities offer ratepayer-funded rate assistance, arrears management, and energy efficiency programs
 - Utilities also offer charitable rate assistance programs
 - LIHEAP funding in 2014: \$46,377,830

State ratemaking practices:

Colorado law demands that rates charged by utilities be fair to customers. As summarized in the Colorado Revised Statutes, §40-3-101.1, “All charges made, demanded, or received by any public utility for any rate, fare, product, or commodity furnished or to be furnished or any service rendered or to be rendered shall be just and reasonable.”¹ In addition, the Public Utilities Commission (PUC) takes into account low-income customers when setting rates. Specifically, the Colorado Department of Regulatory Agencies PUC code states, “Electric utilities with Colorado retail customers shall file with the Commission a proposal to provide low-income energy assistance by offering rates, charges, and services that grant a reasonable preference or advantage to residential low-income customers,” which is permitted by CRS §40-3-106.²

In 2007, the General Assembly of the State of Colorado amended the CRR §40-1-102 to declare that cost-effective Demand-Side Management Programs (DSMs), which include any combination of energy efficiency, energy conservation, load management, and demand response programs, “will save money for

¹ Colorado Revised Statutes §40-3-101.1, effective April 19, 2013.

² Colorado Department of Regulatory Agencies PUC CCR 723-3, Part 3.

consumers and utilities and protect Colorado's environment." As utilities develop their DSM programs and implement incentive mechanisms, which can include cost-adjustment, the Commission "shall ensure that utilities develop and implement DSM programs that give all classes of customers an opportunity to participate and shall give due consideration to the impact of DSM programs on Nonparticipants and on low-income customers."³

Collection of energy efficiency (and other) public benefit revenues:

While Colorado does not have a true Public Benefits Fund, Xcel Energy agreed to spend \$196 million on energy efficiency programs from 2004 to 2013 as part of a settlement and levied a charge on customers to recover these costs. The utility administered these funds, which were collected for energy efficiency and load management programs, and the PUC served as the oversight body.⁴

Additionally, in 2006 citizens of the City of Boulder voted in favor of a tax levied on electricity customers in the form of a charge based on electric usage. Proceeds go to programs to increase energy efficiency, increase renewable energy, and decrease motor vehicle emissions. Maximum tax rates for electricity customers as reported in DSIRE are as follows: for residential customers, \$0.0049/kWh; for commercial customers, \$0.0009/kWh; and for industrial customers, \$0.0003/kWh. In 2010, proceeds from this tax totaled \$1.8 million.⁵

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Colorado in 2012 was distributed in the following way: 35% of spending was on residential customers, 54% was on commercial customers, and 11% was on industrial customers.⁶ This is in rough proportion to the electric revenues collected from each rate class.⁷

Protection of low-income customers:

As mentioned above, there are laws in place to protect low-income customers when it comes to the setting of utility rates. In addition, federally-funded LIHEAP funds go toward protecting low-income utility customers. Colorado LIHEAP funds for 2014 totaled \$46,377,830, and benefit customers who are below 150% of the Federal Poverty Level. In Colorado, this money is spent on heating, with an average spending in 2013 of \$302 per household.⁸

The LIHEAP Clearinghouse additionally also compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent Colorado data from 2012 lists a total of \$5.47 million in ratepayer funds dedicated toward low-income rate assistance, and \$6.33 million in ratepayer funds dedicated toward low-income energy efficiency.⁹

³ CRS §40-1-102 as Amended by House Bill 07-1037, effective 2007.

⁴ "Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities," published by the US DOE, March 2010.

⁵ City of Boulder – Climate Action Plan Fund webpage, DSIRE database, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CO37R&re=1&ee=1, accessed June 4, 2014.

⁶ Percentages reflect EE and Load Management Program costs from EIA data.

⁷ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 4, 2014.

⁸ LIHEAP Clearinghouse State Profile, available at <http://liheap.ncat.org/profiles/Colorado.htm>, accessed June 4, 2014.

⁹ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 4, 2014.

Individual utilities have low-income programs that include some combination of rate assistance, arrears management, and energy efficiency. Many of these programs are administered in partnership with Colorado LIHEAP and/or Energy Outreach Colorado¹⁰, a non-profit that helps raise funds to help low-income Coloradans meet their energy needs.¹¹ A few examples of programs offered by Colorado utilities are provided below:

- Black Hills Energy offers a Black Hills Energy Assistance Program (BHEAP) and Low-Income Weatherization (LIWAP) Program.
 - BHEAP is administered in partnership with Colorado LIHEAP, and qualifying customers receive both rate assistance through a fixed monthly credit on customers' bills and a monthly arrearage credit equal to 1/24 of the pre-existing arrearage. This program is funded through a "BHEAP Funding Fee" charged to all customers.
 - LIWAP is administered through partnership with community action agencies, and qualifying customers receive weatherization services such as refrigerator replacement and evaporative cooler installations. This program is funded through a "Demand-Side Management Cost Adjustment" charge to all customers.
 - Estimated 2012 funding for BHEAP was \$234,000 and for LIWAP was \$424,000.
- Xcel Energy also offers low-income rate assistance, arrears management, and energy efficiency programs.
 - The Electric Affordability Program (EAP) is administered in partnership with Colorado LIHEAP and provides several options for rate-assistance and arrears management for qualifying customers. For rate assistance, the Percentage of Income Payment Plan (PIPP) allows customers to receive a bill credit related to the difference between their customer bill and 3% of their annual income, while the Step Bill Discount (SBD) gives qualifying households a percentage discount based on their last twelve months of energy usage. For arrears management, PIPP credits are designed to eliminate outstanding balances over the course of 12 or 24 months, while SBD provides a one-time credit of up to \$200 to arrears. The cost of EAP is built into the "Service and Facility Charge" charged to all customers. Estimated 2012 funding for EAP was \$6.4 million.
 - The Low-Income Segment (LIS) is a low-income energy efficiency program that is administered in partnership with the Governor's Energy Office and Energy Outreach Colorado. This program offers services including the distribution of energy-saving kits and weatherization assistance, and is funded through a "Demand-Side Management Cost Adjustment" charged to all customers. Estimated 2012 funding for LIS was \$5.54 million.¹²

¹⁰ LIHEAP Clearinghouse State Snapshot, available at <http://liheap.ncat.org/dereg/states/cosnapshot.htm>, accessed June 4, 2014.

¹¹ See Energy Outreach Colorado About Us webpage, available at <http://www.energyoutreach.org/about>, accessed June 4, 2014.

¹² LIHEAP Clearinghouse State Snapshot, available at <http://liheap.ncat.org/dereg/states/cosnapshot.htm>, accessed June 4, 2014.

Many utilities also offer charitable programs to help with rate assistance. A few examples are provided below:

- Black Hills Energy's Black Hills Cares program matches customer and employee donations to the program and provides assistance to eligible customers to pay their energy bills or pay energy-related expenses.
- The City of Longmont's COPE program offers utility bill payment assistance to customers who have a disconnect notice.
- Yampa Valley Electric offers a Caring Customers program, where customers can elect to round their electric bills up to the nearest dollar, and an appointed board of directors determines whom to deliver funds to.¹³

¹³ LIHEAP Clearinghouse State Profile, available at <http://liheap.ncat.org/profiles/Colorado.htm>, accessed June 4, 2014.

CONNECTICUT

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - Separate energy efficiency and renewable energy funds exist
 - The Clean Energy Finance and Investment Authority has overseen the collection and spending of the Connecticut Clean Energy Fund for 16 years
 - The Energy Conservation Management Board has helped the relevant utilities oversee the Connecticut Energy Efficiency Fund for 16 years
 - Public benefit funding collected from all rate classes, and all customers within rate classes, on a volumetric basis
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected within rate classes
 - Energy efficiency spending in 2012 was 48% residential, 40% commercial, and 12% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$20.8 million toward rate assistance and \$19.1 million toward energy efficiency in 2012
 - Utilities offer energy efficiency and arrears management programs
 - Charitable fuel assistance programs also exist
 - LIHEAP funding in 2014: \$77,412,553

State ratemaking practices:

Connecticut has laws in place to protect utility customers by requiring that rates be fair. In Chapter 277, Section 16-19a of the General Statutes of Connecticut, the law commands that at least once every four years, the Public Utilities Regulatory Authority (the Authority) “conduct a complete review and investigation of the financial and operating records of each such company and hold a public hearing to determine whether the rates of each such company are unreasonably discriminatory or more or less than just, reasonable and adequate” for gas and electric companies of a certain size.¹ In addition to requiring that rates be just and reasonable, there is an additional concern about protecting low-income customers. In particular, Section 16-19e states that “The authority shall determine whether existing or future rate structures place an undue burden upon those persons of poverty status and shall make such adjustment in the rate structure as is necessary or desirable to take account of their indigency.”²

¹ General Statutes of Connecticut, Chapter 277, Section 16-19a.

² General Statutes of Connecticut, Chapter 277, Section 16-19e.

Information from a recent rate case provides an example of the importance of equity in ratemaking practices. The Authority used information obtained from a utility's cost of service study to assess whether the proposed rates were equitable for all customers. In fact, in its Order, the Authority disallowed certain rate proposals made by the utility because the rates were "inexact pricing schemes that inequitably discount bills for one subset of customers to create an opportunity to inequitably overcharge a different subset of customers in the name of price signaling," and that "neither subset of customers is treated equitably." When this happens, the Authority then works with the Company "to implement cost based customer and demand rates across all customer classes."³

Collection of energy efficiency (and other) public benefit revenues:

The Connecticut Clean Energy Fund (CCEF) and the Connecticut Energy Efficiency Fund (CEEF) are two Public Benefits Funds created in 1998. The CCEF is administered and governed by the Clean Energy Finance and Investment Authority, and proceeds from the fund go toward investments in renewable energy and alternative fuels produced in Connecticut and used for electricity generation. Ratepayer funds can also "be leveraged to raise private investment and further support renewable and clean energy development in the state." The charge for this fund is "not less than" \$0.0001/kWh for Connecticut Light and Power and United Illuminating customers. Revenues for the fund total approximately \$20 million annually.⁴

The CEEF has the mission "to advance the efficient use of energy, to reduce air pollution and negative environmental impacts, and to promote economic development and energy security." CEEF is funded by rate surcharges on Connecticut Light and Power and United Illuminating customers. Utilities then develop plans for energy efficiency programs with assistance from the Energy Conservation Management Board. The fund is supplemented by money from other sources, including RGGI and ISO New England's forward capacity market. The charge for this fund is \$0.003/kWh for Connecticut Light and Power and United illuminating customers, with varying charges for municipal utility customers. CEEF funds totaled \$154 million in 2011, with \$130.3 million coming from ratepayer collections.⁵

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Connecticut in 2012 was distributed in the following way: 48% of spending was on residential customers, 40% was on commercial customers, and 12% was on industrial customers.⁶ This is in rough proportion to the electric revenues collected from each rate class.⁷

Low-income programs:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. LIHEAP funds for Connecticut in 2014 totaled \$77,412,553. Funds are available for customers below 150% of the Federal Poverty Level, or 200% of the Federal Poverty Level for certain families with

³ Connecticut Rate Case 13-01-19, Order Issued August 15, 2013.

⁴ Connecticut Clean Energy Fund Page, DSIRE database, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CT03R&re=1&ee=1, accessed June 4, 2014.

⁵ Energy Efficiency Fund Page, DSIRE database, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CT12R&re=1&ee=1, accessed June 4, 2014.

⁶ Percentages reflect EE and Load Management Program costs from EIA data.

⁷ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 4, 2014.

disabled family members, seniors, or young children. Funds go toward heating costs, with between \$350 and \$575 spent in each household helped.⁸

The LIHEAP Clearinghouse also compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data for Connecticut, from 2012, lists a total of \$20.8 million in ratepayer funds dedicated toward low-income rate assistance, and \$19.1 million in ratepayer funds dedicated toward low-income energy efficiency.⁹

As mentioned above, CEEF is funded in part through a charge levied on Connecticut Light and Power and United Illuminating customers. One energy efficiency program funded through CEEF is the Home Energy Solutions Income Eligible (HSE-IE) which addresses energy-efficient issues such as water heating, refrigeration and insufficient insulation. In addition, proceeds from surcharges on Connecticut Light and Power and United Illuminating customers can be used for arrearage forgiveness. The Matching Payment Program (MPP) is a mandated arrearage forgiveness program for eligible low-income customers. Both the HSE-IE and MPP are administered by the utilities with oversight from the Authority. Funding from electric utilities in 2012 was \$12.8 million for arrears management and \$14.8 million for energy efficiency.¹⁰

In addition to ratepayer-funded low-income programs, several charitable programs exist to provide rate assistance to low-income utility customers. A few examples of such programs are below:

- State legislation requires that all gas and electric utilities with over 75,000 customers facilitate customer donation to Operation Fuel, which provides help paying energy bills to low-income customers not eligible for other rate assistance programs.
- In Westport and Weston, community donations to the Warm Up Fund provide funds for fuel assistance.
- Donations to the Windsor Community Service Counsel go toward the Windsor Fuel Bank, which provides fuel assistance for low-income customers not eligible for other rate assistance programs.¹¹

⁸ LIHEAP Clearinghouse State Profile, available at <http://liheap.ncat.org/profiles/Connecticut.htm>, accessed June 4, 2014.

⁹ LIHEAP Clearinghouse “2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency,” available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 4, 2014.

¹⁰ LIHEAP Clearinghouse Connecticut Snapshot, available at <http://liheap.ncat.org/dereg/states/ctsnapshot.htm>, accessed June 4, 2014.

¹¹ LIHEAP Clearinghouse Connecticut Profile, available at <http://liheap.ncat.org/profiles/Connecticut.htm>, accessed June 4, 2014.

FLORIDA

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
- **Collection of energy efficiency (and other) revenues**
 - The Commission oversees the collection and spending of funds collected by utilities for energy efficiency, RD&D, and low-income programs
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected within rate classes
 - Energy efficiency spending in 2012 was 66% residential, 24% commercial, and 10% industrial
- **Protection of low-income customers**
 - Programs resulting from state-mandated FEECA provide energy efficiency savings to low-income customers
 - Charitable rate assistance programs are also available
 - LIHEAP funding in 2014: \$77,350,999

State ratemaking practices:

Florida law mentions the importance of addressing equity and fairness in ratemaking. In particular, Florida Statute Title XXVII, §366.03 states that “All rates and charges made, demanded, or received by any public utility for any service rendered, or to be rendered by it, and each rule and regulation of such public utility, shall be fair and reasonable.” The Florida Public Service Commission accomplishes the goal of “fixing fair, just, and reasonable rates for each customer class” by “consider[ing] the cost of providing service to the class, as well as the rate history, value of service, and experience of the public utility; the consumption and load characteristics of the various classes of customers; and public acceptance of rate structures.”¹

Collection of energy efficiency (and other) revenues:

The Florida Energy Efficiency and Conservation Act (FEECA) requires that utilities offer energy efficiency, R&D, and low-income programs, which are funded through a charge on customers' utility bills. Programs resulting from this act are administered by the utilities, and the Public Service Commission provides oversight.²

¹ Florida Statute Title XXVII, §366.03 and §366.06, 2010 Florida Statutes.

² “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010; Florida Energy Efficiency Goals webpage, DSIRE database, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=FL25R&re=1&ee=1, accessed June 4, 2014.

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Florida in 2012 was distributed in the following way: 66% of spending was on residential customers, 24% was on commercial customers, and 10% was on industrial customers.³ This is in rough proportion to the electric revenues collected from each rate class.⁴

Low-Income Programs:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Florida, funding for 2014 totaled \$77,350,999. Customers whose income is not greater than 150% of the Federal Poverty Level are LIHEAP-eligible. LIHEAP funds go toward both heating and cooling, and between \$150 and \$300 is spent per household.⁵

As mentioned above, FEECA requires that utilities of a certain size meet certain goals relating to energy efficiency, among other things. All five of the state's investor owned utilities (IOUs) and two municipal utilities are subject to this law, and below is an example of one company's implementation.⁶

- Tampa Electric is one of the IOUs that falls under FEECA. Tampa Electric has a Neighborhood Weatherization program, where free energy-savings kits are distributed. Tampa Electric partners with non-profit Tampa Hillsborough Action Plan (THAP) for this program.⁷

Outside of FEECA, other IOUs and municipal utilities offer their own energy efficiency and rate assistance programs. For example, City of Tallahassee Utilities has a Good Neighbor Program where they offer a 25% credit on electric service for qualified customers when funds are available. This program additionally provides weatherization and energy efficiency measures.⁸

Many utilities also offer charitable programs to help with energy assistance. Examples include:

- Some programs, such as the City of Lake Worth Utilities' Share to Care Program, are funded through customer donations and are used to help needy families pay their energy bills. Share to Care is administered by the Salvation Army.
- Other programs, like Fort Pierce Authority's Project Care, are funded by business and religious and civic organizations, in addition to individuals.⁹

³ Percentages reflect EE and Load Management Program costs from EIA data.

⁴ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 4, 2014.

⁵ LIHEAP Clearinghouse State Profile, available at <http://liheap.ncat.org/profiles/Florida.htm>, accessed June 4, 2014.

⁶ Florida Energy Efficiency Goals webpage, DSIRE database, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=FL25R&re=1&ee=1, accessed June 4, 2014.

⁷ LIHEAP Clearinghouse Florida Profile, available at <http://liheap.ncat.org/profiles/Florida.htm>, accessed June 4, 2014.

⁸ LIHEAP Clearinghouse Florida Profile, available at <http://liheap.ncat.org/profiles/Florida.htm>, accessed June 4, 2014.

⁹ LIHEAP Clearinghouse Florida Profile, available at <http://liheap.ncat.org/profiles/Florida.htm>, accessed June 4, 2014.

GEORGIA

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
 - Low-income considerations
- **Disbursement of energy efficiency revenues**
 - Energy efficiency spending in 2012 was 56% residential, 24% commercial, and 21% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$11.4 million toward rate assistance and \$1.75 million toward energy efficiency in 2011
 - Senior citizen discount rates for qualifying customers over 65
 - Weatherization services distributed by the Georgia Environmental Finance Authority
 - HEAT and SHARE programs help customers with energy assistance
 - LIHEAP funding in 2014: \$61,157,824

State ratemaking practices:

Georgia has laws and practices in place to protect its utility customers. In Georgia State Code §46-2-20c, the law states that the Commission “may, either by general rules or by special orders in particular cases, require all companies under its supervision to establish and maintain such public services and facilities as may be reasonable and just.”¹ This is supported in a recent rate case, where the Commission writes that, in general, “a Settlement Agreement must be considered as a whole, and examined as to whether its adoption serves the public interest by resulting in just and reasonable rates for all classes of ratepayers.” Further, in reviewing the cost of service study provided as part of a recent rate case and in listening to the opinions of interested parties, the Commission found that “that the allocation of costs and rate design contemplated in the Settlement Agreement are reasonable and in the best interests of all customer groups.”²

In addition to ensuring equity across customer classes, the Commission also considers the rate-paying abilities of low-income customers. In the aforementioned rate case, for example, the Commission ordered that the low-income senior discount “be increased by an amount sufficient to offset the impact of the rate increases specified in the Settlement Agreement” to protect this class of customers.³

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Georgia in 2012 was distributed in the following way: 56% of spending was on residential customers, 24% was on commercial customers, and 21% was on industrial customers.⁴ This is in rough proportion to the electric revenues collected from each rate class.⁵

¹ Georgia State Code §46-2-20c.

² Georgia Rate Case Docket 36989, Order Issued November 18, 2013.

³ Georgia Rate Case Docket 36989, Order Issued November 18, 2013.

⁴ Percentages reflect EE and Load Management Program costs from EIA data.

Low-income programs:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Georgia, funding for 2014 totaled \$61,157,824. Customers whose income is not greater than 60% of the state median income are LIHEAP-eligible. An estimated 156,649 households benefited from LIHEAP heating and cooling assistance in 2013. The average amount spent on heating for LIHEAP customers in 2013 was \$345, and customers received a maximum of \$350 for cooling.⁶

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2011 lists a total of \$11.4 million in ratepayer funds dedicated toward low-income rate assistance, and \$1.75 million in ratepayer funds dedicated toward low-income energy efficiency.⁷ These numbers include totals from state- and utility-administered programs.

Since 1989, the Georgia Commission has also required that all major utilities waive their monthly service charge for qualifying low-income customers over the age of 65.⁸ For example, qualifying customers of Georgia Power and Savannah Electric are eligible to receive a \$14.00 discount on their electric bills. Funding in 2011 for this program totaled \$16 million across electric and gas utilities.⁹

In addition, many charitable rate assistance and energy efficiency programs exist throughout the state. These programs are offered both through state agencies and through individual utilities. Examples of these programs are below:

- The Georgia Department of Human Resources also administers the statewide Heating Energy Assistance Team (HEAT) program, which uses funds from private citizens and the natural gas industry to help customers with energy assistance.¹⁰
- The Georgia Environmental Finance Authority also distributes funds for weatherization assistance through Community Action Agencies.¹¹

In addition, most electric and gas utilities give customers the opportunity to make charitable donations through their electric bills. This program, Project SHARE, is administered by the Salvation Army.¹² Some utilities, like Georgia Power Company and Atlanta Gas Light Company, also match the donations of their customers. This money then goes toward energy assistance for low-income customers.¹³

⁵ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 4, 2014.

⁶ LIHEAP Clearinghouse Georgia State Profile, available at <http://liheap.ncat.org/profiles/Georgia.htm>, accessed June 4, 2014.

⁷ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 4, 2014.

⁸ LIHEAP Clearinghouse Georgia State Profile, available at <http://liheap.ncat.org/profiles/Georgia.htm>, accessed June 4, 2014.

⁹ LIHEAP Clearinghouse Georgia State Snapshot, available at <http://liheap.ncat.org/dereg/states/gasnapshot.htm>, accessed June 4, 2014.

¹⁰ LIHEAP Clearinghouse Georgia State Profile, available at <http://liheap.ncat.org/profiles/Georgia.htm>, accessed June 4, 2014.

¹¹ Georgia Public Service Commission, Consumer Advisory, available at http://www.psc.state.ga.us/consumer_corner/cc_advisory/payassist.asp, accessed June 4, 2014.

¹² LIHEAP Clearinghouse Georgia State Profile, available at <http://liheap.ncat.org/profiles/Georgia.htm>, accessed June 4, 2014.

¹³ Georgia Public Service Commission, Consumer Advisory, available at http://www.psc.state.ga.us/consumer_corner/cc_advisory/payassist.asp, accessed June 4, 2014.

ILLINOIS

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Department of Commerce and Economic Opportunity has overseen the collection and spending of public benefit funding mechanisms for 17 years
 - Public benefit funding for energy efficiency is collected from utilities using a pro rata share of \$3 million
 - Public benefit funding for renewables is collected from all rate classes, and all customers within rate classes, as a set fee that varies by rate class
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues from residential customers are spent in rough proportion to the dollars collected within that rate class
 - Energy efficiency spending in 2012 was 50% residential, 48% commercial, and 2% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$58.9 million toward rate assistance and \$13.7 million toward energy efficiency in 2012
 - State-mandated SLEAF provides funds to help with bill assistance and weatherization
 - Utility-specific arrears management and energy efficiency components
 - LIHEAP funding in 2014: \$167,457,747

State ratemaking practices:

Illinois Statute 220 ILCS 5/1-102 mandates equitable utility service stating “The General Assembly finds that the health, welfare and prosperity of all Illinois citizens require the provision of adequate, efficient, reliable, environmentally safe and least-cost public utility services at prices which accurately reflect the long-term cost of such services and which are equitable to all citizens.” Part of determining equitable pricing is determining how rates should vary across different customer classes, and the law further clarifies that “variation in costs by customer class and time of use is taken into consideration in authorizing rates for each class.”¹

When a utility seeks to change its rates, the Illinois Commerce Commission hears a rate case, which is when the above laws are enforced. In one recent rate case, the Commission evaluated Commonwealth Edison Company’s Embedded Cost of Service Study and found that it “reasonably allocates costs among customer classes and is approved.”²

¹ Statute 220 ILCS 5/1-102, effective June 30, 2001.

² Illinois Rate Case Docket 13-0318, Order Issued December 18, 2013.

Collection of energy efficiency (and other) public benefit revenues:

In 1997, Illinois established non-bypassable public benefits funds for energy efficiency, renewable energy, and low-income assistance programs. The funds are administered and overseen by the Department of Commerce and Economic Opportunity (DCEO).³

The restructuring legislation of 1997 created separate funds for energy efficiency and renewable energy. Money for the Energy Efficiency Trust Fund (Trust) comes from electric utilities and alternative retail electric supplier contributions on a pro-rata basis based on the amount of energy sold. In addition to receiving funds from electric utilities, the Trust may receive contributions resulting from the Energy Efficiency Portfolio Standard (EEPS). From 1998-2015, contributions to the Trust are expected to total \$54 million. The EEPS fund stood at \$95 million for 2012. The total yearly contribution of all utilities to the Trust is \$3 million.⁴

In addition to creating the Trust, the 1997 legislation created the Renewable Energy Resources Trust Fund (RERTF). This fund supports renewable energy through grants, loans, and other incentives, and is funded by a mandatory surcharge on IOUs' customers' electric and gas bills, that varies based on customer class. Municipal utilities and electric cooperatives also have the option of participating. Half of the proceeds collected fund the RERTF, while the other half fund the Coal Technology Development Assistance Fund. The RERTF generally receives between \$5 million and \$5.5 million annually, and surcharges on electric customers vary by rate class in the following way: \$0.05/month for residential customers, \$0.50/month for nonresidential customers with less than 10 MW peak demand during the previous year, and \$37.50/month for nonresidential electric service with at least 10 MW of peak demand during the previous year.⁵

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Illinois in 2012 was distributed in the following way: 50% of spending was on residential customers, 48% was on commercial customers, and 2% was on industrial customers.⁶ Energy efficiency spending on residential customers is in rough proportion to the electric revenues collected from that rate class.⁷

Low-income programs:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Illinois, funding for 2014 totaled \$167,457,747. Customers whose income is not greater than 150% of the Federal Poverty Level are LIHEAP-eligible, and receive up to \$100 for heating.⁸

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2012 lists a total of \$58.9 million in ratepayer funds dedicated toward low-income rate assistance, and

³ "Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities," published by the US DOE, March 2010.

⁴ Energy Efficiency Public Benefits Fund, DSIRE database, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=IL10R&re=1&ee=1, accessed June 4, 2014.

⁵ Renewable Energy Resources Trust Fund, DSIRE database, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=IL01R&re=1&ee=1, accessed June 4, 2014.

⁶ Percentages reflect EE and Load Management Program costs from EIA data.

⁷ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 4, 2014.

⁸ LIHEAP Clearinghouse Illinois Profile, available at <http://liheap.ncat.org/profiles/Illinois.htm>, accessed June 4, 2014.

\$13.7 million in ratepayer funds dedicated toward low-income energy efficiency.⁹ These numbers include totals from state- and utility-administered programs.

Utility restructuring created the Supplemental Low-Income Energy Assistance Fund (SLEAF). Gas and electric utilities deposit a monthly surcharge from customers into the fund. This money, along with federal LIHEAP funds, gets distributed to low-income customers to help with bill payment assistance and weatherization. Money spent from the fund totals around \$76 million annually. SLEAF funds are spent only on customers whose utilities contribute to the fund.¹⁰

In addition to rate assistance programs stemming from SLEAF, utilities offer low-income arrearage management and energy efficiency components. Below is a summary of ratepayer funded low-income programs offered by Ameren Illinois, ComEd, Nicor Gas, and Peoples Gas/North Shore Gas:¹¹

- The Percentage of Income Payment Plan (PIPP) is open to customers whose income is at or below 150% of the Federal Poverty Level. Participants pay no more than 6% of their income on their utilities bill, and participants who make PIPP payments on time receive a credit of 1/12th of overdue bills and can receive up to \$1,000 annually for past due statements. PIPP is funded by a flat fee on customers' bills that varies based on customer classes, and is overseen by the DCEO.
- The DCEO also oversees federal Weatherization Assistance Programs, which are supplemented by ratepayer funds from the above utilities.

ComEd offers a Residential Special Hardship, where customers who are experiencing hardship such as job loss or illness and making less than 250% of the Federal Poverty Level are eligible to receive up to \$500 on a biannual basis to deal with that hardship.¹²

⁹ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 4, 2014.

¹⁰ LIHEAP Clearinghouse Illinois Profile, available at <http://liheap.ncat.org/profiles/Illinois.htm>, accessed June 4, 2014.

¹¹ LIHEAP Clearinghouse State Snapshot, available at <http://liheap.ncat.org/dereg/states/ilsnapshot.htm>, accessed June 4, 2014.

¹² LIHEAP Clearinghouse State Snapshot, available at <http://liheap.ncat.org/dereg/states/ilsnapshot.htm>, accessed June 4, 2014.

MAINE

Summary

- **State ratemaking practices**
 - Just and reasonable allocation of utility costs to rate classes
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Commission has overseen the collection and spending of public benefit funding mechanisms for 17 years
 - Public benefit funding is collected from consumers on a voluntary basis and from utilities through both alternative compliance payments and charges collected on a volumetric basis
- **Disbursement of energy efficiency (and other) public benefit revenues**
 - Energy efficiency spending in 2012 was 35% residential, 43% commercial, and 21% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$8.3 million toward rate assistance and \$930,000 toward energy efficiency in 2011
 - Low income rates: ratepayer- and utility-funded programs offer low-income discounts on utility bills
 - Minimum levels of energy efficiency spending on low income customers: a minimum of 20% of Maine Efficiency Trust funds must go toward energy programs for low-income customers and another minimum of 20% must go toward energy programs for small business customers.
 - Charitable emergency assistance for heat, electricity, and other items is offered to communities in crisis
 - LIHEAP funding in 2013: \$39,195,339

State ratemaking practices:

The state of Maine works toward just and reasonable allocation of utility costs to rate classes. Enacted in 1987, the Maine Title 35-A, Part 1, Chapter 3 states, “The rate, toll or charge, or any joint rate made, exacted, demanded or collected by any public utility for production, transmission, delivery or furnishing of electricity, gas, heat or water; for communications service; or for transportation of persons or property within this State or for any service rendered or to be rendered in connection with any public utility, shall be just and reasonable.”¹ In addition to mandating low-income assistance in the form of funds collected through system benefit charges, which will be described in more detail below, the “Needs-Based Low-Income Assistance” section of the Maine Title states that no low-income assistance should be prohibited: “Nothing in this section may be construed to prohibit a transmission and distribution utility from offering

¹ Maine Title 35-A, Part 1: Public Utilities Commission Heading, Chapter 3: Rates of Public Utilities Heading, 1987, §301.2.

any special rate or program for low-income customers that is not in effect as of the effective date of this chapter, subject to the approval of the commission.”²

Collection of energy efficiency (and other) public benefit revenues:

Maine established its first Public Benefit Fund, known as the Renewable Resource Fund (Fund), in 1997. The development and implementation of the Fund’s energy efficiency programs was originally divided amongst three entities – the State Planning Office (SPO), the state’s electric utilities, and the Maine Public Utilities Commission (PUC).³ However, legislative amendments directed full administration to the PUC in 2002.⁴

Renewable energy programs are supported by revenues generated through both utilities customers and the utilities themselves. Utility customers generate revenue for the Fund through voluntary contributions on top of their monthly utilities bill. Additionally, public benefit revenues are also generated from utilities through any alternative compliance payments (ACP) made to comply with the state’s renewable portfolio standard.⁵ Collections through these voluntary utility customer contributions and utility ACPs generated approximately \$800,000 in 2009, an estimated \$1.325 million during 2010 and approximately \$800,000 in 2011.⁶

In 2009, Maine established a larger fund under Public Law 372, known as the Efficiency Maine Trust (Trust). The Trust has no expiration date and collects funds for all of Maine’s energy efficiency and renewable energy programs.⁷ By statute, the Trust must direct at least 20% of the funds to energy programs for low-income residents and at least another 20% towards energy programs for small business customers. A large source of the Trust’s funds for energy efficiency programs result from PUC assessments of 0.145 cents per kilowatt-hour from utilities. Revenue from utility assessments accounted for approximately \$12.4 million in 2010, \$12.9 million in 2011, and \$13.2 million in 2012. The Trust also manages funds received from RGGI auctions and miscellaneous grants. In 2012, an approximate total of \$34 million was collected from all sources to support Maine’s energy efficiency and renewable energy programs.^{8, 9}

Disbursement of energy efficiency (and other) public benefit revenues:

According to the EIA, energy efficiency spending in Maine in 2012 was distributed in the following way: 35% of spending was on residential customers, 43% was on commercial customers, and 21% was on industrial customers.¹⁰

² Maine Title 35-A, Part 1: Public Utilities Commission Heading, Chapter 3: Rates of Public Utilities Heading, 1987, §3214.3.

³ Maine Public Benefits Fund Page, DSIRE database, “Efficiency Maine Trust – Renewable Resource Fund,” available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=ME07R&re=1&ee=1, accessed June 3, 2014.

⁴ Maine Public Benefits Fund Page, DSIRE database, “Efficiency Maine Trust,” available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=ME11R&re=1&ee=1, accessed June 3, 2014.

⁵ Public Law 403 established the Renewable Portfolio Standard alternative compliance payment in 2007.

⁶ Maine Public Benefits Fund Page, DSIRE database, “Efficiency Maine Trust – Renewable Resource Fund,” available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=ME07R&re=1&ee=1.

⁷ As of July 1, 2010, all of the funds in the Renewable Energy Fund were transferred to the Efficiency Maine Trust.

⁸ Maine Public Benefits Fund Page, DSIRE database, “Efficiency Maine Trust,” available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=ME11R&re=1&ee=1, accessed June 3, 2014.

⁹ “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010.

¹⁰ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. Maine LIHEAP funding is currently set at \$39,195,339 for 2014. To be LIHEAP-eligible, utility customers must have a household income of no greater than 60% the state median income. Additionally, Maine offers LIHEAP eligibility to households with incomes between 150% and 170% of the federal poverty guidelines if a member is susceptible to hypothermia (e.g. elderly or children under the age of two) or with the guidance of a doctor's note. In 2013, an estimated 44,556 households benefited from LIHEAP heat assistance. These households received an average LIHEAP heating benefit of \$556, a minimum benefit of \$144, and a maximum benefit of \$1,656.¹¹

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency program by state, where applicable. The most recent Maine data from 2011 lists a total of \$8.3 million in ratepayer funds dedicated toward low-income rate assistance, and \$930,000 in ratepayer funds dedicated toward low-income energy efficiency programs. These numbers include totals from state- and utility-administered programs.¹² Participating utilities include Central Maine Power Company and Emera Maine,¹³ which cover 95% of the state, as well as 10 consumer-owned utilities.

Maine has several low-income rate assistance and energy efficiency programs that are administered by utilities with regulatory oversight. The ratepayer funded programs, their funding mechanisms and administration, are listed below:

- The Low Income Assistance Program (LIAP) offers rate assistance benefits that vary by utility, but are most often a credit to or discount on an electric bill. To be eligible for LIAP, individuals must be LIHEAP-eligible customers of participating electric utilities and not reside in subsidized housing.
 - *Funding mechanism:* funds for LIAP are generated by a customer charge based on 0.5% of a utility's annual revenue. Funding for LIAP totaled \$8.3 million in 2012.
 - *Administration:* LIAP is administered by the Maine State Housing Authority, in coordination with local delivery agencies.
- The Low-Income Weatherization energy efficiency program offers appliance replacement and updates to building envelop and heating systems for single and multi-family dwellings.
 - *Funding mechanism:* funds for the Low-Income Weatherization program stem from the system benefit charge. Funding for the program totaled \$930,311 in 2012.
 - *Administration:* the Low-Income Weatherization program is administered by the Efficiency Maine Trust.¹⁴

¹¹ LIHEAP Clearinghouse Maine Profile, available at <http://liheap.ncat.org/profiles/Maine.htm>, accessed June 3, 2014.

¹² LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 3, 2014.

¹³ Emera Maine is the corporate parent to once separate utilities, Bangor Hydro-Electric Company and Maine Public Service Co.

¹⁴ LIHEAP Maine State Snapshot, available at <http://liheap.ncat.org/dereg/states/mesnapshot.htm>, accessed June 3, 2014.

In addition to the ratepayer funded programs listed above, utilities also offer rate assistance and energy efficiency programs to low-income customers. Examples of each include, but are not limited to, the following:¹⁵

Low-Income Rate Assistance:

- Central Maine Power's Electricity Lifeline Program offers qualified low-income customers a credit on their electric bill. This credit is based on household income and estimated electricity usage and is applied to your bill for the same amount each month, up to 12 months.
- Until's Discount Rate Program offers LIHEAP recipients a 30% discount on gas that is effective for a 12 month period.

Low-Income Energy Efficiency:

- Maine's Low Income Refrigerator Replacement program replaces inefficient refrigerators and installs energy efficient lighting for qualifying low-income consumers.¹⁶ This program is made possible by the collaborative efforts of Efficiency Maine, the Maine State Housing Authorities and Community Action Programs throughout the state.
- Until offers no-cost home energy assessments and installation of weatherization measures to qualifying households.

In addition to the ratepayer- and utility-based programs listed above, the state also has charitable assistance in the event of crises. For example, Maine Sea Coast Mission offers "emergency assistance for heat, electricity, food and other emergency circumstances for island and coastal communities from mid- to Downeast coastal Maine."¹⁷

¹⁵ LIHEAP Clearinghouse Maine Profile, available at <http://liheap.ncat.org/profiles/Maine.htm>, accessed June 3, 2014.

¹⁶ All LIHEAP applicants are automatically considered for the Appliance replacement program.

¹⁷ LIHEAP Clearinghouse Maine Profile, available at <http://liheap.ncat.org/profiles/Maine.htm>, accessed June 3, 2014.

MARYLAND

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Public Service Commission has overseen the collection of universal service funds used to help low-income utility customers for 15 years
 - Universal service program funding is collected from all rate classes, and all customers within rate classes, on a volumetric basis
- **Disbursement of energy efficiency revenues**
 - Energy efficiency spending in 2012 was 71% residential and 29% commercial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$37 million toward rate assistance and \$15 million toward energy efficiency in 2012
 - State-mandated programs providing low-income rate assistance, arrearage management, and energy efficiency programs as a result of 1999 restructuring
 - Utility-funded rate assistance and weatherization programs exist
 - Charitable rate assistance and weatherization programs also exist
 - LIHEAP funding in 2014: \$68,513,491

State ratemaking practices:

In a recent rate case in which Baltimore Gas and Electric (BGE) requested adjustments to its base rates, BGE filed two cost of service studies (COSSs) to “determine the costs a customer class, or in some cases a jurisdiction, imposes upon a company.” The results of the COSSs were then used by the Public Service Commission (Commission) “as a guide in developing appropriate customer class rates.” Based upon this COSS, the Commission determined “that BGE has appropriately allocated its electric and gas plant . . . because the Studies fairly and reasonably distribute costs among its customer classes and are consistent with previous Company COSSs approved by the Commission.”¹ In this way, the State of Maryland ensures through its Commission that rates are reasonably assigned to different customer classes based on cost.

Collection of energy efficiency (and other) public benefit revenues:

In 1999, the Maryland state legislature created a public benefit fund for low-income assistance and energy efficiency as a part of utility restructuring. The Maryland Public Service Commission serves as the oversight body.² Initially, the restructuring law provided \$34 million for low-income programs, and was

¹ Public Service Commission Rate Case 9326, Order no. 86060, Issued December 13, 2013.

² “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010.

increased to \$37 million in 2005-2006. The majority of funding—74%—comes from industrial and commercial customers, while 26% comes from residential customers.³

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Maryland in 2012 was distributed in the following way: 71% of spending was on residential customers and 29% was on commercial customers.⁴

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Maryland, funding for 2014 totaled \$68,513,491. Customers whose income is not greater than 175% of the Federal Poverty Level are LIHEAP-eligible. An estimated 113,787 households benefited from LIHEAP heat assistance in 2013 and received an average of \$496 in heating assistance.⁵

One LIHEAP-affiliated Maryland program is the Universal Service Protection Program, which subtracts the LIHEAP benefit from customers' bills and divides the remainder by twelve months in order to even out monthly utility payments.⁶

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2012 lists a total of \$37 million in ratepayer funds dedicated toward low-income rate assistance, and \$15 million in ratepayer funds dedicated toward low-income energy efficiency.⁷ These numbers include totals from state- and utility-administered programs.

The Electric Universal Service Program was authorized during utility restructuring in 1999 and includes bill assistance, arrears management, and weatherization services.⁸ As mentioned above, the EUSP is funded by surcharges on all customer classes. Eligible low-income customers receive discounts of 17% to 35% of their bill, with an average benefit of \$334. Arrearage retirement programs also exist, where customers at least \$300 in arrears and can receive a maximum benefit of \$2,000 once every seven years. These programs are administered by the Office of Home Energy Programs in the Department of Human Resources.⁹

EmPower Maryland Low Income Energy Efficiency Programs (LIEEP) is administered by the Maryland Department of Housing and Community Development and is available to customers of BGE, Southern Maryland Electric Cooperative, Delmarva Power, Potomac Edison, and Potomac Electric Power Company. This program is funded by a surcharge on all customer classes and provides weatherization

³ LIHEAP Clearinghouse Maryland PBF Overview, available at <http://www.liheap.ncat.org/dereg/states/maryland.htm>, accessed June 4, 2014.

⁴ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 4, 2014. Percentages reflect EE and Load Management Program costs from EIA data.

⁵ LIHEAP Clearinghouse Maryland Profile, available at <http://liheap.ncat.org/profiles/Maryland.htm>, accessed June 4, 2014.

⁶ LIHEAP Clearinghouse Maryland Profile, available at <http://liheap.ncat.org/profiles/Maryland.htm>, accessed June 4, 2014.

⁷ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 4, 2014.

⁸ LIHEAP Clearinghouse Maryland Profile, available at <http://liheap.ncat.org/profiles/Maryland.htm>, accessed June 4, 2014.

⁹ LIHEAP Clearinghouse Maryland State Snapshot, available at <http://liheap.ncat.org/dereg/states/mdsnapshot.htm>, accessed June 4, 2014.

services such as attic, floor, and wall installation and lighting retrofits. LIEEP funding in 2012 totaled \$15 million.¹⁰

In addition to the above programs, many utilities offer additional rate assistance and energy efficiency programs. A few examples are below:¹¹

- BGE, along with many smaller utilities, offers deposit, reconnect fee, and application fee waivers to qualifying low-income customers.
- PEPCO offers a Residential Aid Discount Program which provides eligible customers that do not have all-electric heating with a 63% discount on the first 400 kwh of energy usage in the summer and a 32% discount in the winter. Discounts for customers with all-electric heating are 38% on the first 700 kwh of energy used in the summer and a 51% discount in the winter.
- BGE and Colombia bas both offer free weatherization programs for qualifying low-income customers.

Lastly, many charitable energy assistance programs exist to help low-income customers. For example, the Fuel Fund of Maryland, Inc. consists of fuel funds from several counties and provides help for customers that use oil. The Victorine Q. Adams Fuel Fund similarly provides up to \$125 for clients facing energy shut-offs, and also helps with arrears management and emergency energy situations. Other utilities offer matching programs from customer donations that go toward low-income rate assistance.¹²

¹⁰ LIHEAP Clearinghouse Maryland State Snapshot, available at <http://liheap.ncat.org/dereg/states/mdsnapshot.htm>, accessed June 4, 2014.

¹¹ LIHEAP Clearinghouse Maryland Profile, available at <http://liheap.ncat.org/profiles/Maryland.htm>, accessed June 4, 2014.

¹² LIHEAP Clearinghouse Maryland Profile, available at <http://liheap.ncat.org/profiles/Maryland.htm>, accessed June 4, 2014.

MASSACHUSETTS

Summary

- **State ratemaking practices**
 - The DPU works to equitably allocate utility costs to rate classes
- **Collection of energy efficiency (and other) public benefit revenues**
 - The DPU along with the utilities and Massachusetts Clean Energy Center have overseen the collection and spending of public benefit funding mechanisms for 17 years
 - Public benefit funding is a non-bypassable charge and collected on a volumetric basis
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent roughly in proportion to the dollars collected from rate classes
 - Energy efficiency spending in 2012 was 49% residential, 32% commercial, and 18% industrial
- **Protection of low-income customers**
 - Low-income rates: there is a low-income discount on natural gas and electricity bills
 - Minimum energy efficiency spending: the low-income sector is allocated at least 10% of the funds for electric energy efficiency programs and 20% of the funds for gas energy efficiency programs
 - Ratepayer-funded low-income programs totaled \$103.6 million toward rate assistance and \$36.6 million toward energy efficiency in 2012
 - Massachusetts also has arrearage management and low-income demand side management programs
 - LIHEAP funding in 2014: \$140,014,388

State ratemaking practices:

The Massachusetts Department of Public Utilities (DPU) works to equitably allocate utility costs to the different customer classes. In particular, Massachusetts state law requires that the DPU, “design base distribution rates using a cost-allocation method that is based on equalized rates of return for each customer class.”¹ Furthermore, the DPU considers the impacts of their actions on low-income electricity customers. The law states, “In all decisions or actions regarding rate designs, the department shall consider the impacts of such actions, including the impact of new financial incentives on the successful development of energy efficiency and on-site generation. Where the scale of on-site generation would have an impact on affordability for low-income customers, a fully compensating adjustment shall be made to the low-income rate discount.” Lastly, the department requires electric distribution companies to include a low-income customer discount. “The department shall require that distribution companies provide discounted rates for low income customers comparable to the low-income discount rate in effect prior to March 1, 1998.”²

¹ The Commonwealth of Massachusetts, General Laws, Part I, Title XXII, Chapter 164, Section 94I.

² The Commonwealth of Massachusetts, General Laws, Part I, Title XXII, Chapter 164, Sections 1F and 141.

Collection of energy efficiency (and other) public benefit revenues:

As part of electric industry restructuring, Massachusetts established a public benefit fund in 1997 to fund renewable energy, energy efficiency, and low-income assistance programs. The charge is non-bypassable, and is administered by two entities. The renewable energy programs are administered by the Massachusetts Clean Energy Center, while the energy efficiency and low-income assistance programs are administered by the utilities.³ DSIRE reports that the charge for renewables is 0.5 mill/kWh, while the energy efficiency and low-income assistance charge is 2.5 mills/kWh.⁴

The public benefit fund receives additional revenues from RGGI auction proceeds since Massachusetts is a participating state.⁵

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Massachusetts in 2012 was distributed in the following way: 49% of spending was on residential customers, 32% was on commercial customers, and 18% was on industrial customers. This is roughly proportional to the electric revenues collected from each customer class.⁶

Protection of low-income customers:

LIHEAP provides states with federal funding to assist low-income utility customers with their home energy bills. For Massachusetts, funding for fiscal year 2014 totaled a little over \$140 million. For 2013, this funding reached an estimated 190,432 households. In particular, LIHEAP benefits included a minimum of \$450 for deliverable fuel, \$260 for gas and electric, with a maximum of \$750 and \$430 for fuel, and gas and electric, respectively. Customers eligible for LIHEAP are those whose income is not greater than 60% of the state median income.⁷

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2012 lists a total of \$103.6 million in ratepayer funds dedicated toward low-income rate assistance, and \$36.6 million in ratepayer funds dedicated toward low-income energy efficiency. These numbers include totals from state- and utility-administered programs.⁸

Massachusetts has several low-income rate assistance and energy efficiency programs that are administered by utilities with regulatory oversight. Participating utilities include a number of gas, electric and combination IOUs in Massachusetts. The utility rate discounts total nearly \$40 million per year, and

³ "Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities," published by the US DOE, March 2010.

⁴ "Renewable Energy Trust Fund," Database of State Incentives for Renewables & Efficiency (DSIRE), Massachusetts Incentives/Policies for Renewables & Efficiency, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MA07R&re=1&ee=1, accessed June 3, 2014.

⁵ "Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities," published by the US DOE, March 2010.

⁶ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

⁷ LIHEAP Clearinghouse Massachusetts Profile, available at <http://liheap.ncat.org/profiles/Mass.htm>, accessed June 3, 2014.

⁸ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

the discounts reduce the low-income customer's bill between 20% and 42%.⁹ A selection of such low-income assistance programs are listed below:

- Utilities including National Grid, NStar, Unitil, Western Massachusetts Electric, Berkshire Gas, Columbia Gas, and New England Gas offer discount rates for low-income customers through a Residential Discount Rate.
 - Annual funding in 2012 for the low-income discount was \$103 million and served 406,000 households.
- NSTAR offers a Forgiveness Program for those customers experiencing difficulty paying their utility bill. Those with an income that falls within 60% of the state median income are eligible to participate in the program.
- Arrearage Management Programs
 - NSTAR and Berkshire Gas have programs in place that provide financial assistance to qualifying low-income customers that have outstanding bills in arrears.
 - This program reached 12,632 electric and 4,692 gas households in 2012.

In addition to the above utility-administered low-income rate assistance programs, many who receive the low-income discount rate are also eligible for free energy efficiency services.¹⁰ A few examples of utilities' programs are included below:

- Berkshire Gas' energy efficiency program will cover 100% of installed costs for energy-saving measures to low-income heating customers.
- Unitil provides eligible low-income customers with free energy efficiency services, including energy audits, electric baseload measures, appliance efficiency services, and heating system replacement.
- National Grid's free home weatherization program offers low-income customers free home weatherization from a licensed and insured local company, paid for by National Grid.

NSTAR's energy efficiency program provides customers who qualify for NSTAR's discount rate with a free home energy consultation. The consultation could include the installation of energy-saving measures.

⁹ LIHEAP Massachusetts State Snapshot, available at <http://liheap.ncat.org/dereg/states/masnapshot.htm>, accessed June 3, 2014.

¹⁰ LIHEAP Clearinghouse Massachusetts Profile, available at <http://liheap.ncat.org/profiles/Mass.htm>, accessed June 3, 2014.

MICHIGAN

Summary

- **State ratemaking practices**
 - The Michigan PSC works to equitably allocate utility costs to rate classes
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected within rate classes
 - Energy efficiency spending in 2012 was 49% residential, 43% commercial, and 8% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$23.7 million toward energy efficiency in 2012
 - There are a number of emergency charitable assistance programs in place
 - LIHEAP funding in 2014: \$165,443,927

State ratemaking practices:

Michigan state law requires that the PSC consider all customer classes and set rates in a just and reasonable fashion. In particular, the Commission ensures “all persons in this state are afforded safe, reliable electric power at a reasonable rate.” Furthermore, utilities must consider low-income and senior citizen customers when filing for changes in rates. The law states that “[u]pon filing of a rate increase request, a utility shall include proposed eligible low-income customer and eligible senior citizen customer rates and a method to allocate the revenue shortfall attributed to the implementation of those rates upon all customer classes.”¹

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Michigan in 2012 was distributed in the following way: 49% of spending was on residential customers, 43% was on commercial customers, and 8% was on industrial customers. This is in rough proportion to the electric revenues collected from each rate class.²

Protection of low-income customers:

LIHEAP provides states with federal funding to assist low-income utility customers with their home energy bills. For Michigan, funding for fiscal year 2014 totaled \$165 million. Customers whose income is 110% of the federal poverty guidelines qualify for LIHEAP heating assistance. Crisis assistance goes to customers whose income is 150% of the federal poverty guidelines. An estimated 623,549 households benefited from LIHEAP heat assistance in fiscal year 2013. As an example, LIHEAP benefits for fiscal year 2013 included a maximum of \$850 for heating assistance.³

¹ Act 3 of 1939 - Add. 2000, Act 141 (effective June 5, 2000); Act 3 of 1939 - Add. 2008, Act 286 (effective October 6, 2008).

² Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

³ LIHEAP Clearinghouse Michigan Profile, available at <http://liheap.ncat.org/profiles/Michigan.htm>, accessed June 11, 2014.

The LIHEAP Clearinghouse compiles a table that provides the breakdown of Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency by state for certain states. The most recent data from 2012 lists a total of \$23.7 million in ratepayer funds dedicated toward low-income energy efficiency.⁴ These numbers include totals from state- and utility-administered programs.

Michigan has several low-income assistance programs that are administered by utilities with regulatory oversight. All utilities, including IOUs, municipals, and co-ops, participate in low-income energy efficiency programs.⁵

- Detroit Edison has two rate assistance programs and one energy efficiency assistance program in place.
 - Under the Residential Income Assistance Credit program, low-income customers may qualify for a \$6 per month credit on their electric, and/or a \$10.50 per month credit on their natural gas accounts.
 - The Senior Citizen Electric Service Rate program provides seniors 62 and older with savings up to 32%.
 - Detroit Edison offers energy efficiency assistance through the EEA Home Performance Rebate Program (includes an audit of effective energy improvements for one's home), Test and Tune-up Program (provides cleaning and tune-up of natural gas furnace), and Energy Star Refrigerator Replacement Program

In addition to the above utility-administered programs, the state offers low-income rate assistance programs. A few examples are below:⁶

- The Department of Treasury makes payments to eligible customers through the Home Heating Credit.
- Michigan has a State Emergency Relief fund that provides payments for heating fuel, electricity, and home repairs among other services. Customers must submit an application for assistance.

There are also a number of emergency charitable assistance programs in Michigan that offer low-income assistance. A few examples are below:⁷

- Consumers Energy works with the Salvation Army to provide bill credits for low-income gas and electric customers under the PeopleCare program.
- Indiana Michigan Power provides eligible low-income customers with electric bill assistance through their Energy Share program.
- Lansing Board of Water & Light's Pennies for Power Program provides low-income families with utility shutoff protection.

The Heat and Warmth Fund is a non-profit organization that offers bill-payment assistance in addition to promoting energy conservation, weatherization and energy efficiency education.

⁴ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

⁵ LIHEAP Michigan Snapshot, available at <http://liheap.ncat.org/dereg/states/misnapshot.htm>, accessed June 11, 2014.

⁶ LIHEAP Clearinghouse Michigan Profile, available at <http://liheap.ncat.org/profiles/Michigan.htm>, accessed June 11, 2014.

⁷ LIHEAP Clearinghouse Michigan Profile, available at <http://liheap.ncat.org/profiles/Michigan.htm>, accessed June 11, 2014.

MINNESOTA

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to all customers
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - Xcel Energy administers a renewable development fund supported by Xcel customers
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent roughly in proportion to the dollars collected from rate classes
 - Energy efficiency spending in 2012 was 35% residential, 42% commercial, and 23% industrial
- **Protection of low-income customers**
 - Low-income rates: Xcel must provide a 50% discount to low-income customers on the first 300 kwh consumed each month
 - Beginning in 2010, a utility or association that furnishes electric service must spend 0.2% of its gross operating revenue from residential customers in the state on low-income programs
 - Ratepayer-funded low-income programs totaled \$16.85 million toward rate assistance and \$6.25 million toward energy efficiency in 2012
 - Arrearage management programs are in place for Minnesota low-income customers
 - LIHEAP funding in 2014: \$114,540,746

State ratemaking practices:

The Minnesota Public Utility Commission (Commission) works to allocate utility costs equitably to the various rate classes. Since 1974, Minnesota law has required that “[e]very rate made, demanded, or received by any public utility, or by any two or more public utilities jointly, shall be just and reasonable. Rates shall not be unreasonably preferential, unreasonably prejudicial, or discriminatory, but shall be sufficient, equitable, and consistent in application to a class of consumers.”¹ Furthermore, laws require special consideration of low-income customers. In addition to mandating that utilities fund affordability programs for low-income ratepayers, the law requires that the Commission “must consider ability to pay as a factor in setting utility rates and may establish affordability programs for low-income residential ratepayers in order to ensure affordable, reliable, and continuous service to low-income utility customers.”²

¹ Minnesota Statute § 216B.03.

² Minnesota Statute § 216B.16 Subd. 15.

Collection of energy efficiency (and other) public benefit revenues:

In 1999, Xcel Energy established the Renewable Development Fund to promote the “start up, expansion and attraction of renewable energy projects and companies in the Xcel Energy service area.”³ The fund is financed by Xcel Energy ratepayers, and revenues are generally split between new development projects for renewable energy and research and development. Expenditures from the fund must be approved by the Commission.⁴

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Minnesota in 2012 was distributed in the following way: 35% of spending was on residential customers, 42% was on commercial customers, and 23% was on industrial customers. This is roughly proportional to the electric revenues collected from each customer class.⁵

Protection of low-income customers:

LIHEAP provides states with federal funding to assist low-income utility customers with their home energy bills. For Minnesota, funding for 2014 totaled \$114.5 million. In 2013, this funding reached 147,636 households and included a minimum of \$100 and maximum of \$1,200 for heating assistance. Customers eligible for LIHEAP are those whose income is not greater than 60% of the state median income.⁶

The LIHEAP Clearinghouse compiles a table that provides the breakdown of Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency by state for certain states. The most recent data from 2012 lists a total of \$16.85 million in ratepayer funds dedicated toward low-income rate assistance, and \$6.25 million in ratepayer funds dedicated toward low-income energy efficiency.⁷ These numbers include totals from state- and utility-administered programs.

Minnesota state law requires that the PUC ensure “each utility and association provides low-income programs...Beginning in 2010, a utility or association that furnishes electric service must spend 0.2 percent of its gross operating revenue from residential customers in the state on low-income programs.”⁸ Minnesota has several low-income rate assistance programs that are ratepayer funded.⁹ Several of such programs are listed below:¹⁰

³ “Overview,” Xcel Energy Renewable Energy Development Fund, available at https://www.xcelenergy.com/Environment/Renewable_Energy/Renewable_Energy_Grants/Renewable_Development_Fund, accessed June 4, 2014. See also, “Renewable Development Fund (RDF),” Database for State Incentives for Renewables & Efficiency (DSIRE), available at, accessed June 3, 2014.

⁴ “Overview,” Xcel Energy Renewable Energy Development Fund, available at https://www.xcelenergy.com/Environment/Renewable_Energy/Renewable_Energy_Grants/Renewable_Development_Fund, accessed June 4, 2014. See also, “Renewable Development Fund (RDF),” Database for State Incentives for Renewables & Efficiency (DSIRE), available at, accessed June 3, 2014.

⁵ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

⁶ LIHEAP Clearinghouse Minnesota Profile, available at <http://liheap.ncat.org/profiles/Minn.htm>, accessed June 3, 2014.

⁷ LIHEAP Clearinghouse “2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency,” available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

⁸ Minnesota Statute § 214B.241 Subd. 7.

⁹ LIHEAP Minnesota Snapshot, available at <http://liheap.ncat.org/dereg/states/mnsnapshot.htm>, accessed June 3, 2014.

¹⁰ LIHEAP Minnesota Snapshot, available at <http://liheap.ncat.org/dereg/states/mnsnapshot.htm>, accessed June 3, 2014.

- LIHEAP eligible customers qualify for up to 37% discounts based on usage and a reduced monthly service charge fee under the Customer Affordability of Resident Electricity (CARE) program. Annual funding in 2012 for CARE was \$282,130 and reached 2,760 households.
- All natural IOUs in Minnesota must provide a Gas Affordability Program (GAP) under a law passed in 2007. It reduces natural gas payments to no less than 6% of eligible customer's income.
 - Annual funding in 2012 for GAP was \$7.7 million and reached 32,502 households.
- Xcel's Low-Income Senior Discount offers an additional discount of 50% on monthly electric consumption, up to kWhs per billing period, for those low-income residential electric and gas customers who are 62 years of age or older.
- The PowerOn Program provides LIHEAP customers various benefits based on energy use, income, and amount of arrears. The program served nearly 15,000 households in 2012.

In addition to the PowerOn program listed above that includes arrears management, Minnesota also facilitates arrears management through the Gas Affordability Program.

Low-income customers, who may receive rate assistance through the ratepayer funded programs described previously, may also qualify for several energy efficiency programs.¹¹ A few examples are below:

- Both Great Plains Natural Gas and Minnesota Energy Resources offer low-income weatherization programs. This includes weatherization measures such as insulation, caulking, weather-stripping, and storm windows and doors.
- Otter Tail Power Company's House Therapy Program provides customers with high bill concerns and high energy use with an energy analysis. The analysis may include the installation of energy-saving insulation and weather-stripping.

Many utilities also offer emergency charitable assistance that is to provide last resort emergency funds for low-income customers.¹² A number of emergency charitable programs in Minnesota are listed below:

- Minnesota law established Reach Out for Warmth in 1992, aiming to provide people in need with emergency energy assistance and furnace repair. The program is administered by the Energy Program Unit of the Department of Economic Security along with local energy assistance agencies.
- Minnesota utilities fund the "last resort" HeatShare program that is administered by the Salvation Army. The program provides money to help pay for electricity bills along with natural gas, oil, propane, wood, and emergency furnace repairs.
- Agralite Electric, Benco Electric, and Kandiyohi Power Cooperatives use customer donations to provide funds for individuals and organizations in need through Operating Round Up.

¹¹ LIHEAP Clearinghouse Minnesota Profile, available at <http://liheap.ncat.org/profiles/Minn.htm>, accessed June 3, 2014.

¹² LIHEAP Clearinghouse Minnesota Profile, available at <http://liheap.ncat.org/profiles/Minn.htm>, accessed June 3, 2014.

MISSOURI

Summary

- **State ratemaking practices**
 - Inquiry into impact of utility rates on vulnerable citizens
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues from residential customers are spent in rough proportion to the dollars collected within that rate class
 - Energy efficiency spending in 2012 was 52% residential, 47% commercial, and 1% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$600,000 toward rate assistance and \$4.3 million toward energy efficiency in 2012
 - Utilities offer rate assistance and energy efficiency programs
 - Charitable rate assistance programs offered through organizations, utilities, cities, and counties also exist
 - LIHEAP funding in 2014: \$70,882,484

State ratemaking practices:

In 2012, the Missouri Public Service Commission (Commission) “ordered an inquiry into the impact higher utility rates will have on older or low-income citizens and established a docket to consider rate design changes and methods other states use to reduce the impact of higher utility rates on financially vulnerable citizens.”¹ In this way, the Commission is looking after low-income customers when it comes to utility rates.

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Missouri in 2012 was distributed in the following way: 52% of spending was on residential customers, 47% was on commercial customers, and 1% was on industrial customers.²

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Missouri, funding for 2014 totaled \$70,882,484. Customers whose income is not greater than 135% of the Federal Poverty Level are LIHEAP-eligible. An estimated 145,279 households benefited from LIHEAP in 2013, and the maximum heating benefit was \$450.³

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from

¹ “PSC Orders Inquiry Into Impact of Higher Utility Rates on Missouri’s Low-Income Citizens,” Missouri Public Service Commission Press Release, August 9, 2012.

² Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

³ LIHEAP Clearinghouse Missouri Profile, available at <http://liheap.ncat.org/profiles/Missouri.htm>, accessed June 4, 2014.

2012 lists a total of \$600,000 in ratepayer funds dedicated toward low-income rate assistance, and \$4.3 million in ratepayer funds dedicated toward low-income energy efficiency.⁴ These numbers include totals from state- and utility-administered programs.

Many Missouri utilities offer rate assistance and energy efficiency programs. Several examples are provided below:⁵

- Ameren Missouri's Keeping Current Program provides credits to low-income customers who remain current with payments during the heating and/or cooling seasons. The Dollar More agencies help determine qualifying customers. Ameren also offers a \$500 credit on utility bills to military families.
- Independence Power & Light offers qualified low-income elderly or disabled customers a 50% discount on their electric bill through their Independence Rate Assistance Program
- Ameren Missouri provides weatherization for its customers through Operation Winter Survival

Other charitable rate assistance programs exist and are listed below. These include programs run by charitable organizations, along with programs specific to certain cities, counties, or coops:⁶

- HeatShare provides rate assistance for elderly or disabled low-income customers, along with customers unable to pay bills due to unexpected events, such as a birth or death in the family. In addition, HeatShare may offer grants to repair energy related equipment.
- Boone County offers a Heat Energy and Light Program to provide one-time assistance to low-income families with young children, and also offers a Citizens Assisting Seniors and Handicapped which provides assistance to low-income seniors and people with disabilities.
- City Utilities of Springfield offers a community supported rate assistance program called Project Share.

⁴ LIHEAP Clearinghouse Missouri Profile, available at <http://liheap.ncat.org/profiles/Missouri.htm>, accessed June 4, 2014.

⁵ LIHEAP Clearinghouse Missouri Profile, available at <http://liheap.ncat.org/profiles/Missouri.htm>, accessed June 4, 2014.

⁶ LIHEAP Clearinghouse Missouri Profile, available at <http://liheap.ncat.org/profiles/Missouri.htm>, accessed June 4, 2014.

MONTANA

Summary

- **State ratemaking practices**
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - The PSC has overseen the collection and spending of public benefit funding mechanisms for 18 years
 - Public benefit funding is collected through a 2.4% surcharge rate based on electric utilities' 1995 revenue
- **Disbursement of energy efficiency revenues**
 - Energy efficiency spending in 2012 was 41% residential and 59% commercial
- **Protection of low-income customers**
 - \$5.64 million in ratepayer funds dedicated toward low-income rate assistance in 2012
 - \$1.66 million in ratepayer funds dedicated toward low-income energy efficiency in 2012
 - Low income rates: ratepayer- and utility-funded programs offer low-income discounts on utility bills
 - Charitable emergency assistance offered to communities in crisis
 - LIHEAP funding in 2014: \$23,654,004

State Ratemaking Practices:

Montana includes low-income considerations in its ratemaking practices. For example, as ordered in 2011, the Department of Public Service Regulation Rate Case states, "As noted in Finding of Fact No. 211, MDU is not ordered to rebate the difference between the rates approved in the Interim Order and this Final Order. Rather, MDU must remit \$5,000 to the state Department of Revenue for deposit in the low-income energy assistance fund administered by the state Department of Health and Human Services to be used for the benefit of customers in MDU's electric service territory."¹

Collection of energy efficiency (and other) public benefit revenues:

Montana established its first public benefit fund in 1996. Called the Universal System Benefits Program (USBP), all electric utilities (including cooperatives) are required by law to charge customers a non-bypassable surcharge on electricity use. The fund is fully administered by the individual utilities and overseen by the Public Service Commission. Revenues generated by the USBP are directed towards research and development efforts and energy efficiency, conservation, renewable energy, and low-income energy assistance programs. Utilities may use a portion of USBP revenues to fund internal or eligible external programs. Large-scale utilities customers with loads exceeding one megawatt may also use a portion of the USBP-generated revenues for eligible internal programs. In 2011, the USBP generated approximately \$9.4 million in revenue.

¹ Department of Public Service Regulation Rate Case - D2010.8.82 (Final Order Issued May 9, 2011).

The USBP was originally set to expire on December 31, 2009, but that expiration date has since been extended indefinitely.^{2, 3}

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Montana in 2012 was distributed in the following way: 41% of spending was on residential customers and 59% was on commercial customers.⁴

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. Montana LIHEAP funding is currently set at \$23,654,004 for 2014. To be LIHEAP-eligible, utility customers must have a household income of no greater than 60% the state median income. Additionally, a household of seven or more members may be LIHEAP-eligible if their income is no more than 150% of the federal poverty level. In 2013, an estimated 21,700 households benefited from LIHEAP heat assistance. These households received an average heating benefit of \$541, a minimum benefit of \$50, and a maximum benefit of \$1,500.⁵

The LIHEAP Clearinghouse compiles a table that provides the breakdown of Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency by state for certain states. The most recent Montana data from 2012 lists a total of \$5.64 million in ratepayer funds dedicated toward low-income rate assistance, and \$1.66 million in ratepayer funds dedicated toward low-income energy efficiency. These numbers include totals from state- and utility-administered programs.⁶ Participating utilities include NorthWestern Energy, Montana-Dakota Utilities, Energy West, and 24 rural electric cooperatives.

Montana has several low-income rate assistance and energy efficiency programs that are administered by utilities with regulatory oversight. The ratepayer funded programs, their funding mechanisms and administration, are outlined below:

- The Low Income Discounts program offers a 25% electric bill discount for the months of November through April to LIHEAP-eligible customers of NorthWestern Energy. Other utilities, which include cooperatives, offer discounted electric bills and rate assistance to low-income customers as well.⁷
 - *Funding Mechanism:* Funding for the program is generated from the USBP charge imposed on all electric and natural gas IOU ratepayers and rural electric cooperatives.
 - *Administration:* The Commission administers this program in coordination with LIHEAP and additional utilities.⁸
- The Free Weatherization Program (FWP) is offered to NorthWestern Energy customers who make no more than 200% of the federal poverty level. The LIHEAP Clearinghouse reports that

² “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010.

³ Montana Public Benefits Fund Page, DSIRE database, “Universal System Benefits Program,” available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MT01R&re=1&ee=1, accessed June 4, 2014.

⁴ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 4, 2014.

⁵ LIHEAP Clearinghouse Montana Profile, available at <http://liheap.ncat.org/profiles/Montana.htm>, accessed June 4, 2014.

⁶ LIHEAP Clearinghouse “2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency,” available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 4, 2014.

⁷ Low Income Discounts are offered under the Universal Systems Benefit Program (USBP).

⁸ LIHEAP Montana State Snapshot, available at <http://liheap.ncat.org/dereg/states/mtsnapshot.htm>, accessed June 4, 2014.

the FWP “provides audits, air-sealing, hot water conservation, insulation, CFLs, heating equipment tune-up/ repair, [and] fuel switching (electric heat to gas) as appropriate.” Additional utilities offer weatherization programs in coordination with Montana’s Weatherization Assistance Program.

- *Funding Mechanism:* Funding for the program is generated from the USBP charge on all electric and natural gas IOU ratepayers and rural electric cooperatives.
- *Administration:* The Commission administers this program in coordination with LIHEAP and the larger utilities involved with WAP.⁹

In addition to the ratepayer funded programs listed above, utilities also offer rate assistance and energy efficiency programs to low-income customers. Examples of each include, but are not limited to, the following:¹⁰

Low-Income Rate Assistance:

- Flathead Electric Cooperative offers low-income residents at or below 150% of the federal poverty level with a credit to their monthly electric bill.
- Park Electric Co-op offers a Senior Income Eligible Discount to LIHEAP-eligible co-op members over the age of 60.
- Lincoln Electric Co-op offers a 10% energy bill discount to low-income seniors over 65 and permanently disabled residents.
- Vigilante Electric Cooperative, Inc. offers energy assistance to low-income households in the fall months.

Low-Income Energy Efficiency:

- Energy West and Montana-Dakota Utilities each run Furnace and Water Heater Safety and Efficiency Programs in which low-income household appliances are inspected and replaced if deemed unsafe.
- NorthWestern Energy, in collaboration with Montana’s state weatherization program, offers a Free Weatherization Program to eligible homeowners.

In addition to the ratepayer- and utility-based programs listed above, the state also has charitable assistance in the event of crises. For example, Energy Share of Montana is a non-profit organization that provides one-time needs-based assistance to state residents. Assistance may come in the form of appliance repairs or installation, but most often comes in the form of help with heating bill payments. Additionally, Flathead Electric offers the Keep the Lights On program “provides help in emergencies for low-income members who are in disconnect status.”¹¹

⁹ LIHEAP Montana State Snapshot, available at <http://liheap.ncat.org/dereg/states/mtsnapshot.htm>, accessed June 4, 2014.

¹⁰ LIHEAP Clearinghouse Montana Profile, available at <http://liheap.ncat.org/profiles/Montana.htm>, accessed June 4, 2014.

¹¹ LIHEAP Clearinghouse Montana Profile, available at <http://liheap.ncat.org/profiles/Montana.htm>, accessed June 4, 2014.

NEVADA

Summary

- **State ratemaking practices**
 - Just and reasonable rates for all customers
- **Collection of energy efficiency (and other) public benefit revenues**
 - The PUC oversees the collection and spending of the Fund for Energy Assistance and Conservation
- **Disbursement of energy efficiency revenues**
 - Energy efficiency spending in 2012 was 56% residential and 44% commercial
- **Protection of low-income customers**
 - Low-income rates: Certain utilities offer low-income customers annual credits
 - Ratepayer-funded low-income programs totaled \$9.1 million toward rate assistance and \$3.25 million toward energy efficiency in 2012
 - Nevada has low-income rate assistance, energy efficiency, arrears management, and emergency charitable programs available for eligible low-income customers
 - LIHEAP funding in 2014: \$11,103,694

State ratemaking practices:

Nevada law requires that the Public Utilities Commission (Commission) set rates to be “just and reasonable” for all customers.¹

Collection of energy efficiency (and other) public benefit revenues:

Nevada established the Fund for Energy Assistance and Conservation (Fund) which is administered by the Division of Welfare and Supportive Services. Fund revenues come from the universal energy charge, a surcharge of 0.39 mills on each kwh of electricity for retail customer purchases for consumption in Nevada. Nevada law mandates that 75% of the money in the Fund be distributed to assist eligible households for natural gas and electric payments.

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Nevada in 2012 was distributed in the following way: 56% of spending was on residential customers and 44% was on commercial customers.² This is in rough proportion to the electric revenues collected from each rate class.³

Protection of low-income customers:

LIHEAP provides states with federal funding to assist low-income utility customers with their home energy bills. For Nevada, funding for fiscal year 2014 totaled \$11,103,694. Customers whose income is 150% of the federal poverty level are LIHEAP-eligible. An estimated 30,000 households benefited from

¹ Nevada State Law, Chapter 704 – Regulation of Public Utilities Generally, Section 120.

² Percentages reflect EE and Load Management Program costs from EIA data.

³ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

LIHEAP heat assistance in fiscal year 2013. As an example, LIHEAP benefits for fiscal year 2013 included a minimum of \$180, but average of \$684 in benefits.⁴

The LIHEAP Clearinghouse compiles a table that provides the breakdown of Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency by state for certain states. The most recent data from 2012 lists a total of \$9.1 million in ratepayer funds dedicated toward low-income rate assistance, and \$3.25 million in ratepayer funds dedicated toward low-income energy efficiency.⁵ These numbers include totals from state- and utility-administered programs.

Nevada has several ratepayer funded low-income rate assistance and energy efficiency programs. Participating utilities include NV Energy and Southwest Gas.⁶ A sampling of such programs is listed below:

- Low-income rate assistance comes from Nevada's Energy Assistance Program.
 - The program provides annual credits for low-income customers. The program reduces participants' percentage of income paid on utility bills to the state median percentage of income spent on such bills.
- There are two main ratepayer funded programs that address energy efficiency in Nevada.
 - The UEC Weatherization Assistance Program provides various services to improve health and safety measures. The program served 756 households with \$3 million in funding for 2012.
 - There are also a number of demand side management programs in place for households. In 2012, Southwest Gas demand side management program funding was \$247,500 and reached 269 households.

In addition to the above utility-administered programs, there are multiple emergency charitable assistance programs in place.⁷ A few examples are below:

- NV Energy helps facilitate energy assistance programs.
 - Project REACH helps adults by providing relief through energy assistance and is administered by the United Way of Southern Nevada. Eligible customers include individuals over the age of 62 that are isolated, medically fragile in need of emergency energy assistance.
 - The Community Services Agency administers the Special Assistance Fund for Energy. The program is a low-income energy assistance programs were shareholder funds match public donations on a dollar for dollar basis up to \$100,000.
- Southwest Gas's Energy Share program offers direct assistance to those with unexpected financial difficulties. The program is administered by the Salvation Army.
- Valley Electric Associations works with county social service agencies to provide assistance to customers that are having difficulty paying their electric bill.

⁴ LIHEAP Clearinghouse Nevada Profile, available at <http://liheap.ncat.org/profiles/Nevada.htm>, accessed June 3, 2014.

⁵ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

⁶ LIHEAP Nevada Snapshot, available at <http://liheap.ncat.org/dereg/states/nvsnapshot.htm>, accessed June 3, 2014.

⁷ LIHEAP Clearinghouse Nevada Profile, available at <http://liheap.ncat.org/profiles/Nevada.htm>, accessed June 3, 2014.

NEW HAMPSHIRE

Summary

- **State ratemaking practices**
 - Fair and reasonable allocation of utility costs to customers.
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Commission has overseen the collection and spending of public benefit funding mechanisms for 18 years
 - Public benefit funding collected from customers on a volumetric basis
 - Additional energy efficiency funding was made available through the conversion of the state's greenhouse gas emissions fund in 2012
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues from residential customers are spent in rough proportion to the dollars collected within that rate class
 - Energy efficiency spending in 2012 was 46% residential, 53% commercial, and 2% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$15.1 million toward rate assistance and \$3.9 million toward energy efficiency in 2012
 - State-mandated ratepayer-funded rate assistance and energy efficiency programs
 - Charitable rate assistance programs also exist
 - LIHEAP funding in 2014: \$25,536,004

State ratemaking practices:

New Hampshire has laws in place to ensure fair ratemaking practices. New Hampshire Statutes, §378:10 states, “No public utility shall make or give any undue or unreasonable preference or advantage to any person or corporation, or to any locality, or to any particular description of service in any respect whatever or subject any particular person or corporation or locality, or any particular description of service, to any undue or unreasonable prejudice or disadvantage in any respect whatever.”¹

Collection of energy efficiency (and other) public benefit revenues:

Electric restructuring legislation in 1996 created a system benefit charge (SBC) that supports low-income rate assistance and energy efficiency programs. The efficiency fund took effect in 2002 and is funded by a \$.0018/kWh charge on electric utility customers, with a separate \$.0015/kWh customer charge to fund low-income energy assistance. This adds up to approximately \$19 million collected annually from the surcharges. The New Hampshire Public Utilities Commission (PUC) approves programs that receive funding from the SBC and oversees these utility-administered programs. The PUC also provides annual reports on the SBC to the Legislative Oversight Committee on Electric Restructuring.²

¹ New Hampshire Statutes, Title XXXIV, §378:10.

² DSIRE database, New Hampshire System Benefits Charge, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NH07R&re=1&ee=1, accessed June 9, 2014.

In 2012, New Hampshire legislation converted the greenhouse gas emissions fund into an energy efficiency fund, which will provide additional funding for energy programs funded by SBCs.³

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in New Hampshire in 2012 was distributed in the following way: 46% of spending was on residential customers, 53% was on commercial customers, and 2% was on industrial customers.⁴ This is in rough proportion to the electric revenues collected from each rate class.⁵

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For New Hampshire, funding for 2014 totaled \$25,536,004. Customers whose income is not greater than 200% of the Federal Poverty Level are LIHEAP-eligible. An estimated 36,805 households benefited from LIHEAP heat assistance in 2013. Eligible customers in 2013 received a minimum heating benefit of \$120, with \$500 awarded on average.⁶

A state statute from the 1840's mandates that New Hampshire cities and towns provide emergency welfare services to the poor. This assistance is funded through local property taxes and includes utility payment assistance, food and clothing vouchers, and burial expenses.⁷

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2012 lists a total of \$15.1 million in ratepayer funds dedicated toward low-income rate assistance, and \$3.9 million in ratepayer funds dedicated toward low-income energy efficiency.⁸ These numbers include totals from state- and utility-administered programs.

Many utilities participate in rate assistance and energy efficiency programs funded through a system benefits charge of \$003.3/kWh. These programs are administered by the utilities with PUC oversight. Programs for Public Service Company of New Hampshire, Granite State Electric, Unitil Energy Systems, Inc., and New Hampshire electric Cooperative are summarized below:

- The Electric Assistance Program (EAP) provides monthly electric bill discounts for low-income customers with household income at or below 175% of the federal poverty level. Discounts range from 7 to 70 percent off the first 700 kWh of energy used, with discounts ranging based on income level and size of household. EAP funding in 2012 totaled \$13.6 million.
- The Home Energy Assistance (HEA) program provides up to \$5,000 in energy efficiency improvements for customers of participating utilities whose income is less than 200% of the

³ DSIRE database, New Hampshire System Benefits Charge, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NH07R&re=1&ee=1, accessed June 9, 2014.

⁴ Percentages reflect EE and Load Management Program costs from EIA data.

⁵ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

⁶ LIHEAP Clearinghouse New Hampshire Profile, available at <http://liheap.ncat.org/profiles/NH.htm>, accessed June 9, 2014.

⁷ LIHEAP Clearinghouse New Hampshire Profile, available at <http://liheap.ncat.org/profiles/NH.htm>, accessed June 9, 2014.

⁸ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 9, 2014.

federal poverty level. Improvements include insulation, weatherization, appliance upgrades, and health and safety measures. HEA electric utility funding in 2012 totaled \$3 million.⁹

In addition to the state-mandated ratepayer funded programs listed above, charitable programs for rate assistance are also available. Many of New Hampshire's utilities participate in Neighbors Helping Neighbors, which is a "last resort" fund to help protect low-income customers from disruption in energy service once other funds have run out. New Hampshire Electric Cooperative's Project Care works similarly, providing help to members to avoid disconnection in service. Project Care is funded through the Round Up program, where members choose to "round up" their utility bills to the nearest dollar to help with funding.¹⁰

⁹ LIHEAP New Hampshire State Snapshot, available at <http://liheap.ncat.org/dereg/states/nhsnapshot.htm>, accessed June 9, 2014.

¹⁰ LIHEAP New Hampshire State Snapshot, available at <http://liheap.ncat.org/dereg/states/nhsnapshot.htm>, accessed June 9, 2014.

NEW JERSEY

Summary

- **State ratemaking practices**
 - Just and reasonable allocation of utility costs to rate classes
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Board of Public Utilities has administered the public benefit fund for 15 years
 - Public benefit funding is a non-bypassable charge and collected on a volumetric basis
- **Disbursement of energy efficiency revenues**
 - Energy efficiency spending in 2012 was 75% residential, 20% commercial, and 5% industrial
- **Protection of low-income customers**
 - Low-income rates: there is a low-income discount on natural gas and electricity bills
 - Ratepayer-funded low-income programs totaled \$273.15 million toward rate assistance and \$30 million toward energy efficiency in 2012
 - New Jersey also has arrearage management programs
 - LIHEAP funding in 2014: \$ 124,569,647

State ratemaking practices:

The state of New Jersey works toward just and reasonable allocation of utility costs to rate classes. New Jersey Statute states, “The board may, after hearing... [f]ix just and reasonable individual rates, joint rates, tolls, charges or schedules thereof, as well as commutation, mileage and other special rates which shall be imposed, observed and followed thereafter by any public utility, whenever the board shall determine any existing rate, toll, charge or schedule thereof, commutation, mileage or other special rate to be unjust, unreasonable, insufficient or unjustly discriminatory or preferential.”¹

Collection of energy efficiency (and other) public benefit revenues:

As part of electric-utility restructuring legislation, New Jersey established a public benefit fund in 1999 to fund renewable energy, energy efficiency, and low-income assistance programs through the New Jersey Clean Energy Program (NJCEP). The NJCEP is administered by the Board of Public Utilities (BPU). NJCEP funds are generated from collection of what is known as the “societal benefits charge” (SBC). DSIRE reports that the SBC is a non-bypassable, per-kWh surcharge imposed on customers of NJ’s seven investor-owned gas and electric public utilities. The magnitude of the SBC varies as the BPU sets three-year period funding targets. From 2001-2004, a total of \$482 million was collected and from 2005-2008, a total of \$745 million was collected. The 2009-2012 budget was set at \$1.213 billion with approximately 80% of funds directed to energy efficiency programs and 20% to renewable energy programs. DSIRE notes that New York’s NJCEP target budgets may also be affected by a variety of factors over the course of a funding period, including: interest accruals, budget re-allocations, alternative compliance payment

¹ New Jersey Statute §48:2-21.

funds, and amounts routed out of the fund to external state needs.² Until state Governor Chris Christie withdrew New Jersey from the RGGI program in 2011, the SBC received additional revenues from RGGI auction proceeds.³

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in New Jersey in 2012 was distributed in the following way: 75% of spending was on residential customers, 20% was on commercial customers, and 5% was on industrial customers.⁴

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. New Jersey LIHEAP funding is currently set at approximately \$124.5 million for 2014. To be LIHEAP-eligible, utility customers must have a household income of no greater than 200% the federal poverty guidelines. For fiscal year 2013, this funding reached an estimated 190,432 households. For fiscal year 2012, LIHEAP households received an average benefit of \$275 for heating and \$160 for “medically necessary cooling.”⁵

The LIHEAP Clearinghouse compiles a table that provides the breakdown of Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency by state for certain states. The most recent data New Jersey data from 2012 lists a total of approximately \$273.15 million in ratepayer funds dedicated toward low-income rate assistance and \$30 million in ratepayer funds dedicated toward low-income energy efficiency.⁶ These numbers include totals from state- and utility-administered programs.

New Jersey has several low-income rate assistance programs, an energy efficiency program, and arrears management that are administered by utilities, state departments, and non-profit entities with regulatory oversight. Participating utilities include a number of gas and electric providers: “PSE&G, Elizabethtown Gas, NJ Natural Gas, South Jersey Gas, Atlantic City Electric, Jersey Central P&L, Rockland Electric.” Funding for all of the ratepayer programs is generated from the SBC on all electric and natural gas consumers.⁷ The current programs for each category are outlined below:

Rate Assistance

- Universal Service Fund (USF) offers energy bill credits of up to \$1,800 annually to customers who fall under the 150% federal poverty guidelines and direct more than 6% of their income to gas and electricity. The USF is administered by the Department of Community Affairs as a LIHEAP grantee. In 2012, the USF received \$197 million in funding and served an estimated 221,451 households.

² “Societal Benefits Charge,” Database of State Incentives for Renewables & Efficiency (DSIRE), New Jersey Incentives/Policies for Renewables & Efficiency, available at

http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NJ04R&re=1&ee=1, accessed June 11, 2014.

³ “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010.

⁴ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

⁵ LIHEAP Clearinghouse New Jersey Profile, available at <http://liheap.ncat.org/profiles/NJ.htm>, accessed June 13, 2014.

⁶ LIHEAP Clearinghouse “2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency,” available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

⁷ LIHEAP New Jersey State Snapshot, available at <http://liheap.ncat.org/dereg/states/njsnapshot.htm>, accessed June 13, 2014.

- Temporary Relief for Utility Expenses (TRUE) offers one-time credit of \$1,500 to overdue electric or gas bills to customers who may be ineligible for LIHEAP or USF support, but have a record of timely energy bill payments. TRUE is administered by the Affordable Housing Alliance. In 2012, TRUE received a “one-time funding” amount of \$25 million for the 2011-2015 period.
- Lifeline offers elderly and disabled customers up to \$225 in rate assistance. The program is administered by the Department of Human Services. In 2012, Lifeline received \$65 million in funding and served an estimated 281,855 households.

Arrearage Management

- Fresh Start offers arrearage forgiveness to first-year enrollees of the USF if a customer enters the program with at least \$60 in overdue, but pays all monthly utility bills in full and on time for the course of a year. Fresh Start is managed by the Department of Community Affairs as a LIHEAP grantee. In 2012, the Fresh Start program received \$12.4 million in funding and served an estimated 24,360 households.

Energy Efficiency

- Comfort Partners repairs, replaces, and installs energy efficient appliances of customers with income no greater than 225% of the federal poverty guidelines, prioritizing USF participants with higher energy use. Comfort Partners is administered by utilities and the office BPU Office of Clean Energy. In 2012, Comfort Partners received \$33.3 million in funding and served an estimated 7,897 households.

In addition to the ratepayer funded programs listed above, utilities also offer rate assistance and energy efficiency programs to low-income customers. An example includes, but is not limited to, the following:

- Payment Assistance for Gas & Electric offers assistance to “low-to-moderate income” state residents experiencing economic hardship and facing difficulty paying utility bills. To be eligible for assistance, customers must have overdue bills or be in disconnect status, must have a recent history of consistent payments prior to hardship, meet specific program income guidelines, and not have received USF within 6 months.⁸

Charitable Assistance

In addition to the ratepayer- and utility-based programs listed above, New Jersey also has charitable assistance in the event of crises. For example, New Jersey SHARES offers temporary energy bill assistance to non-welfare residents of the state who are experiencing financial hardship, but have “demonstrated a good faith effort to pay their energy bills.” Additionally, New Jersey Natural Gas offers the Gift of Warmth program which provides utility bill assistance to low-income customers experiencing financial hardship.⁹

⁸ LIHEAP Clearinghouse New Jersey Profile, available at <http://liheap.ncat.org/profiles/NJ.htm>, accessed June 13, 2014.

⁹ “[The Gift of Warmth] program is administered by the United Way through local Community Action Program (CAP) agencies.” LIHEAP Clearinghouse New Jersey Profile, available at <http://liheap.ncat.org/profiles/NJ.htm>, accessed June 13, 2014.

NEW MEXICO

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - Public Regulation Commission and utilities have overseen the collection and spending of public benefit funding mechanisms for 9 years
 - Different policies are in place for IOUs, distribution co-ops and electric co-ops
 - Charges are collected by utilities
- **Disbursement of energy efficiency revenues**
 - Energy efficiency spending in 2012 was 54% residential, 38% commercial, and 8% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$1.8 million toward energy efficiency in 2012
 - State-mandated ratepayer funded energy efficiency program
 - Charitable rate assistance programs also available
 - LIHEAP funding in 2014: \$16,734,368

State ratemaking practices:

The New Mexico statutes help ensure fair ratemaking practices for all utility customers. The law states, “Every rate made, demanded or received by any public utility shall be just and reasonable.”¹ In addition, a specific clause covering discrimination outlines that “No public utility shall, as to rates or services, make or grant any unreasonable preference or advantage to any corporation or person within any classification or subject any corporation or person within any classification to any unreasonable prejudice or disadvantage,” and further clarifies that “No public utility shall establish and maintain any unreasonable differences as to rates of service either as between localities or as between classes of service.” Finally, the law provides special considerations concerning the protection of low-income ratepayers, stating “Nothing shall prohibit, however, the commission from approving economic development rates and rates designed to retain load or from approving energy efficiency programs designed to reduce the burden of energy costs on low-income customers pursuant to the Efficient Use of Energy Act.”²

Collection of energy efficiency (and other) public benefit revenues:

In 2005, the Efficient Use of Energy Act created a public benefits charge that utilities could levy to implement energy efficiency programs. Utilities are allowed to charge customers to obtain funding for energy efficiency and load management programs, with a tariff that cannot exceed \$75,000 per year per customer. All programs must be approved by the Public Regulation Commission (Commission) before

¹ New Mexico state statutes, 62-8-1.

² New Mexico state statutes, 62-8-6.

they can be implemented by utilities, and all IOUs have established programs and received approval by the Commission.³

Approval for electric cooperative energy efficiency programs resides with each co-op's governing body, but the co-ops must also provide written submission of their programs to the Commission. Distribution co-ops are allowed to collect a renewable energy and conservation fee of up to 1% of the customer's bill, and are allowed to spend the funds on projects and programs related to renewable energy, load management, and energy efficiency.⁴

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in New Mexico in 2012 was distributed in the following way: 54% of spending was on residential customers, 38% was on commercial customers, and 8% was on industrial customers.⁵

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For New Mexico, funding for 2014 totaled \$16,734,368. Customers whose income is not greater than 150% of the federal poverty level are LIHEAP-eligible. An estimated 68,462 households benefited from LIHEAP heat assistance in 2013. The amount of money spent on heating and cooling for LIHEAP customers ranged between \$32 and \$224, and customers could receive up to \$224 to deal with a crisis.⁶

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2012 lists \$1.8 million in ratepayer funds dedicated toward low-income energy efficiency.⁷ These numbers include totals from state- and utility-administered programs.

As mentioned above, public benefits funds are collected by utilities for energy efficiency programs. In addition, many charitable low-income assistance programs exist. A few examples are provided below:

- The Public Service Company of New Mexico (PNM) has a Good Neighbor Fund, where customer donations are matched by PNM and funds go toward rate assistance for low-income customers between November and April. The Fund is administered by the Salvation Army.
- Several programs for help exist in Bernalillo County:
 - St. Vincent De Paul, a Catholic aid organization, provides electricity, gas, and water assistance.
 - The Home Education Livelihood Program (HELP) provides utility rate assistance, rent assistance, or food vouchers once per year for eligible low-income households.

³ DSIRE database, New Mexico Efficient Use of Energy Act, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NM09R&re=1&ee=1, accessed June 9, 2014.

⁴ DSIRE database, New Mexico Efficient Use of Energy Act, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NM09R&re=1&ee=1, accessed June 9, 2014.

⁵ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>. Percentages reflect EE and Load Management Program costs from EIA data.

⁶ LIHEAP Clearinghouse New Mexico Profile, available at <http://liheap.ncat.org/profiles/NM.htm>, accessed June 9, 2014.

⁷ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

- Silver Horizons provides assistance to residents over age 60 who have received a disconnection notice.
- El Paso Electric's Project Care matches employee and customer donations with contributions by EPE shareholders to help families unable to pay their electricity bills because of medical or financial problems. The El Paso County General Assistance administers the fund.⁸

⁸ LIHEAP Clearinghouse New Mexico Profile, available at <http://liheap.ncat.org/profiles/NM.htm>, accessed June 9, 2014.

NEW YORK

Summary

- **State ratemaking practices**
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - The public benefit fund was established by the Commission 18 years ago and is administered by the New York State Research and Development Authority
 - The Commission establishes “annual collection targets” for participating utilities
 - Public benefit funding is collected as a surcharge on energy bills issued to the customers of participating utilities
- **Disbursement of energy efficiency revenues**
 - Energy efficiency spending in 2012 was 24% residential, 70% commercial, and 7% industrial
- **Protection of low-income customers**
 - Low-income rates: there is a low-income discount on gas and electricity bills
 - Ratepayer-funded low-income programs totaled \$112 million toward rate assistance and \$40 million toward energy efficiency in 2012
 - Arrearage management and forgiveness
 - Charitable emergency assistance - for heat, electricity, and other items - is offered to communities in crisis
 - LIHEAP funding in 2014: \$366,843,330

State ratemaking practices:

New York works toward low-income considerations. A 2014 Con Edison rate case ordered low-income considerations into effect by stating, “In addition to stabilizing delivery charges to customers, other benefits for customers include: Improving and increasing the discounts associated with the electric and gas low-income programs...”¹

Collection of energy efficiency (and other) public benefit revenues:

New York’s Public Service Commission (PSC) established a public benefit fund in 1996 to support energy efficiency, education and outreach, research and development, and low-income energy assistance programs. The fund is administered by the New York State Research and Development Authority (NYSERDA). Revenue for the fund is generated through a system benefits charge (SBC) issued to customers of the state’s six investor-owned utilities (IOUs) as a surcharge on utility bills. Only the IOU customers paying the SBC are eligible for program benefits. Customers of municipal utilities and electric cooperatives are not eligible beneficiaries. Additionally, customers of Long Island Power Authority (LIPA) and the New York Power Authority (NYPA) are not eligible to benefit from SBC-funded

¹ Con Edison Rate Case - Docket 13-E-0030 (Final Order Issued February 20, 2014).

initiatives, but are offered separate programs.² The public benefit fund receives additional revenues from RGGI auction proceeds since New York is a participating state.³

The SBC has evolved over the years, with multiple iterations released since its inception in 1996. While the charge was first set to run through 2011, the PSC extended the program term out to 2016 in 2011.⁴ Throughout the years, the efforts of the fund have also evolved to avoid duplicity with other state programs that support energy efficiency and renewable energy efforts, such as the Energy Efficiency Portfolio Standard (EEPS) and the Renewable Portfolio Standard (RPS). Iterations of the SBC have shifted various programs to be under domain of these additional state programs. Additionally, the PSC orders that any uncommitted SBC funds be directed towards efforts external to the fund, such as the Technology and Market Development Portfolio.

Each year, the PSC establishes public benefit fund “collection targets” for participating utilities. The fund’s budget has grown over its years in existence: the SBC budget totaled \$234 million between 1998 and 2001, \$750 million by 2006, and \$1.89 billion by 2011. Moreover, these budget totals are not reflective of the complete universe of programs that the state offers to support energy efficiency and renewable energy.⁵

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in New York in 2012 was distributed in the following way: 24% of spending was on residential customers, 70% was on commercial customers, and 7% was on industrial customers.⁶

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. New York LIHEAP funding is currently set at approximately \$366.8 million for 2014. LIHEAP funding reached an estimated 2,564 household with cooling assistance in 2014 and an estimated 1.46 million households for heating in 2013. LIHEAP heating benefits for 2013 included a minimum of \$50 and an average of \$338. Maximums of LIHEAP heating benefits varied by fuel type with a maximum of \$6,000 for oil, kerosene, or propane; \$500 for wood, coal, or other deliverable fuels; and \$400 for natural gas and electric. Customers eligible for LIHEAP are those whose income is not greater than 60% of the state median income.⁷

The LIHEAP Clearinghouse compiles a table that provides the breakdown of Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency by state for certain states. The most recent New York

² “Systems Benefits Charge,” Database of State Incentives for Renewables & Efficiency (DSIRE), Massachusetts Incentives/Policies for Renewables & Efficiency, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NY07R&re=1&ee=1, accessed June 3, 2014.

³ “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010.

⁴ Order Continuing the System Benefits Charge and Approving an Operating Plan for a Technology and Market Development Portfolio of System Benefits Charge Funded Programs, State of New York Public Service Commission, Case 10-M-0457 - In the Matter of the System Benefits Charge IV, October 13, 2011.

⁵ Order Continuing the System Benefits Charge and Approving an Operating Plan for a Technology and Market Development Portfolio of System Benefits Charge Funded Programs, State of New York Public Service Commission, Case 10-M-0457 - In the Matter of the System Benefits Charge IV, October 13, 2011.

⁶ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

⁷ LIHEAP Clearinghouse New York Profile, available at <http://liheap.ncat.org/profiles/NY.htm>, accessed June 10, 2014.

data from 2012 lists a total of \$112 million in ratepayer funds dedicated toward low-income rate assistance, and \$40 million in ratepayer funds dedicated toward low-income energy efficiency.⁸ These numbers include totals from state- and utility-administered programs.

New York has several low-income rate assistance and energy efficiency programs that are overseen with regulatory oversight. Participating utilities include: Consolidated Edison, National Grid, New York State Electric and Gas, KeySpan Energy New York, KeySpan Energy Long Island, National Fuel Gas, Central Hudson, Orange and Rockland, Rochester Gas and Electric, Corning and St. Lawrence. Assistance offered is outlined below.

Rate Assistance Programs

- Individual utilities administer a variety of monthly gas and electric bill discounts to customers facing financial difficulty or recipients of other assistance such as LIHEAP, Supplemental Social Security Income, Temporary Assistance for Needy Families, Supplemental Nutrition Assistance Program, Medicaid, or Veterans benefits. The rate assistance programs are funded by individual rate case settlements.

Energy Efficiency

- EmPower New York offers energy education, and appliance and insulation assessment and replacement to utility customers whose income is 60% or less of the state median income, is eligible to receive LIHEAP or utility rate assistance program benefits, and lives in a building with less than 100 units. EmPower New York is administered by NYSERDA and funded by revenues generated from the SBC on utility customers.

Arrearage Management

- New York has a variety of arrearage management programs, offering various degrees of assistance. LIHEAP Clearinghouse reports the following list of programs:⁹
 - EPOP: 1/24th of arrears forgiven monthly
 - On-Track: Up to \$400 in 4 payments over 18 months
 - LICAAP: 1/24th of arrears forgiven monthly
 - AffordAbility: Matching credit up to \$30/ month
 - NYSEG EAP: 1/24th of arrears forgiven monthly (up to \$750)
 - RG&E EAP: 1/24th of arrears forgiven monthly (up to \$750)

⁸ LIHEAP Clearinghouse “2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency,” available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

⁹ LIHEAP New York State Snapshot, available at <http://liheap.ncat.org/dereg/states/nysnapshot.htm>, accessed June 13, 2014.

Charitable Assistance

In addition to the ratepayer- and utility-based programs listed above, various entities within the state also offer charitable assistance in the event of crises. For example, various utility companies and counties offer state residents experiencing difficulty paying utility bills a range of assistance including, but not limited to, one-time payment assistance and/or appliance repair.^{10, 11}

¹⁰ LIHEAP Clearinghouse New York Profile, available at <http://liheap.ncat.org/profiles/NY.htm>, accessed June 10, 2014.

¹¹ LIHEAP Clearinghouse lists the following utilities as participating in emergency charitable assistance programs: Central Hudson Gas & Electric, KeySpan, Long Island Power Authority, National Fuel Gas Company, National Grid, New York State Electric and gas, Niagara Mohawk Power Corporation, Orange County Fuel Fund, Orange and Rockland Utilities, and Rochester Gas and Electric Corporation.

NORTH CAROLINA

Summary

- **State ratemaking practices**
 - Just and reasonable rates for all customers
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Commission has overseen public benefit funding since 1980
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected from rate classes
 - Energy efficiency spending in 2012 was 55% residential, 37% commercial, and 8% industrial
- **Protection of low-income customers**
 - Multiple energy efficiency and charitable assistance programs are in place
 - Duke Energy recently made a \$10 million contribution to assist low-income customers
 - LIHEAP funding in 2014: \$88,270,604

State ratemaking practices:

The North Carolina Utilities Commission (Commission) works to “provide just and reasonable rates and charges for public utility services without unjust discrimination, undue preferences or advantages, or unfair or destructive competitive practices and consistent with long-term management and conservation of energy resources by avoiding wasteful, uneconomic and inefficient uses of energy.”¹

Collection of energy efficiency (and other) public benefit revenues:

In 1980, the Commission established a public benefit fund for renewable energy programs. The Commission provides oversight, but the fund is administered by the North Carolina Advanced Energy Corporation. The charge is 0.03 mills per kWh.²

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in North Carolina in 2012 was distributed in the following way: 55% of spending was on residential customers, 37% was on commercial customers, and 8% was on industrial customers.³ This is roughly proportional to the electric revenues collected from each customer class.⁴

¹ North Carolina state law §62-1 and §62-133.8 Subs. h-4.

² “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010.

³ Percentages reflect EE and Load Management Program costs from EIA data.

⁴ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

Protection of low-income customers:

LIHEAP provides states with federal funding to assist low-income utility customers with their home energy bills. North Carolina LIHEAP funding is currently set at approximately \$88.27 million for 2014. LIHEAP eligible customers for heating and cooling include those at 135% of the federal poverty level. An estimated 88,260 households benefited from LIHEAP heat assistance in 2013, and 35,242 households benefited from cooling. As an example, LIHEAP benefits for 2013 included a minimum benefit of \$200 and a maximum of \$400.⁵

There are a number of utility run low-income energy efficiency programs in place in North Carolina. Examples of such programs are included below:

- In addition to general energy efficiency programs, Duke Energy offers a low-income energy efficiency and weatherization program.
- Duke Energy Progress initiated a new Residential Neighborhood Energy Saver program after Senate Bill 3 passed in 2007. The program is targeted at low-income customers. Between 2009 and 2013, program expenditures totaled \$10.1 million.
- In 2011, the Commission approved Dominion's residential low-income energy efficiency program.⁶

North Carolina has several charitable assistance programs in place. A few examples are below:

- A number of electric co-ops and utilities participate in Operating Roundup. The program uses customer donations to provide funds for individuals and organizations and include activities such as heating system repair.
- Cape Hatteras Electric facilities the Cape Hatteras Electric Foundation which uses customer donations to pay for humane needs.
- Wake County uses citizens' voluntary contributions to supply families and individuals with funds to cover heating costs during the winter.
- Duke Energy has a number of programs in place in North Carolina:
 - Share the Warmth uses contributions for heating bill assistance. The Duke Energy Foundation matches individual contributions dollar-for-dollar up to \$50, and matches corporate contributions up to \$500,000 each year.
 - Duke also has a Fan-Heat Relief Program that uses up to \$40,000 annually for the purchase of fans for senior citizens.⁷
 - In a recent rate case settlement agreement, Duke Energy made a one-time \$10 million contribution to assist low-income customers.⁸

⁵ LIHEAP Clearinghouse North Carolina Profile, available at <http://liheap.ncat.org/profiles/NC.htm>, accessed June 3, 2014.

⁶ Biennial Report of the North Carolina Utilities Commission to the Governor of North Carolina and the Joint Legislative Commission in Governmental Operations Regarding Proceedings for Electric Power Suppliers Involving Energy Efficiency and Demand-Side Management Programs, Cost Recovery and Incentives, August 30, 2013.

⁷ LIHEAP Clearinghouse North Carolina Profile, available at <http://liheap.ncat.org/profiles/NC.htm>, accessed June 3, 2014.

⁸ "Rate Case Update," Duke Energy North Carolina, available at <http://www.duke-energy.com/north-carolina/nc-rate-case.asp>, accessed on June 6, 2014.

OHIO

Summary

- **State ratemaking practices**
 - Reasonable rates for all customers
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - PUC has overseen the collection and spending of public benefit funding mechanisms for 15 years
 - Public benefit funding collected from utility customers on a flat fee bases
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected within rate classes
 - Energy efficiency spending in 2012 was 43% residential, 34% commercial, and 22% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$477 million toward rate assistance and \$58 million toward energy efficiency in 2012
 - State-mandated ratepayer-funded programs on regulated utilities related to rate assistance, arrearage management, and energy efficiency
 - Smaller utilities and co-ops offer energy efficiency programs
 - Charitable rate assistance programs also exist
 - LIHEAP funding in 2014: \$154,313,750

State ratemaking practices:

It is Ohio state policy to “Ensure the availability to consumers of adequate, reliable, safe, efficient, nondiscriminatory, and reasonably priced retail electric service.”¹ Special attention is also paid to low-income ratepayers: for example, Duke Energy has a separate rate class for rate low-income residential service.²

Collection of energy efficiency (and other) public benefit revenues:

The Ohio Advanced Energy Fund was established by legislation in 1999 as a result of electric restructuring. This fund supports energy efficiency, renewables, and low-income assistance programs. A flat fee is charged to electric utility customers and is determined by dividing target aggregate revenue by the number of customers.³ The fund was authorized to collect \$15 million each year from 2001-2005 and

¹ Ohio Revised Code (ORC), Title 49, 4928.02.

² Ohio Rate Case 12-1682-EL-AIR, order issued May 1, 2013.

³ “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010.

\$5 million per year from 2006-2010, and additional have been added from the Advanced Energy Research and Development Taxable Fund. The Ohio Development Services Agency administers the fund.⁴

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Ohio in 2012 was distributed in the following way: 43% of spending was on residential customers, 34% was on commercial customers, and 22% was on industrial customers.⁵ This is in rough proportion to the electric revenues collected from each rate class.⁶

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Ohio, funding for 2014 totaled \$154,313,750. Customers whose income is not greater than 175% of the Federal Poverty Guidelines are LIHEAP-eligible. An estimated 454,520 households benefited from LIHEAP heat assistance in 2013. As an example, LIHEAP benefits for 2013 included an average of \$292 in heating benefits, along with winter crisis average assistance of \$450 for regulated utilities and summer crisis average assistance of \$175 for regulated utilities.⁷

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2012 lists a total of \$477 million in ratepayer funds dedicated toward low-income rate assistance, and \$58 million in ratepayer funds dedicated toward low-income energy efficiency.⁸ These numbers include totals from state- and utility-administered programs.

Regulated electric utilities are required to participate in the Percentage of Income Payment Plan (PIPP) and related programs funded by the electric universal service rider. These state-mandated programs provide rate assistance, energy efficiency, and arrearage management, and are highlighted below:⁹

- **Rate Assistance:** PIPP Plus sets the maximum rate that low-income customers must pay to the greater of 6% of their monthly income or \$10 (for customers that heat with natural gas), or the greater of 10% of their monthly income or \$10 (for customers with all-electric homes). PIPP Plus is administered by Ohio's LIHEAP office.
- **Arrearage Management:** On-time PIPP Plus payments are rewarded with an incentive credit and an arrearage credit. When a monthly PIPP Plus payment is made on-time and in full, the customer no longer owes the rest of that month's billed amount and receives credit for 1/24th of old debt, so that on-time payments for 24 months would eliminate all arrearages.
- **Energy Efficiency:** The Electric Partnership Program (EPP) is available to PIPP participants, and consists of base load efficiency component audits and insulation weatherization measures for participants with moderate to high energy usage related to heating.

⁴ DSIRE database, Ohio Advanced Energy Fund, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=OH11R&re=1&ee=1, accessed June 6, 2014.

⁵ Percentages reflect EE and Load Management Program costs from EIA data.

⁶ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 6, 2014.

⁷ LIHEAP Clearinghouse Ohio Profile, available at <http://liheap.ncat.org/profiles/Ohio.htm>, accessed June 5, 2014.

⁸ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 6, 2014.

⁹ LIHEAP Clearinghouse Ohio Profile, available at <http://liheap.ncat.org/profiles/Ohio.htm>, and LIHEAP Clearinghouse Ohio State Snapshot, available at <http://liheap.ncat.org/dereg/states/ohsnapshot.htm>, accessed June 6, 2014.

- Participating utilities include Cleveland Electric Illuminating Company, Dayton Power & Light, Duke Energy Ohio, Ohio Edison Company, Toledo Edison Company, Columbus Southern Power Company, and Ohio Power Company.

In addition to the above state-mandated ratepayer funded programs, many regulated utilities offer additional programs. See examples below:¹⁰

- Dayton Power & Light offers an arrearage management program for customers who are no longer PIPP-eligible.
- Duke Energy provides rate assistance to customers who are below 200% of the federal poverty guidelines but are not enrolled in PIPP.

Other utilities not required to participate in PIPP offer energy efficiency programs in addition to the state-mandated EPP. Two examples are below:¹¹

- American Electric Power offers weatherization assistance and repair services to customers enrolled in PIPP, the Home Weatherization Assistance Program, or the state LIHEAP program.
- Vectren also offers free energy efficiency measures to households whose income is 300% or less of the federal poverty level.

Finally, many utilities offer charitable programs to help with rate assistance. A selection of these programs is below:¹²

- American Electric Power's Neighbor to Neighbor Program is offered in partnership with the Dollar Energy Fund. Eligible customers receive a utility assistance grant on their electric bill.
- Ohio Edison, Cleveland Electric Illuminating Company, and Toledo Edison all offer one-time assistance to low-income or disabled customers who are at risk of disconnection. This program is administered through the Salvation Army.
- Consolidated Electric Cooperative receives customer donations to The People Fund, which is used for community needs not met through other agencies.

As a final measure of protection, in 2001 the State of Ohio created the Public Benefits Advisory Board, "which has the purpose of ensuring that energy services be provided to low-income consumers in this state in an affordable manner consistent with the policy specified in section 4928.02" of the ORC.¹³

¹⁰ LIHEAP Clearinghouse Ohio Profile, available at <http://liheap.ncat.org/profiles/Ohio.htm>, accessed June 6, 2014.

¹¹ LIHEAP Clearinghouse Ohio Profile, available at <http://liheap.ncat.org/profiles/Ohio.htm>, accessed June 6, 2014.

¹² LIHEAP Clearinghouse Ohio Profile, available at <http://liheap.ncat.org/profiles/Ohio.htm>, accessed June 6, 2014.

¹³ ORC 4928.58.

PENNSYLVANIA

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
- **Collection of energy efficiency (and other) public benefit revenues**
 - Four public benefit funds were established in 1996 as a result of utility restructuring
 - Public benefit funding collected from all rate classes, and all customers within rate classes, on a volumetric basis
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected within rate classes
 - Energy efficiency spending in 2012 was 48% residential, 31% commercial, and 21% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$339.7 million toward rate assistance and \$42.5 million toward energy efficiency in 2011
 - State-mandated ratepayer funded rate assistance and energy efficiency programs
 - Charitable rate assistance and crisis management programs exist
 - LIHEAP funding in 2014: \$203,071,386

State ratemaking practices:

Pennsylvania law provides protections for utility ratepayers. In the Public Utilities section of the Pennsylvania Consolidated Statutes, the law states, “Every rate made, demanded, or received by any public utility, or by any two or more public utilities jointly, shall be just and reasonable, and in conformity with regulations or orders of the commission.”¹ The law provides even more detail related to ratemaking practices in specific instances. It reads that any distribution system improvement charge “shall be applied equally to all customer classes as a percentage of each customer’s billed revenue.”² Additionally, when setting rates related to energy efficiency and conservation programs, the law states that cost recovery must be structured “to ensure that measures approved are financed by the same customer class that will receive the direct energy and conservation benefits.”³

Collection of energy efficiency (and other) public benefit revenues:

During electrical restructuring in 1996, settlements with Pennsylvania’s five large distribution utilities resulted in the creation of four “Sustainable Energy Funds.” The goals of these funds were to advance the development of clean and renewable energy, promote energy efficiency and conservation, and promote sustainable-energy business. Funds are collected through utilities’ distribution rates on a per-kilowatt-hour basis. For example, the surcharge included in Pennsylvania Power & Light’s (PP&L) distribution

¹ Pennsylvania Consolidated Statutes, Title 66, § 1301.

² Pennsylvania Consolidated Statutes, Title 66, § 1358.(d)(1).

³ Pennsylvania Consolidated Statutes, Title 66, § 2806.1.(a)(11).

rates was \$0.0001/kWh in 2005 and \$0.00005/kWh in 2006. Each utility has an oversight board and a designated administrator for the funds, and the Pennsylvania Sustainable Energy Board oversees communication between the funds. The Board also provides annual reports on the projects supported by the funds, and has created guidelines with regard to the funds' business practices which were approved by the Public Utility Commission (PUC) in 2007.⁴

Total revenues collected from the four funds through 2012 totaled approximately \$99 million. Currently, "the funds are transitioning toward a revolving loan and investment fund model in order to sustain their capital," and no revenue is currently being collected.⁵

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Pennsylvania in 2012 was distributed in the following way: 48% of spending was on residential customers, 31% was on commercial customers, and 21% was on industrial customers.⁶ This is in rough proportion to the electric revenues collected from each rate class.⁷

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Pennsylvania, funding for 2014 totaled \$203,071,386. Customers whose income is not greater than 150% of the Federal Poverty Guidelines are LIHEAP-eligible. An estimated 391,461 households benefited from LIHEAP heat assistance in 2013. For 2014, estimated LIHEAP benefits are \$100-\$1,000 for heating and \$25-\$500 for crisis.⁸

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2011 lists a total of \$339.7 million in ratepayer funds dedicated toward low-income rate assistance, and \$42.5 million in ratepayer funds dedicated toward low-income energy efficiency.⁹ These numbers include totals from state- and utility-administered programs.

⁴ DSIRE database, Pennsylvania Public Benefits Programs, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=PA01R&re=1&ee=1, accessed June 9, 2014.

⁵ DSIRE database, Pennsylvania Public Benefits Programs, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=PA01R&re=1&ee=1, accessed June 9, 2014.

⁶ Percentages reflect EE and Load Management Program costs from EIA data.

⁷ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 9, 2014.

⁸ LIHEAP Clearinghouse Pennsylvania Profile, available at <http://liheap.ncat.org/profiles/Penn.htm>, accessed June 7, 2014.

⁹ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

Pennsylvania's major gas and electric utilities are required by law to provide Customer Assistance Programs to their low-income customers. These programs generally include rate assistance based on a percentage of income payment plan or a percentage of bill plan, and can also include arrearage management or bill credits. A few examples are below:¹⁰

- Duquesne Light offers arrearage forgiveness over time, reduced monthly payments based on customers' ability to pay, and protection against loss of electrical service. They also waive the security deposit for customers who qualify.¹¹
- PECO offers a discounted residential tariff rate for low-income customers, with four different percentage discounts based on customers' household income.¹²
- Rate assistance funding totaled \$234.4 million for electric utilities in 2012.¹³

Pennsylvania's major gas and electric utilities are also required to participate in the Low-Income Usage Reduction Program (LIURP). LIURP includes application assistance and education to address energy savings and regular bill payment behavior.¹⁴ Programs are administered by the participating utilities, and energy efficiency funding totaled \$26.5 million for electric utilities in 2012.¹⁵

In addition to the state-mandated ratepayer-funded rate assistance and energy efficiency programs, there are also charitable programs associated with the major utilities, smaller utilities, and coops that are available and provide rate assistance, along with programs unaffiliated with utilities that also provide assistance. A selection of these programs is below:¹⁶

- PP&L's Operation Help programs combines funds from PP&L, its customers, its employees, and its retirees to help customers pay any type of home heating bill. This program is administered by a network of social service agencies community groups throughout eastern and central Pennsylvania.
- Claverack Electric Cooperative collects member donations which go toward helping low-income and other in-need families with their electric bills.
- The Dollar Energy Hardship Fund is the fourth largest fuel fund in the US. Utilities partner with the fund and match customer donations and also provide donations to cover administrative expenses of the fund.
- The Philadelphia Utility Emergency Services Fund was created by utility companies, public officials, business leaders, and community organizations to help with energy crisis benefits. The three largest utilities in the state have a dollar-to-dollar matching programs for funds raised.

¹⁰ LIHEAP Clearinghouse Pennsylvania Profile, available at <http://liheap.ncat.org/profiles/Penn.htm>, accessed June 9, 2014.

¹¹ Duquesne Light Customer Assistance Program, available at <https://www.duquesnelight.com/forYourHome/SaveEnergyAndSaveMoney/AssistanceHelpForYourEnergyNeeds/CustomerAssistanceProgram.cfm>, accessed June 9, 2014.

¹² LIHEAP Clearinghouse Pennsylvania Profile, available at <http://liheap.ncat.org/profiles/Penn.htm>, accessed June 9, 2014.

¹³ LIHEAP Clearinghouse Pennsylvania State Snapshot, available at <http://liheap.ncat.org/dereg/states/pasnapsnapshot.htm>, accessed June 9, 2014.

¹⁴ LIHEAP Clearinghouse Pennsylvania Profile, available at <http://liheap.ncat.org/profiles/Penn.htm>, accessed June 9, 2014.

¹⁵ LIHEAP Clearinghouse Pennsylvania State Snapshot, available at <http://liheap.ncat.org/dereg/states/pasnapsnapshot.htm>, accessed June 9, 2014.

¹⁶ LIHEAP Clearinghouse Pennsylvania Profile, available at <http://liheap.ncat.org/profiles/Penn.htm>, accessed June 9, 2014.

TEXAS

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to rate classes
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Commission has overseen the collection and spending of public benefit funding mechanisms for 15 years
 - Public benefit funding collected from retail electric customers of municipal utilities or coops in deregulated parts of Texas, on a volumetric basis
 - In addition to the PBF, Texas' EERS requires that funds be spent on energy efficiency. These mandated funds are collected through a charge approved by the PUC
- **Disbursement of energy efficiency revenues**
 - Energy efficiency spending in 2012 was 59% residential, 38% commercial, and 4% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$73.6 million toward rate assistance and \$25.9 million toward energy efficiency in 2012
 - Ratepayer funded rate assistance and energy efficiency programs exist
 - Smaller utilities, municipals and coops also offer rate assistance and energy efficiency programs
 - Charitable rate assistance programs are also offered
 - LIHEAP funding in 2014: \$128,686,252

State ratemaking practices:

The Texas Administrative Code has laws in place to ensure equity in ratemaking practices. When considering rate design, TAC Chapter 25, Subchapter J, §25.234 states, "Rates shall not be unreasonably preferential, prejudicial, or discriminatory, but shall be sufficient, equitable, and consistent in application to each class of customers, and shall be based on cost."¹

In addition to ensuring equity across customer classes, special consideration is given to low-income customers. The Public Utilities Regulatory Act (PURA) highlights various protections for low-income customers, including mandated rate reduction in conjunction with the system benefit fund. In particular, PURA states, "The reduced rate for a retail electric provider shall result in a total charge that is at least 10 percent and, if sufficient money in the system benefit fund is available, up to 20 percent, lower than the amount the customer would otherwise be charged."²

¹ TAC Chapter 25, Subchapter J, §25.234.

² Public Utilities Regulatory Act (PURA), Title II, Sec. 39.903(h), effective September 1, 2013.

Collection of energy efficiency (and other) public benefit revenues:

Texas has a public benefit fund (PBF) which was established in 1999³ during utility restructuring to provide funding for the Public Utility Commission's (PUC) Low-Income Discount Program, education programs, weatherization, and energy efficiency programs, along with helping to fund the cost of the restructuring. Utilities administer energy efficiency aspects of the PBF, and the PUC administers the low-income aspects and serves as the oversight body. The fee of up to \$0.65/Mwh is levied on retail electric customers of municipal utilities or coops in deregulated parts of Texas. Estimated appropriations to the fund in 2013 were \$86.1 million. Expenditures in 2012 totaled \$69.7 million and were apportioned in the following way: 86.7% of funds went toward the Low-Income Discount Program, 12.8% went toward the PUC, and 0.6% was apportioned to customer education.⁴

In addition to the PBF, Texas enacted an Energy Efficiency Resource Standard (EERS) in 1999 that requires IOUs to meet energy efficiency goals related to reductions in peak demand. Currently, the EERS requires a 30% reduction in annual growth in demand.⁵ Utilities fund the EERS through an energy efficiency cost recovery factor that is "directly assigned to each rate class that receives services under the programs to the maximum extent reasonably possible."⁶

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Texas in 2012 was distributed in the following way: 59% of spending was on residential customers, 38% was on commercial customers, and 4% was on industrial customers.⁷

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Texas, funding for 2014 totaled \$128,686,252. Customers whose income is not greater than 125% of the Federal Poverty Level are LIHEAP-eligible. An estimated 165,835 households benefited from LIHEAP cooling assistance in 2013, while an estimated 26,870 households benefitted from heating assistance. LIHEAP benefits for included maximum heating and cooling benefits of \$1,000.⁸

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2012 lists a total of \$73.6 million in ratepayer funds dedicated toward low-income rate assistance and \$25.9 million in ratepayer funds dedicated toward low-income energy efficiency.⁹ These numbers include totals from state- and utility-administered programs.

³ PURA, Sec. 39.903.

⁴ Issue Brief from the Legislative Budget Board Staff on the Texas System Benefit Fund, February 2013, available at http://www.lbb.state.tx.us/Documents/Publications/Issue_Briefs/343_System_Benefit_Fund.pdf, accessed June 5, 2014.

⁵ DSIRE database Texas Energy Efficiency Goal, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=TX28R&re=1&ee=1, accessed June 5, 2014.

⁶ TAC Chapter 25, Subchapter J, §25.181.

⁷ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 5, 2014. Percentages reflect EE and Load Management Program costs from EIA data.

⁸ LIHEAP Clearinghouse Texas Profile, available at <http://liheap.ncat.org/profiles/Texas.htm>, accessed June 5, 2014.

⁹ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

Texas has several ratepayer funded low-income rate assistance and energy efficiency programs offered by electric utilities. Several of such programs are listed below:

- LITE UP Texas is administered Solix with oversight by the PUC and provides a 10% discount on electrical bills for eligible low-income customers between May and August. Electric utilities participate in this program. Funding in 2012 totaled \$73.6 million, and an estimated 920,000 households were served.
- The SBC weatherization program is offered in conjunction with the federal Weatherization Assistance Program and provides additional funds to help low-income customers with weatherization measures. Estimated funding in 2012 totaled \$11.7 million.
- Utilities also offer low-cost weatherization and energy efficiency measures for Hard-to-Reach customers. Estimated funding for Hard-to-Reach programs in 2012 totaled \$14.2 million.¹⁰

In addition to the above utility-administered programs, smaller utilities and municipal utilities offer low-income rate assistance programs. A few examples are below:

- El Paso Electric offers a Low Income Rider program where eligible low-income customers are exempt from the residential service customer charge.
- Reliant energy will not disconnect electricity service for critical-care customers, low-income elderly customers, and other low-income customers who agree to a payment plan.

Many utilities and coops also offer charitable rate assistance programs. Some examples are provided below:

- Several coops offer Operation Round Up programs where donations by members go toward community service projects, other community programs, and emergency assistance.
- Denton Municipal forwards customer donations to Interfaith Ministries, which distributes funds to families experiencing hardship in order to help with utility bill assistance.¹¹

¹⁰ LIHEAP Clearinghouse Texas State Snapshot, available at <http://liheap.ncat.org/dereg/states/txsnapshot.htm>, accessed June 5, 2014.

¹¹ LIHEAP Clearinghouse Texas Profile, available at <http://liheap.ncat.org/profiles/Texas.htm#state>, accessed June 5, 2014.

WASHINGTON

Summary

- **State ratemaking practices**
 - Equitable allocation of utility costs to customers
 - Low-income considerations
- **Collection of energy efficiency (and other) public benefit revenues**
 - In 2006, voters passed initiatives requiring that utilities meet certain renewable and efficiency standards, which utilities are allowed to fund through a customer surcharge
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected within rate classes
 - Energy efficiency spending in 2012 was 48% residential, 41% commercial, and 10% industrial
- **Protection of low-income customers**
 - Ratepayer-funded low-income programs totaled \$47.5 million toward rate assistance and \$6.4 million toward energy efficiency in 2010
 - Ratepayer-funded rate assistance and energy efficiency programs exist
 - State general funds are matched by utility funds for energy efficiency programs
 - Charitable rate assistance programs also exist
 - LIHEAP funding in 2014: \$59,124,210

State ratemaking practices:

The Washington Utilities and Transportation Commission (Commission) is tasked with ensuring that rate increases proposed by utilities are reasonable to customers. In particular, whenever the Commission finds that rates are “unjust, unreasonable, unjustly discriminatory or unduly preferential,” the Commission determines the just rates.¹ Furthermore, the Commission has the authority to approve discounted rates for low-income customers, and low-income senior customers.²

Collection of energy efficiency (and other) public benefit revenues:

In 2006, voters passed an initiative requiring utilities to meet certain targets related to energy efficiency and renewable energy, which utilities are allowed to recover through a customer surcharge. Utilities administer the specific programs, while the Transportation Commission provides oversight.³

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Washington in 2012 was distributed in the following way: 48% of spending was on residential customers, 41% was on commercial customers, and 10% was on industrial customers.⁴ This is in rough proportion to the electric revenues collected from each rate class.⁵

¹ RCW 80.28.020: Commission to fix just, reasonable, and compensatory rates.

² RCW 80.28.068: Low-income customers.

³ “Public Benefits Funds: Increasing Renewable Energy & Industrial Energy Efficiency Opportunities,” published by the US DOE, March 2010.

Protection of low-income customers:

LIHEAP provides federal funding to states to assist low-income utility customers with their home energy bills. For Washington, funding for 2014 totaled \$59,124,210. Customers whose income is not greater than 125% of the Federal Poverty Level are LIHEAP-eligible. An estimated 71,592 households benefited from LIHEAP heat assistance in 2013, and heating benefits for 2013 ranged from \$25 to \$1,000, with an average of \$450 spent per household served.⁶

The LIHEAP Clearinghouse compiles a table that provides the breakdown of ratepayer funded low-income energy assistance and energy efficiency by state for certain states. The most recent data from 2010 lists a total of \$47.5 million in ratepayer funds dedicated toward low-income rate assistance, and \$6.4 million in ratepayer funds dedicated toward low-income energy efficiency.⁷ These numbers include totals from state- and utility-administered programs.

As mentioned above, utilities are required to meet certain goals related to renewable energy and energy efficiency. In addition, utilities use ratepayer funds for low-income rate assistance. Examples of rate assistance programs for IOUs, Municipals/Co-ops, and Public Utility Districts (PUDs) are listed below:⁸

- Investor-Owned Utilities
 - Puget Sound Energy offers rate assistance to customers with incomes at or below 50% of the local median income. The benefit is calculated in relation to annual energy use.
 - PacifiCorp's Low-Income Bill Assistance program provides discounts to low-income customers that is applied to every kWh over 600 kWh of energy used. The discount varies based on household income and is available to customers with incomes at or below 100% the federal poverty guideline.
 - All five regulated IOUs provide rate assistance and/or discounts.
- Municipals/Cooperatives
 - The city of Richland offers a 33% discount on electric bills for low-income customers 62 years of age or older.
 - Seattle City Light offers a 60% discount on bills to customers with household incomes at or below 70% of the state median income.
- Public Utility Districts
 - The Low-Income Senior Discount is offered by 11 PUDs and provides discounts that range from 5 to 60% off on home energy bills for customers of at least 62 years of age that have household incomes at or below 125% of the federal poverty guideline (discounts and eligibility requirements vary based on PUD).

⁴ Percentages reflect EE and Load Management Program costs from EIA data.

⁵ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>, accessed June 9, 2014.

⁶ LIHEAP Clearinghouse Washington Profile, available at <http://liheap.ncat.org/profiles/WA.htm>, accessed June 9, 2014.

⁷ LIHEAP Clearinghouse "2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency," available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>, accessed June 9, 2014.

⁸ LIHEAP Clearinghouse Washington Snapshot, available at <http://liheap.ncat.org/dereg/states/wasnapshot.htm>, accessed June 9, 2014.

- The Low-Income Disabled Discount is offered by 8 PUDs and provides discounts that range from 5 to 40% off home energy bills for customers that meet disability and low-income requirements (discounts and income-eligibility requirements vary based on PUD)
- 12 PUDs offer some form of low-income discount.

Utilities also offer ratepayer-funded energy efficiency programs. As an example, Avista, PacifiCorp, and Puget Sound Energy have a Low-Income Weatherization program that provides insulation, installation of energy efficient appliances, and heating and cooling upgrades to low-income customers.⁹ Many utilities also provide funds to the Energy Matchmaker Program, which matches state general funds and provides weatherization services to low-income households.¹⁰

Many utilities also offer charitable rate assistance programs that are funded through customer, employee, and/or community donations. These programs are often administered in conjunction with community action councils or entities like the Salvation Army.¹¹

⁹ LIHEAP Clearinghouse Washington Snapshot, available at <http://liheap.ncat.org/dereg/states/wasnapshot.htm>, accessed June 9, 2014.

¹⁰ LIHEAP Clearinghouse Washington Profile, available at <http://liheap.ncat.org/profiles/WA.htm>, accessed June 9, 2014.

¹¹ LIHEAP Clearinghouse Washington Profile, available at <http://liheap.ncat.org/profiles/WA.htm>, accessed June 9, 2014.

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Summary

- **State ratemaking practices**
 - The Wisconsin Public Service Commission works to equitably allocate utility costs to rate classes
- **Collection of energy efficiency (and other) public benefit revenues**
 - The Commission has overseen the collection and spending of public benefit funding mechanisms for 15 years
- **Disbursement of energy efficiency revenues**
 - Energy efficiency revenues are spent in rough proportion to the dollars collected within rate classes
 - Energy efficiency spending in 2012 was 34% residential, 26% commercial, and 40% industrial
- **Protection of low-income customers**
 - Each electric IOU is required to spend 1.2% of the latest 3-year average of its gross operating revenue on energy efficiency and renewable energy programs
 - Ratepayer-funded low-income programs totaled \$45.2 million toward rate assistance and \$50 million toward energy efficiency in 2012
 - There are a number of emergency charitable assistance programs in place
 - LIHEAP funding in 2014: \$103,103,118

State ratemaking practices:

The Wisconsin Public Service Commission (PSC) works to ensure that “in rate-making orders that an energy utility recovers from its ratepayers the amounts the energy utility spends for programs.” In particular, the PSC works to equitably distribute recovery amounts between the different customer classes. The purpose being to “ensure that customers of an energy utility within a particular class are treated equitably with respect to customers of other energy utilities within the same class.”¹

State law requires that the Wisconsin PSC ensure that “the cost of energy efficiency and renewable resource programs is equitably divided among customer classes so that similarly situated ratepayers contribute equivalent amounts for the programs.”²

Collection of energy efficiency (and other) public benefit revenues:

Wisconsin established a public benefit fund in 1999 that provided energy assistance programs for low-income residents in addition to funds for programs that promote renewable energy and energy efficiency. Today's program, known as Focus on Energy, became effective in July 2007 and replaced the public benefit programs in place at the time. Focus on Energy receives oversight and approval from the PSC, but programs and created and funded by the utilities. Furthermore, each electric IOU is required to spend

¹ Wisconsin State Legislature, Chapter 196, Regulation of Public Utilities, Section 374, (5) Cost Recovery.

² Wisconsin State Legislature, Chapter 196, Regulation of Public Utilities, Section 374, (5) Cost Recovery.

1.2% of the latest 3 year average of its gross operating revenue on renewable energy and energy efficiency programs.³

Wisconsin municipal utilities and electric cooperatives can also participate in “commitment-to-community” programs similar to Focus on Energy. These programs are not overseen by the PSC, but they do submit annual reports to the PSC.⁴

Disbursement of energy efficiency revenues:

According to the EIA, energy efficiency spending in Wisconsin in 2012 was distributed in the following way: 34% of spending was on residential customers, 26% was on commercial customers, and 40% was on industrial customers. This is in rough proportion to the electric revenues collected from each rate class.⁵

Protection of low-income customers:

LIHEAP provides states with federal funding to assist low-income utility customers with their home energy bills. For Wisconsin, funding for 2014 totaled \$103 million. Customers whose income is not greater than 60% of the state median income are LIHEAP-eligible. An estimated 214,531 households benefited from LIHEAP heat assistance in 2013. As an example, LIHEAP benefits for 2013 included a minimum of \$30 for heating, while the average and maximum were \$336 and \$2,085, respectively.⁶

The LIHEAP Clearinghouse compiles a table that provides the breakdown of Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency by state for certain states. The most recent data from 2012 lists a total of \$45.2 million in ratepayer funds dedicated toward low-income rate assistance, and \$50 million in ratepayer funds dedicated toward low-income energy efficiency. These funds served 212,816 households in rate assistance, and 7,196 in energy efficiency and weatherization assistance.⁷

These programs provide non-heating electric bill assistance based on a household’s income, size, and electric costs. Energy efficiency funds include refrigerator replacements, insulation, upgrades to furnaces and lighting, and energy education. Participating utilities include We Energies, Alliant Energy, Xcel Energy, Madison Gas & Energy, Northwestern Electric, 15 electric cooperatives and 54 municipal utilities, among others.⁸

In addition to the above utility-administered programs, there are a number of emergency charitable assistance programs in Wisconsin. A few examples are below:⁹

- Wisconsin’s Keep Wisconsin Warm/Cool Fund is a voluntary and community program that provides energy assistance to low income people. Business and individuals make contributions to the fund.

³ “Wisconsin Incentives/Policies for Renewables & Efficiency, Focus on Energy Program.” Database for State Incentives for Renewables & Efficiency, DSIRE, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=WI15R&re=1&ee=1, accessed June 10, 2014.

⁴ “Wisconsin Incentives/Policies for Renewables & Efficiency, Focus on Energy Program.” Database for State Incentives for Renewables & Efficiency, DSIRE, available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=WI15R&re=1&ee=1, accessed June 10, 2014.

⁵ Electric power sales, revenues, and energy efficiency Form EIA-861 detailed data files, U.S. Energy Information Administration, Electricity, available at <http://www.eia.gov/electricity/data/eia861/>.

⁶ LIHEAP Clearinghouse Wisconsin Profile, available at <http://liheap.ncat.org/profiles/Wisconsin.htm>, accessed June 10, 2014.

⁷ LIHEAP Clearinghouse “2012 State-by-State Ratepayer Funded Low-Income Energy Assistance and Energy Efficiency,” available at <http://liheap.ncat.org/Supplements/2012/supplement12.htm>.

⁸ LIHEAP Wisconsin Snapshot, available at <http://liheap.ncat.org/dereg/states/wisnapshot.htm>, accessed June 10, 2014.

⁹ LIHEAP Clearinghouse Wisconsin Profile, available at <http://liheap.ncat.org/profiles/Wisconsin.htm>, accessed June 10, 2014.

- Menasha Utilities' Project Share Fund allows customers to donate monthly or annually to the fund which assists local families with energy bills.
- Helping Hand is run by River Falls Municipal Utilities and matches customers' payments on an account to help bring the account to a current status.