

# **The George Wiley Center's Plan for Universal Access to Affordable Energy in Rhode Island**

**Percent of Income Payment Plan (PIPP) Policy Analysis**

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**Part 1:**

**The Affordable  
Energy Crisis**

## Legislation and Policies

On June 29, 2006, Governor Carcieri signed the "Comprehensive Energy Conservation, Efficiency and Affordability Act of 2006" that was expected to start providing energy bill relief to low-income households in FY 2008. The bill was the culmination of several years of effort by advocacy groups to get a low-income energy assistance program. However, due to budget constraints, the Rhode Island General Assembly eliminated all funding for the Energy Affordability Fund for FY 2008 and in FY 2009 the state repealed the Act.

In Rhode Island today, the Low Income Home Energy Affordability Program (LIHEAP) is the only government run energy assistance program; it is a federally funded program that provides a varying amount of assistance to states each year to help pay the energy costs of low-income residents. Although LIHEAP is proven to be effective in helping reduce energy insecurity, the funding has only a small impact. 2010-2011 LIHEAP funding is expected to be about half that of 2009-2010. The following table shows the amount of funds Rhode Island received from 2002- 2009, along with the ratio of coverage of the need for assistance.<sup>1</sup>

| Rhode Island 2002-2009 |              |                       |
|------------------------|--------------|-----------------------|
|                        | LIHEAP funds | LIHEAP coverage ratio |
| 2002                   | \$11,539,387 | 26.2%                 |
| 2003                   | \$12,149,968 | 23.1%                 |
| 2004                   | \$12,157,305 | 22.5%                 |
| 2005                   | \$12,816,175 | 21.2%                 |
| 2006                   | \$13,473,508 | 16.0%                 |
| 2007                   | \$13,473,508 | 11.2%                 |
| 2008                   | \$13,438,642 | 13.2%                 |
| 2009                   | \$30,123,062 | 35.1%                 |

Many states have recognized that with electric restructuring and implementation of green technology the cost burden falls disproportionately on low-income customers. Dozens of states have put programs in place to protect those customers from being gouged and hit extremely hard. Rhode Island passed restructuring legislation in 1996 and renewable energy legislation in 2010, without putting sufficient protections in place for those that would be hardest hit by the associated costs. Rhode Island's Utility Restructuring Act of 1996 states that costs for low-income assistance and weatherization programs

<sup>1</sup> "On the Brink: 2009. The Home Energy Affordability Gap, April 2010, Rhode Island." Oct. 25, 2010  
<<http://www.homeenergyaffordabilitygap.com>>

"shall be included in the distribution rates charged to all other customers." However, further policies have not been implemented to make sure that happens.

Over the past six years, the Wiley Center has proposed affordable energy legislation, based on daily experiences trying to help people whose financial situations make it so they cannot feasibly afford their utility bills and continue to eat and pay other shelter costs. Each year, this legislation is met with varying degrees of acceptance and disdain, and invariably fails to make it to the House of Senate floor for a vote. The ongoing plan is to enact legislation to prove that Rhode Islanders value access to heat and electric services at an affordable cost to low-income residents.

### Rising Costs of Energy

Energy prices have dramatically increased over the past decade. A nation-wide report issued by David Carroll, Jacqueline Berger and Roger Colton in 2007 (Appendix A) revealed the following:

- Total energy expenditures for low-income households grew rapidly from 2000-2005, increasing by over 40% in five years.
- More than 7.1 million low-income households had a home energy burden that exceeded 15% of income.<sup>2</sup>

Fisher, Sheehan & Colton calculate a nationally recognized figure called the home energy affordability gap. This figure quantifies the gap between affordable home energy bills and actual home energy bills. The "affordable burden" for home energy bills is set at 6% of gross household income for the home energy affordability gap model. This burden takes into account the total cost of shelter and the proportion of total shelter cost devoted specifically to energy. They consider a high energy burden one that exceeds 11% in income.<sup>3</sup>

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<sup>2</sup> David Carroll, Jacqueline Berger, Roger Colton. "A National Study of Ratepayer-Funded Low-Income Energy Programs." APPRISE Inc., 2007.

<sup>3</sup> "What Is the Home Energy Affordability Gap" Oct. 25, 2010  
<[http://www.homeenergyaffordabilitygap.com/01\\_WhatIsHEAG3.html](http://www.homeenergyaffordabilitygap.com/01_WhatIsHEAG3.html)>

The following data show the rise in the home energy affordability gap in Rhode Island from 2002-2009:<sup>4</sup>

| Rhode Island Home Energy Affordability Gap |                             |                           |
|--|-----------------------------|---------------------------|
|  | Aggregate Affordability gap | Average gap per household |
| 2002                                       | \$82,197,201                | \$813                     |
| 2003                                       | \$100,570,998               | \$995                     |
| 2004                                       | \$104,586,852               | \$1,034                   |
| 2005                                       | \$120,521,795               | \$1,192                   |
| 2006                                       | \$170,922,500               | \$1,690                   |
| 2007                                       | \$218,884,565               | \$2,165                   |
| 2008                                       | \$246,372,124               | \$2,437                   |
| 2009                                       | \$159,369,307               | \$1,576                   |

With an average gap for low-income households in Rhode Island at \$1,576 annually, only 13 states have a larger gap. The aggregate gap for the state is \$159,369,307, almost double the 2002 gap of \$82,197,201. When asked about the dramatic changes in 2007 and 2008 affordability gaps compared to prior and proceeding years, Roger Colton explained it as a function of the combination of changes in income and energy prices.<sup>5</sup> See Appendix B for details about Rhode Island’s home energy affordability gap.

The percentage of income many Rhode Islanders are expected to pay is extremely high. The following table shows the home energy burden in relation to poverty level in 2009 <sup>6</sup>:

<sup>4</sup> "On the Brink: 2009. The Home Energy Affordability Gap, April 2010, Rhode Island." Oct. 25, 2010 <<http://www.homeenergyaffordabilitygap.com>>

<sup>5</sup> Roger Colton, personal email interview, 6 Dec. 2010.

<sup>6</sup> "On the Brink: 2009. The Home Energy Affordability Gap, April 2010, Rhode Island." Oct. 25, 2010 <<http://www.homeenergyaffordabilitygap.com>>

| Rhode Island, 2009 |                    |                      |
|--------------------|--------------------|----------------------|
| Poverty Level      | Home energy burden | Number of Households |
| Below 50%          | 62.5%              | 21,981               |
| 50-74%             | 25%                | 11,545               |
| 75-99%             | 17.9%              | 15,198               |
| 100-124%           | 13.9%              | 14,584               |
| 125-149%           | 11.4%              | 15,792               |
| 150-185%           | 9.3%               | 22,015               |
|                    |                    | Total: 101,115       |

Comparatively, approximately 38% of Rhode Island households earn over \$70,000 annually. These households spend an average of 3.6% of their income on energy costs. According to 2010 Census Bureau supplemental data, 158,982 Rhode Island households are at or below 60% of state median income and eligible for LIHEAP. In a state with 431,418 households, that is more than a third. In 2009, approximately 35,000 households received LIHEAP assistance.<sup>7</sup>

### Shut-Off Crisis

In Rhode Island, the number of utility shut-offs per year continues to climb and will reach nearly 35,000 this year. This is the highest rate reported since the RI PUC began compiling these data in 1999. This year alone, National Grid has sent out over 400,000 gas and electricity termination notices to Rhode Island households. Many households go for months before they are able to get their service restored. Appendix C shows Rhode Island's monthly residential electric and natural gas utility service disconnection and restorations from 1999 to 2010. These data are based on figures provided by the PUC and were compiled by John Howat of the National Consumer Law Center. Through October, 2010, 34,498 households experienced a utility shut-off, only 23,499 have been restored, leaving nearly 11,000 households without gas or electric services, or possibly both. As of October, 2009 there were 30,761 shut-offs, an increase of 12% in 2010 compared to 2009. Utility shut-off numbers fall substantially from November 1 to April 15 of each year due to the Winter Moratorium on shut-offs enacted by R.I.G.L. § 32-1 et. seq. In addition, year round protection from shut-offs is provided to any household where a child under two years old resides, pursuant to R.I.G.L. § 32-1.1-2.1. National Grid provides a very

<sup>7</sup> John Howat, personal email interview, 11 Nov. 2010.

minimal discounted rate to income eligible customers; in 2009, only 35,000 electric customers were billed at the discounted rate. National Grid has enrolled only about 22% of the state's income-eligible customers in its A-60 discount rate. Those "protected status" electric customers saved an average of about \$70 for the year as a result of the discount rate. National Grid also sponsors a "company match" for arrearage management programs, the cost of which is eventually paid by the ratepayers.

Over the past several years, the crisis of affordable energy has come to be known by many as the "Heat or Eat" dilemma. This is a problem which has been well documented nationwide. With the high cost of energy, many heads of households are forced to choose between putting food on the table, keeping their home at a reasonable temperature, turning on the lights, buying clothing, etc. During 2010, the Wiley Center alone has responded to over 600 calls from people who were at risk of a shut-off or already terminated.

A multitude of national studies have documented the measurable health and safety risks associated with utility service termination. The American Academy of Pediatrics, reported in 2008 that children living in homes that are energy insecure are at high risk of experiencing food insecurity, being in fair or poor health, having been hospitalized since birth, and being at risk of developmental delays, compared to children living in energy secure homes. They have found that the current economic conditions have markedly increased energy insecurity. The report also concluded that energy price increases, necessary to reduce greenhouse gas emissions, fall disproportionately on low-income families (See Appendix D for full report).<sup>8</sup>

A study released by AARP (Appendix E) explains many of the threats to the health and well being of older people in low- and moderate-income households due to unaffordable home energy bills. High and volatile home energy prices jeopardize the use of home heating and cooling and increase the exposure to temperatures that are too cold in the winter and too hot in the summer. The adverse health consequences associated with unaffordable home energy bills include worsening of chronic health conditions, food insecurity and premature death of thousands of people in the United States.<sup>9</sup> In homes with residents that have high prescription and medical bills, the high cost of home energy is often an

<sup>8</sup> John T. Cook, PhD, Deborah A. Frank, MD, Patrick H. Casey, MD, Ruth Rose-Jacobs, PhD, Maureen M. Black, PhD, Mariana Chilton, PhD, MPH, Stephanie Ettinger de Cuba, MPH, Danielle Appugliese, MPH, Sharon Coleman, MS, MPH, Timothy Heeren, PhD, Carol Berkowitz, MD, Diana B. Cutts, MD., "A Brief Indicator of Household Energy Security: Associations With Food Security, Child Health, and Child Development in US Infants and Toddlers," *Pediatrics*, 2008. 868.

<sup>9</sup> Lynne Page Snyder, Ph.D., MPH and Christopher Baker, "Affordable Energy and Health: Making the Connections,



insurmountable burden. At the Wiley Center, several members have reported having to forgo paying for a prescription or medical treatment in order to keep the heat or electricity on.

There are additional dangerous and devastating risk factors that are more difficult to document, but are present nonetheless when households are disconnected from electric or gas service. These include:

- Risk of fire due to burning candles for light.
- K-12 students unable to do homework due to lack of electricity for light.
- Inability to cook meals due to termination of gas or electric service.
- Food in the refrigerator spoiling due to termination of electric service.
- Using the oven to provide heat for the home.
- Lack of hot water for washing/bathing.
- Depression, anxiety and stress.
- Medicine that needs refrigeration spoiling/inability to use electrical medical treatments such as a nebulizer.

### **Pay Me Now or Pay Me Later**

National Grid is Rhode Island's only statewide gas and electricity provider. Each year, gas and electric customer arrearages amount to millions of dollars. In 2009, Representative Art Handy reported National Grid's "bad bill write off" for 2009 to be about \$26 million for both gas and electricity. Every year, this uncollected debt gets charged to all ratepayers in the form of an increase to distribution rates for the coming year. In November 2010, for example, National Grid filed the "2010 Gas Cost Recovery Filing." The final docket that was approved by the PUC indicated that customer should expect to experience an increase of approximately \$22 on the gas bill associated with the proposed Distribution Adjustment Charge from November 1, 2010 through October 31, 2011. On March 1, 2010, the PUC authorized National Grid to collect additional revenues of \$16.4 million from electric ratepayers.

There are additional costs of utility termination that are charged to rate payers. The cost of the actual termination itself has two major costs. First, it costs a minimum of \$100 to send out the National Grid trucks and employees to do the termination. With 35,000 shut-offs in 2010, at least \$3.5 million is charged to the rate payers. In addition, there are major costs associated with collection of unpaid bills from mailing hundreds of thousands of notices, to paying collections agencies. In addition, the costs to

the Division of Public Utilities for informal and formal rate hearings for customers facing a shut-off or already shut-off are also paid by rate payers. These are charges that could be avoided if the number of terminations was dramatically reduced.

There are a multitude of costs associated with electric and heat service termination. A cost-benefit analysis would have to factor in many costs associated primarily with health, safety, and education. They include: the cost of chronic and acute illness that are exacerbated by lack of heat and electricity; emergency medical situations that incur as a result of lack of heat or electric; the cost of prevention of fires associated with lack of electricity (a quarter of fatal home candle fires occurred in homes in which the electricity had been shut-off<sup>10</sup>); the cost of mental illness such as depression, stress and anxiety that result from utility termination. Recently, a Wiley Center member reported that her husband was hospitalized for heart problems that were brought on by the trauma resulting from termination of electric service. Several members have reported medication that needs to be refrigerated going bad due to electricity termination. Others members who use nebulizers for respiratory problems have reported inability to use this medical treatment due to lack of electricity. Several members have called facing eviction and homelessness from their subsidized housing because their gas or electricity has been shut-off; regulations for Section 8 housing require residents to maintain their utility service.

The cost to education cannot be ignored. Children who live in energy insecure homes are more likely to experience developmental delays, neuro-developmental and psychological disturbances<sup>11</sup>. These children require costly specialized services in school and beyond. Although not yet widely documented, living in a home without electricity impacts a child's ability to do homework, which impacts school performance, academic achievement and development. Poor development and educational achievement lead to a multitude of social costs such as increased incarceration rates, dependence on social services such as SNAP, subsidized housing, TANF, and unemployment.

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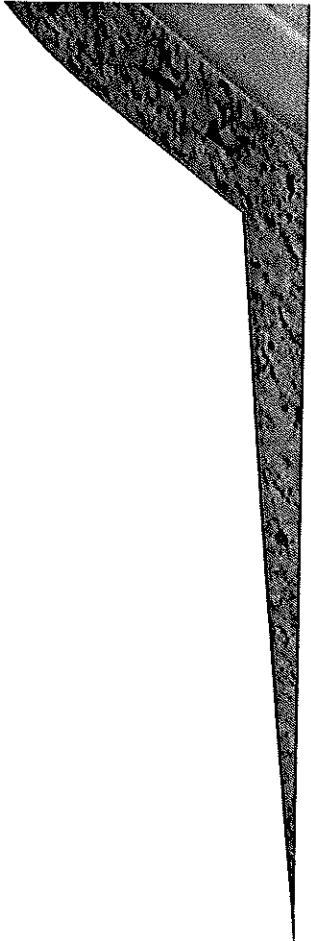
<sup>10</sup> John T. Cook, PhDa, Deborah A. Frank, MDa, Patrick H. Casey, MDb, Ruth Rose-Jacobs, PhDa, Maureen M. Black, PhDc, Mariana Chilton, PhD, MPHd, Stephanie Ettinger de Cuba, MPHe, Danielle Appugliese, MPHe, Sharon Coleman, MS, MPHe, Timothy Heeren, PhD, Carol Berkowitz, MDf, Diana B. Cutts, MD., "A Brief Indicator of Household Energy Security: Associations With Food Security, Child Health, and Child Development in US Infants and Toddlers," *Pediatrics*, 2008. 868.

<sup>11</sup> *ibid*

## Value Decision

Because of adverse economic conditions and the high cost of energy, thousands of Rhode Islanders go without electricity or heat, some for extended periods of time. As a society, we have to determine whether or not we consider heat and electricity as a basic necessity to be healthy and successful in life. It is up to us as a community that looks out for our fellow citizens to make sure this happens. The solution is a Universal Service Fund, funded by very small contributions of residential ratepayers and businesses. This is a similar concept to the 911 fund which phone users pay to make sure everyone has access to 911 services. The fund would be used to provide low-income utility customers with the opportunity to decrease the percent of their income they must pay to keep their services on to a more affordable level. Failure to act upon this crisis of affordable energy will continue to have a chilling impact on Rhode Island's low-income, fixed income, and disabled residents.

The lowest income, most vulnerable Rhode Islanders continue to get raked over the coals year after year, while the highest income get break after break. It is up to the legislators at all levels to decide whether we will provide some protection to those who need it most, or continue to favor the most well off.



**Part 2:**  
**PIPP in other**  
**states**

## **Introduction to Programs in Other States**

With the dramatic rise in energy prices over the past decades, policymakers have sought to ease the increasing home energy burden through a variety of energy affordability and efficiency plans that benefit low income customers. Many states already have programs in place while others are in the process of designing programs. Generally, these plans have been funded by ratepayers, supplementing LIHEAP and other energy assistance programs. The small charges to ratepayers go by different names, some called Systems Benefit Charge (SBC), others are called Universal Service Funds (USF), or Supplemental Low-Income Energy Assistance Fund (SLEAF), for example.

## **Program Design**

There are several major options policy makers have considered or will have to consider in program design. First is the level of integration with existing LIHEAP programs. Some states integrate completely, using a joint application, and factor LIHEAP benefits into total program benefits. Some states coordinate LIHEAP with the affordability program by presuming eligibility for LIHEAP to automatically make someone eligible for the affordability program. In other states, LIHEAP and the affordability program remain totally separate. Along these lines, states must consider the maximum income level to be eligible for program benefits. Some programs follow the same guidelines as LIHEAP eligibility (150% of Federal Poverty Guidelines or 60% State Median Income, whichever is higher), while others set the level higher or lower depending on funding levels. Program design options have been examined in detail by APPRISE Inc., a Princeton, NJ based research agency.

There are several factors which must be considered in determining benefit amounts and how benefits will be distributed. In some models, programs use the actual bill from the previous year to estimate the household energy costs; this is adjusted based on projected changes in energy prices. An estimated bill can also be used, taking state averages by household size, heating fuel type, geographic location and other demographic characteristics. There are two principle models for determining benefit distribution: fixed credit and fixed payment. Under the fixed credit model, the state determines the customer's target affordable energy burden and calculates the predicted energy cost. The difference between the target burden and the predicted cost is the program benefit. Each month, this credit is applied to the bill regardless of actual energy usage or energy cost.

Example: Annual income = \$24,000

Target energy burden for natural gas = 3% of income = \$720

Predicted annual gas bill = \$1,200

Predicted bill – target burden = \$1,200 - \$720 = \$480 ÷ 12 months = 40

Monthly credit for gas = \$40

In the fixed payment model, the customer's discounted energy charge is calculated at a certain percent of income. This charge is divided by 12 months, and each month the customer is charged that amount. In months where the actual cost is higher, the household receives a discount and in months where the actual cost is lower, the household receives a negative discount.

Example: Annual Income = \$24,000

Target energy burden for natural gas = 3% of income = \$720

Target burden \$720 ÷ 12 months = \$60 = fixed monthly payment assistance to customer for gas.<sup>1</sup>

Some programs have a fixed meter charge that is the same regardless of usage. Others have a volumetric charge that is an amount per KWh or per therm of gas. Some might argue that the first option is more regressive, and the second option might inspire greater conservation.

Other considerations for energy affordability programs include: determining the agency that will oversee the program, and the agency that will administer the program. Along the same lines, legislators must decide the degree of freedom they are willing to give the agency to enact the will of the legislation. In New Jersey, for example, the enabling legislation is very short, and it simply empowers the Board of Public Utilities to enact the USF. Other states have much lengthier rules written into law.

Due to the severe nature of the affordable energy crisis, there is no shortage of research and evaluation of different programs. Many states have heard the call for action and implement some degree of programming to relieve the excessive burden put on low-energy households for home energy costs. The PIPP in New Jersey is considered the most successful and progressive. Ohio's PIPP is the oldest in the

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<sup>1</sup> David Carroll, Jacqueline Berger, Roger Colton. "A National Study of Ratepayer-Funded Low-Income Energy Programs." APPRISE Inc., 2007. 12.

country, while Illinois's PIPP is the newest program. Taking a closer look at these programs is important for determining Rhode Island's options for low-income energy assistance.

## New Jersey Percent of Income Payment Plan (PIPP)

New Jersey's programs to help low-income, fixed income and disabled residents keep their electricity and heat on are considered by some to be the best in the country. The Director of New Jersey AARP said the following when the program began in 2003:

"The preliminary numbers demonstrate that there was a tremendous need, as we knew, and this program will help meet that need....It will help families avoid shut-offs and their resulting dangers, their frequent moving to new addresses, and the high collection costs ratepayers have been saddled with. In terms of quality of life, this is a major public policy improvement gained at a modest net cost....This is the largest scale fixed credit percentage of income program in the country and New Jersey is the first state to screen all LIHEAP and Lifeline recipients for eligibility for the program, calculate the proper benefit based on an analysis of income and electric and natural gas usage, and transmit the credit information to all the state investor-owned electric and gas utilities. New Jersey's experience demonstrates that a fixed credit percentage of income program can be administered at a reasonable cost using the techniques of automatic enrollment."<sup>1</sup>

In an interview with John Howat of the National Consumer Law Center, he suggested that New Jersey is a good model for Rhode Island.<sup>2</sup>

The state of New Jersey mandated its Universal Service Fund (USF) in 1999 through the Electric Discount and Energy Competition Act, more familiarly known as restructuring legislation. The USF was set up as a permanent fund to help address low-income energy needs. The restructuring legislation left it up to the New Jersey Board of Public Utilities (BPU) to determine the level of USF funding, its administration, purposes and programs to be funded, as well as other new charges to change or expand programs. The law is defined as "non-lapsing". It was not until 2003 that the BPU issued the Universal Service Fund Order, establishing permanent statewide assistance programs. The USF is administered by the Department of Community Affairs.<sup>3</sup>

The USF program is a fixed credit percent of income payment plan in which eligible participants pay no more than 6% of their annual income toward electric and gas bills. The maximum credit per year is capped at \$1,800. Income eligibility is %175 of the federal poverty level, which in 2009/2010 was

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<sup>1</sup> "New Jersey Universal Service Program Surpasses Expectations in First Phase," 25 Oct. 2010  
<<http://liheap.ncat.org/newslett/48net.htm#newjersey>>

<sup>2</sup> John Howat, Personal Interview, 11 Nov. 2010.

<sup>3</sup> "State PBF/USF History, Legislation, Implementation: New Jersey," 25 Oct. 2010  
<<http://liheap.ncat.org/dereg/states/njersey.htm>>



\$38,588 for a family of four.<sup>4</sup> In the first year, New Jersey Department of Human Services automatically enrolled customers who were already enrolled in the LIHEAP program. In 2004, manual enrollment began so customers could apply directly. In 2009, the program served 200,944 households or approximately 35% of those income-eligible.<sup>5</sup> The estimated cost of the program was \$248 million in 2009.<sup>6</sup>

For a household with an annual income of \$24,000 that heats with gas, the USF credit for gas is calculated in the following way:<sup>7</sup>

|                                    |          |
|------------------------------------|----------|
| Annual Income, Household of Four - | \$24,000 |
| Annual Natural Gas Bill *          | \$ 1,500 |
| Annual LIHEAP Benefits -           | \$400    |

**Step #1 – Determine the customer’s current natural gas burden**

|                             |                |                          |
|-----------------------------|----------------|--------------------------|
| Annual Natural Gas Bill     | \$1,500        |                          |
| Minus LIHEAP Benefit –      | -\$400         |                          |
| Actual Natural Gas Burden = | <u>\$1,100</u> | (more than 3% of income) |

**Step #2 – Determine what the customer should be paying for natural gas under USF**

|   |                |
|---|----------------|
| Annual Household Income                   | \$24,000       |
| Maximum Natural Gas Bill Burden under USF | x 3% of income |
| Customer’s Maximum Natural Gas Burden =   | <u>\$720</u>   |

<sup>4</sup> “2009/2010 HHS Poverty Guidelines,” 25 Oct. 23010.

<<http://liheap.ncat.org/profiles/povertytables/FY2010/popstate.htm>>

<sup>5</sup> “Home Energy Affordability Gap: On the Brink: New Jersey 2009,” 25 Oct. 2010

<[http://www.homeenergyaffordabilitygap.com/05\\_Current\\_State\\_Data2.html](http://www.homeenergyaffordabilitygap.com/05_Current_State_Data2.html)>

<sup>6</sup> “State PBF/USF History, Legislation, Implementation: New Jersey,”

<<http://liheap.ncat.org/dereg/states/njersey.htm>>

<sup>7</sup> ibid

**Step #3 – USF will pay the difference**

|   |   |
|---|---|
| Actual Natural Gas Burden                 | \$1,100                                   |
| Customer's Maximum USF Natural Gas Burden | – \$720                                   |
| Annual USF Benefit =                      | $\frac{\$380}{12} = \$31.67/\text{month}$ |

\*The annual gas bill is determined based on the average of the previous 12 months gas bills.

Note that LIHEAP benefits are calculated into the customer's heating source total burden.

The same procedure is done for electric, in a gas and electric household, except LIHEAP is not factored in. In a household that uses only electric, the maximum burden is calculated as 6% of income.

Another important part of the USF in New Jersey is the arrearage reduction program, called Fresh Start. The program allows for enrollees to have their past due bills forgiven if they start paying their bills in full and do so for an entire year. In 2009, payments totaling \$12 million were made to about 30,000 households.<sup>8</sup> Including all USF programs in New Jersey, about 36% of those eligible for the programs receive benefits.<sup>9</sup>

**New Jersey Legislation**

The enabling statute for the USF is found in the "Electric Discount and Energy Competition Act, N.J. P.L. 1999, 48:3-60 "Social benefits charge by public utility; Universal Service Fund." The relevant section 48:3-60(b) states:

b. There is established in the Board of Public Utilities a non-lapsing fund to be known as the "Universal Service Fund." The board shall determine: the level of funding and the appropriate administration of the fund; the purposes and programs to be funded with monies from the fund; which social programs shall be provided by an electric public utility as part of the provision of its regulated services which provide a public benefit; whether the funds appropriated to fund the "Lifeline Credit Program" established pursuant to P.L.1979, c.197 (C.48:2-29.15 et seq.), the "Tenants' Lifeline Assistance Program" established pursuant to P.L.1981, c.210 (C.48:2-29.31 et seq.), the funds received pursuant to the Low Income Home Energy Assistance Program established pursuant to 42 U.S.C. s. 8621 et seq., and funds collected by electric and natural gas utilities, as authorized by the board, to off-set uncollectible electricity and natural gas bills should be deposited in the fund; and whether new charges should be imposed to fund new or expanded social programs.

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<sup>8</sup> ibid

<sup>9</sup> ibid

Compared to other states statutes, and particularly Rhode Island's previously proposed legislation, this is relatively short. It places all of the power in the hands of the Board of Public Utilities (BPU) to set the funding level, the ratepayer contribution, and determine program design. By using such language, the legislature exhibits a great deal of faith in the BPU as a strong reliable agency to enact the will of the law and of the people. The program is considered very successful, so presumably the BPU, and the Department of Community Affairs (DCA) which administers the programs, do a good job.

### **Universal Service Fund Ratepayer Charge**

In an interview with Peter Hillero of the New Jersey Board of Public Utilities, he reported that the BPU is responsible for setting the level of ratepayer contribution to the USF each year. The legislation enables to the board to set the levels each year. The charge determined for this year amounts to 0.002716 per KWh for electric and 0.0194 per therm for gas.<sup>10</sup> This amount contributes to both the USF and the Lifeline Program (Lifeline is administered by the Department of Health and Senior Services, provides a \$225 energy benefit to seniors and the disabled who meet the Pharmaceutical Assistance to the Aged and Disabled (PAAD) eligibility requirements or who receive SSI. The benefit is also available to customers who have electric and gas costs included in their rent).<sup>11</sup>

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<sup>10</sup> Peter Hillero, Personal Interview, 21 October, 2010.

<sup>11</sup> " Board of Public Utilities: Assistance" 25 Oct. 2010 <<http://www.state.nj.us/bpu/assistance/programs/>>

## Ohio Percent of Income Payment Plan (PIPP)

Ohio's has had PIPP in place for 26 years. It is the largest and oldest state mandated PIPP in the country. The state recently enacted PIPP Plus, reforming the previous program. The reform was the result of studies done by a working group formed in 2006. The working group consisted of staff from the Ohio Department of Development (ODOD)-the LIHEAP grantee, the Public Utilities Commission of Ohio (PUCO), the Office of Consumer Council and low-income advocacy and consumer groups. In Ohio, the PUCO oversees the natural gas PIPP and the ODOD administers the electric PIPP, providing administrative support for the natural gas PIPP, including enrollment and income verification services.

Regarding PIPP in Ohio, PUCO Chairman Alan Schriber explained: "It is imperative that energy assistance programs are available to Ohio's struggling families. The new PIPP Plus program will balance the hardships and concerns of those eligible for the program with that of all other ratepayers, many of whom are also struggling to make ends meet in this economy."<sup>1</sup>

The new program makes monthly payments more affordable on a year-round basis and provides incentives to participants for regular, timely payments. With the new program, low-income participants will pay a maximum of 6% of their income for natural gas and 6% for electric bills, or 10% if they heat with electricity. The minimum payment is \$10 for households with zero income. In the previous version, the maximum energy bill payment was 15% of income. For each timely payment they will receive a credit of 1/24th of their arrearages, encouraging responsible payment behavior. If a customer makes 24 consecutive payments, all arrearages are eliminated. Income eligibility for the program is 150% of the federal poverty level. PIPP customers must re-verify their eligibility every 12 months.

The program is funded by a ratepayer surcharge (rider) on gas and electric bills, which was put into law with the state's 1999 restructuring legislation. The law created a Universal Service Fund for low-income customer assistance programs, to include the state's existing PIPP, targeted low-income energy-efficiency programs, a consumer education program, and administration costs.<sup>2</sup> The law also requires electric utilities to collect the rider revenues and remit them to the ODOD's Office of Community Services, which must keep them in the USF, an interest-bearing account. OCS verifies the amount of

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<sup>1</sup> "Public Utilities Commission, Ohio Department of Development Launce PIPP Plus to Assist Ohioans with Paying Utility Bills," 2 Nov. 2010, < <http://www.puco.ohio.gov/PUCO/MediaRoom/MediaRelease.cfm?id=10201>>

<sup>2</sup> "State PBF/USF History, Legislation, Implementation," 4 Nov. 2010 < <http://liheap.ncat.org/dereg/states/ohio.htm>>

unpaid PIPP customers' bills, and returns that amount to the appropriate company. Remaining funds from the rider collection stay in the USF, to be spent on electric energy efficiency and consumer education services to high-consumption, high-arrears PIPP households. The amount of the USF rider was determined for each electric utility territory to cover the newly authorized programs. The rider is adjusted each year, based on the revenue requirements of the programs. The revenue collected varies because it is a volumetric charge based on electric consumption. The gas PIPP rider is embedded in gas distribution charges and companies collect for costs as needed, rather than readjusting the rider annually.

USF rider revenues for 2009 totaled around \$156 million. While the majority of the rider revenues fund the PIPP, about \$7 million is set aside each year for the low-income energy efficiency program and \$6 million for consumer education. In 2009, 230,000 Ohioans were served by the electric PIPP and 211,000 were served by the gas PIPP. In Ohio, PIPP programs served about one quarter of those eligible for the program.<sup>3</sup>

Ohio's legislation is lengthy and detailed, due to the program's long standing implementation. There are several sections in the Ohio Revised Code that pertain to the USF and PIPP. These sections were enacted in 1999. Additional sections in Ohio's Administrative code provide further details on PIPP administration, these sections were revised and re-enacted in 2009. Sections in the Administrative Code outline criteria for customer eligibility, procedures for verifying eligibility, payment and crediting arrangements, procedures for distributing funds to electric utilities, as well as energy efficiency, weatherization and education services included in the program.

#### **4928.51 Universal service fund.**

(A) There is hereby established in the state treasury a universal service fund, into which shall be deposited all universal service revenues remitted to the director of development under this section, for the exclusive purposes of providing funding for the low-income customer assistance programs and for the consumer education program authorized under section 4928.56 of the Revised Code, and paying the administrative costs of the low-income customer assistance programs and the consumer education program. Interest on the fund shall be credited to the fund. Disbursements from the fund shall be made to any supplier that provides a competitive retail electric service or a noncompetitive retail electric service to a customer who is approved to receive assistance under a specified low-income customer assistance program and to any authorized provider of weatherization or energy efficiency service to a customer approved to receive such assistance under a specified low-income customer assistance program.

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<sup>3</sup> "State PBF/USF History, Legislation, Implementation," 4 Nov. 2010 <<http://liheap.ncat.org/dereg/states/ohio.htm>>

(B) Universal service revenues shall include all of the following:

(1) Revenues remitted to the director after collection by an electric distribution utility beginning July 1, 2000, attributable to the collection from customers of the universal service rider prescribed under section 4928.52 of the Revised Code;

(2) Revenues remitted to the director that have been collected by an electric distribution utility beginning July 1, 2000, as customer payments under the percentage of income payment plan program, including revenues remitted under division (C) of this section;

(3) Adequate revenues remitted to the director after collection by a municipal electric utility or electric cooperative in this state not earlier than July 1, 2000, upon the utility's or cooperative's decision to participate in the low-income customer assistance programs.

(C)(1) Beginning July 1, 2000, an electric distribution utility shall transfer to the director the right to collect all arrearage payments of a customer for percentage of income payment plan program debt owed to the utility on the day before that date or retain the right to collect that debt but remit to the director all program revenues received by the utility for that customer.

(2) A current or past percentage of income payment plan program customer is relieved of any payment obligation under the percentage of income payment program for any unpaid arrears accrued by the customer under the program as of the effective date of this section if the customer, as determined by the director, meets both of the following criteria:

(a) The customer as of that date has complied with customer payment responsibilities under the program.

(b) The customer is permanently and totally disabled as defined in section 5117.01 of the Revised Code or is sixty-five years of age or older as defined in that section.

(D) The public utilities commission shall complete an audit of each electric utility by July 1, 2000, for the purpose of establishing a baseline for the percentage of income payment plan program component of the low-income assistance programs.

#### **4928.52 Universal service rider.**

(A) Beginning July 1, 2000, the universal service rider shall replace the percentage of income payment plan rider in existence on the effective date of this section and any amount in the rates of an electric utility for the funding of low-income customer energy efficiency programs. The universal service rider shall be a rider on retail electric distribution service rates as such rates are determined by the public utilities commission pursuant to this chapter. The universal service rider for the first five years after the starting date of competitive retail electric service shall be the sum of all of the following:

(1) The level of the percentage of income payment plan program rider in existence on the effective date of this section;

(2) An amount equal to the level of funding for low-income customer energy efficiency programs provided through electric utility rates in effect on the effective date of this section;

(3) Any additional amount necessary and sufficient to fund through the universal service rider the administrative costs of the low-income customer assistance programs and the consumer education program created in section 4928.56 of the Revised Code.

(B) If, during or after the five-year period specified in division (A) of this section, the director of development, after consultation with the public benefits advisory board created under section 4928.58 of the Revised Code, determines that revenues in the universal service fund and revenues from federal or other sources of funding for those programs, including general revenue fund appropriations for the Ohio energy credit program, will be insufficient to cover the administrative costs of the low-income customer assistance programs and the consumer education program and provide adequate funding for those programs, the director shall file a petition with the commission for an increase in the universal service rider. The commission, after reasonable notice and opportunity for hearing, may adjust the universal service rider by the minimum amount necessary to provide the additional revenues. The commission shall not decrease the universal service rider without the approval of the director, after consultation by the director with the advisory board.

(C) The universal service rider established under division (A) or (B) of this section shall be set in such a manner so as not to shift among the customer classes of electric distribution utilities the costs of funding low-income customer assistance programs.

#### **4928.53 Director of development to administer low-income customer assistance programs.**

(A) Beginning July 1, 2000, the director of development is hereby authorized to administer the low-income customer assistance programs. For that purpose, the public utilities commission shall cooperate with and provide such assistance as the director requires for administration of the low-income customer assistance programs. The director shall consolidate the administration of and redesign and coordinate the operations of those programs within the department to provide, to the maximum extent possible, for efficient program administration and a one-stop application and eligibility determination process at the local level for consumers.

(B)(1) Not later than March 1, 2000, the director, in accordance with Chapter 119. of the Revised Code, shall adopt rules to carry out sections 4928.51 to 4928.58 of the Revised Code and ensure the effective and efficient administration and operation of the low-income customer assistance programs. The rules shall take effect on the July 1, 2000.

(2) The director's authority to adopt rules under this division for the Ohio energy credit program shall be subject to such rule-making authority as is conferred on the director by sections 5117.01 to 5117.12 of the Revised Code, as amended by Sub. S.B. No. 3 of the 123rd general assembly, except that rules initially adopted by the director for the Ohio energy credit program shall incorporate the substance of those sections as they exist on the effective date of this section.

(3) The director's authority to adopt rules under this division for the percentage of income payment plan program shall include authority to adopt rules prescribing criteria for customer eligibility and policies regarding payment and crediting arrangements and responsibilities, procedures for verifying customer

eligibility, procedures for disbursing public funds to suppliers and otherwise administering funds under the director's jurisdiction, and requirements as to timely remittances of revenues described in division (B) of section 4928.51 of the Revised Code. The director's authority in division (B)(3) of this section excludes authority to prescribe service disconnection and customer billing policies and procedures and to address complaints against suppliers under the percentage of payment plan program, which excluded authority shall be exercised by the public utilities commission, in coordination with the director. Rules adopted by the director under this division for the percentage of income payment plan program shall specify a level of payment responsibility to be borne by an eligible customer based on a percentage of the customer's income. Rules initially adopted by the director for the percentage of income payment plan program shall incorporate the eligibility criteria and payment arrangement and responsibility policies set forth in rule 4901:1-18-04(B) of the Ohio Administrative Code in effect on the effective date of this section.

**4928.54 Aggregate percentage of income payment plan program customers.**

Beginning on the starting date of competitive retail electric service, the director of development may aggregate percentage of income payment plan program customers for the purpose of competitively auctioning the supply of competitive retail electric generation service to bidders certified under section 4928.08 of the Revised Code and further qualified under eligibility criteria the director prescribes by rule under division (B) of section 4928.53 of the Revised Code after consultation with the commission and electric light companies regarding any such rule. The objectives of the auction shall be to provide reliable retail electric generation service to customers, based on selection criteria that the winning bid provide the lowest cost and best value to customers. The rules adopted by the director under division (B) of section 4928.53 of the Revised Code shall ensure a fair and unbiased auction process and the performance of any winning bidder.

**4928.55 Energy efficiency and weatherization program.**

The director of development shall establish an energy efficiency and weatherization program targeted, to the extent practicable, to high-cost, high-volume use structures occupied by customers eligible for the percentage of income payment plan program, with the goal of reducing the energy bills of the occupants. Acceptance of energy efficiency and weatherization services provided by the program shall be a condition for the eligibility of any such customer to participate in the percentage of income payment plan program. Any difference between universal service fund revenues under section 4928.51 of the Revised Code and any savings in percentage of income payment plan program costs as a result of competitive auctioning under section 4928.54 of the Revised Code shall be reinvested in the targeted energy efficiency and weatherization program.

**4928.56 Education program for consumers eligible to participate in low-income customer assistance programs.**

The director of development may adopt rules in accordance with Chapter 119. of the Revised Code establishing an education program for consumers eligible to participate in the low-income customer assistance programs. The education program shall provide information to consumers regarding energy efficiency and energy conservation.



**4928.57 Biennial report to general assembly.**

On and after the starting date of competitive retail electric service, the director of development shall provide a report every two years until 2008 to the standing committees of the general assembly that deal with public utility matters, regarding the effectiveness of the low-income customer assistance programs and the consumer education program, and the effectiveness of the advanced energy program created under sections 4928.61 to 4928.63 of the Revised Code.

**4928.58 Public benefits advisory board.**

(A) There is hereby 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 Revised Code. The advisory board shall consist of twenty-one members as follows: the director of development, the chairperson of the public utilities commission, the consumers' counsel, and the director of the air quality development authority, each serving ex officio and represented by a designee at the official's discretion; two members of the house of representatives appointed by the speaker of the house of representatives, neither of the same political party, and two members of the senate appointed by the president of the senate, neither of the same political party; and thirteen members appointed by the governor with the advice and consent of the senate, consisting of one representative of suppliers of competitive retail electric service; one representative of the residential class of electric utility customers; one representative of the industrial class of electric utility customers; one representative of the commercial class of electric utility customers; one representative of agricultural or rural customers of an electric utility; two customers receiving assistance under one or more of the low-income customer assistance programs, to represent customers eligible for any such assistance, including senior citizens; one representative of the general public; one representative of local intake agencies; one representative of a community-based organization serving low-income customers; one representative of environmental protection interests; one representative of lending institutions; and one person considered an expert in energy efficiency or renewables technology. Initial appointments shall be made not later than November 1, 1999.

(B) Initial terms of six of the appointed members shall end on June 30, 2003, and initial terms of the remaining seven appointed members shall end on June 30, 2004. Thereafter, terms of appointed members shall be for three years, with each term ending on the same day of the same month as the term it succeeds. Each member shall hold office from the date of the member's appointment until the end of the term for which the member was appointed. Members may be reappointed. Vacancies shall be filled in the manner provided for original appointments. Any member appointed to fill a vacancy occurring prior to the expiration date of the term for which the member's predecessor was appointed shall hold office as a member for the remainder of that term. A member shall continue in office after the expiration date of the member's term until the member's successor takes office or until a period of sixty days has elapsed, whichever occurs first.

(C) Board members shall be reimbursed for their actual and necessary expenses incurred in the performance of board duties. The reimbursements constitute, as applicable, administrative costs of the low-income customer assistance programs for the purpose of division (A) of section 4928.51 of the Revised Code or administrative costs of the advanced energy program for the purpose of division (A) of section 4528.61 of the Revised Code.

(D) The advisory board shall select a chairperson from among its members. Only board members appointed by the governor with the advice and consent of the senate shall be voting members of the board; each shall have one vote in all deliberations of the board. A majority of the voting members constitute a quorum.

(E) The duties of the advisory board shall be as follows:

(1) Advise the director in the administration of the universal service fund and the low-income customer assistance programs and advise the director on the director's recommendation to the commission regarding the appropriate level of the universal service rider;

(2) Advise the director on the administration of the advanced energy program and the advanced energy fund under sections 4928.61 to 4928.63 of the Revised Code.

(F) The advisory board is not an agency for purposes of sections 101.82 to 101.87 of the Revised Code.

Top↑



Department of  
Development

Office of Community Services

# Percentage of Income Payment Plan

## PIPP Plus Rules

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December 2009

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122:5-3-01      Definitions.

Defined terms used in this chapter are as follows:

"Account default" means a PIPP customer's failure to pay monthly PIPP installment amounts causing the PIPP customer's electric service to be subject to disconnection by a utility for nonpayment or actually disconnected for nonpayment.

"Accrued arrearage" means for each PIPP customer such customer's total bill balance, less the current bill amount, owed to the electric distribution utility then providing electric service to such customer.

"Active PIPP customer" means a customer who is both currently enrolled in PIPP and currently using utility service from the electric distribution utility receiving payments from the fund for such customer.

"Annual energy assistance guidelines" means the operating guidelines written by the office of community services and published annually to provide information to staff of the office of community services and local agencies and to the public about the operation of low-income customer assistance programs.

"Annual HWAP plan" means for each program year for the home weatherization assistance program, the home weatherization assistance state plan submitted by the director to the United States department of energy, as such plan may be amended.

"Annual LIHEAP plan" means for each program year for the home energy assistance program, the low-income home energy assistance program federal fiscal year state plan for the state of Ohio submitted by the director to the United States department of health and human services, as such plan may be amended.

"Arrearage credit amount" means an amount calculated for each PIPP customer as described in paragraph (B)(3) of rule 122:5-3-04 of the Administrative Code.

"Business day" means any day that is not a Saturday or a Sunday and not a day on which governmental offices of the state of Ohio are required or permitted to be closed or on which banks are required or permitted to be closed in the state of Ohio.

"Commission" means the public utilities commission of Ohio.

"Current bill balance" means for each monthly billing cycle for a PIPP customer, the difference between such customer's monthly PIPP installment amount and the actual amount billed for electric service for the billing cycle.

"Customer" means any person who enters into an agreement to purchase residential electric service by contract and/or tariff from an electric distribution utility or from a municipal electric utility or electric cooperative that participates in the low-income customer assistance programs.

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"Customer arrearages" means for each PIPP customer such customer's current bill balance, plus the customer's accrued arrearage at the time the customer enrolls in the percentage of income payment plan program, but does not include past due monthly PIPP installments.

"Customer payment" means, for purposes of these rules and arrearage crediting, a payment of a monthly PIPP installment made from the customer's financial resources or paid by a third-party on the customer's behalf, excluding federal funds administered by the office of community services.

"Director" means the director of the Ohio department of development and also includes such other officers or employees of the Ohio department of development who may act for or in the place of the director under this chapter pursuant to rule 122:5-3-09 of the Administrative Code.

"Electrically heated residence" means a residence for which the primary source of heating is an electric appliance such as an electric furnace, heat pump or electric baseboard heater.

"Electric baseload residence" means a residence for which electricity is not the primary source of heating.

"Electric cooperative" means, as defined in division (A)(5) of section 4928.01 of the Revised Code, a not-for-profit electric light company that both is or has been financed in whole or in part under the "Rural Electrification Act of 1936," 49 stat. 1363, 7 U.S.C. 901, and owns or operates facilities in the state of Ohio to generate, transmit, or distribute electricity, or a not-for-profit successor of such company.

"Electric distribution utility" means, as defined in division (A)(6) of section 4928.01 of the Revised Code, an electric utility that supplies at least retail electric distribution service.

"Electric partnership program policies and procedures" means the policies and procedures developed, maintained, and published from time to time by the office of community services for electric partnership program service providers.

"Electric services company" means, as defined in division (A)(9) of section 4928.01 of the Revised Code, an electric light company that is engaged on a for-profit or not-for-profit basis in the business of supplying or arranging for the supply of only a competitive retail electric service in this state. "Electric services company" includes a power marketer, power broker, aggregator, or independent power producer but excludes an electric cooperative, municipal electric utility, governmental aggregator, or billing and collection agent.

"Electric utility" means, as defined in division (A)(11) of section 4928.01 of the Revised Code, an electric light company that is engaged on a for-profit basis in the business of supplying a noncompetitive retail electric service in this state or in the businesses of supplying both a noncompetitive and a competitive retail electric service in this state. "Electric utility" excludes a municipal electric utility or a billing and collection agent.

"Eligible customer" means a customer who satisfies the eligibility criteria set forth in rule 122:5-3-02 of the Administrative Code.

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"Energy efficiency and weatherization services" means those services coordinated by the office of community services through its energy efficiency and weatherization programs targeted, but not provided exclusively, to high-cost, high-volume use structures occupied by eligible customers with the goal of reducing the energy bills of such customers.

"Federal poverty guidelines" means the poverty guidelines updated periodically in the Federal Register by the United States department of health and human services under the authority of 42 U.S.C. 9902(2).

"Former percentage of income payment plan customer" (former PIPP customer) means a customer who (i) remains within the service territory of the electric distribution utility that provided electric service to the customer while participating in the PIPP program, (ii) either elects to terminate participation in the PIPP program or is no longer eligible to participate in the PIPP program as a result of an increase in the household income or change in the household size, and (iii) is not enrolled in the graduate PIPP or post-PIPP payment programs provided in accordance with paragraph (B)(5) of rule 122:5-3-04 of the Administrative Code.

"Fund" means the universal service fund established by division (A) of section 4928.51 of the Revised Code.

"Graduate percentage of income payment plan customer" (graduate PIPP customer) means a customer who (i) continues to receive electric service from the electric distribution utility that provided service to the customer while participating in the PIPP program, (ii) was previously enrolled in a percentage of income payment plan, and (iii) who is enrolled in the transitional phase of the PIPP program provided in accordance with paragraph (B)(5)(a) of rule 122:5-3-04 of the Administrative Code.

"Household income" means the total gross income before taxes of all household members except earned income of dependent minors under eighteen years old, any income expressly excluded under federal rules for the administration of the home energy assistance program, and any income otherwise expressly excluded by the director as provided in paragraph (B) of rule 122:5-3-02 of the Administrative Code. Gross household income includes, but is not limited to, wages, interest, dividends, annuities, and pensions. Sources of income excluded from "household income" shall be those sources of income identified as excluded by the director annually as part of the annual LIHEAP plan and published in the annual energy assistance guidelines.

"Inactive PIPP customer" means a customer who is not currently enrolled in the PIPP program, the graduate PIPP payment program, or the post-PIPP payment program and such customer has a PIPP arrearage balance greater than zero dollars.

"Local agency" means a community action agency or other local service provider designated by the director to assist with the administration of low-income customer assistance programs at the local level.

"Low-income customer assistance programs" means the percentage of income payment plan program, the home energy assistance program, the home weatherization assistance program, the electric partnership program (formerly known as the targeted energy efficiency and

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weatherization program) and such other programs as may be developed by the director as permitted or required by law.

"Monthly PIPP installment amount" means for each PIPP customer the amount of such customer's household income to be paid each month for electric service as determined in accordance with paragraph (A) of rule 122:5-3-04 of the Administrative Code.

"Municipal electric utility" means, as defined in division (A)(20) of section 4928.01 of the Revised Code, a municipal corporation that owns or operates facilities to generate, transmit, or distribute electricity.

"Office of community services" means the office within the Ohio department of development designated as the agency to receive federal funding from United States departments of health and human services and energy for home energy assistance and home weatherization assistance, respectively.

"On-time payment" means, for purposes of these rules and arrearage crediting, a PIPP installment received by the electric distribution utility prior to the date that the next bill for electric service is issued.

"Percentage of income payment plan program," or "PIPP program," means the program administered by the director in accordance with section 4928.53 of the Revised Code and the rules set forth in this chapter of the Administrative Code allowing eligible customers to pay a percentage of household income in lieu of the actual bill for residential electric service. For purposes of marketing the PIPP program to eligible customers, the director may assign a distinct program name or title to the PIPP program.

"PIPP anniversary date" means the calendar date by which the PIPP customer's PIPP arrearage credit amount will be reviewed and may be recalculated. The PIPP anniversary date shall be at or about twelve months from when the customer is enrolled in PIPP. For transition purposes, the PIPP anniversary date for existing PIPP customers will be the customers' first billing date to occur on or after November 1, 2010.

"PIPP annual verification date" means the calendar date at or about twelve months from the PIPP customer's most recent reverification date.

"PIPP customer" means a customer who participates in the percentage of income payment plan program.

"PIPP reverification date" means the actual date on which the PIPP customer documented his or her household income and household size to continue in the PIPP program or the PIPP graduate program.

"Post-percentage of income payment plan customer" (post-PIPP customer) means a customer who (i) no longer has electric service from the electric distribution utility that provided service to the customer while participating in the PIPP program, (ii) was previously enrolled in a percentage of income payment plan, and (iii) is enrolled in the transitional phase of the PIPP program provided in accordance with paragraph (B)(5)(c) of rule 122:5-3-04 of the Administrative Code.

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"Universal service rider" means the rider on retail electric distribution service rates authorized by section 4928.52 of the Revised Code and established from time to time by petition of the director to the commission as provided therein.

"Weatherization program standards" means the standards developed, maintained, and published from time to time by the office of community services which relate to the installation of weatherization materials and energy efficiency products, services and measures and to performance evaluation of such materials, services, and measures.



122:5-3-02      Criteria for customer eligibility.

(A) Customer of a participating utility. An individual must be a residential customer of an electric distribution utility or a participating electric cooperative or municipal electric company to participate in the PIPP program.

(B) Household income

(1) Compared to federal poverty guidelines. Any customer whose annual household income is one hundred fifty per cent or less than the federal poverty guideline for the corresponding household size shall be eligible to participate in the PIPP program. A customer will be considered to meet the income eligibility requirement if either (a) the customer's household income for the three months prior to enrollment, if annualized, is one hundred fifty per cent or less than the federal poverty guideline for the corresponding household size, or (b) the customer's actual household income for the twelve months prior to enrollment is one hundred fifty per cent or less than the federal poverty guideline for the corresponding household size.

(2) Sources of income. For purposes of determining eligibility for low-income customer assistance programs, "household income" includes all sources of income except sources of income expressly excluded. The director shall review sources of income annually and publish specific exclusions from household income as part of the annual LIHEAP plan. After such public hearings as required by federal law for the annual LIHEAP plan, the director shall publish exclusions from household income in the annual energy assistance guidelines, which the director shall make available through various publication channels throughout the state, including at local agencies, by request to the office of community services and by publication on the department of development website. To assist local agencies and potential PIPP customers, the director may also compile and publish with the exclusions a non-exhaustive list of items included in the determination of household income.

(C) Commitment to participate in a payment plan program. Any customer who enrolls in the PIPP program must be willing to participate actively in the program and contribute in a meaningful way to the cost of their electric service. A customer will satisfy this eligibility requirement by undertaking to pay a monthly PIPP installment calculated as provided in these rules, but not less than ten dollars subject to the limited exception provided in paragraph (A)(2) of rule 122:5-3-04 of the Administrative Code.

(D) Participation in other energy assistance programs. Any customer enrolling in the PIPP program shall also apply to participate in any other energy assistance program for which such customer may be eligible. If a customer is determined to be eligible for energy assistance through other programs, then as condition of continuing eligibility for the PIPP program such customer shall actively participate in any such energy assistance programs that do not require payment.

(E) Participation in energy efficiency and weatherization programs. Any PIPP customer who is the owner of a residence for which energy efficiency and weatherization services are offered by the director shall be required to accept such services as a condition for continuing

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eligibility for the PIPP program. If a PIPP customer resides in a rental property and energy efficiency and weatherization services are offered by the director for such rental property, such PIPP customer shall be required to accept such services as a condition for continuing eligibility for the PIPP program unless the residence owner refuses consent for energy efficiency and weatherization services. Department-authorized service providers that perform energy efficiency and weatherization services will solicit consent from rental property owners as further described in paragraph (C) of rule 122:5-3-08 of the Administrative Code. A PIPP customer shall not be required to accept energy efficiency and weatherization services that require payment by the customer. The obligation of a PIPP customer to accept energy efficiency and weatherization services as provided in this rule shall continue as long as the PIPP customer continues to participate in the PIPP program.

- (F) Payment reminders. The director, through the office of community services, a local agency, or other agent or contractor, may (but shall not be required to) send reminders to PIPP customers in advance of bill due dates to make on-time payments, and receipt of any such payment reminders that may be given shall be considered a condition for participation in the PIPP program. Payment reminders may be given by telephone, mail, electronic mail or any other communications method selected by the director. The director will not send past due notices to PIPP customers nor take any action on behalf of utilities to collect past due amounts.
- (G) Participation in consumer education programs encouraged. PIPP customers shall be encouraged by the office of community services and local agencies to participate in any consumer education programs, including programs about energy conservation and demand reduction, made available to customers at their local agencies, readily accessible in their local communities, or offered locally by their electric distribution utility.
- (H) Eligibility following account default or disconnection by a utility.
- (1) Account default.
- (a) If a PIPP customer fails to pay monthly PIPP installment amounts and such non-payment causes the customer's electric service to be subject to disconnection by a utility for non-payment or actually disconnected by a utility for non-payment, it shall be the responsibility of the PIPP customer to avoid disconnection by paying the minimum amount as provided by the commission in paragraph (B) of rule 4901:1-18-04 of the Administrative Code (or any successor rule of substantially the same effect) or to have service reconnected as provided by the commission in rule 4901:1-18-07 of the Administrative Code (or any successor rule of substantially the same effect), except that for purposes of this rule, the minimum amount to avoid disconnection or to reconnect will not include accrued arrearages on the PIPP customer's account prior to non-payment of monthly PIPP installment amounts. None of the delinquent amounts, including any past due monthly PIPP installment amounts and other charges commission rules permit the utility to collect from a customer to avoid disconnection or to reconnect electric service (but not including accrued arrearages prior to the non-payment of monthly PIPP installment amounts), shall be charged to or paid from the fund. A customer will cease to be an active PIPP customer if a utility disconnects electric service to such PIPP

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customer for non-payment and electric service remains disconnected through two monthly reports of customer-level information to the office of community services. Electric distribution utilities will identify in monthly reports PIPP customers disconnected from service for non-payment, and the office of community services will issue a notice to the utility to drop a customer from the PIPP program if such customer continues to be in disconnect status at the time of the next monthly customer report submitted by the utility. A PIPP customer who has ceased to be an active PIPP customer as a result of disconnection for non-payment shall be ineligible to participate in the PIPP program until such customer pays any delinquent amounts through the date the office of community services identifies the customer for removal as an active PIPP customer, including any past due monthly PIPP installment amounts, and other charges commission rules permit the utility to impose to reconnect service as provided in rule 4901:1-18-07 of the Administrative Code (or any successor rule of substantially the same effect). The requirement in this rule for a customer to pay delinquent amounts and reconnect charges is a condition to re-enroll in the PIPP program. This rule is not intended and should not be interpreted to prevent any customer from taking advantage of any commission rule or order otherwise available to the customer to maintain or reconnect electric service by paying less than the delinquent amounts and reconnect charges.

- (b) If a customer fails to pay two consecutive monthly PIPP installment amounts, the office of community services may take action to terminate such customer's participation in the PIPP program for failure to comply with program requirements. The office of community services will issue a written notice to the affected customer, and the customer will have thirty days after the date of the notice to pay past due monthly PIPP installment amounts. If past due monthly PIPP installment amounts are not paid, the office of community services will notify the applicable electric distribution utility to drop the customer from the PIPP program, and such customer will cease to be an active PIPP customer. A PIPP customer who has ceased to be an active PIPP customer as a result of non-payment of monthly PIPP installment amounts shall be ineligible to participate in the PIPP program until such customer pays any delinquent monthly PIPP installment amounts through the date the office of community services identifies the customer for removal as an active PIPP customer.
- (2) Transition rule for 2010-2011 winter heating season. Notwithstanding paragraph (H)(1) of this rule, a PIPP customer whose electric service is subject to disconnection by an electric distribution utility or actually disconnected by an electric distribution utility for non-payment of charges prior to the effective date of these rules will be eligible to re-enroll in the PIPP program upon reconnection of service as provided under any commission rule or order then in effect, including any rule or order that provides for the customer to maintain or reconnect electric service by paying less than the delinquent amounts and reconnect charges. Any portion of the delinquent amounts remaining when payments are made as provided in such a commission rule or order will be considered an accrued arrearage of the customer and paid from the fund as provided in paragraph (B)(1) of rule 122:5-3-04 of the Administrative Code. This rule applies to customers who owe delinquent amounts for electric service and continue to participate

or re-enroll in the PIPP program during the 2010-2011 winter heating season only (November 1, 2010 through April 15, 2011).

- (3) Disconnection for fraud, tampering, or theft. If a utility disconnects electric service to the residence of a PIPP customer as permitted by commission rules due to any fraudulent act to obtain service, tampering, or theft of service by the customer or any consumer who is a member of the customer's household, the customer shall cease to be eligible to participate in the PIPP program while such fraud, tampering, or theft continues and until the customer completes the actions required to reconnect service as provided in applicable commission rules. No charges for electric service accrued during any period that the customer is ineligible to participate in the PIPP program pursuant to this rule and none of the costs described in paragraph (E)(3) of rule 4901:1-18-03 of the Administrative Code or any other commission rule providing for reconnection of service following disconnection for fraud, tampering, or theft shall be charged to or paid from the fund. This rule is not intended and should not be interpreted as creating new or different standards or procedures for utility response to fraud, tampering, or theft or as involving the department of development in any determination that any fraudulent act to obtain service, tampering, or theft of service has occurred. This rule addresses only the effect of fraudulent acts to obtain service, tampering, and theft, as those acts may be defined by commission rules, on eligibility to participate in the PIPP program and reflects that households that participate in fraudulent acts to obtain service, tampering, or theft of service should not benefit from ratepayer funded assistance until corrective action as prescribed by applicable commission rules, if any, has been completed.
- (1) Removal from PIPP for fraudulent enrollment. In the event that there is an allegation of fraudulent enrollment regarding a PIPP customer, the director, through the office of community services, will investigate such allegation. In the event the director finds that a PIPP customer is enrolled in the PIPP program or continues to participate in the PIPP program as a result of fraud or deception by the customer or any consumer who is a member of the customer's household, the director shall terminate such customer's enrollment in the PIPP program with immediate effect, demand that the customer make restitution of all payments made from the fund for the benefit of such customer during the period the customer was fraudulently enrolled in the PIPP program, and reverse any arrearage credits received by such customer during the period the customer was fraudulently enrolled in the PIPP program. In addition, any such customer found to have fraudulently enrolled in the PIPP program shall be ineligible to participate in the PIPP program for twenty-four months after the finding of fraudulent enrollment and until any demand for restitution is satisfied.

122:5-3-03      Procedures for verifying customer eligibility.

(A) One-stop application and eligibility determination process.

- (1) Local agency. To the extent practicable, the director shall maintain a one-stop application and eligibility determination process for customers administered by the office of community services. Applications may be accepted by the office of community services and, at the local level, by a local agency. The eligibility determination process shall include periodic verification of continuing eligibility to participate in the PIPP program. The office of community services and local agencies designated by the director to accept applications for the PIPP program shall collect information from customers in the form required by the director from time to time. The director may also require such local agencies to use such computer programs and web-based applications as the director may provide in connection with the administration of the PIPP program.
- (2) Referrals. All requests by customers to participate in the PIPP program shall be referred for eligibility determination to the office of community services or a local agency designated by the director to accept applications for the PIPP program. The director shall provide information about the referral process to electric distribution utilities and to the commission. The director shall also make reasonable efforts to make referral information generally available to the public, including by publication on the department of development website. Customers may not be enrolled in the PIPP program directly by utility companies. The requirement that utilities refer customers to the office of community services or a local agency for PIPP enrollment is not intended and should not be interpreted to impose on electric distribution utilities different or additional requirements for establishing customer accounts for electric service or for processing service transfers (changes of service address within the utility's service territory) for PIPP customers. Consistent with the commission rule set forth in paragraph (A) of rule 4901:1-18-15 of the Administrative Code (or any successor rule of substantially the same effect), a PIPP customer who is current on his/her payment of monthly PIPP installment amounts shall not be denied a transfer of service to a new address based solely on the customer's accrued arrearages. PIPP customers relocating within the service territory of an electric distribution utility are not required to re-enroll or reverify eligibility to participate in the PIPP program as a condition for transferring electric service.

(B) Eligibility determination.

- (1) Application. The director shall identify the customer-level information necessary and useful for purposes of determining customer eligibility and administering customer participation in the PIPP program. The director shall prepare a form of application, which may be a single combined application for all low-income customer assistance plans. The director shall make applications for the PIPP program available to customers at various locations and through various publication channels throughout the state, including at local agencies, by request to the office of community services and by publication on the department of development website. The application form may be updated from time to time by the director.

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- (2) Submission of applications. Applications for the PIPP program may be submitted by customers to local agencies designated by the director to accept such applications or by mail to the office of community services.
- (3) Income verification. Income eligibility determinations shall be made based upon income information provided by an applicant and reviewed using the same income verification procedures employed by the director for the home energy assistance program. The director shall review the verification procedures annually and shall publish such procedures in the annual energy assistance guidelines. The director shall provide copies of the annual energy assistance guidelines to the local agencies and shall make the guidelines available to the public, including by publication on the department of development website.
- (4) Notice of eligibility. The office of community services or the local agency, whichever accepts a customer application to participate in the PIPP program, shall notify such applicant in writing of the eligibility determination and, if the applicant is determined to be eligible, such customer's monthly PIPP installment amount. If a customer is determined not to be eligible to participate in the PIPP program, the office of community services or the local agency shall include in the notice a reasonably detailed description of the reason for that determination. The office of community services shall notify electric distribution utilities about eligibility determinations through electronic data transfers made each business day. Electric distribution utilities shall update customer records promptly to reflect customer enrollment information and return to the office of community services an electronic file confirming that customer account records have been updated to reflect enrollment and/or noting any exceptions for PIPP account files that could not be processed or reconciled with customer account records and specifying for each exception the proper exception code from the list of exception codes provided by the office of community services. Electric distribution utilities will work with the office of community services to resolve any exceptions, including the correction of any error in the customer information. Electric distribution utilities shall not unilaterally change a customer's monthly PIPP installment amount from the amount provided in the office of community services electronic data transfer. Electric distribution utilities are not required to send PIPP customers separate written notices of PIPP enrollment or monthly PIPP installment amounts following enrollment, but electric distribution utilities shall reflect a PIPP customer's monthly PIPP installment amount on such customer's bills as required by applicable commission rules.
- (5) Request for reconsideration. Any customer who disputes his/her eligibility determination, including the results of the income verification or evaluation of any other eligibility factor, and/or the calculation of the monthly PIPP installment amount, may request reconsideration by the office of community services or by the local agency that made the initial determination or installment calculation. Requests for reconsideration may be made verbally or in writing but, in either case, must provide a reasonably detailed basis for the dispute and such supporting documentation as may be reasonably requested by the office of community services or the local agency. Requests for reconsideration must be made within sixty days after the date of the disputed determination or installment calculation, and shall be considered and resolved promptly

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by the office of community services or the local agency receiving the request. Responses to requests for reconsideration shall be made to the customer in writing.

### (C) Continuing eligibility.

- (1) Annual verification of income eligibility. Income eligibility will be subject to annual verification at or about 12 months from the PIPP customer's most recent PIPP reverification date. The director will use reasonable efforts to notify PIPP customers in advance of annual verification deadlines. PIPP customers will be required to submit then-current application information to the office of community services or a local agency. The director shall use such application information to determine continuing income eligibility. Local agencies and electric distribution utilities will cooperate with the director to facilitate the income verification process. If a PIPP customer fails to submit information sufficient to verify continuing eligibility within sixty days after the customer's annual verification date, the customer will be ineligible to continue in the PIPP program, and the office of community services will send the affected utility by electronic data transfer a drop file to remove such customer as an active PIPP customer. Failure to complete the annual reverification process does not prevent a customer from later applying to re-enroll in the PIPP program, provided, however, that if the customer has not made payments to the electric distribution utility during the time the customer was not an active PIPP customer in an aggregate amount equal to the customer's monthly PIPP installment amount for each month of that period, the customer shall be required as a condition for re-enrollment to pay the electric distribution utility the difference between any customer payments made and monthly PIPP installment amounts that would have been owed to the electric distribution utility had the customer remained an active PIPP customer.
- (2) Updating customer records. The office of community services or the local agency, whichever reverifies a customer's continuing eligibility to participate in the PIPP program, shall notify such PIPP customer in writing of the reverification determination and, if the PIPP customer continues to be eligible, the monthly PIPP installment amount based on reverified income. If a customer is determined not to be eligible for continued participation in the PIPP program, the office of community services or the local agency shall include in the notice a reasonably detailed description of the reason for that determination and the customer may request reconsideration as provided in paragraph (B)(5) of this rule. The office of community services shall notify electric distribution utilities about reverification determinations through electronic data transfers made each business day. Electric distribution utilities shall update customer records promptly to reflect customer reverification information and return to the office of community services an electronic file confirming that customer account records have been updated to reflect reverification and/or noting any exceptions for PIPP account files that could not be processed or reconciled with customer account records and specifying for each exception the proper exception code from the list of exception codes provided by the office of community services. Electric distribution utilities will work with the office of community services to resolve any exceptions, including the correction of any error in the customer information. Electric distribution utilities shall not unilaterally change a customer's monthly PIPP installment amount from the amount provided in the office of community services electronic data transfer. Electric

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distribution utilities are not required to send PIPP customers separate written notices of changes to monthly PIPP installment amounts following reverification, but electric distribution utilities shall reflect a PIPP customer's monthly PIPP installment amount on such customer's bills as required by applicable commission rules. Promptly after receipt of notice that a PIPP customer is not eligible to continue in the PIPP program, the electric distribution utility shall remove the affected customer from PIPP billing and notify the customer about any payment plans or other utility-sponsored programs for which the customer may be eligible as a former participant in PIPP. The customer notice sent by the office of community services or the local agency as provided in this rule will also suggest that such customer contact his/her electric distribution utility for information about other payment plans and utility-sponsored programs that may be available to the customer.



122:5-3-04      Payment and crediting arrangements and responsibilities.

(A) Customer payments.

- (1) Monthly PIPP installment amount. For a PIPP customer with an electric baseload residence, the monthly PIPP installment amount shall be the greater of six per cent of such customer's monthly household income, as determined based on current income information provided by the PIPP customer at the time of application or subsequent income verification, or the minimum monthly PIPP installment amount described in paragraph (C) of rule 122:5-3-02 of the Administrative Code. For a PIPP customer with an electrically heated residence, the monthly PIPP installment amount shall be the greater of ten per cent of such customer's monthly household income, as determined based on current income information provided by the PIPP customer at the time of application or subsequent income verification, or the minimum monthly PIPP installment amount.
- (2) Exception to minimum monthly PIPP installment. A limited exception to the minimum monthly PIPP installment amount shall be provided to any eligible customer who is determined at the time of enrollment in the PIPP program, or at a future date during program participation, to have a monthly household income of zero dollars. For a zero-income customer, the minimum monthly PIPP installment amount shall be waived for a period of up to one hundred eighty days not more than once in any five-year period. If during such one hundred eighty day period the customer's household income changes, the customer shall notify the office of community services or a local agency as soon as practicable and provide information necessary for the office of community services or the local agency, as applicable, to reverify household income and calculate a new monthly PIPP installment amount. If the customer's monthly PIPP installment amount has not been reverified during the one hundred eighty day period in response to a change in household income, then the customer shall be required at the end of the one hundred eighty day period to have his/her monthly household income reverified and such customer shall be required after reverification to pay a monthly PIPP installment amount calculated as set forth in paragraph (A)(1) of this rule using the customer's reverified monthly household income or the minimum monthly PIPP installment amount, whichever is greater.
- (3) Payment to electric utility. PIPP customers shall be required to remit their monthly PIPP installment amounts directly to electric distribution utilities each month. Subject to commission rules applicable to customer billing, paragraph (G) of rule 4901:1-10-22 of the Administrative Code (or any successor rule of substantially the same effect), and any agreements between the director and electric distribution utilities regarding PIPP procedures, the monthly PIPP installment amounts will be shown on monthly bills for electric service. Customer payments shall be credited to the accounts of PIPP customers by each electric distribution utility in accordance with payment crediting rules of the commission. Consistent with the commission rule as set forth in paragraph (C) of rule 4901:1-18-15 of the Administrative Code (or any successor rule of substantially the same effect), electric distribution utilities shall not charge late payment fees to any PIPP customer as long as such customer continues to be an active PIPP customer and no late fees shall be charged to or payable from the fund.

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(B) Customer arrearages.

- (1) Customer arrearages paid from fund. Since the administration of the PIPP program was transferred to the department of development pursuant to section 4928.53 of the Revised Code, electric distribution utilities have been paid for customer arrearages from the fund. Accrued arrearages have generally been charged to the director and paid to the affected electric distribution utility upon enrollment of an eligible customer in the PIPP program. Current bill balances have been charged to the director monthly and paid from the fund. From and after the effective date of this rule, the director shall continue to pay from the fund accrued arrearages upon initial enrollment of an eligible customer in the PIPP program and monthly current bill balances according to the payment procedures described in rule 122:5-3-05 of the Administrative Code. Each electric distribution utility will maintain accurate records of all customer arrearages paid or reimbursed to the utility through any percentage of income payment plan mechanism, and such records shall be maintained in a form that such electric distribution utility can readily report customer arrearages on a per customer and aggregate basis. Electric distribution utilities shall not be paid any amount included in any customer arrearages that has previously been paid or reimbursed to the utility through any percentage of income payment plan mechanism.
- (2) Monthly payment amounts not counted as arrearages. Electric distribution utilities shall not be entitled to recover from the fund, and they shall not charge to the director, any deficiencies accruing as a result of a PIPP customer's failure to pay monthly PIPP installment amounts. Such deficiencies also shall not be counted as customer arrearages for purposes of the arrearage crediting program provided by this rule.
- (3) Arrearage credits for eligible customers. Each PIPP customer who makes an on-time payment of the monthly PIPP installment amount shall receive a credit applied in the same month as the on-time payment against customer arrearages as described in this paragraph. A PIPP customer shall not be eligible to receive an arrearage credit for any month during which the minimum monthly PIPP installment amount is waived for such customer pursuant to paragraph (A)(2) of this rule. The amount of the arrearage credit that may be earned by a PIPP customer each month for making an on-time payment of the monthly PIPP installment amount shall be the sum of the current bill balance, plus an accrued arrearage credit determined by the electric distribution utility as provided in this rule. The accrued arrearage credit shall be the amount that would reduce the PIPP customer's accrued arrearages to zero over a twenty-four month period assuming on-time payment of all monthly PIPP installment amounts during that period. The amount of the accrued arrearage credit will be determined initially based on the customer's accrued arrearages at the time the customer enrolls in the PIPP program. The electric distribution utility shall calculate the customer's arrearage credit amount upon the customer's enrollment in the PIPP program and provide such customer's PIPP arrearage credit amount to the office of community services via an electronic data transfer. The accrued arrearage credit amount shall be reviewed annually by the electric distribution utility at or about the customer's PIPP anniversary date and, for each PIPP customer who has not made each monthly payment on-time during the prior year, adjusted to account for months for which the on-time payment credit was not earned by

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the customer. The recalculated accrued arrearage credit shall be an amount equal to one twenty-fourth of the customer's accrued arrearages, including any accrued arrearage amount for which a credit was not earned during the prior year and any current bill balance(s) for which a credit was not earned during the prior year, but not including any missed monthly PIPP installment amounts. The electric distribution utility shall provide such customer's recalculated PIPP arrearage credit amount to the office of community services via an electronic data transfer. For a PIPP customer who made each monthly payment on-time during the prior year, the accrued arrearage credit amount shall remain the same as during the prior year. For a PIPP customer with no accrued arrearage, the monthly arrearage credit would be an amount equal to the customer's current bill balance for that billing cycle. Arrearage credits will be applied against customer arrearages only. PIPP customers may not earn arrearage credits pursuant to this rule for any missed monthly PIPP installment amounts. Arrearage credits may not be accumulated on a customer account that is current and applied against future service.

- (4) Notice of accrued arrearage credit amounts. The office of community services shall notify each PIPP customer of the customer's accrued arrearage credit amount promptly after it is received from the electric distribution utility via the electronic data transfer described in paragraph (B)(3) of this rule. Such electric distribution utility shall apply arrearage credits for such customer beginning with the next billing after the calculation or recalculation of such customer's accrued arrearage credit amount. Electric distribution utilities shall apply arrearage credits to each bill for which an on-time payment of the monthly PIPP installment amount is made.
- (5) Graduate PIPP transition assistance and post-PIPP arrearage credits. If a customer ceases to participate in the PIPP program voluntarily (which does not include being dropped from the PIPP program for failing to provide information necessary to complete periodic eligibility reverification or comply with other PIPP program requirements) or because the customer is no longer eligible to participate based on income, such customer may nevertheless receive transition assistance and arrearage credits against customer arrearages accumulated but not paid at the time such customer ceases to participate in the PIPP program. To qualify for graduate PIPP transition assistance and post-PIPP arrearage credits, a customer must pay all missed monthly PIPP installment amounts, if any, owed to the electric distribution utility for which transition assistance or arrearage credits will be provided. A customer will be eligible to receive graduate PIPP transition assistance and post-PIPP arrearage credits under this rule based on payments made during the twelve months immediately following the last billing cycle during which the customer ceases to participate in the PIPP program. Graduate PIPP and post-PIPP arrearage credits under this rule will be applied only against customer arrearages accumulated at the time the customer ceases to participate in the PIPP program. Arrearage credits may not be accumulated on a customer account that is current and applied against future service.
  - (a) Graduate PIPP - customer continues electric service. A graduate PIPP customer continues to receive electric service from the same electric distribution utility after ceasing to be in PIPP. The customer shall select one of the three payment options in this paragraph at the time such customer is enrolled in the graduate PIPP program by the electric distribution utility. A graduate PIPP customer will be

eligible to receive arrearage credits under this rule if the customer makes regular payments for electric service under one of the following options: (1) the transition installment amount described in this paragraph, (2) a budget payment amount established under a twelve-month budget plan offered by the electric distribution utility, or (3) the charges for the cost of electric service as billed. The transition installment amount shall be the average of the customer's most recent monthly PIPP installment and the customer's budget bill amount if the customer were placed on a twelve-month budget plan. If such customer's graduate PIPP transition installment amount would not reduce each current monthly bill balance to zero, then during the twelve-month period under this rule, the electric distribution utility shall apply a credit to the graduate PIPP customer's account for the difference between the transition installment amount and the actual cost of service and may submit such credit amount to the fund for reimbursement as transition assistance. The graduate PIPP arrearage credit will be earned and shall be applied to such customer's account for each month during the twelve-month period that the customer makes an on-time payment for electric service to the electric distribution utility until the customer arrearage has been fully credited. If the customer fails to make twelve on-time payments for electric service during the twelve-month graduate PIPP arrearage credit period, the uncredited balance of the customer arrearage shall remain on the customer's account. Upon notice from the office of community services to the electric distribution utility that the customer has ceased to participate in PIPP, the utility shall determine the customer arrearages as of the effective date of such notice and calculate the monthly arrearage credit as an amount equal to one-twelfth of such customer arrearages, but not including any missed monthly PIPP installment amounts. The electric distribution utility shall notify the office of community services of the monthly graduate PIPP arrearage credit amount, and the utility shall apply the graduate PIPP arrearage credit as provided in this paragraph.

- (b) Customers on company-specific arrearage crediting payment plans as of the effective date. This rule is not intended to preclude any customer from completing any other arrearage crediting plan that may be offered by an electric distribution utility according to the requirements of such other plan as of the effective date of these rules. If a former PIPP customer is participating in an arrearage crediting plan offered by an electric distribution utility as of the effective date of these rules, such former PIPP customer may elect within ninety days after the effective date of these rules as an alternative to completing such other plan to receive post-PIPP arrearage credits as described in paragraph (A) of this rule<sup>1</sup> provided that such customer makes regular payments for electric services under a budget plan offered by the electric distribution utility or for the cost of electric service as billed.
- (c) Post-PIPP - customer account closed. When an electric distribution utility closes the account of a PIPP customer (i.e., account "finaled"), the utility shall report to the office of community services the amount of any customer arrearage for which the utility was previously paid by the fund or through any other percentage of

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<sup>1</sup> Post-filing note: the correct reference is "paragraph (B)(5)(a) of this rule," which will be corrected in a future rule filing.

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income payment plan mechanism. Each electric distribution utility shall notify such PIPP customer that post-PIPP arrearage credits will be available during the next twelve-month period to reduce the customer's final bill amount and request that such customer contact the utility company for additional information. Each electric distribution utility shall enter into a payment arrangement with any former PIPP customer who will agree to make payments against such customer's arrearage on a finaled account. A post-PIPP customer who makes payments against the customer arrearage on a finaled account as provided in this rule will be eligible for post-PIPP arrearage credits. In order to receive a post-PIPP arrearage credit, the amount of the customer payment must be at least one-sixtieth of the customer arrearage on the finaled account. The post-PIPP customer will earn an arrearage credit for each such payment made to the electric distribution utility during the twelve-month period after the customer's account is closed. The post-PIPP arrearage credit shall be calculated by the electric distribution utility as one-twelfth of the customer arrearage on the finaled account, and the electric distribution utility shall apply the credit against the customer arrearage each time that a customer payment is made as described in this paragraph. If a post-PIPP customer fails to make payments against customer arrearages on a finaled account during the twelve-month post-PIPP arrearage credit period, the uncredited balance of the customer arrearage shall remain on the customer's account.

- (6) Limitations on arrearage credits. The arrearage credits provided in paragraph (B) of this rule apply only to customer arrearages for which electric distribution utilities have been paid through a percentage of income payment plan mechanism. Arrearage credits provided in paragraph (B) of this rule may not be earned based on payments made from federal funds administered by the office of community services.
- (C) Evaluation of program effectiveness. The director shall periodically review and analyze data collected in connection with the administration of the PIPP program and evaluate the payment and arrearage crediting arrangements, the operation and performance of the PIPP program as a means of assisting low-income households to maintain electric service and the fiscal implications of the PIPP program for ratepayers, generally.

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Procedures for disbursing public funds to electric utilities; timely remittance of revenue.

- (A) Application of customer deposits. If an electric distribution utility has collected a deposit from a customer who subsequently enrolls in the PIPP program, the electric distribution utility shall apply the deposit to the customer's account in a manner consistent with rule 4901:1-10-14 of the Administrative Code (or any successor rule of substantially the same effect) promptly following delivery of notice by the director that the customer has enrolled in the PIPP program. Consistent with the commission rule set forth in paragraph (B) of rule 4901:1-18-15 of the Administrative Code (or any successor rule of substantially the same effect), electric distribution utilities shall not charge or collect deposits from any PIPP customer as long as such customer continues to be an active PIPP customer and customer deposits shall not be charged to or payable from the fund.
- (B) Payment for electric service. The director shall make monthly payments from the fund to electric distribution utilities on behalf of active PIPP customers. For each active PIPP customer, the director shall pay an amount equal to the difference between the cost of electric service provided by the relevant electric distribution utility to such active PIPP customer during the applicable billing cycle and the monthly PIPP installment amount for such customer for the corresponding billing cycle whether or not the customer has paid the monthly PIPP installment amount. It shall be the responsibility of each electric distribution utility to collect monthly PIPP installment amounts, which shall not be paid from the fund for any electric service provided after the effective date of this rule. The director shall also make monthly payments from the fund to electric distribution utilities for transition assistance for eligible graduate PIPP customers as provided in paragraph (B)(5)(a) of rule 122:5-3-04 of the Administrative Code. Electric distribution utilities may not bill the director for electric service or any other charges to a customer's account for any time during which electric service to such customer was disconnected or for any time during which such customer was not an active PIPP customer, and no such amounts will be paid from the fund. Electric distribution utilities shall submit invoices to the director monthly by the fifteenth day of the month for all billing cycles ended during the preceding revenue month. "Revenue months" shall be periods established by each electric distribution utility corresponding to its respective billing activities and listed in an annual schedule that shall be provided to the director. If the fifteenth is not a business day, invoices may be submitted on the next business day after the fifteenth. Invoices shall be in the form further described in paragraph (F)(1) of this rule. The director shall use its commercially reasonable efforts to remit payments from the fund to the electric distribution utility within fifteen days after receipt of a proper invoice for such services. In the event the director fails to remit payment within thirty days after receipt of a proper invoice for services, the director shall be obligated to pay interest on the late payment at the rate then provided for in section 126.30 of the Revised Code.
- (C) Municipal electric utility or electric cooperative. In the event a municipal electric utility or an electric cooperative elects to participate in the low-income customer assistance programs as permitted by section 4928.51 of the Revised Code, such municipal electric utility or electric cooperative shall be subject to all applicable conditions and requirements of sections 4928.51 to 4928.61 of the Revised Code and the rules in this chapter of the Administrative Code. For purposes of applying the rules in this chapter to a municipal electric utility or electric

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cooperative, all references to an electric distribution utility will be construed to refer to such municipal electric utility or electric cooperative. A detailed plan for participation of a municipal electric utility or an electric cooperative and administration of low-income customer assistance programs for the customers of the municipal electric utility or electric cooperative shall be developed by the director and such municipal electric utility or electric cooperative and memorialized in a written agreement.

(D) Timely remittance of revenue; deposit to fund.

(1) Collections remitted. Each electric distribution utility shall remit to the director all universal service rider revenue collected by such electric distribution utility and all revenue collected by such electric distribution utility in respect of any customer arrearages for which the electric distribution utility was at any time paid from the fund or otherwise through a PIPP rider mechanism. Such revenue shall be paid over to the director by the fifteenth day of the month immediately following the month in which the revenue is received by the electric distribution utility. In the event an electric distribution utility fails to remit timely any universal service rider revenue or revenue from the collection of customer arrearages, such electric distribution utility shall be obligated to pay interest on the late payment at the rate then provided for in section 126.30 of the Revised Code. Each payment from an electric distribution utility to the director shall be accompanied by a revenue report as further described in paragraph (F)(2) of this rule. Payments shall be made to the director by electronic funds transfer according to funds transfer instructions provided by the director from time to time.

(2) Deposit to universal service fund. All revenue remitted by any electric distribution utility to the director in connection with the PIPP program shall be deposited promptly by the director into the fund.

(E) Billing and payment disputes. The director shall have a reasonable time to review all invoices and revenue reports submitted by electric distribution utilities. Payment of invoices and acceptance of remittances shall not foreclose the director from disputing any error or deficiency found by the director upon review of invoices or revenue reports. In the event the director finds any invoice or revenue report to be deficient or in error, the director shall notify the affected electric distribution utility in writing, and the director shall be entitled to recover from the electric distribution utility any overcharges for service or underpayment of collections with interest accruing from the date such payments were made or should have been made at the rate provided for in section 126.30 of the Revised Code. If the electric distribution utility disputes the director's finding of error or deficiency, representatives of the director and the electric distribution utility shall meet in person to review the respective calculations of the disputed amounts and work in good faith to resolve the dispute.

(F) Reporting

(1) Invoices for service to PIPP customers. Invoices shall provide the director customer-level and aggregate information about the electric service provided to PIPP customers during the billing cycles covered by the invoice. Invoices shall be submitted in form and substance as required by the director from time to time. The director shall notify electric distribution utilities in writing of any changes to the required form or substance

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for invoices and allow a reasonable time for electric distribution utilities to transition to the modified invoice requirements.

- (2) Revenue reports. Revenue reports shall provide information to the director regarding collections and universal service fund revenue remitted to the director in connection with the PIPP program. Revenue reports shall be submitted in form and substance as required by the director from time to time. The director shall notify electric distribution utilities in writing of any changes to the required form or substance for revenue reports and allow a reasonable time for electric distribution utilities to transition to the modified revenue report requirements.
- (3) Monthly customer information reports. On or before the fifteenth day of each month (or if the fifteenth is not a business day, the next business day after the fifteenth), each electric distribution utility shall report to the director about all customers of such electric distribution utility participating in either or both the PIPP program or the home energy assistance program during the preceding calendar month. Monthly customer information reports shall be submitted in form and substance as required by the director. The director shall notify electric distribution utilities in writing of any changes to the required form or substance for customer information reports and allow a reasonable time for electric distribution utilities to transition to the modified customer information report requirements.
- (4) Special information requests. From time to time to assist the office of community services with the administration and/or evaluation of low-income customer assistance programs, the director may make special information requests of electric distribution utilities and shall provide a reasonable period of time for reply. The electric distribution utilities shall respond to the special information requests within the time permitted. If an electric distribution utility is unable to respond completely to a special information request, the electric distribution utility shall notify the office of community services promptly and cooperate with the office of community services to address any issues that would delay or impair compliance with the information request.
- (5) Electronic data interchange. All invoices, revenue reports, monthly customer information reports, and any special information requests that may be reasonably requested by the director from time to time shall be submitted to the director electronically. In addition, each electric distribution utility shall submit to the director a paper copy of each invoice and revenue report certified by a responsible officer of the utility as being true, correct and complete. Technical guidelines and protocols for electronic data interchange shall be established and maintained by the director and provided to each electric distribution utility. To the extent practicable, the director shall provide electric distribution utilities notice and an opportunity to review and comment on any proposed change to electronic data interchange technical guidelines and protocols, and the director shall allow a reasonable time for electric distribution utilities to implement system modifications necessary to conform to any technical changes adopted by the director.



122:5-3-06     Aggregation.

Pursuant to section 4928.54 of the Revised Code, the director may aggregate PIPP customers for the purpose of competitively auctioning the supply of competitive retail electric generation service to bidders certified under section 4928.08 of the Revised Code and further qualified under eligibility criteria the director prescribes by rule under division (B) of section 4928.53 of the Revised Code after consultation regarding any such rule with the commission and electric light companies as well as such other interested parties as the director may identify. The director shall review from time to time the feasibility of aggregating PIPP customers as contemplated by section 4928.54 of the Revised Code. If the director determines that a market has developed in which aggregating PIPP customers is feasible and substantial savings for the PIPP program can be realized by aggregating customers for the purpose of competitively auctioning the supply of competitive retail electric generation services, then the director shall undertake to consult with the commission and electric light companies and develop rules consistent with the requirements of section 4928.54 of the Revised Code.

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122:5-3-07      Procedures for administering funds under director's jurisdiction.

- (A) Compliance with federal requirements. Federal funds received by the director for the purpose of providing home energy assistance or energy efficiency and weatherization services shall be administered in accordance with any applicable federal laws and program guidelines in effect from time to time. In the event the director determines that any provision of this Rule conflicts with any federal law or program guideline as adopted or amended after the effective date of this rule, the director may do all things necessary to conform the administration of federally-funded assistance programs to applicable laws and guidelines, including, without limitation, suspension of any invalid or conflicting provision of this chapter of the Administrative Code.
- (B) Home energy assistance program.
- (1) Annual program determinations. Each year, the director shall develop a plan for administration of the home energy assistance program taking into account the amount of program funds to be received by the state from the federal government, any additional funds that may be made available for such programs by the state and the timing of the availability of all such funds for distribution to eligible recipients. The plan for administration, including the priorities for distribution of funds, shall be as provided in the annual LIHEAP plan for the applicable program year. The annual LIHEAP plan shall set forth the eligibility criteria for the program year and describe the manner in which home energy assistance funds will be made available for the crisis assistance component of the home energy assistance program.
- (2) Customer eligibility. Eligibility for home energy assistance program benefits shall be as set forth in the annual LIHEAP plan. Such assistance is not limited to PIPP customers. The director may in the annual energy assistance guidelines issued to local agencies for administration of the program reserve emergency or crisis assistance for households that do not receive electric service from an electric distribution utility and/or for customers of electric distribution utilities who are not eligible to participate in the PIPP program. The director shall make information about the home energy assistance program, including customer eligibility requirements, available to the public at public hearings, through local agencies and various other communication channels, including publication on the department of development website.
- (C) Home weatherization assistance program.
- (1) Annual program determinations. Each year, the director shall develop a plan for administration of the home weatherization assistance program funds taking into account the amount of program funds to be received by the state from the federal government, any additional funds that may be made available for such programs by the state and the timing of the availability of all such funds for distribution to eligible recipients. The plan for administration, including the priorities for distribution of funds, shall be as provided in the annual HWAP plan for the applicable program year. The annual HWAP plan shall set forth the eligibility criteria for such program year and describe the manner in which home weatherization assistance funds will be made available to authorized energy efficiency and weatherization service providers. Energy efficiency

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and weatherization service providers shall adhere to applicable guidelines of the federal agencies providing funds in selecting households to receive energy efficiency and weatherization services.

- (2) Customer Eligibility. Eligibility for home weatherization assistance program grants shall be as set forth in the annual state plan for the home weatherization assistance program. Such assistance is not limited to PIPP customers. The director shall make information about the home weatherization assistance program, including customer eligibility requirements, available to the public at public hearings, through local agencies and various other communication channels, including publication on the department of development website.

- (D) Application. The director shall identify the customer-level information necessary and useful for purposes of determining customer eligibility and administering customer participation in the home energy assistance program and home weatherization assistance program. The director shall prepare a form of application, which may be a single combined application for all low-income customer assistance plans. The director shall make applications for the home energy assistance program and the home weatherization assistance program available to customers at various locations and through various publication channels throughout the state, including at local agencies, by request to the office of community services and by publication on the department of development website. The application form may be updated from time to time by the director. Applications for home energy assistance program funds and/or home weatherization assistance program services may be submitted by customers to local agencies designated by the director to accept such applications or by mail to the office of community services.

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122:5-3-08

Energy efficiency and weatherization services and consumer education.

- (A) Allocation of energy efficiency and weatherization services. To the extent practicable, energy efficiency and weatherization services supported with resources from the fund shall be targeted to the certified territories of an electric distribution utility in the same proportion as the revenue remitted by such electric distribution utility to the director for the fund as corresponds to the total revenue remitted from all electric distribution utilities to the director for the fund. In the event any electric distribution utility makes any other funding contribution to the director to support energy efficiency or weatherization services, such additional funding shall be targeted to delivery of energy efficiency and weatherization services in such electric distribution utility's service territory.
- (B) Target high-cost, high-use structures. The director shall establish and maintain criteria designed to target energy efficiency and weatherization services to high-cost, high-use structures, provided that such criteria may allow flexibility to perform cost-effective energy efficiency and weatherization services for residences of PIPP customers and customers then eligible to participate in the PIPP program even though such residences may not be the highest cost or highest use structures. Such criteria may include, among others identified by the director from time to time: (1) the extent to which an adequate delivery infrastructure is available to serve the targeted structures within a particular region; (2) the extent to which additional training is necessary to deliver the energy efficiency and weatherization services; and (3) the net present value of savings to the fund from the implementation of particular energy efficiency and weatherization services. Any energy efficiency or weatherization measure projected to yield a savings-to-investment ratio of greater than one shall be considered a cost-effective measure.
- (C) Rental properties. Energy efficiency and weatherization services may be provided for a rental property then leased to a PIPP customer or to a customer then eligible to participate in PIPP. As a condition to providing energy efficiency and weatherization services for a rental property, the director may require the owner of such rental property to agree: (1) for the benefit of the PIPP customer not to increase rent charged to such individual as a result of any investment made in the property in connection with the energy efficiency and weatherization services to be provided; and (2) to make a funding contribution toward the cost of the energy efficiency and weatherization service where such services are likely to enhance the value of the rental property. Replacement of consumables (e.g., light bulbs and furnace filters) and tenant-owned appliances shall not require landlord approval or a funding contribution from the landlord. The director may authorize service providers to solicit and obtain landlord approval and funding contributions to be applied against the cost of the energy efficiency and weatherization measures provided. A funding contribution will not be required from an individual owner of a rental property who is himself or herself eligible to participate in the PIPP program. The amount of any funding contribution received by a service provider from an owner of rental property for energy efficiency and weatherization measures will be offset dollar-for-dollar from the amount to be paid by the department to the service provider for such measures.
- (D) Service providers. The director shall establish and maintain standards for the selection and performance of service providers who offer energy efficiency and weatherization services to participants in low-income customer assistance programs. No service provider shall hold

itself out as a department of development authorized provider unless the service provider has a current designation of such status from the director. The standards for authorized service providers shall require, without limitation, service providers to: (1) be able to provide services which are to be paid for from the fund comparably and in accordance with energy efficiency and weatherization program standards, as established and amended by the office of community services from time to time; (2) employ electronic data collection methods for reporting service data, cost data, and customer eligibility data, and report all such data to the director; (3) provide for proper verification of service delivery; and (4) cooperate fully in an evaluation of such service provider's services through an objective third-party review, which may include an on-site evaluation, collection and analysis of pre- and post-service energy usage, and an analysis of bill payment behavior. The director may modify the standards for authorized service providers from time to time, and the current standards for authorized service providers shall be made available upon request to the office of community services and posted on the website of the department of development.

- (E) Evaluation of program effectiveness. The director shall periodically review and analyze data collected from authorized service providers and otherwise in connection with low-income customer assistance programs to evaluate the results of energy efficiency and weatherization services. In particular, the director shall determine whether such data provide evidence of reduced energy consumption by households receiving such services and reduced costs of electric service provided to PIPP customers.
- (F) Consumer education. To the extent practicable within the resources available from the fund for consumer education, the director will establish and maintain a consumer education program covering energy efficiency, energy conservation, demand reduction, and such other subject matter as the director determines relevant and useful for customers eligible to participate in low-income customer assistance programs, including such materials as electric distribution utilities may provide for distribution to their respective customers about energy efficiency, energy conservation, and demand reduction programs the electric distribution utility offers.

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122:5-3-09      Delegation of functions.

Except as provided in this rule, each and any of the powers and duties of the director under this chapter may be performed by the assistant director of the department of development or such other officers and employees of the department of development as may be designated in writing by the director or such assistant director. Any such designation under this chapter shall continue to be effective for purposes of this chapter unless and until it is terminated or superseded in writing, notwithstanding any succession in the office of director or assistant director. Except as provided in this rule, any reference in this chapter to the director includes the assistant director and such other designated officers and employees.

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122:5-3-10      Severability.

If any clause, provision or application of any rule in this chapter is determined to be invalid or unenforceable under applicable law, such determination shall not affect the remainder of such rule or other application of the rule or other rules of this chapter, which shall be applied as if the invalid or unenforceable portion or application or references to the invalid or unenforceable portion did not exist.

### Illinois Percent of Income Payment Plan (PIPP)

Legislation to create PIPP in Illinois was signed into law in July, 2009. Previously, the state had a PIPP program in place from 1985-1991. Restructuring legislation passed in 1997 established the Supplemental Low-Income Energy Assistance Fund (SLEAF), and the legislature has extended the SLEAF through December 2013. This program is paid for by a \$ .40 monthly charge per meter for electric and gas customers. Per the 1997 legislation, 80% of SLEAF monies were earmarked for low-income bill payment assistance. With the new legislation, the meters charge was raised to \$ .48 for residential and a comparable increase for commercial/industrial customers. The bill requires Illinois natural gas utilities to reduce natural gas usage by 7% by 2020, and 1.5% each year after.<sup>1</sup> The 2009 legislation was unanimously passed.<sup>2</sup>

The PIPP program is funded through LIHEAP and a portion of the \$ .48 meters charge. The utilities have also made a onetime contribution of \$22 million toward program costs. In the new program, participants pay no more than 6% of their income for gas and electric, with a maximum annual benefit of \$1,800. Income eligibility is 150% of federal poverty guidelines.<sup>3</sup> In 2009, 537,000 households received LIHEAP benefits, which equates to approximately 65% of eligible households being served by LIHEAP.<sup>4</sup>

For arrearage reduction, program participants who make their monthly PIPP payments receive a 1/12<sup>th</sup> credit of their past due bills, up to \$1,000 per year. The PIPP is administered by the Illinois Department of Commerce and Economic Opportunity (DCEO) and the Illinois Association of Community Action Agencies (IACAA) the same network of community agencies that administer Weatherization and LIHEAP. These agencies may also use some of the SLEAF for education programs, although it is not mandated. Dan Manfredo, Director of Energy Policy and Programs for the IACAA explained that the Illinois program is unique because it includes a design option to help keep participants enrolled. This means that the Community Action Agencies are required to notify a participant if they have missed a payment, and try to troubleshoot in order to keep that participant enrolled.<sup>5</sup> The PIPP has been in a pilot phase since

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<sup>1</sup> " State PBF/USF History, Legislation, Implementation," 4 Nov. 2010, <<http://liheap.ncat.org/dereg/states/illinois.htm>>

<sup>2</sup> Dan Manfredo, Personal Interview, 3 Dec. 2010.

<sup>3</sup> Ibid.

<sup>4</sup> " State PBF/USF History, Legislation, Implementation," 4 Nov. 2010, <<http://liheap.ncat.org/dereg/states/illinois.htm>>

<sup>5</sup> Dan Manfredo, Personal Interview, 3 Dec. 2010.



legislation was passed in 2009. Full implementation of the program is expected to begin in September, 2011.<sup>6</sup>

There are two main pieces of legislation that pertain to PIPP. The first is Senate Bill 1918 which mandates that utilities that serve more than 100,000 customers provide bill payment assistance to customers in need, and shall include a percent of income payment plan. Several sections in the Illinois Compiled Statutes pertain to some of the administrative aspects of the SLEAF. Illinois legislation is akin to that of New Jersey, in the sense that it enables the agencies to administer the programs as they see fit.

### Illinois Legislation

|                           |   |
|---------------------------|---|
| Senate Bill 1918 Enrolled |   |
| 1                         | AN ACT concerning regulation.                         |
| 2                         | Be it enacted by the People of the State of Illinois, |
| 3                         | represented in the General Assembly:                  |

|                     |   |
|---------------------|---|
| <u>Sec. 8-105.</u>  |   |
| <u>Financial</u>    |   |
| <u>assistance;</u>  |   |
| <u>electric and</u> |   |
| <u>gas</u>          |   |
| 25                  | (a) Notwithstanding any other provision of this Act, an               |
| 1                   | <u>electric or gas utility serving more than 100,000 retail</u>       |
| 2                   | <u>customers as of January 1, 2009, shall offer programs in 2010</u>  |
| 3                   | <u>and 2011 that are authorized under Section 16-111.5A of this</u>   |
| 4                   | <u>Act or approved by the Commission specifically designed to</u>     |
| 5                   | <u>provide bill payment assistance to customers in need. These</u>    |
| 6                   | <u>programs shall include a percentage of income payment plan.</u>    |
| 7                   | <u>After receiving a request from a utility for the approval of a</u> |
| 8                   | <u>proposed plan pursuant to this Section, the Commission shall</u>   |

<sup>6</sup> Ibid.

|    |  |
|----|--|
| 9  | <u>render its decision within 120 days. If no decision is rendered</u> |
| 10 | <u>within 120 days, then the request shall be deemed to be</u>         |
| 11 | <u>approved.</u>   |
| 12 | <u>(b) The costs of any program offered by a gas utility in</u>        |
| 13 | <u>2010 or 2011 and by an electric utility in 2011 under this</u>      |
| 14 | <u>Section, excluding utility information technology costs, shall</u>  |
| 15 | <u>be reimbursed from the Supplemental Low-Income Energy</u>           |
| 16 | <u>Assistance Fund established in Section 13 of the Energy</u>         |
| 17 | <u>Assistance Act. The utility shall submit a bill to the</u>          |
| 18 | <u>Department of Commerce and Economic Opportunity which shall be</u>  |
| 19 | <u>promptly paid out of such funds or may net such costs against</u>   |
| 20 | <u>monies it would otherwise remit to the Fund. In furtherance of</u>  |
| 21 | <u>these programs, the utilities have committed to make a</u>          |
| 22 | <u>contribution to the Fund, as described in subsection (b) of</u>     |
| 23 | <u>Section 13 of the Energy Assistance Act. The utility shall</u>      |
| 24 | <u>provide a report to the Commission on a quarterly basis</u>         |
| 25 | <u>accounting for monies reimbursed or netted through the Fund.</u>    |
| 26 | <u>Nothing in this Section shall preclude a utility from</u>           |
| 1  | <u>recovering prudently incurred information technology costs</u>      |
| 2  | <u>associated with these programs in rates.</u>                        |
| 3  | <u>(c) This Section is repealed on December 31, 2011.</u>              |

**Illinois Compiled Statutes 305 ILCS 20 Energy Assistance Act. Section 18**

**Sec. 18. Financial assistance; payment plans.**

(a) The Percentage of Income Payment Plan (PIPP or PIP Plan) is hereby created as a mandatory bill payment assistance program for low-income residential customers of utilities serving more than 100,000 retail customers as of January 1, 2009. The PIP Plan will:

- (1) bring participants' gas and electric bills into the range of affordability;
- (2) provide incentives for participants to make timely payments;

(3) encourage participants to reduce usage and participate in conservation and energy efficiency measures that reduce the customer's bill and payment requirements; and

(4) identify participants whose homes are most in need of weatherization.

(b) For purposes of this Section:

(1) "LIHEAP" means the energy assistance program established under the Illinois Energy Assistance Act and the Low-Income Home Energy Assistance Act of 1981.

(2) "Plan participant" is an eligible participant who is also eligible for the PIPP and who will receive either a percentage of income payment credit under the PIPP criteria set forth in this Act or a benefit pursuant to Section 4 of this Act. Plan participants are a subset of eligible participants.

(3) "Pre-program arrears" means the amount a plan participant owes for gas or electric service at the time the participant is determined to be eligible for the PIPP or the program set forth in Section 4 of this Act.

(4) "Eligible participant" means any person who has applied for, been accepted and is receiving residential service from a gas or electric utility and who is also eligible for LIHEAP.

(c) The PIP Plan shall be administered as follows:

(1) The Department shall coordinate with Local Administrative Agencies (LAAs), to determine eligibility for the Illinois Low Income Home Energy Assistance Program (LIHEAP) pursuant to the Energy Assistance Act, provided that eligible income shall be no more than 150% of the poverty level. Applicants will be screened to determine whether the applicant's projected payments for electric service or natural gas service over a 12-month period exceed the criteria established in this Section. To maintain the financial integrity of the program, the Department may limit eligibility to households with income below 125% of the poverty level.

(2) The Department shall establish the percentage of income formula to determine the amount of a monthly credit, not to exceed \$150 per month per household, not to exceed \$1,800 annually, that will be applied to PIP Plan participants' utility bills based on the portion of the bill that is the responsibility of the participant provided that the percentage shall be no more than a total of 6% of the relevant income for gas and electric utility bills combined, but in any event no less than \$10 per month, unless the household does not pay directly for heat, in which case its payment shall be 2.4% of income but in any event no less than \$5 per month. The Department may establish a minimum credit amount based on the cost of administering the program and may deny credits to otherwise eligible participants if the cost of administering the credit exceeds the actual amount of any monthly credit to a participant. If the participant takes both gas and electric service, 66.67% of the credit shall be allocated to the entity that provides the participant's primary energy supply for heating. Each participant shall enter into a levelized payment plan for, as applicable, gas and electric service and such plans shall be implemented by the utility so that a participant's usage and required payments are reviewed and adjusted regularly, but no more frequently than quarterly. Nothing in this Section is intended to prohibit a customer, who is otherwise eligible for LIHEAP, from participating in the program described in Section 4 of this Act.

Eligible participants who receive such a benefit shall be considered plan participants and shall be eligible to participate in the Arrearage Reduction Program described in item (5) of this subsection (c).

(3) The Department shall remit, through the LAAs, to the utility or participating alternative supplier that portion of the plan participant's bill that is not the responsibility of the participant. In the event that the Department fails to timely remit payment to the utility, the utility shall be entitled to recover all costs related to such nonpayment through the automatic adjustment clause tariffs established pursuant to Section 16-111.8 and Section 19-145 of the Public Utilities Act. For purposes of this item (3) of this subsection (c), payment is due on the date specified on the participant's bill. The Department, the Department of Revenue and LAAs shall adopt processes that provide for the timely payment required by this item (3) of this subsection (c).

(4) A plan participant is responsible for all actual charges for utility service in excess of the PIPP credit. Pre-program arrears that are included in the Arrearage Reduction Program described in item (5) of this subsection (c) shall not be included in the calculation of the levelized payment plan. Emergency or crisis assistance payments shall not affect the amount of any PIPP credit to which a participant is entitled.

(5) Electric and gas utilities subject to this Section shall implement an Arrearage Reduction Program (ARP) for plan participants as follows: for each month that a plan participant timely pays his or her utility bill, the utility shall apply a credit to a portion of the participant's pre-program arrears, if any, equal to one-twelfth of such arrearage provided that the total amount of arrearage credits shall equal no more than \$1,000 annually for each participant for gas and no more than \$1,000 annually for each participant for electricity. In the third year of the PIPP, the Department, in consultation with the Policy Advisory Council established pursuant to Section 5 of this Act, shall determine by rule an appropriate per participant total cap on such amounts, if any. Those plan participants participating in the ARP shall not be subject to the imposition of any additional late payment fees on pre-program arrears covered by the ARP. In all other respects, the utility shall bill and collect the monthly bill of a plan participant pursuant to the same rules, regulations, programs and policies as applicable to residential customers generally. Participation in the Arrearage Reduction Program shall be limited to the maximum amount of funds available as set forth in subsection (f) of Section 13 of this Act. In the event any donated funds under Section 13 of this Act are specifically designated for the purpose of funding the ARP, the Department shall remit such amounts to the utilities upon verification that such funds are needed to fund the ARP.

(6) The Department may terminate a plan participant's eligibility for the PIP Plan upon notification by the utility that the participant's monthly utility payment is more than 45 days past due.

(7) The Department, in consultation with the Policy Advisory Council, may adjust the number of PIP Plan participants annually, if necessary, to match the availability of funds from LIHEAP.

(8) The Department shall fully implement the PIPP at the earliest possible date it is able to effectively administer the PIPP. Within 90 days of the effective date of this amendatory Act of the 96th General Assembly, the Department shall, in consultation with utility companies, participating alternative suppliers, LAAs and the Illinois Commerce Commission (Commission), issue a detailed implementation plan which shall include detailed testing protocols and analysis of the capacity for implementation by the LAAs and utilities. Such consultation process also shall address how to implement the PIPP in the most cost-effective and timely manner, and shall identify opportunities for relying on the expertise of utilities, LAAs and the Commission. Following the implementation of the testing protocols, the

Department shall issue a written report on the feasibility of full or gradual implementation. The PIPP shall be fully implemented by September 1, 2011, but may be phased in prior to that date.

(9) As part of the screening process established under Item (1) of this subsection (c), the Department and LAAs shall assess whether any energy efficiency or demand response measures are available to the plan participant at no cost, and if so, the participant shall enroll in any such program for which he or she is eligible. The LAAs shall assist the participant in the applicable enrollment or application process.

(10) Each alternative retail electric and gas supplier serving residential customers shall elect whether to participate in the PIPP or ARP described in this Section. Any such supplier electing to participate in the PIPP shall provide to the Department such information as the Department may require, including, without limitation, information sufficient for the Department to determine the proportionate allocation of credits between the alternative supplier and the utility. If a utility in whose service territory an alternative supplier serves customers contributes money to the ARP fund which is not recovered from ratepayers, then an alternative supplier which participates in ARP in that utility's service territory shall also contribute to the ARP fund in an amount that is commensurate with the number of alternative supplier customers who elect to participate in the program.

(d) The Department, in consultation with the Policy Advisory Council, shall develop and implement a program to educate customers about the PIP Plan and about their rights and responsibilities under the percentage of income component. The Department, in consultation with the Policy Advisory Council, shall establish a process that LAAs shall use to contact customers in jeopardy of losing eligibility due to late payments. The Department shall ensure that LAAs are adequately funded to perform all necessary educational tasks.

(e) The PIPP shall be administered in a manner which ensures that credits to plan participants will not be counted as income or as a resource in other means-tested assistance programs for low-income households or otherwise result in the loss of federal or State assistance dollars for low-income households.

(f) In order to ensure that implementation costs are minimized, the Department and utilities shall work together to identify cost-effective ways to transfer information electronically and to employ available protocols that will minimize their respective administrative costs as follows:

(1) The Commission may require utilities to provide such information on customer usage and billing and payment information as required by the Department to implement the PIP Plan and to provide written notices and communications to plan participants.

(2) Each utility and participating alternative supplier shall file annual reports with the Department and the Commission that cumulatively summarize and update program information as required by the Commission's rules. The reports shall track implementation costs and contain such information as is necessary to evaluate the success of the PIPP.

(3) The Department and the Commission shall have the authority to promulgate rules and regulations necessary to execute and administer the provisions of this Section.

(g) Each utility shall be entitled to recover reasonable administrative and operational costs incurred to comply with this Section from the Supplemental Low Income Energy Assistance Fund. The utility may net such costs against monies it would otherwise remit to the Funds, and each utility shall include in the annual report required under subsection (f) of this Section an accounting for the funds collected.

**Part 3:**  
**Rhode Island**  
**Policy**  
**Recommendations**

## Recommendations for Rhode Island

Over the past several years, PIPP legislation has been proposed to the House or Senate many times, but it has yet to be passed. In 2010, the *Home Energy Rate Affordability Act 10-H-7816* (see Appendix F) went before the House Finance Committee on March 24. The legislation was never voted on in committee. It was met with mixed acceptance from the Committee and pretty clear opposition from Governor Carcieri's appointees at the Office of Energy Resources (OER) and PUC. See Appendix G for a synopsis of the hearing. Although the lack of support is frustrating for supporters and beneficiaries of affordable energy legislation, the issues raised at the hearing are important to consider when developing new legislation for 2011. Consideration of past experiences, coupled with knowledge gained from implementation of affordable energy legislation in other states indicate several major factors that Rhode Island policy makers should consider for the new legislation. Although it is a somewhat complicated issue, there are a multitude of resources, analysts and researchers, networks, studies and reports, evaluations and research agencies, etc., available to policy makers trying to deal with the issue of affordable energy for low-income residents. Rhode Island policy makers will not have to "reinvent the wheel" in order to find a solution to the affordable energy crisis. The following are some basic recommendations to consider in legislation and program design:

- Legislation should be short and concise. It should establish a Universal Service Fund (USF) paid for by very minimal charges to ratepayers, and mandate establishment of PIPP using the USF. Legislation should establish the purpose and goals of such programs as well as a minimum level of service that will be provided through the programs. Otherwise, the legislation should empower the administrative agencies to determine details such as the amount to be charged to the ratepayer, the maximum benefit customers can receive, determination of benefit level, arrearage payments, etc. Legislation should also mandate evaluation and collaboration among state agencies and consumer advocates, in the form of a task force to meet several times a year.
- Rhode Island should integrate administration of PIPP with administration of LIHEAP as much as possible. Those that are eligible for LIHEAP should automatically be eligible for PIPP, there does not need to be a separate screening process. Additionally, the LIHEAP benefit should be calculated into the energy burden.
- The Community Action Agencies (CAPs) should administer the benefits.
- Arrearage management must be part of the program. PIPP enrollees who make on-time payments should have their arrearages diminished over time.

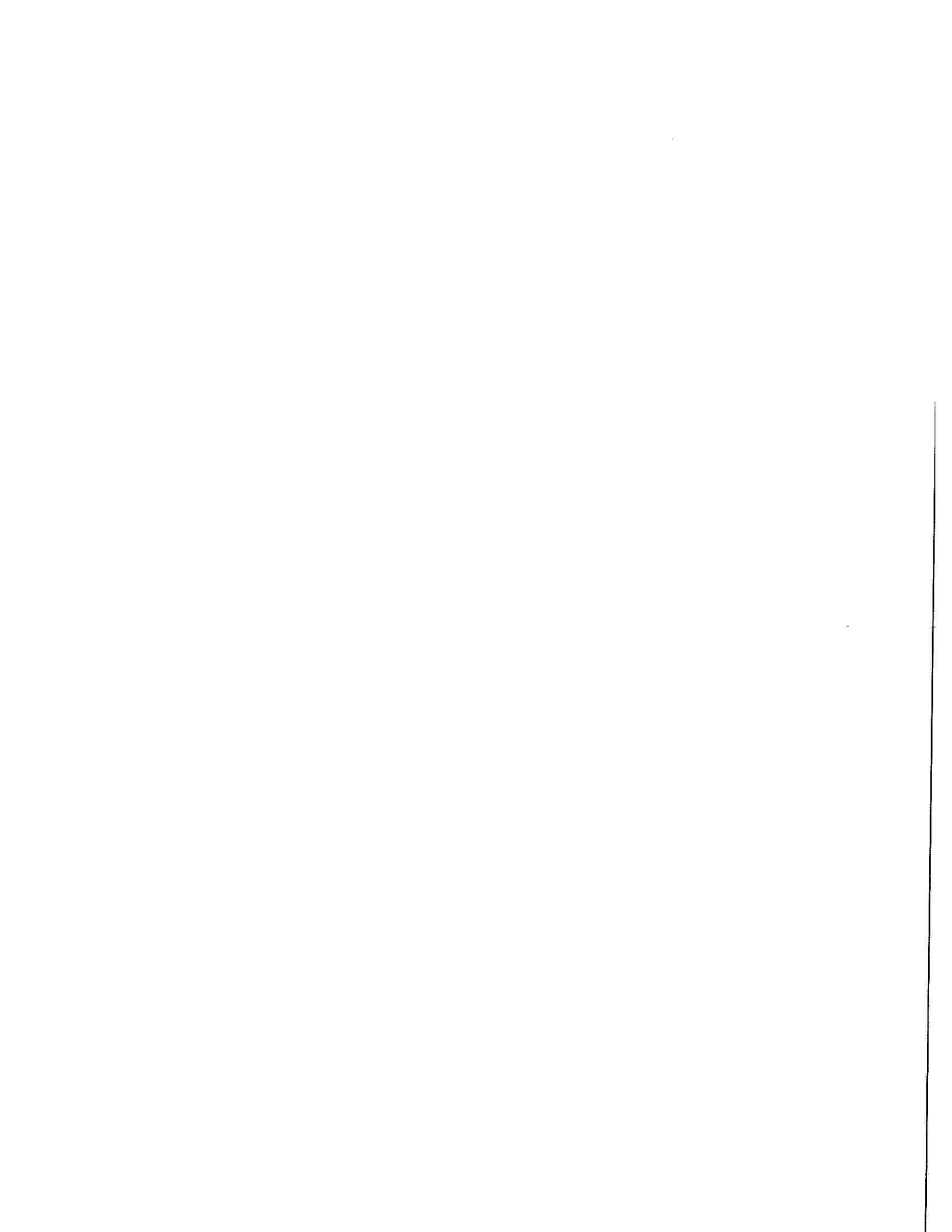


- There must be a cap on the total amount of benefits a household can receive from the USF. This could be tied to the average home energy affordability burden in Rhode Island, which is approximately \$1,600.
- An education and conservation component should be a requirement. Those households that use much more energy than the state averages should be flagged for investigation. Those households should be prioritized for weatherization, conservation and education programs. They should have to demonstrate decreased usage to stay in the program.
- The USF should not become part of the state General Fund.
- The charge to ratepayers should be volumetric, reflecting usage, as opposed to a flat rate as previously proposed.
- Evaluation measures should include: decrease in the number of utility shut-offs; program retention rates and consistent on-time payments; reduction in energy usage in high usage households;
- The target percent of income low-income customers would pay should be 6%.
- Participants should be taken off the program if they miss two consecutive payments without notifying the agency of some change in income or proving other extenuating circumstance. The CAP agencies should have a system in place to notify participants if they are at risk of being taken off the program.
- For participants who have been in the same residence for several years, the previous year's average bill should be used to determine energy usage. However, for participants who do not have a previous year's bill, the administrator must establish a fair way to determine the average usage for the residence. This could involve a formula that takes into account family size, home size and thermal integrity of the dwelling.
- The program administrators should consider targeting homes with elderly and children, and the lowest income levels as the priority groups for participation.
- Take advantage of knowledge administrators in other states have gained; join professional networks with those that administer such programs.

# Appendix K

# Part 4:

# Appendices



# A National Study of Ratepayer-Funded Low-Income Energy Programs

By David Carroll, Jacqueline Berger and Roger Colton

Three well-known researchers within the energy assistance community – David Carroll and Jackie Berger of APPRISE and Roger Colton of Fisher Sheehan and Colton – joined forces in late 2006 and early 2007 to conduct a national study of ratepayer-funded low-income energy programs. Their findings were presented during a plenary forum at the 21<sup>st</sup> Annual National Low Income Energy Conference in Nashville, Tennessee, on June 6, 2007. Below is the executive summary of their report.

## Executive Summary

Policymakers throughout the country have implemented low-income affordability and energy efficiency programs to help low-income households meet their energy needs. For 2005, the LIHEAP Clearinghouse identified more than \$2.3 billion in funding through state and local taxes, funds from electric and gas ratepayers, private charitable donations, and other sources. The level of commitment of funds to these programs illustrates the nearly universal understanding that low-income households need assistance in meeting their energy needs.

The purpose of this study is to furnish comprehensive information on ratepayer-funded low-income energy programs. This study includes information on and analysis of the energy needs of low-income households, the legal and regulatory framework supporting ratepayer-funded programs, program design options, and the findings from evaluations of program effectiveness. The study will directly benefit the study sponsors by furnishing information on how they can advocate for and implement new low-income energy programs or make enhancements to existing programs. The study also serves the broader low-income energy community by furnishing a publicly available report on the study findings.

## Introduction

This is a multi-sponsor study that was funded by a diverse group of national, state, and local organizations. The study sponsors are:

- AARP
- Citizens Gas & Coke Utility (Indiana Utility Consortium)
- Colorado Governor's Energy Office
- Maryland Department of Human Resources
- Missouri Association for Community Action
- Northern Indiana Public Service Company (Indiana Utility Consortium)
- Oregon Housing and Community Services
- PECO Energy
- Philadelphia Gas Works

- Public Service Electric and Gas (contributor)
- Vectren Energy Delivery (Indiana Utility Consortium)
- Washington State Department of Community, Trade and Economic Development

In addition to funding, these organizations contributed to the study by furnishing information on the low-income affordability and energy efficiency programs in their jurisdictions and helping to identify the key questions of interest for policymakers. While we appreciate the contributions of the study sponsors, it is important to note that the statements, findings, and conclusions in this study are those of analysts from APPRISE and Fisher, Sheehan, and Colton, and do not necessarily reflect the views of the sponsor organizations.

The study focuses on ratepayer-funded low-income energy programs in thirteen states (California, Colorado, Indiana, Maine, Maryland, Missouri, Nevada, New Jersey, Ohio, Oregon, Pennsylvania, Washington, and Wisconsin). Based on data available from the LIHEAP Clearinghouse, ratepayer-funded programs represent about 85% of all state and local funding for low-income energy programs. The programs in the states included in the study account for more than three-fourths of all ratepayer funding for low-income energy programs.

### **Low-Income Energy Needs Assessment**

Policymakers throughout the country have identified the need for low-income energy assistance and have made significant commitments to low-income energy programs. In 2005, there was more than \$2.4 billion in funding for the Federal LIHEAP and WAP programs and more than \$2.3 billion in funding for state and local low-income energy programs. However, for the same year, the aggregate residential energy bill for low-income households was estimated to be about \$32 billion. Policymakers considering the implementation and/or expansion of low-income energy programs need information that helps them to assess the needs of households in their jurisdictions.

In this study, we developed national and state-level statistics on the energy needs of low-income households. The national statistics demonstrate the magnitude of the problem facing low-income households and the organizations that serve them. The state-level data, on the other hand, are more relevant to the policymakers who are attempting to address the energy needs of low-income households in their jurisdictions and advocates who wish to demonstrate the need for low-income programs.

### **National Statistics**

At the national level, we made use of a number of data sources, including:

- *LIHEAP Home Energy Notebook for FY 2005*
- *NEADA National Energy Assistance Survey for FY 2003*
- *SIPP "Measures of Well Being" for 1992, 1998, 2003*
- *DOE Residential Energy Consumption Survey for 2001*

From these data sources, we identified energy need indicators for low-income households.

The LIHEAP Home Energy Notebook for FY 2005 documents the rapid growth of the low-income energy bill and can be used to examine the aggregate need for energy assistance.

- *Energy Expenditures* – Total energy expenditures for low-income households grew rapidly from 2000 to 2005, increasing by over 40% in just five years. While growth in LIHEAP funding partially offset the increasing demand for energy assistance, statistics show that LIHEAP benefits only cover about 5.3% of the total residential energy bill for low-income households.

*Energy Burden* – The median energy burden for low-income households was 9.9% of income in 2005. By comparison, the median energy burden for households that were not low-income was 2.8% of income.

- *Need for Assistance* – More than 7.1 million low-income households had an energy burden that exceeded 15% of income. The amount of energy assistance needed to reduce energy burdens to 15% of income was about \$6.1 billion. At its 2005 funding level, LIHEAP benefits would only be able to cover about one-fourth of this amount.

These statistics demonstrate why state and local policymakers have found it necessary to supplement LIHEAP funds with state and local resources, including ratepayer-funded programs.

Other national research furnishes additional insights regarding low-income energy needs.

- *2003 NEAS* - The 2003 National Energy Assistance Survey found that 88% of recipients reported that LIHEAP was “very important in helping them to meet their energy needs.” Without their LIHEAP benefits, 39% of recipients indicated that they would have had to “keep their home at an unsafe or unhealthy temperature” and 39% reported that they would have had “their energy services disconnected or discontinued at a time when it was needed to heat or cool their homes.”
- *SIPP “Measures of Well-Being”* - The “Measures of Well-Being” topical module from the 2003 Survey of Income and Program Participation (SIPP) demonstrates that most low-income households keep up with their energy bills, despite the high energy burden. Almost 80% of households with incomes at or below the poverty level pay all of their utility bills.
- *RECS Energy Usage Data* - The national RECS data also show that energy efficiency programs could be a cost-effective way to reduce energy burdens for

These sources demonstrate indicators of need that go beyond the measurement of energy burden.

### State Statistics

At the state level, we made use of a number of data sources, including:

- *American Community Survey for FY 2005*
- *NOAA Weather Data*
- *EIA Energy Price Data*

From these data sources, we were able to develop state-level indicators of need that are more directly relevant to state and local policymakers. Examples of the different circumstances faced at the state level include:

- *Energy Expenditures* – Median low-income baseload electric expenditures ranged from about \$621 in California to about \$906 in Maryland. Median gas expenditures ranged from about \$379 in California to \$1,020 in Ohio.
- *Energy Burden* – Median low-income baseload electric burden ranged from about 4% to 9% and median gas burden ranged from about 3% to 10%.

### Energy Gap Analysis

In setting target affordability levels, policymakers might consider research on the need for energy assistance. Analysts have developed two important indicators of energy affordability – an affordable energy burden and a high energy burden.

- *Affordable Energy Burden* – Roger Colton of Fisher, Sheehan, and Colton has recommended using an affordability standard of 6% of income based on the idea that a household can afford to spend about 30% of income on shelter costs and that about 20% of shelter costs are used for energy bills.
- *High Energy Burden* – APPRISE has proposed an approach for defining “high energy burden” using a model that identified a severe shelter burden as 50% of income or more and energy costs as about 22% of shelter costs. Using that approach, APPRISE has suggested that analysts might use 11% of income as an indicator of “high energy burden.”

While individual households may be able to pay more or less than that average for energy, as an overall indicator of need, these statistics have value.



### Defining Affordable and High Residential Energy Burden

Fisher, Sheehan, and Colton: Moderate Shelter Burden = 30% of income  
Median residential energy costs for low income households = 20% of shelter costs  
*Affordable residential energy burden = 30% \* 20% = 6% of income*

APPRISE: Severe Shelter Burden = 50% of income  
Median residential energy costs for low income households = 22% of shelter costs  
*High residential energy burden = 50% \* 22% = 11% of income*

Using data from the American Community Survey (ACS), we developed estimates of the total need for energy assistance for each state using a 5% need standard and a 15% need standard. Even using the relatively high 15% need standard, we found that LIHEAP funding only covers between 6% and 43% of the outstanding need in the states we studied. In the median state, LIHEAP covered about 20% of the need at the 15% energy burden need standard and about 9% of the need at the 5% need standard.

### Legal/Regulatory Framework

Policymakers throughout the country have addressed a number of regulatory and legal issues that are common to programs in their adoption, design and implementation. While most states have mandated the creation of low-income affordability programs through specific state action, such legislative direction is not a prerequisite to the pursuit of such programs. When regulators desire to implement a low-income affordability program, sound and readily sustainable regulatory foundations exist, without explicit legislation action, upon which to base regulatory approval. The law is insufficiently developed, however, to judicially require a state regulatory agency to act to adopt affordability programs.

### Legislative Authorization

Our research found that states have frequently mandated the creation of low-income affordability programs by statute, thus rendering moot the question of whether the state utility commission has the authority to pursue such programs. Maryland, California, Nevada and New Jersey, for example, all had utility commissions act after the legislature enacted a statute directing the implementation of a low-income program.

Other states have acted to adopt affordability programs without specific legislative authorization.

- *Pennsylvania* - Pennsylvania's commission found that it had the authority to order programs to stop the "wasteful" cycle of repeating service disconnections, reconnections, failed payment plans, and a return to the start of the cycle with another disconnection.

- *Ohio* - The Ohio commission found that it had authority under the state of “emergency” which it found to exist as a result of the tens of thousands of households that were losing their utility service due to the unaffordability of home energy.
- *Indiana* - Indiana utilities found authority to adopt their low-income programs under a statute providing for “alternative regulatory plans,” which allow the utilities and the state commission to set aside all or parts of traditional regulation when to do so is in the public interest.

Even state utility commissions that have expressed doubt about their regulatory authority to implement permanent statewide programs have adopted smaller programs using different aspects of their regulatory authority.

- *Missouri* - The Missouri utility commission, for example, has held that it lacks statutory authority to adopt preferential rates. Nonetheless, that commission has approved multi-million dollar programs by electric and natural gas companies to deliver rate affordability and arrearage forgiveness through specifically-dedicated funds.
- *Colorado* - Even before the State Supreme Court decision proscribing preferential rates was legislatively overturned, the Colorado Commission approved a low-income energy efficiency program on the grounds that it was cost-effective. It also approved a rate affordability pilot to test whether it could be shown to be cost-effective.

The legal authorization under which state utility commissions operate can explicitly require the development of a program, can have language that the utility commission interprets to order the implementation of a program, or can merely be interpreted to allow the utility commission to approve a program. No known instance exists where legislation has explicitly proscribed a low-income affordability program.

### **Future Legal Authority**

Our review of affordability programs found that numerous stakeholders have advanced creative justifications upon which to structure their low-income affordability programs. The lines of analysis presented below do not necessarily apply in every state. The application of any given line of reasoning depends upon the specific statutes that exist in any given state.

#### *Foundational Policy Basis for Commission’s Existence*

Our research found that the regulation of natural gas and electric rates in any given state is governed not only by the statutes that specifically mention ratemaking, but by the statutes setting forth the broad regulatory mission of the state utility commission as well. Invoking such statutes is akin to the work of environmental advocates who historically

have sought to have utility regulators take into account the environmental implications of their decisions. Just as environmental protection can be advanced through enforcement of the "general charge" of a utility commission, low-income protection can be advanced by enforcement of that language as well. For example, many such statutes *direct* the utility commission to undertake its duties within the constraint of maintaining public health and safety. The way to conceptualize this approach to low-income rates is to think of these general charges as being the seminal documents of the agency. Policy declarations included in the charter documents of an administrative agency create enforceable obligations on the part of that agency.

### *Universal Service as a "Public Good"*

The notion that assistance provided to low-income households supports the broader public interest is not an unusual idea. In the public utility industry, for example, universal service is considered by many authoritative sources to be a "public good" subject to the financial support of ratepayers as part of the general regulatory oversight of public utilities. The question which presents itself, of course, involves determining how to define "public good" so as to include universal service. Fire hydrants and streetlights, for example, have been found to be public goods. The basic telecommunications network has also been found to be a "public good" as a justification for spreading network costs over all customer classes in support of the promotion of universal service.

### *Improving Business Competitiveness*

An increasing body of research has documented how the problems associated with inability to pay affect the competitiveness of local business and industry as well. Special rates for energy customers, as well as state regulatory decisions regarding ratemaking in the telecommunications industry, frequently are premised on their positive impacts on promoting business competitiveness. These considerations have also supported "implicit subsidies" generated by transferring costs from high-cost rural areas to lower-cost urban areas in both the energy and telecommunications industries. Similarly, assistance to low-wage, poverty-level workers through home energy affordability subsidies can promote the competitiveness of local business and industry.

### **The Legislative Frameworks**

The "legal" framework of energy assistance programs around the nation does not rest exclusively in the regulatory decisions of the various state utility commissions. It rests, also, in the statutory structures upon which many of the study programs are based. These statutory decisions exhibit considerable, though clearly not universal, differences on major program decisions. Patterns do appear, however.

### *The Scope of the Programs*

The "scope" of a universal service program refers to the extent to which all low-income customers within a state are covered by the program.

- *Mandated Electric Programs* - Some state programs are focused on delivering benefits to customers of a particular fuel type. Maine and Maryland, for example, have directed the implementation of a statewide electric universal service program.
- *Mandated Electric and Gas Programs* - States such as New Jersey, Pennsylvania, Nevada and California have all mandated that programs be directed to both natural gas and electric customers.
- *Voluntary Programs* - While Washington has made all programs optional to utilities and Oregon has made programs optional for natural gas utilities, both states have such programs by both natural gas and electric utilities.

### *The Coverage of the Programs*

Most states that have enacted universal service programs restrict those programs to regulated utilities. Programs in New Jersey, Maryland, Pennsylvania and California are legislatively focused on regulated utilities. In contrast, Maine's legislation is specifically directed not simply toward the state's three investor-owned electric utilities, but to Maine's consumer-owned electric utilities as well. In Wisconsin, municipal utilities must, at a minimum, operate local programs that are equivalent to the statewide program.

### *Program Design*

One issue policymakers must face is whether to create a uniform statewide program, or to allow diversity in program design amongst utility service territories.

- *Variable Program Design* - Maine and Pennsylvania allow each utility within the state to develop its own program design, so long as those designs are consistent with state prescribed minimum standards.
- *Uniform Program Design* - New Jersey, Nevada and Maryland have all implemented uniform statewide programs.
- *Voluntary Program Design* - Washington relies upon voluntary program proposals that are initiated by each individual utility, as does Oregon for natural gas utilities. While those program designs are similar, law or policy does not dictate the similarity.

The Maine Office of Public Advocate (OPA) had a unique approach. In its essence, the OPA urged that there should be rebuttable presumption favoring a uniform program. According to the OPA, "all three utility-sponsored programs should be similarly designed, except to the extent that demonstrably different customer needs exist." While the Maine Commission rejected that approach given time constraints on the design and

implementation of programs in the state, the Commission held open the possibility of imposing such a future requirement.

### *Program Support*

Program support involves primarily the collection of funding in support of the low-income affordability programs. One primary question is whether program funds should be collected from all customer classes or from the residential customer class alone. Many of the Pennsylvania CAP programs, along with the voluntary programs in Oregon (natural gas only) and Washington, are based on financial support provided only by the residential class. In contrast, the Nevada legislation directs that funding will be collected from all "retail customers." Program funding in Maryland and New Jersey, too, are statutorily directed to be collected on a per unit of energy basis from all customers.

### **Efficiency Investments as a Rate Affordability Program Component**

Every state that has adopted a home energy affordability program has incorporated an energy efficiency component into that affordability initiative. Differences appear, however, in the manner in which the efficiency program is integrated into the broader affordability effort, in the means of targeting the efficiency investments to particular households, in the linkage between the rate affordability and efficiency program components, and in the cost recovery for the program components.

### *Connection between Affordability and Efficiency*

The connection between the rate affordability and energy efficiency components of home energy affordability programs varies widely by state. In some states the connection is explicit. Maine regulators have held, for example, that the obligation to deliver energy efficiency measures to participants in the various utility affordability programs flows from a statutory mandate to operate the programs efficiently. New Jersey regulators have found that the state's rate affordability program will provide a steady stream of new participants into the energy efficiency program. Nevada requires that the agencies administering the rate affordability and energy efficiency components of the overall affordability programs develop a joint annual planning document explaining how the programs will operate together.

While part of a low-income affordability effort, not all low-income energy efficiency programs have the pursuit of affordability improvement as their primary objective. The California utility commission, for example, has explicitly held that the objective of that state's Low-Income Energy Efficiency (LIEE) program is to promote affordability. As a corollary of that objective, the California commission has emphasized that the goal in California is to expand the number of households served by the efficiency program rather than to expand the measures delivered in any given household. In contrast, the Pennsylvania Low-income Usage Reduction Program (LIURP) is viewed foremost as a usage reduction program. Efficiency investments through LIURP should be targeted to maximizing the cost-effective reduction of energy use. Targeting is toward high-use

customers, with the affordability impacts taken into account only among customers with equal consumption levels.

Finally, some states implement low-income usage reduction programs on equity principles. These states find that the broad scale demand side management programs adopted for residential customers generally do not reach low-income customers. New Jersey, for example, found that due to characteristics unique to the low-income population, unless special low-income usage reduction programs were implemented, these poverty-level households would end up paying for the efficiency programs without receiving any benefits from those programs. In these states, the low-income usage reduction programs are not designed to confer a special affordability benefit on the poverty population, but rather to ensure that the poverty population is not excluded from receiving benefits from these programs.

#### *Administratively Linking Affordability and Efficiency*

Most states operating a rate affordability program link their rate initiatives with their energy efficiency initiatives through a referral process. The automatic qualification of a high-use affordability participant for the receipt of energy efficiency measures, however, does not exist. Bill reductions through usage reduction and bill reductions through rate discounts/energy assistance are not found to be interchangeable. States such as Maine and Maryland refer high-use affordability program participants to their usage reduction programs, though such referrals do not have any "preference" in the receipt of efficiency services. Wisconsin requires high-use affordability program participants to accept efficiency services to the extent that such services are offered.

#### *Cost Recovery*

Some states incorporate the cost recovery of their low-income energy efficiency investments directly into the broader effort to address the unaffordability of home energy bills to low-income households. In Nevada, the legislation explicitly directs not only that efficiency measures be funded, but that a prescribed percentage of the low-income funding be devoted to low-income efficiency measures. Indiana's utilities, on the other hand, commit to an annual funding stream as part of their affordability efforts, but that commitment is individualized to each utility and is not part of a broader statewide program.

#### **Affordability Program Design and Implementation**

Our research has demonstrated that there are many different options for designing programs. For each program that we studied, policymakers in that jurisdiction chose to exercise their judgment on what combination of design elements is best suited to their program, their clients/customers, and their circumstances. All of the programs successfully enrolled customers, delivered benefits, and made energy bills more affordable for low-income households.

However, the various program design choices do affect the way that a program performs and how it affects both low-income customers and the utilities involved in the programs. Our analysis suggests that policymakers have important choices to make with respect to the key design elements.

- Program Funding
  - Program Funding Level – Policymakers must determine whether they will set a limit on program funding or attempt to serve all eligible customers with a fixed set of program benefits. While a program funding limit allows policymakers to project how the program will affect ratepayers, a fixed program benefit offers greater equity in treating all eligible customers in the same way.
  - Program Funding Source – A systems benefit charge (SBC) gives policymakers the greatest flexibility in terms of contracting for services and delivering benefits across utility service territories. However, since most utilities have included the costs of write-offs and collections activities in their existing base rates, some advocates suggest that funding programs through base rates is the most cost-effective approach for minimizing costs to ratepayers. Base rate recovery also ensures that program cost offsets are considered, whether implicitly or explicitly.
  - Targeting – Programs may be targeted at certain customers to address specific policy issues, or if the legal and/or regulatory framework requires it. In the absence of such requirements, program managers will need to conduct targeted outreach to certain groups (e.g., the elderly or households that speak a language other than English at home) if they hope to serve all customers who need the program.
- Program Benefits
  - Coordination with LIHEAP – Each state LIHEAP program delivers benefits to low-income ratepayers. Coordination with LIHEAP can help to reduce administrative expenses, improve the equity of programs at the state level, and can simplify program design.
  - Computation of Benefits – Programs have used percent-of-income calculations, rate discounts, and benefit matrixes to set program benefit levels. Each approach has certain advantages; it is important for policymakers to understand the trade-offs associated with these options to ensure that the program is meeting policy goals.
  - Level of Benefits – The benefits made available to clients in the programs we studied range from about \$121 to \$1,105 per year. It is clear that higher program benefits will have a greater impact on clients. However, the

available research also shows that all programs are viewed as important by clients and even relatively small benefit levels deliver some program benefits.

- Benefit Distribution – Benefit distribution procedures are extremely important. Whether benefits are provided as fixed payments, fixed credits, a monthly discount, or annual credits has a significant impact on client risks and responsibilities. They also appear to have some impact on program success rates. Policymakers must be careful to choose the payment distribution procedure that best meets their policy goals.
- Arrearage Forgiveness – Programs often attempt to resolve payment problems. Arrearage forgiveness is an important program element for those customers who enter a program with significant arrearages.
- Program Operations
  - Program Administration – Some programs are operated by State LIHEAP Offices and some are operated by individual utility companies. Utility companies often contract with local intake agencies for certain program services. There are advantages to each approach that must be considered in program design and implementation.
  - Program Certification and Recertification – Policymakers must consider trade-offs between program fiscal integrity and customer participation barriers in designing certification and recertification procedures.
  - Program Benefit Periods – When a program offers the customer a monthly benefit, it is important to consider whether receipt of the benefit will be contingent on consistent customer payments. While payment requirements may be an incentive for improved payment rates, they may be administratively complex and may result in many clients losing program benefits.

In the evaluation section, we examine how program design choices affect program outcomes. Some of the evaluation findings may help policymakers to select the program design options that best meet the objectives of their programs and the needs of clients in their jurisdictions.

### **Affordability Program Evaluations**

The report reviews the results of affordability evaluations that have been conducted on programs that are researched in this study. The availability of evaluation information differed greatly by state and program.

One of the goals of the evaluation review was to assess whether the program performance indicators were related to the program design parameters. Because the program design parameters vary on so many dimensions, and because there are few evaluation reports



that contain a comprehensive set of performance statistics, the extent to which program design could be definitively linked to program performance was limited. However, where possible, we compare and contrast evaluation findings and relate the findings back to program design options, utilizing both the performance indicators summarized in this document and our experience studying the design and implementation of these programs.

Review of the evaluation reports is helpful because it sets realistic expectations for what may be achieved by implementing affordability programs and provides insight on how various program models perform. Some of the key findings from the review of the ten available affordability evaluations are summarized below.

### **Targeting**

Despite funding of over \$4.5 billion in Federal and ratepayer assistance, there are not enough funds to meet the low-income need for energy assistance. Therefore, targeting resources where they can provide the greatest benefit is critically important. A review of the evaluation reports showed that programs performed differently in terms of targeting key demographic groups. For example, the percent of households with income below the poverty level ranged from 49% in the NJ USF to 72% in PGW's CRP. The percent with elderly members ranged from 8% in PGW's CRP (where the elderly are more likely to participate in the senior discount instead) to 37% in the NJ USF. The characteristics of households who participate in the programs are predictably linked to the eligibility, outreach, and targeting approach that is employed. Therefore, program managers should think carefully about their target population when designing the program.

### **Retention and Recertification**

In many affordability programs, customers are not removed from the program and continue to receive program benefits until their utility service is terminated. This practice leads to higher program retention rates than those programs that dismiss program participants who miss payments. However, programs still have difficulty recertifying customers or having customers reapply for the program. While recertification rates can be difficult to interpret, as some customers are not required to recertify when they participate in particular programs such as LIHEAP, reenrollment rates are more straightforward. The NJ USF evaluation showed that only 44% of customers reenrolled in the program. Since most customers continue to have need for assistance, programs can improve affordability by facilitating reapplication or recertification and by allowing customers to continue to participate in the program, even after they have paid off their full arrearage.

### **Affordability and Bill Payment**

The affordability programs we reviewed resulted in large decreases in energy burden for program participants. Programs that targeted benefits to achieve particular energy burdens for clients came close to achieving these burdens on average.

However, programs appear to perform differently with respect to their impact on the consistency of bill payment. There are several theories for how bill payment assistance can affect customer payment behavior.

- *Annual Credits* - A lump sum payment, such as LIHEAP, may help the customer to pay off accumulated arrearages and prevent disconnection of service, or may assist the customer to keep current with the coming year's bills, depending on the individual customer's circumstances and the timing of the payment. By making the annual bill more affordable or by paying off the customer's accumulated debt, an annual lump sum assistance payment can improve payment patterns.
- *Rate Discounts or Fixed Credits* - These programs make the overall bill more affordable and thereby are expected to improve customer payment patterns. However, the program does not necessarily make payment requirements more consistent. In fact, some fixed credit programs result in no payment requirement in some months and a high payment requirement in other months.
- *Fixed Payment Plans* - Fixed payment plans require a customer to pay the same amount each month. It is argued that these plans have a greater likelihood of improving payment patterns because they help customers to develop regular payment patterns and increase the total amount of payments that customers make.

The evidence from the review of program evaluations included in this study is that only the equal monthly payment plans improve customer payment patterns. The one program reviewed in this study, the PGW CRP, that had an equal payment plan, is the only one that found improvements in the number of payments made by customers and the amount of cash payments made. Results from two other evaluations (of programs not included in this study) of low-income affordability programs with equal monthly payment plans also found improved payment patterns.

### **Arrearages**

The evaluations found that a significant share of program participants did not pay their full reduced bill after enrolling in the programs. Because many customers come into the program with arrears and some do not meet their full bill payment obligations after enrolling in the affordability programs, arrears would continue to grow on average if arrearage forgiveness was not provided. Program evaluations showed that significant percentages of program participants received arrearage forgiveness, and the amount ranged from \$182 to \$403.

### **Financial Impact**

Evaluations of the affordability programs found reductions in the number of collections actions and in the number of service terminations after customers began participating in the programs. There were also small reductions in collections costs, averaging \$8 to \$16

per customer. Such reductions can help to offset the administrative costs of these programs.

However, the evaluations are generally not able to assess whether programs are cost neutral. To measure cost neutrality, a program would have to measure the net cost of services for customers prior to enrollment (cost minus payments) compared to the net costs after program enrollment. Further, the analysis would require an experimental design where customers in similar situations were randomly assigned to test and control groups. Utility cost of service information is generally inadequate to measure true service delivery costs. Additionally, programs that we have researched have not employed an experimental design. Therefore, we have not found any evidence to either support or refute the hypothesis that programs can be cost neutral. However, based on their design, certain programs are unlikely to be cost neutral. Programs that result in large reductions in payments by customers are unlikely to be cost neutral.

### **Energy Usage**

Energy affordability programs reduce the cost of using energy, and therefore program managers are often concerned that they may result in increased energy usage. However, evaluation results show that this does not occur. Program evaluations find small and insignificant increases in energy usage, or sometimes even find declines in energy usage.

The review of energy affordability program evaluations reinforced the perception that program design is critically important. Many program outcomes can be predicted based on the design parameters that are chosen. Program designers should think carefully about their goals and choose the program design parameters that are most likely to meet these goals.

### **Energy Efficiency Program Design and Implementation**

While energy efficiency programs are often mandated through a public utility commission or state legislation, most aspects of program design and delivery are selected by the program administrator. Program design choices have important implications for targeting, energy savings, and cost effectiveness. In this study, we collected information on 13 different low-income energy efficiency programs. These programs are designed to account for local needs and to complement other existing low-income energy efficiency and energy affordability programs. In this section, we identify the dimensions on which program design choices must be made, discuss the advantages and disadvantages of each design choice, and identify the design choices made for the 13 energy efficiency programs that we reviewed.

### **Funding and Delivery**

The largest ratepayer-funded energy efficiency program is the California LIEE. It was funded at over \$130 million in 2006 and delivered services to over 160,000 low-income electric and gas customers. Many of the 13 states in our study have made a significant

investment of energy efficiency services. In addition to California, five other states spent more than \$10 million per year.

Some programs set goals or restrictions on the number of households to be served or the average level of spending per home served. Per-home spending limits are sometimes set to ensure that resources are distributed across households and that no one household receives too large of a program benefit. However, by setting such limits, programs lose some flexibility to serve households with greater needs. Three of the programs studied had spending limits, ranging from \$3,000 to \$5,000.

### **Eligibility and Targeting**

Common program eligibility parameters are poverty level, participation in affordability programs, and energy usage. Program specifications for poverty level range from 150 percent, the most common standard, to 225 percent. Programs sometimes require that households participate in the corresponding energy affordability program with the goal of reducing the subsidy that ratepayers provide. Four of the 13 programs studied included this restriction. Programs that serve higher usage households usually achieve higher energy savings. Two of the 13 programs studied set energy usage requirements for program participation.

Beyond setting eligibility limits, programs sometimes try to target certain households for service delivery. The most commonly targeted group in the programs studied was high energy usage households. Other targeted groups included those who have arrearages or who are payment troubled; households with elderly or disabled members or with young children; and affordability program participants.

### **Benefits**

Energy efficiency programs vary widely in the type of benefits provided. The programs with lower funding levels, those serving lower usage households, or those providing baseload usage services only spend less per home and have a smaller variety of eligible measures. The most comprehensive programs spend several thousand dollars per home on average and include health and safety repairs and furnace replacement, as well as the more common weatherization measures. Expenditures per home range from \$480 for the Maine Low-Income Appliance Replacement Program, which focuses on refrigerators and CFLs, to over \$6,000 per home for the Wisconsin Weatherization Assistance Program.

All of the programs studied provide energy education as a part of service delivery. However, the level of energy education that is provided can vary widely by program. Often programs develop detailed energy education procedures, but without adequate training and reinforcement these procedures are unlikely to be implemented according to the protocols. Some of the programs also provide energy education that is separate from service delivery, either as a workshop or an additional follow-up visit. Follow-up to the initial energy education can provide reinforcement for the client and increase the energy savings from the program.

## **Program Operations**

There are many operational aspects of energy efficiency programs that can be delegated to various program actors. These include the program manager, the service delivery contractors, the data manager, and the quality control team. State offices or utilities usually serve as program managers. Community Action Agencies, other nonprofits, for-profit contractors, or a mixture of these types are used to provide program services. Data management is often handled by the state or the utility, and is sometimes done by the contractor(s). Programs often use a mixture of quality control methods, conducting it both by the same contractors that serve the customers, and by the state or utility that oversees the program.

Other operational parameters to be decided upon include the service delivery procedures, the data management systems, and the quality control procedures.

## **Energy Efficiency Program Evaluation**

This section reviews the results of energy efficiency evaluations that have been conducted on the programs that are researched in this study. The availability of energy efficiency program evaluation information differed greatly by state and program. Where possible, we compare and contrast evaluation findings and relate the findings back to program design options.

### **Targeting**

Targeting of energy efficiency programs will vary by the program mandate, goals, and scope. Some programs explicitly target subgroups of the low-income population and some programs tend to serve particular subgroups due to the program design.

One of the most consistent findings from energy efficiency program evaluations is that customers with higher usage provide greater opportunities for savings, and therefore programs that target high usage yield higher savings and more cost-effective service delivery. A rule-of-thumb that is often used is that electric customers should have annual baseload usage that is at least 6,000 to 8,000 kWh, and heating and/or cooling usage of at least 8,000 kWh. Gas usage that is targeted for service delivery is often 1,200 ccf.

Most of the programs studied serve customers with average usage that exceeds these targets. One of the best targeted programs, the Ohio Electric Partnership Program (EPP), serves electric customers with average baseload usage of 13,500 annual kWh for the high-use program, 6,500 annual kWh for the moderate use program, and nearly 30,000 annual kWh for the Targeted Energy Efficiency (TEE) program which provides shell as well as baseload measures.

Cost-effective measure installation opportunities are a function of the usage level of the customers treated by the program. The Ohio EPP averaged over 16 bulbs per home for the high-use baseload program, over 12 for the moderate use baseload program, and

nearly 16 per home for the TEE program. This program also found frequent opportunities for refrigerator and freezer replacement.

### **Comfort and Health Impacts**

Evaluations of energy efficiency programs often include surveys with program participants because this activity provides information that cannot be obtained from other evaluation activities. The evaluation review found that many of the customers surveyed noted that the winter and/or summer comfort of their home had improved since receipt of program services. In addition, one program evaluation directly measured a reduction in unsafe heating practices.

### **Usage Impacts**

One of the primary issues addressed by energy efficiency program evaluations is the amount of energy saved by the program. When analyzing the change in energy usage that is due to the program intervention, it is important to look at weather-normalized energy usage and to make use of a comparison group.

Gross electric savings range from 366 to 3,461 kWh and from 4.7 to 12.5 percent of pre-program usage. Gross gas savings range from 8 therms to 156 therms and from two percent of pre-treatment usage to nearly 16 percent of pre-treatment usage. There is a strong relationship between pre-program usage and the amount of energy saved.

### **Cost Effectiveness**

The cost-effectiveness of an energy efficiency program is the extent to which the program results in savings that cover the cost of providing the energy efficiency services.

Cost-effectiveness can be examined narrowly from the perspective of only the savings in energy usage, or more broadly in terms of both energy impacts and non-energy impacts. Non-energy impacts that are considered sometimes include increases in economic activity that result from the program, reductions in environmental pollutants due to decreases in energy usage, and improvements in participants' health and safety. These non-energy benefits are beyond the scope of this study, which focuses on the reductions in energy costs that accrue to program participants and/or to ratepayers.

Cost effectiveness can be measured in several different ways.

- The Savings to Investment Ratio (SIR) is the ratio of the amount of savings that results from the program to the costs that were incurred in providing program services. An SIR of one or greater indicates that the program yields at least one dollar of savings for each dollar spent on program services.
- The cost per unit saved is the amount of resources that are devoted for each unit of energy that is saved as a result of the program services over the measures'

lifetime. The program is often evaluated as cost-effective if the cost per unit saved is less than or equal to the current or expected future retail price of gas or electricity.

Most of the programs studied would be viewed as cost effective. The Ohio high-use and TEE programs and the PGW CWP have SIRs that are above one. Most of the electric and gas costs per unit saved for the other studies are below the retail cost of electricity and gas.

### **Bill and Payment Impacts**

One of the goals of energy efficiency programs is to make energy more affordable for low-income households through reduced energy usage, and result in improved bill payment compliance. Most but not all of the programs studied resulted in gross and/or net reductions in the participants' average energy bills. The NJ Comfort Partners program reduced combination customers' bills by \$234 on average as compared to the comparison group, the Ohio EPP reduced bills by \$160, and the PGW CWP reduced bills by \$64 as compared to the comparison group.

If customers come close to covering their bill prior to receiving energy efficiency services, the approximately ten percent reduction in energy usage may be enough to help customers meet their bill payment obligations, in the absence of rising fuel prices. Some programs had increased bill coverage rates, but in general significant improvements were not seen.

### **Findings and Recommendations**

The purpose of this study is to furnish comprehensive information on low-income energy programs, including analysis of the energy needs of low-income households, the legal and regulatory framework supporting these programs, the design options for these programs, and the evaluation findings on program effectiveness.

- **Needs Assessment** – Our study found that the energy needs of low-income households are so large that it might be overwhelming for policymakers to consider options for resolving these problems. However, programs are not designed to serve 100% of low-income need and should not be expected to do so. Through careful research and analysis, it is possible for policymakers to identify the households in the greatest need and to design programs that are targeted to directly address those needs.
- **Legal/Regulatory** – Each of the 13 states that we studied used a different legislative and/or regulatory mechanism to authorize ratepayer-funded low-income program(s). The examples furnished by the 13 states give policymakers a good understanding of options for program authorization. They also demonstrate that authorization of low-income affordability programs is possible even in those

jurisdictions where legislation and/or legal decisions do not favor “preferential” rates.

- **Affordability Program Design and Evaluation** – Our research on the design, implementation, and evaluation of ratepayer-funded affordability programs demonstrates the importance of targeting the program design to the energy needs of low-income customers and policy goals. A careful review of how program designs affect customer incentives, as well as the impact of program designs on utilities and other ratepayers, will help to ensure that the program addresses the highest priority customers, the most important program objectives, and the most pressing policy goals. In addition, review of evaluation findings from other studies will help to establish realistic expectations for program outcomes.
- **Energy Efficiency Design and Evaluation** – Our research on the design, implementation, and evaluation of ratepayer-funded energy efficiency programs demonstrates the importance of matching the energy efficiency program design to policy goals. The research on program impacts and cost-effectiveness clearly demonstrate the best strategies to meet certain goals. Certain types of energy efficiency programs deliver modest benefits to large numbers of low-income customers, while others deliver significant benefits to the highest usage customers. Establishing the policy priority and a design to address that priority will yield the most cost-effective programs for ratepayers.

This report is designed to furnish each individual and organization with the type of information that is most needed at the level that is most useful. The body of the report furnishes an overview of all states and programs in the study, while the appendices furnish detailed information on each state and its programs. As policymakers consider the issues associated with the authorization, design, implementation, and evaluation of ratepayer-funded low-income energy programs, different parts of the report will be relevant.

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*David Carroll, M.P.A., and Jacqueline Berger, Ph.D., are the president and director of program evaluation for APPRISE, Inc., in Princeton, New Jersey. Roger Colton, M.A., J.D., is a partner in Fisher, Sheehan and Colton and directs work in the firm’s Boston office. Their final report, executive summary and state appendices are available online at [www.appriseinc.org](http://www.appriseinc.org).*



# ON THE BRINK: 2009

## THE HOME ENERGY AFFORDABILITY GAP APRIL 2010

### Finding #1

| Poverty Level | Home Energy Burden |  |
|---------------|--------------------|--|
| Below 50%     | 62.5%              | Home energy is a crippling financial burden for low-income Rhode Island households. Rhode Island households with incomes of below 50% of the Federal Poverty Level pay 62.5% of their annual income simply for their home energy bills.  |
| 50 – 74%      | 25.0%              |  |
| 75 – 99%      | 17.9%              | Home energy unaffordability, however, is not simply the province of the very poor. Bills for households between 75% and 100% of Poverty take up 17.9% of income. Even households with incomes between 150% and 185% of the Federal Poverty Level have energy bills above the percentage of income generally considered to be affordable. |
| 100 – 124%    | 13.9%              |  |
| 125 – 149%    | 11.4%              |  |
| 150% - 185%   | 9.3%               |  |

### Finding #2

| Poverty Level | No. of Households |  |
|---------------|-------------------|--|
| Below 50%     | 21,981            | The number of households facing these energy burdens is staggering. According to the 2000 Census, nearly 22,000 Rhode Island households live with income at or below 50% of the Federal Poverty Level and thus face a home energy burden of 62.5%.                               |
| 50 – 74%      | 11,545            |  |
| 75 – 99%      | 15,198            | Nearly 12,000 Rhode Island households live with incomes between 50% and 74% of Poverty (home energy burden of 25.0%). And more than 15,000 <i>more</i> Rhode Island households live with incomes between 75% and 99% of the Federal Poverty Level (home energy burden of 17.9%). |
| 100 – 124%    | 14,584            |  |
| 125 – 149%    | 15,792            |  |
| 150% - 185%   | 22,015            |  |

**Finding #3**

|                        | Home Energy<br>Affordability<br>Gap | Gross<br>LIHEAP<br>Allocation |
|------------------------|-------------------------------------|-------------------------------|
| 2002<br>(base year)    | \$82,197,201                        | \$11,539,387                  |
| 2009<br>(current year) | \$159,369,307                       | \$30,123,062                  |
| Change                 | \$77,172,106                        | \$18,583,675                  |

Existing sources of energy assistance do not adequately address the energy affordability gap in Rhode Island. Actual low-income energy bills exceeded affordable energy bills in Rhode Island by \$159 million at 2008/2009 winter heating fuel prices. In contrast, Rhode Island received a gross allotment of federal energy assistance funds of \$30.1 million for Fiscal Year 2009.

Rhode Island's LIHEAP allocation has lost ground relative to its Home Energy Affordability Gap. From 2002 to 2009, the total Home Energy Affordability Gap increased by \$77.2 million. In comparison, the federal LIHEAP allocation to Rhode Island increased \$18.6 million.

**Finding #4**

|   |               |
|---|---------------|
| Home Energy Affordability<br>Gap: 2002 (base year)    | \$82,197,201  |
| Home Energy Affordability<br>Gap: 2009 (current year) | \$159,369,307 |
| Home Energy Affordability<br>Gap Index (2002 = 100)   | 193.9         |

The Home Energy Affordability Gap Index in Rhode Island was 193.9 for 2009. This Index indicates that the Home Energy Affordability Gap has increased 93.9% between 2002 and the current year.

The Home Energy Affordability Gap Index uses the year 2002 as its base year. In that year, the Index was set equal to 100. A current year Index of more than 100 thus indicates that the Home Energy Affordability Gap for Rhode Island has increased since 2002. A current year Index of less than 100 indicates that the Home Energy Affordability Gap has decreased since 2002.

**Finding #5**

| End Use           | Average Annual Bill |   |
|-------------------|---------------------|---|
| Electric          | \$952               | <p>The energy affordability gap in Rhode Island is not created exclusively, or even primarily, by home heating and cooling bills.</p> <p>At 2008/2009 prices, while home heating bills were \$1,092 of a \$2,555 bill, electric bills (other than cooling) were \$952. Annual cooling bills represented \$83 in expenditures, while domestic hot water represented \$428 in expenditures.</p> |
| Hot water         | \$428               |   |
| Space heating     | \$1,092             |   |
| Space Cooling     | \$83                |   |
| Total annual bill | \$2,555             |   |

**Finding #6**

| Fuel                      | 2007 Price | 2008 Price | 2009 Price |   |
|---------------------------|------------|------------|------------|---|
| Natural gas heating (ccf) | \$1.588    | \$1.577    | \$1.603    | <p>In Rhode Island, natural gas prices stayed relatively constant (1.6%) during the 2008/2009 winter heating season. Fuel oil prices fell substantially (30.9%) while propane prices fell 3.4%.</p> |
| Electric heating (kWh)    | \$0.133    | \$0.151    | \$0.176    |   |
| Propane heating (gallon)  | \$2.201    | \$2.668    | \$2.576    | <p>Heating season electric prices rose substantially (16.8%) in the same period while cooling season electric prices fell (24.1%).</p>  |
| Fuel Oil heating (gallon) | \$2.358    | \$3.223    | \$2.226    |   |
| Electric cooling (kWh)    | \$0.131    | \$0.182    | \$0.138    |   |

## Rhode Island Energy Gap Rankings (scale of 1-51)

A higher ranking (1 is the highest) indicates better conditions while a lower ranking (51 is the lowest) indicates worse conditions relative to other states.

|   |   |
|---|---|
| <p><b>AVERAGE DOLLAR AMOUNT<br/>BY WHICH ACTUAL HOME ENERGY BILLS<br/>EXCEEDED AFFORDABLE HOME ENERGY BILLS<br/>FOR HOUSEHOLDS BELOW 185% OF POVERTY LEVEL.</b></p> <p><b>\$1,576 per household</b></p> <p><b>RANK: #36</b></p> | <p><b>AVERAGE TOTAL HOME ENERGY<br/>BURDEN FOR HOUSEHOLDS<br/>BELOW 50% OF POVERTY<br/>LEVEL.</b></p> <p><b>62.5% of household income</b></p> <p><b>RANK: #36</b></p>       |
| <p><b>PERCENT OF INDIVIDUALS BELOW<br/>100% OF POVERTY LEVEL.</b></p> <p><b>11.9% of all individuals</b></p> <p><b>RANK: #31</b></p>  | <p><b>PORTION OF HEATING/COOLING<br/>AFFORDABILITY GAP COVERED BY<br/>FEDERAL HOME ENERGY ASSISTANCE.</b></p> <p><b>35.1% of gap is covered</b></p> <p><b>RANK: #23</b></p> |

## DEFINITIONS AND EXPLANATIONS

Each state (along with the District of Columbia) has been ranked (from 1 to 51) in terms of four separate measures of the extent of the energy affordability gap facing its low-income customers:

- (1) The percent of individuals with annual incomes at or below 100% of the Federal Poverty Level. This data is obtained directly from the 2000 U.S. Census.
- (2) The average total home energy burden for households with income at or below 50% of the Federal Poverty Level shows the percentage of income that households with these incomes spend on home energy. "Total home energy" includes all energy usage, not merely heating and cooling. A home energy bill is calculated on a county-by-county basis. The statewide average is a population-weighted average of county-by-county data.
- (3) The average affordability gap (in dollars per household) for all households with income at or below 185% of Poverty is the dollar difference between actual total home energy bills and bills that are set equal to an affordable percentage of income. Affordability for total home energy bills is set at 6% of household income.
- (4) The extent to which federal energy assistance covers the combined heating/cooling affordability gap for each state. The combined heating/cooling affordability gap is the difference between actual heating/cooling bills and bills that are set equal to an affordable percentage of income. Affordability for combined heating/cooling bills is set at 2% of income. This measure thus examines the proportion of the heating/cooling gap that is covered by the gross federal Low-Income Home Energy Assistance Program (LIHEAP) allocation to the state assuming that the entire LIHEAP allocation is used for cash benefits.

In the state's rankings, a higher ranking (1 is the highest) indicates better conditions while a lower ranking indicates worse conditions relative to other states. Thus, for example:

- (1) The state with the rank of #1 has the lowest percentage of individuals living in households with income at or below 100% of the Federal Poverty Level while the state with the rank of #51 has the highest percentage.
- (2) The state with the rank of #1 has the lowest average home energy burden for households with income below 50% of the Federal Poverty Level while the state with the rank of #51 has the highest average home energy burden.
- (3) The state with the rank of #1 has the lowest average affordability gap (dollars per household) while the state with the rank of #51 has the highest dollar gap.
- (4) The state with the rank of #1 has the highest percentage of its heating/cooling affordability gap covered by federal energy assistance while the state with the rank of #51 has the lowest percentage of its heating/cooling gap covered.

All references to "states" include the District of Columbia as a "state." Low-income home energy bills are calculated using average residential revenues per unit of energy. State financial resources and utility-specific discounts are not considered.

LIHEAP comparisons use gross allotments from the baseline LIHEAP appropriation; they do not reflect supplemental appropriations or the release of other emergency funds. For example, the 2006 Home Energy Affordability Gap analysis (issued in April 2007) does not reflect the supplemental appropriation bill enacted in March 2006.

Energy bills are a function of the following primary factors:

- Tenure of household (owner/renter)
- Housing unit size (by tenure)
- Heating Degree Days (HDDs) and Cooling Degree Days (CDDs) (by county)
- Household size (by tenure)
- Heating fuel mix (by tenure)
- Energy use intensities (by fuel and end use)

Bills are estimated using the U.S. Department of Energy's "energy intensities" published in the most recent DOE Residential Energy Consumption Survey (RECS). The energy intensities used for each state are those published for the Census Division in which the state is located. State-specific demographic data is obtained from the most recent Decennial Census of the U.S. Census Bureau. Heating Degree-Days (HDDs) and Cooling Degree-Days (CDDs) are obtained from the National Weather Service's Climate Prediction Center on a county-by-county basis for the entire country. State price data for each end-use is obtained from the Energy Information Administration's (EIA) fuel-specific price reports (e.g., Natural Gas Monthly, Electric Power Monthly).

Each state's Home Energy Affordability Gap is calculated on a county-by-county basis. Once total energy bills are estimated for each county, each county bill is weighted by the percentage of persons below 185% of the Federal Poverty Level in each county to the total statewide population below 185% of the Federal Poverty Level to derive a statewide result.

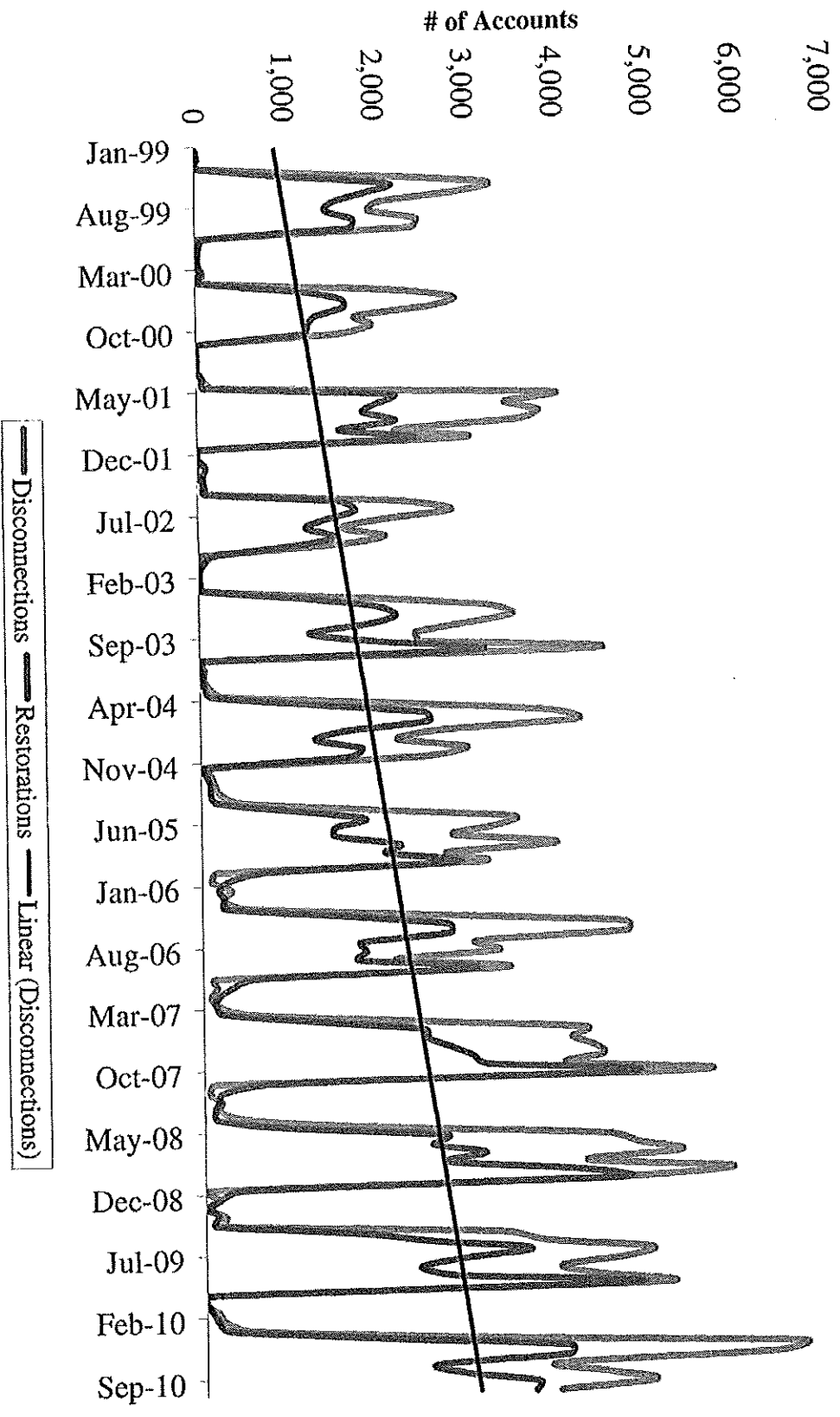
The Home Energy Affordability Gap Index uses 2002 as its base year. In that year, the Index was set equal to 100. A current year Index of more than 100 thus indicates that the Home Energy Affordability Gap has increased since 2002. A current year Index of less than 100 indicates that the Home Energy Affordability Gap has decreased since 2002.

The Home Energy Affordability Gap is a function of many variables. Increases in income, for example, result in decreases in the Gap while increases in energy prices result in an increase in the Gap. The Home Energy Affordability Gap Index allows the reader to determine the cumulative impact of these variables. Since the Gap is calculated assuming normal Heating Degree Days (HDDs) and Cooling Degree Days (CDDs), temperatures do not have an impact on the Affordability Gap or the Affordability Gap Index.

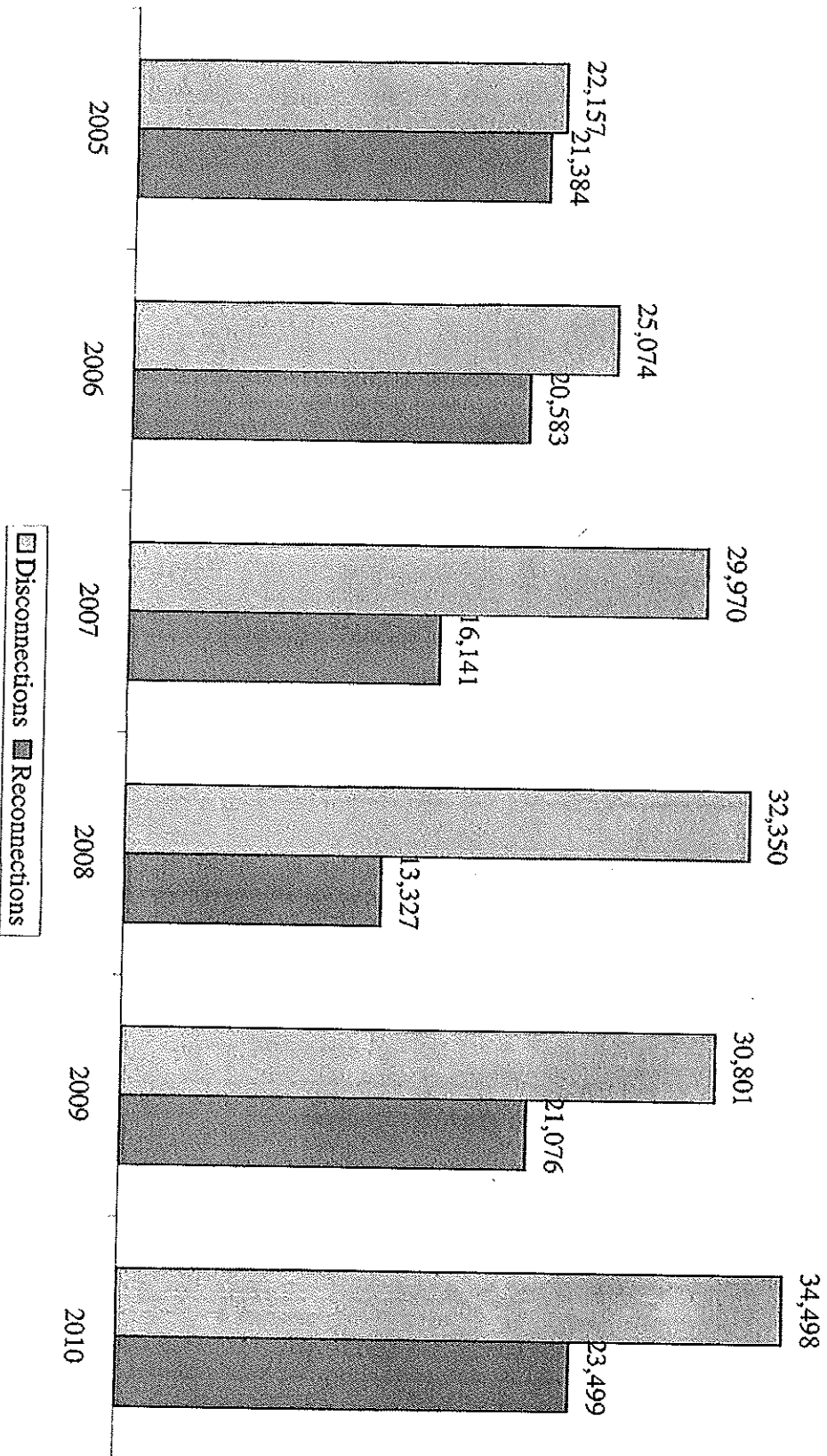
Price data for the various fuels underlying the calculation of the 2009 Home Energy Affordability Gap was used from the following time periods:

|                               |               |
|-------------------------------|---------------|
| <i>Heating prices</i>         |               |
| Natural gas                   | February 2009 |
| Fuel oil                      | February 2009 |
| Liquefied petroleum gas (LPG) | February 2009 |
| Electricity                   | February 2009 |
| <i>Cooling prices</i>         |               |
|                               | August 2009   |
| <i>Non-heating prices</i>     |               |
| Natural gas                   | May 2009      |
| Fuel oil                      | May 2009      |
| Liquefied petroleum gas (LPG) | May 2009      |
| Electricity                   | May 2009      |

# Rhode Island Monthly Residential Electric and Natural Gas Utility Service Disconnections and Restorations

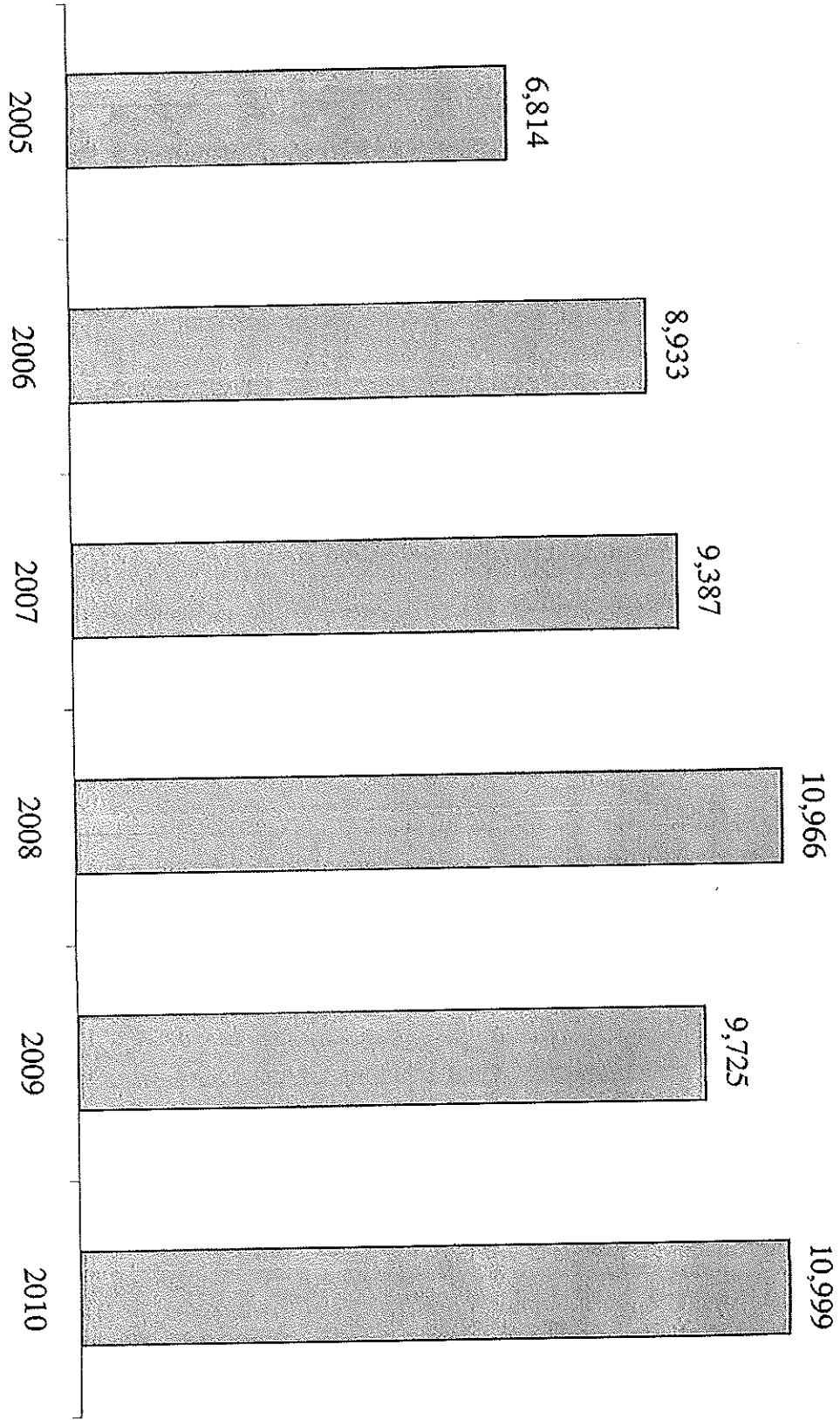


Year-to-date (OCT) Natural Gas and Electricity Service Disconnections  
Rhode Island Residential Customers: 2005 - 2010





**Rhode Island Unrestored Residential Electricity and Natural Gas Accounts  
October YTD 2005 - 2010**



# PEDIATRICS®

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**A Brief Indicator of Household Energy Security: Associations With Food Security, Child Health, and Child Development in US Infants and Toddlers**  
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DEDICATED TO THE HEALTH OF ALL CHILDREN™



# A Brief Indicator of Household Energy Security: Associations With Food Security, Child Health, and Child Development in US Infants and Toddlers

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## What's Known on This Subject

Rising energy prices are forcing many low-income families to choose between paying utility bills and other necessities such as food and rent. Both "heat or eat" and "cool or eat" phenomena have been described elsewhere, with energy assistance found to moderate their adverse effects.

## What This Study Adds

Energy security was defined conceptually, and a simple but effective operational measure was developed for use in clinical and other settings. Energy insecurity is independently and positively associated with food insecurity and reports of poor health, history of hospitalization, and developmental concerns.

## ABSTRACT

**OBJECTIVE.** Household energy security has not been measured empirically or related to child health and development but is an emerging concern for clinicians and researchers as energy costs increase. The objectives of this study were to develop a clinical indicator of household energy security and assess associations with food security, health, and developmental risk in children <36 months of age.

**METHODS.** A cross-sectional study that used household survey and surveillance data was conducted. Caregivers were interviewed in emergency departments and primary care clinics from January 2001 through December 2006 on demographics, public assistance, food security, experience with heating/cooling and utilities, Parents Evaluation of Developmental Status, and child health. The household energy security indicator includes energy-secure, no energy problems; moderate energy insecurity, utility shutoff threatened in past year; and severe energy insecurity, heated with cooking stove, utility shutoff, or  $\geq 1$  day without heat/cooling in past year. The main outcome measures were household and child food security, child reported health status, Parents Evaluation of Developmental Status concerns, and hospitalizations.

**RESULTS.** Of 9721 children, 11% ( $n = 1043$ ) and 23% ( $n = 2293$ ) experienced moderate and severe energy insecurity, respectively. Versus children with energy security, children with moderate energy insecurity had greater odds of household food insecurity, child food insecurity, hospitalization since birth, and caregiver report of child fair/poor health, adjusted for research site and mother, child, and household characteristics. Children with severe energy insecurity had greater adjusted odds of household food insecurity, child food insecurity, caregivers reporting significant developmental concerns on the Parents Evaluation of Developmental Status scale, and report of child fair/poor health. No significant association was found between energy security and child weight for age or weight for length.

**CONCLUSIONS.** As household energy insecurity increases, infants and toddlers experienced increased odds of household and child food insecurity and of reported poor health, hospitalizations, and developmental risks. *Pediatrics* 2008;122:e867–e875

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### Key Words

energy security, food security, child health, development

### Abbreviations

HEAF—household energy affordability gap  
LIHEAP—Low-Income Home Energy Assistance Program  
FI—food insecurity  
ED—emergency department  
RR—relative risk  
HES—household energy security  
C-SNAP—Children's Sentinel Nutrition Assessment Program  
FSS—Food Security Scale  
PEDS—Parents' Evaluation of Developmental Status  
HEI—household energy insecurity  
aOR—adjusted odds ratio  
CI—confidence interval

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**T**HE SPECTER OF imminent peaking of global petroleum production and rapid increases in energy prices raise urgent concerns about the ability of some low- and moderate-income households to sustain safe and healthy environments for their children.<sup>1</sup> Overall, energy prices increased by 58% between 2000 and 2006.<sup>2</sup> Between the winters of

2001–2002 and 2006–2007, the national average expenditures for electricity increased by 24%, propane by 83%, natural gas by 75%, and fuel oil by 134%.<sup>1</sup>

For many low-income families in the United States, heating and cooling their homes while maintaining utilities for lighting, refrigeration, and other appliances are ongoing struggles. The difference between an affordable and an actual energy bill has been defined as the home energy affordability gap (HEAG). In 2002, the average annual HEAG per US household with income below 185% of the poverty threshold was estimated at \$639; by 2006 it had increased to \$1047.<sup>4</sup>

The primary federal government program for assisting low-income families in paying their energy bills is the Low Income Home Energy Assistance Program (LIHEAP), administered by the Department of Health and Human Services' Administration for Children and Families. According to the LIHEAP Home Energy Notebook for Fiscal Year 2003, published by Department of Health and Human Services' Administration for Children and Families in 2005, the average home energy burden (proportion of household income required for energy purchases) for the 9.6 million households in 2003 with incomes below 150% of poverty was 13.7% of income, compared with the mean for all households of 6.4% of income.<sup>4–6</sup> This survey of LIHEAP recipients found that 51% of recipient families with children younger than 18 years received an electricity or home heating fuel shutoff notice or threat of shutoff that year.<sup>5</sup> Although updated shutoff data are not yet available, it is noteworthy that overall energy prices increased by an additional 44% between 2003 and 2006.<sup>2</sup>

Health effects of inadequate home heating and cooling on the elderly have been described in some detail,<sup>7–9</sup> but little empirical research literature has addressed the effects of home energy insecurity on infants' and toddlers' health and development. Maintaining a thermally neutral environment through household space heating in the winter and cooling in the summer is important to both health and development of young children.<sup>10</sup> Infants' and toddlers' immature physiologic capacity for thermoregulation makes them more vulnerable than healthy adults to extreme variations in ambient temperature.<sup>10,11</sup> Under extreme temperature conditions, these differences in thermoregulation can contribute to adverse child health outcomes, such as higher rates of hospitalization,<sup>12</sup> and increased incidence of neurodevelopmental and psychologic disturbances.<sup>13</sup>

Many poor families have to make difficult choices between paying for energy to heat (or cool) their homes and paying for enough food because household finances do not allow both.<sup>7</sup> Thus, in addition to direct effects of unregulated environmental temperatures on infant and child health, data suggest that household food insecurity (FI) associated with energy insecurity can adversely affect children's nutritional status and health.<sup>14,15</sup> Data from the US Consumer Expenditure Survey and the Third National Health and Nutrition Examination Survey showed a temperature-related decrease in food expenditures and energy intake in low-income families with children.<sup>15</sup> A 1996 study of children 6 to 24 months

of age in Boston, MA, found significantly higher proportions of children with weight-for-age below the fifth percentile in the 3 months after the coldest months, compared with all other months of the year (8.8% vs 6.6% [ $P < .001$ ]).<sup>16</sup> A 2006 multisite study from our research group that examined children who were younger than 3 years and in low-income families showed that energy assistance can buffer the effects of this "heat or eat" phenomenon in infants and toddlers. Children in eligible households that received LIHEAP were less likely to have anthropometric evidence of undernutrition and less likely to require acute hospitalization from an emergency department (ED) visit than children from comparable households that did not receive LIHEAP.<sup>17</sup>

In addition to "heat or eat" decisions, energy insecurity can lead to other undesirable choices. In a 2005 survey of LIHEAP recipients, 35% reported going without medical or dental care as a result of high energy bills, and 32% reported taking less than the prescribed dose or not filling a prescription for medication as a result of high energy bills.<sup>18</sup> When families are unable to pay their gas, electric, or heating-fuel bills, they often resort to improvised unsafe energy sources.<sup>18,19</sup> Alternative heating sources that many poor families use can lead to adverse health consequences in young children, such as increased incidence of burns,<sup>19</sup> carbon monoxide exposure, and respiratory illnesses.<sup>20,21</sup> In 2002, 24% of all fatal home candle fires occurred in homes in which the power had been shut off, and children who were younger than 5 years faced the highest relative risk (RR) for death (2.5) from home candle fires of all age groups.<sup>22</sup> Despite the widespread need for LIHEAP, however, combined state and federal funding for the program enabled only 16% of eligible families to receive energy assistance in 2006.<sup>23</sup>

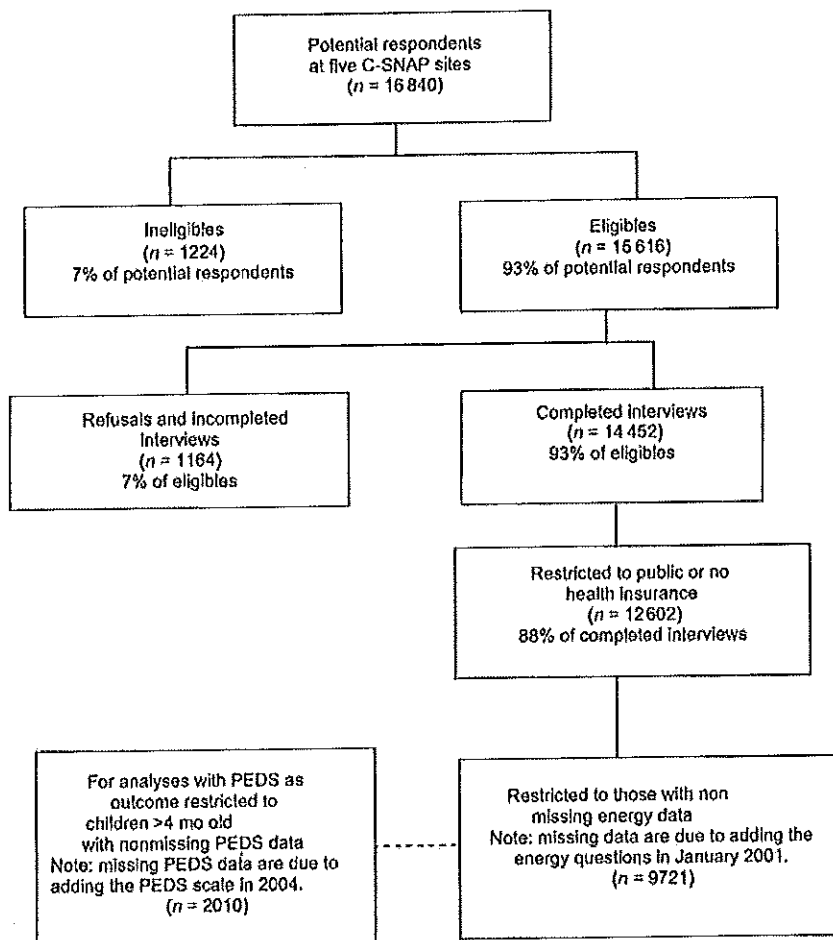
Along with increasing energy prices, poverty rates for children who were younger than 6 years rose from 17.2% in 2000 to 20.3% in 2006.<sup>6</sup> In addition, children's experience of FI during this period was widespread. The prevalence of FI among all children (regardless of age) living in households with at least 1 child who was younger than 6 years averaged 19.5%.<sup>24</sup> With rapidly increasing energy costs accompanied by unremitting levels of child poverty and FI, it is important to understand how energy insecurity affects food security, nutritional risks, and ultimately health and development in young children. The aims of this study were to (1) propose a simple household energy security (HES) indicator that can be adapted to surveys and clinical practice and (2) test hypotheses about relationships between HES as measured by this indicator and FI, poor health, and developmental risks in children who are younger than 36 months.

## METHODS

### Participants and Survey: Children's Sentinel Nutrition Assessment Program

This was a cross-sectional study that used a household survey administered from January 2001 through De-

FIGURE 1  
Description of analytic sample selection.



ember 2006 as part of the ongoing Children's Sentinel Nutrition Assessment Program (C-SNAP).<sup>17</sup> The C-SNAP surveys and medical chart audits were completed at central-city medical centers in Baltimore, Boston, Little Rock, Minneapolis, and Philadelphia. Institutional review board approval was obtained at each site before beginning data collection and has been renewed yearly. Trained interviewers who were scheduled during peak patient flow times interviewed adult caregivers who accompanied children who were younger than 3 years in private settings at acute/primary care clinics and hospital EDs. Caregivers of critically ill or injured children were not approached. Potential respondents were excluded when (1) they did not speak English, Spanish, or (in Minneapolis only) Somali, (2) they were not knowledgeable about the child's household, (3) they had been interviewed within the previous 6 months, (4) they lived out of state, or (5) they refused consent for any reason (Fig 1).

Since initiation in 1998, the C-SNAP survey instrument included questions on household characteristics, children's health and hospitalization history, maternal health, participation in federal assistance programs, changes in benefit levels, and the US Food Security Scale (FSS).<sup>24-27</sup> Questions about energy insecurity were added to the initial survey in 2001,<sup>28-30</sup> and the Parents' Eval-

uation of Developmental Status (PEDS; a well-validated and reliable standardized instrument that meets the American Academy of Pediatrics' standards for developmental screening) was added in 2004.<sup>31-33</sup>

Study staff members also collected anthropometric data. Each child's weight was obtained either by project staff members or from medical chart reviews conducted on the same day as the caregiver interview. Each child's length or height (referred to hereafter as height) was also obtained when possible. To ensure that weights and heights were recorded in the same manner at all sites, standard equipment was purchased and regular periodic training sessions conducted at each site.

#### Energy Security Defined

There is no officially sanctioned definition of HES of which we are aware. For the research reported here, drawing on our experience with the construct of food security, we defined energy security conceptually as follows: HES is consistent access to enough of the kinds of energy needed for a healthy and safe life in the geographic area where a household is located. An energy-secure household's members are able to obtain the energy needed to heat/cool their home and operate lighting, refrigeration, and appliances while maintaining expenditures for other necessities (eg, rent, food, cloth-

ing, transportation, child care, medical care). A household experiences energy insecurity (HEI) when it lacks consistent access to the amount or the kind of energy needed for a healthy and safe life for its members.

#### Predictor Variable: HES Indicator

The definitions in the previous section were operationalized by using a 3-category HES indicator as the primary predictor variable. This indicator was created from responses to a set of 4 questions about the household's energy situation asked in the C-SNAP survey questionnaire since 2001;

1. Since [current month] of last year, has the [gas/electric] company sent [you/the primary caregiver] a letter threatening to shut off the [gas/electricity] in the house for not paying bills?
2. In the last 12 months since last [current month], [have you/has the primary caregiver] ever used a cooking stove to heat the [house/apartment]?
3. Since [current month] of last year, were there any days that the home was not [heated/cooled] because [you/the primary caregiver] could not pay the bills?
4. Since [current month] of last year, has the [gas/electric/oil] company [shut off/refused to deliver] the [gas/electricity/oil] for not paying bills?

When a respondent affirmed none of these 4 questions, her or his household was categorized as "energy secure." Preliminary bivariate associations between each of these questions and proposed outcome measures were examined to determine how affirmative responses to the questions correlated individually and in combinations with the study outcomes. When only the first question was affirmed, indicating the household received a letter from a utility company threatening to shut off a supply of energy, the household was categorized as "moderately energy insecure." When any 1 or more of questions 2 to 4 were also affirmed by a respondent, their household was categorized as "severely energy insecure." Pediatric colleagues who specialize in housing issues reviewed this categorization scheme for face validity. In multivariate analyses, statistical significance of differences in magnitude of associations between successively more severe categories of energy insecurity indicated by the energy security indicator and outcomes was also tested.

#### Outcome Variables

Outcome variables included household and child food security status, categorized in the standard manner. Food security was measured by the 18-item FSS, which classifies households as food-insecure when adult respondents report conditions indicating that they cannot afford enough nutritious food for all household members to lead active, healthy lives.<sup>24-26</sup> Child FI was measured using 8 child-referenced items in the FSS and has been shown elsewhere to indicate a more severe pediatric condition than household FI measured by using the 18-item scale.<sup>27-29</sup> Other outcomes used are caregiver reports of the child's health status as "fair/poor" versus

"excellent/good" (from the Third National Health and Nutrition Examination Survey health status question), caregivers' reports of whether the child had been hospitalized since birth, the child's weight for age (in z-score form), whether the child was at risk for underweight (weight/age z score < 5th percentile or weight/height z score < 10th percentile), whether the child was overweight or at risk for overweight (age- and gender-standardized weight for length > 85th percentile), whether the child was admitted on the day of the interview (for interviews conducted in EDs at Boston and Little Rock only), and whether the caregiver reported significant developmental concerns on the PEDS.

The FSS uses 18 survey questions to categorize households with children as food-secure (no scale items affirmed), food-insecure without hunger or "low food security" (3-7 scale items affirmed), and food-insecure with hunger or "very low food security" ( $\geq 8$  scale items affirmed). For these analyses, the 2 most severe categories (food-insecure without hunger and food-insecure with hunger) were collapsed to form a dichotomous (food-secure versus food-insecure) variable. Similarly, the 8-item child FSS was used to form a dichotomous child food security variable in accordance with procedures described elsewhere.<sup>27,29</sup> In this study, we examined associations of HES with household and child food security separately.

The PEDS, standardized for children birth to 8 years of age, includes 10 questions and is largely unaffected by sociodemographic variables, geographic location, parental education or employment, and parent or child gender.<sup>31,32</sup> Caregivers were asked to report any concerns (responding no, yes, or a little) about the child's development in 8 areas: expressive and receptive language, fine and gross motor, behavior, socioemotional, self-help, and, for older children, school. In addition, caregivers were asked 2 open-ended questions about concerns in the global/cognitive area and "other concerns." On the basis of standard scoring of the PEDS, endorsed items (yes or a little) were classified as significant or nonsignificant concerns depending on the age of the child. Children who had  $\geq 2$  significant concerns were considered to be at developmental risk.<sup>31,32</sup> The sensitivity and specificity of the PEDS are better for children who are older than 4 months than for infants; therefore, PEDS data were analyzed for children who were older than 4 months and younger than 36 months.<sup>33</sup>

#### Analytic Plan

Separate multivariate logistic regression models were estimated for each of the outcome variables described in the previous section. Covariates included in each model (Table 1) varied and were selected on the basis of previous research results<sup>16,17,24,28-30,33</sup> and bivariate correlation with both the outcome and predictor variables. All children in the study were US citizens; however, mother's race/ethnicity was included as a covariate on the basis of previous research using these data and differences in national prevalence of poverty and FI across race/ethnicity subgroups.<sup>6,17,24,28-30,33,34</sup> Separate sets of logistic regression models were estimated to test whether asso-

**TABLE 1** Demographic Characteristics of the C-SNAP Sample

| Characteristic                  | Energy Security<br>(n = 6385 [66%]) | Moderate Energy<br>Insecurity: Shutoff<br>Threatened<br>(n = 1043 [11%]) | Severe Energy<br>Insecurity: Heat<br>With Cooking<br>Stove/Shutoff/<br>Unheated<br>(n = 2293 [23%]) | Overall P |
|---------------------------------|-------------------------------------|--|---|-----------|
| Site, % <sup>a</sup>            |                                     |  |   |           |
| Baltimore                       | 67                                  | 15   | 18  |           |
| Boston                          | 61                                  | 9  | 27  |           |
| Little Rock                     | 61                                  | 14   | 25  | <.01      |
| Minneapolis                     | 70                                  | 7  | 23  |           |
| Philadelphia                    | 69                                  | 15   | 15  |           |
| Child's gender, %               |                                     |  |   |           |
| Male                            | 53                                  | 51   | 54  | .74       |
| Female                          | 47                                  | 46   | 46  |           |
| Race/ethnicity, % <sup>a</sup>  |                                     |  |   |           |
| Asian                           | 82                                  | 3  | 15  |           |
| Black                           | 62                                  | 12   | 26  |           |
| Latino                          | 73                                  | 7  | 20  | <.01      |
| White                           | 67                                  | 13   | 20  |           |
| Native American                 | 62                                  | 13   | 25  |           |
| Mother                          |                                     |  |   |           |
| US born, %                      | 66                                  | 76   | 69  | <.01      |
| Married, %                      | 33                                  | 30   | 29  | <.01      |
| Employed, %                     | 40                                  | 49   | 40  | <.01      |
| Education, %                    |                                     |  |   |           |
| Some high school                | 35                                  | 29   | 35  |           |
| High school graduate            | 41                                  | 40   | 39  | <.01      |
| College graduate                | 25                                  | 31   | 25  |           |
| Maternal depressive symptoms, % | 29                                  | 40   | 49  | <.01      |
| Age, y                          | 26.0                                | 27.4   | 26.9  | <.01      |
| Child                           |                                     |  |   |           |
| Age, mo                         | 12.1                                | 13.4   | 12.8  | <.01      |
| Breastfed, %                    | 59                                  | 51   | 56  | <.01      |
| Low birth weight (<2500 g), %   | 13                                  | 15   | 14  | .29       |
| Insurance, %                    |                                     |  |   |           |
| Public                          | 96                                  | 96   | 95  | .16       |
| None                            | 4                                   | 4  | 5   |           |
| Receives, %                     |                                     |  |   |           |
| Food stamps                     | 40                                  | 55   | 50  | <.01      |
| TANF                            | 27                                  | 30   | 35  | <.01      |
| WIC                             | 82                                  | 78   | 82  | .01       |
| Housing subsidy                 | 27                                  | 35   | 38  | <.01      |
| LIFEAP                          | 13                                  | 30   | 22  | <.01      |
| Receives TANF or food stamps, % | 43                                  | 58   | 54  | <.01      |
| TANF sanctioned, %              | 25                                  | 30   | 33  | <.01      |
| FSP sanctioned, %               | 5                                   | 7  | 8   | <.01      |

Some percentages do not sum to 100% because of rounding. TANF indicates Temporary Assistance for Needy Families; WIC, Special Supplemental Nutrition Program for Women, Infants, and Children; FSP, Food Stamp Program.

<sup>a</sup> Row percentage instead of column percentage.

relations between energy security status and outcomes might have been mediated by food security status. These tests involved including household food security status and child food security status in the multivariate models (separately) as covariates. Interaction models with energy security by food security interactions were also estimated to test whether food security was a modifier of the effects of energy security on the outcomes.

## RESULTS

Sixty-six percent of children in the analytic sample lived in energy-secure households, whereas 11% lived in

moderately energy-insecure households and 23% in severely energy-insecure households (Table 2). Compared with infants and toddlers in households that were energy secure, those in households with moderate energy insecurity had odds of household FI >2.33 times as great (adjusted odds ratio [aOR]: 2.37 [95% confidence interval (CI): 1.78–3.16]), whereas those in households with severe energy insecurity had odds of household FI >3 times as great (aOR: 3.06 [95% CI: 2.46–3.81]) after adjusting for covariates (Table 1). Similarly, compared with infants and toddlers in energy-secure households, those in moderately energy-insecure households had

TABLE 2 Adjusted Logistic Regression Results

| Outcomes                                       | Energy Security<br>(n = 6385 [66%]) | Moderate Energy Insecurity:<br>Shutoff Threatened<br>(n = 1043 [11%]) |      | Severe Energy Insecurity:<br>Heat With Cooking<br>Stove/Shutoff/Unheated<br>(n = 2293 [23%]) |      | P    |
|--|-------------------------------------|---|------|--|------|------|
|  |                                     | aOR (95% CI)  | P    | aOR (95% CI)   | P    |      |
| Household FI (yes/no) <sup>a</sup>             | 1.00                                | 2.37 (1.78–3.16)  | <.01 | 3.06 (2.46–3.81)   | <.01 | <.01 |
| Child FI (yes/no) <sup>a</sup>                 | 1.00                                | 1.79 (1.18–2.72)  | <.01 | 3.46 (2.56–4.67)   | <.01 | <.01 |
| Child health fair/poor <sup>b</sup>            | 1.00                                | 1.34 (1.08–1.68)  | .01  | 1.36 (1.15–1.61)   | <.01 | <.01 |
| Hospitalized since birth (yes/no) <sup>b</sup> | 1.00                                | 1.22 (1.03–1.45)  | .02  | 1.02 (0.89–1.17)   | .73  | .07  |
| PEDS, significant concerns <sup>c</sup>        | 1.00                                | 1.00 (0.71–1.41)  | .99  | 1.82 (1.38–2.39)   | <.01 | <.01 |

Covariates were included when significantly related to outcome and predictor. Education is forced into PEOS concern model, and birth weight is forced into underweight and z weight models.

<sup>a</sup> Adjusted for site, mother's race, US birth, marital status, employment, education, maternal depressive symptoms, age, age of child, being breastfed, food stamps, receiving Temporary Assistance for Needy Families, receiving Special Supplemental Nutrition Program for Women, Infants, and Children benefits, Temporary Assistance for Needy Families sanction, and Food Stamp Program sanction.

<sup>b</sup> Adjusted for site, mother's race, maternal education, maternal depressive symptoms, age of child, being breastfed, receiving Special Supplemental Nutrition Program for Women, Infants, and Children benefits, and receiving housing subsidy.

<sup>c</sup> Limited to those older than 4 months. Adjusted for site, US birth, maternal education, maternal depressive symptoms, age, age of child, being breastfed, receiving Special Supplemental Nutrition Program for Women, Infants, and Children benefits, and receiving housing subsidy.

adjusted odds of experiencing child FI 79% greater (aOR: 1.79 [95% CI: 1.18–2.72]), whereas those in severely energy-insecure households had odds of child FI nearly 3.5 times as great (aOR: 3.46 [95% CI: 2.56–4.67]).

Children in households with moderate or severe energy insecurity had adjusted odds of being reported in "fair/poor" health more than one third greater than those in energy-secure households (aOR: 1.34 [95% CI: 1.08–1.68] and 1.36 [95% CI: 1.15–1.61], respectively). Children in moderately energy-insecure households also had adjusted odds of having been hospitalized since birth 22% greater than children in energy-secure households (aOR: 1.22 [95% CI: 1.03–1.45]); however, no significant association was found between lifetime hospitalizations and severe energy insecurity. Also, no significant association was found between energy security status and children's being admitted to the hospital on the day of interview in the 2 ED study sites.

Significant associations between energy insecurity and growth status did not emerge for any of the 3 growth outcome measures used in the study (weight for age, risk for underweight, and risk for overweight); however, a significant association did appear between energy insecurity and caregivers' report of developmental concerns on the PEDS. Infants and toddlers who were between 4 and 36 months of age and in households with severe energy insecurity had adjusted odds of significant PEDS concerns being reported 82% greater than those in energy-secure households (aOR: 1.82 [95% CI: 1.38–2.39]), although no significant association was found between moderate energy insecurity and caregivers' reports of PEDS concerns.

#### Secondary Analyses of the HES Indicator

To test whether the effect of severe energy insecurity on the odds of being food-insecure was statistically significantly greater than the effect of moderate energy insecurity, we changed the reference categories for the energy security variable in multivariate logistic regressions from energy security to moderate energy insecurity. In

models with household food security and child food security as outcomes, children in households with severe energy insecurity had significantly greater odds of being food-insecure than children in moderately energy-insecure households.

Because previous studies had shown household and child FI independently associated with children's health status, hospitalizations, and developmental risk,<sup>28–30,33</sup> we tested whether the effects of HEI were mediated by FI and whether food security modified the effects of energy security on study outcomes. When household or child food security status was entered as a covariate in the multivariate logistic regression models, none of the associations between levels of HES and other outcomes changed notably. In addition, no significant interactions were found when energy security × food security interaction terms were included in the multivariate models.

#### DISCUSSION

The concept of HES, although recognized implicitly in the past, has not been extensively developed empirically or previously analyzed in relation to children's health and development. In this study, we introduced, defined, and measured HES and empirically examined hypotheses regarding its associations with household and child food security, child health, and reported developmental issues.

Household FI has been shown to be positively associated with adverse health outcomes in infants and toddlers<sup>28–30,33</sup> and with negative outcomes on health, social functioning, problem behaviors, academic achievement, and school performance in children in other age ranges.<sup>34–39</sup> The results reported here indicate that energy insecurity is positively and strongly associated with both household and child FI, even after controlling for a number of covariates that are associated with both energy security and food security. Moreover, statistically significant increments in the odds that children who were younger than 3 years experienced either household or child FI when comparing associations of moderate versus severe energy insecurity with food security in



these data are noteworthy. These results indicate that HES is ordinal associated with household and child FI in these data and suggest that additional research to examine this relationship by using data from other contexts would be useful.

We examined the possibility that associations found in this study between HES and child health and development outcomes might be mediated by food security and that the effects of HES on those outcomes might be modified by food security. Results indicate that neither the direction nor the magnitude of associations between HES and study outcomes changed; neither was statistical significance of these associations affected. These tests confirm that although household and child food security are associated with HES, neither acts as a mediator or an effect modifier in the associations of HES with child health and developmental risk in these analyses; however these results do not necessarily indicate that the effects of energy insecurity on the child health outcomes are completely independent from those of FI or other correlates of poverty.

Although results of this study indicate that energy security/insecurity seems to be a clinically meaningful construct and that the HES scale seems to be ordinal across the categories of household and child food security, it does not seem to be ordinal with respect to the other outcomes examined in these data. The odds of children in moderately energy-insecure households having their health status reported as "fair/poor" versus "excellent/good" are essentially the same as those for children in severely energy-insecure households. This finding suggests a low "threshold effect" of energy insecurity on parents' reports of child health status that, once passed, does not increase significantly at more severe levels of energy insecurity. Conversely, parental concerns about their children's development seem to appear only at more severe levels of energy insecurity, suggesting a higher threshold for this effect.

Interpretation of the association of HES with lifetime hospitalization is more complex. In that case, the absence of significant association between severe energy insecurity and the odds of having been hospitalized since birth appears together with significantly greater odds of having been hospitalized for children in moderately energy-insecure households. One possible explanation for this is that fewer children in the most severely energy-insecure households are taken to clinics or EDs for care, and, thus, fewer experience hospitalizations. In addition, because HES was measured for the 12 months before the interview only, whereas hospitalizations were reported for the child's entire lifetime (<36 months), the 2 measures are not fully congruent in the time periods covered. These relationships could also be clarified by additional research.

Additional research is also needed to clarify the nature of HES and the mechanisms through which it influences children's health. For practical reasons, we defined HES operationally in terms of threatened or actual utility shutoff or refusal to deliver fuel and coping strategies to avoid or accommodate these conditions. Although it may be considered a correlate of poverty, HES

can also be viewed as a special form of household deprivation because it involves resources and services that are widely viewed as necessities for safe and healthful homes. Heating and cooling homes require large amounts of energy in forms specific to structures and geographic locations. Lighting, water heating, cleaning appliances, and refrigeration for food are practical necessities for safety and prevention of asthma, diarrhea, and infectious disease. Appliances such as computers and, to some extent, radio and television are widely thought to be part of healthy, enriched home environments. Absence or shortages of appropriate forms and amounts of energy to provide these services and amenities can expose children to unsafe and unhealthy conditions.

In addition to effects on household and child food security, other suggested pathways of direct influence of HES on child health include exposure to extreme temperatures (low and high), unsafe conditions as a result of insufficient lighting and use of dangerous alternative heating and lighting sources, and carbon monoxide and other air contaminants from alternative lighting and heating sources. Possible indirect pathways can include exposures that result from financial trade-offs necessitated by high energy costs. These can include unhealthy housing conditions such as water leaks and mold, cockroach and rodent infestations, peeling paint and lead paint, and, in the extreme, homelessness after eviction from rental housing subsequent to utility shutoff.<sup>40</sup>

We note that the indicator of HES reported here excludes additional important forms of energy required for transportation. Gasoline, motor oil, and other forms of energy used in transportation also compose a large proportion of an average household's total expenditures. Transportation energy was not included in the HES indicator developed in this study mainly because of a lack of data. Future research that incorporates transportation energy into the concept of HES is also needed.

Identification of solutions to the problem of HEI is beyond the scope of this study; however, it seems to us that multiple approaches are needed. The largest federally funded energy assistance program is LIHEAP. Although LIHEAP can be effective for households that receive it, it is available only for a small proportion of households that need assistance. Improving efficiency of household energy use by people at all income levels is desirable, and innovative approaches are emerging. These include designing and building more energy-efficient housing and retrofitting existing structures to improve their energy efficiency. Advocates for affordable housing, energy assistance, and other policies to address the needs of low-income populations have forged partnerships with local and regional government agencies and utility companies to obtain support for weatherization, winterization, energy efficiency education, shutoff protections, and supports for purchase of energy-efficient appliances. All of these efforts are laudable, and many more are needed.

There are limitations in this research that need to be noted. First, the C-SNAP sample is a large sentinel convenience sample selected over a long period of time by

well-trained interviewers who recruited participants during peak patient-flow times in clinics and EDs at 5 urban medical centers in 5 states; however it is neither a random nor a probability sample, thereby limiting the extent to which these findings can be generalized. Second, although the time-series cross-sectional nature of the data can support tests of association, they cannot be used to determine causality. Although the sentinel sample was of poor and near-poor caregivers and their children who were at a high baseline of risk for negative health and developmental outcomes, the caregivers of the most severely ill and injured children were not included because of their need for immediate medical care. We controlled statistically for important covariate and confounding factors, but unmeasured confounders also may have influenced the findings. Although we sampled caregivers from poor and near-poor families and adjusted for variables related to poverty, such as caregiver education and employment and type of health insurance, we did not have a measure of family income per se or of the quality of home environments. Quality of the home environment related to poverty may be the most important unmeasured confounder in the relation between HES and developmental risk.

Shared method bias (ie, energy security, food security, and child health and developmental concerns all were reported by a single respondent during the same interview) could have influenced the results. That is, it is possible that caregivers who are concerned about energy and food access might report concerns about child health and development because they are more generally concerned about the overall family situation. Finally, we caution that the HES indicator was developed in a sample of largely urban, low-income families with children younger than 3 years and needs additional evaluation in other populations.

## CONCLUSIONS

The research reported here indicates that HES can be measured effectively using a straightforward indicator that is based on a small number of survey questions. Energy insecurity is strongly positively associated with household and child FI in households with children who are younger than 36 months, with significantly greater effects at more severe levels of energy insecurity. As we and others have shown, FI in turn is associated with adverse health and developmental outcomes in children. Above the already established effects of household and child FI, this study suggests that energy insecurity is independently associated with poor health status, lifetime hospitalizations, and parents' report of developmental concerns among infants and toddlers.

Persistently high rates of poverty among families with children in the United States, coupled with increasingly pessimistic projections for energy supplies and prices in the next decade,<sup>41</sup> raise serious concerns about the future health, growth, and development of US children. Pediatric health care providers need to be aware of the energy security status of their patients' households and use this information to inform decisions regarding both treatment and referrals for other services. Additional

research is needed to replicate these findings in other samples and to evaluate whether the relationships pertain to families with older children and households with no children; however, the current findings suggest that policies that reduce HEI may also reduce household FI and may exert additional direct protective effects on the health and development of infants and toddlers.

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## AUTHOR CONTRIBUTIONS

Dr Cook had full access to all of the data in the study and takes responsibility for the integrity of the data and accuracy of the data analysis; Drs Cook, Frank, Casey, Rose-Jacobs, Black, Chilton, Heeren, Berkowitz, and Cutts were responsible for study concept and design; Drs Cook, Frank, Casey, Black, Chilton, Heeren, Berkowitz, and Cutts, and Ms Ettinger de Cuba, Appugliese, and Coleman were responsible for acquisition and interpretation of data; Drs Cook and Frank were responsible for drafting of the manuscript; Drs Cook, Frank, Casey, Rose-Jacobs, Black, Chilton, Berkowitz, and Cutts and Ms Ettinger de Cuba were responsible for critical revision of the manuscript for important intellectual content; Dr Cook, Frank, and Heeren and Ms Ettinger de Cuba, Appugliese, and Coleman were responsible for statistical analysis; Ms Ettinger de Cuba, Appugliese, and Coleman were responsible for administrative, technical, or material support; and Drs Cook and Frank were responsible for study supervision.

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**A Brief Indicator of Household Energy Security: Associations With Food Security, Child Health, and Child Development in US Infants and Toddlers**  
John T. Cook, Deborah A. Frank, Patrick H. Casey, Ruth Rose-Jacobs, Maureen M. Black, Mariana Chilton, Stephanie Ettinger deCuba, Danielle Appugliese, Sharon Coleman, Timothy Heeren, Carol Berkowitz and Diana B. Cutts  
*Pediatrics* 2008;122:e867-e875  
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AARP Public Policy Institute

Affordable Home Energy and Health:  
Making the Connections

Lynne Page Snyder, PhD, MPH  
National Energy Assistance Directors' Association

Christopher A. Baker  
AARP Public Policy Institute

**AARP**<sup>™</sup>

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AARP's Public Policy Institute (PPI) informs and stimulates public debate on the issues we face as we age. Through research, analysis, and dialogue with the nation's leading experts, PPI promotes development of sound, creative policies to address our common need for economic security, health care, and quality of life.

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*Contributors:* The authors jointly developed the concepts in this paper and collaborated on its organization and the development of themes and recommendations. L. Snyder conducted the literature review and analysis and drafted versions of the report. C. Baker provided extensive revisions to the initial draft and to each subsequent version until the final report was completed.



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## EXECUTIVE SUMMARY

Unaffordable home energy bills pose a serious and increasing threat to the health and well-being of a growing number of older people in low- and moderate-income households. For many of these households, high and volatile home energy prices jeopardize the use of home heating and cooling and increase the prospect of exposure to temperatures that are too hot in summer and too cold in winter. The potential consequences of exposure to such temperatures and related financial pressures include a host of adverse health outcomes, such as chronic health conditions made worse, food insecurity, and even the premature death of thousands of people in the United States each year.

Home energy service provides a buffer against the impact of unsafe temperatures and is particularly important for older adults. Aging can impair the body's ability to maintain a normal temperature because of physiological changes, such as the loss of physical fitness, reduction in body mass, and decline in body temperature. Older adults are more likely to have chronic medical conditions and to take multiple prescription medicines, which can further reduce the body's ability to sense and respond to changes in temperatures. These characteristics may indicate particular risk for older adults living in urban areas, where the heat-retaining properties of roads, buildings, and other urban infrastructure magnify and extend hot weather events compared with rural areas.

The significant risks associated with unaffordable home energy are unlikely to diminish any time soon. To the extent that climate change accelerates in the coming years and oppressive temperatures occur more frequently and for longer periods of time, adverse health outcomes are both more likely and more severe. In addition, unaffordable home energy undermines national priorities in the areas of long-term care services and livable communities, destabilizing efforts to support aging in place and hindering opportunities to facilitate independent living.

## PRINCIPAL FINDINGS

**Evidence connects temperature, health, and safety.** Heat and cold challenge the body's ability to maintain a steady core temperature. Anything that impairs the body's ability to regulate its own temperature heightens vulnerability. Significant risk factors include the following:

- Age
- Chronic diseases such as heart disease, stroke, respiratory disease, and diabetes
- Medications that impair thermoregulation (such as antihistamines, tricyclic antidepressants, beta-blockers, and vasodilators)
- Dependency and frailty signaled by cognitive impairment or limited mobility

**While exposure to heat and cold kills thousands of people prematurely in the United States each year, the death toll underestimates the true impact of temperature on health.** For example, mortality statistics do not distinguish between outdoor and indoor exposure to unsafe temperatures as the cause of death and do not account for a range of

adverse health consequences that fall short of premature death. For many older adults, it is the aggravation of existing health conditions from exposure to even moderate temperature changes, rather than extreme exposure, that is both of concern and difficult to measure.

**Adverse health outcomes, including death, become more likely as temperatures deviate from a moderate range.** Temperature thresholds beyond which adverse health outcomes occur reflect local climate, access to resources (such as prevalence of central air-conditioning), and acclimatization (how adapted the population is to local conditions). Greater numbers of temperature-related deaths occur in warmer regions exposed to unseasonable cold and colder regions experiencing atypical warming. Lack of acclimatization also explains why heat waves early in the summer are more deadly than those later in the season.

**Lower socioeconomic status is associated with a greater risk of temperature-related death, particularly for older adults.** Strong evidence points to indoor cooling, particularly central air-conditioning, and lower temperatures in upstairs sleeping areas as key to mitigating the health effects of hot weather. Research suggests that access to, use of, and efficacy of home heating and cooling increases as household income increases.

**High and volatile home energy costs make heating and cooling increasingly unaffordable to millions of low- and moderate-income households, many of which include older persons.** Since 2005, the average cost to heat homes in winter has risen about 27.3 percent and the price of residential electrical service has jumped 22 percent. While energy prices rose, median incomes stagnated, especially for low- and moderate-income households. These trends increased the proportion of a household's budget allocated for utility bills. The average low-income household spends 16 percent of its annual income on home energy costs—more than four times the level that all households, on average, devote to home energy bills.

**The Low-Income Home Energy Assistance Program (LIHEAP) improves access to home energy, but it has not kept pace with need and does not guarantee basic, affordably priced utility service.** In fiscal year 2009, the federal appropriation for LIHEAP nearly doubled from \$2.57 billion to \$5.1 billion, yet the 7.7 million households that received LIHEAP during 2009 was less than one-quarter of the number estimated to be income-eligible. Moreover, most states offer limited protections against the shutoff of home utility service for nonpayment.

**Unaffordable home energy subjects many older adults to direct and indirect threats to their health and safety.** For example, 74 percent of households that include older adults report that they cut back on the purchase of household necessities because of high home energy bills. Thirty-two percent of LIHEAP households that include an older person report going without medical or dental care as a result of high home energy bills in the past five years.

**Policies and programs to address the health threats posed by high home energy prices can build on existing efforts in the areas of energy, long-term care and health care reform, and livable communities:**

*Energy:* Affordable energy policies can and do promote public health. For example, energy assistance, shutoff protection rules and other policies that protect vulnerable

households against the involuntary loss of home utility service promote health and safety. Conversely, policies that address home energy costs by shifting or dampening consumer demand for energy pose a potential threat to health and safety for consumers who may have to choose between paying more for their energy or going without life-saving air-conditioning during summer heat because they cannot shift their usage from higher cost peak times to lower cost off-peak times.

*Health Services and Long-Term Care:* Published studies document the greater use of health services that result from exposures to excessive heat or cold and the potential of high home energy burdens to make aging in place and independent living more difficult. One implication of these findings is that efforts to strengthen access to affordable energy and ensure protections against shutoffs of basic service for nonpayment can reduce the economic costs of avoidable health care services, improve patient health status, and facilitate independent living.

*Livable Communities:* Ultimately, policies that promote adequate and affordable home energy use, and that acknowledge the role of home energy as a support for the effective delivery of long-term care and health services to older adults, in turn promote community dwelling that facilitates personal independence and quality of life.

## **POLICY RECOMMENDATIONS**

- Ensure that subsidies and discounts help make home energy affordable and sustainable for households that include older adults.
- Assess the need for LIHEAP and the total amount of energy assistance for households in terms not only of lowering the home energy burden but also of recognizing the value added through improved health and reduced threats to safety.
- Expand categorical eligibility for LIHEAP, weatherization services, and other affordable energy programs to target groups identified as most at risk of adverse health outcomes, for example, through their eligibility for state Medicaid waiver programs and the Medicare Part D Low-Income Subsidy.
- Ensure that state-regulated utility consumer protections and policies (such as shutoff policies) specifically recognize and address the needs of groups identified as most at risk of adverse health outcomes.
- Ensure that demand-response programs for consumers balance the need to reduce energy consumption with the protection of health and safety for older adults and persons living with serious or disabling conditions.
- Design evaluations of weatherization and energy efficiency programs to assess their impact on health and safety as a way to demonstrate the importance of home energy for health.
- Ensure that intake services for state Medicaid waiver program participation and long-term care case management services include referrals for LIHEAP, weatherization, and other affordable energy programs.

- Support education and outreach efforts to increase awareness—both within the health care community and among older adults, their families, and caregivers—of resources that can help them maintain access to healthy and comfortable temperatures.
- Give priority in home repair or modification programs that serve medically frail participants (such as under a state Medicaid waiver) to cost-effective energy efficiency measures that protect health and safety, for example, special coatings for flat-roofed rowhouses that lower indoor temperatures in summer.
- Identify and implement best practices for communicating with the public, especially older adults, their families, and caregivers, about the risks of heat waves and cold temperatures, the links between temperature and health, and the most effective prevention, education, and response efforts.

## CONCLUSION

As the U.S. population ages, as the U.S. health care system shifts toward support for independent living and aging in place, and as urban infrastructure and global warming present new environmental challenges, demand for affordable home energy is growing. Increased demand combined with the rising cost of basic utility service jeopardizes the stability and capacity for self-sufficiency of households that include older adults. Understanding and addressing the implications for energy policy of public and population health priorities, as well as the implications for public health of affordable energy and energy efficiency priorities, requires a fresh approach. Such an approach should unite two diverse groups of practitioners, in the energy and health fields, to craft new solutions to help American households maintain both economic security and good health.

## INTRODUCTION

In July 1995, a week of sustained hot weather in Chicago killed hundreds of people, most of whom were low-income, older residents living independently. The extreme heat also hospitalized close to a thousand people with strokes, heart attacks, renal failure, and other conditions.<sup>1</sup> Chicago's experience highlighted the value of social connections, walkable neighborhoods, affordable housing, and basic utility services during extreme weather conditions. Extreme heat events in the United States are still rare, but growth in urban infrastructure and climate change are contributing to a gradual rise in ambient temperature and greater seasonal variation in the weather.<sup>2</sup>

This report has two primary goals: first, to explore the implications of affordable home energy for health services, long-term care, and livable communities; and second, to consider low-income energy assistance and other approaches to lowering household energy burdens (the ratio of a household's energy expenditures to its income) in light of this more explicit connection between affordable home energy and health.

The report begins with a review of literature to characterize the health threats posed by weather and high home energy costs and to describe how affordable home energy protects health and reduces inappropriate use of health services. It then describes the energy burden faced by households across the income spectrum, ways to trace the health impacts of unaffordable home energy, and evidence of these impacts documented through telephone surveys. Next, it frames the discussion of affordable home energy and health in the context of policy interests in energy, health services and long term care reform, and livable communities. Finally, the report offers recommendations that promote adequate and affordable home energy use and that acknowledge the role of home energy in helping older adults and people of all ages maintain both economic security and good health.

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## EVIDENCE ON TEMPERATURE, HEALTH, AND SAFETY

The use of home energy for heating and cooling buffers the impact of outdoor temperatures. Publication of epidemiological studies on the adverse effects on health of both heat (from heat waves and predicted changes in global climate) and cold (from exposures connected with substandard, energy-inefficient housing during wintertime in temperate climates) has increased appreciation of the importance of this buffering effect.<sup>3</sup>

Heat and cold challenge the body's ability to maintain a steady core temperature. Anything that impairs the body's ability to regulate its own temperature heightens vulnerability. Significant risk factors include the following:<sup>4</sup>

- Age (infants and young children are at greater than average risk, and old age increases risk because of the loss of physical fitness and related physiological changes associated with the aging process)
- Chronic diseases that slow the heart's response to stress; the circulatory system's capacity to dilate or contract blood vessels that convey heat (cardiovascular and cerebrovascular disease); the body's ability to change fluid levels in plasma or through sweating (diabetes, kidney and metabolic conditions, scleroderma, cystic fibrosis, and dehydration)
- Medications that impair thermoregulation (such as antihistamines, tricyclic antidepressants, beta-blockers, and vasodilators)
- Frailty signaled by cognitive impairment or limited mobility (nervous system disorders such as Parkinson's disease)

The most commonly recognized adverse outcomes of heat and cold exposure are hyperthermia (and the range of effects from heat cramps and exhaustion to heat stroke) and hypothermia, but many less severe ailments also exist. For many older adults, it is the aggravation of existing health conditions from exposure to even moderate temperature changes, rather than an extreme exposure, that is both of concern and more difficult to measure.

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3 For this research report, a literature review was conducted using the PubMed search engine and the MeSH search terms "heat/adverse effects" and "cold/adverse effects" for publications that included human subjects, reviewing all publications starting in 1990. In addition, a citation searching strategy was used to identify peer-reviewed publications dated before 1990 and those in subject areas not covered comprehensively by Pub Med, such as journals in the areas of meteorology and housing. Approximately 300 peer-reviewed journal articles and monographs and a small number of grey literature reports were identified.

4 Discussion in this paragraph based on E. M. Kilbourne, "Temperature and Health," in *Wallace/Maxcy-Rosenau-Last. Public Health and Preventive Medicine*, ed. Robert B. Wallace, 725-34, 15th ed. (New York: McGraw Hill Medical, 2008); R. S. Kovats and S. Hajat, "Heat Stress and Public Health: A Critical Review," *Annual Review of Public Health* 29 (2008): 41-55; F. Matthies, G. Bickler, N. C. Marin, and S. Hales, *Heat Health Action Plans. Guidance* (Denmark: World Health Organization, Regional Office for Europe, 2008).

## EXPOSURE TO HEAT AND COLD

Exposure to heat and cold kills thousands of people prematurely in the United States each year; however, the death toll underestimates the true impact of temperature on health. Accounts of the impact of temperature on health typically focus on the number of deaths reported based on death certificates or estimated by looking at seasonal patterns of excessive numbers that correlate with weather extremes.

*Death certificates:* The most recent annual count for the United States identifies 688 heat-related deaths and 1,152 cold-related deaths, with older adults accounting for 40 to 50 percent of these deaths.<sup>5</sup> Such counts likely underestimate the impact of exposure to unsafe temperatures, reflecting differences from state to state in how such deaths are defined. In this regard, the more narrow definition taken by many coroners' offices hinges on the body temperature of the deceased, whereas in those counties or states where a medical examiner (physician) determines causation, a broader view is more likely to take into account the circumstances in which a victim is found, such as in an overheated apartment.<sup>6</sup>

*Attributable deaths:* For heat-related deaths alone in the United States, studies converge on an annual number of between 1,700 and 1,800 per year.<sup>7</sup> These estimates are derived by looking at the experiences of populations statistically, measuring deaths from all causes or deaths from conditions linked to heat or cold exposure (for example, seasonal rises in cardiovascular or respiratory disease), adjusting these measures to account for influences unrelated to temperature exposures or home energy burden (the ratio of a household's expenditures to its income), and counting the estimated number of deaths over and above what is observed at other times of year or during the same time period in the absence of extreme weather. One study of deaths during California's 2006 heat wave finds that the attributed number of deaths is two to three times higher than the number reported by coroners' offices.<sup>8</sup>

Using counts or estimates of deaths as the sole measure of temperature's impact neglects the range of nonfatal health consequences. Such estimates are also of limited utility in understanding the impact of home energy use on health, as most studies fail to distinguish between outdoor and indoor exposure to unsafe temperatures or to account for other risk

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<sup>5</sup> G. E. Luber, C. A. Sanchez, and L. M. Conklin, "Heat-Related Deaths—United States, 1999–2003," *Morbidity and Mortality Weekly Review* 55 (2006): 796–98; T. Murphy, R. Zumwalt, and F. Fallico, "Hypothermia-Related Deaths—United States, 1999–2002 and 2005," *Morbidity and Mortality Weekly Review* 55 (2006): 282–84.

<sup>6</sup> H. G. Mirechandani, G. McDonald, I. C. Hood, and C. Fonseca, "Heat-Related Deaths in Philadelphia—1993," *American Journal of Medical Pathology* 17, no. 2 (1996): 106–08; B. D. Ostro, L. A. Roth, R. S. Green, and R. Basu, "Estimating the Mortality Effect of the July 2006 California Heat Wave," *Environmental Research* 109, no. 5 (2009): 614–19.

<sup>7</sup> C. E. Reid, M. S. O'Neill, C. Gronlund, S. J. Brines, D. G. Brown, A. V. Diez-Roux, and J. Schwartz, "Mapping Community Determinants of Heat Vulnerability," *Environmental Health Perspectives*, epub 11 (June 2009); Environmental Protection Agency, *Excessive Heat Event Guidebook*, EPA 430-B-06-005 (Washington, DC: EPA, 2006).

<sup>8</sup> Ostro et al., "Estimating the Mortality Effect."



factors not directly related to home heating or cooling (such as the prevalence of influenza or the adequacy of clothing in protecting from cold).<sup>9</sup>

## ADVERSE HEALTH OUTCOMES

Adverse health outcomes, including death, become more likely as temperatures deviate from a moderate range. Although mortality rates offer only one perspective on the consequences of inadequate home heating and cooling, they do convey information that is useful for guiding policy choices, for example, in establishing threshold temperatures above and below which public health precautions are needed. For a population, the relationship between temperature and death resembles a U, V, or J shape, with a dip or flat area in moderate temperature ranges and greater numbers of deaths at temperatures both lower and higher than thresholds specific to a given area.<sup>10</sup>

Temperature thresholds reflect local climate, infrastructure (such as prevalence of central air-conditioning), and acclimatization (how adapted the population is to local conditions). More temperature-related deaths occur in warmer regions exposed to the cold and colder areas experiencing unseasonable warming. Heat waves tend to have a stronger impact in the Northeast and Midwest than the South and West, and an index of heat vulnerability mapped nationally indicates that the 20 most vulnerable cities are clustered on the East and West Coasts, while most of the least vulnerable cities are in the Southeast.<sup>11</sup> During California's July 2006 heat wave, the highest rate of heat-related emergency department visits was seen in the Central Coast region, where more moderate temperatures are the norm.<sup>12</sup> The lack of time to acclimatize explains why heat waves early in the summer are more deadly than those later in the season.<sup>13</sup>

For U.S. cities, deaths increase by an estimated 2 to 4 percent per degree Fahrenheit above an area's heat threshold (during a heat wave, daily death rates climb even more quickly), and up to an estimated 6 percent per degree Fahrenheit below the cold threshold.<sup>14</sup> Temperature-related respiratory and cardiovascular deaths are more likely

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  - 10 A. Braga, A. Zanobetti, and J. Schwartz, "The Time Course of Weather-Related Deaths," *Epidemiology* 12 (2001): 662-67; R. Basu and J. Samet, "An Exposure Assessment Study of Ambient Heat Exposure in an Elderly Population in Baltimore, Maryland," *Environmental Health Perspectives* 110 (2002): 1219-24.
  - 11 Environmental Protection Agency, *Excessive Heat Events Guidebook*, 13-14.
  - 12 K. Knowlton, M. Rotkin-Ellman, G. King, H. G. Margolis, D. Smith, G. Solomon, R. Trent, and P. English, "The 2006 California Heat Wave: Impacts on Hospitalizations and Emergency Department Visits," *Environmental Health Perspectives* 117, no. 1 (2009): 61-67.
  - 13 Braga et al., "The Time Course of Weather-Related Deaths"; F. Curriero, K. Heiner, J. Samet, S. Zeger, L. Strug, and J. Patz, "Temperature and Mortality in 11 Cities of the Eastern United States," *American Journal of Epidemiology* 155 (2002): 80-87.
  - 14 Braga et al., "The Time Course of Weather-Related Deaths"; S. Hajat, R. S. Kovats, and K. Lachowycz, "Heat-Related and Cold-Related Deaths in England and Wales: Who Is at Risk?" *Occupational and Environmental Medicine* 64, no. 2 (2007): 93-100; M. Medina-Ramon and J. Schwartz, "Temperature, Temperature Extremes, and Mortality: A Study of Acclimatization and Effect Modification in 50 United States Cities," *Occupational and Environmental Medicine*, epub (2007); R. Basu, W. Y. Feng, and B. D. Ostro, "Characterizing Temperature and Mortality in Nine California Counties," *Epidemiology* 19 (2008): 138-45; A.

during the summertime for older adults, with premature or what are known as excess deaths seen from kidney failure and electrolyte imbalance.<sup>15</sup> In temperate climates, the winter months bring excess deaths for older adults from circulatory system disease (particularly heart attacks and congestive heart failure), respiratory disease (influenza, bronchitis, emphysema, and chronic obstructive pulmonary disorder),<sup>16</sup> and diabetes.<sup>17</sup>

No consensus yet exists on how global climate change will influence current patterns of heat- and cold-related deaths.<sup>18</sup> Some see an increase in heat-related deaths that will more than exceed an anticipated decrease in cold-related deaths.<sup>19</sup> Others anticipate that new weather extremes will mean more respiratory disease deaths in cities with colder climates.<sup>20</sup> Regardless of any future shift in the range of ambient temperatures related to climate change, many other factors, such as personal behavior (in terms of energy use and decisions about appropriate clothing and outdoor gear) and urban infrastructure capacity to respond to shifts in outdoor temperature, will affect the rate of temperature-related deaths and other adverse health outcomes. The fact that heat waves bring greater adverse health impacts to areas that typically experience moderate temperatures, compared with areas accustomed to a broad range of temperatures, underscores the significance of a population's overall capacity to adapt over time.<sup>21</sup>

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Zanobetti and J. Schwartz, "Temperature and Mortality in Nine U.S. Cities," *Epidemiology*, epub (2008); Ostro et al., "Estimating the Mortality Effect."

- 15 A. Braga, A. Zanobetti, and J. Schwartz, "The Effect of Weather on Respiratory and Cardiovascular Deaths in 12 U.S. Cities," *Environmental Health Perspectives* 110 (2002): 859-63; H. Johnson, R. S. Kovats, G. McGregor, J. Stedman, M. Gibbs, H. Walton, L. Cook, and E. Black, "The Impact of the 2003 Heat Wave on Mortality and Hospital Admissions in England," *Health Statistics Quarterly* 25 (2005): 6-11; Hajat et al., "Heat-Related and Cold-Related Deaths"; A. Ishigami, S. Hajat, R. S. Kovats, L. Bisanti, M. Rognoni, A. Russo, and A. Paldy, "An Ecological Time-Series Study of Heat-Related Mortality in Three European Cities," *Environmental Health* 7 (2008): 5.
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- 21 Braga et al., "The Time Course of Weather-Related Deaths"; Medina-Ramon and Schwartz, "Temperature, Temperature Extremes, and Mortality"; Knowlton K, Lynn B, Goldberg RA, Rosenzweig C, Hogrefe C, Rosenthal JK, Kinney PL, "Projecting heat-related mortality impacts under a changing climate in the New York City region," *American Journal of Public Health* 97

## INTERIOR HEATING AND AIR-CONDITIONING

**Interior heating in the wintertime and air-conditioning in the summertime protect against deaths from heart disease, stroke, and respiratory disease.** For populations over time and in regions facing episodes of extreme weather, adequate heating in winter and air-conditioning in summer play key roles in promoting public health.<sup>22</sup>

- Poorly insulated dwellings and low indoor temperatures in bedrooms and living rooms are associated with greater numbers of deaths, especially in regions with warmer winters.<sup>23</sup> Among people living with chronic obstructive pulmonary disorder, those whose living rooms in the wintertime are warm (21 degrees Celsius or 70 degrees Fahrenheit and higher) fewer than nine hours per day have significantly poorer respiratory health than those whose living rooms are warm for at least nine hours per day.<sup>24</sup> Older residents in East London are 60 to 70 percent more likely to experience an emergency hospitalization in wintertime if they live in a neighborhood where high home energy burdens are more common.<sup>25</sup> Central heating lowers the odds of wintertime death for older residents,<sup>26</sup> and studies from the United Kingdom and New Zealand as well as the United States document the improved health and quality of life reported by low-income residents of newly weatherized dwellings.<sup>27</sup>

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- Indoor cooling, especially central air-conditioning, is key to saving lives and mitigating the heat-related impacts of climate warming.<sup>28</sup> Studies of heat waves in Philadelphia, Chicago, and Cincinnati confirm the risk posed by high temperatures in upstairs sleeping areas and the efficacy of air-conditioning to reduce the frequency of heat-related death.<sup>29</sup> Looking at the general population over time, people living in homes with central air-conditioning are 42 percent less likely to die than those living in homes without air-conditioners, with positive effects seen for window air-conditioning units in smaller residences.<sup>30</sup> And a study of deaths in Pittsburgh, Chicago, Detroit, and Minneapolis-St. Paul finds a 5 percent higher heat-related death rate among African Americans than white residents and concludes that more than two-thirds of this racial disparity reflects the lack of central air-conditioning among African-American households surveyed.<sup>31</sup>

### LOWER SOCIOECONOMIC STATUS

Lower socioeconomic status is associated with a greater risk of temperature-related death, particularly for older adults. Poverty and low-income status in the United States are associated with unsafe indoor temperatures and, through this link, with adverse health outcomes.<sup>32</sup> Research suggests that access to, use of, and efficacy of home heating and cooling increase as household income increases.

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Heating:<sup>33</sup>

- Almost all households have space-heating equipment, but households eligible for the Low-Income Home Energy Assistance Program (LIHEAP).<sup>34</sup> are less likely to have such equipment (1.6 percent, versus 1.1 percent of all households) and twice as likely to not use heating equipment that they have (1.6 percent, versus 0.7 percent of all households).
- LIHEAP-eligible households are more likely to live in homes that lack adequate insulation (24.9 percent, versus 18.4 percent of all households) and are more likely to report that their home is too drafty most of the time (14.5 percent, versus 10.5 percent of all households).

Cooling:

- LIHEAP-eligible households with air-conditioning are much more likely than all households with air-conditioning to have window or wall air conditioning units (45.3 percent versus 30.9 percent, respectively).<sup>35</sup>
- A recent national survey of LIHEAP-recipient households finds that only 62 percent use air-conditioning as a primary means to keep cool in summer.<sup>36</sup>

Lower socioeconomic status means greater risk of temperature-related death, especially for older adults.<sup>37</sup> Other socioeconomic indicators of temperature-related death include social isolation, gender, black ethnic or racial identity, and housing conditions that

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33 Data in this section are from the U.S. Department of Energy, Energy Information Administration (2009), Table HC7.5, "Space Heating Usage Indicators by Household Income, 2005," [http://www.eia.doe.gov/cmeu/recs/recs2005/hc2005\\_tables/hc5spaceheatingindicators/pdf/tablehc7.5.pdf](http://www.eia.doe.gov/cmeu/recs/recs2005/hc2005_tables/hc5spaceheatingindicators/pdf/tablehc7.5.pdf) (accessed 04/08/10).

34 Federal statute limits LIHEAP eligibility to households with incomes that do not exceed 150 percent of the federal poverty level or 60 percent of the state median income, whichever is greater.

35 U.S. Department of Energy, Energy Information Administration (2009), Table HC7.6, "Air Conditioning Usage Indicators by Household Income, 2005," [http://www.eia.doe.gov/cmeu/recs/recs2005/hc2005\\_tables/hc7airconditioningindicators/pdf/tablehc7.7.pdf](http://www.eia.doe.gov/cmeu/recs/recs2005/hc2005_tables/hc7airconditioningindicators/pdf/tablehc7.7.pdf) (accessed 04/08/10).

36 National Energy Assistance Directors Association (NEADA), "2008 National Telephone Sample Survey" (Washington, DC: Apprise, Inc., unpublished and available from NEADA).

37 Kilbourne, "Temperature and Health."

concentrate heat indoors.<sup>38</sup> The income gradient widened by high home energy prices also contributes to health disparities related to home energy, such as food insecurity.<sup>39</sup>

- Older residents in low-income households of the northern United States are more likely to go hungry in late winter, while similar households in the South are more likely to go hungry in late summer, reflecting the costs of heating and cooling.<sup>40</sup>
- In northern states, poor families with children spend less on food and more on home fuel, and their children have lower caloric intake during the winter months, than higher income families.<sup>41</sup>

## HIGH AND RISING HOME ENERGY PRICES: A THREAT TO LOW- AND MODERATE-INCOME HOUSEHOLDS

According to data from the Energy Information Administration, the average cost to heat homes in winter has increased by 27.3 percent since 2005.<sup>42</sup> During the same time period, the use of air conditioning has also become more expensive as the price of residential electrical service (cents per kilowatt hour) has jumped 22 percent.<sup>43</sup> The trend is likely to continue as electrical utilities invest in more modern infrastructure, pay more for fuel, and respond to new regulatory policies related to climate change.<sup>44</sup>

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38 Curriero et al., "Temperature and Mortality in 11 Cities"; J. Diaz, A. Jordan, R. Garcia, C. Lopez, J. C. Alberdi, E. Hernandez, and A. Otero, "Heat Waves in Madrid 1986–1997: Effects on the Health of the Elderly," *International Archives of Occupational and Environmental Health* 75 (2002): 163–70; Kaiser et al., "The Effect of the 1995 Heat Wave in Chicago"; Naughton et al., "Heat-Related Mortality"; M. O'Neill, A. Zanobetti, and J. Schwartz, "Modifiers of the Temperature and Mortality Association in Seven U.S. Cities," *American Journal of Epidemiology* 157 (2003): 1074–82; O'Neill, Zanobetti, and Schwartz, "Disparities by Race in Heat-Related Mortality"; M. Medina-Ramon, A. Zanobetti, D. P. Cavanagh, and J. Schwartz, "Extreme Temperatures and Mortality: Assessing Effect Modification by Personal Characteristics and Specific Cause of Death in a Multi-City Case-Only Analysis," *Environmental Health Perspectives* 114 (2006): 1331–36; J. Schwartz, "Who Is Sensitive to Extremes of Temperature? A Case-Only Analysis," *Epidemiology* 16 (2005): 67–72; Zanobetti and Schwartz, "Temperature and Mortality in Nine U.S. Cities."

39 N. Adler and D. Rehkopf, "U.S. Disparities in Health: Descriptions, Causes, and Mechanisms," *Annual Reviews in Public Health* 29 (2008): 235–52; M. S. O'Neill, A. J. McMichael, J. Schwartz, and D. Wartenberg, "Poverty, Environment, and Health: The Role of Environmental Epidemiology and Environmental Epidemiologists," *Epidemiology* 18 (2007): 664–68.

40 M. Nord and L. S. Kantor, "Seasonal Variation in Food Insecurity Is Associated with Heating and Cooling Costs among Low-Income Elderly Americans," *Journal of Nutrition* 136 (2006): 2939–44.

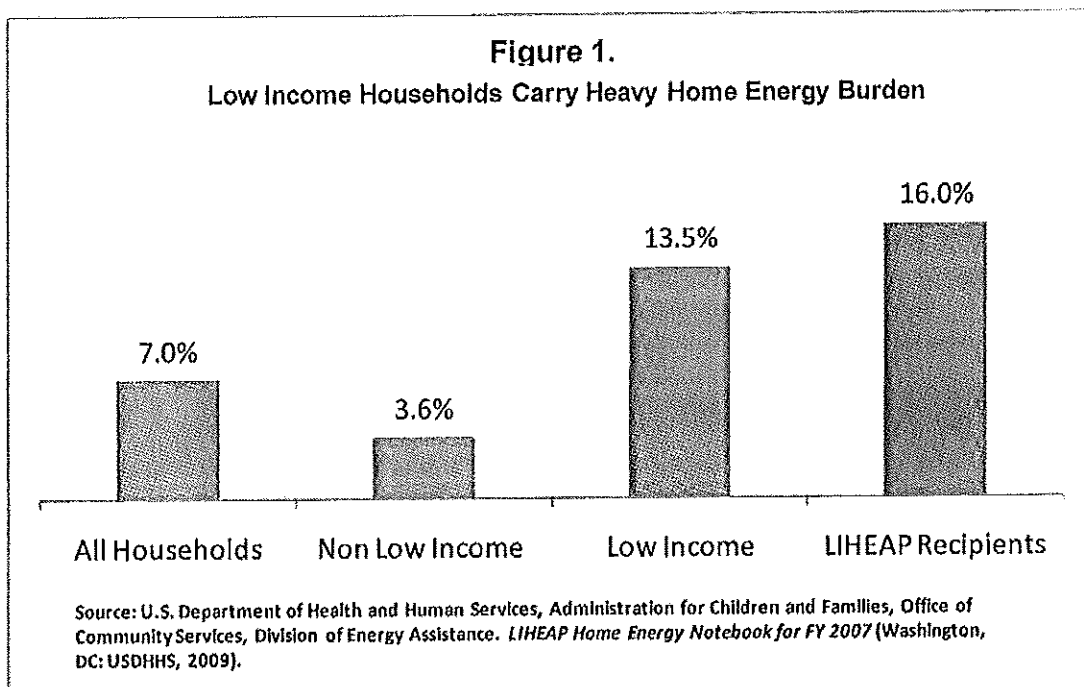
41 J. Bhattacharya, T. DeLeire, S. Haider, and J. Currie, "Heat or Eat? Cold-Weather Shocks and Nutrition in Poor American Families," *American Journal of Public Health* 93 (2003): 1149–54.

42 Expenditures are in nominal terms and not adjusted for inflation. U.S. Department of Energy, Energy Information Administration, Short-Term Energy Outlook (March 2010), Table WF01, "Average Consumer Prices and Expenditures for Heating Fuels During the Winter," <http://www.eia.doe.gov/pub/forecasting/stco/oldstcos/mar10.pdf> (accessed 5/18/2010).

43 U.S. Department of Energy, Energy Information Administration (2010), Table 5.3, "Average Retail Price of Electricity to Ultimate Customers: Total by End-Use Sector, 1996 through February 2010," [http://www.eia.doe.gov/cneaf/electricity/epm/table5\\_3.html](http://www.eia.doe.gov/cneaf/electricity/epm/table5_3.html) (accessed 5/18/2010).

<sup>44</sup>U.S. Department of Energy, Energy Information Administration (2010), *Annual Energy Outlook 2010*, p.66; Rebecca Smith, "Utilities Seek Round of Rate Increases," *Wall Street Journal* November 27, 2009; Scott DiSavino, "U.S. Power Bills Down, But Not For Long," *Reuters*, August 25, 2009.

In fiscal year (FY) 2007, the most recent year for which such data are available, the average residential energy expenditure for all households was \$1,986, the mean home energy burden (the proportion of a household's budget allocated for utility bills) was 7 percent, and heating costs and cooling costs accounted for about 41 percent (28 percent and 13 percent, respectively) of residential energy expenditures.<sup>45</sup> Households *eligible* for LIHEAP spend less on energy (\$1,715) on average but carry nearly twice the home energy burden (13.5 percent), while households *enrolled* in LIHEAP spent about an average amount (\$1,900) but 16 percent of their annual income (see Figure 1). On average, LIHEAP-enrolled households have lower incomes than LIHEAP-eligible households.



High and rising energy prices have a disparate impact on households that include older adults, even though they consume less energy than households without older adults. In fact, households that include older adults use about 5 percent less energy, reflecting smaller homes, and among these households, those at or below the federal poverty level use about one-third less energy.<sup>46</sup> Nationally, and in all regions of the country (Northeast, Midwest, South) except the West, low-income households that include older adults use energy more intensively—that is, they consume more energy per square foot of living

45 U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance, *LIHEAP Home Energy Notebook for FY 2007* (Washington, DC: USDHHS, June 2009).

46 J. Howat and P. Taormina, "Home Energy Costs: The New Threat to Independent Living for the Nation's Low-Income Elderly," *Clearinghouse REVIEW, Journal of Poverty Law and Policy* 41 (2008): 552-68.

space—than do households above the poverty line. This use reflects the fact that these households are more likely to have older, less energy-efficient appliances such as refrigerators and heating equipment. Because of this disparity, these households pay more and receive less, in terms of home energy, than the average household.<sup>47</sup>

While energy prices have risen, median incomes have stagnated, especially for low- and moderate-income households. As a result, home energy burdens, have increased:

- Between 2001 and 2006, home energy burdens for poor, older adults living in two-person households rose significantly.<sup>48</sup> For such households whose incomes are less than 150 percent of the federal poverty levels, average energy burdens grew by almost 25 percent in the Northeast (to 9.6 percent) and South (to 8.2 percent), and by more than 10 percent in the Midwest (to 7.5 percent).<sup>49</sup>
- The home energy affordability gap, which illustrates differences between what low-income households are billed and what they can afford to pay, has more than doubled between 2002 and 2007.<sup>50</sup>
- Since the early 1970s, while median household incomes have risen, the volatility of income has increased; and the chance that a household headed by a working-age adult (ages 25 through 65) will experience a significant loss of income has increased by almost 50 percent.<sup>51</sup>

## LIHEAP IMPROVES ACCESS TO HOME ENERGY

LIHEAP improves access to home energy, but it has not kept pace with need and does not guarantee basic, affordably priced utility service. LIHEAP, the single largest source of federal income support for home energy costs, provides eligible low-income households with financial assistance to offset the costs of heating and cooling their homes. According to the most recent data from the U.S. Department of Health and Human Services (FY 2007), an estimated 5.3 million households received an average of \$320 in winter heating or winter crisis assistance, and 600,000 households received an average of \$171 in summer cooling or summer crisis assistance.<sup>52</sup>

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47 Howat and Taormina, "Home Energy Costs: The New Threat."

48 Ibid.

49 Ibid. These figures do not reflect significant energy price increases seen in 2007 and those predicted for the future.

50 This measure aggregates county-level measures of total energy bills, weighted by the proportion of low-income residents (households earning less than 185 percent of the poverty level); see <http://www.homeenergyaffordabilitygap.com>. A home energy burden is defined as affordable if bills are less than 10 percent of household income.

51 P. Gosselin and S. Zimmerman, "Trends In Income Volatility and Risk, 1970–2004." Urban Institute Working Paper (Washington, DC: The Urban Institute, 2008).

52 USDHHS, *LIHEAP Home Energy Notebook for FY 2007*.



Unfortunately, LIHEAP benefits cover only a portion of home energy costs. In fact, the percentage of the total home heating bill covered by LIHEAP benefits decreased from 23 percent in 1981 to 10 percent in FY 2007.<sup>53</sup>

Moreover, the number of households that receive LIHEAP assistance represents only a small fraction of income-eligible households. More than 33.8 million households—which included more than 13.7 million households that had at least one member 60 years of age or older—were income-eligible for LIHEAP in FY 2007.<sup>54</sup> Millions more households became eligible during FY 2009 as many states increased their maximum income eligibility guidelines for LIHEAP from 60 percent to 75 percent of state median income.

Congress nearly doubled the federal allocation for LIHEAP from \$2.6 billion in FY 2008 to \$5.1 billion for FY 2009. The increase provided a much-needed infusion of support for the program:

- The purchasing power of LIHEAP dollars jumped to approximately 56 percent of the average cost to heat a home, the highest percentage since the program began.
- The average grant increases modestly to an estimated \$543.
- The number of households served rose by 25 percent, or an additional 1.9 million households.<sup>55</sup>

Nevertheless, the 7.7 million households who received LIHEAP during 2009 was less than one-quarter of the number estimated to be income-eligible.<sup>56</sup>

Households that cannot afford to pay their utility bills face the possibility of having their utility service disconnected. While LIHEAP can help prevent shutoff of essential utility service by making payment more affordable, millions of residential consumers, including many LIHEAP-eligible and -assisted households, have their electricity or natural gas service terminated for failing to pay their bills.<sup>57</sup> Most states offer only limited protections to prevent the shutoff of regulated home utility service for nonpayment, and there are no regulatory protections governing delivered fuels, such as heating oil, propane, and wood. According to the National Center for Appropriate Technology's LIHEAP Clearinghouse, 40 states have seasonal moratoria on the shutoff of electricity or natural gas during the wintertime, 10 states have seasonal moratoria for the summer

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53 USDHHS, *LIHEAP Home Energy Notebook for FY 2007*.

54 The number of eligible households is calculated using state-level income guidelines. USDHHS, *LIHEAP Home Energy Notebook for FY 2007*.

55 NEADA, "Low Income Home Energy Assistance Program – Program Purchasing Power," (unpublished memo: NEADA, October 6, 2008, available from Mark Wolfe, mwolfe@neada.org); NEADA, "Table 1: LIHEAP Winter Heating Households Served FY 09 & FY 10 Projected (Revised 02-23-10)," press release available at <http://www.neada.org/communications/press/2010-02-22/Table1-LIHEAP10ProjServed.pdf> (accessed 04/08/10).

56 *Ibid.*

57 S. Sloane, M. Miller, B. Barker, and L. Colosimo, "2008 National Association of Regulatory Utility Commissioners (NARUC) Collections Survey Report," <http://www.naruc.org/Publications/2008%20NARUC%20Collections%20Survey%20Report.pdf> (accessed 04/08/10).

months, and 43 states have limited protections against shutoffs on the grounds of life-threatening or serious illness (usually a delay in a scheduled shutoff for nonpayment if a health care practitioner certifies poor health).<sup>58</sup> Only eight states have utility shutoff protections specifically for older adults, two of which protect against shutoffs during summertime and wintertime, while six offer protection only during the wintertime.

Low-income energy assistance, and related utility rate discount programs, where offered, help increase access to moderate indoor temperatures and temper the stress that high utility bills place on household budgets. Smart public policy, however, also involves weatherization and energy efficiency measures, utility shutoff protections, and guaranteed basic levels of service, as well as public education to inform individual decision making about using and conserving home energy.

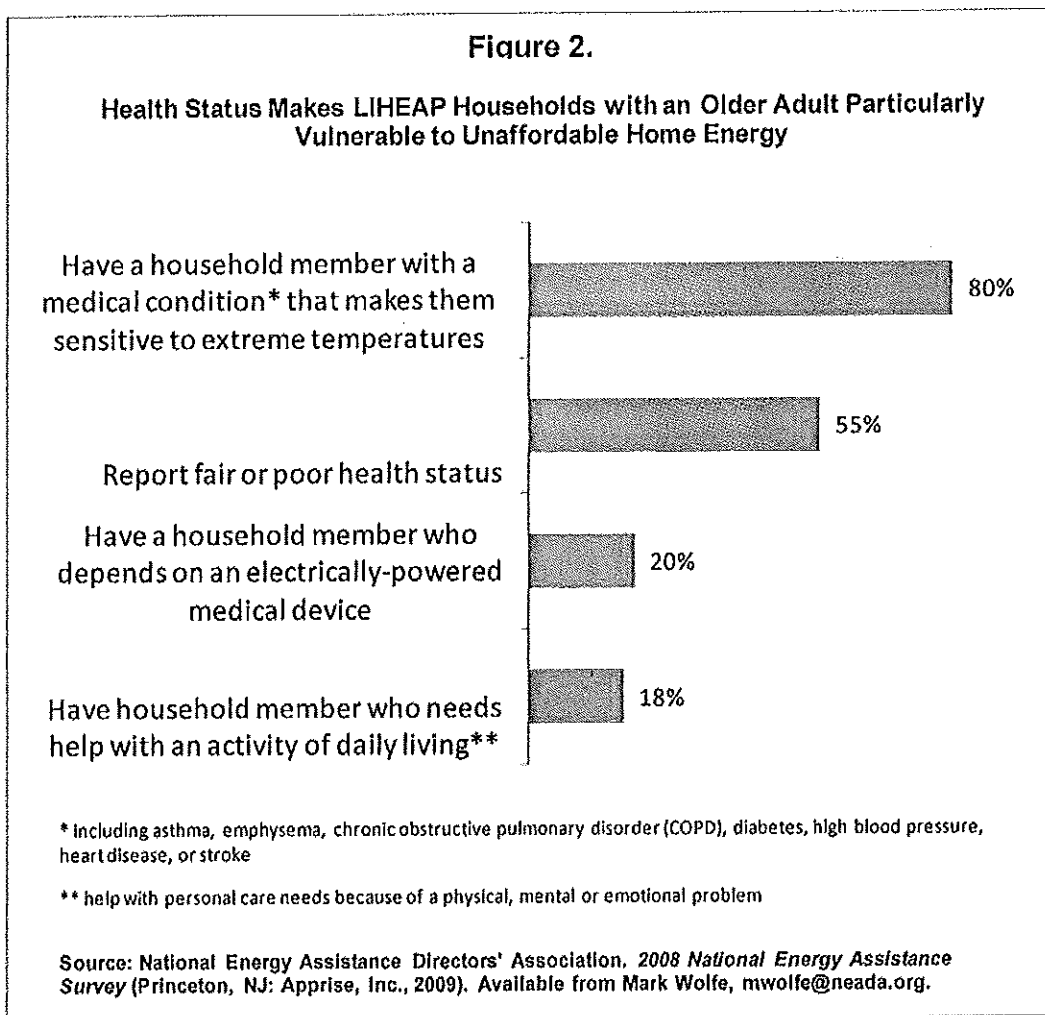
### NATIONAL ENERGY ASSISTANCE SURVEY

Unaffordable home energy subjects many older adults to direct and indirect threats to their health and safety. A survey released by the National Energy Assistance Directors' Association indicates that LIHEAP-enrolled households that include an older adult are particularly vulnerable to adverse health outcomes related to high home energy burdens (see figure 2) and frequently make difficult choices that pose both *direct* and *indirect* risks to health.<sup>59</sup>

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58 LIHEAP Clearinghouse, "Seasonal Termination Protection Regulations," table prepared by the National Center for Appropriate Technology, 2009, <http://liheap.ncaat.org/Disconnect/SeasonalDisconnect.htm> (accessed 12/25/09).

59 The concept of two main pathways through which household energy burden affects health is developed in Child Health Impact Working Group, *Unhealthy Consequences: Energy Costs and Child Health* (Boston, MA: Child Health Impact Working Group, 2006). Unless otherwise noted, all findings reported in this section are from a 12-state telephone sample survey of households receiving an LIHEAP benefit. See NEADA, "2008 National Energy Assistance Survey" (Washington, DC: Apprise, Inc., 2009), available from Mark Wolfe, [mlwolfo@ncada.org](mailto:mlwolfo@ncada.org).



Direct threats to health:

Health is at risk *directly* through exposure when heat is turned down in winter or air-conditioning is turned off in summer, when unsafe means are used to heat or light homes, and when utility service is lost due to nonpayment. Substandard dwellings may be hard or impossible to keep within a moderate temperature range, and excessive humidity may lead to mold growth that increases the likelihood of respiratory disease. The following statistics pertain to LIHEAP-enrolled households that include an older adult:

- In response to high home energy prices perceived as unaffordable, 46 percent report closing off part of their home for at least one month a year, 24 percent maintain their home at what they perceived as an unsafe or unhealthy temperature, and 17 percent

report leaving their home for part of the day because they were unable to maintain moderate indoor temperatures..<sup>60</sup>

- More than one-quarter (27 percent) report using the kitchen stove or oven for heat, and 4 percent use candles or lanterns because of loss of utility service for nonpayment..<sup>61</sup>
- More than one-quarter (28 percent) report skipping payment of a utility bill or paying less than the full amount, 19 percent received a shutoff notice for nonpayment within the past year, and 6 percent report the loss of either electrical or natural gas service for nonpayment..<sup>62</sup>
- One in six (17 percent) report that they were unable to use their main heating source at some point during the previous year because they did not have the money to accomplish one or more of the following: fix or replace a broken furnace; purchase bulk fuel such as heating oil, propane, or wood; or prevent the shutoff of utility service for nonpayment..<sup>63</sup>
- One in eight (12 percent) report that they were unable to use their air-conditioning at some point during the previous year because they did not have the money to accomplish one or both of the following: fix or replace a broken air conditioner; or prevent the shutoff of electricity for nonpayment..<sup>64</sup>

Indirect threats to health:

Financial stress poses *indirect* threats when households must make difficult decisions in the face of competing demands for limited dollars. This scenario is commonly described as “heat or eat,” making vivid the trade-offs between paying a utility bill and purchasing groceries or medications. The following statistics pertain to LIHEAP-participating households that include an older adult:

- Three-quarters (74 percent) report cutting back on the purchase of household necessities because of high home energy bills..<sup>65</sup>
- Nearly one-quarter (24 percent) report going without food for at least one day because of energy bills in the past five years..<sup>66</sup>

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60 NEADA, “2008 National Energy Assistance Survey,” Table IV-17B, Table IV-18B, Table IV-19B.

61 *Ibid.*, Table IV-20B, Table IV-37B.

62 *Ibid.*, Table IV-22B, Table IV-23B, Table IV -27B.

63 *Ibid.*, Table IV-31B.

64 *Ibid.*, Table IV-34B.

65 *Ibid.*, Table IV-14B.

66 *Ibid.*, Table IV-50B.

- Almost one-third (32 percent) report going without medical or dental care because of energy bills in the past five years, and 31 percent report neglecting to fill a medical prescription or taking less than a full dose because of high energy bills.<sup>67</sup>
- One in six (15 percent) report being unable to pay energy bills because of medical or prescription drug expenses during the past year.<sup>68</sup>

## MAKING THE CONNECTIONS: HIGH HOME ENERGY BURDENS AND POLICY PRIORITIES

Policies and programs to address the health threats posed by high home energy prices can build on existing efforts in the areas of energy, long-term care and health care reform, and livable communities.

### ENERGY

The high cost of basic home utility service threatens the economic security of low- and moderate-income households and by extension, the health and well-being of household members. Affordable energy policies promote population health.

The ultimate goal of home heating and cooling is to maintain moderate indoor temperatures. Meeting energy needs affordably has been a consistent challenge for too many households and could become even more problematic as energy prices increase in response to efforts to reduce greenhouse gas emissions. Full funding of LIHEAP in recent years has enabled many states to raise their maximum income eligibility guidelines, the size of individual awards, and the numbers of households enrolled. However, LIHEAP still services only about one-quarter of eligible households.<sup>69</sup>

Recognizing that a host of issues can make young children and older adults more vulnerable to temperatures that deviate from a moderate range, some states prohibit or limit the disconnection of residential energy services for households with members of certain ages.<sup>70</sup> Many states offer a limited protection against involuntary loss of home utility service for people facing life-threatening circumstances or serious illness. Typically, these protections take the form of a delay or extension in the schedule for a shutoff, which is set in motion by the periodic filing of a medical certification with the state energy office or utility company.<sup>71</sup> Only a handful of states prohibit shutoffs

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67 Ibid., Table IV-51B, Table IV-52B.

68 Ibid., Table IV-53B.

69 NEADA, "LIHEAP Program Purchasing Power," unpublished memo, November 11, 2009, available from Mark Wolfe, [mjwolfe@neada.org](mailto:mjwolfe@neada.org).

70 LIHEAP Clearinghouse, "State Disconnection Policies," table prepared by the National Center for Appropriate Technology, 2009, <http://liheap.neat.org/Disconnect/disconnect.htm> (accessed 12/25/09).

71 LIHEAP Clearinghouse, "Seasonal Termination Protection Regulations," table prepared by the National Center for Appropriate Technology, 2009, <http://liheap.neat.org/Disconnect/SeasonalDisconnect.htm> (accessed 12/25/09).

altogether for people facing significant health challenges. Current practice does not acknowledge the difficulty that the average low-income household has in maintaining regular access to appropriate health care so that a medical provider can file such a notice.

Some recent policy initiatives pose threats to the health of older people. At the local, state, regional, and national levels, policymakers and industry groups have initiated efforts to shift and dampen consumer demand for electricity. These efforts have focused on the deployment of advanced metering technology and a variety of new pricing programs that vary the price of electricity based on the time of day.<sup>72</sup> These demand-response policies not only create financial incentives and indirect pressure to reduce consumption but also pose a potential threat to health and safety for consumers who must pay more for electricity because they cannot shift their usage from higher cost peak times to lower cost off-peak times. These policies raise other concerns as well:

- Installing advanced meters, and related technology is expensive and expected to be financed by utility customers, adding to the cost of residential electricity.
- While traditional meter technology requires a visit to the customer's premises to disconnect service for nonpayment or other reasons, advanced meters typically include a switch that allows the utility to disconnect service from a remote location. The use of this functionality could result in an increase in the volume of disconnections for nonpayment and have adverse impacts on health and safety if utilities do not visit the customer's premises at the time of disconnection. In this regard, a site visit allows utility field personnel to observe individual customer circumstances and identify signs of potential medical emergencies and other safety risks associated with the loss of service. It also provides customers with opportunity to pay any delinquencies on their bill and ensures that they are aware of the impending action. The potential danger of remote disconnections is exemplified in the case of a 93-year-old Michigan resident who died of hypothermia inside his home, the result of a service limiter being tripped.<sup>73</sup>

## HEALTH SERVICES AND LONG-TERM CARE

Exposures to extreme temperatures and lack of access to home energy assistance are associated with greater use of health services, especially by older adults with chronic health conditions. Published studies document the greater use of health services that result from exposures to excessive heat or cold and the potential of high home energy burdens to destabilize the national movement to promote aging in place and independent living.

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72 B. Alexander, "Smart Meters, Real Time Pricing, and Demand Response Programs: Implications for Low Income Electric Customers," unpublished paper, revised May 30, 2007, available from Barbara Alexander, [barbalex@ctel.net](mailto:barbalex@ctel.net); N. Brockway, "Advanced Metering Infrastructure: What Regulators Need to Know about Its Value to Residential Customers" (Silver Spring, MD: National Regulatory Research Institute, 2008); N. Walters, *Can Advanced Metering Help Reduce Electricity Costs for Residential Consumers?* AARP Insight on the Issues no. 18 (Washington, DC: AARP, 2008).

73 D. Eggert, "Freezing Death of Michigan Man, 93, Inside House Sparks Anger; City Utility Cut Power with Limiter," Associated Press, January 28, 2009.

One implication of these findings is that efforts to strengthen access to affordable energy and ensure protections against shutoffs of basic service can reduce the economic costs of avoidable health care services, improve patient health status, and facilitate independent living. This relationship between home energy and health services is analogous to the connection between the use of primary health care and potentially avoidable hospitalization. Hospitalizations can be avoided with sufficient access to primary care.<sup>74</sup> Similarly, in the context of high home energy burdens, avoidable hospital visits and admissions for heat- and cold-sensitive conditions suggest the need to strengthen access to affordable energy and to ensure protections against shutoffs of basic service.

In the federal LIHEAP statute, Congress recognizes that affordable home energy has important implications for the health and safety of older adults (defined as at least 60 years of age), young children (up to age 6), and people living with a disability. The statute identifies these three populations in its definition of households that have the “highest home energy needs” and identifies them as priorities for outreach and enrollment.

The federal statute gives each state and tribal LIHEAP program the option of allowing households to demonstrate eligibility for the program based on their participation in other means-tested programs rather than having to provide evidence of income. Known as categorical eligibility, the option of using other low-income assistance programs, including Temporary Assistance for Needy Families (TANF), Supplemental Security Income (SSI), and the Supplemental Nutrition Assistance Program (food stamps), as proxies for income eligibility gives states more flexibility and provides the opportunity to identify and serve households that are at risk of adverse health outcomes from high home energy burdens. For instance, SSI provides monthly benefits to 7.5 million low-income individuals who live with a significant disabling condition, who are legally blind, or who are at least 65 years old.<sup>75</sup> States likely would reach even more of those most at risk of adverse health outcomes if categorical eligibility were extended to targeted groups of medically frail individuals, as identified through their participation in health services and receipt of long-term care services. For example, consider the following statistics that pertain to approximately 12.6 million Medicare beneficiaries who are at least 65 years old and who live in households that are income-eligible for LIHEAP (earning no more than 150 percent of the federal poverty level):<sup>76</sup>

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74 A. B. Bindman, K. Grumbach, D. Osmand, M. Komaromy, K. Vranizan, N. Lurie, J. Billings, and A. Stewart A, “Preventable Hospitalizations and Access to Care,” *Journal of the American Medical Association* 274, no. 4 (1995): 305–11.

75 SSI is a federal entitlement program providing monthly income support for members of low-income households who live with a significant disabling condition, who are legally blind, or who are at least 65 years of age. Social Security Administration, *SSI Annual Statistical Report, 2007*, SSA Pub. No. 13-11827 (Washington, DC: SSA, 2008).

76 Estimates cited in this paragraph are from Kaiser Family Foundation (KFF), Urban Institute, and Kaiser Commission on Medicaid and the Uninsured, based on the U.S. Census Bureau, “March 2007 and 2008 Current Population Survey,” CPS: Annual Social and Economic Supplements (Washington, DC: U.S. Census Bureau, 2008, 2009), <http://statehealthfacts.org> (04/20/09).

- Nearly 9.4 million are eligible to enroll in the Medicare Part D Low-Income Subsidy for assistance paying for prescription drugs.<sup>77</sup>
- About 6.2 million are fully eligible for Medicaid subsidy of health care expenses not covered under Medicare.<sup>78</sup>

Long-term care arrangements for older adults who are seriously ill or disabled should acknowledge the importance of affordable home energy. Most states have Medicaid waiver programs that pay for home- and community-based services for income-eligible people who otherwise might enter a nursing home. Some 1.3 million people receive support to stay in their homes under Medicaid waivers, and many more are eligible and

**Box 1.  
Extreme Temperatures, LIHEAP, and Potentially  
Avoidable Hospitalization**

- **Hospital admissions attributed to exposure:** In 2005, about 12,700 people were hospitalized in the United States for weather-related reasons, with residents of lower income communities more than twice as likely as those from higher income areas to be hospitalized.<sup>a</sup> Aggregate costs for these admissions are significant—\$38.7 million for heat-related stays and \$81.5 million for cold-related stays.
- **Hospital visits and admissions during heat waves:** During a two-week heat wave in California in July 2006, emergency department visits rose more than sixfold and hospital admissions more than tenfold for heat-related diagnoses for the state as a whole.<sup>b</sup> Chicago's July 1995 heat wave boosted hospital admissions 35 percent over the average for older Americans.<sup>c</sup>
- **Positive impact of energy assistance:** Young children in families eligible for but not enrolled in LIHEAP are more likely to need hospital admission on the day of a health care visit.<sup>d</sup>

a C.T. Merrill, M. Miller and C. Steiner, "Hospital Stays Resulting From Excessive Heat and Cold Exposure Due to Weather Conditions in U.S. Community Hospitals, 2005," *Healthcare Cost and Utilization Project, Statistical Brief No. 55* (Rockville, MD: U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, 2008).

b Knowlton et al., "The 2006 California Heat Wave."

c Semenza et al., "Excess Hospital Admissions."

d D.A. Frank, N.B. Neault, A. Skalicky, J.T. Cook, J.D. Wilson, S. Levenson, A.P. Meyers, T. Heeren, D.B. Cutts, P.H. Casey, M.M. Black and C. Berkowitz, "Heat or Eat: the Low Income Home Energy Assistance Program and Nutritional and Health Risks Among Children Less Than 3 Years of Age," *Pediatrics* 118, no.5 (2006): e1293-1302.

77 KFF statehealthfacts.org, estimate for 2008 from Centers for Medicare and Medicaid Services (CMS), Office of External Affairs, released January 31, 2008.

78 KFF, statehealthfacts.org, Urban Institute estimates for 2003 based on data from the Medicaid Statistical Information System (MSIS) prepared for the Kaiser Commission on Medicaid and the Uninsured.



on waiting lists for waiver slots.<sup>79</sup> Affordable home energy and adequate indoor temperatures are an important support for the success of home- and community-based services, stabilizing the home environment and freeing up dollars in the household budget. Although federal Medicaid funds may not be used to pay for home utility service, some states, such as Florida, have carried out demonstration projects (cash and counseling) that give participants greater latitude in how funds for long-term care services are used, including to pay utility bills.<sup>80</sup> Access to basic home utility service can be considered part of accommodations made under the Americans with Disabilities Act to guarantee that people who are ill or disabled enough to live in a nursing home have the option to live in a community setting instead.<sup>81</sup>

Strengthening the connections between affordable home energy and health requires a greater understanding of affordable energy issues among clinicians, health care administrators, and analysts. Many in the health care community fail to recognize the role of home energy as a support for the effective delivery of health services and long-term care. Various studies indicate that health care and public health professionals, and the clients and family caregivers they serve, need better information about the health and safety threats posed by inadequately heated and cooled homes and the high home energy burdens borne by low- and moderate-income households.<sup>82</sup> Preparing the health care community for climate change will involve training providers and safety net workers to recognize heat-related ailments and making them aware of the resources that can help at-risk patients maintain access to healthy and comfortable temperatures. For example, a health care practitioner's ability to protect people facing life-threatening circumstances or serious illness against involuntary loss of home utility service (as discussed above) depends significantly on the practitioner's awareness of and ability to comply with the consumer protection regulations that govern utility service shutoffs.<sup>83</sup>

## LIVABLE COMMUNITIES

Ultimately, policies that promote adequate and affordable home energy use, and that acknowledge the role of home energy as a support for the effective delivery of long-term

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79 Estimate for 2004 from AARP, *A Balancing Act: State Long-Term Care Reform* (Washington, DC: AARP, 2008), Table A3.

80 On the cash and counseling demonstration in Florida, see B. Phillips and B. Schneider, "Commonalities and Variations in the Cash and Counseling Programs across the Three Demonstration States," *Health Services Research* 42, no. 1 (2007): 397-413.

81 A state's Olmsted plan, required under federal law, details how the state will provide long-term care supports to residents in the least restrictive setting available. R. DeSonia, *Is Community Care a Civil Right?* National Health Policy Forum Background Paper, 2003, <http://www.nhpf.org> (12/14/09).

82 R. Jackson and K. N. Shields, "Preparing the U.S. Health Community for Climate Change," *Annual Reviews in Public Health* 29 (2008): 57-73; F. Matthiès, G. Bickler, N. C. Marin, and S. Hales S., eds., *Heat-Health Action Plans. Guidance* (Copenhagen, Denmark: World Health Organization, 2008); J. Balbus, K. Ebi, L. Finzer, C. Malina, A. Chadwick, D. McBride, M. Chuk, and E. Maibach, *Are We Ready? Preparing for the Public Health Challenges of Climate Change* (New York: Environmental Defense Fund, 2008), [http://www.edf.org/documents/7846\\_AreWeReady\\_April 2008.pdf](http://www.edf.org/documents/7846_AreWeReady_April 2008.pdf) (accessed 04/08/10).

83 One such strategy, the Energy Clinic, has been developed at the Boston Medical Center. Energy Clinic activities include training for clinicians about how to prepare medical certification letters to prevent shutoffs of home utility services for the families of pediatric patients—Adam Sege, *Utility Access and Health. A Medical-Legal Partnership Patients-to-Policy Case Study* (Boston, MA: National Center for Medical Legal Partnership, 2010). Available at <http://www.medical-legalpartnership.org>.

care and health services to older adults, promote community dwelling that facilitates personal independence and quality of life.

For example, prudent land-use planning recognizes that the urban heat island effect, or how buildings and paved space retain heat locally, increases ambient temperatures and raises the risk of premature death.<sup>84</sup> Studies of differences in neighborhood temperatures during the summer underscore the importance of access to air-conditioning in protecting against the heat. In urban St. Louis, older adults are more likely to die during a heat wave if they live in the more crowded blocks adjacent to the central business district, where older, red brick buildings are more likely to retain heat overnight and where residents tend to be from lower-income households and therefore less likely to have air-conditioning.<sup>85</sup> In Phoenix, Arizona, temperatures vary by up to 7 to 12 degrees Fahrenheit among urban, suburban, and urban fringe neighborhoods.<sup>86</sup> The highest temperatures are seen in the poorest neighborhoods, which are densely populated and have little green or open space, and in newer middle-class areas that by design also feature homes built in close proximity and that substitute desert landscaping for green space. For residents of these middle-class Phoenix neighborhoods, access to central air-conditioning and to swimming pools lowers the risks associated with the heat.

Policies that make affordable housing energy efficient lower the costs of heating and cooling, preserve household budgetary assets, and protect the health and safety of occupants. As such, these policies leverage the impact of public benefit dollars spent for health care (Medicaid, Medicare) and food (Supplemental Nutrition Assistance Program, Commodity Foods).

Policies that promote walkable neighborhoods discourage crime, nurture intergenerational social networks, and minimize (through these networks) social isolation and the chances that weather extremes will lead to premature deaths, hospitalizations, and an increased burden of disability and disease among low- and moderate-income households that include older adults.<sup>87</sup> For example, the Philadelphia Department of Health maintains a partnership with a network of neighborhood block captains to support the outreach efforts of city's heat health warning/watch system during heat waves. Working with city Health Department staff, the block captains—volunteers elected by residents to organize neighborhood activities and projects with the city—disseminate information as a heat wave develops and identify and evaluate the health status of vulnerable local residents.<sup>88</sup> This active and personal approach to conveying public health information is particularly important for socially isolated and older adults, who

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84 K. E. Smoyer, "Putting Risk in Its Place: Methodological Considerations for Investigating Extreme Event Health Risk," *Social Science and Medicine* 47, no. 11 (1998): 1809-24.

85 Ibid.

86 S.L. Harlan, A.J. Brazel, I. Prashad, W.L. Stefanov and L. Larsen, "Neighborhood Microclimates and Vulnerability to Heat Stress," *Social Science and Medicine* 63, no. 11 (2006): 2847-2863.

87 During heat waves, the most vulnerable are older people who live alone, have limited mobility, and are socially isolated. E. Klinenberg, *Heat Wave. A Social Autopsy of Disaster in Chicago* (Chicago: University of Chicago Press, 2002); Kovats and Hajat, "Heat Stress and Public Health."

88 Environmental Protection Agency, *Excessive Heat Event Guidebook*.

tend to be less responsive to information disseminated through brochures and other more passive means.<sup>89</sup>

Finally, effective risk communication efforts help the public understand the threats to health and safety posed by inadequate home heating and cooling, as well as exposures to outdoor temperatures that are likely to vary dramatically and to change from historic patterns because of climate change.<sup>90</sup> For example, in implementing heat health warning and watch systems in their communities, policymakers have taken advantage of various communication strategies, including the following:

- Developing and disseminating information that summarizes health and safety risks
- Instructing members of the public about available municipal services to mitigate summertime heat or winter cold
- Targeting messages to specific groups of at-risk residents
- Developing warnings that function effectively, for example, to discourage older adults from using electric fans as a cooling strategy when temperatures climb into the upper nineties.<sup>91</sup>

The reviews of the heat health warning/watch system in Philadelphia indicate impressive results.<sup>92</sup> Over its first three years (1995–1998), Philadelphia’s Hot Weather-Health Watch/Warning System is estimated to have saved about 2.6 lives per day when a warning is issued and for the three-days following the warning, for a total of 117 lives, at an estimated total cost of \$210,000.<sup>93</sup> This cost is about 5 percent of the valuation of a statistical life of one older adult, as estimated by the Environmental Protection Agency, making a communications-based strategy a practically no-cost approach to saving lives.

## POLICY RECOMMENDATIONS

The following recommendations could help address the serious and increasing health threats posed by unaffordable home energy:

- Ensure that subsidies and discounts help make home energy affordable and sustainable for households that include older adults. These households should have

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89 Matthies et al., *Heat-Health Action Plans*.

90 E. W. Maibach, C. Roser-Renouf, and A. Leiserowitz, “Communication and Marketing as Climate Change-Intervention Assets: A Public Health Perspective,” *American Journal of Preventive Medicine* 35, no. 5: 488–500.

91 Environmental Protection Agency, *Excessive Heat Event Guidebook*.

92 Environmental Protection Agency, *Excessive Heat Event Guidebook*, citing M. A. Palecki, S. A. Chagnon, and K. E. Kunkel, “The Nature and Impacts of the July 1999 Heat Wave in the Midwestern United States: Learning from the Lessons of 1995,” *Bulletin of the American Meteorological Society* 82: 1353–67.

93 K. L. Ebi, T. J. Teisberg, L. S. Kalkstein, L. Robinson, and R. F. Weiher, “Heat Watch/Warning Systems Save Lives. Estimated Costs and Benefits for Philadelphia 1995–1998,” *Bulletin of the American Meteorological Society* 85, no. 8: 1067–73.

the option to pay down utility arrearages (amounts due) while not jeopardizing current payments, and should have priority access to energy-efficiency and conservation services and to appliance replacement programs.

- Assess the need for LIHEAP and the total amount of energy assistance for households in terms not only of lowering the home energy burden (the percentage of household income that must be spent for essential home energy services) but also the value added through improved health and reduced threats to safety. Such an approach is rooted in the perspective of the household, rather than that of the utility company.
- Expand categorical eligibility for LIHEAP, weatherization services, and other affordable energy programs to target groups identified as most at risk of adverse health outcomes through their eligibility for Medicaid and Medicare programs, such as state Medicaid waiver programs and the Medicare Part D Low-Income Subsidy.
- Ensure that state-regulated utility consumer protections and policies specifically recognize and address the needs of groups identified as most at risk of adverse health outcomes. For example, shutoff protections based on certification of serious illness should be extended to at least 120 days or one full year (before requiring recertification). In addition, states should adopt policies to lessen the likelihood of a shutoff, such as in-person notification of intent to disconnect and the option to make alternative payment arrangements.
- Ensure that demand-response programs for consumers balance the need to reduce energy consumption with the protection of health and safety for older adults and persons living with serious or disabling conditions.
- Design evaluations of weatherization and energy-efficiency programs to assess their impact on health and safety to demonstrate the importance of home energy for health, for example, how improvements in asthma symptoms can lower health care costs.
- Ensure that intake services for state Medicaid waiver program participation and long-term care case management services include referrals for LIHEAP, weatherization, and other affordable energy programs.
- Support education and outreach efforts to increase awareness both within the health care community and among older adults, their families, and caregivers of the resources that can help at-risk individuals maintain access to healthy and comfortable temperatures. For example, in each state, clinicians and public health officials should be trained in regulated utility consumer protections and in procedures to prepare letters to certify medical shutoff protections for their patients.
- Give priority in home repair or modification programs that serve medically frail participants (such as under a state Medicaid waiver) to cost-effective energy-efficiency measures that protect health and safety (for example, special coatings for flat-roofed rowhouses that lower indoor temperatures in summer).

- Identify and implement best practices for communicating with the public, especially older adults, their families, and caregivers, about the risks of heat waves and cold temperatures, about the links between temperature and health, and about which prevention, education, and response efforts are most effective. Implementation should bring together public officials from health departments, energy offices, and state emergency preparedness.

## CONCLUSION

As the U.S. population ages, as our health care system shifts toward support for independent living and aging in place, and as urban infrastructure and global warming present new environmental challenges, the rising cost of basic utility services jeopardize the stability and capacity for self-sufficiency of households that include older adults. Understanding and addressing the implications for energy policy of public and population health priorities, and the implications for public health of affordable energy and energy efficiency priorities, requires a fresh approach. Such an approach should unite two diverse groups of practitioners, in the energy and health fields, to craft new solutions to help American households maintain both economic security and good health.

When a heat wave recurred in Chicago in 1999, four years after hundreds of deaths and hospitalizations during the July 1995 heat wave, city officials and civic groups responded with an effective, coordinated approach informed by the research done in the wake of the 1995 disaster. Chicago implemented a heat health emergency plan that included the opening of cooling centers and outreach to homebound older adults. Far fewer residents died prematurely on account of this second heat wave. Nevertheless, the summer of 1999 in Chicago exposed a number of critical issues, including the following:

- High home energy burdens
- Limited subsidies under LIHEAP and related programs
- Lack of coordination among Medicaid and other public benefit programs with low-income home energy subsidies or residential utility consumer protections
- The realities of life in neighborhoods that remained unsafe and socially isolating for older adults

Ten years later, these and many other related issues remain unresolved, a fact that must change if the United States is to address the widespread problem of insufficient access to affordable heating and cooling as the public health threat it has become.



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## House Finance Committee Hearing Synopsis

On March 24, 2010, the House Finance Committee heard bill 10-H-7816, the *Home Energy Rate Affordability Act*. The bill was never voted on in the committee. Several positive and negative aspects of the legislation were discussed that day and many issues and concerns were raised by committee members, the director of the Office of Energy Resources (OER), and representatives of Division of Public Utilities. The following is a synopsis of the positive and negative points raised that day, as well as points of clarification that were requested.

The hearing began with those in favor of the legislation, including: John Howat of the National Consumer Law Center, Boston, MA; Jean Rosiello, Esq., lawyer and member of the Wiley Center; Representative Art Handy, sponsor of the bill; Paula McFarland, RICAP Executive Director; and several other Wiley Center members. These participants explained many of the details of the bill and made other points that are not directly found in the bill itself:

Mr. Howat noted that he and others have been working on affordable energy legislation for Rhode Island for the past 6 years, and it is always about politics and funding. He commented that many other states have some type of protection in place, but that is not happening in Rhode Island. Many Rhode Islanders do not have the income to keep up with the high cost of utility service. He pointed out that the ball is really in the legislature's court to finally do something. He explained that in Massachusetts, National Grid has a program in which those at 200% of the federal poverty level or 60% of State Median Income receive a straight discount of 22% and an arrearage management program of \$125 per month or \$1000 per year if they stay current with their payments. He further impressed the idea that all other states have acted on this issue.

Representative Handy explained that last year in Rhode Island, National Grid's bad bill write off was over \$26 million.

Questions, comments and concerns from the committee included:

Rep. Ehrhardt: Allowing the PUC to annually set the level of ratepayer contribution to the program, after the first three years, seems too open ended. I want to say that I believe there needs to be some limitation, we don't want to leave a blank checkbook. Also, we refer to this money as a charge or contribution, isn't it a tax?

Ms. Rosiello: It is a charge imposed on the consumer by the legislation.

Rep. Melo: Would the OER have to conduct inspections of dwellings to determine what the maximum usage of consumers should be? Is the OER prepared to do that? When people rent, they often do not have the luxury of choosing an apartment that is more efficient.

Ms. Rosiello: The bill leaves it to the OER discretion to give more assistance to dwellings that are known to use more energy.

Rep. Melo: How much money will be raised?

Rep. Handy: In the \$11-12 million range.

Ms. Rosiello: Which will not be enough to cover everyone in need. It will be on a first come first served basis.

Rep. Jackson: Why isn't the PUC charged with this?

Rep. Handy: The Commission says it is up to the legislators.

Rep. Jackson: If the PUC is looking for authority, can't we give them the authority to create a program and remedy the solution and they can work out the details.

Mr. Howat: That is what programs in many other states do. The details are left to the regulator.

Paula McFarland, the Executive Director of the Rhode Island Community Action Program (CAP) testified in favor of the legislation and provided details about the population that would be served.

- Over 200,000 Rhode Islanders are seen by the CAP agencies for food assistance, LIHEAP and weatherization. It is the largest anti-poverty program in the state.
- 12,000 homes need weatherization in the state. All CAP agencies have energy auditors.
- There were 31,000 shut-offs in 2009.
- 36,000 homes received LIHEAP benefits.
- 15,000 were employed, 13,900 receive SSI.
- 21,900 were renters, 14,075 were home owners.

Several Wiley Center members testified as to the devastating impact the high cost of utilities has on low-income residents around the state. Jack Colby noted the need for a systemic change to the energy crisis.



80% of the programs in place to help people stay turned on do not work; these programs are a "cruel hoax." Sandra Morra further explained the "squeeze" that is put on people to keep their electricity and heat on. Suzette Orazi stated that she is \$13,000 in dept to National Grid because she could not afford her bills on her SSI income. In addition, her husband is unemployed not receiving any unemployment benefits.

Director of OER, Ken Payne testified on his major concerns with the legislation. He stated that he could not administer the program as it was written. He pointed out drafting errors and confusion in use of terms. He also indicated there were structural issues, such as how to calculate the home energy burden, and whether LIHEAP should be subtracted or added to income. He stated that he did not know how the OER would calculate the rates of benefits, wondering how to apply average for usage based on median family income. He also expressed concern that the 10% for administrative costs is too small. On the policy side, he said that the surcharge for residential customers is regressive; it shields a large number of households from economic price signals and does not encourage conservation. Further, it only applies to gas and electric customers, and many suburban poor heat with oil.

Representatives of the Division of Public Utilities also testified against the bill. Their major concerns were over the cost implications to rate payers in light of other increases that are going on. They also expressed concern over the lack of a "sunset" provision in the legislation.

2010 -- H 7816

LC02029

STATE OF RHODE ISLAND

IN GENERAL ASSEMBLY

JANUARY SESSION, A.D. 2010

AN ACT

RELATING TO STATE AFFAIRS AND GOVERNMENT

Introduced By: Representatives Handy, Slater, Fierro, Almeida, and Silva

Date Introduced: February 25, 2010

Referred To: House Finance

It is enacted by the General Assembly as follows:

1 SECTION 1. Title 42 of the General Laws entitled "STATE AFFAIRS AND  
2 GOVERNMENT" is hereby amended by adding thereto the following chapter:

3 CHAPTER 141.1

4 THE HOME ENERGY RATE AFFORDABILITY ACT

5 42-141.1-1. Short title. -- This act shall be known and may be cited as "The Home  
6 Energy Rate Affordability Act."

7 42-141.1-2. Findings. --

8 (a) Over the past decade, the United States has experienced a twenty-five percent (25%)  
9 increase in demand for fuel assistance;

10 (b) In Rhode Island, between 1999 and 2008, the gap between annual disconnection rates  
11 and annual reconnection rates has more than doubled;

12 (c) Over the past six (6) years, the amount of bad debt (as a percentage of total revenue)  
13 held by National Grid has more than doubled;

14 (d) Payment plans and winter moratorium policy currently offered by National Grid for  
15 low-income payers, while admirable in their intentions, fail to address this problem of cyclical  
16 arrears and the burgeoning need for greater energy assistance;

17 (e) Twenty-seven (27) states, including Massachusetts, New Hampshire, Connecticut,  
18 and Illinois, have passed legislation to establish some form of rate-payer program to address  
19 rising demand for energy assistance; and,

1           (f) In 2009, over thirty-one thousand (31,000) families/individuals throughout Rhode  
2 Island had their power shut-off;

3           (g) The general assembly hereby establishes the Rhode Island Home Energy Emergency  
4 Act.

5           42-141.1-3. Program creation. – As soon as practicable the governor’s office of energy  
6 resources shall create a program to be known as the “Home Energy Rate Affordability Program”  
7 for the purpose of insuring that utility rates are affordable for households of limited means.

8           42-141.1-4. Definitions. – For purposes of this section:

9           (1) “Commercial and industrial customers” includes all establishments engaged in  
10 commercial activity, either for-profit or non-profit, including, but not limited to, transportation,  
11 manufacturing, mining, construction, agriculture, fishing, forestry, school dormitories, hospitals,  
12 and military barracks and other non-residential customers.

13           (2) “Commission” means the public utilities commission.

14           (3) “Energy office” means the governor’s office of energy resources.

15           (4) “Home energy” means retail electric and natural gas service provided for end-use  
16 consumption by residential consumers.

17           (5) “Home energy burden” means a consumer’s home energy bill divided by the  
18 consumer’s household income, including any grant of LIHEAP assistance.

19           (6) “LIHEAP” means the federal Low Income Household Energy Assistance Program.

20           (7) “Participating agency” includes any community action program or other community-  
21 based agency which determines eligibility for LIHEAP benefits.

22           (8) “Residential customer” means all private residences, whether occupied or vacant,  
23 owned or rented, including single-family homes, multi-family housing units and mobile homes,  
24 but not including school dormitories, hospitals and military barracks.

25           42-141.1-5. Eligibility. – Customers with a household income at or below one hundred  
26 fifty percent (150%) of the federal poverty level that are receiving assistance through LIHEAP  
27 shall be eligible for the rate affordability program under this section.

28           42-141.1-6. Program credits. – (a) The energy office shall inform each utility and each  
29 trustee of a rate affordability account under section 42-141.1-11 of the credit amount for which  
30 each eligible household is qualified, and of the duration for which that credit must be provided  
31 from the “rate affordability account” established pursuant to subsection 42-141.1-9(b), on a first-  
32 come, first-served basis, as long as funds are available. All funds in any rate affordability  
33 account established under section 42-141.1-11 shall be fully expended annually, including  
34 accumulated interest.

1           (b) The amount of credit shall be that amount necessary to reduce the household's home  
2 energy burden to an affordable percentage of income.

3           (c) The affordable home energy burden for each eligible household that uses both gas and  
4 electric service and each household that uses electric service for heating purposes shall be tiered  
5 as follows:

6           (1) Six percent (6%) of gross annual income: households earning zero to fifty percent (0-  
7 50%) of the federal poverty level;

8           (2) Seven percent (7%) of gross annual income: households earning fifty to one hundred  
9 percent (50-100%) of the federal poverty level;

10           (3) Eight percent (8%) of gross annual income: households earning one hundred percent  
11 (100%) of the federal poverty level to maximum LIHEAP eligibility benefits amount.

12           (d) If a household uses electricity only for non-heating purposes, the affordable home  
13 energy burden for each eligible household shall be tiered as follows:

14           (1) Two percent (2%) of gross annual income: households earning zero to fifty percent  
15 (0-50%) of the federal poverty level;

16           (2) Three percent (3%) of gross annual income: households earning fifty to one hundred  
17 percent (50-100%) of the federal poverty level;

18           (3) Four percent (4%) of gross annual income: households earning one hundred to one  
19 hundred fifty percent (100-150%) of the federal poverty level.

20           (e) The energy office may allocate credits as it deems appropriate for crisis intervention.

21           (f) The energy office may also allocate credits to provide arrearage forgiveness when  
22 needed to bring home energy burdens to an affordable level, as determined by the energy office.

23           (g) Each utility shall seek reimbursement from the trustee of a rate affordability account  
24 established pursuant to section 42-141.1-11 for any credits it provides for its low-income  
25 customers under this chapter.

26           42-141.1-7. Obligations of participants. -- Participating households shall agree to the  
27 following obligations in order to participate in this program:

28           (1) The household shall report, within a time period prescribed by the energy office,  
29 changes in income or financial condition that affect the household's eligibility or need for energy  
30 assistance to a responsible administrator in the energy office or in a participating agency;

31           (2) Household participation in this program shall be terminated if the household fails to  
32 make three (3) or more consecutive monthly payments gas and/or electric bills, unless the  
33 household has reported a change in income or financial status in accordance with subdivision (1)  
34 above and has been determined eligible on account of that change for additional assistance or for

1 emergency assistance. Upon termination from the program, all arrearages will become due and  
2 payable, and the household, upon re-application, will be treated as a new applicant.

3 42-141.1-8. Arrearage. -- A household establishing three (3) years of regular monthly  
4 payments under this chapter shall not be required to pay any arrearage incurred prior to entry into  
5 the program. The energy office shall prescribe the mechanism for providing arrearage credits  
6 pursuant to this section.

7 42-141.1-9. Usage limit. -- The energy office shall establish maximum usage limits  
8 based on such factors as household size, thermal integrity of the household dwelling unit, and  
9 average household energy expenditure of a median income household. Energy usage exceeding  
10 the limits shall be billed at the prevailing consumer rate. Conservation may be rewarded with a  
11 reduction in the payment percentage required.

12 42-141.1-10. Rates. -- (a) For the first three (3) years, utilities shall collect a non-  
13 bypassable monthly charge from each gas and each electric account receiving energy not for  
14 resale, including low-income households, in accordance with the following:

15 (1) Electric Service Accounts;

16 (i) One dollar and forty cents (\$1.40) for residential service customers;

17 (ii) One dollar and forty cents (\$1.40) for commercial and industrial service customers  
18 whose average usage is less than ten (10) kilowatts of demand;

19 (iii) Thirteen dollars (\$13.00) for commercial and industrial service customers whose  
20 average usage is between ten (10) kilowatts and two hundred (200) kilowatts; and

21 (iv) Two hundred fifty dollars (\$250) for commercial and industrial service customers  
22 whose average usage is greater than two hundred (200) kilowatts.

23 (2) Natural Gas Service Accounts;

24 (i) One dollar and forty cents (\$1.40) for residential service customers;

25 (ii) One dollar and forty cents (\$1.40) for commercial and industrial service customers  
26 whose usage is less than five hundred thousand (500,000) cubic feet per year;

27 (iii) Thirteen dollars (\$13.00) for commercial and industrial service customers whose  
28 usage is between five hundred thousand (500,000) cubic feet and three million, five hundred  
29 thousand (3,500,000) cubic feet per year; and

30 (iv) Two hundred fifty dollars (\$250) for commercial and industrial customers whose  
31 usage is greater than three million, five hundred thousand (3,500,000) cubic feet per year.

32 (b) These charges shall be kept in trust in a separate "rate affordability account" which  
33 shall be used for program expenditures under this chapter and shall be established and operated in  
34 accordance with section 42-141.1-11 of this chapter.

1           (c) After the third (3<sup>rd</sup>) year of the program, the commission shall annually set a non-  
2 bypassable monthly charge sufficient to fund the total program budget developed by the energy  
3 office. When determining the charge, the commission shall not substantially deviate from the  
4 customer class rate allocation proportion as set forth herein.

5           42-141.1-11. Administration. -- The energy office shall administer the program,  
6 including informing utilities of applicable credits, answering consumer inquiries, referring  
7 eligible customers for weatherization assistance, and keeping appropriate records. The energy  
8 office may delegate to participating agencies the responsibility for determining program  
9 eligibility and calculating the amount of credit due to each eligible household.

10           42-141.1-12. Rate affordability accounts. -- (a) Every utility shall place all charges  
11 collected under section 42-141.1-9 in a rate affordability account, which shall be opened in the  
12 name of, and held by, an independent existing nonprofit organization as trustee (hereinafter "rate  
13 affordability account trustee"), and which shall be operated as a nonprofit program.

14           (b) The rate affordability account trustee shall report to the energy office monthly the  
15 total amount of funds available for low-income customers for each utility, including accumulated  
16 interest, minus any administrative costs incurred.

17           (c) The rate affordability account may be used to pay annual administrative costs  
18 incurred by the utility, the energy office, the rate affordability account trustee, and participating  
19 agencies, as long as those costs do not exceed ten percent (10%) of the total annual amount  
20 allocated for program credits for eligible households. The utility, the energy office, the rate  
21 affordability account trustee, and participating agencies shall submit their bills for administrative  
22 costs annually to the energy office, which shall ensure that these bills do not together exceed this  
23 limit, and shall then forward these bills to the rate affordability account trustee for payment.

24           (d) Utility companies shall report annually to the public utilities commission including,  
25 but not limited to, the amount of funds collected in the rate affordability account, the distribution  
26 of those funds, the amount of funding allocated to administrative costs, and the projected amount  
27 of funds to be collected and distributed in the following year.

28           (e) The energy office shall annually evaluate the impact of the Rate Affordability Act,  
29 including *inter alia* an assessment of the number of eligible low-income customers who  
30 participated in the rate affordability program, the number of low-income customers who did not  
31 participate in the rate affordability program, and any difference in payment history between these  
32 two (2) groups of low-income utility customers.

1 SECTION 2. This act shall take effect upon passage.

LC02029

EXPLANATION  
BY THE LEGISLATIVE COUNCIL  
OF  
AN ACT  
RELATING TO STATE AFFAIRS AND GOVERNMENT

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- 1 This act would create the Home Energy Rate Affordability Program to ensure that utility
- 2 rates are affordable for households of limited means.
- 3 This act would take effect upon passage.

LC02029