MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT ON THE INVESTIGATION INTO THE ESTABLISHMENT OF A LOW-INCOME CUSTOMER CLASS OR OTHER MEANS TO HELP MAKE ELECTRIC, GAS OR WATER UTILITY SERVICE AFFORDABLE

FILE NOS.
EW-2013-0045, GW-2013-0046 and WW-2013-0047

Jefferson City, Missouri
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I. Executive Summary

On August 8, 2012, the Commission issued Order[s] Opening an Investigation Into the Establishment of a Low-Income Customer Class or Other Means to Help Make Utility Service Affordable in File Nos. EW-2013-0045, GW-2013-0046, WW-2013-0047. The Orders indicated interested entities may file initial comments and enter exhibits addressing the financial burden on low-income consumers.

In response to the Orders, Staff reviewed, to the best of its ability in the time allotted, previous Commission dockets, consumer comments, utility assistance programs offered in other states, the Public Utility Regulatory Policies Act (PURPA), and various other sources.

This Report includes: Legal analysis (p. 2), federal poverty level statistics for Missouri (p. 13), information on funding resources for low-income programs (p. 16), a summary of provided in this case (p. 17), a review of experimental low-income utility programs in Missouri (p. 18), a review of programs in other states (p. 22), and criteria for determining the effectiveness of energy assistance programs (p. 32).

Key points of the Report include:

- The Commission does not have the express statutory authority to establish low-income customer classes.
- States that have established low-income customer classes, or other means of low-income customer assistance, have specific legislative mandates or authority.
- Without express statutory authority, low-income customer classes in other states have been struck down by their courts as unlawful rate discrimination.

The remainder of this Report includes a more detailed synopsis of Staff's review.

II. Legal Analysis

A. PURPA Standards Analysis

Section 114 of Public Utility Regulatory Policies Act of 1978 ("PURPA")[1] provides that if any electric utility does not have a rate for essential needs[2] of residential electric consumers which is lower than a rate designed to the maximum extent practical to reflect the cost of providing electric service to such class in effect by November 9, 1980, the State regulatory authority having ratemaking authority with respect to such State regulated electric utility shall determine, after an evidentiary hearing, whether such a rate should be implemented by such utility. The State regulatory authority is not allowed to grandfather prior State action that substantially conforms with the requirements of PURPA. As explained further below, other state courts have held that PURPA Section 114 only requires a state regulatory authority to (1) hold an

[1] PURPA Section 114 Lifeline Rates

(a) Lower Rates
No provision of this chapter prohibits a State regulatory authority (with respect to an electric utility for which it has ratemaking authority) or a nonregulated electric utility from fixing, approving, or allowing to go into effect a rate for essential needs (as defined by the State regulatory authority or by the nonregulated electric utility, as the case may be) of residential electric consumers which is lower than a rate under the standard referred to in section 111(d)(1) of this title.

(b) Determination
If any State regulated electric utility or nonregulated electric utility does not have a lower rate as described in subsection (a) of this section in effect two years after November 9, 1978, the State regulatory authority having ratemaking authority with respect to such State regulated electric utility or the nonregulated electric utility, as the case may be, shall determine, after an evidentiary hearing, whether such a rate should be implemented by such utility.

(c) Prior Proceedings
Section 124 of this title shall not apply to the requirements of this section.

(16 U.S.C. §2624)

[2] As defined by State regulatory authority. *Id.*

evidentiary hearing to consider the possibility of implementing lifeline rates and (2) determine whether to do so or not.[3]

A review by Staff has not disclosed a Commission case or cases in 1979 or the early 1980's addressing PURPA Section 114. Counsel for the Missouri Energy Development Association ("MEDA") has found and provided Staff with a copy of a February 1, 1983 letter from Commission Assistant General Counsel A. Scott Cauger to James Swearengen, as Counsel for The Empire District Electric Company, Missouri Public Service Company, St. Joseph Light & Power Company, and Arkansas Power & Light Company, with the subject line "PURPA Standards." The letter appears to be an effort to identify which PURPA standards have been addressed and which have yet to be addressed for each of the aforementioned electric utilities.

Regarding Section 114, the letter states "[b]ased upon my research I cannot find where the Commission, since 1978, either in individual utility cases, generic, or rulemaking proceedings, has considered the lifeline standard and determined, after public notice and an evidentiary hearing whether such a rate should be implemented by each individual electric utility." The letter relates that testimony on lifeline rates was filed in a Kansas City Power & Light Company (KCPL) rate design case, EO-78-161, but a Report and Order had not been issued yet in the case and there was no telling whether the Commission would address the issue in its Report and Order. Case No. EO-78-161 was a separate and distinct rate design case that went to full hearing and decision by the Commission. The Commission did not address PURPA Section 114 in its Report and Order in Case No. EO-78-161, *Re Kansas City Power & Light Co*., 25 Mo.P.S.C.(N.S.) 605 (1983), although it did address other PURPA standards.

With the original PURPA Section 111(d) standards, there is a provision that if the consideration and determination of whether to adopt a Section 111(d) standard were not

[3] *Greater Cleveland Welfare Rights Organization, Inc. v. Public Util. Comm'n*, 442 N.E.2d 1288, 1294 (Ohio 1982).

completed for an electric utility by November 9, 1981 (three years after the date of the enactment of PURPA), then the State regulatory authority was to undertake the consideration and make the determination in the first rate proceeding for that electric utility commenced after November 9, 1981. The time frame is different for PURPA Section 114, i.e., two years, and there is no requirement for consideration in the first rate case if the time frame is missed for PURPA Section 114. Thus, in one of the concluding paragraphs of A. Scott Cauger's February 1, 1983 letter he states that it is the Staff's view that "a generic proceeding would be the best vehicle" for considering PURPA Section 114 and "whether such a rate is consistent with Missouri law and the Commission's authority."

B. Experimental low-income assistance

The Missouri Supreme Court has long held that the Commission has the power to set interim or experimental rates, "as a matter of necessary implication from practical necessity."[4] Low-income assistance programs considered and approved by the Commission in Missouri proceed from that authority.

C. Telecommunications

As for as the provision of telecommunications service to a low-income residential class, there is specific State and Federal legislation that authorizes special rates and charges. Section 392.200.2 RSMo. 2000 prohibits unequal treatment in the provision of service to any person or corporation for doing like or contemporaneous service under the same or substantially the same circumstances, except for offering (a) economy rate telephone service and/or (b) reduced charges for residential telecommunications connection services of participating local exchange

[4] *State ex rel. Laclede Gas Co. v. Public Serv. Comm'n,* 535 S.W.2d 561, 574 fn.1 (Mo.App. K.C.D. 1976).

telecommunications companies pursuant to the lifeline connection assistance plan as promulgated by the Federal Communications Commission ("FCC"):

> No telecommunications company shall directly or indirectly or by any special rate, rebate, drawback or other device or method charge, demand, collect or receive from any person or corporation a greater or less compensation for any service rendered or to be rendered with respect to telecommunications or in connection therewith, except as authorized in this chapter, than it charges, demands, collects or receives from any other person or corporation for doing a like and contemporaneous service with respect to telecommunications under the same or substantially the same circumstances and conditions. Promotional programs for telecommunications services may be offered by telecommunications companies for periods of time so long as the offer is otherwise consistent with the provisions of this chapter and approved by the commission. Neither this subsection nor subsection 3 of this section shall be construed to prohibit an economy rate telephone service offering. This section and section 392.220 to the contrary notwithstanding, the commission is authorized to approve tariffs filed by local exchange telecommunications companies which elect to provide reduced charges for residential telecommunications connection services pursuant to the lifeline connection assistance plan as promulgated by the federal communications commission. Eligible subscribers for such connection services shall be those as defined by participating local exchange telecommunications company tariffs.

Also in Chapter 392 is Section 392.480.1 providing for a State universal service board comprised of the Public Service Commissioners and the Public Counsel and a State universal service fund. In order to ensure "just, reasonable, and affordable rates for reasonably comparable essential local telecommunications services throughout the state," the Legislature established the State universal service board which was empowered to create a State universal service fund and to supervise the management of the State universal service fund. Pursuant to Section 392.248.2, funds from the State universal service fund are used to ensure the provision of "reasonably comparable essential local telecommunications service . . . throughout the state including high-cost areas, at just, reasonable and affordable rates," "to assist low-income customers and disabled customers in obtaining affordable essential telecommunications services." Section 392.248.4 states that

> To facilitate provision of essential local telecommunications service, the commission shall determine whether and to what extent any telecommunications company in the state providing essential local telecommunications service in any part of the state, shall be eligible to receive funding. Eligibility shall be determined as follows:
>
> (1) A telecommunications company's eligibility to receive support for high-cost areas from the universal service fund shall be conditioned upon:
>
> (a) The telecommunications company offering essential local telecommunications service, using its own facilities, in whole or in part, throughout an entire high-cost area and having carrier of last resort obligations in that high-cost area; and
>
> (b) The telecommunications company charging a rate not in excess of that set by the commission for essential services in a particular geographic area; and
>
> (2) A telecommunications company's eligibility to receive support to assist low-income customers and disabled customers shall be conditioned on the company's providing essential local telecommunications services to such customers pursuant to the discounted rate established by the commission for such customers. Distributions from the universal service fund shall be made by the universal service board in accordance with rules approved by the commission.

D. Chapter 393 does not contain statutory authority for low-income rate relief.

While Chapter 392 specifically provides that economy rates or reduced charges are not unlawfully discriminatory, there is no statutory authority in Chapter 393 similar to Chapter 392, and thus it may be argued that there is no authority for the Commissioners to effectuate rates for a low-income residential class of electric, gas, water, or sewer customers.

However, there is no express statutory for interim rates, either—but Missouri courts have held that the Commission has the "implied power to set interim rates." Staff notes *State ex rel Laclede Gas Co. v. Public Serv. Comm'n*, 535 S.W.2d 561 (Mo.App. K.C.D. 1976). *Amicus curiae* commented in the *Laclede Gas* interim rate relief case that during the then current Legislative Session a Bill had been introduced that would have expressly empowered the Commission to grant interim rate relief but the Bill did not pass. The Court stated that "[w]hile the amendment to a statute must be deemed to have been intended to accomplish some purpose,

that purpose can be clarification rather than a change of existing law" and held that the Bill in question was "intended only to clarify and particularize existing law." 535 S.W.2d at 567. The Western District Court of Appeals held that "the Commission has power in a proper case to grant interim rate increases within the broad discretion implied from the Missouri file and suspend statutes and from the practical requirements of utility regulation." 535 S.W.2d at 567. *Cf. State ex rel. Southwestern Bell Tel. Co. v. Public Serv. Comm'n*, 645 S.W.2d 44, 49-51 (Mo.App. 1982) (Commission authorized to adopt rule providing for use of data requests, even though there was no provision for data requests in Chapter 536).

E. Rate relief for low-income customers in other states

Several public utility commissions in other states have considered adopting low-income rate relief measures pursuant to PURPA and state legislation.

The Public Utilities Commission of Ohio ("Ohio Commission") in 1980 and 1981 held evidentiary hearings on PURPA Section 114. On November 4, 1981, the Ohio Commission issued its Opinion and Order in which it stated that it concluded based upon the overwhelming weight of the evidence to not implement lifeline rates. The Opinion and Order ultimately came before the Ohio Supreme Court for review. *Greater Cleveland Welfare Rights Organization, Inc. v. Public Util. Comm'n*, 442 N.E.2d 1288, 1290-91 (S.Ct. 1982). PURPA Section 114 only requires a state regulatory authority to (1) hold an evidentiary hearing to consider the possibility of implementing lifeline rates and (2) determine whether to do so or not. *Id*. at 1294. The appellants argued two propositions of law: one involving PURPA and the other involving State statute.

Regarding PURPA, the Court first held that the Ohio Commission did not err in not undertaking to define "essential needs" in the absence of a decision to adopt lifeline rates.

Second, the Court held that the Ohio Commission did not err in not considering lifeline rates based on cost of service the standard referred to in PURPA Section 111(d)(1). *Id*. at 1292. Third, the Court held that the Ohio Commission did not err in confining its analysis to whether lifeline rates provided assistance to low- and fixed-income individuals. *Id*. at 1293.

Fourth, the Court held that the Ohio Commission did not err by comparing lifeline rates to available assistance programs because the Ohio Commission's rejection of lifeline rates was not based on the existing availability of adequate assistance programs. The Ohio Commission's rejection of lifeline rates as inappropriate to aid low- and fixed-income customers was based on the conclusion that lifeline rates would not fulfill the proposed goals and would result in the imposition of inequitable rates. The Court stated that it seemed apparent that lifeline rates would not have been adopted by the Ohio Commission even in the absence of existing available adequate assistance programs. 442 N.E.2d at 1293.

Fifth, the Court held that the Ohio Commission did not err in rejecting the redistribution of income as a ratemaking function of lifeline rates. The Ohio Commission commented that lifeline rates do not adequately accomplish the intended goal of having high-use residential electric customers assist lower-use low-income and elderly customers because a portion of low-income and elderly customers are high-use residential electric customers and would not only fail to receive any benefit from lifeline rates but would in fact be harmed by even higher electric bills from lifeline rates. 442 N.E.2d at 1293.

F. Low-Income rate classes have been held to be discriminatory

Some state courts have held that low-income rate classes or discount rates implemented without specific statutory authority constitutes unlawful rate discrimination. On November 8, 1977, the Colorado Public Utilities Commission ordered gas utilities in two decisions to

implement a discount gas rate plan for low-income elderly and low-income disabled persons. The resulting revenue loss for discounted services was to be recovered by higher rates on all other customers. The Colorado Supreme Court in *Mountain States Legal Foundation v. Public Util. Comm'n*, 590 P.2d 495 (Colo.banc 1979) held the Colorado PUC's adoption of such a special reduced rate exceeded the PUC's authority from granting preferential or unjustly discriminatory rates:

> Section 40-3-106(1), C.R.S.1973, prohibits public utilities from granting preferential rates to any person, and section 40-3-102, C.R.S.1973, requires the PUC to prevent unjust discriminatory rates. When the PUC ordered the utility companies to provide a lower rate to selected customers unrelated to the cost or type of the service provided, it violated section 40-3-106(1)'s prohibition against preferential rates. In this instance, the discount rate benefits an unquestionably deserving group, the low-income elderly and the low-income disabled. This, unfortunately, does not make the rate less preferential. To find otherwise would empower the PUC, an appointed, nonelected body, to create a special rate for any group it determined to be deserving. The legislature clearly provided against such discretionary power when it prohibited public utilities from granting "any preference." In addition, section 40-3-102, C.R.S.1973, directs the PUC to prevent unjust discriminatory rates. Establishing a discount gas rate plan which differentiates between economically needy individuals who receive the same service is unjustly discriminatory.

590 P.2d at 498.

G. Evidentiary hearings in state commissions

In accordance with Section 114 of PURPA, the Florida Public Service Commission ("Florida Commission") initiated a generic docket and held an evidentiary hearing in 1980 in *Re Consideration of Lifeline Rates*, 43 P.U.R.4th 355 (Fla. Public Serv. Comm'n 1981). "Essential needs" were defined as basic needs for a minimum standard of living. The Florida Commission noted that most proposals quantified the required kwh in the range of 300 kwh or less per month. The target group was usually based on income level, disability, or age. *Id.* at 356-57. The Florida Commission stated that statistical data revealed that a lifeline rate not only failed to reach

a large number of intended beneficiaries, but, contraveningly reached a large number of unintentional beneficiaries. *Id.* at 358. The Florida Commission found that the adoption of lifeline rates in compliance with PURPA Section 114 had not been shown to be in the public interest and the objective of PURPA could best be achieved through other methods and programs of Federal, State, and local governmental entities. *Id.* at 359.

The Indiana Public Service Commission ("Indiana Commission") established a generic proceeding regarding PURPA Section 114 and set an evidentiary hearing for February 17, 1981. *Re Lifeline Rates*, 46 P.U.R.4th 149, 150, Subcause No. 35780-S8 (Ind. Public Serv. Comm'n 1982). The Indiana Commission found that the definition of "essential needs" should be based upon the uses for which there are no practical alternative energy sources and that a basic usage level of 300 kwh per month is a sufficient level of electric energy usage to provide such needs. The Indiana Commission also found that there are two basic forms of lifeline rates – general and targeted – and "[a] targeted lifeline rate is a lower than cost uniform charge per kilowatt-hour for a basis amount of electricity which is only available to specific income and/or demographic groups within the residential class." *Id*. at 152.

The Indiana Commission held that a lifeline rate targeted to provide rate relief to specific income and/or demographic groups for a basic level of electricity which is less than the rate charged all others for a like and contemporaneous service is prohibited by Indiana statute. 46 P.U.R.4th at 155-56. The Indiana Commission also held that a general lifeline rate structure would benefit some low-income/low users of electric energy, but it would also have the undesired result of benefiting a substantial number of middle- and/or high-income/low users of electric energy, and harming a substantial number of low-income/high-users of electric energy. *Id*. at 157.

The Arizona Corporation Commission ("Arizona Commission") held an evidentiary hearing on November 3, 1981 on PURPA Section 114. The Arizona Attorney General had previously issued Attorney General's Opinion No. 63-2 that in view of Arizona Constitution and Statute, the Arizona Commission did not have the power to authorize a lower water rate to natural persons living on pensions, welfare, or relief, who in addition are over the age of sixty-five years. As a result the Arizona Commission held that "it is clear that any proposed lifeline rate based upon age or economic status or a combination of both would be discriminatory and thus illegal under Arizona law." *Re Lifeline Rates*, 46 P.U.R.4th 163, 164 (Ariz. Corp. Comm'n 1982).

The Oregon Public Utility Commissioner ("Oregon Commissioner") instituted an investigation into rate structures of electric utilities and ratemaking standards as required under PURPA and issued Order No. 80-728 respecting the adoption of a lifeline rate in *Re Investigation Into Rate Structures Of Electric Utilities, Order*, 38 P.U.R.4th 409 (Or. Public Util. Comm'n 1980) in which he determined that a lifeline rate would not be adopted. Although the *Order* of the Oregon Commissioner states that the proceeding is in response to the requirements of PURPA, it does not mention PURPA Section 114 or any other specific section of PURPA. The Order notes that in 1975 the Oregon Commissioner instituted an investigation to determine whether to reduce rates for energy consumed by poor persons and senior citizens. In Order No. 76-039, January 16, 1976, the Oregon Commissioner concluded that under Oregon law he was prohibited from doing so, that to do so was a matter for the Oregon legislative assembly:

> . . . The commissioner concluded that he was forbidden under Oregon law from imposing rate classifications which discriminate on the basis of customer age or income level. The commissioner found the legislative assembly to be the government agency most appropriate and able to address the needs of the poor and the elderly.

38 P.U.R.4th at 414.

The Alaska Public Utilities Commission ("Alaska Commission") consideration and determination regarding PURPA Section 111(d) standards and Section 114 Lifeline Rates was made in *Re Municipality of Anchorage d/b/a Municipal Light and Power Department*, U-80-20, Order No. 8, U-82-27, Order No. 7, 6 APUC 38 (Alaska Public Util. Comm'n 1983).

The Washington Utilities and Transportation Commission ("Washington Commission") established Cause No. U-78-05 to consider ratemaking standards and utility service practices and also used it for consideration and determination of PURPA Section 114, Section 111(d) and Section 113(b). *Re Pacific Power & Light Co., et al.*, 46 P.U.R.4th 405, 408 (Washington Utilities and Trans. Comm'n 1980). Regarding PURPA Section 114, the Washington Commission identified the concept of "baseline rates" in addition to the PURPA term "lifeline rates." Clearly stating they "rejected the 'lifeline' concept for the setting of the electrical rates," the Washington Commission explained that they had repeatedly stated in prior Orders that "the needs of fixed- and low-income persons are real and are significant, but that it is more properly the function of state or federal social welfare agencies rather than fellow ratepayers of a utility to meet the needs of needy individuals." *Id*. at 423.

A concept that did find favor with the Washington Commissioners was that of the "baseline rate," which they defined as a lower rate charged for the initial block of electric consumption, thereby satisfying the requirement of PURPA Section 114, and universally applicable to all residential customers "essential needs" service. 46 P.U.R.4th at 423. The Washington Commissioners determined a range of 400 to 600 kwh per month to be a level of electric residential service to meet "essential needs." The Washington Commission required each respondent utility to initiate a baseline rate in its next ensuing proceeding. *Id*. at 424.

III. The Federal Poverty Level - Statistics for Missouri

The Federal Poverty Level ("FPL") in 2011 was defined as a family of four earning $22,050 per year. However, research suggests that families actually need almost twice the federal guideline in order to meet basic needs. Families of four who fall below 200 percent of the federal guideline are referred to as "low-income." And, as the following statistics indicate, people living in low-income conditions face significant challenges navigating the current economic landscape:

- People in poverty are less likely to have bank accounts and often resort to alternative banking options such as pay day loan and check cashing businesses. The typical payday loan borrower pays $793 for a $325 loan, although fees can range as high as 400 percent. (Center for Responsible Lending)
- Over 4 million lower-income homeowners (earning less than $30,000 annually) pay higher than average prices for mortgages, auto loans and excessive fees for furniture, appliances and electronics. They also tend to pay more for basic financial services, groceries and insurance. These extra costs add up to hundreds (sometimes thousands) of dollars per family. (Center for Responsible Lending)
- On average, Americans spend 5 percent of their income to pay energy bills. However, for lower income households, the costs average 18-20 percent or more. These costs include heating, cooling, appliances, lighting, etc. The difference between 5 percent and 18 percent for a family of four in poverty is $88 per month to $318 per month for utility costs. (U.S. Department of Energy)
- Housing costs for low-income families who receive no subsidy or assistance (such as Section 8 vouchers) spend as much as 50 percent to 75 percent of their annual income on rent. ("Connecting the Dots" by David K. Shipler)

As of April 2012, Missouri's poverty rate stands at 15.5 percent or 926,000 Missouri citizens. Of that number, 340,000 individuals are children.[5]

In Missouri, most families bear an energy burden of 3-6 percent of their income, yet low-income households often pay 16 percent or more of their income for energy alone. Over all low-income households spend an average of 46 percent of their gross pay on housing and energy.[6]

[5] Missouri Community Services Block Grant (CSBG) FFY2013-2013 Plan
[6] 2011 Missourian to End Poverty - Poverty Summit report.

In Missouri, there are approximately 2,925,933 residential customers who receive gas or electric services from a regulated utility and approximately 1,456,000 customers who receive their gas or electric services from either an electric cooperative or a municipality. For water services, there are approximately 488,134 residential customers who receive services from a regulated water utility. The number of Missouri customers who receive water services from a municipality or other sources is unknown. Assuming that approximately 15.5 percent of the regulated utility residential customers live in poverty (with qualifying criteria for a family of four living below the federal poverty guideline of $22,050), approximately 453,520 customers could potentially qualify for a low-income rate. If the same assumptions were applied to regulated utilities, cooperatives and municipalities, approximately 679,200 residential consumers statewide could potentially qualify.

According to the June 2012 Missouri report, "On the Brink: 2011, The Home Energy Affordability Gap", ("On the Brink") (Attachment 1) Missouri households with income below 50 percent of the Federal Poverty Level FPL pay 55.4 percent of their annual income toward energy bills. Bills for households between 75 percent and 100 percent of the FPL account for approximately 16 percent of household income and bills for households between 150 percent and 185 percent of the FPL have energy bills above the amount considered affordable.

According to 2000 Missouri Census data that was included in "On the Brink", more than 113,000 Missouri households live with income at or below 50 percent of the FPL, more than 68,000 live with incomes between 50 percent and 74 percent of the FPL and more than 79,000 live with incomes between 75 percent and 99 percent of the FPL.

A. Missouri energy gap rankings relative to other states[7]

"On the Brink" contains Home Energy Affordability Gap rankings by Missouri county and also compares Missouri to the other states and the District of Columbia. Missouri ranks eighth when comparing the average dollar amount by which actual home energy bills exceed affordable energy bills at the 185 percent FPL. The portion of the Missouri heating/cooling affordability gap covered by federal home energy assistance is 49.2 percent. For this ranking, Missouri is 9th. The Attachment also contains several June 2012 charts outlining home energy affordability gap rankings[8]. According to the charts, 11.7 percent of Missouri persons are below 100 percent of the Federal Poverty Level (FPL), with a poverty ranking of 28 when compared to the other states and the District of Columbia.

IV. Low Income Home Energy Assistance in Missouri[9]

Of the Federal Government's FY2012 Low Income Home Energy Assistance Program (LIHEAP) funds of $3.47 Billion, Missouri received an allocation of $68,231,128. Missouri's Weatherization Assistance Program funds from LIHEAP equaled $0.

To protect families and seniors, on July 26, 2012, the Governor announced that he instructed the Missouri Department of Social Services to redirect $1.5 million in LIHEAP funds to the Summer Crisis Program, which provides assistance to low-income Missourians to help pay for cooling costs. That brings the total funding for the program to $9.1 million. The $1.5 million was available because it was not spent for heating costs during the past warm winter.

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[7] On a scale of 1-51, a ranking of 1 indicates best conditions and a ranking of 51 indicates worse conditions relative to other states.

[8] See: www.opportunitystudies.org/energy-affordability.

[9] Attachment 7 provides the most recent publicly available LIHEAP facts.

A. Energy Assistance (EA) Program[10]

Following are the most recent Low-Income Home Energy Assistance statistics for Missouri.

EA Assisted Households: 147,004

		Percentage of Assisted Households
Category A Cases (all on food stamps):	107,755	3.30%
Category B Cases (none on food stamps):	29,424	20.02%
Category C Cases (combination of A and B):	9,825	6.68%
Total:	147,004	100.00%

Households Under 75% of Federal Poverty	63.04%
Households 75%-100% of Federal Poverty	21.73%
Households 101%-125% of Federal Poverty	12.73%
Households 126%-135% of Federal Poverty	2.50%

(Note: Income for a family of 3 at 75% of Federal Poverty is $1,158 per month)

Average Household Size:	2.38
Average Gross Monthly Income:	$940.55
Average Net Monthly Income:	$813.67

Fuel Types Used as Primary Heat Source:

Natural Gas:	41.91%	Average Payment:	$258.19
Electricity:	41.94%	Average Payment:	$251.94
Tank Propane:	14.31%	Average Payment:	$363.57
Wood:	1.60%	Average Payment:	$163.85
Fuel Oil:	.10%	Average Payment:	$251.48
Cylinder Propane:	.13%	Average Payment:	$133.51
Kerosene:.	01%	Average Payment:	$113.06

[10]Missouri Department of Social Services, Family Support Division. Low-Income Home Energy Assistance Program - FFY 2012 Program Statistics.

Total EA Payments Winter 2011-2012	$39,537,336.64
Average EA Benefit Amount	$268.95
EA benefit based on fuel type, household size and income.	
Maximum benefit is $450 for tank propane.	
EA Households with services that were threatened:	39,220
EA Households with services that were terminated:	13,877
EA Households in crisis:	53,097*

*Crisis information is self-declared on LIHEAP application and possibly under reported.

B. Energy Crisis Intervention Program (ECIP) Winter Program

Total number of ECIP Assisted Households	98,815
Total ECIP Payments Winter 2011-2012	$27,471,600
Total Available for Summer 2012	$ 8,668,400
Maximum Winter Benefit	$ 800
Maximum Summer Benefit	$ 300

V. Summary of Customer Comments

The Commission has received twenty (20) Public Comments associated with File Nos. EW-2013-0045, GW-2013-0046 and WW-2013-0047. Of the public comments seven (7) have submitted comments in favor of the Commission establishing a low-income rate class and twelve (12) have submitted comments opposing the establishment of a low-income rate class. One public comment was an administrative question on how to file comments directly into the dockets.

Comments supporting the establishment of a low-income rate class were stated by Ms. Lucile McClure of Maryville, MO who stated, “I’m writing to tell the Utility Services that Senior Citizens and low income families should get a discount. Many are on low fixed incomes.” And by Woodrod Landreth, St. Louis, MO who stated, “I am on Social Security. My income is limited to a very small raise and some times’ the raise goes to pay for my Medicare cost. I can’t keep up with my utilities now.”

Consumer comments opposing the establishment of a low-income rate class were stated by Gertrude Mulvania, Rock Port, MO who stated, "I am writing about the study regarding the possibility of offering discounted utility rates for low-income customers. I taught school 19 years, so I am familiar with the situation for those in my community. I recently retired as Secy.-Treas. of the Rock Port Ministerial Alliance. In that position I was familiar with many in our community who struggled to pay their utility bills. Depending upon true need, we were often able to help. Even so, I believe that a discount to rates for those low-income customers is not a good choice for several reasons: … Please do not expect other rate-payers to pay more so low-income customer can pay less. It's a terrible burden and unfair to those who already pay more than their share through taxes and their own generosity to provide for those who have less." (See Attachment 2 for Ms. Mulvania's complete statement.) Other consumers have made comments in opposition but have provided the Commission with an alternative or their recommendation for a solution, such as Howard Dozier, St. Joseph, MO (Attachment 3). These excerpts and attachments were selected as representative of the comments or because they provided constructive insight into considerations for the establishment of a low-income rate class.

VI. Low-Income Experiments Previously Approved by the Commission

The Commission has a long history of working through the very difficult reality of how to provide assistance to low-income customers and increasing energy costs. As explained above, Staff conducted research on low-income experiments previously approved by the Commission.

In completing this research, Staff first looked to Case No. GW-2004-0452, captioned, *In the Matter of a Commission Inquiry into Affordable Heating Energy for Customers of Regulated Missouri Utilities and Possible Changes to the Cold Weather Rule.* From this case, a Final Report of the Missouri Public Service Commission's Cold Weather Rule & Long Term Energy

Affordability Task Force ("Final Report") (Attachment 4) was submitted for the Commission's consideration. This document is very helpful in the instant dockets.

The driver of the case in 2004/2005 was the then ever-increasing cost of natural gas and how that trend was affecting low-income Missourians. Although various ideas were discussed, no fundamental change in rates to address low-income customers was created as a result of the case. Recommendations included action required by the Legislature and the Commission. The recommendations that the Commission could implement with existing statutory authority included educational awareness, assistance programs, incentives, rate design changes, and efficiency measures. Some of these ideas have been implemented.

The Final Report is useful here. Appendix B to the Final Report is a listing of the development of low income programs in Missouri. This list goes back to 1976 when The Weatherization Assistance Program was established by the Department of Energy. Funds were administered by the Missouri Department of Natural Resources. Since that date, many other programs were proposed and approved on an experimental basis. Furthermore, the report shows that there have been attempts to address low-income issues in both the electric and gas industries. However, there has not been the same level of low-income assistance discussion in the water industry. This section of the instant Report will focus solely on programs that addressed rates, discounted rates, arrearage forgiveness, etc after the date of Final Report. It will not mention programs that dealt only with weatherization or specific programs developed by the utilities such as Dollar Help or Dollar More.

A. Electric Programs

In *Re The Empire District Electric Co.*, Case No. ER-2002-424, Report and Order, 11 Mo.P.S.C.3d 604, 608-09 (2002), the Commission accepted a Unanimous Stipulation and

Agreement. As part of that resolution of the rate case, Empire agreed to implement an Experimental Low-Income Program ("ELIP") generally consistent with the program proposed by Empire, but the program details were to be developed by a collaborative committee. Program funds were to be paid by ratepayers at the level proposed by Empire to be matched by Empire. Empire was to assist ELIP participants in completing LIHEAP applications.

This program became effective on April 30, 2003 and mirrors the MGE program discussed below. On December 14, 2007, it was modified to include participants up to 125 percent of the FPL and the first tier credit was increased from $40 to $50. This program expired on June 15, 2011.

On February 10, 2010, the Commission issued in Ameren Missouri Case No. ER-2010-0036 an Order Directing The Parties To Address The Concerns Raised By AmerenUE's Low-Income Residential Customers. The Order stated, in part, at pages 1-2:

> In addition to the mechanisms traditionally utilized to assist low income customers, the Commission would like the parties in their testimony to address the feasibility of establishing an experimental "very low-income" customer class that would be based upon the federal poverty level. The Commission would like any testimony filed on this issue to include an: 1) analyze the practicality of establishing such a class, including the effect on revenues and costs, 2) propose guidelines for inclusion in such a class, 3) propose verification procedures for participants in such a class, 4) analyze the possible effect on the company's bad debt expense of such a class, and 5) state an opinion as to whether such a class should be tied to the current industrial rate class or propose an alternate rate.

Ameren Missouri's experimental program is called the Keeping Current Program. It was approved in Case No. ER-2010-0036. It became effective on August 7, 2010 and had a two-year time period. No further funding was to be provided after July 31, 2012. Its parameters were similar to previous experimental programs in that there is a bill credit based upon the participant's income level and an arrearage bill credit. This program established credits for both heating and cooling periods. Ameren Missouri is currently in the middle of a rate case, ER-

2012-0166, and this program is an issue in the proceeding. The first comprehensive review of the program should be available soon.

KCPL and KCP&L Greater Missouri Operations Company ("GMO") were each granted authority for experimental programs called the Economic Relief Pilot Program ("ERPP") in Case Nos. ER-2009-0089 and ER-2009-0090, respectively. These programs became effective on September 1, 2009. They were established as three-year pilot programs and are still in effect. In these programs, customers who are up to 185 percent of the FPL are eligible. Recipients receive a fixed credit on their monthly bill for up to 12 months. If the participant has outstanding arrearages, he will have to enter a special payment program. The bill credit will not exceed $50 per month.

B. Natural Gas Programs

In 2001, Missouri Gas Energy ("MGE") established what seems to be the first experimental low-income rate program in Missouri. This program, titled ELIR ("Experimental Low-Income Rate"), was approved by the Commission as a part of a Stipulation and Agreement in Case No. GR-2001-292 and was targeted to the Joplin area. The basic parameters of the program established two groups, Group A at 0-50 percent of the FPL and Group B at 51-100 percent of FPL, which would receive a bill credit of either $40 or $20 per month, respectively. The length of time a participant could be on the program was 24 months. All participants had to enroll in budget billing and those with arrearages had to enter into pay arrangements over a given period of time. The program was effective on November 1, 2001. It ended after Case No. GR-2004-0209 in July 2006.

Aquila, in Case No. GR-2004-0072, established its own low-income program. This program become effective on October 1, 2004 and targeted the Sedalia area. One of the

parameters of this plan, known as ELIP ("Experimental Low Income Program"), was a tiered system of bill credits of either $60 or $40 during the months of November through March. This tiered system of rate discounts is similar to the experimental programs previously established for other utilities. One difference is that the second tier included customers who were up to 125 percent of the FPL. This program continued when Empire purchased Aquila's assets. However, the tariffs cancelled the program on April 1, 2010.

Ameren Missouri was allowed to create an experimental low-income program for a portion of its territory in Stoddard and Scott counties in Case No. GR-2003-0517. However, no customers participated in the program and it ended in Ameren Missouri's subsequent rate case, Case No. GR-2007-0003.

To the best of Staff's information at this time, there are no experimental low-income programs currently in effect for any natural gas utilities in Missouri. One overriding comment regarding the previous experiments is a general lack of participation among the customers.

C. Water Programs

In Missouri, there is one large water provider, Missouri-American Water Company ("MAWC"). In Case No. WR-2010-0131, MAWC, in response to discussion regarding low-income rate relief in the other industries, filed for a low-incom'e rate. The basic premise proposed by the Company was to create a low-income customer charge that was 65 percent of the normal customer charge charged to residential customers. MAWC's use of 65 percent of the normal customer charge was due in part to a similar program in effect in Pennsylvania, which is more fully discussed later in the Report. In the Stipulation & Agreement approved by the Commission, a collaborative was established to review the concept of creating a low-income rate for MAWC. During discussions, it was determined that there was an experimental low-income

program being offered by Ameren Missouri at that time and the best course of action was to wait for the results of Ameren Missouri's experiment to determine the scope and nature of any potential experiment for MAWC.

D. Summary of Commission-approved experimental programs

Currently, there are three pilot programs concerning low-income customers in the electric industry and none for gas, water, or sewer. Historically, there have been three experimental pilots in the natural gas industry, four total in the electric industry, and none in the water and sewer industry in Missouri. Of the experimental plans, there have been some common themes. Generally, low-income customers had to be at or below 125 percent of the FPL (the KCPL/KCPL GMO plans being an exception). All programs granted bill credits and most had a tiered system giving a greater bill credit to those at 0 to 50 percent of FPL. Some programs required participants to participate in budget billing. Most, if not all, required participants who were in arrears to establish a special payment plan. Finally, the general funding mechanism for the pilot or experimental programs was a surcharge or addition to the utility's overall revenue requirement with some matching funds provided by shareholders in certain cases.

Most of the programs have expired. A brief review of the programs indicates that a major contributing factor leading to the expiration of the programs is a general lack of customer participation in the programs.

VII. Other States' Utility Assistance Programs[11]

A. Electric Programs

1. California

Federal electric rate assistance ("FERA") allows an electric bill discount to low- to middle-income households of three or more people. In 2011-2012, an eligible household of four may earn from $45,101 to $56,400 per year.

2. Delaware

March 1999 legislation provided funding for low-income energy assistance and weatherization through a systems benefit charge ("SBC") on Delmarva Power & Light Company ("DP&L") customers. The assistance is provided to consumers at or above 150 percent of the FPL.

3. Maine

A Statewide Low-Income Assistance Plan ("LIAP") created a central fund to finance the statewide plan and apportion the fund to each utility. Each utility contributes money to the central fund based upon the number of residential customers residing in its service territory. The funds are then redistributed to the transmission and distribution utilities based on the number of customers eligible for LIHEAP in each service territory. To be eligible for LIAP, the customer or a member of the customer's household must be eligible to receive a LIHEAP benefit, and the customer must not receive a housing subsidy. The Maine State Housing Authority administers the plan and the individual LIAPs. The Maine Public Utilities Commission reviews and approves each utility's LIAP, and modifications thereto.[12]

[11] See: http://liheap.ncat.org/dereg.htm for additional details.

[12] 65-407 Public Utilities Commission: Chapter 314 Statewide Low-Income Assistance Plan

4. Maryland

The Electric Universal Service Program ("EUSP"), established pursuant to Senate Bill 504, has three components: 1) bill payment assistance to help participants pay current electric bills (the income group at 0-75 percent of poverty was to receive an electric bill benefit that is equal to 65 percent of the estimated annual bill; at 76-110 percent, it was 50 percent. The group from 111-150 percent was slated to receive a benefit equal to 40 percent of the estimated annual electric cost; while those from 151-175 percent of poverty were to receive 20 percent. The benefit for those households living in subsidized housing was also planned at 20 percent of the annual bill); 2) arrearage retirement payments to help them pay some past due electric bills (minimum of $300 in past due bills and the maximum benefit amount is capped at $2,000); and 3) weatherization to provide electric energy efficiency measures to reduce future electric bills.

5. Montana

Restructuring legislation established an electric universal systems benefits charge ("EUSBC"), a portion of which funds low-income energy assistance and conservation. The law requires all utilities to set aside 2.4 percent of their retail sales revenues (based on 1995 levels) to fund "energy conservation, renewable resource projects and applications, and low-income energy assistance" through July 1, 2003. The EUSBC remains in place.

6. New Hampshire

Legislation authorized a SBC to fund programs such as New Hampshire's Electric Assistance Program ("EAP"), also known as the tiered-discount program ("TDP"). The EAP provides eligible low-income customers with discounts up to 70 percent of their electric bill, depending on household size and income.

7. Oregon

Restructuring legislation provides approximately $18 million in funding for low-income energy assistance and weatherization programs. Legislation also authorized collection of money

for low-income electric assistance through a meters charge on residential and commercial/industrial customers of PGE and PacificCorp. In 2011, the governor signed Senate Bill 863, which directed electric companies to collect an additional $5 million for low-income assistance if at least 2 of the 4 following economic conditions are met in the previous 12-month period.

- The unemployment rate exceeded 10 percent for at least 6 months.
- The poverty rate exceeded 12 percent.
- The LIHEAP allocation is 75 percent or less than the previous year's allocation.
- The number of SNAP (supplemental nutrition assistance program) households exceeded 20 percent.

The program is administered by Oregon Housing and Community Services, and funds are distributed through community action agencies.

8. Texas

Restructuring legislation authorized a SBC of up to 65 cents per megawatt hour to fund low-income rate assistance and energy efficiency.

LITE-UP Texas provides eligible households with a 10 percent electric bill discount. Funding has been limited since it has regularly been shifted to the state general fund.

B. Natural Gas Programs

1. Georgia

As a result of natural gas deregulation laws, households meeting the low-income requirements for LIHEAP qualify for a reduced security deposit, special rates and a lower customer service fee. Customers apply through their local community action agencies. The rates are approximately 10 to 14 cents per therm lower than the current variable rates, and low-income senior citizens receive an additional two cents per therm discount. The monthly customer service charge for senior citizens is $2 less than for other consumers and the $100 deposit is waived.

Discounts are partially funded by the Georgia Universal Service Fund (GUSF). In 2001 and 2002, the Natural Gas Consumers' Relief Act was amended so that "assisting low-income residential consumers in times of emergency as determined by the commission, and consumers of the regulated provider" were the primary purposes of the GUSF. The GUSF is funded through surcharges on large industrial users and certain profits from Atlanta Gas Light.

2. Montana

Legislation established a USBC which all natural gas transmission or distribution service providers began charging to all end users in May 1997. A natural gas utility's annual funding requirement for conservation and low-income energy bill assistance within the USBC was 0.42 percent of the utility's 1995 revenue. In 2007 this was changed so that the requirement is now a minimum of 0.42 percent of a utility's previous year's revenue.

C. Electric and Natural Gas Programs

1. California

California Alternate Rates for Energy ("CARE") provides a 20 percent discount on electric and natural gas bills for low-income customers that are enrolled in the program. Eligible customers are those customers whose total household income is at or below the income limits indicated below.

Income limits effective June 1, 2012 through May 31, 2013.

Household Size	CARE & Energy Savings Assistance Programs (200% of Federal Poverty Guidelines)
1	$22,340
2	$30,260
3	$38,180
4	$46,100
5	$54,020
6	$61,940
7	$69,860
8	$77,780
Each Additional Person	$7,920

Customers may also be eligible for CARE if they are enrolled in public assistance programs such as Medicaid/Medi-Cal, Women, Infants and Children Program ("WIC"), Healthy Families A & B, National School Lunch's Free Lunch Program ("NSL"), Food Stamps/SNAP, LIHEAP, Head Start Income Eligible (Tribal Only), Supplemental Security Income ("SSI"), Bureau of Indian Affairs General Assistance, and Temporary Assistance for Needy Families ("TANF") or Tribal TANF.

Low income energy efficiency ("LIEE") is a program for efficiency measures only and does not include administrative and indirect costs, or costs of inspections and oversight. Measures include repair and replacement of gas and electric heating and water heating systems, air conditioners and evaporative coolers, refrigerator and lighting upgrades, weatherization and energy efficiency education.

2. Colorado

As explained above, in 1977 the Colorado Supreme Court struck down a low-income program implemented without statutory authority. Now, Title 40, Article 3 of the Colorado statutes[13] states,

> (d)(I)Notwithstanding any provision of articles 1 to 7 of this title to the contrary, the commission may approve any rate, charge, service, classification, or facility of a gas or electric utility that makes or grants a reasonable preference or advantage to low-income customers, and the implementation of such commission-approved rate, charge, service, classification, or facility by a public utility shall not be deemed to subject any person or corporation to any prejudice, disadvantage, or undue discrimination.
>
> (II) As used in this paragraph (d), a "low-income utility customer" means a utility customer who:
> (A) Has a household income at or below one hundred eighty-five percent of the current FPL; and
> (B) Otherwise meets the eligibility criteria set forth in rules of the department of human services adopted pursuant to section 40-8.5-105.
>
> (III) When considering whether to approve a rate that makes or grants a reasonable preference or advantage to low-income utility customers, the commission shall take into account the potential impact on, and cost-shifting to, utility customers other than low-income utility customers.
>
> (2) Nothing in articles 1 to 7 of this title shall be taken to prohibit a public utility engaged in the production, generation, transmission, or furnishing of heat, light, gas, water, power, or telephone service from establishing a graduated scale of charges subject to the provisions of this title.
>
> (3) Nothing in this section shall prevent the commission from revoking its approval at any time and fixing other rates and charges for the product or commodity or service as authorized by articles 1 to 7 of this title.

3. Georgia

In 1987, the Georgia Public Service Commission mandated that major gas and electric utilities waive the monthly service charge for customers age 65 or over, or earning less than $10,000 per year. (The low-income wage amount has been raised to $14,355.) The amount of

[13] Colorado Statutes. Title 40. Utilities. §40-3-106. Advantages prohibited – graduated schedules – consideration of household income and other factors – definitions.

the waiver has increased over the years as part of electric and gas utility rate case settlements. This program continues in addition to the GUSF natural gas assistance program discussed above.

4. Illinois

On July 10, 2009, legislation was signed creating a statewide percentage of income payment plan ("PIPP") for low-income natural gas and electricity consumers. The PIPP began with small pilot programs conducted by ComEd and Ameren, with statewide implementation in FY 2012. Participants generally pay 6 percent of their gross monthly income for gas and electric service. The PIPP also includes an arrearage reduction program and client education. The maximum PIPP benefit is $1800 per year, with a maximum of $100 per month toward the participant's natural gas bill and $50 toward the electric bill. Consumers have the option of signing up for PIPP or receiving a regular, one-time LIHEAP payment. Income eligibility for participation in either option is 150 percent of the FPL. Funding is provided through a meters charge.

5. Massachusetts

Electric and natural gas investor-owned utilities provide low-income utility discounts. The natural gas discount is mandated by state regulation. The electric discount is codified through the state's 1997 restructuring legislation. In February 2010, the Massachusetts Department of Public Utilities (DPU) required utilities to file tariffs with discounts at a flat 25 percent off the total bill. According to the DPU, this structure would provide uniformity regardless of consumption or energy prices. Prior discounts varied by consumption. Consumers qualify for the discounts through participation in means-tested programs such as food stamps and TANF.

6. Michigan

From February 2002 through September 2010, the Michigan Public Service Commission ("Michigan Commission") solicited grants administered through the Department of Human

Services for low-income energy assistance programs. In July 2011, a Michigan appeals court struck down the funding saying the Michigan Commission no longer had authority to maintain and disburse money from the fund. The Michigan Supreme Court declined to review the appeals court's decision.[14]

7. Nevada

In July 2001, legislation created the Nevada Fund for Energy Assistance and Conservation ("FEAC"), funded through a tax assessment, or a Universal Energy Charge ("UEC") paid by regulated gas and electric residential, commercial and industrial customers. Funds are credited to the states LIHEAP and weatherization assistance programs. Federal and state funding is used to operate an energy assistance program that requires participants with income at 110 percent of the FPL to pay no more than a small percentage of their income for energy. The benefit, or Fixed Annual Credit ("FAC"), is calculated for each eligible household in an amount sufficient to reduce the percentage of the household's income spent on natural gas and electricity to the state median percentage of household income spent on these services. The 2012 state median is 2.03 percent.

8. New Jersey

New Jersey electric and gas customers with household income equal to or less than 175 percent of the federal poverty level are eligible for assistance from the New Jersey Universal Service Fund ("NJUSF"). Participants are required to pay no more than six percent of their annual income toward electric and gas bills, capped at $1,800 annually.

9. New York

The New York Public Service Commission ("New York Commission") directs the creation and expansion of low-income energy programs under the state's and the New York Commission's policy that the "continued provision of gas, electric and steam service to

[14] *In re Application of Michigan Consolidated Gas Company to Increase Rates*, 491 Mich. 884 (2012).

residential customers without unreasonable qualifications or lengthy delays is necessary for the preservation of the health and general welfare and is in the public interest."[15] All of the regulated utilities have some form of rate assistance, usually discounts off the basic monthly service charge for electricity and/or gas, funded through utility rates of all customer classes and administered by each utility.

10. Ohio

On November 1, 2010, Ohio began an updated PIPP, known as PIPP Plus. PIPP Plus is designed to make customers' monthly payments more affordable on a year-round basis. Participating households pay six percent of their monthly income, or $10 per month, whichever is greater, to both electric and natural gas utilities. All-electric customers pay 10 percent of their income, or $10 per month, whichever is greater. The OUSF funds the electric PIPP, along with energy efficiency and consumer education programs and the natural gas PIPP is funded through a gas PIPP rider embedded in gas distribution charges. The Ohio Department of Development administers the electric PIPP. Individual utilities administer the natural gas PIPP.

11. Pennsylvania

Electric and gas restructuring legislation required regulated utilities to continue existing low-income rate assistance and energy efficiency programs beyond restructuring. Funding for electric customer assistance programs is recovered by non-bypassable, competitively neutral distribution service charges and the costs of the gas customer assistance programs are recovered from ratepayers. Generally, electric and natural gas customers enrolled in universal service programs have average household incomes that are less than $15,287 a year.

The Customer Assistance Program ("CAP") follows the universal service guidelines set forth in relevant Pennsylvania statutes. CAPs provide a percentage-of-bill or percent-of-income payment plan. Some programs offer arrearage forgiveness, flat rate discounts or bill credits.

[15] Public Service Law, §30.

According to a Pennsylvania Commission order, utilities administer the programs, relying on community-based organizations. Utilities must file universal service plans, which are subject to Pennsylvania Commission approval, every three years.

12. Rhode Island

In June 2006, the governor signed "The Comprehensive Energy Conservation, Efficiency and Affordability Act of 2006", which was to start providing energy relief to low-income households in FY 2008. The Affordable Energy Fund, was to be funded through a gross receipts tax on electric and gas utilities and a sales tax on heating oil. Customers would receive a 50 percent reduction in natural gas distribution rates and a 50 percent reduction on electric charges for usage up to 500 kwh per month. Due to budget constraints, all funding was eliminated and the Act was repealed.

13. Wisconsin

Wisconsin's "Reliability 2000" law permanently funded low-income energy programs. Funding for the low-income public benefits fund ("PBF") is provided by funding based on prior electric and gas low-income expenditures; a fee or customer charge on all electric bills; and current LIHEAP and weatherization allocations. The law specifies that 47 percent of the funds be used for weatherization and 53 percent be used for bill payment assistance.

D. Water Programs

Pennsylvania-American Water Company ("PAWC") initiated a low-income program in 1997. This program is administered by a third-party entity and is designed for customers who typically qualify for LIHEAP funds. Once established as being eligible, PAWC assigns a code to the customer's account and the customer charge is reduced to 65 percent of the normal customer charge.

VIII. Effectiveness of Energy Assistance Programs

Ken Costello, Principal for The National Regulatory Research Institute (NRRI), drafted a paper, "How to Determine the Effectiveness of Energy Assistance, and Why It's Important." (Attachment 5) The paper identifies criteria to assess the effectiveness of programs designed to facilitate the payment of utility bills by low-income households. The paper identifies questions that any regulatory or legislative policy-maker should consider when developing policy related to providing utility assistance to low-income households.

- How much assistance should a utility provide in view of governmental and non-utility private assistance?
- Who should pay for the assistance?
- How should the utility collect the money (e.g., system benefit charge, cost tracker)?
- What constitutes an appropriate financial effect on subsidizing customers?
- How should the utility distribute the assistance to eligible households?

The paper also identifies nine criteria that regulators can use to identify effective and ineffective energy assistance. The nine criteria are:

1. Benefits should accrue only to low-income households.
2. Recipients should receive maximum benefits relative to funding dollars.
3. Consumer information and education should make consumers aware of assistance and provide ways to reduce energy bills.
4. Benefits should positively correlate with actual energy costs or burdens.
5. Assistance programs should avoid large efficiency losses or cross-subsidization
6. Assistance programs should have reasonable administrative and implementation costs.
7. Funding should have a tolerable financial effect on subsidizing customers.
8. Assistance programs should result in reduced collection costs, service disconnections, arrearages and debt write-offs.
9. Assistance programs should promote equity.

The paper provides a matrix that allows regulators to qualitatively compare actions and provides performance indicators for actions related to energy assistance programs, with a goal of ensuring utility-service affordability effectively and with minimal adverse effect.

The Applied Public Policy Research Institute for Study and Evaluation (APPRISE) authored a paper titled "Energy Affordability Program Design Options" (Attachment 6). The

paper provides options for designing energy-affordability programs and provides advantages and disadvantages of various models. Topics of discussion include administrative efficiency, benefit determination and benefit distribution

These papers are provided as additional resources the Commission may want to incorporate when considering whether to implement low-income assistance programs.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of a Working Case to Consider the Establishment of a Low-Income Customer Class or Other Means to Help Make Electric Utility Services Affordable	))))	Case No. EW-2013-0045
In the Matter of a Working Case to Consider the Establishment of a Low-Income Customer Class or Other Means to Help Make Natural Gas Utility Service Affordable	))))	Case No. GW-2013-0046
In the Matter of a Working Case to Consider the Establishment of a Low-Income Customer Class or Other Means to Help Make Water Utility Services Affordable	))))	Case No. WW-2013-0047

AFFIDAVIT OF JAMES A. BUSCH

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

James A. Busch, employee of the Staff of the Missouri Public Service Commission, being of lawful age and after being duly sworn, states that he has participated in the preparation of the accompanying Staff Report on pages 18-23 and 33, and the facts therein are true and correct to the best of his knowledge and belief.

James A. Busch

Subscribed and sworn to before me this 7th day of September, 2012.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of a Working Case to Consider the Establishment of a Low-Income Customer Class or Other Means to Help Make Electric Utility Services Affordable	))))	Case No. EW-2013-0045
In the Matter of a Working Case to Consider the Establishment of a Low-Income Customer Class or Other Means to Help Make Natural Gas Utility Service Affordable	))))	Case No. GW-2013-0046
In the Matter of a Working Case to Consider the Establishment of a Low-Income Customer Class or Other Means to Help Make Water Utility Services Affordable	))))	Case No. WW-2013-0047

AFFIDAVIT OF NATELLE DIETRICH

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Natelle Dietrich, employee of the Staff of the Missouri Public Service Commission, being of lawful age and after being duly sworn, states that she has participated in the preparation of the accompanying Staff Report on pages 14-15, 24-33 and 34-35, and the facts therein are true and correct to the best of her knowledge and belief..

Natelle Dietrich

Subscribed and sworn to before me this 7th day of September, 2012.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086

Susan L. Sundermeyer
Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of a Working Case to Consider the Establishment of a Low-Income Customer Class or Other Means to Help Make Electric Utility Services Affordable	))))	Case No. EW-2013-0045
In the Matter of a Working Case to Consider the Establishment of a Low-Income Customer Class or Other Means to Help Make Natural Gas Utility Service Affordable	))))	Case No. GW-2013-0046
In the Matter of a Working Case to Consider the Establishment of a Low-Income Customer Class or Other Means to Help Make Water Utility Services Affordable	))))	Case No. WW-2013-0047

AFFIDAVIT OF CAROL GAY FRED

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Carol Gay Fred, employee of the Staff of the Missouri Public Service Commission, being of lawful age and after being duly sworn, states that she has participated in the preparation of the accompanying Staff Report on pages 13 - 14 and 15 - 18, and the facts therein are true and correct to the best of her knowledge and belief..

Carol Gay Fred
Carol Gay Fred

Subscribed and sworn to before me this 7th day of September, 2012.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086

Susan L. Sundermeyer
Notary Public

MISSOURI

ON THE BRINK: 2011

THE HOME ENERGY AFFORDABILITY GAP
JUNE 2012

Finding #1

Poverty Level	Home Energy Burden
Below 50%	55.4%
50 – 74%	22.3%
75 – 99%	16.0%
100 – 124%	12.5%
125 – 149%	10.2%
150% - 185%	8.4%

Home energy is a crippling financial burden for low-income Missouri households. Missouri households with incomes of below 50% of the Federal Poverty Level pay 55.4% of their annual income simply for their home energy bills.

Home energy unaffordability, however, is not simply the province of the very poor. Bills for households between 75% and 100% of Poverty take up 16.0% 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.

Finding #2

Poverty Level	No. of Households
Below 50%	113,308
50 – 74%	68,358
75 – 99%	79,385
100 – 124%	91,834
125 – 149%	102,104
150% - 185%	146,829

The number of households facing these energy burdens is staggering. According to the 2000 Census, more than 113,000 Missouri households live with income at or below 50% of the Federal Poverty Level and thus face a home energy burden of 55.4%.

More than 68,000 Missouri households live with incomes between 50% and 74% of Poverty (home energy burden of 22.3%). And more than 79,000 *more* Missouri households live with incomes between 75% and 99% of the Federal Poverty Level (home energy burden of 16.0%).

PUBLIC FINANCE AND GENERAL ECONOMICS
BELMONT, MASSACHUSETTS

Finding #3

	Home Energy Affordability Gap	Gross LIHEAP Allocation
2002 (base year)	$272,596,654	$38,745,874
2011 (current year)	$763,142,806	$95,595,838
Change	$490,546,152	$56,849,964

Existing sources of energy assistance do not adequately address the energy affordability gap in Missouri. Actual low-income energy bills exceeded affordable energy bills in Missouri by $763 million at 2010/2011 winter heating fuel prices. In contrast, Missouri received a gross allotment of federal energy assistance funds of $95.6 million for Fiscal Year 2011.

Missouri's LIHEAP allocation has lost ground relative to its Home Energy Affordability Gap. From 2002 to 2011, the total Home Energy Affordability Gap increased by $490.5 million. In comparison, the federal LIHEAP allocation to Missouri increased $56.8 million.

Finding #4

Home Energy Affordability Gap: 2002 (base year)	$272,596,654
Home Energy Affordability Gap: 2011 (current year)	$763,142,806
Home Energy Affordability Gap Index (2002 = 100)	280.0

The Home Energy Affordability Gap Index in Missouri was 280.0 for 2011. This Index indicates that the Home Energy Affordability Gap has increased 180.0% 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 Missouri 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	$835
Hot water	$332
Space heating	$532
Space Cooling	$135
Total annual bill	$1,834

The energy affordability gap in Missouri is not created exclusively, or even primarily, by home heating and cooling bills.

At 2010/2011 prices, while home heating bills were $532 of a $1,834 bill, electric bills (other than cooling) were $835. Annual cooling bills represented $135 in expenditures, while domestic hot water represented $332 in expenditures.

Finding #6

Fuel	2009 Price	2010 Price	2011 Price
Natural gas heating (ccf)	$1.139	$0.949	$0.997
Electric heating (kWh)	$0.073	$0.072	$0.083
Propane heating (gallon)	$2.026	$1.911	$1.976
Fuel Oil heating (gallon)	$1.863	$2.432	$3.182
Electric cooling (kWh)	$0.097	$0.104	$0.115

In Missouri, natural gas prices rose 5.1% during the 2010/2011 winter heating season. Fuel oil prices rose substantially (30.8%) while propane prices rose 3.4%.

Heating season electric prices rose substantially (15.6%) in the same period while cooling season electric prices also rose (10.7%).

Missouri 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.

AVERAGE DOLLAR AMOUNT BY WHICH ACTUAL HOME ENERGY BILLS EXCEEDED AFFORDABLE HOME ENERGY BILLS FOR HOUSEHOLDS BELOW 185% OF POVERTY LEVEL. **$1,268 per household** **RANK: #8**	**AVERAGE TOTAL HOME ENERGY BURDEN FOR HOUSEHOLDS BELOW 50% OF POVERTY LEVEL.** **55.4% of household income** **RANK: #9**
PERCENT OF INDIVIDUALS BELOW 100% OF POVERTY LEVEL. **11.7% of all individuals** **RANK: #28**	**PORTION OF HEATING/COOLING AFFORDABILITY GAP COVERED BY FEDERAL HOME ENERGY ASSISTANCE.** **49.2% of gap is covered** **RANK: #9**

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 2011 Home Energy Affordability Gap was used from the following time periods:

Heating prices	
Natural gas	February 2011
Fuel oil	February 2011
Liquefied petroleum gas (LPG)	February 2011
Electricity	February 2011
Cooling prices	August 2011
Non-heating prices	
Natural gas	May 2011
Fuel oil	March 2011
Liquefied petroleum gas (LPG)	March 2011
Electricity	May 2011

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Total Shortfall <185% of Federal Poverty Level	
	Number of Households	Aggregate Shortfall
Adair County	3,959	$5,800,086
Andrew County	1,437	$2,168,211
Atchison County	890	$1,230,424
Audrain County	3,093	$4,170,573
Barry County	5,347	$7,207,024
Barton County	1,802	$2,338,133
Bates County	2,327	$3,218,741
Benton County	2,902	$3,954,304
Bollinger County	1,739	$2,416,464
Boone County	15,523	$20,055,825
Buchanan County	10,227	$12,238,095
Butler County	6,742	$8,306,895
Caldwell County	1,091	$1,895,790
Callaway County	3,514	$4,832,340
Camden County	4,604	$5,706,230
Cape Girardeau County	7,332	$8,444,794
Carroll County	1,409	$1,990,771
Carter County	1,189	$1,803,739
Cass County	4,868	$6,673,597
Cedar County	2,135	$2,823,641
Chariton County	1,077	$1,555,302
Christian County	5,222	$6,729,813
Clark County	1,002	$1,514,230
Clay County	10,997	$12,702,327
Clinton County	1,657	$2,366,590
Cole County	5,350	$6,953,973
Cooper County	1,622	$2,163,097
Crawford County	3,248	$5,141,967
Dade County	1,159	$1,530,781
Dallas County	2,539	$3,954,935
Daviess County	1,125	$1,958,431
DeKalb County	1,160	$1,758,077
Dent County	2,415	$3,313,380
Douglas County	2,357	$3,636,094
Dunklin County	6,259	$7,752,155
Franklin County	7,100	$9,632,583
Gasconade County	1,679	$2,416,405
Gentry County	1,005	$1,460,238
Greene County	29,221	$31,472,503
Grundy County	1,652	$2,279,562
Harrison County	1,417	$2,172,798
Henry County	3,072	$3,962,861
Hickory County	1,703	$2,406,442
Holt County	808	$1,116,191
Howard County	1,345	$1,765,074
Howell County	6,658	$9,444,248
Iron County	1,801	$2,380,563
Jackson County	69,536	$82,443,546
Jasper County	14,309	$16,446,182
Jefferson County	13,564	$17,744,660

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Total Shortfall <185% of Federal Poverty Level	
	Number of Households	Aggregate Shortfall
Johnson County	5,759	$7,942,120
Knox County	718	$1,153,972
Laclede County	4,909	$6,966,623
Lafayette County	3,114	$4,138,393
Lawrence County	4,935	$6,479,055
Lewis County	1,462	$2,185,685
Lincoln County	3,157	$4,478,968
Linn County	2,114	$2,900,446
Livingston County	1,886	$2,540,945
McDonald County	3,666	$5,204,218
Macon County	2,100	$2,970,433
Madison County	2,070	$2,518,416
Maries County	1,156	$1,802,866
Marion County	3,468	$4,360,610
Mercer County	576	$803,839
Miller County	3,242	$4,373,983
Mississippi County	2,611	$3,358,843
Moniteau County	1,423	$1,846,240
Monroe County	1,131	$1,598,819
Montgomery County	1,485	$1,958,537
Morgan County	2,917	$4,058,332
New Madrid County	3,291	$4,329,249
Newton County	6,081	$7,796,994
Nodaway County	2,818	$4,191,468
Oregon County	2,170	$3,335,693
Osage County	1,066	$1,804,820
Ozark County	1,798	$2,667,621
Pemiscot County	4,341	$5,650,718
Perry County	1,971	$2,486,505
Pettis County	5,037	$6,358,605
Phelps County	5,634	$7,580,668
Pike County	2,220	$3,149,540
Platte County	3,788	$4,658,076
Polk County	3,811	$5,549,739
Pulaski County	4,479	$5,700,939
Putnam County	944	$1,387,001
Ralls County	1,033	$1,553,447
Randolph County	2,979	$3,611,308
Ray County	1,896	$2,799,094
Reynolds County	1,196	$1,775,246
Ripley County	2,778	$3,867,485
St. Charles County	11,197	$14,514,574
St. Clair County	1,712	$2,491,625
Ste. Genevieve County	1,467	$2,105,185
St. Francois County	7,349	$8,803,503
St. Louis County	64,921	$77,400,662
Saline County	2,953	$3,839,969
Schuyler County	637	$949,964
Scotland County	797	$1,294,394
Scott County	5,571	$7,019,733

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Total Shortfall <185% of Federal Poverty Level	
	Number of Households	Aggregate Shortfall
Shannon County	1,806	$2,995,556
Shelby County	1,089	$1,689,244
Stoddard County	4,861	$5,943,254
Stone County	3,749	$5,066,873
Sullivan County	1,233	$1,932,851
Taney County	5,503	$6,448,846
Texas County	4,331	$6,567,908
Vernon County	2,932	$3,914,298
Warren County	2,141	$3,042,176
Washington County	3,786	$5,551,064
Wayne County	2,460	$3,365,450
Webster County	4,058	$6,291,873
Worth County	371	$583,178
Wright County	3,397	$5,144,763
St. Louis city	66,074	$74,839,615
Totals	601,818	$763,142,806
	Average	$1,268

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations — Less than 50% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Adair County	$2,072	1193	$2,472,409	58.4%
Andrew County	$2,405	184	$442,092	62.7%
Atchison County	$2,208	161	$356,298	62.4%
Audrain County	$2,102	607	$1,276,953	57.4%
Barry County	$2,179	781	$1,701,918	58.3%
Barton County	$2,167	226	$488,969	57.8%
Bates County	$2,228	334	$743,982	59.5%
Benton County	$2,174	400	$868,779	61.1%
Bollinger County	$2,274	209	$474,916	59.6%
Boone County	$1,985	3932	$7,804,711	55.1%
Buchanan County	$2,008	1746	$3,505,012	55.2%
Butler County	$1,991	1086	$2,161,626	55.2%
Caldwell County	$2,590	161	$415,909	68.2%
Callaway County	$2,250	557	$1,254,242	59.4%
Camden County	$2,058	661	$1,360,591	57.8%
Cape Girardeau County	$1,962	1228	$2,408,256	54.1%
Carroll County	$2,252	189	$425,214	61.2%
Carter County	$2,260	172	$389,534	60.9%
Cass County	$2,274	845	$1,921,506	58.4%
Cedar County	$2,045	420	$858,980	57.0%
Chariton County	$2,290	126	$289,580	62.7%
Christian County	$2,211	594	$1,313,034	57.7%
Clark County	$2,337	168	$393,231	62.8%
Clay County	$2,028	1774	$3,597,805	54.8%
Clinton County	$2,294	224	$514,686	60.1%
Cole County	$2,081	933	$1,942,304	56.9%
Cooper County	$2,191	250	$547,256	59.1%
Crawford County	$2,376	621	$1,476,401	62.8%
Dade County	$2,200	127	$279,482	59.7%
Dallas County	$2,388	314	$748,896	62.6%
Daviess County	$2,563	156	$399,805	67.7%
DeKalb County	$2,440	128	$312,657	64.9%
Dent County	$2,170	373	$809,549	58.8%
Douglas County	$2,380	358	$851,659	63.4%
Dunklin County	$1,928	1400	$2,699,848	53.3%
Franklin County	$2,272	1054	$2,394,559	58.7%
Gasconade County	$2,311	184	$425,338	62.4%
Gentry County	$2,343	115	$269,147	63.4%
Greene County	$1,878	4691	$8,811,232	52.9%
Grundy County	$2,143	273	$586,030	60.1%
Harrison County	$2,394	194	$465,619	65.5%
Henry County	$2,078	442	$918,753	57.5%
Hickory County	$2,162	297	$642,948	61.1%
Holt County	$2,240	80	$178,217	61.8%
Howard County	$2,177	190	$413,246	58.9%
Howell County	$2,228	879	$1,957,486	60.0%
Iron County	$2,107	302	$635,441	57.2%
Jackson County	$1,932	16052	$31,005,716	53.4%
Jasper County	$1,957	2219	$4,343,396	53.5%
Jefferson County	$2,239	2043	$4,573,124	57.1%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations — Less than 50% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Johnson County	$2,171	1117	$2,424,846	57.3%
Knox County	$2,382	77	$183,124	64.9%
Laclede County	$2,288	654	$1,496,142	60.8%
Lafayette County	$2,232	421	$939,386	59.1%
Lawrence County	$2,169	711	$1,543,250	57.6%
Lewis County	$2,276	286	$651,253	61.3%
Lincoln County	$2,330	449	$1,047,073	58.8%
Linn County	$2,177	314	$683,400	60.0%
Livingston County	$2,174	278	$604,675	59.8%
McDonald County	$2,213	657	$1,454,492	57.5%
Macon County	$2,247	247	$556,149	61.6%
Madison County	$2,047	354	$724,063	55.7%
Maries County	$2,396	178	$427,664	63.5%
Marion County	$2,083	496	$1,033,686	56.8%
Mercer County	$2,221	90	$199,997	61.9%
Miller County	$2,203	452	$996,533	59.0%
Mississippi County	$1,988	605	$1,201,594	54.5%
Moniteau County	$2,210	186	$410,151	58.5%
Monroe County	$2,243	198	$444,183	60.0%
Montgomery County	$2,182	203	$442,630	58.9%
Morgan County	$2,177	476	$1,035,537	59.4%
New Madrid County	$2,016	825	$1,663,081	54.7%
Newton County	$2,156	788	$1,699,812	57.1%
Nodaway County	$2,202	653	$1,438,179	61.1%
Oregon County	$2,309	345	$796,648	62.9%
Osage County	$2,589	184	$476,229	66.8%
Ozark County	$2,242	295	$660,488	61.2%
Pemiscot County	$1,986	1019	$2,023,132	53.6%
Perry County	$2,214	203	$449,622	58.4%
Pettis County	$2,100	715	$1,501,376	56.7%
Phelps County	$2,094	1113	$2,330,157	57.8%
Pike County	$2,202	437	$962,323	59.1%
Platte County	$2,087	650	$1,356,694	56.3%
Polk County	$2,278	682	$1,553,740	60.1%
Pulaski County	$2,251	567	$1,276,842	58.0%
Putnam County	$2,316	107	$248,579	64.1%
Ralls County	$2,434	137	$333,145	63.9%
Randolph County	$2,056	426	$875,030	56.3%
Ray County	$2,397	329	$788,244	62.0%
Reynolds County	$2,244	210	$471,186	61.3%
Ripley County	$2,175	404	$878,069	58.8%
St. Charles County	$2,232	1714	$3,825,959	56.7%
St. Clair County	$2,191	337	$737,679	60.7%
Ste. Genevieve County	$2,351	146	$343,858	60.6%
St. Francois County	$2,022	1110	$2,245,413	54.8%
St. Louis County	$1,989	12858	$25,569,828	54.2%
Saline County	$2,127	433	$922,188	57.8%
Schuyler County	$2,338	70	$164,352	63.7%
Scotland County	$2,477	100	$246,772	64.9%
Scott County	$2,041	976	$1,991,038	54.6%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

Shortfall Calculations

Less than 50% of Federal Poverty Level

County	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Shannon County	$2,391	369	$882,372	63.7%
Shelby County	$2,354	140	$329,335	64.3%
Stoddard County	$2,025	750	$1,518,203	55.9%
Stone County	$2,173	497	$1,080,263	59.5%
Sullivan County	$2,399	193	$464,027	64.8%
Taney County	$1,999	829	$1,657,473	55.6%
Texas County	$2,277	779	$1,773,616	61.8%
Vernon County	$2,148	436	$936,757	58.4%
Warren County	$2,315	313	$723,315	60.0%
Washington County	$2,252	837	$1,884,817	58.5%
Wayne County	$2,093	442	$926,032	58.1%
Webster County	$2,424	694	$1,683,438	61.5%
Worth County	$2,353	57	$134,471	65.2%
Wright County	$2,294	543	$1,245,178	61.2%
St. Louis city	$1,761	18492	$32,557,708	50.5%
Totals	$2,023	113,308	$229,254,842	55.4%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations 50%-74% of Federal Poverty Level Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Adair County	$1,717	536	$919,718	23.4%
Andrew County	$2,024	158	$319,591	25.1%
Atchison County	$1,856	56	$103,111	25.0%
Audrain County	$1,734	406	$703,739	23.0%
Barry County	$1,805	611	$1,102,944	23.3%
Barton County	$1,790	175	$313,428	23.1%
Bates County	$1,854	258	$477,797	23.8%
Benton County	$1,819	200	$363,858	24.4%
Bollinger County	$1,892	203	$383,501	23.8%
Boone County	$1,621	2053	$3,329,154	22.1%
Buchanan County	$1,641	1014	$1,663,579	22.1%
Butler County	$1,626	909	$1,478,700	22.1%
Caldwell County	$2,216	91	$202,140	27.3%
Callaway County	$1,871	346	$647,531	23.8%
Camden County	$1,701	467	$794,369	23.1%
Cape Girardeau County	$1,595	871	$1,388,311	21.6%
Carroll County	$1,885	157	$295,151	24.5%
Carter County	$1,890	215	$407,092	24.4%
Cass County	$1,884	358	$673,665	23.4%
Cedar County	$1,684	209	$351,160	22.8%
Chariton County	$1,926	137	$264,631	25.1%
Christian County	$1,826	465	$848,977	23.1%
Clark County	$1,966	92	$180,623	25.1%
Clay County	$1,654	1002	$1,656,314	21.9%
Clinton County	$1,913	205	$391,402	24.0%
Cole County	$1,713	671	$1,149,826	22.8%
Cooper County	$1,819	183	$332,211	23.6%
Crawford County	$2,000	362	$724,761	25.1%
Dade County	$1,831	181	$331,682	23.9%
Dallas County	$2,008	400	$803,963	25.0%
Daviess County	$2,189	148	$323,082	27.1%
DeKalb County	$2,067	118	$244,933	25.9%
Dent County	$1,800	357	$642,988	23.5%
Douglas County	$2,007	253	$506,981	25.4%
Dunklin County	$1,561	858	$1,339,596	21.3%
Franklin County	$1,884	683	$1,287,557	23.5%
Gasconade County	$1,943	186	$361,455	25.0%
Gentry County	$1,976	74	$146,148	25.4%
Greene County	$1,518	3225	$4,896,160	21.2%
Grundy County	$1,786	135	$240,737	24.0%
Harrison County	$2,032	133	$270,375	26.2%
Henry County	$1,715	414	$709,854	23.0%
Hickory County	$1,809	263	$476,257	24.4%
Holt County	$1,879	100	$187,857	24.7%
Howard County	$1,806	129	$233,501	23.6%
Howell County	$1,857	896	$1,664,296	24.0%
Iron County	$1,736	215	$373,355	22.9%
Jackson County	$1,564	7378	$11,542,005	21.3%
Jasper County	$1,587	1757	$2,788,442	21.4%
Jefferson County	$1,844	1332	$2,455,998	22.8%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations 50%-74% of Federal Poverty Level Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Johnson County	$1,790	750	$1,343,137	22.9%
Knox County	$2,018	104	$209,428	26.0%
Laclede County	$1,912	533	$1,019,798	24.3%
Lafayette County	$1,854	296	$548,994	23.6%
Lawrence County	$1,791	528	$946,149	23.0%
Lewis County	$1,905	169	$321,401	24.5%
Lincoln County	$1,932	382	$738,108	23.5%
Linn County	$1,814	241	$437,853	24.0%
Livingston County	$1,810	171	$308,811	23.9%
McDonald County	$1,826	502	$915,650	23.0%
Macon County	$1,884	230	$433,708	24.6%
Madison County	$1,677	143	$239,938	22.3%
Maries County	$2,021	138	$279,433	25.4%
Marion County	$1,714	433	$741,773	22.7%
Mercer County	$1,864	48	$89,545	24.8%
Miller County	$1,829	314	$573,518	23.6%
Mississippi County	$1,619	360	$582,549	21.8%
Moniteau County	$1,831	131	$239,655	23.4%
Monroe County	$1,869	106	$198,904	24.0%
Montgomery County	$1,811	143	$258,799	23.6%
Morgan County	$1,810	347	$628,321	23.8%
New Madrid County	$1,644	377	$619,673	21.9%
Newton County	$1,776	675	$1,199,840	22.8%
Nodaway County	$1,842	370	$680,796	24.5%
Oregon County	$1,944	275	$533,727	25.2%
Osage County	$2,206	82	$180,037	26.7%
Ozark County	$1,877	225	$421,488	24.5%
Pemiscot County	$1,610	651	$1,048,691	21.4%
Perry County	$1,834	224	$410,261	23.4%
Pettis County	$1,727	609	$1,052,243	22.7%
Phelps County	$1,731	657	$1,136,583	23.1%
Pike County	$1,829	200	$365,857	23.7%
Platte County	$1,713	395	$677,137	22.5%
Polk County	$1,899	320	$607,532	24.0%
Pulaski County	$1,862	344	$640,533	23.2%
Putnam County	$1,958	114	$223,605	25.7%
Ralls County	$2,056	104	$214,459	25.6%
Randolph County	$1,688	271	$457,207	22.5%
Ray County	$2,012	100	$201,150	24.8%
Reynolds County	$1,878	181	$340,458	24.5%
Ripley County	$1,805	365	$659,546	23.5%
St. Charles County	$1,835	1167	$2,142,446	22.7%
St. Clair County	$1,830	191	$349,648	24.3%
Ste. Genevieve County	$1,964	177	$346,955	24.2%
St. Francois County	$1,649	926	$1,526,484	21.9%
St. Louis County	$1,617	6769	$10,947,295	21.7%
Saline County	$1,758	306	$538,104	23.1%
Schuyler County	$1,974	58	$114,783	25.5%
Scotland County	$2,099	105	$219,798	26.0%
Scott County	$1,662	787	$1,309,064	21.8%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

Shortfall Calculations

50%-74% of Federal Poverty Level

County	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Shannon County	$2,018	251	$505,632	25.5%
Shelby County	$1,990	161	$321,102	25.7%
Stoddard County	$1,660	472	$782,986	22.4%
Stone County	$1,808	447	$807,505	23.8%
Sullivan County	$2,032	141	$287,221	25.9%
Taney County	$1,636	553	$905,150	22.2%
Texas County	$1,910	613	$1,170,424	24.7%
Vernon County	$1,779	389	$691,344	23.4%
Warren County	$1,929	189	$365,270	24.0%
Washington County	$1,866	435	$811,237	23.4%
Wayne County	$1,731	380	$657,350	23.2%
Webster County	$2,031	372	$756,454	24.6%
Worth County	$1,996	35	$69,112	26.1%
Wright County	$1,920	449	$861,714	24.5%
St. Louis city	$1,405	8733	$12,267,465	20.2%
Totals	$1,679	68,358	$114,775,344	22.3%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations 75%-99% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Adair County	$1,479	529	$782,899	16.7%
Andrew County	$1,769	175	$310,150	17.9%
Atchison County	$1,621	99	$160,661	17.8%
Audrain County	$1,489	441	$656,910	16.4%
Barry County	$1,555	828	$1,287,832	16.7%
Barton County	$1,539	234	$360,719	16.5%
Bates County	$1,604	353	$566,730	17.0%
Benton County	$1,583	564	$891,946	17.5%
Bollinger County	$1,637	224	$366,695	17.0%
Boone County	$1,379	1732	$2,387,575	15.8%
Buchanan County	$1,396	1363	$1,902,807	15.8%
Butler County	$1,383	1117	$1,544,859	15.8%
Caldwell County	$1,966	166	$325,793	19.5%
Callaway County	$1,618	324	$524,029	17.0%
Camden County	$1,462	671	$981,783	16.5%
Cape Girardeau County	$1,350	900	$1,214,291	15.5%
Carroll County	$1,640	224	$367,959	17.5%
Carter County	$1,643	214	$351,204	17.4%
Cass County	$1,624	531	$862,476	16.7%
Cedar County	$1,443	360	$519,634	16.3%
Chariton County	$1,684	137	$230,616	17.9%
Christian County	$1,569	792	$1,243,216	16.5%
Clark County	$1,719	156	$267,644	17.9%
Clay County	$1,404	1183	$1,661,648	15.7%
Clinton County	$1,658	238	$395,033	17.2%
Cole County	$1,468	745	$1,093,312	16.3%
Cooper County	$1,572	200	$314,369	16.9%
Crawford County	$1,749	466	$814,859	17.9%
Dade County	$1,585	118	$187,748	17.1%
Dallas County	$1,755	363	$636,997	17.9%
Daviess County	$1,940	179	$347,577	19.3%
DeKalb County	$1,819	134	$243,220	18.5%
Dent County	$1,554	301	$468,082	16.8%
Douglas County	$1,758	304	$533,827	18.1%
Dunklin County	$1,316	1015	$1,336,226	15.2%
Franklin County	$1,625	704	$1,143,902	16.8%
Gasconade County	$1,697	215	$364,386	17.8%
Gentry County	$1,731	143	$247,510	18.1%
Greene County	$1,278	3892	$4,974,983	15.1%
Grundy County	$1,548	282	$436,210	17.2%
Harrison County	$1,791	166	$297,462	18.7%
Henry County	$1,473	453	$667,551	16.4%
Hickory County	$1,573	206	$324,432	17.5%
Holt County	$1,638	109	$179,120	17.7%
Howard County	$1,559	129	$200,937	16.8%
Howell County	$1,609	982	$1,579,837	17.1%
Iron County	$1,489	286	$425,572	16.3%
Jackson County	$1,320	8309	$10,965,227	15.2%
Jasper County	$1,340	2043	$2,737,235	15.3%
Jefferson County	$1,581	1462	$2,312,264	16.3%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations: 75%-99% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Johnson County	$1,536	716	$1,100,234	16.4%
Knox County	$1,776	142	$252,903	18.6%
Laclede County	$1,662	634	$1,053,713	17.4%
Lafayette County	$1,602	387	$620,717	16.9%
Lawrence County	$1,539	671	$1,033,233	16.5%
Lewis County	$1,658	183	$302,649	17.5%
Lincoln County	$1,668	312	$520,782	16.8%
Linn County	$1,572	292	$459,757	17.1%
Livingston County	$1,568	262	$411,065	17.1%
McDonald County	$1,568	519	$814,121	16.4%
Macon County	$1,641	325	$533,734	17.6%
Madison County	$1,430	311	$444,643	15.9%
Maries County	$1,771	143	$252,651	18.2%
Marion County	$1,468	416	$610,698	16.2%
Mercer County	$1,625	76	$123,816	17.7%
Miller County	$1,580	545	$860,522	16.9%
Mississippi County	$1,373	302	$414,171	15.6%
Moniteau County	$1,579	205	$323,748	16.7%
Monroe County	$1,620	132	$213,205	17.1%
Montgomery County	$1,563	213	$333,541	16.8%
Morgan County	$1,565	452	$707,686	17.0%
New Madrid County	$1,395	516	$719,680	15.6%
Newton County	$1,523	875	$1,332,729	16.3%
Nodaway County	$1,603	325	$521,420	17.5%
Oregon County	$1,700	311	$529,188	18.0%
Osage County	$1,950	144	$280,243	19.1%
Ozark County	$1,633	332	$541,673	17.5%
Pemiscot County	$1,360	713	$970,332	15.3%
Perry County	$1,580	198	$312,386	16.7%
Pettis County	$1,478	671	$991,552	16.2%
Phelps County	$1,488	806	$1,199,367	16.5%
Pike County	$1,581	367	$580,173	16.9%
Platte County	$1,465	351	$514,136	16.1%
Polk County	$1,646	616	$1,014,123	17.2%
Pulaski County	$1,602	470	$753,291	16.6%
Putnam County	$1,719	134	$230,383	18.3%
Ralls County	$1,804	82	$147,836	18.3%
Randolph County	$1,443	441	$636,069	16.1%
Ray County	$1,755	163	$286,232	17.7%
Reynolds County	$1,635	156	$254,759	17.5%
Ripley County	$1,558	420	$654,131	16.8%
St. Charles County	$1,571	1168	$1,834,593	16.2%
St. Clair County	$1,590	263	$418,627	17.4%
Ste. Genevieve County	$1,705	217	$369,876	17.3%
St. Francois County	$1,400	1057	$1,480,690	15.7%
St. Louis County	$1,370	8126	$11,130,070	15.5%
Saline County	$1,511	444	$670,555	16.5%
Schuyler County	$1,731	163	$281,677	18.2%
Scotland County	$1,847	113	$209,330	18.6%
Scott County	$1,410	738	$1,040,260	15.6%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

Shortfall Calculations

75%-99% of Federal Poverty Level

County	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Shannon County	$1,769	268	$474,559	18.2%
Shelby County	$1,748	155	$270,974	18.4%
Stoddard County	$1,416	794	$1,124,324	16.0%
Stone County	$1,564	562	$879,255	17.0%
Sullivan County	$1,788	149	$265,934	18.5%
Taney County	$1,394	614	$856,094	15.9%
Texas County	$1,665	606	$1,009,450	17.7%
Vernon County	$1,534	362	$554,968	16.7%
Warren County	$1,671	292	$487,463	17.1%
Washington County	$1,608	465	$748,076	16.7%
Wayne County	$1,490	388	$578,374	16.6%
Webster County	$1,769	565	$999,102	17.6%
Worth County	$1,757	53	$92,805	18.6%
Wright County	$1,671	541	$904,205	17.5%
St. Louis city	$1,167	9190	$10,728,748	14.4%
Totals	$1,439	79,385	$114,265,252	16.0%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations 100%-124% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Adair County	$1,242	515	$639,968	13.0%
Andrew County	$1,515	246	$371,998	13.9%
Atchison County	$1,386	122	$169,406	13.9%
Audrain County	$1,244	429	$533,857	12.8%
Barry County	$1,305	792	$1,033,555	13.0%
Barton County	$1,288	362	$465,806	12.8%
Bates County	$1,354	340	$460,629	13.2%
Benton County	$1,346	470	$632,811	13.6%
Bollinger County	$1,383	285	$394,082	13.2%
Boone County	$1,136	2032	$2,309,711	12.3%
Buchanan County	$1,151	1552	$1,786,581	12.3%
Butler County	$1,140	1129	$1,287,332	12.3%
Caldwell County	$1,716	205	$352,056	15.2%
Callaway County	$1,365	637	$869,435	13.2%
Camden County	$1,224	739	$904,883	12.8%
Cape Girardeau County	$1,105	1038	$1,146,673	12.0%
Carroll County	$1,395	213	$296,907	13.6%
Carter County	$1,396	181	$253,006	13.5%
Cass County	$1,363	737	$1,004,533	13.0%
Cedar County	$1,203	452	$543,528	12.7%
Chariton County	$1,441	182	$261,599	13.9%
Christian County	$1,312	838	$1,099,641	12.8%
Clark County	$1,472	153	$224,998	13.9%
Clay County	$1,155	1665	$1,922,957	12.2%
Clinton County	$1,404	284	$398,913	13.4%
Cole County	$1,223	854	$1,043,928	12.6%
Cooper County	$1,324	183	$242,871	13.1%
Crawford County	$1,498	477	$715,048	14.0%
Dade County	$1,339	156	$208,576	13.3%
Dallas County	$1,501	481	$722,041	13.9%
Daviess County	$1,690	157	$265,715	15.0%
DeKalb County	$1,570	143	$225,089	14.4%
Dent County	$1,307	344	$450,419	13.1%
Douglas County	$1,510	427	$645,029	14.1%
Dunklin County	$1,071	974	$1,043,496	11.8%
Franklin County	$1,367	1225	$1,674,255	13.1%
Gasconade County	$1,451	343	$497,705	13.9%
Gentry County	$1,486	182	$270,259	14.1%
Greene County	$1,038	4411	$4,578,403	11.8%
Grundy County	$1,310	357	$467,199	13.3%
Harrison County	$1,550	180	$278,396	14.6%
Henry County	$1,231	535	$659,257	12.8%
Hickory County	$1,338	263	$351,637	13.6%
Holt County	$1,397	153	$214,033	13.7%
Howard County	$1,312	289	$378,758	13.1%
Howell County	$1,362	1245	$1,695,075	13.3%
Iron County	$1,242	262	$325,697	12.7%
Jackson County	$1,075	9940	$10,685,747	11.9%
Jasper County	$1,093	2320	$2,535,524	11.9%
Jefferson County	$1,318	1996	$2,631,353	12.7%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations: 100%-124% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Johnson County	$1,282	842	$1,079,397	12.7%
Knox County	$1,533	151	$231,257	14.4%
Laclede County	$1,411	815	$1,150,824	13.5%
Lafayette County	$1,350	463	$625,183	13.1%
Lawrence County	$1,287	827	$1,064,276	12.8%
Lewis County	$1,411	198	$279,937	13.6%
Lincoln County	$1,403	581	$815,424	13.1%
Linn County	$1,330	341	$454,160	13.3%
Livingston County	$1,325	402	$532,396	13.3%
McDonald County	$1,310	645	$844,331	12.8%
Macon County	$1,399	408	$570,088	13.7%
Madison County	$1,183	362	$428,413	12.4%
Maries County	$1,522	204	$310,970	14.1%
Marion County	$1,222	648	$791,438	12.6%
Mercer County	$1,387	84	$117,057	13.8%
Miller County	$1,330	445	$592,214	13.1%
Mississippi County	$1,127	512	$577,461	12.1%
Moniteau County	$1,326	186	$246,020	13.0%
Monroe County	$1,371	195	$267,579	13.3%
Montgomery County	$1,316	228	$299,894	13.1%
Morgan County	$1,321	478	$631,441	13.2%
New Madrid County	$1,147	450	$516,755	12.2%
Newton County	$1,270	947	$1,201,957	12.7%
Nodaway County	$1,363	386	$526,567	13.6%
Oregon County	$1,457	420	$611,785	14.0%
Osage County	$1,695	105	$178,580	14.8%
Ozark County	$1,390	290	$403,567	13.6%
Pemiscot County	$1,110	650	$721,634	11.9%
Perry County	$1,327	303	$401,735	13.0%
Pettis County	$1,230	922	$1,133,394	12.6%
Phelps County	$1,246	926	$1,153,712	12.9%
Pike County	$1,332	293	$389,922	13.1%
Platte County	$1,216	592	$719,364	12.5%
Polk County	$1,394	614	$855,167	13.4%
Pulaski County	$1,343	633	$849,661	12.9%
Putnam County	$1,480	136	$200,897	14.3%
Ralls County	$1,552	123	$191,057	14.2%
Randolph County	$1,198	451	$540,284	12.5%
Ray County	$1,498	349	$522,878	13.8%
Reynolds County	$1,391	173	$240,570	13.6%
Ripley County	$1,311	572	$749,684	13.1%
St. Charles County	$1,307	1525	$1,993,415	12.6%
St. Clair County	$1,350	266	$358,875	13.5%
Ste. Genevieve County	$1,447	287	$414,969	13.5%
St. Francois County	$1,152	1109	$1,277,337	12.2%
St. Louis County	$1,122	9281	$10,413,733	12.0%
Saline County	$1,265	511	$645,892	12.8%
Schuyler County	$1,488	58	$85,896	14.2%
Scotland County	$1,595	150	$238,916	14.4%
Scott County	$1,158	993	$1,150,356	12.1%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

Shortfall Calculations

100%-124% of Federal Poverty Level

County	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Shannon County	$1,520	283	$429,811	14.1%
Shelby County	$1,505	173	$260,585	14.3%
Stoddard County	$1,173	817	$958,358	12.4%
Stone County	$1,321	655	$865,614	13.2%
Sullivan County	$1,543	194	$299,026	14.4%
Taney County	$1,153	981	$1,130,726	12.4%
Texas County	$1,420	655	$929,780	13.7%
Vernon County	$1,288	468	$602,151	13.0%
Warren County	$1,414	369	$521,673	13.3%
Washington County	$1,351	560	$756,821	13.0%
Wayne County	$1,249	388	$484,726	12.9%
Webster County	$1,507	617	$929,894	13.7%
Worth County	$1,519	75	$114,402	14.5%
Wright County	$1,421	568	$807,947	13.6%
St. Louis city	$930	9004	$8,375,737	11.2%
Totals	$1,200	91,834	$110,235,945	12.5%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations — 125%-149% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Adair County	$1,005	461	$462,867	10.6%
Andrew County	$1,260	264	$332,387	11.4%
Atchison County	$1,151	172	$197,985	11.3%
Audrain County	$999	500	$499,250	10.4%
Barry County	$1,055	1058	$1,116,439	10.6%
Barton County	$1,037	387	$401,254	10.5%
Bates County	$1,104	439	$484,250	10.8%
Benton County	$1,109	529	$586,713	11.1%
Bollinger County	$1,129	404	$456,221	10.8%
Boone County	$894	2551	$2,280,947	10.0%
Buchanan County	$906	2012	$1,824,001	10.0%
Butler County	$897	1095	$982,232	10.0%
Caldwell County	$1,466	180	$263,992	12.4%
Callaway County	$1,113	663	$738,069	10.8%
Camden County	$985	771	$759,742	10.5%
Cape Girardeau County	$860	1426	$1,227,315	9.8%
Carroll County	$1,150	234	$269,549	11.1%
Carter County	$1,148	192	$220,362	11.1%
Cass County	$1,103	1010	$1,114,663	10.6%
Cedar County	$962	287	$275,915	10.4%
Chariton County	$1,199	206	$246,810	11.4%
Christian County	$1,055	1077	$1,136,901	10.5%
Clark County	$1,225	152	$185,750	11.4%
Clay County	$906	2020	$1,830,013	10.0%
Clinton County	$1,149	233	$268,028	10.9%
Cole County	$977	878	$858,201	10.3%
Cooper County	$1,077	329	$353,955	10.7%
Crawford County	$1,247	538	$671,071	11.4%
Dade County	$1,093	214	$234,368	10.9%
Dallas County	$1,248	384	$478,813	11.4%
Daviess County	$1,441	230	$330,854	12.3%
DeKalb County	$1,321	272	$359,223	11.8%
Dent County	$1,061	497	$527,498	10.7%
Douglas County	$1,261	405	$510,390	11.5%
Dunklin County	$827	889	$734,781	9.7%
Franklin County	$1,108	1262	$1,398,519	10.7%
Gasconade County	$1,205	286	$344,225	11.3%
Gentry County	$1,242	210	$261,170	11.5%
Greene County	$798	5496	$4,385,006	9.6%
Grundy County	$1,073	256	$274,212	10.9%
Harrison County	$1,308	358	$468,987	11.9%
Henry County	$989	514	$508,886	10.5%
Hickory County	$1,102	209	$230,709	11.1%
Holt County	$1,156	137	$157,967	11.2%
Howard County	$1,065	239	$254,202	10.7%
Howell County	$1,114	1270	$1,414,815	10.9%
Iron County	$995	357	$355,191	10.4%
Jackson County	$830	11222	$9,317,543	9.7%
Jasper County	$846	2573	$2,175,882	9.7%
Jefferson County	$1,055	2520	$2,658,752	10.4%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations — 125%-149% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Johnson County	$1,028	1005	$1,033,055	10.4%
Knox County	$1,291	116	$149,135	11.8%
Laclede County	$1,161	970	$1,125,775	11.1%
Lafayette County	$1,098	576	$632,374	10.7%
Lawrence County	$1,035	939	$971,765	10.5%
Lewis County	$1,164	293	$341,200	11.1%
Lincoln County	$1,138	575	$654,136	10.7%
Linn County	$1,089	436	$474,495	10.9%
Livingston County	$1,083	246	$266,654	10.9%
McDonald County	$1,052	575	$605,059	10.5%
Macon County	$1,156	366	$423,671	11.2%
Madison County	$936	358	$335,144	10.1%
Maries County	$1,272	180	$228,996	11.6%
Marion County	$976	602	$587,415	10.3%
Mercer County	$1,148	121	$138,686	11.3%
Miller County	$1,081	632	$683,574	10.7%
Mississippi County	$881	322	$283,908	9.9%
Moniteau County	$1,073	248	$265,779	10.6%
Monroe County	$1,121	213	$239,103	10.9%
Montgomery County	$1,068	288	$307,462	10.7%
Morgan County	$1,076	493	$530,004	10.8%
New Madrid County	$899	452	$406,798	10.0%
Newton County	$1,016	1222	$1,241,738	10.4%
Nodaway County	$1,124	413	$463,933	11.1%
Oregon County	$1,213	378	$458,436	11.4%
Osage County	$1,439	211	$304,400	12.1%
Ozark County	$1,146	273	$312,775	11.1%
Pemiscot County	$859	522	$448,291	9.7%
Perry County	$1,074	359	$385,633	10.6%
Pettis County	$981	779	$764,289	10.3%
Phelps County	$1,003	830	$833,090	10.5%
Pike County	$1,083	425	$460,210	10.8%
Platte County	$967	627	$606,411	10.2%
Polk County	$1,141	647	$737,946	10.9%
Pulaski County	$1,083	896	$969,860	10.6%
Putnam County	$1,241	179	$222,460	11.7%
Ralls County	$1,299	270	$351,096	11.6%
Randolph County	$953	637	$606,452	10.2%
Ray County	$1,241	355	$440,339	11.3%
Reynolds County	$1,148	208	$239,099	11.1%
Ripley County	$1,064	490	$521,492	10.7%
St. Charles County	$1,043	2014	$2,099,653	10.3%
St. Clair County	$1,110	306	$339,159	11.0%
Ste. Genevieve County	$1,188	216	$256,850	11.0%
St. Francois County	$903	1246	$1,125,079	10.0%
St. Louis County	$874	10901	$9,532,796	9.9%
Saline County	$1,019	519	$528,373	10.5%
Schuyler County	$1,245	99	$123,420	11.6%
Scotland County	$1,343	121	$162,177	11.8%
Scott County	$906	911	$825,623	9.9%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations — 125%-149% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Shannon County	$1,271	285	$362,041	11.6%
Shelby County	$1,263	209	$264,253	11.7%
Stoddard County	$929	913	$848,014	10.2%
Stone County	$1,077	644	$693,856	10.8%
Sullivan County	$1,298	200	$259,647	11.8%
Taney County	$911	1145	$1,042,955	10.1%
Texas County	$1,176	693	$815,273	11.2%
Vernon County	$1,042	593	$618,262	10.6%
Warren County	$1,157	373	$431,556	10.9%
Washington County	$1,094	590	$644,973	10.6%
Wayne County	$1,008	346	$348,383	10.6%
Webster County	$1,245	757	$943,231	11.2%
Worth County	$1,280	77	$99,215	11.9%
Wright County	$1,172	650	$761,423	11.1%
St. Louis city	$693	8701	$6,029,394	9.2%
Totals	$956	102,104	$97,634,624	10.2%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations 150%-185% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Adair County	$720	725	$522,225	8.7%
Andrew County	$955	410	$391,994	9.4%
Atchison County	$869	280	$242,963	9.3%
Audrain County	$704	710	$499,862	8.6%
Barry County	$755	1277	$964,336	8.7%
Barton County	$736	419	$307,958	8.6%
Bates County	$804	604	$485,354	8.9%
Benton County	$825	739	$610,196	9.1%
Bollinger County	$823	414	$341,049	8.9%
Boone County	$603	3223	$1,943,728	8.2%
Buchanan County	$613	2540	$1,556,115	8.2%
Butler County	$606	1407	$852,146	8.2%
Caldwell County	$1,166	288	$335,900	10.2%
Callaway County	$809	987	$799,035	8.9%
Camden County	$699	1294	$904,862	8.6%
Cape Girardeau County	$567	1870	$1,059,947	8.1%
Carroll County	$857	392	$335,992	9.1%
Carter County	$852	214	$182,541	9.1%
Cass County	$791	1387	$1,096,753	8.7%
Cedar County	$673	408	$274,425	8.5%
Chariton County	$908	289	$262,065	9.4%
Christian County	$747	1456	$1,088,043	8.6%
Clark County	$929	282	$261,983	9.4%
Clay County	$607	3352	$2,033,591	8.2%
Clinton County	$844	472	$398,528	9.0%
Cole County	$683	1269	$866,402	8.5%
Cooper County	$780	478	$372,434	8.8%
Crawford County	$945	783	$739,827	9.4%
Dade County	$798	362	$288,923	8.9%
Dallas County	$944	598	$564,225	9.3%
Daviess County	$1,142	255	$291,398	10.1%
DeKalb County	$1,023	365	$372,954	9.7%
Dent County	$765	542	$414,844	8.8%
Douglas County	$962	611	$588,209	9.5%
Dunklin County	$533	1122	$598,207	8.0%
Franklin County	$798	2172	$1,733,792	8.8%
Gasconade County	$910	465	$423,299	9.3%
Gentry County	$948	281	$266,003	9.5%
Greene County	$510	7507	$3,826,719	7.9%
Grundy County	$787	350	$275,174	9.0%
Harrison County	$1,019	385	$391,960	9.8%
Henry County	$699	713	$498,560	8.6%
Hickory County	$820	464	$380,459	9.1%
Holt County	$868	229	$198,997	9.2%
Howard County	$769	370	$284,430	8.8%
Howell County	$817	1387	$1,132,739	9.0%
Iron County	$699	380	$265,307	8.5%
Jackson County	$537	16636	$8,927,307	8.0%
Jasper County	$549	3396	$1,865,703	8.0%
Jefferson County	$739	4211	$3,113,168	8.5%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations — 150%-185% of Federal Poverty Level			
	Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Johnson County	$724	1329	$961,450	8.6%
Knox County	$1,000	128	$128,124	9.7%
Laclede County	$860	1302	$1,120,371	9.1%
Lafayette County	$795	971	$771,738	8.8%
Lawrence County	$732	1257	$920,383	8.6%
Lewis County	$868	333	$289,246	9.1%
Lincoln County	$820	857	$703,444	8.8%
Linn County	$798	489	$390,782	9.0%
Livingston County	$792	527	$417,344	8.9%
McDonald County	$743	768	$570,564	8.6%
Macon County	$865	524	$453,084	9.2%
Madison County	$639	541	$346,215	8.3%
Maries County	$972	312	$303,152	9.5%
Marion County	$681	874	$595,600	8.5%
Mercer County	$862	156	$134,737	9.2%
Miller County	$782	854	$667,623	8.8%
Mississippi County	$586	510	$299,161	8.1%
Moniteau County	$770	469	$360,887	8.7%
Monroe County	$822	287	$235,846	9.0%
Montgomery County	$771	410	$316,211	8.8%
Morgan County	$782	671	$525,343	8.9%
New Madrid County	$601	671	$403,262	8.2%
Newton County	$712	1574	$1,120,918	8.5%
Nodaway County	$836	670	$560,573	9.1%
Oregon County	$921	441	$405,909	9.4%
Osage County	$1,133	340	$385,331	10.0%
Ozark County	$854	384	$327,631	9.1%
Pemiscot County	$559	785	$438,638	8.0%
Perry County	$770	684	$526,867	8.7%
Pettis County	$682	1342	$915,751	8.5%
Phelps County	$713	1302	$927,759	8.6%
Pike County	$785	498	$391,055	8.8%
Platte County	$669	1173	$784,334	8.4%
Polk County	$838	933	$781,231	9.0%
Pulaski County	$771	1569	$1,210,753	8.7%
Putnam County	$954	274	$261,077	9.6%
Ralls County	$997	317	$315,853	9.5%
Randolph County	$658	754	$496,266	8.4%
Ray County	$933	600	$560,250	9.3%
Reynolds County	$855	268	$229,174	9.1%
Ripley County	$767	527	$404,564	8.8%
St. Charles County	$726	3609	$2,618,509	8.5%
St. Clair County	$822	350	$287,636	9.1%
Ste. Genevieve County	$878	424	$372,677	9.0%
St. Francois County	$604	1900	$1,148,501	8.2%
St. Louis County	$577	16985	$9,806,940	8.1%
Saline County	$723	740	$534,856	8.6%
Schuyler County	$953	189	$179,837	9.5%
Scotland County	$1,040	209	$217,401	9.7%
Scott County	$603	1166	$703,392	8.1%

Missouri 2011
Home Energy Affordability Gap
(Published June 2012)

County	Shortfall Calculations 150%-185% of Federal Poverty Level Individual HH Shortfall	Number of Households	Aggregate Shortfall	Home Energy Burden
Shannon County	$973	351	$341,141	9.5%
Shelby County	$972	250	$242,996	9.6%
Stoddard County	$637	1117	$711,369	8.3%
Stone County	$785	943	$740,379	8.9%
Sullivan County	$1,005	355	$356,997	9.7%
Taney County	$621	1380	$856,448	8.3%
Texas County	$882	986	$869,364	9.2%
Vernon County	$747	684	$510,816	8.7%
Warren County	$848	605	$512,899	9.0%
Washington County	$785	898	$705,140	8.7%
Wayne County	$718	516	$370,584	8.7%
Webster County	$931	1052	$979,755	9.2%
Worth County	$994	74	$73,172	9.7%
Wright County	$873	646	$564,295	9.1%
St. Louis city	$408	11955	$4,880,564	7.5%
Totals	$660	146,829	$96,976,799	8.4%

Home Energy Affordability Gap Ranking
Persons Below 100% Federal Poverty Level by State
June 2012

State	2000 Decennial Census		
	Total Persons Below 100% FPL	% Persons Below 100% FPL	Poverty Ranking
New Hampshire	78,530	6.5%	1
Connecticut	259,514	7.9%	2
Minnesota	380,476	7.9%	3
Maryland	438,676	8.5%	4
New Jersey	699,668	8.5%	5
Wisconsin	451,538	8.7%	6
Iowa	258,008	9.1%	7
Delaware	69,901	9.2%	8
Colorado	388,952	9.3%	9
Massachusetts	573,421	9.3%	10
Alaska	57,602	9.4%	11
Utah	206,328	9.4%	12
Vermont	55,506	9.4%	13
Indiana	559,484	9.5%	14
Virginia	656,641	9.6%	15
Nebraska	161,269	9.7%	16
Kansas	257,829	9.9%	17
Nevada	205,685	10.5%	18
Michigan	1,021,605	10.5%	19
Ohio	1,170,698	10.6%	20
Washington	612,370	10.6%	21
Illinois	1,291,958	10.7%	22
Hawaii	126,154	10.7%	23
Maine	135,501	10.9%	24
Pennsylvania	1,304,117	11.0%	25
Wyoming	54,777	11.4%	26
Oregon	388,740	11.6%	27
Missouri	637,891	11.7%	28
Idaho	148,732	11.8%	29
North Dakota	73,457	11.9%	30
Rhode Island	120,548	11.9%	31
North Carolina	958,667	12.3%	32
Florida	1,952,629	12.5%	33
Georgia	1,033,793	13.0%	34
South Dakota	95,900	13.2%	35
Tennessee	746,789	13.5%	36
Arizona	698,669	13.9%	37
South Carolina	547,869	14.1%	38
California	4,706,130	14.2%	39
New York	2,692,202	14.6%	40
Montana	128,355	14.6%	41
Oklahoma	491,235	14.7%	42
Texas	3,117,609	15.4%	43
Kentucky	621,096	15.8%	44
Arkansas	411,777	15.8%	45
Alabama	698,097	16.1%	46
West Virginia	315,794	17.9%	47
New Mexico	328,933	18.4%	48
Louisiana	851,113	19.6%	49
Mississippi	548,079	19.9%	50
District of Columbia	109,500	20.2%	51

Home Energy Affordability Gap Ranking
Dollar Gap per Household by State
June 2012

	2011 Ranking (Released in 2012)			Base Year 2002 Ranking (Released in 2003)		
State	Grand Total Affordability Gap	Average Gap per HH	Gap per HH Ranking	Grand Total Affordability Gap	Average Gap per HH	Gap per HH Ranking
Alabama	$1,048,521,013	$1,811	31	$408,597,691	$706	35
Alaska	$140,205,127	$2,778	45	$44,233,651	$876	42
Arizona	$873,545,553	$1,501	20	$321,366,942	$552	20
Arkansas	$546,343,374	$1,482	18	$266,540,214	$723	36
California	$4,575,307,977	$1,310	10	$1,899,591,194	$544	17
Colorado	$422,229,800	$1,151	3	$120,138,614	$327	1
Connecticut	$653,498,774	$2,856	47	$200,793,319	$877	43
Delaware	$178,483,132	$2,848	46	$63,197,446	$1,009	47
District of Columbia	$154,255,116	$1,821	32	$67,316,202	$795	38
Florida	$2,494,204,638	$1,398	15	$876,051,219	$491	12
Georgia	$1,447,031,547	$1,705	27	$505,515,026	$596	26
Hawaii	$400,859,198	$4,185	51	$112,178,919	$1,171	51
Idaho	$160,615,465	$1,124	2	$96,003,279	$672	33
Illinois	$1,478,562,238	$1,377	13	$504,263,015	$470	8
Indiana	$718,388,178	$1,321	12	$225,363,622	$414	5
Iowa	$376,069,542	$1,390	14	$137,598,051	$509	14
Kansas	$315,944,809	$1,238	7	$122,360,904	$480	11
Kentucky	$787,578,530	$1,497	19	$277,454,986	$527	15
Louisiana	$799,129,817	$1,282	9	$401,731,470	$644	27
Maine	$421,170,293	$3,025	48	$144,896,826	$1,041	48
Maryland	$899,874,550	$2,378	42	$301,170,053	$796	39
Massachusetts	$1,252,138,666	$2,564	44	$435,822,130	$892	45
Michigan	$1,547,259,153	$1,761	29	$487,734,690	$555	21
Minnesota	$622,052,909	$1,668	26	$203,471,575	$546	18
Mississippi	$682,624,307	$1,650	25	$289,642,999	$700	34
Missouri	$763,142,806	$1,268	8	$272,596,654	$453	7
Montana	$159,056,200	$1,317	11	$51,495,975	$426	6
Nebraska	$243,346,057	$1,461	16	$56,873,101	$342	2
Nevada	$220,221,285	$2,252	39	$86,645,052	$886	44
New Hampshire	$258,191,857	$3,204	49	$77,489,400	$962	46
New Jersey	$1,191,516,901	$2,098	37	$366,873,703	$646	28
New Mexico	$317,337,912	$1,236	6	$139,682,359	$544	16
New York	$4,710,623,711	$2,334	40	$2,134,341,097	$1,057	49
North Carolina	$1,439,874,543	$1,650	24	$565,065,982	$647	30
North Dakota	$145,547,644	$2,000	36	$34,877,860	$479	10
Ohio	$1,644,212,232	$1,542	21	$626,651,854	$588	24
Oklahoma	$854,007,045	$1,885	33	$298,560,448	$659	31
Oregon	$416,878,002	$1,157	4	$143,363,061	$398	4
Pennsylvania	$2,260,085,520	$1,889	34	$887,284,036	$742	37
Rhode Island	$249,854,397	$2,471	43	$82,197,201	$813	41
South Carolina	$744,294,261	$1,582	23	$269,152,121	$572	23
South Dakota	$132,442,487	$1,549	22	$47,535,811	$556	22
Tennessee	$982,987,489	$1,473	17	$365,347,142	$548	19
Texas	$5,363,741,325	$2,219	38	$1,938,802,071	$802	40
Utah	$192,912,929	$1,124	1	$85,485,572	$498	13
Vermont	$193,086,439	$3,347	50	$67,488,944	$1,170	50
Virginia	$1,172,617,396	$1,890	35	$416,204,278	$671	32
Washington	$648,306,608	$1,219	5	$203,345,659	$382	3
West Virginia	$638,736,796	$2,339	41	$176,620,071	$647	29
Wisconsin	$770,674,022	$1,754	28	$260,777,428	$594	25
Wyoming	$97,300,143	$1,798	30	$25,466,805	$471	9
Total US	$48,806,889,713	$1,714		$18,193,257,723	$639	

Home Energy Affordability Gap Ranking
Energy Burden at Less Than 50% FPL by State
June 2012

State	2011 Ranking (Released in 2012)		Base Year 2002 Ranking (Released in 2003)	
	Energy Burden <50% FPL	Energy Burden Ranking	Energy Burden <50% FPL	Energy Burden Ranking
Alabama	67.1%	31	44.6%	33
Alaska	75.5%	40	49.9%	43
Arizona	59.6%	17	40.3%	18
Arkansas	60.0%	20	46.1%	38
California	53.0%	7	38.3%	9
Colorado	52.5%	3	32.9%	1
Connecticut	92.5%	47	50.4%	45
Delaware	92.3%	46	54.7%	48
District of Columbia	67.7%	32	45.7%	37
Florida	58.6%	14	39.2%	12
Georgia	63.5%	26	41.0%	20
Hawaii	104.5%	50	56.2%	49
Idaho	52.1%	2	45.3%	36
Illinois	56.2%	11	38.0%	7
Indiana	56.8%	12	36.8%	5
Iowa	59.4%	16	41.3%	23
Kansas	55.4%	10	39.8%	17
Kentucky	60.0%	18	39.5%	13
Louisiana	52.6%	4	41.2%	22
Maine	100.6%	48	57.6%	50
Maryland	79.5%	42	47.3%	41
Massachusetts	84.7%	45	50.0%	44
Michigan	65.4%	29	39.8%	16
Minnesota	64.8%	28	41.6%	25
Mississippi	61.7%	23	43.4%	30
Missouri	55.4%	9	38.0%	8
Montana	57.3%	13	37.3%	6
Nebraska	61.6%	22	35.0%	3
Nevada	59.4%	15	41.9%	26
New Hampshire	102.7%	49	54.7%	47
New Jersey	72.5%	37	42.4%	28
New Mexico	52.7%	5	39.2%	11
New York	75.9%	41	52.1%	46
North Carolina	64.3%	27	44.1%	32
North Dakota	74.7%	39	39.8%	15
Ohio	61.6%	21	42.1%	27
Oklahoma	70.7%	36	44.6%	34
Oregon	52.8%	6	35.7%	4
Pennsylvania	69.1%	33	46.3%	39
Rhode Island	83.8%	44	48.1%	42
South Carolina	62.1%	24	41.1%	21
South Dakota	62.7%	25	41.3%	24
Tennessee	60.0%	19	40.8%	19
Texas	74.4%	38	46.6%	40
Utah	50.0%	1	39.0%	10
Vermont	107.1%	51	61.3%	51
Virginia	69.9%	35	44.8%	35
Washington	53.6%	8	34.3%	2
West Virginia	81.5%	43	43.4%	31
Wisconsin	66.6%	30	42.5%	29
Wyoming	69.9%	34	39.7%	14

Home Energy Affordability Gap Ranking
LIHEAP Coverage by State
June 2012

	2011 (released in 2012)				
State	Total Energy Affordability Gap	Heating-Cooling Affordability Gap	LIHEAP Allocation	LIHEAP Coverage Ratio	LIHEAP Coverage Ratio Ranking
Alabama	$1,048,521,013	$298,384,080	$59,010,121	19.8%	44
Alaska	$140,205,127	$56,444,775	$14,327,158	25.4%	30
Arizona	$873,545,553	$185,664,404	$30,214,443	16.3%	47
Arkansas	$546,343,374	$195,593,466	$34,985,452	17.9%	46
California	$4,575,307,977	$378,287,879	$201,117,115	53.2%	7
Colorado	$422,229,800	$124,228,961	$62,138,649	50.0%	8
Connecticut	$653,498,774	$242,406,302	$98,253,881	40.5%	16
Delaware	$178,483,132	$79,844,968	$15,171,820	19.0%	45
District of Columbia	$154,255,116	$42,984,760	$14,050,604	32.7%	23
Florida	$2,494,204,638	$428,033,917	$107,686,091	25.2%	32
Georgia	$1,447,031,547	$423,592,318	$85,164,350	20.1%	43
Hawaii	$400,859,198	$59,182,437	$6,027,212	10.2%	51
Idaho	$160,615,465	$61,928,056	$25,736,498	41.6%	15
Illinois	$1,478,562,238	$329,272,544	$238,712,118	72.5%	2
Indiana	$718,388,178	$211,720,614	$102,742,736	48.5%	10
Iowa	$376,069,542	$123,724,931	$68,137,227	55.1%	6
Kansas	$315,944,809	$68,361,989	$42,326,807	61.9%	3
Kentucky	$787,578,530	$263,986,547	$58,334,575	22.1%	40
Louisiana	$799,129,817	$171,596,193	$53,164,200	31.0%	24
Maine	$421,170,293	$203,133,553	$51,464,282	25.3%	31
Maryland	$899,874,550	$344,964,515	$85,522,613	24.8%	34
Massachusetts	$1,252,138,666	$493,144,265	$175,103,814	35.5%	19
Michigan	$1,547,259,153	$505,798,527	$227,108,113	44.9%	14
Minnesota	$622,052,909	$245,990,470	$145,240,955	59.0%	4
Mississippi	$682,624,307	$172,478,645	$38,756,195	22.5%	39
Missouri	$763,142,806	$194,281,464	$95,595,838	49.2%	9
Montana	$159,056,200	$77,051,323	$25,911,700	33.6%	21
Nebraska	$243,346,057	$111,350,811	$39,738,187	35.7%	18
Nevada	$220,221,285	$18,921,912	$15,462,272	81.7%	1
New Hampshire	$258,191,857	$118,777,145	$34,255,054	28.8%	28
New Jersey	$1,191,516,901	$382,629,236	$180,990,934	47.3%	11
New Mexico	$317,337,912	$86,742,744	$20,573,372	23.7%	36
New York	$4,710,623,711	$1,466,945,165	$495,531,625	33.8%	20
North Carolina	$1,439,874,543	$541,659,080	$109,284,197	20.2%	42
North Dakota	$145,547,644	$80,306,340	$26,573,796	33.1%	22
Ohio	$1,644,212,232	$499,328,285	$225,398,415	45.1%	13
Oklahoma	$854,007,045	$351,451,574	$43,338,994	12.3%	49
Oregon	$416,878,002	$151,323,632	$44,847,353	29.6%	27
Pennsylvania	$2,260,085,520	$927,733,889	$280,477,927	30.2%	25
Rhode Island	$249,854,397	$105,118,920	$29,701,124	28.3%	29
South Carolina	$744,294,261	$222,317,932	$46,909,261	21.1%	41
South Dakota	$132,442,487	$57,224,150	$22,877,566	40.0%	17
Tennessee	$982,987,489	$305,751,591	$71,594,781	23.4%	37
Texas	$5,363,741,325	$1,347,536,134	$179,199,982	13.3%	48
Utah	$192,912,929	$57,254,666	$31,707,749	55.4%	5
Vermont	$193,086,439	$103,781,775	$25,675,382	24.7%	35
Virginia	$1,172,617,396	$456,399,576	$102,839,476	22.5%	38
Washington	$648,306,608	$238,843,102	$71,774,103	30.1%	26
West Virginia	$638,736,796	$324,055,191	$39,046,566	12.0%	50
Wisconsin	$770,674,022	$289,409,546	$130,737,715	45.2%	12
Wyoming	$97,300,143	$49,882,672	$12,465,530	25.0%	33
Total US	$48,806,889,713	$14,276,826,971	$4,443,005,928	31.1%	

Home Energy Affordability Gap Ranking
LIHEAP Coverage by State
June 2012

	Base Year–2002 (released in 2003)				
State	Total Energy Affordability Gap	Heating-Cooling Affordability Gap	LIHEAP Allocation	LIHEAP Coverage Ratio	LIHEAP Coverage Ratio Ranking
Alabama	$408,597,691	$189,350,350	$14,362,196	7.6%	46
Alaska	$44,233,651	$24,063,507	$9,167,711	38.1%	8
Arizona	$321,366,942	$156,256,191	$6,945,729	4.4%	51
Arkansas	$266,540,214	$150,060,448	$10,959,034	7.3%	48
California	$1,899,591,194	$312,958,028	$77,048,998	24.6%	23
Colorado	$120,138,614	$56,169,674	$26,864,584	47.8%	5
Connecticut	$200,793,319	$117,328,102	$35,045,798	29.9%	16
Delaware	$63,197,446	$38,050,429	$4,651,655	12.2%	37
District of Columbia	$67,316,202	$33,475,420	$5,442,670	16.3%	32
Florida	$876,051,219	$263,872,663	$22,725,282	8.6%	43
Georgia	$505,515,026	$217,066,495	$17,967,820	8.3%	44
Hawaii	$112,178,919	$24,871,362	$1,809,458	7.3%	49
Idaho	$96,003,279	$45,485,604	$10,478,978	23.0%	27
Illinois	$504,263,015	$187,956,310	$97,000,718	51.6%	2
Indiana	$225,363,622	$141,124,278	$43,919,200	31.1%	15
Iowa	$137,598,051	$66,623,273	$31,126,126	46.7%	6
Kansas	$122,360,904	$56,822,048	$14,294,513	25.2%	22
Kentucky	$277,454,986	$178,398,046	$22,855,403	12.8%	36
Louisiana	$401,731,470	$185,644,027	$14,683,141	7.9%	45
Maine	$144,896,826	$78,817,454	$22,704,091	28.8%	18
Maryland	$301,170,053	$169,501,239	$26,834,125	15.8%	33
Massachusetts	$435,822,130	$237,531,696	$70,103,202	29.5%	17
Michigan	$487,734,690	$292,896,183	$92,093,679	31.4%	14
Minnesota	$203,471,575	$121,154,471	$66,348,286	54.8%	1
Mississippi	$289,642,999	$107,041,862	$12,313,352	11.5%	39
Missouri	$272,596,654	$117,404,687	$38,745,874	33.0%	13
Montana	$51,495,975	$34,844,795	$12,291,175	35.3%	11
Nebraska	$56,873,101	$31,747,290	$15,393,063	48.5%	4
Nevada	$86,645,052	$14,720,431	$3,262,202	22.2%	28
New Hampshire	$77,489,400	$47,267,808	$13,269,106	28.1%	19
New Jersey	$366,873,703	$176,974,997	$65,079,920	36.8%	9
New Mexico	$139,682,359	$62,974,200	$8,695,571	13.8%	35
New York	$2,134,341,097	$864,954,511	$212,495,786	24.6%	24
North Carolina	$565,065,982	$270,920,666	$31,668,320	11.7%	38
North Dakota	$34,877,860	$26,180,725	$13,351,935	51.0%	3
Ohio	$626,651,854	$349,462,182	$85,811,633	24.6%	25
Oklahoma	$298,560,448	$178,653,577	$13,201,808	7.4%	47
Oregon	$143,363,061	$112,960,543	$20,821,188	18.4%	31
Pennsylvania	$887,284,036	$553,362,245	$114,141,586	20.6%	29
Rhode Island	$82,197,201	$44,050,592	$11,539,387	26.2%	21
South Carolina	$269,152,121	$124,795,951	$11,406,510	9.1%	42
South Dakota	$47,535,811	$26,681,872	$10,844,109	40.6%	7
Tennessee	$365,347,142	$220,276,689	$23,152,034	10.5%	41
Texas	$1,938,802,071	$691,169,664	$37,807,287	5.5%	50
Utah	$85,485,572	$34,439,449	$12,484,036	36.2%	10
Vermont	$67,488,944	$42,765,301	$9,945,667	23.3%	26
Virginia	$416,204,278	$229,762,817	$32,686,964	14.2%	34
Washington	$203,345,659	$171,519,617	$34,247,986	20.0%	30
West Virginia	$176,620,071	$131,861,439	$15,125,156	11.5%	40
Wisconsin	$260,777,428	$172,723,502	$59,722,984	34.6%	12
Wyoming	$25,466,805	$18,160,040	$4,998,337	27.5%	20
Total US	$18,193,257,723	$8,203,154,746	$1,669,935,373	20.4%	

Home Energy Affordability Gap
Dollar Gap per Household by Census Division
June 2012

		2011 Ranking (Released in 2012)		Base Year 2002 Ranking (Released in 2003)	
Census Division	**HHS < 185% FPL**	**Grand Total Affordability Gap**	**Average Gap per HH**	**Grand Total Affordability Gap**	**Average Gap per HH**
Mountain	1,793,020	$2,443,219,287	$1,363	$926,284,598	$517
Pacific	4,530,542	$6,181,556,912	$1,364	$2,402,712,484	$530
West North Central	1,825,198	$2,598,546,254	$1,424	$875,313,956	$480
East North Central	4,002,513	$6,159,095,823	$1,539	$2,104,790,609	$526
East South Central	2,185,900	$3,501,711,339	$1,602	$1,341,042,818	$613
South Atlantic	5,395,758	$9,169,371,979	$1,699	$3,240,292,399	$601
West South Central	3,861,995	$7,563,221,561	$1,958	$2,905,634,202	$752
Mid-Atlantic	3,782,835	$8,162,226,132	$2,158	$3,388,498,837	$896
New England	1,095,901	$3,027,940,426	$2,763	$1,008,687,819	$920
Total US	28,473,662	$48,806,889,713	$1,714	$18,193,257,723	$639

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Missouri Public Service Commission
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Reference File Nos. EW 2013-0045 (electric service)
GW 2013-0046 (gas service
WW 2013-0047 (water service)

I am writing about the study regarding the possibility of offering discounted utility rates for low-income customers.

I taught school for 19 years, so I am familiar with the situation of those in my community. I recently retired as Secy.-Treas. of the Rock Port Ministerial Alliance. In that position I was familiar with many in our community who struggled to pay their utility bills. Depending upon true need, we were often able to help. Even so, I believe that to discount rates for those low-income customers is not a good choice for several reasons:

- Most low-income households already live with/on entitlements: WIC, Aid for Dependent Children, Social Security, Medicare, Medicaid, Free/Reduced School Breakfasts/Lunches, PLUS Backpack Buddies (free food for children each weekend), free School backpacks with all needed supplies each fall, free "adoption" of children, their families and the elderly for Christmas gifts/food, eligibility for free food at local food pantries (including 2nd Harvest, and other organizations whose focus is on providing for low-income households) and help from churches and Ministerial Alliances.
  These programs are already in place and used by low-income persons/households.
- Many low-income people do not know how to budget the income they have. (and for many the ONLY income they have is from entitlements) They are teaching their children (by example) that it is not necessary to have an education...to have a job (often having an inflated idea of their own worth...minimum wage simply is "not enough") or to pay the bills, because someone else will do it for them. This is not a good principle to live by, but it's becoming the American "way". Having less responsibility to pay their bills often means that they will be less responsible with the income they do have. Some still manage to buy beer/liquor, cigarettes, lottery tickets, casino trips, etc.
- We already have an entitlement dependent society. At some point, surely every household should be expected to be responsible for the decisions they make in life and expected to "pay its own way".

PLEASE do not expect other rate-payers to pay more so low-income customers can pay less. It's a terrible burden and unfair to those who already pay more than their share through taxes and their own generosity to provide for those who have less.

Sincerely,

Gertrude Mulvania

G. Bulsara
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KANSAS CITY MO
FIRST-CLASS FOREVER

MO Public Service Commission
P.O. Box 360
Jefferson City, MO 65102

65102036060

August 30, 2012

Missouri Public Service Commission
P.O. Box 360
Jefferson City, MO 65102
File Nos. EW2013-0045, GW2013-0046, WW2013-0047

Honorable Members

According to "Our Opinion" editorial in the August 23, 2012 News Press there is ongoing discovery regarding reduced rates based on income. As an almost 70 year old, who spent over 50 years in the workforce, starting at the age of 14; I oppose such a plan based on the following.

My family was hard working but very poor (financially) and I realized that if I was going to have anything in life and be able to pay my own way, I would be required to work for it, which I did. In the 1960's the percentage of the population of the United States drawing some form of financial support was approximately 5 percent. Today after millions (perhaps billions) of dollars, both government and private money being poured into these programs it currently stands at between 35 and 40 percent. Unfortunately President Johnson's vision of a "Great Society" has turned into a Society that expects to be taken care of from the cradle to the grave. Many individuals are just too lazy to work for a living. Here is where one would argue, but there are no jobs available, and here is where I could write 5 pages on how to fix that issue.

I know of a family that works only part time because if they make too much money they will lose their welfare benefits. As a result they work just enough to be able to file a tax return receiving all of the money back that was withheld, plus EIC money which will result in a large check from the government. However this same family was able to purchase one of those expensive ATV's. Question, should I as a taxpayer and a utility rate payer have to subsidies such behavior? I think not! The way to reduce your utilities expense, use less! One way to fund your basic needs is to restrict purchases of items that you do not need! I.E. cable, internet, cigarettes, tattoos, booze, cell phones, electronic games, ATV's ETC... Bottom line is there are folks who simply will not work because they are convinced that the government and/or some other agency will bail them out.

I realize that there are individuals that through no fault of their own are having problems paying their bills. However, there are safety nets available to help them. In St Joseph there are facilities where folks with genuine needs can live comfortably including rent and utilities at practically no cost to them. With private and government programs, food stamps, housing, Medicaid, free cell phones and utility assistance that we taxpayers are supporting, I see no reason for my utility bill to increase just to expand this free for life society any farther. I just heard an advertisement on the radio yesterday where KCP & L had 1 million dollars available to help pay customer's bill. Where did that money come from? My guess is out of funds that could have been used to reduce rates for all of us.

The article quoted Robert Kenney suggesting that some of the money to fund such a program could come from a "reduction in delinquent payments". How much will it cost to monitor a program that will be fraught with abuse and fraud? How will you handle a situation where more than one wage earner lives at the same address but only reports income on one person? Will you be able to cross check this with the IRS or Social Security, I think not. Currently, in KCP & L's St Joseph region, the cost for a KWH is

approximately 11 cents. A household using 500 KW's per month would be billed 55 dollars. If this plan is put in place using the 20 percent formula, the bill would be 44 dollars. Do you honestly think that will result in less collection issues? What about the individual that just misses the threshold by a few dollars, the increase per KWH in their rates could cause more delinquencies, thus more collection costs.

Perhaps the Missouri Public Service Commission should be more vigilant in monitoring the required investment cost of the utilities versus the optimum amount needed to increase the bottom line. If I was guaranteed a set return on my investment, obviously I would maximize my investment, the greater the investment the greater the profit. For example, do the utilities need to purchase 100 new trucks a year, or would 50 suffice. How long should they be required to use said trucks prior to replacing them? How about staffing, do they really need to hire ex-politicians at large salaries to conduct the business, or is this just a payoff for past and future favors? I do not know if this is the case and hopefully the PSC is doing what is right for both the rate payers and the utilities. However, it appears to me that the ratepayers are getting hit regularly with increases. If the rates keep increasing you are going to see a lot more delinquencies, hence more collection issues and costs. What then, allow the utilities to just bill the government and have them pay the bill for all of us?

However, I would submit another option that could be simpler, fairer to all and less able to be abused. Reduce the rate for the first few units used, in the case of electrical, maybe 300-500 KWH for everyone thus eliminating the need for another level of bureaucracy and fraud. At least with this plan everyone would get the benefit of a reduction even though most would still have to pay a higher rate on the 300-500 plus KWH. By doing this it would also promote conservation of resources. Finally, I do not mind helping those who want to help themselves; I personally have helped out many who had legitimate issues, as a matter of fact, just yesterday I bought and gave an individual a debit card that lost everything in a fire. However, I am sick and tired of helping those that are too lazy to help themselves and are simply looking for a free ride. We must break this cradle to grave cycle that we are in or else everyone fails. It is called personal responsibility. Revisit the nursery rhyme of the "Little Red Hen".

Respectfully,
Howard Dozier

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KANSAS CITY 640

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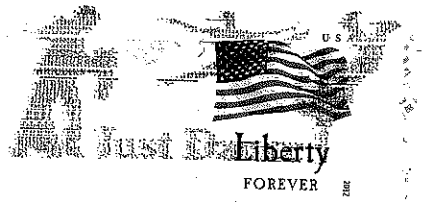

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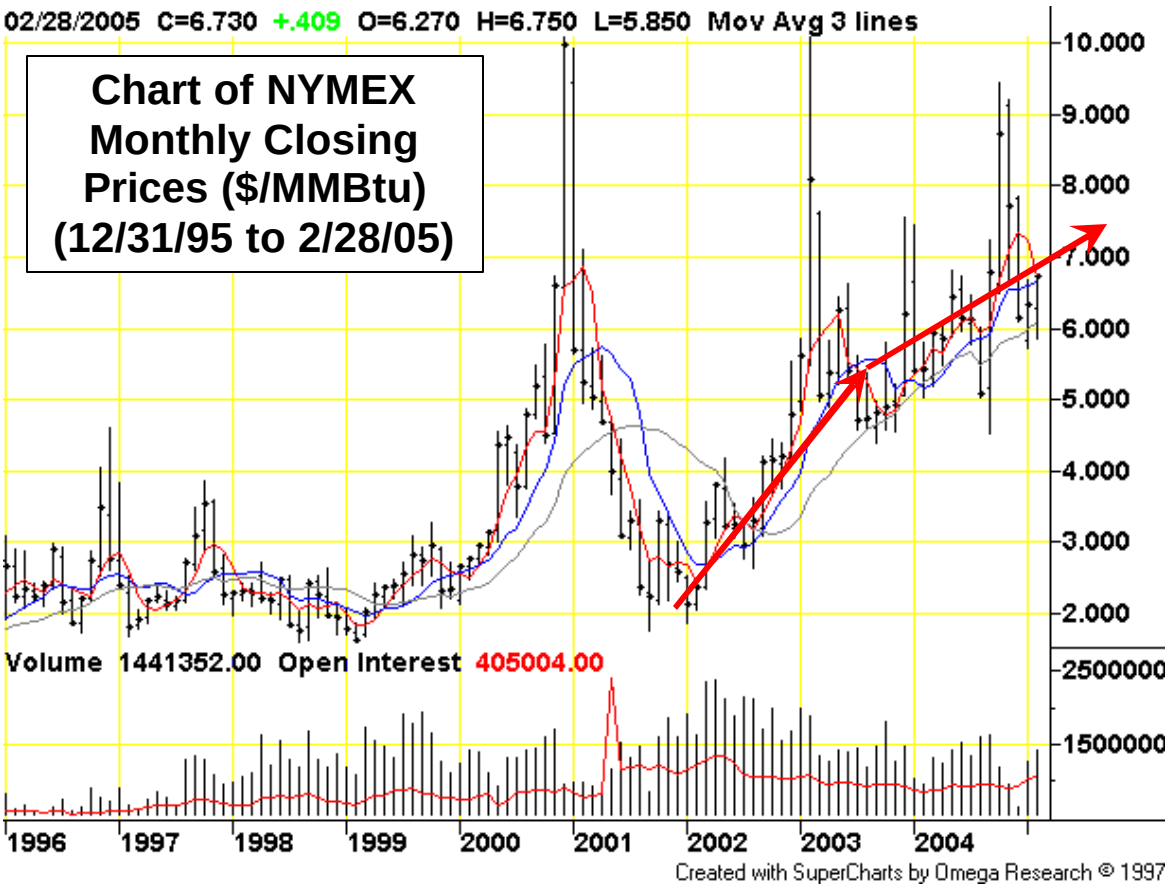
Final Report of the Missouri Public Service Commission's Cold Weather Rule & Long Term Energy Affordability Task Force



Issued: March 31, 2005

In the Matter of a Commission Inquiry into Affordable Heating Energy for Customers of Regulated Missouri Utilities and Possible Changes to the Cold Weather Rule	))))))	**Case No. GW-2004-0452**

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I. Executive Summary

The task force members are thankful for the opportunity to provide the Commission with this report. Further, the task force wishes to thank the Commission for its interest in this important subject and for establishing a task force to address possible approaches for dealing with it.

Over the past year, the members of this task force, as well as about fifteen other interested people, have met in twenty five all day meetings. Outside of the structured meetings of the task force, many individual meetings took place and much research was conducted by the involved parties. In total, the efforts of those participating on this task force spent at least ten percent of their productive work related hours over the last thirteen months.

As the Commission is already well aware, natural gas prices are higher now than was the normal range of natural gas prices only a few years ago. With the supply and demand situation the nation now faces a hot topic in government and industry circles, some hope for reductions in these prices is on the horizon but there is no certainty of lower and/or less volatile prices any time soon. Technology developments to advance methane hydrates production capability, increased import capability from Alaska and Canada, better access to the world liquefied natural gas (LNG) market through new ports, and efforts to reduce usage through energy efficiency all may represent portions of the total solution to this problem but none of them offer an immediate solution.

Many of the natural gas customers in our state have seen their bills double over the last few years. This has obviously impacted the budgets of many Missourians, especially those with limited financial means. Many households that were able to pay their full energy bills in the past can no longer do so without making decisions between paying for heat, food or medicine. These higher bills also impact the utilities that sell these services as they see their bad debts increase and the number of customers disconnected for nonpayment grows. Higher bad debts eventually contribute to higher rates for all customers.

This report provides summaries of the programs and concepts considered, the funding mechanisms considered, recommendations for changes in legislation and ideas for regulatory approaches in the future to assist in long-term energy affordability. Much of this information is provided in a relatively summarized form to avoid making this report

too long and burdensome to read. Where appropriate, information has been referenced and provided in the appendices.

This report also provides some technical information for those wishing to look closely at the facts and figures. The task force recognizes that these facts and figures often tell real stories about the struggles people are experiencing in keeping up with their utility bills and all of their other expenses and that is why these facts and figures have been included. For those wishing to look even closer at the issues touched on in this report, the reference materials in Appendix A provide numerous internet links.

The task force members note that the recommendations in this report were supported by all of its members (with the exception of one that is noted in the legislative recommendations section). Many other recommendations were strongly supported by one group but just as strongly opposed by another group. These recommendations, where possible, were revised through negotiations to a point where the concerns of all parties were addressed. If middle ground could not be found on a recommendation, it did not become a recommendation of the task force. The Additional Recommendations & Concurrences of Various Parties section near the end of this report provides a space for parties who wish to speak individually to the Commission on these issues to do so.

Although the task force members recognize that this task force's efforts may be concluded with the issuance of this report, we also recognize that this group may be called upon again to resume discussion of these issues in the very near future. A amendment to Senate Bill 179 requires that "the public service commission shall appoint a task force, consisting of all interested parties, to study and make recommendations on the cost recovery and implementation of conservation and weatherization programs for electrical and gas corporations". If the Commission wishes this group to address this issue, the task force stands ready to provide whatever assistance the Commission request.

II. Why Missouri Needs to Address Long Term Energy Affordability

The Commission established the long-term energy affordability task force in order to examine "possible programs to improve long-term energy affordability for persons who need help with their utility bills." The task force, composed of representatives from utility companies and consumer groups, the Missouri Department of Natural Resources, the Committee to Keep Missourians Warm, the Community Action Agencies, the PSC Staff and the Office of the Public Counsel, considered innovative ways to finance weatherization and energy efficiency measures for homes and buildings, and ways to provide financial assistance to customers facing mounting energy bills on low and fixed incomes.

One of the crucial hurdles that the task force was able to overcome early in its discussions was the recognition that many customers, due to their income level, are unable to pay their increasing household energy burden. By recognizing that most low-income households in Missouri who fail to pay their full energy bills on time each month are unable to pay, rather than are unwilling to pay, the task force was able to move to a discussion regarding possible solutions. The persons in this category include low income disabled and elderly Missourians, and families with young children on public assistance. In addition, the utility customers who find themselves unable to pay their energy bills include those who are known as the "working poor." These customers live in households where one or more members work at least 1000 hours per year, yet find themselves living under the federal poverty level, or only slightly above it. These customers increasingly find that their household energy burden exceeds their resources.

The Household Energy Burden is the percentage of household income necessary to fully pay household energy bills including ordinary use of lighting and appliances as well as heating and cooling. The task force considered various ways of measuring energy burden, all of which eventually relied, to some degree, on the federal government's poverty guidelines. These guidelines attempt to define the "poverty level" in the United States based on a calculation that includes income and family size. These guidelines are currently relied on for allocating LIHEAP assistance, which in Missouri, is available to persons with incomes below 125% of the poverty level. Even with income at 125% of the guideline level, it is difficult for today's households to make ends meet, due in part to soaring energy prices and in part from the way in which the guidelines are calculated.

Back in the 1960s, when low-income families spent approximately 1/3 of their income on food, the government determined who lived in poverty by calculating the cost of a "thrifty monthly food basket" and multiplying that number by 3. The government assumed the remaining 2/3s of the income allowance was sufficient to provide for basic shelter, clothing and transportation needs. Over time, costs of other basic needs rose faster than food costs, to the point that the thrifty food basket now equals only 1/6 of the amount required to live. Income self-sufficiency begins for today's families at about 200% of the federal guideline amount.

At 100% of the federal poverty guideline, a single person with no dependents can earn no more than $9,576 per year. Under guidelines recommended by Roger D. Colton, a national expert on long-term energy affordability, 3% of household income represents a fair energy burden for very low income households. That person, then, can afford to pay about $287 per year for energy costs. Yet today, due to rising energy costs, the monthly energy bill for that person during just the winter heating months is likely to exceed that level for a single utility. Therefore, it comes as no surprise that low income customers are facing rising arrearages when they most need reliable sources of energy.

Households at or near the federal poverty level spend nearly 20 percent of their annual income on home energy costs - four times as much as those at the median-income level, according to Dr. Meg Power, the executive director of Economic Opportunity Studies.

A recent study conducted in Missouri by Roger D. Colton found that 46 percent of households living within 25 percent of the federal poverty level skipped meals "sometimes" or "often" to pay for their energy bills and that 45 percent did not take medications prescribed by their doctors for the same reason. Another troubling finding of the study, commissioned by the National Low Income Energy Consortium, was that 54 percent of the respondents used their kitchen ovens as space heaters - a health and safety hazard.

Today's high cost of energy is "driving many low-income families to desperate measures when it comes to how they spend the very limited amount of money they have," said Skip Arnold, executive director of Energy Outreach Colorado, a privately funded not-for-profit group. Although LIHEAP distributed nearly $1.9 billion in 2004 to state and local agencies, that was roughly the same amount available in 1981, when the program was founded.

The Poor Cannot Pay Their Bills Now

Without developing some way to make energy more affordable, utility bill increases will lead to more sacrifices of medication, nutrition, and other necessities. As bills grow beyond the customer's ability to pay, arrearages and eventually uncollectibles grow too. The costs to the system in growing arrearages and collection costs, and to the low-income community in human suffering must be considered in designing affordability programs. However, these considerations do not occur in a vacuum; making energy affordable for the poor must not occur at the expense of making energy unaffordable for persons in the higher income tiers. The task force recognized that careful balancing of interests would be necessary in designing programs so that all customers could benefit.

Benefits to All Customers

In order to ensure that energy remains affordable for all customers, energy efficiency measures, including weatherization and conservation education, create ways for all customers to consume less energy. Customers who use less energy will see a drop in their utility bill. If enough customers from all customer classes take steps to use less energy, demand should decrease, and a drop in the price of fuels, such as natural gas, will follow. Therefore, the benefits to all customers of providing ways to increase energy efficiency can be realized over the long term, provided that care is given to ensure that residential customers with few resources are not forced to bear all of the costs for these programs.

One way that customers in general benefit from affordability programs is through the possible reduction in collection costs and bad debt expense. As more low-income households are able to pay their full utility bills, utilities should see some reduction in these types of operating costs. While the task force found no study that suggests that there would be a one-to-one correlation between increasing affordability and reduction in bad debt expense, there are reasons to believe that a large percentage of customers who currently are not able to pay they bills can and will do so under a program that makes their utility service affordable.

Benefits to the State

The State as a whole benefits from affordable energy policies. By keeping utility rates low, the State attracts businesses, which in turn provide jobs to Missouri citizens. By increasing employment opportunities, more utility customers will be able to afford to pay their energy bills. In addition, affordable energy policies reduce the need for government assistance programs to provide low income customers with help paying bills.

The savings to the state from providing the means for low income customers to keep their heating utilities on may result in savings in other areas as well. Families who can keep the heat on in the winter, and have a means for cooling in summer are less likely to engage in forced moves. Social workers who may feel an obligation to remove children from homes where the utilities are shut off can better assess whether children need to be in foster care, or whether less expensive alternatives exist for helping poor families in crisis.

Benefits to Low Income Customers

When energy is unaffordable, low income households report missing meals, avoiding doctor visits, and leaving prescriptions for vital medication unfilled. The result can be more trips by uninsured Missouri residents to emergency rooms. By recommending that the Commission seek clarity regarding its jurisdiction to approve low income assistance programs, the task force believes that the Commission will have more tools available to craft appropriate and effective programs to assist low income customers in paying their energy bills. Therefore, the long-term effect will be to assist low-income customers with a means to pay their energy bills, as well as provide for their family's other needs.

Benefits to the Environment

The same tools that will assist the Commission in establishing low income programs can also be used to require public utilities to offer weatherization and other energy efficiency programs. These types of programs reduce the demand for energy, and over the long term have the potential to enhance the environment if efficiency reduces the demand for production of energy.

III. Commission Order Creating Task Force & Objectives

Given the persistent high prices of natural gas, the significant increase in customers' bills, the increased number of customers applying for assistance, and knowing that the Commission's Cold Weather Rule (rule or 4 CSR 240-13.055) had not changed on a permanent basis for over a decade, the Commission created a task force in Case No. GW-2004-0452 on March 3, 2004 to analyze these issues. Related to establishment of this case was the establishment of rulemaking Case No. GX-2004-0496. In its order creating this task force the Commission stated, "the Commission believes it is imperative that the rule be closely examined again to determine if it continues to adequately address consumer needs."

The Commission appointed members to this task force from a broad array of organizations to assure that it included the expertise necessary to address the issues and provide a balance of perspectives on these issues. The individuals appointed to this task force and their organizations:

Legislators: Senator David Klindt
Senator Rita Days
Representative Lanie Black
Representative Vicki Walker

PSC Staff: Gay Fred, Warren Wood

OPC: John Coffman

Department of Natural Resources:
Anita Randolph

Utilities: Ben McReynolds (Laclede), Jeanie Cathy (Aquila),
Laurie Karman (UE & Committee to Keep Missourians Warm),
Kim Lambert (MGE)

Low-Income Advocates/Action Agencies:
Harold Crumpton (Heat-Up St. Louis), Jackie Hutchinson (HDC & Committee to Keep Missourians Warm), Bob Jackson (City of KC), and Robin Sherrod (Low-Income Advocate)

Others Who Attended Task Force Meetings & Provided Input:

Leigh Taylor and Ivan Eames with Central MO Counties HDC, Mike Noack (MGE), Jeanna Machon (DFS), Brenda Wilbers (DNR), Mike Pendergast (Laclede), Bob Sullivan & Lori Shaffer (KCPL), Ruth O'Neill (OPC), Roland Maliwat and Cindy Sagastume with Aquila, Dan Danahy, Mark Mueller and Jon Carls with AmerenUE, and Lisa Kremer, Anne Ross, Henry Warren, and Greg Meyer with PSC Staff

The task force held its first working meeting on March 25, 2004. Public hearings were held on April 20th in Kansas City, on May 4th in Columbia and on May 11th in St. Louis. The task force held working meetings on March 25th, May 4th, 19th, 25th and 26th, and June 3rd, 10th, 15th and 30th to discuss the application of the rule and the proposed changes the different members of the task force wanted to have incorporated into the rule. The initial efforts of the task force focused on the proposed changes in a December 29, 2003 letter from the Office of the Public Counsel (OPC) to PSC Staff. After addressing each of the eleven items identified in OPC's letter, the task force discussed other items that the members of the task force requested be addressed.

Commission Staff actively participated in all of the public and working meetings of the task force. These meetings were open and all interested parties were welcome to attend, have input, and discuss with the task force members any issues that they thought should be addressed. Staff found that these discussions often resulted in a better understanding of the issues low-income customers face in paying their bills and the issues utilities face in their efforts to collect amounts that are past due. These discussions also resulted in agreement among the parties on several changes to the cold weather rule consistent with the needs of all parties.

The task force submitted proposed rule changes to the Commission that it supported unanimously. Staff participated in these negotiations and fully supported incorporation of the changes to the rule recommended by the task force. Additional negotiations shortly before the Commission agenda session approving the Final Order of Rulemaking resulted in further substantive changes to the rule that became effective on November 1, 2004. The changes to the rule approved by the Commission significantly increase the rule's protections to the customers most at risk of being disconnected during the winter as well as limiting the applicability of the financial provisions of the rule to those that most likely truly need the assistance. The current provisions of the rule represent a careful balancing of the needs of low-income customers, the utilities, and all the other customers that the utilities serve.

The submittal of the Final Order of Rulemaking with an effective date of November 1, 2004 to the Secretary of State represented the conclusion of the cold weather rule portion of this task force's efforts. The remaining efforts of this task force, which is now informally referring to itself as the Long Term Energy Affordability Task Force, were to achieve the following objectives laid out in the Commission's March 3, 2004, ORDER ESTABLISHING CASE AND CREATING TASK FORCE:

> "…the Missouri Public Service Commission will open an investigatory case to examine possible programs for improving long term energy affordability to those in need of assistance…"

and

> "The task force is to explore measures and programs that could have a long-term impact on the affordability of heat related bills, such as energy efficient appliances and weatherization in homes that currently are not energy efficient. This inquiry should include an evaluation of possible funding sources and mechanisms that can be used effectively by those struggling with energy bills."

The task force has been actively discussing long-term energy affordability issues since the conclusion of its efforts related to the cold weather rule. The task force met on June 10th, 15th, and 30th, July 27th, August 10th and 30th, September 7th and 21st, October 14th and 27th, November 10th, December 15th, January 6th and 19th, February 3rd, 10th and 25th, and March 11th and 23rd to discuss priority issues and recommendations to assist in long-term energy affordability as well as possible legislation and funding mechanisms to support these recommendations. The long-term energy affordability focus of this task force was kicked off on June 10th when Roger Colton spoke to the task force in St. Louis on affordability program structures, the need for low-income customers to have access to energy assistance, and the consequences of not having this assistance.

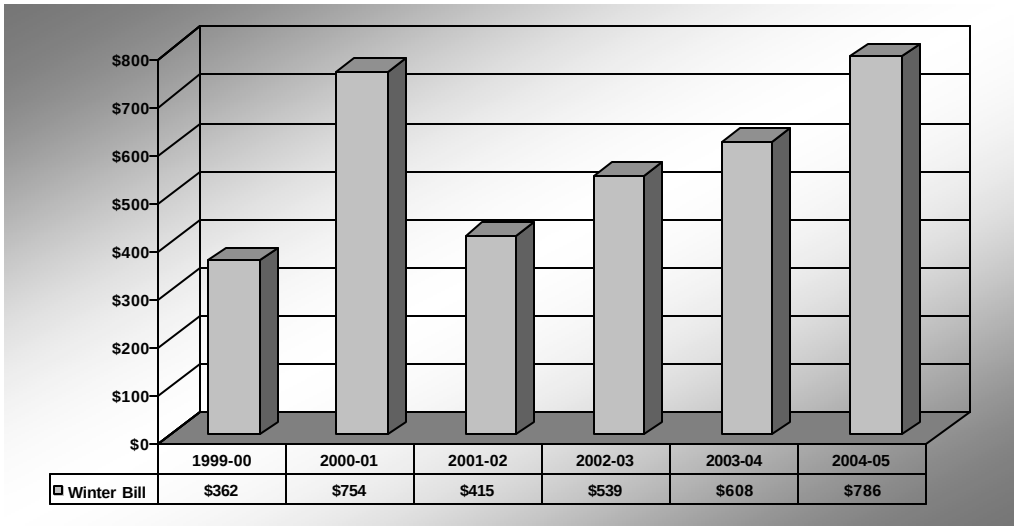
The initial meetings of the task force focusing on long-term energy affordability issues involved lengthy discussions on purposes and objectives as well as brainstorming on all the types of programs and policies that could potentially assist in long-term energy affordability. After finishing a long list of possible options the task force focused on discussing each of the possibilities and revising, consolidating or deleting each of the options as appropriate. The list of programs and concepts considered that is provided later in this report resulted from the early brainstorming discussions of the task force members.

The task force discussed, on several occasions, the fact that many of these recommendations cannot be implemented without changes in legislation, statutory or Commission authorized funding, or both. The task force is hopeful that decision makers will find the basis for some of these recommendations compelling and determine they are appropriate for implementation on an experimental basis before potential large-scale adoption. The task force members greatly appreciate the Commission's interest in this important topic and sincerely hope that the efforts of this task force will result in some level of assistance to the customers who are struggling to keep up with the increasing cost of their energy bills and the utilities that provide these customers with service.

IV. Energy Utility Bill Increases & Their Impacts on Missouri's Utilities & Consumers

As Missouri reaches the end of its third straight winter of significantly higher natural gas bills for residential, commercial and industrial customers, it is appropriate that this section of the report start with information on what higher energy utility bills mean for a significant percentage of Missouri's citizens. To begin to understand this subject you only have to look at the New York Mercantile Exchange (NYMEX) strip of monthly natural gas prices shown on the cover of this report.

In looking at what these higher natural gas prices have meant to residential customers, it is clear that this situation is causing an increasingly more difficult burden on household incomes. As part of its regular education effort for Missouri's energy utility consumers, the Staff looked at average customer natural gas bills since the winter of 1999-2000 and, not surprisingly, found that natural gas bills have increased dramatically. As an example of the kind of information Staff found, the following Laclede Gas Company natural gas bill trend was observed (5 month winter bill before taxes):



Many consumers recall the winter of 2000-01 as the winter their natural gas bills doubled from the previous winter. Unfortunately for many consumers this winter's natural gas bills will exceed those observed during the 2000-01 winter. It should be noted that this happened without abnormally cold weather as was observed in the 2000-01 winter, which illustrates how high natural gas prices have climbed in the last few years.

As might be expected, these increases in energy utility bills are increasing bad debt levels and the number of customers who are eventually disconnected from service for lack of payment. In the most recent 12-month accounting period of Missouri's largest three gas utilities, the companies incurred a total bad debt level of over **$19,000,000**. During the same time frame these three utilities also had approximately **48,000** customers disconnected from service for non-payment. This creates a very difficult situation for these customers who are without their primary heating source during the winter and for the utilities that are providing them with service. These circumstances increase the costs of service to all customers and can eventually contribute to higher utility rates.

A good place to begin the discussion of the characteristics of Missouri's low-income households is by discussing the Federal Poverty Guideline (FPG) measure. The FPG, published annually by the Department of Health and Human Services, is a benchmark measure used to standardize eligibility determination for state and federal programs. It should be noted that, as discussed in Section II, achieving an income that is greater than 100% of the FPG does not indicate that a household's financial needs are met. The table below shows the **monthly** income of households at various FPG's. For example, a household of one person with a gross monthly income at 100% of the FPG is receiving $798 per month. A three person household with a gross income at 100% of the FPG is receiving $1,341 per month. That monthly income will have to cover food, shelter, transportation, health care, clothing, childcare and all other expenses.

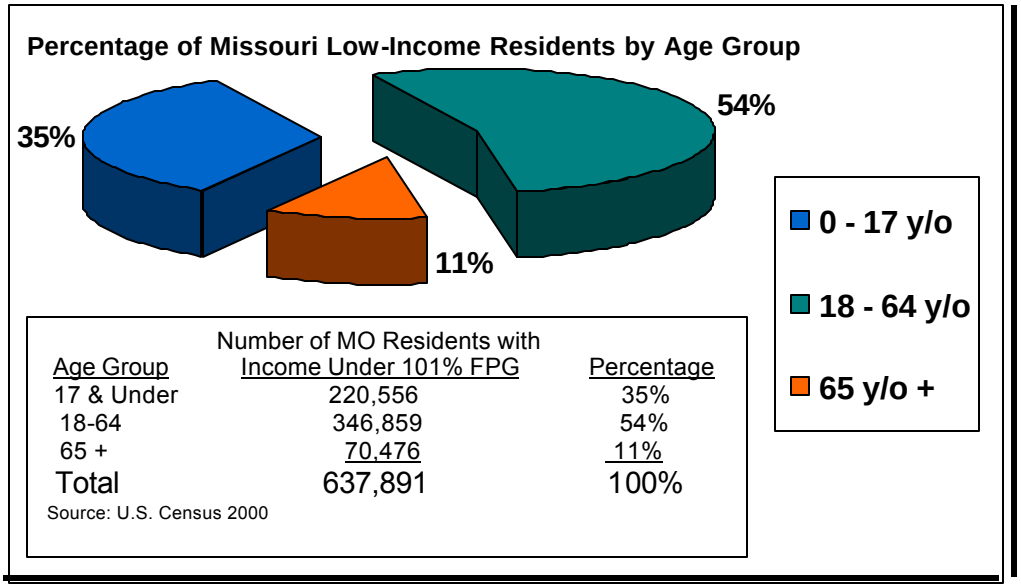
2005 Federal Poverty Monthly Income Guidelines
U.S. Department of Health and Human Services

Number in Household	25%	50%	100% FPG	125%	150%	185%
1	$199	$399	$798	$997	$1,196	$1,475
2	$267	$535	1,069	$1,336	$1,604	$1,978
3	$335	$670	1,341	$1,676	$2,011	$2,481
4	$403	$806	1,613	$2,016	$2,419	$2,983
5	$471	$942	1,884	$2,355	$2,826	$3,486
6	$539	$1,078	2,156	$2,695	$3,234	$3,988

SOURCE: Federal Register, Vol. 70, No. 33, February 18, 2005, pp. 8373-8375.

FPG = Federal Poverty Guideline - multiples of the 100% FPG income level are used as a benchmark to standardize the determination of benefits for various state & federal programs.

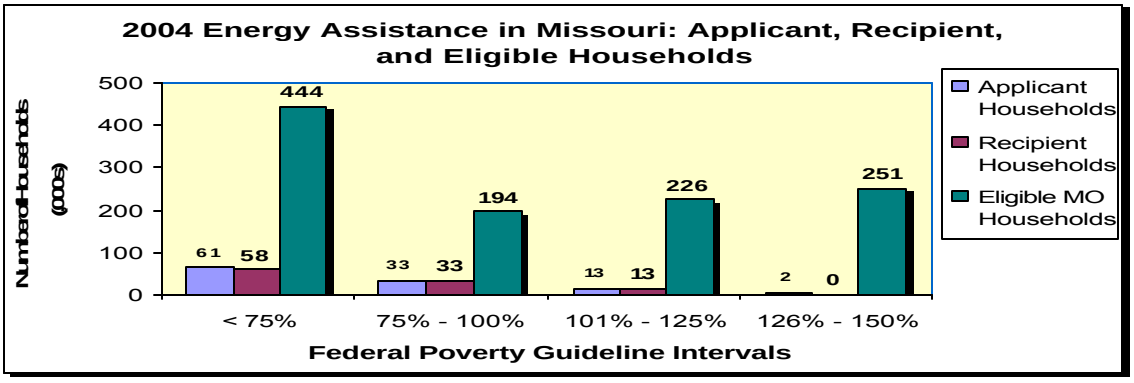
Approximately 12% of Missouri's population lives at or below 100% of the FPG. The following chart illustrates the number of Missourians living below the poverty line and their distribution by age group:



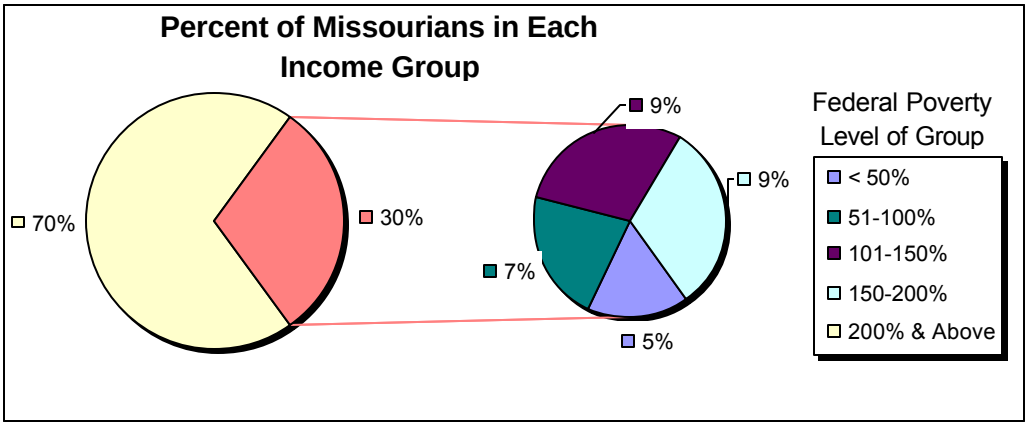
Age Group	Number of MO Residents with Income Under 101% FPG	Percentage
17 & Under	220,556	35%
18-64	346,859	54%
65 +	70,476	11%
Total	637,891	100%

Source: U.S. Census 2000

As this table shows, over 600,000 residents in our state live at or below 100% of the FPG. Households with incomes less than 125% of the FPG potentially qualify for Federal Low Income Home Energy Assistance Program (LIHEAP) assistance. LIHEAP funding provides both energy and crisis assistance but the current funding level of this program has not changed materially from that provided in 1981, when the program was initiated, while the number of customers needing assistance has dramatically increased. The funding that is provided is quickly exhausted each year before many people receive any assistance. The chart below is a comparison of the number of low-income households that apply for and receive LIHEAP, and the number that meet the eligibility guidelines. It is obvious that only a small percentage of eligible households receive LIHEAP benefits.



The following diagram illustrates the percentage of Missouri residents living at various levels of the FPG:



This table provides the information in a different format, using actual numbers for the state of Missouri:

Percent of FPG in 2000	Missouri Residents in FPG Range	2005 Gross Monthly Income	
		1 Person Household	4 Person Household
0 - 50%	276,248	$199	$403
51 - 100%	361,643	$599	$1,210
101 - 150%	476,828	$997	$2,016
151 - 200%	512,874	$1,396	$2,823
201% & above	3,805,700	n/a	n/a

Approximately 1 in 5 MO residents have income at or below 150% FPG
Approximately 1 in 3 MO residents have income at or below 200% FPG

Note: FPG = Federal Poverty Guideline
Source: Federal Register, Vol. 70, No. 33, Feb 18, 2005.
Source: US Census 2000, US Census Bureau. Table P87

Several other facts about Missouri's low-income population are important to recognize:

- Half of the elderly citizens living below 100% FPG are women living alone.
- A quarter of the people living below 100% FPG are disabled. About 30% of that group is elderly.
- If the household income is below 100% FPG, there is a 40% chance that they own the home.
- If the low-income family owns their home, there's a 75% chance that the house is 25 years old or older.
- There is about a 60% chance that at least one person in the household is working.
- There is a 13% chance that there is at least one full time worker in the home.
- The householder might be receiving full social security benefits.

The tables below illustrate the last two facts. They show that a household with a full-time worker, or a household depending on social security, might both have an income at or below 100% of the FPG.

Poverty Level of Household With One Full-time Minimum Wage Worker
(Blue shading denotes households where worker's income is less than the 2005 Federal Poverty Guideline for a Household of that Size)

Household Size	25%	50%	100% FPG	125%	150%	185%
1	$2,393	$4,785	$9,570	$11,963	$14,355	$17,705
2	$3,208	$6,415	$12,830	$16,038	$19,245	$23,736
3	$4,023	$8,045	$16,090	$20,113	$24,135	$29,767
4	$4,838	$9,675	$19,350	$24,188	$29,025	$35,798
5	$5,653	$11,305	$22,610	$28,263	$33,915	$41,829

Annual Income of Full-time, Minimum Wage Worker = $5.15 × 176 hrs/mo × 12 mos/year = $10,877

SOURCE: Federal Register, Vol. 70, No. 33, February 18, 2005, pp. 8373-8375.

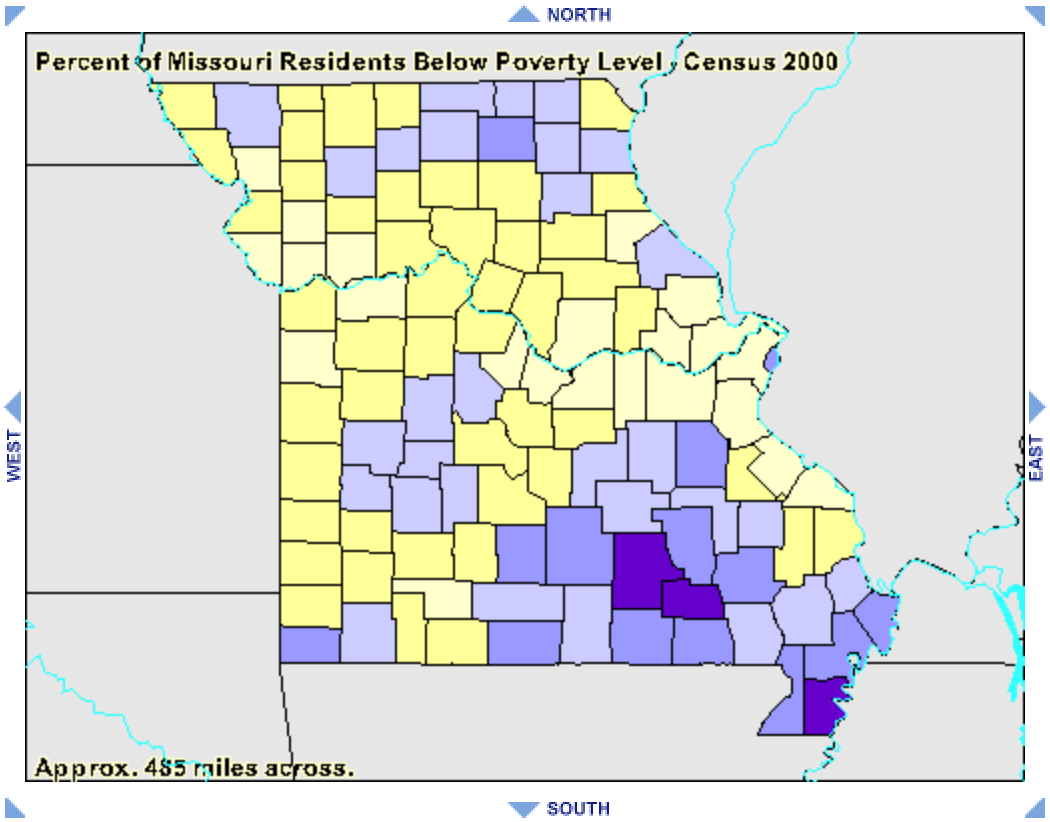
Poverty Level of Household with a Retired, Low-Wage Earner collecting Social Security
(Green shading denotes households where retiree's Social Security income is less than the 2005 Federal Poverty Guideline for a Household of that Size)

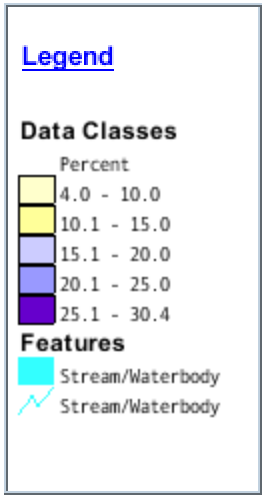
Household Size	25%	50%	100% FPG	125%	150%	185%
1	$2,393	$4,785	$9,570	$11,963	$14,355	$17,705
2	$3,208	$6,415	$12,830	$16,038	$19,245	$23,736
3	$4,023	$8,045	$16,090	$20,113	$24,135	$29,767
4	$4,838	$9,675	$19,350	$24,188	$29,025	$35,798
5	$5,653	$11,305	$22,610	$28,263	$33,915	$41,829

Estimated Annual Benefit for Low-Wage Worker retiring in 2003 = $702/mo × 12 mos = $8,424

SOURCE: AARP Research. The Social Security Benefit Calculator. 2003

Distribution of the residents in Missouri at or below the poverty line*:



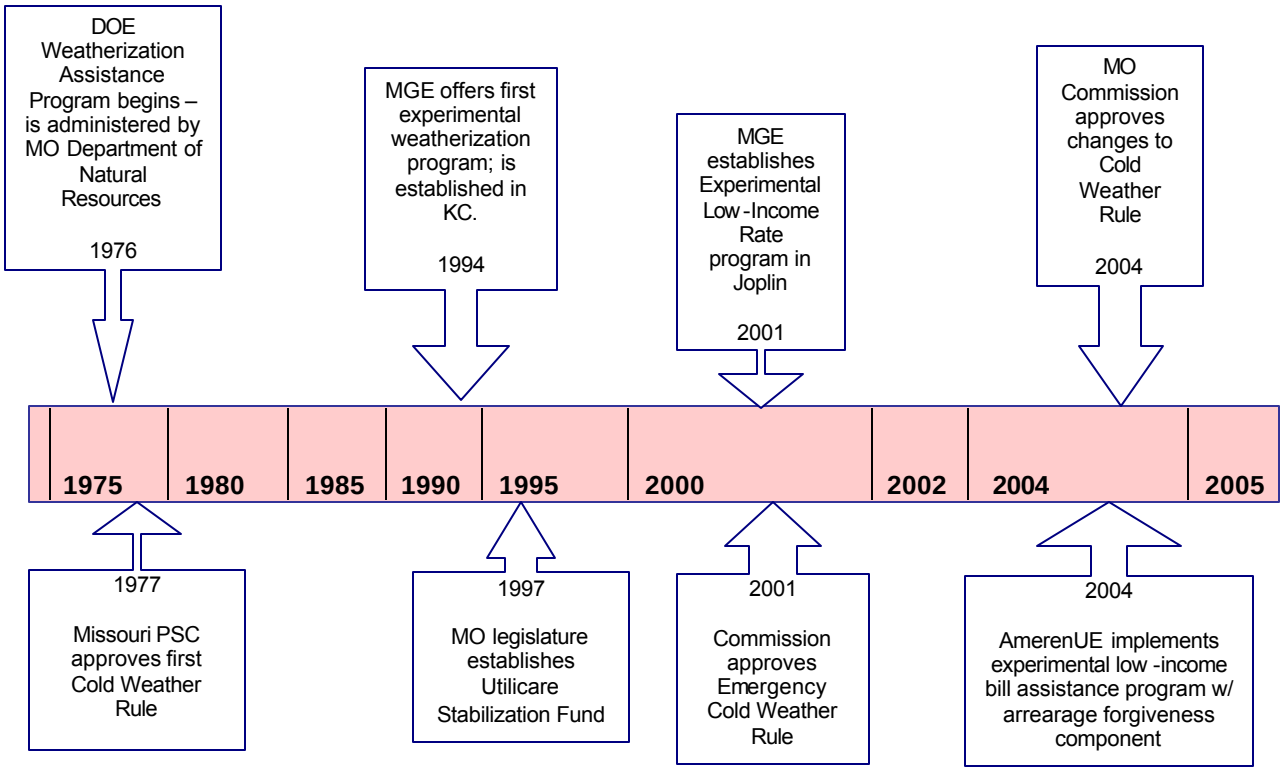


* It is important to note that this information is colored based on percentages of the county's population. The greatest **numbers** of customers that are low-income are located in the metropolitan areas of St. Louis and Kansas City.

This distribution map shows that some of the counties with the greatest percentage of low-income customers are actually in rural areas that are not served by regulated utilities.

V. History of Energy Assistance Programs Offered in Missouri

The Commission has been supportive of experiments proposed by parties in a number of past rate cases. The following timeline shows some of the milestones in the development of low-income energy affordability activities in Missouri:



This timeline shows only a fraction of the events of the past 30 years – Appendix B has a more complete history, and also provides some interesting details. There are three groups, however, that are not in this list, but that have had a major effect on energy affordability for Missouri's low-income population. First, the Missouri network of weatherization agencies perform the energy audits, on-site efficiency education, and weatherization services that are made possible by DOE/DNR or utility funds. Second, Missouri's Community Action Agencies perform outreach activities, education, and

qualification of customers, and are the point of contact for customers applying for energy assistance, crisis funds or weatherization. Finally, numerous charitable, private and civic organizations in Missouri – the Salvation Army, United Way, church groups, and Mid-America Assistance Coalition, to name a few – work tirelessly to raise money for energy assistance and to see that the help goes to the families who need it. Even with these and other sources, for example, the utility fuel funds like Laclede's *Dollar Help*, KCPL's *Dollar-Aide*, AmerenUE's *Dollar More,* and Aquila's *Aquila Cares* programs, there are only enough resources to provide help to a small percentage of the households that need it.

One of the issues the task force discussed was the lessons that have been learned thus far from those experiments. The task force members agreed that the following guidelines are appropriate to note in consideration of the development of future long term energy affordability programs:

1) Arrearage forgiveness programs, coupled with continued on-time payment of regular billing should be considered.

2) Programs should include some aspect of weatherization but assistance should not require that weatherization take place first.

3) Arrearage repayment may need to be on a time-line that exceeds 12-months.

4) Energy efficiency and education should be part of any program.

5) Cost/benefit analyses should be part of any program assessment but the benchmark chosen and how stringent the requirements are for assessing success will greatly influence the extent and impact of the program on those seeking assistance.

VI. List of Programs & Concepts Considered

The task force reviewed a broad range of possible programs and concepts to improve long term energy affordability. In some of the task force's early meetings on long term energy affordability it brainstormed as many options as the group could think of without establishing immediately whether or not they were good or bad ideas. This effort resulted in the following list. Where an (L) or (FL) is identified, this is believed to be a state or federal legislative issue. Where an (R) is identified, this action is believed to be within the Commission's, or other agencies', current regulatory authority.

I. IDENTIFY WAYS TO IMPROVE EFFICIENCY OF LOW-EFFICIENCY HOUSEHOLDS

1. Energy Codes/Ratings
    a. (L) Require Code Development and Enforcement
    b. (L) Increase Accountability of Landlords to Provide Energy Efficient Housing Through Required Bill Disclosures & Possibly Through Home Energy Ratings
    c. (L) Implement a Minimum Statewide Energy Building Code
2. Weatherization
    a. (R) Investigate Pay As You Save (PAYS®) Type Programs
    b. (R) Consider Granting Variances for Master Metering and Utility Payments with Rent Inclusion if Property Owner Weatherizes to an Appropriate Energy Standard
    c. (R) Explore Habitant For Humanity Type Programs
    d. (R) Solicit Donations To Community Action Programs /Other Agencies For Weatherization
    e. (R) Provide Incentives to Lenders That Provide Low-Cost Loans For Weatherization
    f. (R) Procure Lower Cost Supplies For Weatherization Through Bulk Purchases

3. Efficiency
    a. (R) Standardize Energy & Efficiency Education (Web Portal, Video, Pamphlets?)
    b. (L) Develop Efficiency Incentives (Tax Credits, State Tax Credit, Efficient Appliance Rebates, etc…)
    c. (R) Encourage Utility Rate Design that Promotes the Offering and Use of Customer Efficiency Measures
    d. (R) Expand the Availability of Time-of-Use Meters For Recognizing Peak Usage Rate Periods
4. Communications
    a. (R) Encourage the Sharing of Information Between Energy Providers, Efficiency Agencies and Assistance Agencies

II. IDENTIFY WAYS OF REDUCING/CONTROLLING/AVOIDING ARREAGES AND STRUCTURING ARREAGE REPAYMENT OVER TIME

1. (R) Develop Methods to Aid in Earlier Identification of Developing Arrearage Problems, and Design Appropriate Collection/Assistance Measures
2. (FL) Require $ From HUD Go Directly To Utility (Utility Allowance)
3. (R) Require Means Testing for Access to Special Payment Arrangements
4. (R) Continue to Work Toward the Elimination of Estimated Bills

III. DEVELOP STRATEGIES TO CHANGE PAYMENT BEHAVIOR WHERE CUSTOMERS HAVE A HISTORY OF PAYING LITTLE OR NOTHING (REDUCE UNREALISTIC PAYMENT AGREEMENTS)

1. Budget Billing/Payment Plans
    a. (R) Design Flexible Payment Plans – Customer Participates in Development/Plan Correlated With Income
    b. (R) Design Flexible Payment Plans – Plan Correlated To Seasonal Need for Product/Bill Peaks
    c. (R) Require Budget Billing for Low-Income Households
2. Affordability/Special Rates
    a. (L) Investigate Special Rates/Afford To Pay Percentage of Income Plans /Energy Affordability Certificate
    b. (R) Develop Alternate PGA Rate Design for Low-Income Customers
    c. (R) Take Advantage of Savings Resulting From Price/Weather Hedging for Customers
    d. (R) Consider Utility Rate De-Averaging

3. Incentives for Good Pay Behavior
    a. (R) Provide Incentives for Customers Who Participate in Affordability Programs for On-Time Monthly Payments
    b. (R) Offer Coordinated Multi-Utility Electric/Gas Low-Income Measures
    c. (R) Examine Seasonal Penalty/Reconnect Fee/Late Payment Charges for Low-Income Customers
    d. (R) Provide Incentives for Automatic Bank Withdrawal/E-Billing for Low-Income Customers
    e. (FL) Escrow Utility In Home Purchases – Through Earned Income Tax Credit(EITC)
4. Education
    a. (R) Design Network Of State-Wide, Standardized Education
    b. (R) Provide Proactive Educational Effort for Customers Who Appear to be Headed for Disconnection for the First Time
    c. (R) Educate Customers in Importance of Calling Utility In Advance Of Crisis
5. (R) Explore Prepayment/Prepaid Meters

VII. Funding Sources & Mechanisms Considered

As previously noted, the task force recognizes that without appropriate funding mechanisms it will not be possible for many of the recommendations of this task force to be implemented in any meaningful way. During the deliberations of the task force, efforts were made at quantifying the dollar amount of assistance needed to achieve energy affordability in Missouri. In the final analysis, the level of financial assistance needed varies depending on the income level of the households that the program is structured to reach, and the design of program benefits. Different members of the task force had strong views as to how this amount should be calculated. One methodology used by Roger Colton, if interpolated to customers of regulated Missouri utilities, yields the financial assistance need data provided in Appendix C.

The task force deliberated at length about possible mechanisms for funding of programs targeted at long-term energy affordability. As the breakdown below shows, the task force considered funding from legislative action, Commission case decisions, and shareholder contributions. Customer-funded programs generally fall under Commission case funding mechanisms.

Legislative Funding

- Utilicare Check Off Box on the Missouri Income Tax Forms for Donations
- Universal Service Fund (USF) for Energy or Society Benefit Charge (SBC)
- Producers and Suppliers to Contribute to Low-Income Programs
- Corporation Tax Breaks That Would go to Low-Income Programs
- Incentives for High Efficiency Appliances to be Purchased, e.g., Vouchers
- Dollars From HUD Go Directly To Utility (Utility Allowance)

Commission Case Funding (from ratepayers and/or shareholders)

- Investigate a Pay As You Save (PAYS®) Type Program
- Develop a Forgiveness Program for Non-Gas Costs
- Encourage Incentive Based Regulation Programs for Low-Income/Weatherization Programs from Off-System Sales Revenues
- Cost Savings for Consumers Who Make Payments Using Automatic Draft, Debit Card, etc.
- Percentage of Late-Payment Fees Toward Low-Income Programs

Shareholder Direct Funded

- Match Percentage of Funds from Charitable Contributions
- Use a Portion of Company Over Earnings to Fund Low-Income Programs

VIII. Recommendations

As a result of the lengthy deliberations between the task force members and others who attended the meetings, a number of recommendations are provided below for the Commission's consideration. Although some detail is provided regarding each of these recommendations, the task force members recognize that as with any comprehensive program, the devil can be in the details. To the extent any of these recommendations are supported by the Commission, the task force welcomes the Commission to request that further details regarding any particular recommendations be provided.

In one of the early meetings of the task force, it was decided that a mission statement might help to focus the discussions of the group. The mission statement that was unanimously supported by the task force reads as follows:

"Develop recommendations for effective, consistent and suitably funded energy programs that provide consumers with greater access to affordable service."

Some of the first recommendations of the task force dealt with changes to current statutes. These are detailed in the legislative recommendations section below. The other recommendations section that follows the legislative section focuses on possible approaches for improving long term energy affordability that the Commission might consider in future cases. Finally, the recommendations section of this report ends with a summary of the task force's conclusions regarding the need for a hot weather rule.

VIII.a Legislative Recommendations

The task force's legislative recommendations are as follows. Recommendation nos. 1, 2, 3, 5, 6, and 7 were unanimously supported by all the task force members and others in attendance at the task force meetings. The 4th recommendation below was supported by all the task force members except AmerenUE and represents the only recommendation of the task force that was not unanimous.

1. Pursue increased governmental funding for low-income energy assistance and weatherization programs.

Strategies:

? *Support efforts to obtain increased federal funding for Low Income Home Energy Assistance Program (LIHEAP) and Low Income Weatherization Assistance Program (LIWAP) in coordination with other regulatory, consumer and industry groups;*

? *Seek appropriation for UtiliCare Program to match or supplement federal LIHEAP and LIWAP allocations and add statutory language (RSMo 660.135.1) to provide costs of living adjustment to increase maximum available funding beyond the five million dollar cap or to eliminate cap;*

? *Seek other sources of governmental revenue to fund energy assistance and weatherization programs.*

2. Develop a Utilicare check off box on Missouri income tax forms for donations.

3. Whenever residential property is offered for rent or lease, the owner or leasing agent shall provide, in writing, all prospective tenants with the actual annual costs of heating and cooling utilities for the property for each of the previous three years.

4. Authorize the Commission to implement low-income customer bill-assistance programs and energy efficiency programs which may provide long-term benefits to all customers, and to fund such programs through charges on residential customers not to initially exceed $0.25 per month per residential customer. However, nothing herein shall preclude the Commission from exercising its existing authority to additionally fund such programs through revenues or savings received by the utility from incentive plans, late payment charges or funding sources agreed upon in a stipulation and agreement approved by the Commission. The funding levels associated with this approach are given in Appendix D at the end of this report.

5. Require dollars from HUD go directly to utility (the utility allowance) (federal legislation).

6. Develop an incentive for high efficiency appliances and other energy efficiency measures that are purchased, e.g., tax credit.

7. Implement statewide energy efficiency standards for new building construction and major building rehabilitations.

VIII.b Other Recommendations

In addition to the legislative recommendations, the task force discussed at great length possible programs the Commission could consider implementing and activities it could participate in that could improve long-term energy affordability. The recommendations that follow came out of these discussions and are believed to be within the Commission's jurisdiction to accomplish without changes in legislation if they wish to do so. All of these recommendations were unanimously supported by the task force members in attendance.

1. Develop Education Programs on Efficient Energy Usage (flyers, videos, web portals, toll free phone number, etc…). DNR has a significant amount of information on their current website related to energy efficiency and weatherization and has indicated that they may be able to revise this site to provide more of the educational information discussed by the task force. The task force does however believe that a site devoted strictly to energy cost issues, long term energy affordability, where to find assistance, and how to improve the energy efficiency of a home with a highly searchable title would be somewhat more beneficial. As part of this educational effort, methods to aid in earlier identification of developing arrearage problems, and designing appropriate collection/assistance measures should be developed.

2. Pursue an active role in regular Public Service Announcements to advise the public on energy price concerns, where to seek assistance, and how people who wish to make a contribution can do so.

3. Structure assistance programs that vary based on income levels for those seeking assistance (pilot or experimental basis if without legislation).

4. Provide incentives to low-income customers who participate in affordability plans for on time monthly payments.

5. Incorporate rate designs that remove disincentives for utilities to pursue programs aimed at reducing usage.

6. Examine seasonal penalty/reconnect fee/late payment charges.

7. Investigate "Pay As You Save" (PAYS®) type programs for residential and small commercial customers.

8. Examine the feasibility of implementing programs and measures designed to make landlords more accountable for the energy efficiency condition of the properties they rent particularly where the condition of the housing stock is a significant factor in creating costs that have an adverse impact on all utility customers. An example of how this type of a program might be structured is provided in Appendix E of this report.

9. Investigate pilot prepaid meter and other programs as on option for customers.

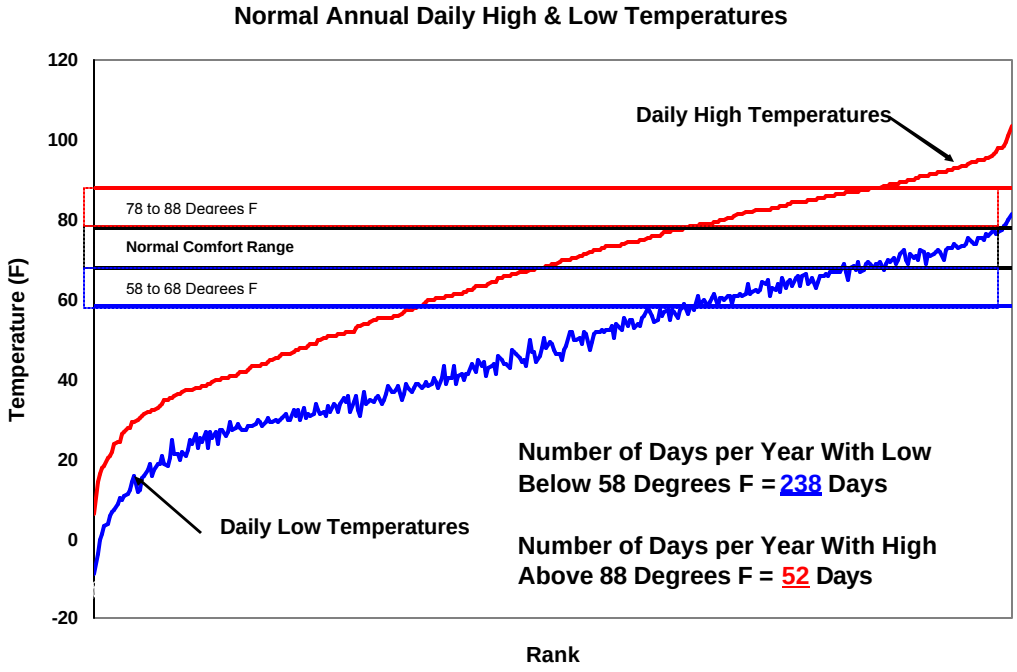
10. Consider granting variances for master metering and utility payments with rent inclusion if property owner weatherizes to an appropriate energy standard.

VIII.c Hot Weather Disconnection Limitations

During its deliberations the task force discussed the importance of helping citizens in need maintain utility service that will protect their health and safety during cold and hot weather. For a more detailed breakdown of the issues related to a possible hot weather rule, please review the compendium of the presentations from the Commission's November 6, 2002 roundtable titled "Cold Weather Rule & Possible Hot Weather Rule".

During its meetings, task force members discussed and acknowledged the health and safety challenges posed by very hot weather. The task force examined the factors that contributed to heat-related deaths in St. Louis and Chicago during prolonged hot-weather episodes that affected these cities in 1980 and 1995 respectively. The task force members explored whether loss of utility service to citizens in need during very hot weather exacerbated the situation.

The following chart illustrates typical daily temperature extremes in the St. Louis area based on a 30 year history. This chart shows the average number of days where temperatures are above or below a comfort range of 58°F to 88°F, where heating or cooling utilities are more urgently needed.



Based on task force discussions and the considerable knowledge of its various members on heat-related health and safety issues among citizens in need, the task force makes the following findings and recommendations:

Findings:

- Factors contributing to heat-related illnesses and deaths center on reluctance of citizens in need to turn on cooling devices such as fans and air conditioners. Citizens in need too frequently fail to use fans and air conditioners because they fear unaffordable utility bills. Thus, the subject of energy affordability is relevant during hot weather as well as cold weather and will continue to be a topic of the task force's examination.

- Actual disconnection of utility service is not a primary contributor to heat-related health and safety issues for citizens in need.

- All investor-owned utility companies that operate in Missouri currently have appropriate and effective company policies that preclude service disconnections during very hot weather.

Hot Weather Rule Recommendations:

- The task force proposes no Hot Weather Rule for Commission consideration at this time.

- The task force recommends that the Commission require that each electric investor-owned utility submit the company's policy governing service disconnection during hot weather to the Staff and OPC on an annual basis.

- The task force recommends that appropriate state agencies including the Department of Health, SEMA and the State's LIHEAP Director initiate an effort to help create and support local approaches to address heat-related issues. While the task force recommends that the state initiate this effort, the goal is to seed and support locally based approaches that use the St. Louis "Operation Weather Survival" as a model. The St. Louis approach has effectively created a network of public and private organizations that coordinates resources and educates the public to prevent illness and death caused by extreme hot or cold weather. The task force recommends that utility companies participate in the state-led and locally based initiatives.

- Heat advisory coordination with company policies.

IX. Programs in Other States

Energy affordability for low-income families is not a Missouri-specific problem – it is nationwide, and many states have grappled with the issues facing Missouri. The task force recognizes that one of the resources it should look to for information as to what might work well in Missouri is the experiences of other states.

The diversity of program designs around the nation reflects the fact that the problem of energy affordability does not have a single cause; it is a product of the interaction between energy usage, energy prices, and household income as well as other factors. Programs designed to affect any or all of these factors can make it more likely that a low-income family will be able to pay its electric and gas bills, in full and on time.

Weatherization is a long-term affordability measure. This approach addresses the amount of energy a household needs in order to meet its basic needs. Low-income families often live in inefficient older homes, manufactured homes, or homes with furnaces, refrigerators or water heaters that use an excessive and wasteful amount of energy. Frequently, these homeowners do not have access to funds that would permit them to insulate their home or buy an energy efficient refrigerator; alternatively they may be renters with little or no control over these factors. Programs that make the housing structure or appliances within it more efficient will increase the probability that the household can pay for the energy it uses. For inefficient housing stock, weatherization measures can decrease the households' heating source usage by up to 25%, with benefits occurring annually for the life of the measure. Even if the household still cannot pay their entire bill because of insufficient income, increasing the home's efficiency will lower the amount of assistance needed.

Another approach to energy affordability does not focus on the household's usage, but on the price of the energy used, and the amount of the bill. Compared to efficiency measures, bill assistance programs can provide a more immediate response to an unaffordable bill, and may be all that is needed to carry a household through a crisis situation such as unemployment or illness. This form of assistance might also be appropriate for households with very low incomes, as they may not have the resources to pay their bill no matter how much their usage can be reduced through efficiency.

In general, the form of payment assistance will involve a discounted rate or bill credit designed to bring the household's bill down to a manageable level. If the household has past due balances, the repayment of these will be an important factor to consider

when an affordable payment is set up. Taking measures to affect the current usage and bill amount will not work if unrealistic arrearage repayment amounts are owed on top of that.

Appendix F provides details about several states' energy affordability programs. Many of these states – for example, Ohio, Pennsylvania, Michigan - have had years of experience in this area. Other states, such as Nevada or New York, have innovative approaches to this issue. Note that these programs are not "one size fits all," and states do not rely upon only one type of program – they generally have a variety of low-income programs, to reflect the variety of reasons that Missouri's low-income households are facing utility bills that they cannot pay.

X. Additional Recommendations & Concurrences of Various Parties

Ameren's Position on Legislative Recommendation No. 4
(Section VIII.a, Legislative Recommendations)

AmerenUE would like to thank the Commission and all Task Force members for the opportunity to participate in the Long Term Energy Affordability Task Force (LTEATF). There were many ideas presented and discussed that could help achieve the basic goal of more affordable energy for low-income customers. However, AmerenUE would like to reiterate its basic concerns that were expressed during the meetings with regards to one recommendation listed in the final report.

The Ameren Corporation has a proven history of providing support for energy assistance funding for its customers in need. Through both corporate funding mechanisms and administration of joint company/customer programs such as Dollar More, Ameren has made ongoing efforts to address the issue of energy affordability for its low-income customers. As a participant in this LTEATF, AmerenUE has concurred on the majority of recommendations put forth by the group. AmerenUE has long held that neither the utility nor its customers should be compelled to fund programs without consideration given to the impact of such funding on shareholders or customers.

AmerenUE has expressed its concern about any proposal that will increase charges to customers in order to provide benefits to a specific subgroup of customers. Consequently, AmerenUE cannot lend its support to Task Force Recommendation No. 4 listed under the Legislative Recommendations of the report. That recommendation contemplates a surcharge to customer bills to fund programs for low-income customers of AmerenUE. AmerenUE believes that issues involving the redistribution of monies for certain groups of customers and/or residents of the state of Missouri should be determined by public policy makers at either the State and/or Federal level. Be assured that AmerenUE will comply with whatever regulations are ultimately placed into effect.

AmerenUE

Comments from Jacqueline A. Hutchinson, Director of Operations,

The Human Development Corporation of Metropolitan St. Louis

929 North Spring, St. Louis MO 63108

Submitted March 28, 2005

Agencies/individuals in concurrence with these comments are:
The low-income advocate, of the Committee to Keep Missourians Warm
The Human Development Corporation of Metropolitan St. Louis
Central Missouri Human Development Corporation
Robin Sherrod, low income individual & Task Force member

I would like to thank the Commission for have the forethought to order this Task Force. Under the leadership of Warren Wood and Gay Fred, the task force brainstormed idea, researched the problems and possible solutions and came to consensus on some important recommendations.

I concur with the recommendations contained in this report for which consensus has been reached, **however I do not believe that the task force fully met the mandate of the commission.**

Much time was spent discussing the language contained in recommendation #4, however, in the final hours, some utility companies would not agree to any legislative language that did not contain the $0.25 cents initial limit. Although low-income advocates agreed to this recommendation, we feel that to impose an initial limit that low, prior to development of a program, could impede the ability to create an efficient and effective program.

While I agree that monetary limits to cost incurred by all residential customers, are necessary, those limits should be determined during the developmental phase of an actual affordability plan. I urge the Commission support a simple version of the legislative language contained in recommendation # 4. This would enable the commission to order low-income rates or programs and determine what reasonable limits should be imposed during program development.

The follow is an example of a simple version:

"**The Commission shall be authorized to implement low-income customer bill-assistance programs and energy efficiency programs which may provide long-term benefits to all customers". (other examples exist in previously filed legislation)**

The section of this report entitled "Why Missouri Needs to Address Long Term Energy Affordability" and other sections of this report clearly describe the immediate need for action. The rising cost of energy and increases that are predicted to continue into the next winter, coupled with the threat of reductions in available LIHEAP funding; further reiterate the urgency and need for immediate action.

I would like to ask that the commission to consider the following:

- **Immediate action is necessary to develop an implementation plan for those recommendations that had full consensus and do not require legislation. I ask that the Commission provide the leadership to assure that where possible, these recommendations and practices are be in place prior to the next heating season.**

- **I ask the Commission to reconvene interested members of the Task Force to actually develop an affordability plan that could be implemented statewide and would provide similar services from utility to utility.**

Again, I thank you for the opportunity to serve on this task force. We believe that this report will provide an excellent foundation to build upon as we take the next steps to develop an affordability plan that protects low-income Missourians.

ROBIN SHERROD
LOW-INCOME REPRESENTATIVE CENTRAL MISSOURI HUMAN DEVELOPMENT CORPORATION
P.O. Box 106106
Jefferson City, MO 65109

Windy_City_Lady@yahoo.com

3/31/2005

TO WHOM THIS MAY CONCERN:

It has been truly beneficial working on the Long Term Energy Affordability Task Force. I have received a wealth of knowledge and understanding; I believe we have explored good ideas and angles that composed this blue print. In regards to the recent report issued by the Long Term Energy Task Force, I feel that it is a good starting point for discussion on the issues facing low-income residents of the state of Missouri. However I feel very strongly that this report does not go far enough in addressing those problems. Many members of the task force did not feel the need to attend a poverty simulation in which those attending were taught about what it was really like to be in poverty. Thus they never truly got a feel for what the true conditions were facing poor people. Had all members attended this simulation, a more accurate understanding would have been gained.

In relation to issues pertaining to substandard rental housing, these should be tracked by the utility companies through automatic computer programs, which are designed to monitor rental units based on the amount of turnover in service to a specific address. For example if service is procured for a specific address under 3 or more names in a given year, the address is flagged internally in the computer for further analysis. The computer would then analyze the energy usage over the previous 5 years and compare it to the amount of energy, which should be used for a comparable size dwelling. If this shows a usage significantly above those comparable units, a service person is sent to investigate the unit to determine whether it is energy efficient and in a habitable condition. Should they find it does not meet specific criteria for habitation, the property should be placed on a “do not serve” list until the deficiencies are corrected. This list should also be published monthly in the local newspaper to make the landlords accountable to the public for the condition of their property. We do not suggest this monitoring be done by the local municipalities due to repeated instances of local governments being highly influenced by the money of local landlords who donate to the campaigns of local officials, thus beholding them to the landlords influence. Since those

with low income do not have access to this same influence, it makes for an uneven playing field which low-income people have little hope of overcoming.

Another point, which should have been stressed more, was in the area of weatherization and training. The weatherization program, while being an excellent program, needs to be funded and publicized far more than it is now. Many low-income people I have spoken to are not aware of the program until I educate them on its' existence and what it can do for them. Flyers publicizing this program should be enclosed with every utility bill throughout Missouri prior to the start of the winter heating season every year. This, in the long run, will pay for itself by lowering energy costs for low income Missourians, thus allowing them to pay more of their bill. In addition, an increase in funding for this program will also pay for itself and it also will help far more Missouri families pay their utility bill, thus generating more income for the utility company and more income for the state of Missouri through more taxes being collected since more people are able to pay their bill. All bills, which are unpaid, benefit neither the utility company nor the state of Missouri. Also this helps the self-esteem of the people affected in that they no longer have the stress of unpaid bills in their life. They are then more productive in their jobs because they are able to focus on their work rather that continually thinking about unpaid bills. Increased productivity also benefits the state of Missouri by generating more income, which then will be spent mostly within the state, thus producing more tax revenue for the state.

Sincerely,
Robin Sherrod

Concurring Comments of the Office of the Public Counsel

The Office of the Public Counsel (Public Counsel) thanks the Missouri Public Service Commission for the opportunity to participate in the cold weather rule and long term energy affordability task force. In addition to the issues addressed in the main body of the task force's report, Public Counsel provides the following comments for the consideration of the Commission.

1. **Hot Weather Rule.** The Public Counsel entered this task force concerned about the health detriments to vulnerable energy customers that may occur if electricity is discontinued during periods of extreme hot weather. Therefore, Public Counsel proposed that a Hot Weather Rule be implemented in addition to the Cold Weather Rule. Although the task force reached a consensus that existing procedures, currently in place for all investor-owned electric utilities in Missouri, adequately protect vulnerable customers from the consequences of such disconnections, Public Counsel believes that it is vitally important for the Commission to require information from the utilities about their shut off procedures in hot weather on an ongoing basis. Should utilities change from their current procedures, Public Counsel expects that it may again request that the Commission impose a hot weather rule for summer disconnections.

2. **Energy affordability.** Public Counsel believes that, while the consensus recommendations of task force regarding affordability represent an important first step toward long term energy affordability, the way in which those recommendations are implemented should be tailored to ensure that all residential customers be able to afford their energy bill. Public Counsel strongly supports all efforts to obtain increased governmental funding of LIHEAP and reliable funding for Utilicare in order to allow agencies to provide assistance to all applicants who qualify. Public Counsel also supports educational efforts, through a wide variety of media, regarding energy conservation and the availability of financial assistance for those who meet eligibility guidelines. Public Counsel further supports efforts to increase public awareness of, and participation in, non-governmental funding assistance programs, whether those programs are administered by an individual utility or by another entity.

Public Counsel believes that the rate-paying public is willing to work with utility companies to ensure that our most vulnerable citizens continue to receive essential heating service during the winter months. However, Public Counsel does not believe that residential customers should be required to shoulder the entire financial burden of these assistance programs. Utilities should be encouraged to identify savings in their existing operations that can be directed toward funding such programs, including, but not limited to such things as savings related to the expected reduction of bad debt

expense, and should be good citizens that make the same types of sacrifices they expect from their customers. Properly designed programs will provide assistance to customers unable to afford their current bills, and customers who elect to take steps to reduce their energy usage, without creating an undue energy burden on customers whose incomes are slightly above the cut offs for assistance. These programs should be more than a mere conduit for increasing revenues paid to utility companies, and should demonstrate benefits to the customers targeted by the various programs. Simply raising everyone's rates in order to provide a benefit to some customers does little to establish long term energy affordability for all. Public Counsel also believes that utilities should be encouraged to actively participate in creative strategies that will reduce their fuel costs, including natural gas. The pricing problems that stem from the unregulated national natural gas market must be addressed in order to truly make energy affordable to all customers over the long term. Strategies that include greater reliance on other fuels, including affordable renewable energy for the generation of electricity should also be explored. In order for the Commission to ensure that residential customers are not overburdened with the responsibility for funding low income assistance programs, Public Counsel believes that such programs should be implemented in connection with rate cases, so that all relevant factors and funding sources may be considered.

3. **Weatherization.** As with low income assistance programs, Public Counsel believes that properly designed weatherization programs can provide residential customers with the means to reduce their demand for energy. Public Counsel will continue to investigate and support properly designed weatherization programs proposed in rate cases that are cost effective and result in actual energy savings for residential and small business customers who choose to participate in these programs.

XI. Appendices

Appendix A

Appendix A - References

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Appendix B - Development of Low Income Programs in Missouri

1976: The Weatherization Assistance Program is established under the Department of Energy. MO Department of Natural Resources becomes the administrator of those funds in MO. Through year end 2003, over 104,000 MO homes had been weatherized with this program's funds at a cost of $128 million, with cumulative energy savings of $287 million.

1977: A Federal Energy Crisis program – the Special Crisis Intervention Program - is created under the Federal Community Services Administration.

First Cold Weather Rule adopted by the Commission.

1980: Federal Low-Income Home Energy Assistance Program (LIHEAP) begins. The program is administered by the MO Department of Social Services.

1981: Operation Weather Survival formed in St. Louis area in the wake of the 1980 prolonged heat wave. This organization of St. Louis government departments, utilities, and agencies disseminates information and mobilizes assistance in weather emergencies. AmerenUE and Laclede are both members of this organization, and AmerenUE provides funds to purchase air conditioners for the air conditioner loan program. This program is nationally recognized, and used as a model for Chicago's program, instituted after the deadly 1995 heat wave.

Laclede begins offering low-interest loans to qualified customers for insulation.

1982: The Dollar-Help program is incorporated in the State of Missouri. The St. Louis area program, proposed by Reverend Larry Rice of the New Life Evangelistic Center, and organized by Sister Patricia Kelley, has raised around $12 million to date for fuel assistance. Laclede Gas remains actively involved, and provides not only administrative, support and fund-raising assistance, but matches a portion of funds raised, as well. This assistance is provided to low-income households, regardless of fuel supplier or heating fuel source.

1984: Laclede Gas Company works with Sister Patricia Kelley and others to found the National Fuel Funds Network (NFFN.) This organization, a nation-wide system of over 250 utilities, community based groups, and local government agencies, advocates on behalf of low-income utility customers in Congress; in addition, NFFN members raise charitable funds used for energy assistance.

1994: MGE establishes first experimental low-income weatherization program in MO. This program, established as part of a stipulation and agreement in Case No. GR-94-40 and administered by the City of Kansas City, MO, serves the KC area with an annual funding level of $250,000. As of year end 2003, 1,203 properties have been weatherized through this program.

1995: Laclede begins offering low-interest financing through authorized HVAC dealers for the purchase of energy efficient natural gas heating systems and appliances.

1996: Laclede Gas initiates the EnergySmart Program Customer Assistance Program and Customer Education Program. The Customer Assistance Program identifies low-income households that have received energy assistance in the past, but whose gas service is not active at the start of the MO Cold Weather Rule period. When a household is identified, Laclede provides information and aids the household in applying for energy assistance funds. The Customer Education Program makes available Laclede employees to conduct workshops where energy conservation measures are demonstrated, customers are educated as to what to do in case of difficulty paying their bills, and also referred for energy assistance.

WeatherWise program, also initiated by Laclede Gas in 1996, provides free weatherization assistance to low-income elderly and handicapped households. Weatherization materials are furnished, and Laclede employees, family and friends weatherize the homes on Saturdays in October. This program has received national recognition.

AmerenUE kicks off the Residential New Construction Pilot Program. This program is targeted to low-income areas in AmerenUE's electric territory.

1997: Senate Bill 263 establishes Missouri's Utilicare Stabilization Fund. This program is funded for 4 years (1998 – 2001) at just under $1 million per year. It is not currently being funded.

1998: Aquila establishes a low-income program for electric customers in its Missouri Public Service territory. The program, targeted toward single-family site-built and mobile homes, is intended to provide energy savings and reduce bills while increasing the comfort of the home.

AmerenUE establishes an experimental weatherization program for natural gas customers in its service territory as part of a stipulation and agreement in Case No. GR-97-393.

1999: MGE Low-Income Weatherization Pilot program (Program) is evaluated by TecMRKT Works. The analysis shows savings of 3,404 million BTU's of natural gas, and 500 kWh of electricity per household each year. The benefit/cost ratio considering only the present value of the fuel savings is determined to be 1.62.[1]

2000: Aquila establishes the "Aquila Cares" program. This program provides funds to help low-income customers pay energy bill, and also provides funds for crisis situations. Aquila matches 50¢ for every dollar contributed.

2001: As part of a stipulation and agreement in Case No. GR-2001-292, Laclede establishes a $300,000 per year weatherization program for customers in its service territory.

The MGE weatherization program is reclassified from an experimental program to a permanent program. Funding increases to $340,000 per year.

MGE establishes the Joplin-area Experimental Low-Income Rate (ELIR) as part of stipulation and agreement in Case No. GR-2001-292. The program, which provides a $20 or $40 bill monthly bill credit to its low-income customers, is open to households with income below 150% of the FPG, and requires levelized billing. The program is financed through a monthly 8 cent monthly surcharge to Residential customers.

An Emergency Cold Weather Rule is approved by the Commission.

[1] Rerunning the analysis using 2005 gas and electric prices and a 3% discount rate results in a PV of benefits of $4,830 per home. On average, it costs $2,600 to weatherize a home. The updated benefit/cost ratio is $4,830/$2,600 or 1.9.

2003: AmerenUE develops the Dollar More Clean Slate Program for low income residential customers. The program is designed to provide a one-time arrearage balance pay-off, and is a result of the stipulation and agreement in Case No. EC-2002-0001. $3,000,000 in program funds are exhausted in one month; 5,700 households are assisted.

As a result of the settlement of EC-2002-0001, AmerenUE Establishes the Change A Light program and the Voluntary MO Energy Efficiency Refrigerator Bounty.

A preliminary evaluation of the MGE Joplin ELIR program is performed by Roger Colton, an expert in low-income issues. The evaluation finds that participants in the program are

- more likely to make a full payment on their bill than are low-income customers not participating the in the program,
- experience a lower incidence of non-pay shutoffs (which might also reflect the budget billing requirement as the difference between the shutoff rates is the greatest in the months after the Cold Weather Rule period expires), and require less collection activities.

It is noted that attrition has been significant over the 21 months in the evaluation period. The level of participation has dropped from around 900 to around 300 in this time. The reason for this is not discussed in the evaluation. Company and Community Action Agency (who administer the program) personnel believe that it might be due to the budget-billing requirement – that customers disliked paying more in the summer than they had in the past, and dropped off the program. In August, the 8 cent surcharge on MGE Residential customer bills is dropped per the tariff. By the end of 2003 there is more than $500,000 collected but unspent.

Empire District Electric, per the Stipulation and Agreement in Case No. ER-2002-0424, begins offering the Experimental Low Income Program in its Joplin service territory. The program is funded at a monthly level of 10 cents per Residential customer, and 25 cents per non-Residential customer. Empire matches these ratepayer contributions dollar-for-dollar. The program is very similar in structure to the MGE ELIR program.

2004: AmerenUE Clean Slate (2003) Program evaluation performed. Evaluation finds that customers "utility payment habits over the long-run did not materially improve."

As a result of the stipulation and agreement in Case No. GR-2003-0517, AmerenUE, the Office of Public Counsel, and MO PSC Staff establish an experimental low-income bill assistance, arrearage matching, and weatherization program in Scott and Stoddard counties. This program provides bill assistance in the 5 winter months of November-March to customers in the 0 – 200% Federal Poverty Level range; the amount depends on the income level of the household. Budget billing is not required.

Weatherization services are required as a condition of receiving the assistance, and funds for this service are available out of program funds.

As a result of the stipulation and agreement in Case No. GR-2004-0209, Aquila, Office of Public Counsel, and MO PSC staff establish an experimental low-income bill assistance, arrearage matching, and weatherization program in Scott and Stoddard counties. This program provides bill assistance in the 5 winter months of November-March to customers in the 0 – 125% Federal Poverty Level range; the amount depends on the income level of the household. Budget billing is not required. Weatherization services are required as a condition of receiving the assistance, and funds for this service are available out of program funds.

In addition to the experimental low-income bill assistance program, Aquila implements a system-wide low income weatherization program for its natural gas customers.

Aquila establishes a system-wide low weatherization program for customers in its electric service territory.

MGE's request to use $250,000 of the overcollection on the ELIR program for low-income bill assistance is granted by the Commission. Per the agreement, the funds are turned over the Mid-America Assistance Coalition to be used for low-income bill assistance.

A Commission order in Case No. GR-2004-0209 increases the MGE weatherization program funding to $500,000 per year, and directs that the ELIR program will remain in effect until current funding runs out.

MO Public Service Commission approves substantive changes to the Cold Weather Rule. The revised rule goes into effect for the 2004-2005 heating season.

2005: The Community Action Agency which is administering the AmerenUE experimental Scott/Stoddard county program (2004) reports that there are no participants in the bill assistance portion of the program. Approximately 15 households have been weatherized using program funds.

AmerenUE, in collaboration with the Department of Natural Resources, the Office of Public Counsel, and PSC staff, designs an energy efficiency program called the "Energy Efficient Natural Gas Rebate Program"; it begins on February 1, 2005

Appendix C - Extent of Aggregate Need in Missouri

Missouri's Natural Gas and Electric Investor-owned Utility Companies

Extent of Aggregate Need Calculated Using a 6% Energy Burden

Federal Poverty Level	(1) (Calculated) Afford Gap/ Household	(2) (3) Number of MO Households served by Investor-Owned Utilities	Affordability Gap Interpolating From R. Colton study
Below 50%	$1,098	82,838	$90,920,816
50-74%	$805	47,020	$37,862,797
75-100%	$601	53,869	$32,375,192
101-124%	$405	61,838	$25,042,064
125-150%	$199	68,999	$13,764,152
150-185%	$6	100,012	$609,316
TOTAL			$200,574,337

(1) Source: On the Brink: 2004 - The Home Energy Affordability Gap - Missouri - Roger Colton

(2) Source: 2000 U.S. Census, Tables P88, P93, H40

(3) Source: Electric Information Administration, Electric Power Annual 2003, Table 14.

Appendix D - Revenue Collected with Monthly Charge

Annual Revenue Collected with Various Levels of Monthly Charge per Residential Account							
	Missouri Jurisdictional Number of Residential Customers			Annual Revenue Collected at Monthly Charge of:			
Company	Electric	Gas	Total	$0.25	$0.50	$0.75	$1.00
Aquila Networks - L&P	56,809	5,256	62,065	$186,195	$372,390	$558,585	$744,780
Aquila Networks - MPS	192,574	40,527	233,101	$699,303	$1,398,606	$2,097,909	$2,797,212
Atmos Energy (Associated)		39,125	39,125	$117,375	$234,750	$352,125	$469,500
Atmos Energy (UC/Greeley)		13,182	13,182	$39,546	$79,092	$118,638	$158,184
Empire District Electric Company	113,473		113,473	$340,419	$680,838	$1,021,257	$1,361,676
Fidelity Natural Gas, Inc.		1,074	1,074	$3,222	$6,444	$9,666	$12,888
Kansas City Power & Light Co.	234,170		234,170	$702,510	$1,405,020	$2,107,530	$2,810,040
Laclede Gas Company		590,785	590,785	$1,772,355	$3,544,710	$5,317,065	$7,089,420
Missouri Gas Energy		440,512	440,512	$1,321,536	$2,643,072	$3,964,608	$5,286,144
Southern Missouri Gas Co., L.C.		6,524	6,524	$19,572	$39,144	$58,716	$78,288
Union Electric Co. d/b/a AmerenUE	1,017,109	97,551	1,114,660	$3,343,980	$6,687,960	$10,031,940	$13,375,920
Total	1,614,135	1,234,536	2,848,671	$8,546,013	$17,092,026	$25,638,039	$34,184,052

Source: MPSC 2004 Annual Report (2003 calendar year customer data

Appendix E

Appendix E - Possible Pilot Program for Addressing Extreme Housing Stock Situations and Their Adverse Impact on Utility Customers - Offered by Some of the Task Force Members

Purpose: In communities where landlords are prohibited from renting residential property if it is not eligible for utility service, apply economic pressure to landlords to rehabilitate or forgo renting vacant housing that is so deteriorated and energy inefficient that it imposes unacceptable costs on other customers.

Proposal: Allow a utility to file a tariff that would deny the initiation of new service to residential property that is found to be uninhabitable due to is deteriorated and energy inefficient condition, until such time as the residence has been rehabilitated, if possible, for energy efficiency.

Scope: 100 homes per year in each of the State's largest metropolitan areas.

Selection: Identify housing candidates through a combination of the following: (1) utility usage and payment records, (2) city records where available, (3) energy audits, (4) weatherization investment criteria, (5) physical observation of the property [ie, broken windows, collapsed roof, etc.] or similar criteria as approved by the Commission.

Process: Upon notice that the current residential customer (renter) is requesting service be disconnected because the customer is vacating the premises, a property which has been identified using the tariffed selection criteria may be placed on the utility's list of residences that are uninhabitable due to deteriorated and energy inefficient conditions. The landlord and the city shall be notified of the utility's designation, and will be informed that utility service will no longer be provided at that residence after the existing tenant moves out, unless the housing is repaired. Notification to the landlord shall, where appropriate, include information regarding the availability of low-cost financing or potential weatherization assistance. If improvements are not made, the utility will not provide new service to the location again.

Safeguards: No service will be disconnected while the property is occupied. In appropriate circumstances, financing and weatherization assistance will be offered to the landlord. No utility shall institute such a tariff in any community unless its housing code prohibits the renting of residential property that is uninhabitable, and that includes the ability to obtain utility service as a condition of habitability.

Evaluation: After three years, evaluate results to determine impact on housing stock, usage, bad debt experience, etc.

Appendix F - A Sample of U.S. Energy Affordability Programs

Pennsylvania is a state with an extensive portfolio of programs for its lower income customers. For over 20 years, the electric and natural gas utilities have offered bill assistance and residential conservation programs; during the state electricity market restructuring period, these programs were mandated by legislation. Universal Service program funds are collected through a monthly charge on customer bills. Every three years each utility submits a funding proposal, based on a needs assessment and detailed strategic plan. This plan is subject to the approval of the Commission.

The major components of Pennsylvania's low-income affordability programs are the Customer Assistance and Referral Evaluation Services (CARES) program; the Low-Income Usage Reduction Program (LIURP); Customer Assistance Programs (CAP); and Hardship Funds.

The Pennsylvania CARES program is a case management and referral entity, and administrator of the Pennsylvania LIHEAP program. Customers may start out by being referred to the CARES program; if their payment difficulties are not resolved in a reasonable length of time, they will be transferred to the CAP program.

The LIURP program targets high usage households at 0 – 150% of the Federal Poverty Guideline (FPG) range, with 20% of each utility's funds available to be used for households in the 150 – 200% FPG range. Priority is given to high usage customers with arrearages. All types of housing are eligible – from manufactured homes to multi-unit apartment buildings - and both homeowners and renters can participate.

Most LIURP program measures are required to meet a seven year expected payback period criterion, with measures like furnace replacement and sidewall or attic insulation evaluated using a longer payback period. Participants

in the program receive energy efficiency education as well as energy conservation services.

Each utility in Pennsylvania structures their individual CAP program. Depending on the plan, customers pay either a percentage of their household income (Percentage of Income Payment Plan, or PIPP), or of the bill. In the PIPPs, the percentage of income is determined by the level of household income - a household at a lower income level generally pays a lower percentage of their income - and type of heating fuel. With the exception of Penn Power, all utilities offer an arrearage forgiveness program, where an amount of pre-program arrearage balances is forgiven based on a criterion such as the timely payment of the full amount billed.

Finally, for customers for whom these programs are not adequate, the utilities offer Hardship, or Crisis funds.

Evaluation of the Pennsylvania programs has shown quite a bit of variation between fuels and utilities. Looking at each utility's results separately, the change in the rate of terminations (2002 to 2003) has ranged from -25% to +20%. The change in the percentage of dollars written off in this time period ranges from -37% to +45%, averaging around -8%.

New York state has taken a holistic approach that makes energy efficiency for lower income families an active component of the state's energy policy. Since 1996, funds have been collected through a System Benefits Charge and administered by the New York State Research and Development Authority (NYSERDA). Each participating utility receives a share of the funds. In addition to administering these funds for the state, NYSERDA oversees a portfolio of programs known collectively as the New York Energy Smart^{SM} (Energy Smart) program. The mission of the Energy Smart program is to achieve New York's stated energy policy goals - increased efficiency, improved electrical system reliability, lower energy costs, improved state energy diversity, and responsible economic development - through the promotion of energy

efficiency and peak load reduction. Program participants come from all groups of users, not just residential or low-income customers.

The programs targeted specifically at lower-income customers comprise about 14% of the Energy Smart budget, the largest of these being the Assisted Multifamily Program, introduced in 2002. This program seeks to lower the energy bills of low-income renters by fostering cooperation among landlords, financial institutions, and state/federal government agencies. Financial incentives are offered to encourage the installation of energy efficiency measures in public and publicly-assisted housing. A recent first year evaluation of the program found that landlords cited 'increased tenant comfort' and 'ease of selling the business" as two primary benefits non-energy benefits.

New York Payment Assistance programs are administered by the separate utilities, so there is a wide range of programs and eligibility requirements. One program that is considered a success is the **Niagara Mohawk Power** (Niagara) Low Income Customer Assistance Program, or LICAP. Approximately 1/3 of Niagara Mohawk's customers are low-income.

When a customer is enrolled in the Niagara low-income assistance plan, an affordable payment is negotiated. The difference between this payment and the household's actual utility bill is placed in an arrearage account. The program provides for forgiveness of the lesser of $250/year or half of the current arrearage balance. In addition, LIHEAP Energy Assistance payments are applied to arrearages, and the customer receives cost effective efficiency measures and education. In an evaluation done after a year of program operation, several benefits were observed. The net revenue from low-income customers on the program was estimated to be 16% higher than from non-participant low-income households. A February, 2002 study of the utility's low-income programs showed that low-income customers who entered the program with lower average arrearage balances tended to be successful in eliminating those balances, that 23% of households had a reduction of $100 to $500 in arrearages, with 11% reducing arrearage balances more than $500 in the first year of plan operation. Over the same time frame, 50% of customers had an

increased level of arrears. Households that received energy efficiency education and services along with an affordable payment were the most successful in reducing arrearage balances. Other reported program impacts included improved health and comfort of participant households.

The largest and oldest Percentage of Income Payment Plan is offered in **Ohio,** where PIPP programs have been available since 1983, and have been funded by a system benefits charge since 2000. Participants in the Ohio program pay a set percentage of income in the winter toward their energy bill, with the percentage lower for households at lower income levels. For example, customers heating with natural gas pay 10% of their monthly income to the gas company, and 5% to the electric company. Customers with incomes below 50% of the FPL pay 3% of their income, rather than 5%.

The difference between the customer's payment and the actual bill is credited to an arrearage account, which the customer is responsible for paying if they leave the PIPP program. All participants on the PIPP must agree to needed weatherization and in-home education in order to take part in the program.

In an effort to lower the long-term costs of the PIPP program to the rest of Ohio regulated utility customers, the Electric Partnership Program was begun in 2001. This program, targeted toward participants in the PIPP program, makes a distinction between energy used for baseload vs. heating/cooling. Depending on the type of energy end-use, measures such as refrigerator replacement and lighting retrofits or full-scale weatherization was performed.

Data was collected on usage, bill paying, household characteristics, and other parameters, and analyzed after the Ohio EPP program had been in effect for approximately a year. The analysis showed a decrease in participant bills, a net reduction of $66 in payments, and a net reduction of $95 in the difference between the full bill and the amount participants paid. It was estimated that ratepayers received 59% of this bill savings, while participants received the other 41%. The overall benefit/cost ratio was estimated, using a present value

analysis, at 1.34, with ratepayers receiving a return of about 80% of the high usage program cost, and 75% of the moderate usage program cost.

One very successful PIPP program is the **Clark County, Washington**, Guarantee of Service Plan. Under this plan, in addition to weatherization, education and arrearage forgiveness, a participant's bill is limited to 9% of their household income. A 1999 plan evaluation showed low-income household disconnections down 64%, a decrease in account write-offs of 36%, and an overall benefit/cost ratio of 1.11. Even though participant customer bills were lower due to the PIPP, the utility reported that it collected more revenue overall from this group.

Massachusetts has had long-term experience with bill assistance programs. Since 1980, low-income discounts have come about as a result of rate case settlements; in 1997, with the restructuring of the state's electric market, the Massachusetts legislature passed legislation requiring regulated utilities to offer discounts ranging from 20-35% of the bill to households with incomes of up to 175% of the FPG (one utility uses 200%). The cost of these programs is recovered through a utility's rates. In an effort to reach the 60% of households that are eligible but do not participate, the enrollment process was recently streamlined. Eligible customers are identified with the assistance of the Executive Office of Health and Human Services, and are automatically enrolled in the utility program unless they choose to opt out. This began in December 2004 so information is not yet available to assess the impact of this change.

Massachusetts utility efficiency programs began in the mid-80's, and were expanded in the late 90's, with the restructuring of the Massachusetts electricity market. A 2002 evaluation performed for KeySpan Energy showed a benefit/cost ratio greater than one when considering only energy savings; it was also reported that 30% of households entering the program with arrearages were able to pay their arrearage amounts in full.

Another state that has actively addressed energy affordability is **Wisconsin**. Wisconsin is unusual because its state Public Benefits Fund was not initiated as a part of electricity market restructuring. State Public Benefits Funds are combined with the federal Weatherization Assistance Program and Low-Income Home Energy Assistance Program funds in the 'Home Energy Plus' program. The split between weatherization and bill assistance is set by law with 47% going to weatherization and 53% to bill assistance programs.

A 2003 evaluation of the program found benefits to the utility companies (and ratepayers) from reduced arrearage carrying cost levels and decreased collection costs. Significant economic development impacts were noted, in the form of new jobs, increased sales, and decreased funds flowing from Wisconsin to energy-producing states. The increase in personal income resulting from the decrease in participants' energy expenses allowed households to pay their utility bill without sacrificing other critical needs, such as food or medication.

In **Connecticut**, two separate charges fund the state's low income programs. A System Benefits Charge covers bill assistance programs, and energy efficiency programs are funded through a Conservation Surcharge. Utilities are allowed to use a portion of the SBC to fund arrearage forgiveness.

Connecticut regulated natural gas companies are required to offer an arrearage repayment option to low-income customers receiving energy assistance; in addition, 2003 legislation made this type of program mandatory for the heating customers of the state's two electric public service companies. The year is divided into heating and non-heating season months, and the arrearage repayment rules differ depending on the period. In the winter months, the entire bill – calculated as a base amount plus an affordable arrearage payment – does not have to be paid in a timely manner, but the account must be brought up to date by the end of the heating-season period (April 30). In the summer period, timely, full payments must be made on the account. Each time a customer successfully completes one of the six-month arrearage periods, an amount equal

to the customer's payment during that timeframe is credited to their arrearage balance.

The Connecticut Light and Power affordability program, NU Start, has a different arrearage management program structure. When a customer at 200% of FPL or below enters the program, their arrearage amount is divided into 12 equal payments. The customer is provided efficiency and budgeting education, referred for weatherization, and placed on an affordable payment plan. For each month that a household makes the payment as agreed-upon, 1/12 of their arrearage balance is forgiven. The company believes that with this type of program, they are able to receive some revenue from customers who would otherwise be disconnected.

Connecticut's Conservation and Load Management Charge, levied on all electricity sold by the state's two largest electric utilities, is used to fund efficiency programs and other conservation activities for customers in all customer groups, not just low income households. It is estimated that the benefit/cost ratio for these programs is around 3. The charge raised almost $90 million in 2003, but a statute was enacted that allows the state to borrow from the fund and use it to supplement the general revenue fund. In 2004, around 30% was borrowed, with a corresponding reduction in programs and services.

Nevada has a unique energy bill assistance program. Customers at up to 150% of the FPG are eligible for a Fixed Annual Credit, calculated as the amount necessary to bring the household's energy burden down to the state median energy burden percentage. For FY 2005, the percentage used will be 3.06%

Funds for this program come from two sources – the Federal LIHEAP program, and a System Energy Charge approved by the legislature in 2001. A November 2004 evaluation of the program found it "the best program of its type" and suggested that it be a model for other western states. Several features of the Nevada program were noted. First, the assistance program addresses year-round bills, not just heating bills. The study suggests that households in western states, which have significant usage in the summer as well as the winter, are not

served by the current LIHEAP practice of disbursing a majority of its funds for winter heating periods. Second, the program covers both gas and electric usage. Finally, rather than using an arbitrary measure such as the federal poverty guidelines, the program uses the state median energy burden in its calculation of benefit levels. This ensures that the measure reflects recent energy prices and, to some extent, weather.

Criticisms include the use of the Federal Poverty Guidelines to establish eligibility, the existence of caps on administrative costs, and the method of calculating the energy burden used to determine benefits.

The **New Jersey** Universal Service Fund, created by an order of the Board of Public Utilities in 2003, is used to fund the state's Percentage of Income Payment Plan program. A customer's utility bill payment is capped at 6% of the household's income and arrearage amounts are forgiven after timely, full payments have been made for a year. Participants are automatically enrolled in the USF program if they are receiving benefits from LIHEAP or the state's Lifeline program. Detailed information is collected to aid in evaluating the program.

In addition, during the restructuring of New Jersey electricity markets in the late 90's, a Societal Benefits Charge was established to pay for efficiency programs, research and development and other social programs of benefit to all ratepayers. The New Jersey Comfort Partners program, funded at $15 million per year from the SBC, combines direct installation of efficiency measures with an arrearage forgiveness program and personalized comprehensive energy education

Summary of States' Arrearage Management Policies

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Connecticut: all gas public service companies required by statute to operate an arrearage forgiveness program for gas heating customers.

- Connecticut Light and Power – customers who pay budgeted amount on time are eligible for arrearage forgiveness – must have arrears of $100 or more, income less than 200% of the FPG.

- Connecticut Natural Gas – customers who qualify for matching funds get $2 reduction for every dollar paid to the Company. Customers must receive energy assistance.
- Yankee Gas – customers who make and keep satisfactory payment arrangement and receive LIHEAP, company will deduct from bill an amount equal to money they have paid, and the amount received from LIHEAP.

Kentucky: Louisville Gas and Electric – provides a subsidy for bill payment. Eligible customers receive about $145 in arrearage subsidy.

Maine: Maine Public Service – LIHEAP eligible customers who keep current with bill payments Nov – March may receive credit up to $230 in June.

Maryland: Electric Universal Service Program authorized through restructuring legislation. Provides for retirement of "certain" old bills.

Massachusetts: IOUs offer utility rate 20-42% off of customer's bill – negotiated, then continued under Massachusetts' restructuring legislation.
KeySpan Energy Delivery – program open to 350 customers in Boston Gas territory. Bill forgiveness up to $400.

Michigan: Arrearage forgiveness provided by utilities that participated in the automated positive billing system (HH must pay a percentage of its monthly assistance grant to utility).

New Hampshire: 2002 program has component that arrearages existing on or before August 31, 2002 are eligible for retirement.

New Jersey:
- New Jersey Comfort Partners (group of 7 utilities), using the System Benefit Charge created in restructuring. Provides weatherization, education, and arrearage forgiveness for participants who agree to payment plans.
- Jersey Central Power and Light – provides up to $750 of arrearage forgiveness through timely and in-full bill payments. Eligibility up to 175% and must participate in the Comfort Partners program.
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Tennessee: - Memphis Light Gas and Water – extended payment plans for up to 3 years.

Wisconsin: State funds are distributed for payment of uncollectible utility arrearages. Assistance provided to HH whose housing cost is more than 35% of their total income.

This discussion skims the surface of the variety of low-income household affordability programs – every state has these plans, and there are as many types of programs as there are of low-income customers. The most common components of successful affordability programs are weatherization and other efficiency and education measures, combined with an affordable bill. This bill generally includes an arrearage management component, which results in realistic household payment amounts. By attacking the problem from a number of directions at once, the likelihood of successfully addressing energy affordability for low-income families is increased

How to Determine the Effectiveness of Energy Assistance, and Why It's Important

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Executive Summary

This paper identifies criteria that state public utility commissions can use to assess the effectiveness of programs and other actions, funded by energy utilities and their customers, to facilitate the payment of utility bills by eligible low-income households. It discusses features of energy assistance (EA) actions that are likely to make then either successful or unsuccessful. The paper also points out, in a generic way, weaknesses and strengths of different EA actions. Commissions can refer to these features when judging specific actions taken or proposed in their states.

While recognizing that both government-funded and privately funded assistance plays a major role in helping low-income energy consumers, a premise of this paper is that utility-service affordability for households with the lowest incomes requires some form of utility-funded EA. Assistance encompasses direct subsidies, rate subsidies, energy-efficiency measures, and waivers on certain costs.

The paper emphasizes that state regulatory or legislative policy requiring utilities to provide monetary assistance to low-income households must address such questions as: (1) How much assistance should a utility provide in view of governmental and non-utility private assistance (e.g., the number of dollars offered to eligible households)? (2) Who should pay for this assistance (e.g., residential customers, all customers, utility shareholders)? (3) How should the utility collect the money (e.g., system benefit charge, cost tracker)? (4) What constitutes an appropriate financial effect on subsidizing customers? and (5) How should the utility distribute the assistance to eligible households (e.g., discount rate, lump-sum payment)?

Good regulation aims for a good benefit-cost ratio. Regulators should strive to assure that each dollar expended returns the highest possible dividend, because increasing effectiveness has the same effect as increasing the number of dollars for EA.

Effectiveness depends upon many factors. This paper helps regulators to assess the effectiveness of the EA programs in their states by identifying nine criteria that regulators can use to distinguish between effective and ineffective EA actions. The nine criteria are:

1. Benefits should accrue to only low-income households.

2. The recipients of EA should receive maximum benefits relative to the dollars funded.

3. Consumer information and education should make eligible households aware of available assistance and ways to reduce their energy bills.

4. Benefits to recipients of EA should positively correlate with their actual energy costs or energy burden.

5. EA should avoid large efficiency losses or cross-subsidization.

6. EA should have reasonable administrative and implementation costs.

7. Funding should have a tolerable financial effect on individual subsidizing customers.

8. EA should result in reduced collection costs, service disconnections, arrearages, and debt write-offs.

9. EA should promote equity.

This paper includes a matrix that relates seven individual EA actions to the nine criteria. The matrix provides a checklist for determining whether and to what extent each action satisfies the different criteria. It also allows regulators to compare qualitatively the different actions based on the information compiled for each cell.

This paper identifies questions that regulators should ask to assure effective EA actions. It also lists examples of performance indicators for EA actions. Regulators should require utilities to provide this information for assessing current EA actions.

In conclusion, the paper recommends that regulators review EA actions to determine whether they are achieving the regulatory goal of utility-service affordability: (1) most effectively and (2) with minimal adverse effects on other goals. Outcomes can easily depart from expectations when actions produce less-than-expected benefits to targeted customers and unintended consequences that harm the utility and its other customers. Regulators should, therefore, evaluate EA actions periodically. In serving the public interest, regulators need to be vigilant in assuring that utility-funded EA is performing at the highest level.

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How to Determine the Effectiveness of Energy Assistance, and Why It's Important

I. Introduction and Reason for the Paper

Whether state public utility commissions ("PUCs" or "regulators") and utilities should assure the affordability of utility service for low-income customers is a question that has occupied regulation since its earliest days. Some analysts have argued that the real problem is inadequate income, not regulatory policy. They contend that state and federal legislatures, or other governmental entities, are better able to address poverty by supplementing the income of poor households and by offering them financial support for energy-efficiency improvements. They argue that these actions are more effective and efficient than subsidizing the prices paid for utility service.

Political pressures and legislative mandates have contributed, however, to regulators and energy utilities' providing programs that protect low-income households from unaffordable utility bills. What some view as "taxation by regulation" requires slightly higher rates to the majority of customers to pay for energy assistance (EA) that benefits a smaller, target group of customers. The "tariff effect" that makes the majority minimally worse off to make a small minority substantially better off has definite political appeal.[1]

State PUCs have long attached importance to utilities' providing affordable service to all customers, including low-income households. EA's premise rests on the belief that no household should have to choose between paying its utility bill and paying for other necessities. Many PUCs have encouraged their utilities to actively assist low-income households in various ways, especially in preventing service disconnections and offering discounts on their bills. They have also encouraged utilities to lobby for more assistance from the federal government and the states, which collectively spend substantially less on energy assistance than they do on assistance for food, medical care, and housing. In 2004, for example, of the total governmental spending for income-tested benefits, only 0.4 percent went toward energy assistance. In contrast, 6.7 percent, 8.2 percent, and 55 percent went toward housing, food, and medical assistance, respectively.[2]

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[1] The paper later discusses the possibility and desirable outcome of non-targeted customers being no worse off, and even better off, because of lower collection, disconnection, and other costs that can result from EA. If regulators, as an alternative, require utility shareholders to fund EA, the price of utility service to non-targeted customers would not have to increase. The taxation would then fall upon the utility and its shareholders.

[2] *See* Congressional Research Service, *Cash and Noncash Benefits for Persons with Limited Income: Eligibility Rules, Recipient and Expenditure Data, Fiscal Years 2002-2004* (Washington, D.C., 2006).

Some utilities consider EA a good business strategy because it increases net revenues by offering discriminatory prices and other assistance to low-income households. A utility is likely to receive only partial bill payments from some low-income households. In the process of trying to collect unpaid amounts, the utility would incur additional costs. If the unpaid amount becomes uncollectible, the utility would write off this amount as bad debt. The utility might even disconnect the customer. The utility might be able to avoid collection, disconnection, and other costs by discounting the customers' bills. These cost reductions can more than offset the lost revenues from discounting and thereby increase the utility's net revenues. Such a possible outcome probably explains why some public utilities have initiated EA actions to help low-income households. These utilities might find more certainty and ease in recovery of revenue shortfalls with regulatory-sanctioned EA actions.

Unlike the goal of economic efficiency, affordability concerns itself with how regulation affects the economic well-being of individuals or individual groups in market exchanges. Economic efficiency becomes important, however, for determining how regulators and other policymakers are able to achieve the goal of affordability most effectively and at minimum cost. In making utility services more affordable, regulators unavoidably need to deviate from strict cost-based, non-discriminatory pricing; but regulators through their policies and practices should strive to minimize the size of efficiency losses.

A. The need for utility-provided EA

The premise of this paper is that utility-service affordability to households with the lowest incomes requires EA provided by utilities and funded by their customers. The paper focuses on those EA actions funded by energy utilities and their customers. These actions were either initiated by the utility or mandated by the state public utility commission or legislature.

Both government-funded and privately funded assistance play a major role in helping energy consumers. Any regulatory policy requiring utilities to help low-income households cannot ignore this assistance. If a regulator deems this assistance inadequate in satisfying the demands of low-income households, it will then have to address such questions as: (1) How much assistance should a utility provide (e.g., the number of dollars offered to eligible households)? (2) Who should pay for this assistance (e.g., residential customers, all customers, utility shareholders)? (3) How should the utility collect the money (e.g., system benefit charge, base rates, cost tracker)? (4) What constitutes an appropriate financial effect on subsidizing customers? and (5) How should the utility distribute the assistance to eligible households (e.g., discount rate, lump-sum payment)?

B. The overriding goal: affordability with minimal adverse effects on other regulatory objectives

In advancing the public interest, regulators would want to achieve the "affordability" goal with minimal impediment of other goals such as economic efficiency. Efficiency losses can result from: (1) recipients over-consuming energy when the subsidized price lies below the utility's marginal cost, and (2) an "excessive" gap between the actual benefits to targeted participants and the subsidy cost absorbed by the utility or general ratepayers (e.g., utility

customers pay $10 million to subsidize low-income households, who benefit by only $7 million).

Wasteful EA actions reduce benefits to targeted utility customers. Excessive cost expenditure in the administration and implementation of EA actions is one source of waste. Another source is non-poor households receiving EA, thereby subtracting from assistance going to the most financially needy households. A non-targeted lifeline rate or a discounted rate with broad eligibility rules that includes non-needy customers are examples of this type of inefficiency. A third source of inefficiency stems from EA not going to the neediest low-income households (e.g., the poorest of the poor). These households are more likely to set their thermostats at an unhealthy level or use their stove or oven for heat. They generally face the most severe unaffordability problems, making debt write-offs and disconnections more imminent.

A study using 1995 U.S. Census data found a statistically significant negative relationship between income levels and the percentage of households who did not fully pay their energy utility bills and whose service was disconnected.[3] More recent statistics from the U.S. Census's *Survey of Income and Program Participation* also showed that disconnection rates rise as household income drops. In 2005, for example, the average disconnection rate for all households was 1.7 percent, while it was statistically significantly higher at 5.9 percent for households at or below 50 percent of the poverty line and 3.9 percent for households with incomes between 51 and 100 percent of the poverty line.

Although impeding some regulatory goals (e.g., cost-based prices), expanding energy affordability to a greater number of households conceivably advances other regulatory goals. No-cost weatherization to low-income households, for example, not only makes energy more affordable but also promotes energy efficiency; it can also reduce collection costs, service disconnections, debt write-offs ("uncollectibles"), and arrearages ("past due bills"). Other EA actions can also mitigate collection problems that financially affect utilities and their non-poor customers.

State regulators need to balance various regulatory goals in determining the socially optimal level of affordability. The conflicting nature of some objectives requires a societal judgment when it comes to weighing their tradeoffs. As an illustration, regulators must consider the compromising effects that advancing affordability has on economic efficiency and discriminatory-free rates.

C. Identifying criteria for desirable EA actions

Part V identifies criteria that state commissions can apply to assess the effectiveness of EA actions. Effectiveness has several dimensions, including: (1) the ability to reach the poorest

[3] *See* Kurt Bauman, "Direct Measures of Poverty as Indicators of Economic Need: Evidence from the Survey of Income and Program Participation," U.S. Census Bureau, Population Division, Technical Working Paper no. 30, November 1998.

households, (2) the share of the subsidy that directly benefits the poor, (3) minimal unintended consequences, and (4) reasonable administrative costs.

Good regulation requires that EA actions funded by utilities and their customers provide adequate benefits to the intended targets, namely, eligible low-income households. Because EA actions collectively fall short in adequately meeting the needs of low-income households, regulators should strive to assure that each dollar expended returns the highest possible dividend. Increased effectiveness has the same effect as an increase in the number of dollars for EA.

Effectiveness depends on many factors. This paper identifies those factors to help regulators systematically determine the effectiveness of EA actions in their states. Effectiveness applies to both individual actions and the portfolio of actions taken to address the affordability problem. A utility, for example, might provide rate discounts concurrently with waivers on deposits, arrearages, and reconnection costs. An assessment of EA actions would involve a determination of whether individual actions complement others, or are in fact conflicting, in advancing affordability.

II. The Rationales for Utility-Provided EA

A. Poor households find energy unaffordable

"Affordability"—a term regulators like to use—refers to a state of affairs in which, after paying their energy utility bills, customers have enough money left to pay for other goods and services essential to their livelihood (e.g., housing, telephone service, insurance, transportation, clothing, food, and medical care). Affordability relates to the concept of "equity"; it is unfair to charge customers more for utility service than they can afford. Unfairness, in this context, would result in customers falling so far behind on their utility bills that over time they accumulate an unpaid account that they cannot possibly pay. The inevitable outcome is that those customers have their service disconnected and face obstacles in having service restored.

Regulators do not have direct knowledge of the difficulties low-income households face in paying for non-energy necessities; they do have information on whether customers have trouble paying their utility bills and are consequently delinquent in paying their past bills. For regulators, then, evidence of affordability comes strictly from knowing the number of low-income households in arrears, the dollar amounts of arrearages, debt write-offs, and the number of shutoffs. If low-income households are conscientious in paying their utility bills, regulators as well as utilities have no direct knowledge about whether these households are forgoing non-energy necessities. (They can consult, however, with a social service agency or other entity to obtain information on a customer's financial situation, but this action may raise a privacy concern.) One perception is that energy is affordable to these households; in reality, however, for whatever reason, they are paying their utility bills but have insufficient income left over to pay for other necessities.

In dealing with an "energy affordability" problem, policymakers can apply one of two broad approaches: (1) increasing the incomes of poor households, and (2) lowering the share of the utility bill for which the customer is responsible for paying. EA actions (i.e., in-kind assistance) focus on the latter, while cash supplements with no strings attached constitute the former. With each approach, energy becomes more affordable, either by increasing a household's income or by reducing the amount a household has to spend on energy. In either instance, the household spends a lower percentage of its income on energy.

Low-income households spend a much higher share of their incomes on home energy use than other households. Within the low-income category, a high negative correlation exists between income and the percentage of income spent on energy. An Idaho household, for example, that is at 75 to 99 percent of the Federal Poverty Level spends, on average, 13.6 percent of its annual income to pay for home energy. A household below 50 percent of the Federal Poverty Level spends, on average, 47.8 percent of its annual income to pay for home energy bills.[4] Another source indicates that beneficiaries of the Low-Income Home Energy Assistance

[4] *See* Idaho Public Utilities Commission, *In the Matter of the Commission's Inquiry about Energy Affordability Issues and Workshops*, and Case No. GNR-U-08-01, Staff Report, January 16, 2009.

Program (LIHEAP) as a whole spend about 20 percent of their annual income on home energy bills, which is more than six times the percentage that other households spend.[5]

Studies estimating short-run price elasticities for electricity and natural gas of much lower than one; therefore, when utility rates rise, customers have less income to spend on non-energy goods and services. This consequence is more severe for poor households. Applying the statistics in the previous paragraph, for a given increase in utility rates, the real purchasing power of a poor household's income, in percentage terms, falls by over three times that of other households.

B. Poor households invest little in energy efficiency

Low-income households also find it hard to find money to pay for energy-efficiency investments. They tend to live in older and less energy-inefficient houses than other households; they are also more likely to rent than to own a home. Low-income households, for example, generally have low-energy-efficiency appliances and poorly insulated homes. Over the past several decades, however, the gap between home energy use by the poor and other households has narrowed, largely because the non-poor have able to make more investments in energy efficiency. While federal government statistics show a positive correlation between total home energy use and income, the correlation between energy use per square foot and income is highly negative.[6] One interpretation of these correlations is that higher-income households consume more energy because they have larger houses and other residences, but their consumption would be substantially higher if they consumed the same energy per square foot as lower-income households.

C. Unaffordability hurts both utilities and non-poor households

A utility incurs lower collection costs if EA results in fewer arrearages and uncollectible accounts. The utility's total cost associated with bill-payment problems would decline, with the general ratepayer benefiting. Accordingly, non-poor households might be better off paying slightly higher rates to assist poor households. Poor households would otherwise accumulate larger arrearages, some of which would become a bad debt that the utility would try to recover from non-poor households. Non-poor customers might also benefit when EA keeps certain customers on the utility system's books, as they would at least be contributing something to the recovery of the utility's fixed costs. The utility might otherwise have disconnected service to these customers if they had had to pay their full bill and not received any financial assistance.

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[5] American Gas Association, *The Increasing Burden of Energy Costs on Low-Income Consumer*, EA 2007-3, September 26, 2007; and David Manning, *Testimony on the Increasing Burden of Energy Costs on Low-Income Consumers*, before the Subcommittee on Healthy Families and Communities, Committee on Education and Labor, U.S. House of Representatives, November 13, 2007.

[6] *See*, U.S., Department of Energy, Energy Information Administration, *2005 Residential Energy Consumption Survey*, September 2008.

As an example, assume that a utility provides a household with $300 of annual assistance paid for by other customers. Because of this assistance, the household is no longer a delinquent customer. The utility then avoids collection, as well as possible debt write-off and disconnection costs. The effect on the utility's net revenues depends upon these cost savings relative to the assistance given to the household, adjusted for the expected shortfall in the household's payments in the absence of assistance. Assume, for example, that the household's annual utility bill is $1,000 without assistance, but the customer would be expected to pay only $700. The difference of $300 is equal to the utility's assistance, so on net the utility collects the same amount from the customer as before, but the customer is now in good standing and the utility incurs no collection costs.

D. Six general questions

If regulators contemplate a review of current utility-funded EA, they must ask themselves a number of broad questions. Answers to these questions would permit regulators to make better decisions regarding the design, administration, and implementation of EA actions.

Regulators can start by asking the following six general questions:

1. *What is the rationale for utilities offering EA to low-income customers?* The combination of outside assistance, such as LIHEAP, fuel fund, and federal and state weatherization programs, could provide adequate support to low-income households. A regulator might find a utility-based program redundant if adequate outside assistance for energy and other essentials is available to low-income households. But the regulator might still require utilities to assume a role, such as educating customers on the availability of this assistance, determining who is eligible, and establishing application procedures.

2. *What primary objectives should EA have?* They should include keeping existing low-income households on the utility system and reconnecting service for others. Affordable utility service to low-income households should mean that those customers are able to enjoy the comforts of space heating and other energy services without the fear of disconnection by the utility.

3. *What should be the dollar amount of assistance?* The answer depends upon the energy burden of poor households, after accounting for outside assistance. The energy burden measures the affordability of energy to households in fully paying their utility bills and having sufficient income left over to pay other necessities. Another question relates to the allocation of a fixed amount of dollars for assistance. Assume that funding is inadequate to meet the total needs of low-income households. Should funds go to households on a first-come, first-served basis? Alternatively, should funds go first to those households with seniors, children, or customers with serious medical problems? Should the objective be to maximize the number of eligible households receiving assistance? Should assistance go to fewer households so that each household can have more funds to make energy affordable?

4. *Who should provide the funding?* Alternatives include charging all utility customers and all residential customers. Funding from a broader group of utility customers lessens the cost per customer and may better reflect the general societal benefits of EA initiatives.

5. *What mechanism(s) should fund EA?* A utility can recover costs through a system benefit charge, a cost tracker, or an increase in the customer charge or volumetric rate. A system benefit charge is a fixed monthly fee designed to fund designated social programs such as EA. Mechanisms have varying effects on: (a) energy consumption by low-income households, (b) economic efficiency, (c) the bills of funding customers, and (d) cost-recovery risk for the utility.

6. *What should be the specific assistance actions (or mechanisms), keeping in mind other regulatory objectives?* Options include a change in rate design, a rate discount, a bill cap based on income, a lump-sum payment, a cost waiver, and no-cost weatherization and other forms of energy efficiency. Similarly to the previous discussion on mechanisms, specific assistance actions have varying effects on low-income households, other customers, and the utility. Complimentary EA mechanisms applied individually or in concert with each can provide greater flexibility for meeting specific low-income customers' needs.

III. Types of EA Actions

A. Overview

Funding for EA comes from federal and state taxpayers, utility customers, utility shareholders, members of local charitable and other non-profit organizations (e.g., United Way, Red Cross, church, and synagogue groups). One study noted that:

> Evaluations of low-income energy programs generally have found that the programs have been cost effective and successful at reducing the number of households who cannot afford electricity and natural gas services. Several evaluations have suggested, however, that the programs fail to target the poorest of the poor. The evidence appears to suggest that many low-income energy assistance programs have provided a significant societal benefit.[7]

Federal EA programs, including low-income weatherization assistance, are the single largest source of funding, with utility-funded programs the second largest source. The FY 2010 $5.1 billion appropriated and funded for LIHEAP, for example, is about three times the amount that gas utilities spend on EA to low-income households.[8] Federal funding for weatherization of low-income households has sharply increased under the American Recovery and Reinvestment Act (aka the Stimulus Bill).

EA also has come in various forms, with differing effects on the recipients, non-targeted utility customers, and utility shareholders, as well as on society in general. Most EA actions reduce energy bills for eligible households either by lowering the effective price of utility service or by reducing energy consumption. In either instance, households have more money available for purchasing other goods and services, some of which are as essential as utility service.

EA also involves the utility giving customers more leniency and flexibility in making payments for overdue accounts. The utility might absolve a customer's arrearages or forgive reconnection charges. Regulatory policy affects both how and when utility customers must pay overdue accounts. Fair and effective policy is critical for preventing some low-income households from having their utility service disconnected.

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[7] *See* Concentric Energy Advisors, "A Review of Low Income Energy Assistance Measures Adopted in Other Jurisdictions," prepared for the Ontario Energy Board, September 4, 2008, 3.

[8] American Gas Association, "AGA Applauds Congressional Funding for Low Income Home Energy Assistance Program," News Release, July 24, 2009.

As of 2007, over 85 percent of the funding for utility rate/bill-assistance and weatherization/energy efficiency initiatives came from system benefit charges.[9] Utilities used over 86 percent of this funding for rate/bill assistance. Utilities add these fixed charges as a separate item on customers' bills. Maryland's electric EA program, for example, requires residential customers to pay a surcharge of 40 cents per month.[10]

Appendix A provides examples of EA initiatives in six states in different regions of the country. A natural gas industry survey showed that about 75 percent of utility assistance is in the form of rate discounts or percentage-of-income plans. The remaining portion includes cost waivers (e.g., reconnection charges, arrearages) and weatherization programs.[11]

Although not addressed in this paper, one area of interest is whether the goals of EA actions differ by region. Northern states may place emphasis on EA actions that prevent disconnections during the winter months, while in southern states actions may center on making electricity affordable during the summer months when air conditioning demands are at their highest. Northern states may also allocate more EA monies to natural gas consumption, for example, by requiring a certain percentage of assistance to be used for weatherization and other energy efficiency measures.

B. Specific EA actions

A discussion of the major EA actions follows. Some utility-funded actions were initiated by utilities, while others were required either by state regulators or legislators. Examples in which the state legislature gave the regulator the authority to approve EA initiatives proposed by a utility are Minnesota and Washington.

Utilities initiating actions ostensibly felt that having general ratepayers and even shareholders funding EA was preferable to dealing with the problem of low-income households continuously falling behind in their utility bills and thereby being vulnerable to service disconnections. Utilities are able to reduce their costs when they have a lower number of delinquent customers, some with severe payment problems.

1. Modified rate designs (MRD)

These rate designs include volumetric rates and lifeline rates. Volumetric residential rates in general consist of a low fixed monthly charge and a high usage charge. This rate

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[9] These charges originated from either state industry restructuring legislation or regulations. *See* LIHEAP Clearinghouse at http://liheap.ncat.org/Supplements/2007/supplement07.htm.

[10] *See*, for example, the LIHEAP Clearinghouse website at http://liheap.ncat.org/dereg.htm.

[11] American Gas Association, *The Increasing Burden of Energy Costs on Low-Income Consumer*, EA 2007-3, September 26, 2007.

structure benefits low-income households (as well as other households) when they consume relatively small amounts of energy. Under volumetric rate structures, customers pay above marginal cost for consuming each unit of energy, since the marginal price by definition includes some of the utility's fixed costs in addition to variable costs. The utility faces the risk of under-recovering its fixed costs because it collects those costs from customers through volumetric energy-usage charges. Energy usage is susceptible to volatility because of weather and other factors.

Lifeline rates have been adopted by regulators to encourage energy efficiency and provide customers with lower marginal prices for "essential" electricity and gas use. Lifeline rates are volumetric rates that apply an inverted tiered rate structure in which consumers pay higher marginal prices at higher tiers of energy consumption. An illustration of lifeline rates is when a customer pays 8 cents per kilowatt-hour (kWh) for the first 500 kWhs consumed in a month, and 12 cents for all additional kWhs. These rates provide even greater benefits, when compared with standard volumetric rates, to low-income households when they consume low amounts of energy relative to other customers. Lifeline rates, like volumetric rates, increase the risk that a utility will under-recover its fixed cost, because it disproportionately collects those costs through the higher rate tiers where the greatest amount of usage volatility occurs.

2. Rate discounts (RDI)

An example of a rate discount is the utility giving eligible low-income households a discount of 30 percent off the rates the utility charges other customers. If other customers pay a price of 10 cents for each additional kWh consumed, low-income households would pay 7 cents. One form of rate discounts might involve larger discounts for smaller energy use. A household, for example, receives a discount of 40 percent if it consumes fewer than 500 kWhs per month, while its discount falls to 30 percent if it consumes more than that amount. One real-world example is California's Alternate Rates for Energy program (CARE). This program provides eligible low-income customers with a 20 percent rate discount on their electric and natural gas bills. All other utility customers fund the CARE program through a rate surcharge.

Rate discounts reflect a pricing principle based on customers' "ability to pay." State regulators have frequently approved a form of discriminatory pricing called "value of service" pricing. Under this pricing scheme, prices to different customers depend on the value that each customer places on the service (i.e., on their "willingness to pay.") But if regulators can legally set prices based on "willingness to pay," why can they not then apply the same pricing principle to "ability to pay," since "ability to pay" is really a sub-component of "willingness to pay"? If a utility is able to offer a rate discount to industrial customers who would otherwise bypass the utility if required to pay the full embedded rate, why could it not offer a rate discount to low-income households? The anti-bypass rate would benefit all of the utility's customers as long as the price allows the utility to earn some margin above variable cost and prevent bypass. The discount to low-income households could also benefit all customers if in its absence the utility would have disconnected low-income households or those customers would have accumulated large bad debt or costs associated with re-establishment of service. (It is assumed that other customers would compensate the utility for lost revenues and the bad debt.) Some regulators and legislatures might, however, perceive a distinction between "willingness to pay" and "ability to

pay" that limits their legal capability to implement both.

From the standpoint of economic efficiency, rate discounts are probably the least desirable form of EA. It would be preferable, as an alternative, to give eligible low-income households monetary assistance in the form of a lump sum or in some other form that does not affect the marginal price.

3. Percentage-of-income plans (PIP)

These plans limit the utility bills of eligible low-income households to a predetermined percentage of their income. Their premise is that affordability inversely relates to how much households have to pay for energy relative to their incomes. Such a plan, for example, may require that eligible households pay no more than 15 percent of their income toward natural-gas service during the winter heating season. The benefits to customers would depend upon both their income and their gas bill. Both lower-income customers and customers with higher gas bills benefit the most. This aspect of the mechanism is desirable.

Under PIP recipients would tend to over-consume energy, since they pay nothing for consuming more energy. A variant of this plan could mitigate this problem by requiring customers to pay the standard rate for energy consumed above some benchmark. The benchmark could be the customer's energy consumption prior to participating in the plan, adjusted for weather and changes in household size. As long as she does not consume beyond the benchmark, the customer pays a flat monthly fee that entitles her to remain on the utility system. The administrative burden associated with this benchmark method is not trivial.

States with PIPs include Illinois, New Hampshire, New Jersey, Ohio, and Pennsylvania. An evaluation of the New Jersey PIP found positive results: (1) the subsidy was about 40 percent of the total energy bill for recipients (i.e., it produce substantial benefits to recipients); (2) it reduced the energy burden of recipients to 6 percent, which coincides with the energy burden of non-poor customers; (3) about 40 percent of recipients had incomes not exceeding $10,000 (i.e., the program reached the poorest of the poor); (4) after the subsidy, two-thirds of the recipients were able to pay their annual utility bills in full; (5) pre-program arrearages of recipients decreased by about 90 percent; and (6) disconnection rates of recipients decreased below the average rate for LIHEAP customers located in the Northeast.[12]

Illinois enacted legislation in July 2009 that established a percentage-of-income plan. The plan caps the amount low-income households pay for electricity and natural gas at 6 percent. The legislation also expands energy-efficiency programs directed at low-income households and

[12] *See* Concentric Energy Advisors, "A Review of Low Income Energy Assistance Measures Adopted in Other Jurisdictions," prepared for the Ontario Energy Board, September 4, 2008, 55-56.

provides for arrearage forgiveness, in which recipients who pay their bills on time will receive credits toward their past due bills. Funding of the plan will come from an increase in the system benefits charge. [13]

4. Bill-assistance programs (BA)

a. LIHEAP

These programs include LIHEAP, fuel funds, and state/local government programs. LIHEAP is the largest source of energy assistance to low-income households. The Federal government established LIHEAP in 1981 in response to continued concerns about the effect of rising energy prices on low-income consumers. LIHEAP distributes funds to state governments in the form of block grants, according to a formula based on each state's weather and low-income population. Geographic areas with higher energy bills disproportionately receive LIHEAP funds. The rationale is that households with higher energy burdens have greater difficulty paying their energy bills and would, therefore, have more incentive to apply for LIHEAP.

The states distribute LIHEAP funds to eligible low-income energy consumers. The states can use LIHEAP money to provide bill-payment assistance, energy-crisis assistance, and weatherization and energy-related home repairs. Households without utility service or facing imminent service disconnection can qualify for "crisis" funds. The President can also release these funds during times of emergencies, such as extreme weather or high fuel prices.

Until the last few years, LIHEAP funds had inexorably declined in real dollars. Between 1985 and 2004, for example, LIHEAP and other Federal energy-assistance funding fell by around 44 percent in real dollars.[14] Even with the large increase in funds last year, LIHEAP funds have not kept pace with the increase in the number of households eligible for the funds. LIHEAP recipients in the country as a whole make up less than a quarter of households who qualify for assistance. During 2002-2004, for example, LIHEAP recipients as a percentage of eligible households were 19.3 percent, 27.3 percent, 23.9 percent, and 26.8 percent in Delaware, Maryland, New Jersey, and Virginia, respectively.[15] A 2009 report prepared for the Idaho Public Utilities Commission calculated that during the 2007/2008 winter heating season 32,843

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[13] *See*, LIHEAP Clearinghouse, *News Bulletin*, September 2009, at http://liheap.ncat.org/newslett/enews4.htm.

[14] *See* Congressional Research Service, *Cash and Noncash Benefits for Persons with Limited Income: Eligibility Rules, Recipient and Expenditure Data, Fiscal Years 2002-2004* (Washington, D.C., 2006).

[15] *See* Donnell Butler et al., "Energy Poverty and Household Wellbeing," presentation at the Atlantic City Electric/Delmarva Power Agency Summit, October 5, 2005. The presentation also expressed the concern that high energy-burden households do not receive proportionally higher LIHEAP assistance than other households.

households received LIHEAP funds, totaling $9.4 million or $286 per household. Assuming the same benefit per household, an additional $19.5 million would have been needed to cover all of Idaho's eligible households.[16]

Insufficient LIHEAP funding provides a strong rationale for supplemental assistance by utilities. LIHEAP funds have failed to prevent utility disconnections of a large number of low-income households. The allocation of LIHEAP funds also does not depend upon a household's energy consumption or the utility's rate. In a state where two household have the same income and household size, each would receive the same LIHEAP assistance even if one faces much higher utility rates and consumes substantially more energy than the other.

b. Fuel funds

Fuel funds (sometimes called "hardship funds") provide cash assistance to customers who "fall through the cracks" of other EA programs, or to those customers who still have a critical need for assistance after the depletion of the other resources. They provide assistance grants to customers by making payments directly to utilities on behalf of eligible customers. Utilities or non-profit organizations (e.g., Salvation Army, HeatShare Program) typically administer fuel funds by collecting and distributing the money. Alabama, New York, Pennsylvania, and Wyoming are examples of states with hardship funds. In Alabama, through a state-wide program called "Project Share," utility customers can voluntarily contribute one dollar a month to the Project Share fund. The American Red Cross administers the fund, which goes to pay the utility bills of customers in need. Wyoming has a similar program, "Energy Share of Wyoming."

c. BA in general

Bill-assistance programs as a general rule distribute lump-sum cash payments to pay down a customer's utility bill. The income-eligible customer pays the same rates as other residential customers, but receives a discount on his total bill. If a customer's utility bill was $200, an assistance payment of $50 would reduce what the customer pays to $150. Some programs determine the amounts distributed based on a household's income, the number of persons in the household, and a household's utility bill. Because they do not affect a customer's decision to consume energy at the margin, bill-assistance programs tend to minimize distortions in energy usage. They commonly provide a one-time-only benefit, which is inadequate when low-income households have an acute ongoing need.

[16] *See* Idaho Public Utilities Commission, *In the Matter of the Commission's Inquiry about Energy Affordability Issues and Workshops*, Case No. GNR-U-08-01, Staff Report, January 16, 2009, 3.

5. Weatherization and other energy-efficiency programs (EE)

a. The different programs

These programs include federal, state, and utility low-income weatherization assistance programs, and other utility energy-efficiency initiatives. A number of states mandate supplementary utility-funded no-cost weatherization services to low-income households. In Minnesota, for example, all state-jurisdictional gas utilities must spend at least 0.5 percent of their gross operating revenues on conservation improvement programs, such as energy audits and weatherization, and on rebates toward the purchase of energy efficient appliances. A utility must spend a portion of this money on residential conservation improvement programs for renters and low-income consumers.

Low-income households, whether they own or rent, live in a single-family home, multi-family housing complex, or a mobile home, can apply for federal assistance. Besides weatherization, energy efficiency actions include consumer education on how to save energy, the repair of cooling and heating systems, and the replacement of old, energy-inefficient appliances.

One problem centers on the transient nature of low-income households to frequently move between different rental residences. Landlords would tend to spend little on energy efficiency, causing these households to have high utility bills. Utility or government incentives can induce landlords to invest in energy efficiency; but unless these incentives are substantial, landlords would probably not respond well.

Local community service agencies administer the federal program. Weatherization measures include attic insulation, energy-efficient furnaces, weather-stripping, water heater blankets, and other measures to reduce air infiltration. The American Recovery and Reinvestment Act provides $5 billion for the federal weatherization program, which is over ten times the previous year's funding. The Act also increases income eligibility from 150 percent of the national poverty level to 200 percent and assistance per dwelling from $2,500 to $6,000. Studies have shown that the federal weatherization programs have saved low-income households substantial amounts of energy and are highly cost-effective. One widely-cited study estimates savings in natural gas usage of around 23 percent per household. The study also found these programs to be highly cost-effective.[17]

[17] *See* Oak Ridge National Laboratory, *Estimating the National Effects of the U.S. Department of Energy's Weatherization Assistance Program with State-Level Data: A Metaevaluation Using Studies from 1993 to 2005*, ORNL/CON-493, prepared for the U.S. Department of Energy, September 2005. The study used data for nineteen states during the period 1993-2005.

Other energy-efficiency activities include consumer education, special assistance to mobile homes and rental housing, and the offering of no-cost energy efficient appliances to eligible low-income households. These actions have the objective of reducing a household's long-term utility bills and arrearages. One study showed energy efficiency programs directed at low-income households to be cost-effective and conducive to lower arrearages.[18]

b. Rationales for targeted, low-income EE initiatives

Reasons for giving priority to offering weatherization and other energy-efficiency assistance to low-income households include:

1. Marginal dollars spent on energy efficiency are likely to produce higher energy savings when directed at the poor, who generally make few investments in energy efficiency without monetary assistance.

2. The poor are less likely to be "free riders," i.e., customers who would have made energy-efficiency investments in the absence of assistance.

3. Inertia and other market problems (e.g., inadequate information) tend to affect the poor more than other households.

One presumption is that the most cost-effective actions address serious barriers and problems afflicting low-income households. The "free rider" phenomenon has afflicted many energy-efficiency programs. This problem occurs when participants include those customers who would have taken the same energy efficiency action without the utility inducement. The net effect is no incremental energy savings, but merely a distributional effect benefiting participants and paid for by the utility and its other customers. The premise that low-income households would less likely be free riders stems from the fact that they have less money to spend on energy efficiency. All of these reasons mean that a utility would achieve a higher benefit-cost ratio from its energy-efficiency activities by favoring low-income households.

Weatherization and other energy-efficiency actions that aid low-income households seem to make good economic sense. They would also have a favorable effect on the environment compared to discounted rates or a percentage-of-income plan, both of which would tend to increase energy usage.

c. Does weatherization eliminate the need for long-term EA?

Initially, it seems these households would still require cash assistance to continue receiving service from the utility; it is doubtful whether weatherization would ultimately reduce energy usage enough for low-income households to fully pay their utility bills without any additional assistance. Assume that a low-income household spends 20 percent of its income on

[18] *See*, for example, Consumer Services Information System Project, Pennsylvania State University, "Long-Term Study of Pennsylvania's Low Income Usage Reduction Program: Results of Analyses and Discussion," January 2009.

home energy and that weatherization reduces energy usage by 25 percent (similar to the estimate made by the Oak Ridge study in footnote 17). The household's energy burden would then fall to 15 percent. This decline seems inadequate to eliminate the need for all energy assistance to that household. This example suggests that policymakers cannot assume that weatherizing the homes of low-income households, especially the poorest ones, will rule out the need for energy assistance in the form of rate or bill discounts; it would only reduce the assistance needed to reduce the household's energy burden to a tolerable level.

As another example, a household has an income of $10,000 and pays $1,500 in annual utility bills. Assume that it receives EA in the amount of $400, which reduces its annual utility payment to $1,100. Let us also assume that an "affordability" standard would limit this household's energy burden to 7 percent or $700 annually. Assuming, as we did above, that weatherization reduces energy usage by around 25 percent, the utility bills would now total $1,125 [$1500 · (1 – 0.25)]. With $400 of EA, the household's utility payments would fall to $725, which is slightly above the "affordable" cap of $700. The policy implication is that, even with weatherization, assuming EA fell far short in reducing low-income households' energy bills to affordable levels, the absolute dollar amount of needed energy assistance might not decrease.[19]

d. Joint application / automatic enrollment

One idea is to require recipients of utility-funded EA to apply for federal weatherization assistance. A joint application in which the customer applies for bill assistance and weatherization at the same time is sensible. The rationale is that low-income households should have the obligation to take full advantage of opportunities to minimize their energy bills as long as they are receiving energy assistance funded by the utility and its non-poor customers.

Another approach would be to enroll low-income customers automatically for utility bill-assistance programs, including no-cost weatherization, when the customer applies for other government assistance programs, including non-energy related programs (e.g., food stamps and other welfare programs). Auto-enrollment would require interaction, with customer consent, between social service agencies (and possibly charitable organizations) and utilities in order to inform the utilities about qualifying customers.

6. Cost waivers (CW)

Cost waivers can help low-income households stay current on their bills and either avoid disconnection by the utility or have utility service restored. These actions include arrearage forgiveness for customers who make timely payments of their utility bill over an extended period and a customer-charge waiver. The customer charge recovers all or a portion of those costs associated with serving customers, irrespective of the amount of electricity or gas usage. These costs include operating and capital costs that vary directly with the number of customers. Customer charges comprise a larger portion of the bills of high-usage customers.

[19] I thank Roger Colton for bringing this point to my attention.

Cost waivers can also apply to service reconnections, late payment charges, and deposits for low-income households who have a poor credit rating or history. A disconnected customer might find it financially impossible to pay all of these costs and have service restored.

A cost waiver could induce a customer to pay off outstanding bills in order to have service restored. It could, for example, lead to customers negotiating in good faith with their utility for a payment plan. It could also substantially lessen the financial obligation on a low-income household. Although these actions seem minor, to some customers they are critical to having service reconnected or continuing with utility service.

On the downside, a cost waiver might make customers less responsible for paying future utility bills (i.e., create moral-hazard incentives). Less responsibility would come from customers who have less incentive for paying their bills on time and in full to avoid service disconnection. A waiver also means that the utility must either absorb the costs or pass them on to the general ratepayers. The regulator will have to judge whether these consequences are small enough relative to the benefits.

7. Bill facilitation (BF)

Billing facilitation helps customers better manage their bill payments. Better management can reduce arrearages and avoid debt write-offs and service disconnections. Bill facilitation includes budget billing, winter moratoria on service disconnection, flexible payment options, prepayment (e.g., customers pay for their energy up front, sometimes at a premium rate), and automatic withdrawal. Flexible payment plans tailored to each customer's unique financial situation, for example, can help to prevent service disconnections and avoid putting customers at risk.

A moratorium allows a customer to continue with utility service without having to make any payments during the winter months. A moratorium reflects a stop-gap policy that defers the inevitable problem of some customers being unable to fully pay their utility bills. After the moratorium lifts, however, customers are obligated to pay their full utility bill in addition to any arrearages that accrued during the moratorium. The payments may be dispersed over several of the non-peak months. Households still face the problem of not being able to afford utility service. When spring arrives, the utility can disconnect their service if they fail to make the required payments. Many of these households might find it difficult to be reconnected. As expressed by one regulatory body:

> The moratorium is not a forgiveness of the utility bill. The customer is ultimately responsible for payment of the entire account owed on the electric or natural gas bill, including late fees that may accrue.[20]

[20] The Public Utilities Commission of Ohio, "Winter Heating Disconnection Moratorium Ends March 18," updated March 3, 2008, website correspondence, at http://www.PUCO.ohio.gov.

Prepayment, which involves the billing of customers in advance of receiving service or the use of prepaid meters, might enable customers to stay connected. The utility would be less willing to serve customers who have a history of severe payment problems, since the utility would expect those customers not to fully pay their bills in the future. By preventing future arrearages, prepayment would make the utility more inclined to serve those customers.

As another form of bill facilitation, budget billing is a deferral program that can provide limited relief to many low-income households. Utilities can place inserts in the bills they send out to customers explaining how budget billing can avoid extremely high monthly bills by paying the same amount each month. Households are still responsible for paying their full bill. The utility treats them like any other customer who falls behind in paying their bills.

IV. Problems to Avoid

A. A general criticism of in-kind programs

One criticism of in-kind programs such as EA is that they produce lower benefits to low-income households than the benefits from distributing the same amount of dollars to the same households without any strings attached. Assume that a household receives $100 restricted to reducing the utility bill. If, as an alternative, the government gives the same household $100 to use as it sees fit, economic theory (supported by empirical studies) says that the households would receive higher benefits. Cash subsidies with no string attached, in other words, can increase the benefits to recipients for each dollar funded by utility customers or taxpayers compared with in-kind subsidies such as EA that require the recipient to use the money to pay his or her utility bill. This outcome derives from the premise that households would not use the entire cash assistance to reduce their utility bill. Instead, they would rationally allocate some of the cash to different goods and services so as to maximize their "utility" (measured in "utils") or economic well-being. In-kind subsidies, in contrast, are paternalistic in nature, requiring recipients to allocate the financial assistance to a designated good or service, such as home energy.

As another illustration of the superiority of unrestricted use of cash payments, assume a household receives $400 that it can spend at its discretion. Assume also that the household allocates this money to buy more different goods and service, and that its "utils" increase by 20. Now assume that the household has to spend all of the $400 on its utility bills. When it does so, its "utils" grow by less than 20, since the household would have benefitted more by spending less of the $400 on utility service. Assume that to increase its "utils" by 20, the household would have had to receive $500 of energy assistance. The waste, in this example, of giving the household in-kind (energy) assistance instead of unrestricted cash would be 20 percent. In other words, society can bestow on the household the same benefit with an unrestricted cash amount ($400) that is 20 percent less than the amount of energy assistance ($500).[21]

The argument for unrestricted use of cash payments, however, has little relevance for state regulators. Regulators have no legal authority to take money from some customers and redistribute it to low-income households without directly reducing the recipients' utility bills. Regulators have authority only over in-kind energy assistance initiatives. Whether low-income households should receive more cash assistance and less energy assistance is a relevant matter for legislative and executive branches of government.

[21] A theoretical discussion of this outcome is found in Lee S. Friedman, *The Microeconomics of Public Policy Analysis* (Princeton, NJ: Princeton University Press, 2002), 94-98.

Other critics of EA actions oppose additional funding. Instead, they contend that policymakers need to improve the effectiveness of existing programs. One way to achieve that goal is to better coordinate and complement the different actions. Bill-assistance programs, for example, can complement weatherization actions aimed at "permanently" reducing a low-income household's unsubsidized utility bill. Part VI lists other ways of increasing the benefits or reducing the costs of EA actions.

B. Specific deficiencies

A review of current EA actions reveals deficiencies in a number of areas. Regulators should try to identify problems with the EA programs under their jurisdictions. The specific deficiencies are the following:

1. Recipients of assistance sometimes include the non-needy.

Non-targeted lifeline rates inadvertently can benefit high-income, low-energy-use customers. Any EA initiative should define eligible low-income households. Regulators and utilities might want to consider the definition of "low-income" used by social service agencies. One possible problem with tying eligibility for utility programs to LIHEAP eligibility, however, is that it might exclude those low-income households that regulators (but not the federal government) deem needy.

2. Poor information and other problems can cause low participation rates.

Several reasons exist for why a substantial number of eligible households do not receive EA. They include inadequate outreach, household inertia, small benefits from participation, a time-consuming and complicated enrollment process, and the social stigma of accepting assistance.

Some households do not want to expend any effort or time in finding out whether they are eligible for assistance and, even if they are, to apply for it. These efforts might impose costs such as "hassle," transportation, and search for the proper documentation. The households, for example, may have to take time off work and pay for bus fare. In other instances, households are not aware that assistance is available. (State regulators recognize the importance of making customers aware of low-income assistance programs. [22]) The elderly and physically disabled people may find it too difficult to travel and apply for assistance. Other households may face language barriers and distrust government groups and utility companies. Some EA might also result in insufficient benefits to eligible households to warrant the aggravation of applying or taking other necessary actions. Finally, some customers, such as seniors or recently unemployed households, might attach a stigma to receiving any assistance. The federal government recognized this problem as it pertained to the food stamp program. The government changed the

[22] *See*, for example, National Association of Regulatory Utility Commissioners, "State Regulators Declare 'Lifeline Awareness Week,"' *Press Release*, September 14, 2009.

official name of the program to the Supplemental Nutrition Assistance Program partially to mitigate the stigma associated with the term "food stamp." Customer information on the objectives and details of assistance programs can also help improve the public's perception of them.

3. Some EA recipients fail even to make the obligatory payment on their subsidized bills.

Households might have little incentive, for example, to pay the 10 percent of their income for gas service that a PIP mechanism requires. As long they continue to receive utility service, they suffer no consequences from not paying the required amount. One strategy that could induce recipient to pay is to credit their arrearages whenever they satisfy their portion of the utility bill over a designated period. Another strategy is to threaten utility shut-off of service when recipients fail to make their obligatory payment.

One problem with deficient payments from the recipient is that either other customers or other EA mechanisms will have to pay for any shortfalls. Utilities might be indifferent to what recipients pay if they have a tracker or rider that guarantees them timely recovery of shortfalls in the absence of a rate case. A tracker for bad debt, for example, can affect how the utility responds to customers who are behind in their payments. It can make the utility more lax in its credit policies, which could result in fewer service disconnections and less costs spent on collection agencies. In the absence of a tracker, the utility presumably would intensify its efforts to collect money owed by delinquent customers.[23]

4. Inadequate funding makes some eligible households vulnerable to service disconnection.

An effective EA, or a portfolio of EA actions, should provide adequate funding to cover all customers applying for assistance that would allow them to stay on the utility system. Assistance programs that fail to reduce disconnections violate the principle that the poorest of customers should be entitled to essential utility service.

5. Subsidization of low-income households can cause them to over-consume energy.

Any EA should try to minimize distortive performance in individual areas of utility operation. One such area relates to the pricing of utility services. Any utility rate discount or a fixed monthly bill would tend to cause households to consume energy beyond what is economically efficient; that is, they induce recipients to consume beyond the amount where the marginal benefits equal the marginal cost to the utility. This problem stems from the marginal price being less than marginal cost. If a utility charges low-income households 7 cents per kWh at the margin for electricity that costs 10 cents, from the standpoint of an economic efficiency

[23] *See* Ken Costello, "How Should Regulators View Cost Trackers?" NRRI 09-13, September 2009, at http://nrri.org/pubs/gas/NRRI_cost_trackers_sept09-13.pdf.

perspective those households would over-consume. In the extreme instance where households pay nothing at the margin for consuming additional energy, they will consume to where the marginal value is zero. One example where over-consumption occurs is when an EA mechanism places a cap on how much eligible low-income households pay for utility service. As actual energy consumption increases, the difference between the cap and the actual utility bill widens, with more funding (i.e., subsidies) required from other customers.

6. EA actions can result in intra- or inter-class cross-subsidization.

Low-income households receiving EA might pay less than a utility's variable costs (i.e., costs that vary with the quantity of utility service). This means that other customers would be better off if the utility disconnected those households. The reason is that the utility earns negative returns from EA recipients; with service disconnections, the utility's returns from those households would be zero. Rates to other customers would therefore have to be higher than otherwise to compensate the utility for the negative returns.

7. Poor coordination among the different EA actions and the different entities jointly responsible for them can lead to lower performance.

Bad communications between a utility and local governmental units and nonprofit social services agencies can hinder the public's awareness of EA prior to the winter heating season. Experience shows a high correlation between EA program success and collaboration between regulators, utilities, charitable organizations, and social service agencies. One reason for the success is that social service agencies and charitable organizations can better identify utility customers who are having difficulty paying both their utility bills and bills for other necessities. Utility service representatives and delinquent account specialists typically are not trained as social workers and are ill-equipped to handle these kinds of problems.

Cooperation requires that utilities and social service agencies work together to disseminate valuable information that allows them to better assist needy low-income households. Utilities, for example, need cooperation from social service agencies and charitable organizations to know the specific financial situation of individual households, besides establishing eligibility requirements for assistance. The utility and other entities should exchange information on customers who face imminent service disconnection.

8. Some forms of assistance fall short in addressing the severity of the unaffordability problem.

Budget billing plans, automatic withdrawal, and certain cost waivers do little to help customers who have large arrearages or who spend a large portion of their income on utility services. A household with a $2,000 arrearage is not discernibly helped by a budget billing plan. The household would still have to cut back on other necessities to pay off its arrearage and avoid falling behind on future utility bills.

This argument should not detract from the value of budget billing to assist customers in making payments during peak energy-use months. By smoothing out monthly payments, for example, a low-income household or a household on a fixed income can more easily make full payments throughout the year.

C. Two examples

1. Non-targeted lifeline rates

Some non-poor customers would likely benefit when lifeline rates do not require that customers receiving the low first-tier rate have low incomes. Under this rate, benefits could accrue randomly across households with much different incomes. Energy usage varies widely across households, not necessarily because of income differences but because of other factors such as household size and consumer preferences. Some higher-income households might consume smaller amounts of energy because of their financial ability to make investments in energy efficiency. On the other hand, one could argue that income and energy consumption have a fairly strong correlation, e.g. wealthier households tend to own larger homes and have more discretionary energy-consuming appliances. The correlation also might substantially differ between electricity and natural gas. Since the early 1980s, national statistics show that the difference in energy consumption between households eligible for federal assistance and other households slightly declined. [24]

It seems illogical to have an action premised on high income elasticity when the basic problem lies with a nonlinear relationship between income and energy usage. As mentioned earlier, this relationship is the reason why low-income households spend a much higher percentage of their incomes on home energy use.

Lifeline rates violate a tenet of economic inefficiency when rate tiers do not reflect marginal cost. In this instance, they are discriminatory against large users; they also make a utility's earnings more volatile and dependent upon such factors as weather and customers' energy-conservation efforts.

2. Rate discounts

The biggest problem with rate discounts is that they cause rates charged to low-income households to fall below cost and rates charged to other customers to increase above cost. Economic efficiency would diminish and low-income households would tend to consume more energy. The latter effect by itself runs counter to reducing the energy burden of low-income households as well as advancing energy efficiency.

Rate discounts are a form of discriminatory pricing that some regulators might consider illegal or undesirable. Discriminatory pricing almost always raises a question of fairness, especially when a favorable rate falls outside a "zone of reasonableness." When a rate falls short

[24] *See*, for example, U.S. Energy Information Administration, *Residential Energy Consumption Survey*, various issues, at http://www.eia.doe.gov/emeu/consumption/index.htm.

of a utility's short-run marginal cost or lies above the price that an unregulated monopolist would charge, a regulator would likely find the rate impermissible. We see examples in unregulated sectors in which a firm offers discounts, say, to seniors and students because of their low incomes. Firms do not favor these groups for altruistic reason; instead, they do it to increase their profits by attracting more customers and sales from existing customers. As long as the price lies above variable costs, firms earn incremental profits from additional sales.

Most regulators allow some forms of price discrimination while preventing other forms (i.e., undue discrimination). They have authorized discriminatory pricing when it serves some public interest, such as economic development, more affordable energy, and the deterrence of uneconomic bypass. One economic and regulatory rationale for these rates is that they increase the utility's earnings compared to when "favored" customers would have to pay the full rate but don't for various reasons (e.g., inadequate income, competitive opportunities). Assume, for example, that the utility by charging the full cost-based rate would recover $4 million of its fixed costs from certain low-income households when those customers stay on the utility system. But Assume that they would not be able to pay enough of their bill to avoid disconnection. By discounting their rates, the utility, say, recovers $2 million from those low-income households. The discount, in this example, benefits the utility, other customers, and the recipients (i.e., achieves a "no-losers" outcome). Even though the discount is discriminatory in not adhering to cost-of-service principles, it produces net benefits that ostensibly promote the public interest. Rate discounts or assistance in other forms to these low-income households can be as high as $4 million before other customers and the utility become worse off. If, on the other hand, these low-income households would still stay on the utility system with the full rate, the rate discount would not necessarily benefit other customers and the utility. It could, however, to the extent that the discount helps to reduce the utility's costs for dealing with payment problems such as collection costs and debt write-offs.

Subsidizing customers are worse off when they fund a rate discount rather than a lump-sum payment to low-income households where the increase in the economic welfare of low-income households is the same. (Appendix B illustrates this outcome with an example.) A lump-sum payment would: (1) avoid giving low-income households improper price signals that conflict with energy-efficiency objectives and (2) reduce the financial effect on subsidizing customers in funding the assistance.

V. Nine Criteria for Evaluating EA

One can list criteria for identifying both good and bad EA actions. No single EA action comes out favorably in meeting all criteria. Some actions perform superbly in satisfying certain criteria while satisfying others less well.

The following list contains nine criteria for evaluating EA actions. Regulators should consider any action that satisfies the vast majority of these criteria as desirable. They should be wary of actions, on the other hand, that fall short in meeting most of the criteria.

A. Benefits should accrue only to low-income households.

Program "leakage," in which some of the benefits go to non-targeted customers, has the unintended consequence of distributing money from non-recipient low-income households to customers whose incomes are many times higher. If utilities rely on rates discounts or other special rates, regulators should make sure that only eligible low-income households benefit (e.g., household income ≤ 150 percent of the poverty guidelines established by the Department of Health and Human Services).

Within the category of low-income households, more EA should go to the poorest of the poor. These households have less income to pay for energy and, compared to other households, their energy burden is excessively high, making utility service particularly unaffordable. Because of this condition, the poorest customers likely face high unpaid bills and are most susceptible to service disconnections.

Economists and policy analysts have criticized defining poverty in terms of income at the exclusion of a household's assets. This criticism is especially directed at elderly customers who have low incomes but own substantial assets including their homes. There is also the issue of defining low-income households. Some utility and state programs differ from federal programs in defining the term "low-income;" in addition, definitions change over time. As mentioned in Part III.B.5, the American Recovery and Reinvestment Act loosened eligibility for Federal weatherization funding from 150 percent of the national poverty level to 200 percent.

B. The recipients of EA should receive maximum benefits relative to the dollars spent.

1. Measures of economic benefits

There are at least four different measures of economic benefits. They include:

1. the value recipients place on additional consumption of non-energy goods and services made possible by the effect of EA in reducing their energy bills;

2. the change in the net benefit that recipients receive from consuming energy, what economists call "consumer surplus;"

3. the amount recipients would be willing to pay to stay in an EA program, what economists label "compensating variation;" and

4. the amount recipients would be willing to accept not to participate in an EA program, what economists label "equivalent variation."

As an illustration of the last measure, a low-income household might be willing to accept $50 per month in lieu of receiving energy assistance; the $50 cash subsidy then equals the value the household places on energy assistance. These measures are theoretically sound and they all correlate closely to, but in some instances fall short of, the recipients' energy-bill savings. The benefits to a recipient include the lowering of her energy bill (which is probably the largest benefit), the security of knowing that service will continue, and less stress from struggling to make payments to avoid large arrearages.

Three common definitions of benefits defined in economic studies are consumer surplus, compensating variation, and equivalent variation. The economist Robert Willig has shown that under most circumstances when the income effect is small, these three measures are roughly equal.[25] According to the economic concept the Slutsky equation, the income effect is the product of the income elasticity of energy and the share of income spent on energy. The Slutsky equation expresses the price elasticity of demand as the sum of the substitution effect and the income effect. Compared to other residential customers, low-income households have a lower substitution effect (e.g., poor households are less able to buy energy-efficient appliances when price rises) but a higher income effect, as they spend a larger share of their incomes on home energy. The income effect can be more than minimal when either the income elasticity or the share of energy in a household's budget is large, as is true for low-income households.[26]

Consumer surplus measures the difference between the economic value of the assistance received by a low-income household and the "time" and "aggravation" cost in applying for assistance. The economic value is equal to the reduced outlays by the low-income household for the energy consumed prior to assistance plus the net benefit from consuming more energy because of the household's greater real income (i.e., the income effect) or the lower price of energy (i.e., the substitution effect), or both.

2. Supplemental benefits

One caveat is that, as noted above, recipients would tend to value assistance above the energy-bill savings that comprise the major part of "consumer surplus." A customer might realize annual bill savings of $500 from EA, for example, but value the assistance much higher. The customer might feel less stress from the threat of losing utility service or the accumulation of

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[25] Robert D. Willig, "Consumer's Surplus without Apology," *American Economic Review*, Vol. 66 (September 1976): 589-97.

[26] *See* Kenneth W. Costello, "A Welfare Measure of a New Type of Energy Assistance Program," *The Energy Journal*, Vol. 9 (July 1988): 129-42.

large due unpaid bills. The assistance may cause a household to increase (decrease) indoor temperatures in the winter (summer), or stop using the stove or oven for heat, making the indoor environment safer and healthier. EA also may offer arrearage forgiveness as long as the recipient makes timely payments of current bills. Although most of these benefits are beyond quantification, they represent a real benefit that regulators and other policymakers should take into account in evaluating EA actions.

C. Consumer information and education should make eligible households aware of available assistance and ways to reduce their energy bills.

Any action would inevitably fail if eligible households do not know that they qualify for assistance. Households should also know how they can reduce their energy usage so that over time they can rely less on rate or bill discounts. Outreach should place special emphasis on reaching those low-income households most in need of EA. They include households who: (1) have the largest arrearages, (2) frequently receive collection notices from their utility, or (3) are currently disconnected from utility service.

Good information requires collaboration among the different entities jointly responsible for EA. These entities include the public utility regulator, utilities, social service agencies, charitable groups, and low-income households themselves.

D. Benefits to recipients of EA should positively correlate with their actual energy costs or energy burden.

Eligible households with higher home energy costs, assuming that other factors are the same, should receive more assistance. For these households, energy is more unaffordable, as they spend a higher percentage of their income on energy (i.e., they have a higher energy burden).

E. EA should avoid large efficiency losses or cross-subsidization.

Efficiency losses primarily result from incorrect price signals to recipients, leading to overuse of energy. Losses can also stem from subsidizing customers paying higher prices at the margin to fund recipients. A loose definition of cross-subsidization is: subsidized customers pay less for utility service than the cost of serving them while subsidizing customers pay more.

The goal of controlling efficiency losses gives support to lump-sum payments over rate discounts. The preferable action might be simply to charge cost-based rates to all customers and then to transfer some of the revenues to eligible low-income households; the level of refund can be tied to a specified income-percentage formula (e.g., eligible households should not have to pay more than 10 percent of their monthly income to heat their homes in the winter).

F. EA should have reasonable administrative and implementation costs.

By reducing administrative and other implementation costs, more of the money for EA would go directly to needy recipients. Federal statute restricts the percentage of LIHEAP funds that grantees can use for planning and administration to 10 percent.

Customers should not have to expend inordinate time enrolling in or renewing enrollment for utility assistance. One option is to automatically enroll customers for utility programs if they previously applied for LIHEAP funds. Another alternative is self-certification by households that wish to sign up for a utility program. Households can also save time with "one-stop shopping," where they are able to go to one entity to enroll in different assistance programs and receive information on how to reduce their energy bills.

G. Funding should have a tolerable financial effect on individual subsidizing customers.

1. "Spreading the burden" and some evidence

The principle of "spreading the burden" among many utility customers has the effect of imposing a small financial cost on each payer. Questions arise as to: (a) which utility customers should fund the subsidies (e.g., all utility customers, non-poor residential customers) and (b) at what point the "subsidy" cost becomes unreasonable. The last question requires regulators to know the tradeoff between adequate funds to assist low-income households and tolerable costs to subsiding customers. The objective of reducing low-income households' energy burden to the level of other households, for example, might require an excessive increase in general rates that violates equity and other regulatory goals.

A survey of utility EA actions across states shows that the burden on funding customers is generally, but not always, minimal.[27] States that limit the amounts of the "tax" paid to support EA initiatives place a cap that represents a small percentage of customers' bills or the utility's revenues. In Wisconsin, legislation requires that surcharges to fund EA actions cannot exceed 3 percent of a customer's bill. Rate assistance programs in Maine constitute only one-half percent of an electric utility's annual revenues. Most Pennsylvania energy utilities spend less than one percent of their annual revenues on EA programs. Additional EA programs in Illinois will increase surcharges to residential customers of energy utilities from 40 cents to 48 cents per month. Maryland's electric EA program requires residential customers to pay a surcharge of 40 cents per month.[28]

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[27] *See,* for example, LIHEAP Clearinghouse, at http://liheap.ncat.org/dereg.htm.

[28] *See* the link in the previous footnote.

The financial burden on utility customers in the future, however, could increase substantially as EA programs expand to meet growing demand. Some utility programs have grown dramatically since the beginning of the century, with customers having to absorb most of the additional costs.[29] In those areas with a high incidence of poverty, funding for assistance programs is potentially high.

2. Subsidies for different EA actions

Table 1 expresses the subsidies for the seven EA actions presented in Part III. The definition of subsidies used here measures the portion of the EA benefits to low-income recipients paid for by charging above-cost rates to other utility customers. (It is assumed here that other customers, rather than utility shareholders, fund any EA.) Applying this definition, changing the rate design can benefit low-income households without creating a subsidy. To the extent that these changes coincide with cost-causation principles, they help to eliminate any pricing inefficiencies.

For rate discounts and percentage-of-income plans, any increase in energy consumption induced by these actions results in higher subsidies. Energy efficiency actions result in no subsidies when they are cost-effective and pass the Rate Impact Measure (RIM) test. Passage means that energy efficiency does not increase rates to non-recipients. (Increased rates occur when energy efficiency causes a utility to lose revenues at a greater amount than the decline in revenue requirements.) Subsidies for EA actions must adjust for any cost declines that result from mitigated bill-payment problems. The relevant costs include collection costs, debt write-off costs, reconnection costs, and disconnection costs.

H. EA should result in reduced collection costs, service disconnections, arrearages, and debt write-offs.

EA should encourage disconnected customers to pay their arrearages and get reconnected; and delinquent customers to pay their arrearages and stay connected. These outcomes would reduce utility costs and the effect on customers who would otherwise absorb those costs. EA should reduce a utility's debt write-offs. (Write-offs are the total dollars the utility determines are uncollectible and, therefore, deducted from revenue.) One consulting firm's evaluation of EA programs found cost savings to utilities from lower past due amounts and collection costs. It calculated that after the implementation of the Oregon Energy Assistance Program, past due amounts per low-income household declined by $340 and costs incurred to collect bad debt declined by $190,000.[30]

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[29] *See* LIHEAP Clearinghouse, at http://liheap.ncat.org/dereg.htm.

[30] *See* Quantec LLC, "Draft Utah HELP Evaluation Comments," memo, January 30, 2004.

Some evidence suggests that the collections problem is more severe for gas utilities than for electric and combination utilities. NRRI analysis showed that the most serious problem lies with customers accumulating large arrearages on their gas bills during the winter heating season. Survey responses from state regulators showed that during the winter of 2005-2006 the average arrearage of gas utilities grew by about 50 percent. The same survey showed that arrearage rates (i.e., the portion of residential customers with unpaid due accounts) in some states were as high as 45 percent for electric utilities and over 50 percent for gas utilities. Average arrearages for gas utilities in several states were in the $600-$900 range.[31]

I. EA should promote equity.

Equity is an elusive and subjective term. EA makes energy more affordable to a greater number of utility customers by providing help to those households with the lowest incomes or the highest energy burdens. Most people would consider a policy or practice for which the poor benefit at the expense of higher income households to promote equity. This outcome is similar to that from a progressive tax system, which many people consider fair.

To many observers, the situation in which some utility customers pay for the delinquency of other customers constitutes a violation of a basic equity standard. This perception is more true when non-paying customers can afford to pay but do not for other reasons (e.g., they prefer spending their money on entertainment and going out to eat). Knowledge of the "equity" effects requires identifying both the utility customers benefiting from EA and those customers, shareholders, and others providing the funds.

[31] National Regulatory Research Institute, "Analysis of Responses to Collections Surveys," NRRI memorandum to the NARUC Staff Subcommittee on Consumer Affairs, March 14, 2007.

Table 1: Subsidies for Different EA Actions

EA Action	Size of Subsidy*
Modified rate design (MRD)	None if MRD is cost-based; otherwise, the difference in the bills of low-income households from a cost-based rate design and from a MRD
Rate discount (RDI)	The difference between the standard rate and the discounted rate times the amount of energy consumed
Percentage-of-income plan (PIP)	The difference between the standard bill and the bill as a percentage of the recipient's income over all seasons
Bill assistance (BA)	The amount of the lump-sum payment
Weatherization and other energy-efficiency actions (EE)	None if cost-effective and passing the Rate Impact Measure (RIM) test; otherwise, non-recipients pay the difference between the utility's lost revenues and the decline in revenue requirements
Cost Waiver (CW)	Waived costs
Billing facilitation (BF)	None if the recipient makes full payment of arrearages and current bills

* For all actions, the calculation of the subsidy should adjust for any reductions in bill-payment problem costs, which include collection costs, debt write-off costs, reconnection costs, and disconnection costs.

VI. What Regulators Can Do to Increase the Effectiveness of EA

A. Regulators have to make tradeoffs

To say that a particular EA action is good or bad depends on the criteria applied to evaluate it. Part V identifies standards for good actions and the deficiencies of bad actions. Because different actions have varying effects, it is difficult to say unequivocally that regulators should impute greater value to some actions than others. Weatherization, for example, is attractive as a long-term remedy for the affordability problem, yet its effect might not help those customers who are in immediate need of assistance to help pay past unpaid bills. Even in the long run, weatherization might not sufficiently reduce the energy bills of low-income households. Those households might, therefore, still require supplemental assistance, although perhaps at a lower level than in the absence of weatherization.

Regulators inevitably have to make tradeoffs between different regulatory goals. A higher participation rate might require more money funded by general ratepayers. Cost waivers might create a moral-hazard incentive: customers who fall behind in paying their utility bills might have less incentive to avoid late and partial payment of their utility bills. This behavior translates into higher costs and lower revenues for the utility, which ultimately falls on the shoulders of other customers or utility shareholders, or both. Customers receiving rate discounts would tend to consume additional energy, which over time might require higher subsidies.

These are only a sampling of how undesirable, and sometimes unintended, consequences, might result from well-intentioned actions designed to make utility service affordable to more customers. Partially for this reason, regulators should periodically assess whether EA actions are producing the intended results and not seriously jeopardizing other goals. The important goals are the advancement of cost-of service rates, energy efficiency, and equity.

B. What questions should regulators ask?

Appendix C lists questions that regulators can ask about both proposed and existing EA actions. By asking these questions and receiving answers, regulators can: (1) take no action, satisfied that additional action is unwarranted; (2) require utilities to take new actions; or (3) make existing actions more effective in benefiting low-income households and minimizing the adverse effects.

Appendix D lists a number of performance indicators for EA actions. Regulators should require utilities to compile this information as part of a review of current actions. The performance indicators link to the criteria that were identified in Part V.

C. A review of EA actions using the nine criteria

Appendix E provides a matrix that relates seven individual EA actions to the nine criteria presented in Part V. It provides a checklist for determining whether, and to what extent, each action satisfies the different criteria. The matrix also allows regulators to compare qualitatively

the different actions based on the information compiled for each cell. It is difficult and not always sensible, though, to place information in all the cells.

The matrix allows regulators to tabulate information about each EA initiative and then use that information to judge which ones are more compatible with promoting overall regulatory goals or the public interest. Regulators can choose those EA actions that score well on those criteria they consider most important.

Regulators can also use the matrix to determine which actions seem to complement others. With regulatory approval, a utility can execute a portfolio of complementary actions to more effectively address the "affordability" problem. If regulators place a high weight on promoting energy efficiency and a permanent solution to the affordability problem, their preference would lean toward weatherization and lifeline rates. If, instead they want a high assurance of affordability in the short term, regulators might favor a percentage-of-income plan or lump-sum bill assistance. With an immediate need for EA, the portfolio might include "crisis" funds. Several energy utilities have a portfolio of EA programs, some of which complement others. Pennsylvania utilities, for example, have the Customer Assistance Program, the Customer Assistance Referral and Evaluation Program, the Low-Income Usage Reduction programs, and Hardship Funds. Unknown is how utilities selected individual actions to compose their overall EA program, but complementarity presumably was a factor.

D. The need to evaluate EA actions

Regulators should review EA actions to determine whether they are achieving the regulatory goal of utility-service affordability: (1) most effectively and (2) with minimal adverse effects on other goals. An important dimension of effectiveness is to maximize the benefits to targeted households given the dollars funded by other utility customers. Minimal adverse effects mean that in funding and executing EA, regulators should mitigate distortions in pricing, energy consumption, and recipient behavior from moral-hazard incentives.

Regulators should evaluate EA actions periodically. Outcomes can easily depart from expectations when actions produce minimal benefits to targeted customers and unintended consequences that harm the utility and its other customers. These outcomes can arise, for example, when energy prices change dramatically or when the economy undergoes a sharp downturn leading to a recession.

In serving the public interest, regulators need to be vigilant in assuring that utility-funded EA is providing adequate benefits to eligible low-income households and, at the same time, minimizing impediments to economic efficiency and other regulatory goals. This paper aims to help state regulators in determining whether EA is meeting those goals.

Appendix A: Examples of EA Actions in Six States

State	Example
Arizona	• One utility offers a discount of up to 40 percent off the cost of electricity to customers who meet certain income guidelines. • Customers whose income does not exceed 150 percent of the federal poverty level are eligible for a deduction of up to $8 off their monthly electric bills and up to $15 off their natural gas bills. • One program provides energy education and weatherization improvements and repairs to eligible low-income homes.
Colorado	• The utility matches employee contributions dollar-for-dollar to support local weatherization efforts, including weather-stripping, caulking and other energy-saving actions. • One initiative provides no-cost energy-efficiency services to income-eligible customers, seniors and disabled; these services include an energy audit, attic, wall and crawlspace insulation, air leakage reduction, and appliance safety inspections.
Georgia	• The regulated natural-gas provider program, partially funded by the state's universal service fund, offers natural gas service to low-income households unable to obtain or maintain natural gas service from another marketer. • Senior citizens who are 65 years of age or older and have a household income of $14,355 or less are eligible for up to a $14 monthly discount on their gas base charge.

Massachusetts	• Several gas, electric, and combination utilities offer utility rate discounts, totaling nearly $40 million per year and ranging from 20 percent to 42 percent off the low-income customer bill. • Low-income customers who receive a rate discount may qualify for no-cost energy efficiency services that include energy audits, appliance efficiency services, attic and wall insulation, air sealing, and heating system replacement. • One utility offers a rate discount for customers who receive certain government means-tested benefits or qualify for fuel assistance.
Ohio	• Regulated gas and electric utilities participate in the statewide Percentage-of-Income Payment Plan (PIPP). Low-income customers who heat with natural gas pay 10 percent of their monthly income to their gas company and 5 percent to their electric company. • The Electric Partnership Program (EPP) has the objective of reducing electric consumption by households that participate in the state's PIPP.
Washington	• One initiative aids customers facing hardships through special payment arrangements and access to referral agencies. • Another initiative provides emergency energy assistance for families. • One utility has a low-income rate assistance program.

Source: LIHEAP Clearinghouse, at http://liheap.ncat.org/sp.htm and state commission websites.

Appendix B: Numerical Examples of EA Mechanisms

The following arithmetical expression shows the standard two-part tariff for residential customers of energy utilities:

$$B_i = C + p \cdot q_i,$$

where the total bill for customer i (B_i) equals the sum of the customer charge (C) and the volumetric charge (p) times the amount of gas consumed (q_i). Assume that the volumetric charge includes actual purchased gas costs and fuel costs.

Using a numerical example, assume the following tariff for a gas utility:

$$B_i = \$5 \text{ per month} + \$6.50 \cdot q_i,$$

If a low-income customer uses 20 Mcf of gas in December, her gas bill would be $135. Without any EA, the customer would be responsible for paying this amount.

Consider now different EA mechanisms aimed at lowering the gas bill of a low income household for this gas utility. The mechanisms examined are a: (1) lifeline rate, (2) rate discount, (3) lump-sum assistance payment, (4) percentage-of-income plan, (5) waiver of the customer charge, and (6) weatherization program. We will focus on the above hypothetical customer for the month of December.

The hypothetical EA mechanisms are as follows:

1. Lifeline rate

The utility sets a volumetric charge of $5 per Mcf for the first 15 Mcf of gas consumed and $7.50 per Mcf for any additional amount. In our example above, the customer would pay the customer charge of $5 plus $75 for the first 15 Mcf of gas consumed and $37.5 for the last 5 Mcf consumed. The customer's bill would be $117.50, which is 13 percent below the bill without the lifeline rate. For another low-income household who consumes 40 Mcf, under the lifeline rate its bill would slightly increase from $265 to $267.50. Assume that the utility offers the lifeline to any residential customer and that a non-poor customer with a highly energy-efficient condominium used as a second home consumes 15 Mcf. His gas bill would decrease by $22.50 or 22 percent. In this example, the high-income customer benefits the most in terms of the percentage decline in his gas bill.

2. Rate discount

The utility offers a 30 percent reduction in the volumetric charge, which reduces it from $6.50 to $4.55. (It is assumed that the discount applies only to eligible low-income households.) Our customer's December gas bill would fall from $135 to $96, a reduction of almost 30 percent.

With a substantial decrease in the rate, a customer is likely to consume more natural gas. Assuming a short-run price elasticity of demand of -0.2, a 30 percent decrease in the rate translates into a 6 percent increase in energy usage, or 1.2 Mcf. The household would then consume 21.2 Mcf and his bill after the discount would be $101.46, still a large reduction from his undiscounted bill. The elasticity effect results in the rate discount requiring a higher subsidy from general ratepayers compared to a lump-sum payment that yields the same benefit to a low-income household. Assume, as we did above, that the utility offers a 30-percent rate discount (i.e., the volumetric charge decreases from $6.50 to $4.55). The subsidy cost to the utility and non-targeted customers would be $41.34 [($6.50 - $4.55) · 21.2)]. If, instead, the utility charges the full rate of $6.50, the customer would consume 20 Mcf. The decrease in consumer surplus (-ΔCS) to the customer from having to pay the full price instead of the discount rate would equal the sum of: (a) the higher gas bill from consuming 20 Mcf, and (b) the net benefit loss from consuming 20 Mcf instead of 21.2 Mcf. Mathematically, ΔCS = ($6.50 - $4.55) · 20 + ½(21.2 – 20) · ($6.50 - $4.55) = $40.17.

This result, where the recipient's economic welfare increases by the same amount, shows a lower subsidy cost from compensating a low-income household with a lump-sum payment of $40.17 than with offering a rate discount (which costs the utility and the non-targeted customers $41.34). Although the difference, which reflects what economists call a "deadweight loss," seems small (around 3 percent), it illustrates that two EA mechanisms with the same benefits to recipients can have different "subsidy" costs. Studies have estimated the long-run price elasticity of demand for energy to be much higher than the short-run elasticity—as much as four to five times higher. The "deadweight loss," in our example, could be as high as 15 percent over time. What this outcome means is that the same benefits to low-income households would require a 15-percent higher funding by general ratepayers. This example also illustrates the different effects on economic efficiency: The rate discount induces recipients to over-consume in that the additional benefit to them is less than the incremental cost associated with the higher consumption.

3. Lump-sum, bill-assistance payment

The utility offers an eligible low-income household assistance in the form of a $50 refund. In our example, this assistance reduces the customer's portion of the bill to $85. The benefit to the customer corresponds to the subsidy cost incurred by the utility and general ratepayers (assuming no administrative and other implementation costs).

A cash subsidy with no strings attached of less than $50 would produce the same benefit. Assume that a cash subsidy of $35 produces the same benefits to a recipient as $50 in energy in-kind money. The waste associated with the energy assistance relative to the cash assistance is then $15, or 30 percent. It results from customers being allowed under cash assistance to allocate the money to both energy and non-energy goods and services so as to maximize their economic well-being. EA causes households to consume more energy and less of other goods and services compared to a lower-cost cash subsidy yielding the same benefit. One benefit of a lump-sum payment over a rate discount is that it does not give customers price signals encouraging them to over-consume energy.

4. Percentage-of-income plan

With this plan, the eligible low-income customer's gas bill is capped at a specified percentage of his income. In other words, the customer pays a flat amount to the utility that entitles him to continued service. Assume that the customer's monthly income is $800 and that the percentage-of-income plan calls for eligible low-income households not to pay more than 10 percent of their income for natural gas service. In our example, the customer's bill would decrease from $135 to $80, a decrease of 40 percent. The benefits to customers would depend upon both their income and gas bill. Both lower-income customers and customers with higher gas bills benefit the most. This aspect of the mechanism is desirable.

One problem with this mechanism is that the customer pays nothing to consume additional natural gas. In our example, the customer could increase his December gas usage from 20 Mcf without incurring any additional cost. One way to eliminate this "waste" would be to calculate a customer's energy usage in the same month for the previous year and then adjust it for changes in weather, household size, and other relevant factors. For consumption beyond the adjusted usage, the utility would require the customer to pay the standard rate (in our example, $6.50). While this provision might be difficult to administer, it has the benefit of reducing both the cost to subsidizing customers and inefficiency from excessive consumption of energy. Recovery of revenue shortfalls to the utility (i.e., the difference between the energy bill and the bill cap specified by the plan) can come from: (a) other customers, (b) LIHEAP funds and other EA programs, and (c) the revenue surpluses from recipients during off-peak periods (e.g., non-winter periods for gas customers when the percentage-of-income payment exceeds energy bills).

5. Customer-charge waiver

An eligible low-income household would not pay the $5 customer charge. By itself, this would have only a minimal benefit for customers; the customer would still have a bill of $130, or a 3.7 percent savings. As some energy utilities have increased substantially their customer charge to residential customers (e.g., from $5 to $20), a waiver would have a greater effect on reducing energy bills. Until this practice becomes commonplace, a waiver on the customer charge by itself would have only a minimal effect on helping low-income households.

6. Weatherization program

The utility weatherizes the customer's house at no cost and reduces his energy usage by 30 percent. In our example, gas consumption decreases from 20 Mcf to 14 Mcf. The customer saves $39 on his December gas bill ($6.50 · 6 Mcf). The lower bill may allow the customer to pay his full bill without additional assistance. What is particularly attractive about weatherization and other energy-efficiency actions is that after a one-time investment the customer continuously receives benefits over several years. These actions can also benefit the utility and general ratepayers by avoiding costs relating to purchased gas, additional capacity, debt write-offs, collection costs, and other costs related to delinquent accounts. One study

showed that the collection cost incurred by a utility for each customer in arrears averages between $20 and $28 depending on the type of utility.[32]

With the passage of global warming legislation and the inevitable rise in energy prices, weatherization and other energy-efficiency actions will take on greater importance. Many experts consider energy efficiency a low-cost near-term strategy for greenhouse gas mitigation. The commercialization of carbon-constrained technologies such as nuclear power, carbon capture and storage from coal plants, and some forms of renewable energy is not expected for several years. In the interim, energy efficiency can play a key role in meeting carbon dioxide targets, helping low-income households decrease their energy burden, and reducing expenditures for EA funded by utility customers and taxpayers.

[32] *See* American Gas Association, "2002-2004 Credit Collection Data for Energy Utilities," EA 2006-03, February 27, 2006.

Appendix C: Questions for Regulators to Ask about Energy Assistance

1. Are the utility-funded EA actions performing as expected? What should be the effects of EA actions? What benchmark did the regulator establish?

2. How are the utilities responding to low-income households with bill-payment problems? Specifically, how should they treat customers who make a good-faith effort to pay their utility bill but are financially unable to make full payment?

3. Do existing EA actions maximize the benefits to low-income households given the dollars being spent? If not, what are the major reasons?

4. Would a re-shifting of EA monies from some actions to others produce better results?

5. What goals and objectives should underlie EA?

6. What essential attributes should EA actions have?

7. Who should be eligible for EA? Who should determine eligibility? Should financial assets in addition to income be a determinant of eligibility? If so, how should regulators define and determine total financial assets?

8. How much money should a utility and its customers spend on EA? What is the maximum financial effect that should fall on subsidizing customers and utility shareholders? How can regulators minimize this financial effect, assuming a predetermined level of energy assistance?

9. How should regulators define and measure "energy affordability"? What is its relationship to "energy burden"?

10. What role should utilities have in designing, administering, and funding EA?

11. How should utilities coordinate their activities with other entities, such as local community service agencies and private charities, involved with EA?

12. How does EA affect arrearages, disconnections, reconnections, debt write-offs, and collection costs? To what extent would these effects offset the direct subsidies to low-income households?

13. How should regulators define, conceptualize, and measure EA benefits?

14. How can a utility structure and implement EA actions to minimize the impediments of other regulatory objectives? Examples of these objectives are economic efficiency, no undue price discrimination, equity or fairness, energy efficiency, efficient

consumption, and the minimization of waste.

15. What specific EA actions seem most effective in benefiting low-income households?

16. What factors seem to contribute most to poor results?

17. How can a utility structure and implement a portfolio of EA actions to produce the best results?

18. What are the most important factors in getting eligible low-income households to participate in EA programs? Are eligible households, for example, adequately notified of program availability through the dissemination of consumer-education materials?

19. What is the effect of EA on general ratepayers and utility shareholders? How can regulators measure these effects?

20. Do regulators have legal authority to discriminate among customers based on their "ability to pay"?

Appendix D: Examples of Performance Indicators for EA

1. *Participation rate* (e.g., the percentage of eligible households that receive direct bill assistance is 40 percent)

2. *Amount of dollar benefits per EA recipient, by income category* (e.g., the average benefit per recipient for households with an income between $10,000 and $20,000 is $400; between $20,001 and $30,000 the average benefit is $500)

3. *Reduction in the energy burden of recipients, by income category* (e.g., recipients with incomes between $10,000 and $20,000, on average, see their energy burden drop from 15 percent to 8 percent)

4. *Estimated reductions in total utility arrearages, collection costs, debt write-offs, and disconnections attributable to EA actions* (e.g., the decrease in the disconnection rate for eligible low-income households falls by 30 percent and total arrearages decrease by 20 percent)

5. *Estimated changes in household energy consumption, adjusted for weather and other quantifiable factors, attributable to EA actions* (e.g., weatherization of low-income households, on average, reduces energy consumption by 25 percent)

6. *Percentage of funds collected for EA disbursed to recipients* (e.g., the utility collects $5 million from customers, of which $4.5 million or 90 percent benefits low-income recipients)

7. *Percentage reduction in EA recipients' utility bills* (e.g., the average monthly gas bill of recipients without EA is $100; with assistance the recipient pays $40, yielding a 60-percent reduction)

8. *Percentage of EA recipients who make full payments on their subsidized bills* (e.g., 60 percent of PIP recipients fulfill their obligation to pay 10 percent of their incomes toward their electric bill), and *the dollar shortfall of EA recipients* (e.g., the utility collects $5 million from PIP recipients, which is $3 million below what they should pay under program rules)

9. *Percentage change in utility bills of funding customers, after adjusting for reduced utility costs from mitigation of recipient bill-payment problems* (e.g., funding for direct bill assistance is $6 million, reduced costs for bill-payment problems are $4 million, and the utility's total cost allocated to residential customers is $100 million; the bills of residential customers would, therefore, increase by 2 percent)

Appendix E: Evaluating Seven EA Actions by the Nine Criteria

Criterion/EA Action	Modified rate design (MRD)	Rate discount (RDI)	Percentage-of-income plan (PIP)	Bill assistance (BA)	Weatherization and other EE actions (EE)	Cost Waiver (CW)	Billing facilitation (BF)
Benefits only to targeted customers							
Adequate benefits to targeted customers per dollar of subsidy							
Good consumer information and education							
Benefits directly related to customers' energy costs							
Small economic-efficiency losses from improper price signals							
Reasonable administrative and enrollment costs							
Tolerable financial cost per subsidizing customer							
Reductions in collection costs, service disconnections, arrearages, and bad debt							
Promotion of equity							

Energy Affordability Program Design Options

By Jacqueline Berger and David Carroll
APPRISE

More than a dozen states have recently designed and implemented energy-affordability plans that benefit low-income customers. Many others have considered how to best implement new affordability programs. These plans have usually been funded with ratepayer dollars and aim to supplement the state's LIHEAP and other energy assistance programs while minimizing administrative costs.

APPRISE has evaluated several energy-affordability programs and has a comprehensive understanding of potential benefits and drawbacks that may result from different program models. This paper describes options for designing such a program and provides information on the advantages and disadvantages of program models for achieving several program goals.

I. Program Design Options

Many different energy-affordability plan options have been implemented by states and utilities around the nation. These programs differ in terms of administration and eligibility, benefit determination and benefit distribution. This section provides a menu of options for the design of a ratepayer-funded, low-income energy-affordability program. In later sections, we describe advantages and disadvantages of various program models.

- **Program Administration and Eligibility**

One decision to be made in the design is the level to which the ratepayer-funded affordability program is integrated or coordinated with LIHEAP and other state-run assistance programs. We define three levels of coordination.

Integration. One option is to integrate the delivery of LIHEAP and ratepayer-funded benefits. For example, in the New Jersey USF program, both the program application and the benefit determination are integrated with LIHEAP. There is a joint application for LIHEAP and the USF. In the benefit determination, a 3 percent energy burden is targeted for electric and gas service or a 6 percent burden for electric heating service. When calculating the burden, LIHEAP benefits are subtracted from annual energy costs to obtain the net energy costs. The USF benefit is then calculated so that net energy costs are no more than the targeted percentage of income.

Coordination. Another option is known as "presumptive" or "adjunctive" eligibility. Under this approach, individuals who currently receive LIHEAP could be determined to be presumptively eligible for the ratepayer-funded program. That is, they could be given the benefits without submitting a separate application and/or income documentation. This method still allows the ratepayer-funded program to specify a higher income eligibility limit than for LIHEAP, and/or for households to receive the ratepayer-funded program without receiving LIHEAP. These households, however, would be required to complete an application and provide income documentation for the ratepayer-funded program.

Independence. The third option is to have the LIHEAP and ratepayer-funded programs operate independently of one another. They would require separate applications, and benefits for the two programs would be determined independently of one another.

- **Benefit Determination**

Programs that determine the household's benefit level by targeting a particular energy burden must establish a method for calculating or estimating the household's energy costs. Three methods for constructing the costs are using the actual bill, developing an estimated bill or utilizing the average bill.

Actual bill. The New Jersey USF program uses the previous year's annual bill adjusted for expected changes in prices as an estimate of the next year's bill. Utilities send cost data electronically to the state administrator, who then uses those data to calculate the benefit amount.

Estimated bill. Another option is to use an estimated bill. An estimate bill can be based on state-level averages by household size, heating fuel, geography and other demographic characteristics. APPRISE has used Census data to develop average energy costs by fuel, household size and utility type for New York State's LIHEAP office. The office uses these "proxy costs" to develop benefit levels for households who do not provide actual energy bills.

Average bill. A third method is to use the statewide average bill as an estimate of electric costs for all households in the state.

- **Benefit Distribution**

Two different methods for distributing the program benefit are to fix the credit that will be applied to the household's bill or to fix the amount that the household is asked to pay.

Fixed credit. The New Jersey USF program utilizes a fixed credit approach. Under this model, the state calculates the customer's affordability energy burden as 6 percent of income. The difference between this calculated affordable energy cost and the customer's predicted energy costs is the program benefit. The annual benefit is divided by 12 to determine the monthly household credit. Each month, this credit is applied to the household's bill regardless of actual energy usage or energy costs.

Fixed payment. The Philadelphia Gas Works Customer Responsibility Program utilizes a fixed payment approach. Under this approach, the customer's discounted energy charge is calculated as 8, 9 or 10 percent of income, depending on poverty level. This annual charge is divided by 12, and each month the customer is charged this amount. In months where the actual cost is higher, the household is receiving a discount, and in months where the actual cost is lower, the household is receiving a negative discount.

II. Administrative Efficiency

Two important decisions for program administration are the level of coordination between the ratepayer-funded program and LIHEAP and the method that will be used to determine the benefit level.

Program integration can provide benefits by reducing the administrative costs that are associated with the program. When there is one application process for the two programs, there is one less process to implement. The benefits of this approach are apparent when comparing the administrative costs of the New Jersey USF, run by the state LIHEAP administrator, and the Customer Assistance Programs (CAPs), operated independently by each utility in Pennsylvania. Administrative costs of the New Jersey USF are estimated at about 3 percent of program costs, as compared to administrative costs of the Pennsylvania CAPs that averaged 11 percent for electric companies and 5 percent for gas companies in 2005.

While the actual bill may be the preferred method for calculating energy costs, the use of such data can be challenging if data management and data transfer capabilities have not been developed by the

administrator and the utilities. This method requires utility companies to send electronic data on customer costs to the program administrator.

III. Targeting Benefits

Three different methods for benefit determination discussed above were the use of the actual bill, an estimated bill or the state average bill. Use of the actual bill may best target benefits and uniformly reduce energy burden. This method ensures that the greatest benefits are provided to those households with the greatest difference between actual and targeted energy burden. Table 1 shows that this method can reduce energy burdens for households with differing gross energy burdens to a targeted level.

Table 1
Demonstration of Bill Calculation Methods

	Household 1	**Household 2**
Income	$10,000	$10,000
Electric bill	$500	$2000
Gross energy burden	5%	20%
Actual Energy Bill Method		
Targeted 5% burden bill	$500	$500
Benefit	$0	$1,500
Net bill	$500	$500
Net burden	5%	5%
Estimated Energy Bill Method		
Targeted 5% burden bill	$500	$500
Estimated energy costs	$800	$1700
Benefit	$300	$1200
Net bill	$200	$800
Net burden	2%	8%
Average Energy Bill Method		
Targeted 5% burden bill	$500	$500
Estimated energy costs	$1000	$1000
Benefit	$500	$500
Net bill	$0	$1500
Net burden	0%	15%

As stated above, however, there are administrative challenges related to the use of actual energy costs. Therefore, an intermediate level of targeting is to use modeled energy costs as a proxy. Energy costs can be modeled with various levels of precision depending on the household demographic data that are

collected as part of the application process. This method is administratively less complex, but it does not provide benefits that are as accurately targeted to energy burden level.

Table 1 assumes that this method will somewhat overpredict energy costs for the low-cost household and somewhat underpredict energy costs for the high-cost household. As a result, the low-cost household has a net energy burden of 2 percent after receiving program benefits, and the high-cost customer has a net energy burden of 8 percent after receiving program benefits.

The simplest approach is the use of a state level average electric cost to calculate the household's gross energy burden. However, this method will not do a good job of targeting benefits to households with higher need. Table 1 shows that this method would result in a net energy burden of 0 percent for the low-cost household and a net energy burden of 15 percent for the high-cost household. This method, therefore, may not do a good job of providing affordable energy bills for households with the greatest costs and the greatest need for assistance.

IV. Usage Reduction Incentives

The various program models that were described above will have different implications for household usage reduction incentives.

- **Benefit Determination**

The previous section showed how the use of the household's actual bill provides greater benefits and more equalized energy burdens for households with higher energy usage. It can be argued that this method "rewards" households who do not work hard to conserve energy, as households who used more energy in the past year will receive greater benefits in the following year. However, energy usage relates to individual household circumstances and individual household need, as well as to energy conservation behavior. For example, a household with a medically necessary device, an old home in poor condition or a household with many members would be expected to use more energy. Therefore, use of the actual bill also provides greater benefits to those households with the greatest need.

Use of an estimated bill would adjust for some differences in need that relate to household size, geography or other factors that may be incorporated into the model. However, it would not adjust for other specific household differences that cannot be incorporated into the model. The use of an estimated bill would reward households who have lower than average energy consumption given their household characteristics.

- **Benefit Distribution**

The fixed credit and fixed payment models also have different implications for usage reduction incentives. The fixed credit model provides a benefit level that is not dependent on current energy usage. Regardless of the household's actual energy usage, the same benefit will be applied to the customer's bill each month. As a result, this method does provide incentives for energy conservation. However, this model does not provide protection for factors that are outside the household's control. If there is an especially cold winter or there is an increase in household size, there will not be an increase in program benefits, despite the increase in need.

The fixed payment model provides the household with a fixed payment level that does not vary with usage. Therefore, this type of benefit provides additional protection for the client. Previous studies have shown that the fixed payment model does not lead to increased energy usage. The one exception is where the customer's heating fuel is not subsidized. Without a corresponding benefit for the household's

heating source, this method can lead the customer to use electric heat instead of the primary heating source, if the other heating fuel becomes unaffordable. This phenomenon has been observed in programs that have a fixed payment program for electricity but no comparable benefit for the heating fuel.

V. Program Linkages

There are many potential program linkages that can provide benefits to the ratepayer-funded program participants, including LIHEAP, usage reduction programs and other social assistance programs.

- **Linkage to LIHEAP**

The New Jersey USF program provides an example for how the ratepayer-funded energy assistance program can be linked to LIHEAP. This linkage can provide advantages for targeting and benefit distribution. If the ratepayer program ignores LIHEAP benefits, customers who receive LIHEAP will pay considerably less than the targeted percentage of income. If the ratepayer program assumes that LIHEAP benefits will be received, customers who fail to apply for LIHEAP will pay considerably more than the targeted percentage of income.

- **Linkage to Usage Reduction Programs**

There are benefits to linking the ratepayer-funded energy assistance program with usage reduction programs. To the extent that the ratepayer subsidy is dependent on the household's actual energy usage, the linkage will provide benefits to ratepayers by reducing the subsidy that the household receives. To the extent that the subsidy level is fixed, the usage reduction program will provide further assurance that the household's bill is affordable.

- **Linkages to Other Assistance Programs**

Linkages of the payment assistance program to other social services can ensure that eligible and needy households receive program benefits. In New Jersey, for example, households who apply for food stamps automatically are screened for the USF program. This linkage requires that the other program application collect all of the information necessary for the payment program application. There are many other social assistance programs that also could serve as an entry point for the ratepayer-funded payment assistance program.

VI. Summary

This paper reviewed program design options and the implications of these different options for administrative efficiency, benefit determination and usage reduction incentives.

Administrative efficiency. Integration with LIHEAP can reduce program costs. There may be administrative challenges to using the household's actual bill to calculate program benefits.

Benefit determination. Use of actual bills ensures that the greatest benefits are provided to those households with the greatest difference between actual and targeted energy burden. However, use of actual bills "rewards" households with greater energy usage. Use of estimated bills does not target benefits as well to those with the greatest energy burdens, but does provide incentives for reduced energy usage.

Benefit distribution. The fixed credit model provides the same benefit regardless of customer usage, and therefore provides an incentive for usage reduction. However, it does not provide protection for the

customer against changes in energy bills. The fixed payment model provides the same payment regardless of customer usage, and does not provide an incentive for usage reduction. However, this method does protect the customer against changes in energy costs.

The report also explored the benefits that could accrue from linking the program with other low-income programs. These benefits included reduced costs, more accurate calculation of household need when LIHEAP is taken into account, and the enrollment of needy households through linkage with other social programs.

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MISSOURI LIHEAP FACTS:

CAMPAIGN FOR HOME ENERGY ASSISTANCE

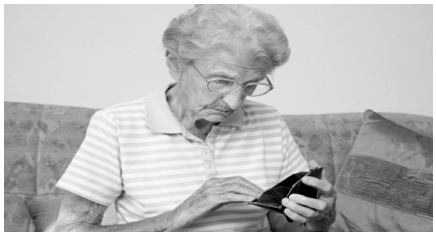
NUMBER SERVED: In 2011, MO LIHEAP provided **roughly 174,000 households with LIHEAP financial assistance** (There are 684,000 eligible households in the state).

ELIGIBILITY: MO families receiving LIHEAP assistance have incomes below 135 percent of the federal poverty level. The majority falls well below the cap.

Under 75%	**56%**
75% - 100 %	**31%**
101% - 125%	**12%**

DEMOGRAPHIC: *MO LIHEAP helps the most vulnerable:*

Elderly	**22%**
Disabled	**33%**
Children under 5	**21%**



AVERAGE AWARD: Average MO household assistance benefit was $199 in 2011. Nationally, the average benefit covered only 8% of household energy bills.

Source: *LIHEAP Energy Notebook, FY08*
National Energy Assistance Directors Association

FEDERAL POVERTY GUIDELINES: LIHEAP FAMILY OF FOUR:

100%	125%	150%
$22,050	**$27,563**	**$33,075**

MISSOURI FUNDING:

The President recommended cutting the LIHEAP program from the authorized $5.1 billion to $3 billion in FY2013. This request falls short of demand and would reduce the amount of funding and households served in the state.

Fiscal Year	Base	Contingency	Total	Missouri Allocation	Households Served
2013 (President)	$2.82 b	$200 m	$3.02 b	$55.3 m	TBD
2012	$3.47 b	$0	$3.47 b	$68.2 m	TBD
2011	$4.51 b	$200 m	$4.71 b	$100.2 m	173,952
2010	$4.5 b	$590 m	$5.1 b	$107.1 m	165,669
2009	$4.5 b	$590 m	$5.1 b	$115 m	147,000

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