The Iowa Policy Project
20 E. Market Street • Iowa City, Iowa 52245 • (319) 338-0773
www.IowaPolicyProject.org

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Making Residential Energy Efficiency Accessible to Low-Income Iowans

By Teresa Galluzzo and Beth Pearson

Although making homes more energy efficient is one of the best ways to reduce Iowa's energy consumption, energy efficiency improvements are a luxury for most low-income Iowa families. Low-income Iowans live in the state's most inefficient housing and struggle with high home energy bills that strain household budgets. This analysis examines how energy efficiency investments can reduce low-income Iowans' energy consumption and utility bills, and highlights ways to improve existing energy efficiency programs so they are more accessible to low-income households.

There are several program avenues for improving home energy efficiency in Iowa. Weatherization programs for low-income homes help Iowa families make important energy efficiency improvements and simultaneously cut the state's greenhouse gas emissions and lower home energy bills. However, the existing Weatherization Assistance Program does not reach all low-income Iowans who would benefit from energy efficiency improvements. Federal tax credits for energy efficiency measures created through the American Recovery and Reinvestment Act will encourage energy efficient improvements, but they do not benefit low-income taxpayers who pay little or no federal income tax. Further, energy efficiency programs run by Iowa's utilities offer financial incentives to encourage energy conservation behavior, but the utilities' programs are unevenly regulated and under-utilized by low-income Iowans.

Comprehensive, innovative and accessible energy efficiency programs are an essential component of policy changes to address climate change. This analysis includes several recommendations for ways to improve existing energy efficiency programs and develop new programs that are accessible to low-income Iowans. However, energy efficiency alone will not ensure that low-income Iowans are protected from the impacts of climate change or climate change policy that will fall more heavily on them. As a result, this analysis concludes with a discussion of how a national climate change policy that limits greenhouse emissions must also meet the needs of low-income Iowans by including additional assistance.

Low-Income Iowans Need Energy Efficiency

Residential energy usage in Iowa is a key contributor to climate change. In 2005, Iowa's residential sector was responsible for 14 percent of the state's overall greenhouse gas emissions.[1] Projections developed by the Iowa Climate Change

Table 1. Residential Sector Responsible for 14 Percent of Iowa Greenhouse Gas Emissions, 2005

	1990	2000	2005	2010	2020	2025
	(in millions of metric tons of CO_2 equivalent)					
Residential Sector*	14.8	16.5	16.7	16.9	18.1	19.2
Gross Emissions**	97.3	114.2	119.5	124.4	139.1	147.9
Residential Share of Total Emissions	15.2%	14.5%	14.0%	13.6%	13.0%	13.0%

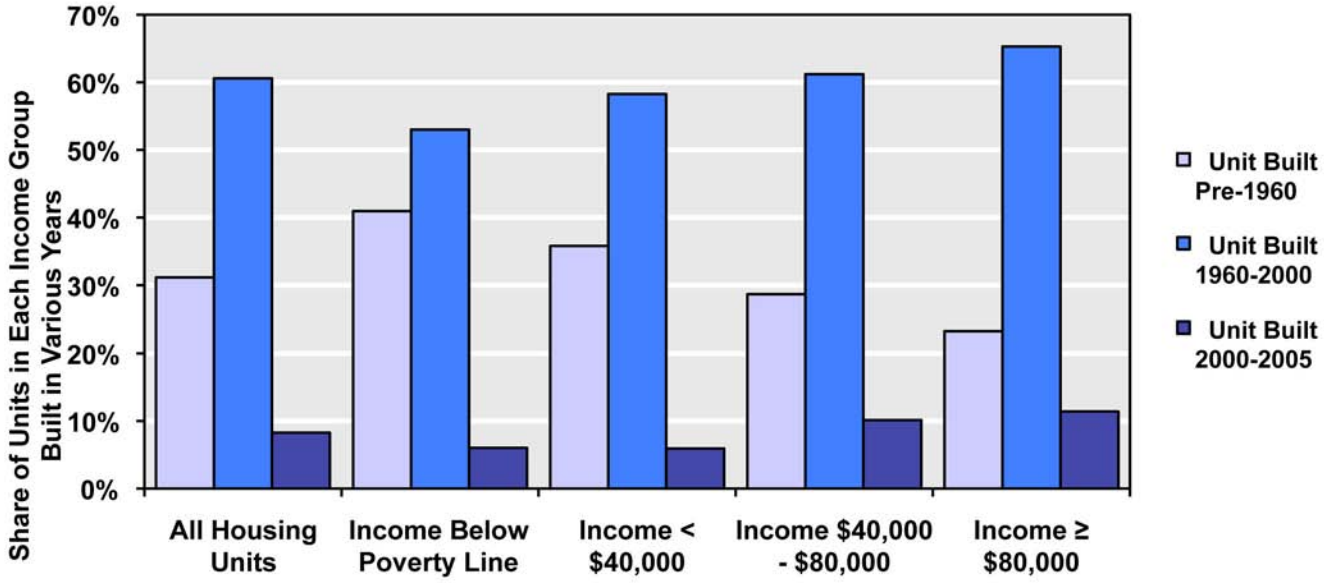
**Residential sector emissions include emissions from electricity and direct fossil fuel use.*
***Consumption basis, excludes carbon sinks*

Source: Center for Climate Strategies, October 2008

Advisory Council show that emissions from residential energy use in Iowa will climb from 16.7 $MmtCO_2e$ (million metric tons of carbon dioxide equivalent) to 19.2 $MmtCO_2e$ by 2025, assuming no action is taken to reduce these emissions.

Emissions patterns differ by income level in Iowa. Low-income households use less energy *per household* than do higher-income households, in part because higher-income households are more likely to live in larger houses. However, because they have inefficient appliances and tend to live in older, less energy-efficient houses, low-income households tend to have higher energy consumption *per square foot* than do higher-income households.[2]

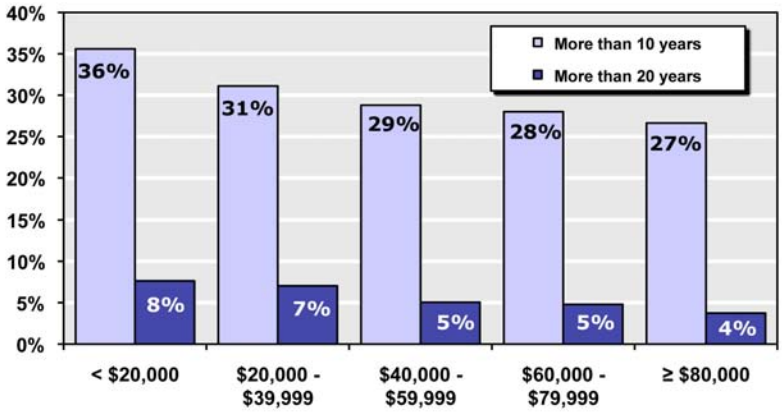
Figure 1. Low-Income Households More Likely than Others to Live in Old Homes



Source: Energy Information Administration, 2005 Residential Energy Consumption Survey, Table HC7.1

Nationally, low-income people are more likely than upper-income people to live in houses built before 1960 (see Figure 1). Older housing units are also more likely than newer units to have problems such as crumbling or cracked foundation, holes in the floor, siding disrepair or broken windows.[3] Such problems in the physical structure of a house are key contributors to energy inefficiency.

Figure 2. Low-Income Households More Likely to Have Older Refrigerators

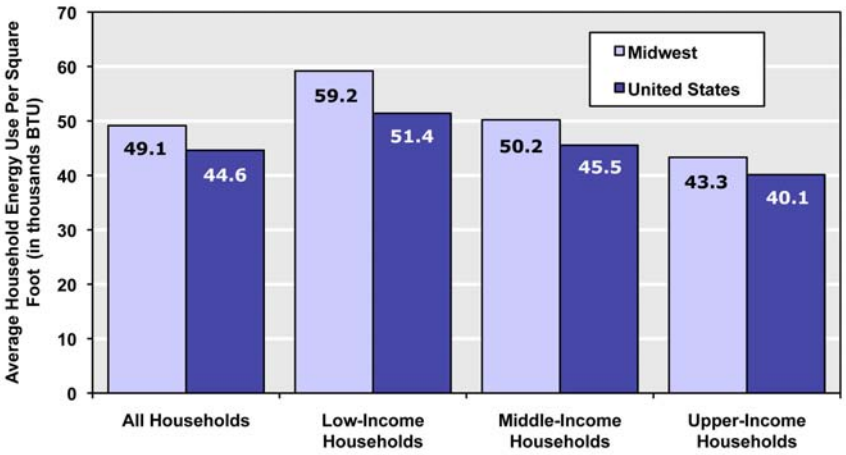


Source: Table HC7.9, Home Appliances Characteristics by Household Income, 2005 Residential Energy Consumption Survey

Low-income households are also more likely than average households to have older appliances, meaning they have not benefited from the large gains in appliance efficiency during the past several decades. For instance, Figure 2 shows 36 percent of households with incomes below $20,000 have a refrigerator more than 10 years old, compared to only 27 percent of households with incomes above $80,000. Low-income households are twice as likely as upper-income households to have a refrigerator more than 20 years old.

Inefficient appliances coupled with older homes, perhaps in need of structural repair, means that the homes of low-income residents are far less energy-efficient than homes occupied by upper-income households. In fact, low-income homes in the Midwest — which tend to be older and larger than houses in other regions — are the least energy-efficient in the nation, using 15 percent more energy per square foot than the national average for low-income homes. Further, low-income Midwestern homes use 20 percent more energy per square foot than the average Midwestern home (Figure 3).[4] Analysis by the Energy Programs Consortium also estimates that the 20 percent of Iowa households with the lowest incomes are responsible for about 33 percent of the state's carbon emissions associated with residential energy usage.[5]

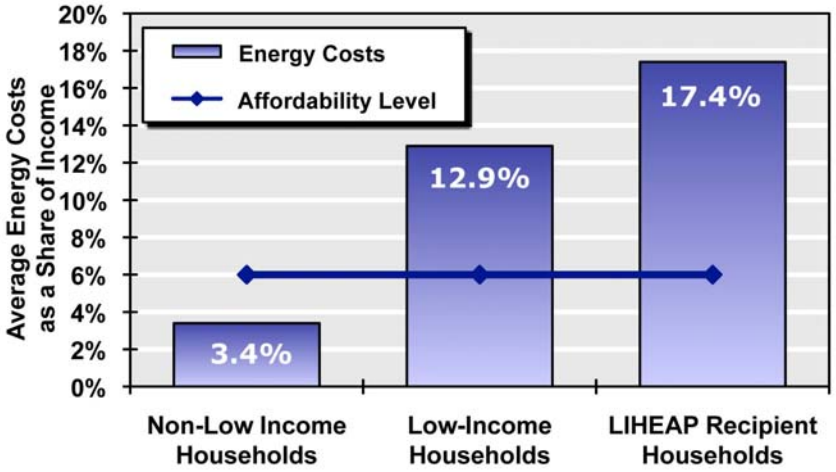
Figure 3. Low-Income Homes in Midwest Least Efficient in Nation



Source: Energy Programs Consortium analysis of 2001 RECS data

These combined home energy inefficiencies also exacerbate the home energy cost burden for low-income households. As Figure 4 shows, low-income households in the Midwest spend on average about 13 percent of their entire incomes on home energy costs, compared to 3 percent for non low-income households.[6] In other words, home energy costs as a share of income for an average low-income household are nearly four times the costs as a share of income for a non low-income household. Low-income households that receive LIHEAP (Low-Income Home Energy Assistance Program) assistance are those most in need of help paying their utility bills, and this group spends even more of their incomes on home energy, with costs representing more than 17 percent of their budgets.[7] An "affordable burden" for home energy bills is commonly defined as 6 percent of gross household income,[8] meaning that the home energy burden for average low-income households is two times greater than what is actually considered affordable. For LIHEAP recipient households, the home energy burden is nearly three times what is affordable.

Figure 4. Home Energy Burden for Low-Income Households Four Times Burden for Non Low-Income Households in Midwest



Source: Data for Midwest households reported in LIHEAP Home Energy Notebook for FY2007, Table A-3b

Home energy has become increasingly unaffordable for low-income Iowans.[9] The average annual energy bill in Iowa during 2008 was $2,066[10] while the average 2008 LIHEAP payment was only $390.[11] As a result, low-income Iowans are left with a high energy bill and a strong incentive to reduce energy costs, but without the means to invest in measures to do so.

Responding to the growing home energy affordability gap

requires that more be done with *both* LIHEAP assistance and residential energy efficiency. Targeted investments in energy efficiency can reduce energy consumption needs, but meaningful LIHEAP payments are a necessary complement to these steps because they combine with efficiency measures to help reduce home energy costs to affordable levels. These changes are urgent, given that the gap between affordable and actual energy costs is likely to increase over the next decade as effective climate policy will likely increase the cost of fossil fuel based energy in the course of reducing greenhouse gas emissions.

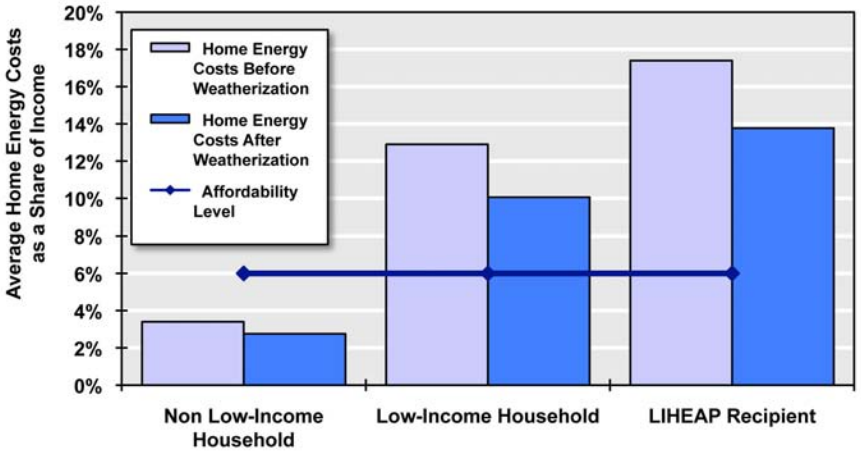
Low-Income Iowans Struggle to Access Energy Efficiency Measures

When low-income Iowans are able to access energy efficiency measures, their energy consumption dramatically decreases. This relieves pressure on household budgets because, as energy bills are reduced, LIHEAP payments cover more of the total cost of home heating and cooling. However, the high cost of efficiency measures, as well as gaps in the programs designed to encourage their installation, limit their accessibility. While Iowa's Weatherization Assistance Program (WAP) is highly successful at reducing home energy costs for low-income Iowans, it is not designed to meet the immediate energy efficiency needs of all low-income Iowans. Federal tax credits for energy efficiency, which were part of federal stimulus legislation, also fall short when it comes to making energy efficiency improvements accessible to low-income households. Iowa's utility energy efficiency programs do not adequately address the barriers that low-income households face. Each of these is described in turn below.

Weatherization Assistance Program Does Not Meet Tremendous Demand

The Weatherization Assistance Program (WAP) is a federal grant program designed to reduce home energy costs for low-income households by improving their homes' energy efficiency. On average, efficiency measures produced annual savings of $388 for each household participating in the Iowa program in 2007.[12] While energy efficiency savings do not entirely eliminate the home energy affordability gap for low-income Iowa households, they do significantly reduce its impact with long-term benefits (Figure 5). As Figure 5 demonstrates, the benefits of $388 in savings from WAP are largest for the lowest-income households; for LIHEAP recipient households, these savings are equivalent to almost 4 percent of annual income. These investments represent long-term improvements that reduce energy burdens for low-income households while decreasing statewide fuel consumption and carbon emissions. At the same time, Figure 6 underscores the need for adequate LIHEAP funding to help families pair energy-efficiency investments with other assistance that makes their energy costs more affordable overall.

Figure 5. Weatherization Assistance Program Savings Can Substantially Reduce Home Energy Burden



Source: IPP calculations based on Midwestern data from LIHEAP Notebook FY2007, Table A-3b and Dalhoff Associates 2009

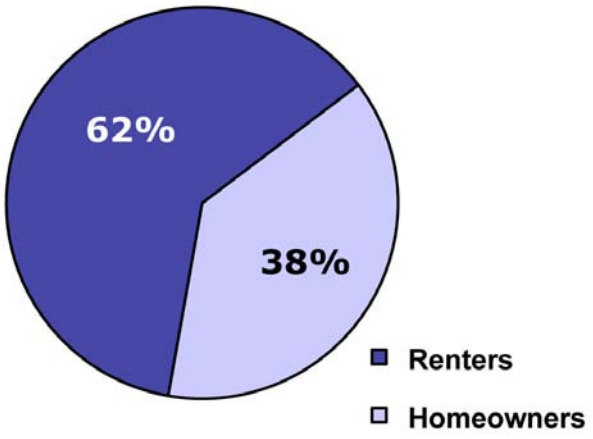
Although the Weatherization Assistance Program is highly effective at reducing energy consumption and lowering utility bills for low-income Iowans, the program ideally should be one of several vehicles for delivering energy efficiency benefits to low-income households. Iowa's WAP weatherizes just over 2,000 homes each year with its regular funding

from the state, the U. S. Department of Energy, and Iowa's regulated utilities. In addition to continuing this annual total of weatherized homes, the WAP expects to weatherize an additional 7,000 homes over the next three years as a result of the program's expansion through federal ARRA dollars.[13] However, as of 2009, the Iowa Bureau of Weatherization estimates that an additional 165,206 eligible homes remain in need of weatherization, which is more than the entire stock of homes that have been weatherized during the program's 29-year existence.[14] In the shorter term, these households need to be able to access energy efficiency options that go beyond weatherization assistance.

Other factors suggest the WAP should not be the sole vehicle to deliver energy efficiency benefits to low-income families in Iowa. Because federal law requires that WAP funds be spent almost exclusively on direct energy-savings expenditures, the WAP program often cannot serve families in homes needing major repairs for structural deficiencies that prevent successful weatherization. For example, if a home does not have sufficient integrity in its roof structure, building shell, doors, windows, living space, electrical system, or plumbing system, WAP crews cannot work on the property until these structural defects are repaired. While programs such as Iowa's that leverage utility funding in addition to Department of Energy funding have more flexibility, they remain largely unable to make major efficiency investments in homes that need major repairs. This is understandable, since the goal of the Weatherization Assistance Program is to help low-income families invest in energy efficiency improvements only where those improvements can be effectively and safely installed. Major structural problems compromise the efficacy and safety of the energy efficiency investment.

Although landlords are permitted to access the Weatherization Assistance Program, the majority of low-income clients served by the WAP are homeowners. This is significant since nearly half (46 percent) of housing units in Iowa whose occupants have incomes below $35,000 are renter-occupied,[15] and Iowans living below the federal poverty level are more likely to be renters than homeowners (Figure 6).[16] Nonetheless, during FY2008, only 12 percent of homes weatherized by Iowa's WAP were occupied by renters.[17] Under current program rules, it makes sense that few rental units are weatherized, because most landowners don't pay for utilities and thus do not have the incentive to spend money or time weatherizing their properties. The WAP will work with landlords to weatherize rental homes, although federal rules for the program prohibit rent increases associated with weatherization improvements. Further, written permission from a landlord must be obtained before a rented home is eligible for WAP services.

Figure 6. Iowans Living in Poverty More Likely To Be Renters than Homeowners



Source: 2005-2007 American Community Survey Three-Year Estimates

Finally, it is important to note that many Iowans who need help overcoming the upfront cost barriers associated with energy efficiency investments will be ineligible for WAP because of the program's income eligibility threshold. Households receiving Supplemental Security Income benefits or participating in the Family Investment Program in Iowa are eligible for WAP services regardless of income, but eligibility is otherwise restricted to households with incomes below 200 percent of the federal poverty level (FPL).[18] For 2009, 200 percent of the FPL for a one-person household was $21,660, and even a three-person household must have an income below $36,620 to qualify for the Weatherization Assistance Program.

Many improvements producing the most energy savings also have the highest upfront costs. Such improvements remain out of reach for Iowans just above WAP income eligibility thresholds. The WAP evaluation finds the greatest energy savings (measured in kWh for electricity savings and therms for gas savings) from removing or exchanging a refrigerator or freezer, and installing compact fluorescent light bulbs, insulation and high-efficiency heating. Table 2 shows the cost of various weatherization improvements, as well as average annual energy and bill savings for WAP clients.

Table 2. Efficiency Improvements with Biggest Savings Often More Expensive

Energy Efficiency Measure	Cost	Avg Annual Electricity Savings (kWh)	Avg Annual Elec Bill Savings	Avg Ann Gas Savings (therms conv to kWh)	Average Annual Gas Bill Savings
Efficient Aerator	$4	71	$7	88	$8
DHW Pipe Insulation	$5	59	$6	88	$8
Efficient Showerhead	$10	242	$23	234	$22
Remove Freezer	$33	672	$63	--	--
Remove Refrigerator	$37	684	$65	--	--
Compact Fluorescent Bulbs	$54	368	$35	--	--
Bandjoist Insulation	$118	148	$14	176	$17
Infiltration Reduction	$35	395	$37	527	$50
Exchange Freezer	$712	762	$72	--	--
Floor/Crawlspace Insulation	$587	137	$13	674	$64
Exchange Refrigerator	$712	703	$66	--	--
Standard Efficiency Water Heater	$759	43	$4	762	$72
High Efficiency Water Heater	$898	175	$17	1,084	$102
Ceiling/Attic Insulation	$974	307	$29	2,403	$227
Wall Insulation	$1,228	251	$24	2,842	$268
Std Efficiency Heating System	$1,997	--	--	2,168	$205
High Efficiency Heating System	$2,498	--	--	3,868	$365

Sources: Cost (in 2008 dollars) and savings data from IPP analysis of Dalhoff Associates 2009.
Average annual savings based on Energy Information Administration's 2008 price per kilowatt hour to Iowa residential customers of $0.975.

These improvements can amount to a substantial portion of annual income for households living below 200 percent of poverty. For instance, installing new ceiling, floor and wall insulation can cost over $2,000, which is equivalent to about 7 percent of the income of an eligible 3-person household. These investments can pay for themselves in four years. Compact fluorescent light bulbs produce a high return of energy savings and cost only about $50 to install throughout a home. The Weatherization Assistance Program's average expenditure per household during 2008 was $7,336, which amounts to just over 20 percent of an eligible family's income. For families living *just above* 200 percent of the federal poverty level, these retrofits would require nearly as much of their annual income and would thus be too costly for them to undertake. These folks are not eligible for WAP and yet very likely unable to make efficiency improvements without assistance.

The Weatherization Assistance Program's effectiveness underlines the strides that can be made in energy efficiency and cost savings when low-income families are able to take advantage of home energy improvements. At the same time, the program should not be the only mechanism in place for low-income families in Iowa to increase their residential energy efficiency. More Iowans need access to energy efficiency improvements than can be reached in the short term through WAP, and some low-income households may not be likely candidates for WAP, given the structural condition of their homes.

Other households are simply ineligible for the program, even though they cannot afford major energy efficiency investments without assistance.

Federal Tax Credits No Benefit to Low-Income Households that Do Not Pay Income Tax

Federal tax credits for energy efficiency were included in the American Recovery and Reinvestment Act and offer a credit of 30 percent of the cost of certain energy efficiency improvements, up to $1,500.[19] However, these credits are non-refundable, meaning that while they can reduce a taxpayer's income-tax liability, they will not result in refund checks if the tax credit exceeds income tax liability. Most low-income Iowans pay no federal income tax, which means that they cannot benefit from these credits. For instance, a married couple with one child would have to be earning more than $36,000 a year to pay any federal income tax (see Table 3 for 2009 federal income-tax thresholds).[20] As a result, these tax credits for energy efficiency primarily benefit upper-income taxpayers.

Table 3. Where Efficiency Credits Start to Help

	2009 Federal Income Tax Thresholds
Single Individuals*	$9,350
Married couples	
No Children	$18,700
One Child	$36,184
Two Children	$44,900
Three Children	$55,217
Heads of Households	
One Child	$31,026
Two Children	$38,765
Three Children	$46,933

*If not eligible for EITC

Source: Congressional Research Service 2009

Falling Through the Gap

Consider a single parent with one child and an annual income of $30,000. This family pays no federal income tax, so cannot benefit from new federal tax credits for energy efficiency. The family also is ineligible for LIHEAP or WAP because their income is too high (the WAP threshold of 200 percent of poverty for a two-person household is $29,140). Yet, a comprehensive retrofit of this family's home could cost as much as 23 percent of their annual income. Although these energy efficiency improvements will pay for themselves over time, the family does not have the discretionary income to invest in these measures without assistance. Rebates and low-interest loans for energy improvements — offered by some of Iowa's utilities to families who qualify — can help, but gaps clearly exist in programs that are designed to make energy efficiency investments accessible to households with limited incomes.

Utility Energy Efficiency Programs Also Have Gaps

Iowa's utility companies also offer programs that encourage energy efficiency through financial incentives. Designing these programs so that they are more accessible to low-income consumers would greatly enhance their ability to help reduce residential energy usage in Iowa and lower energy bills and would complement the efforts that take place through the Weatherization Assistance Program.

State law treats different kinds of utility companies differently in requirements for energy efficiency. Rate-regulated, investor-owned utilities (IOUs) must develop formal energy efficiency plans that can be contested by various interests and require approval by the Iowa Utilities Board. Plans must target help to low-income customers:

> *Gas and electric utilities required to be rate-regulated under this chapter shall file energy efficiency plans with the [Iowa Utilities Board]….. The plans shall include programs for*

> *qualified low-income persons including a cooperative program with any community action agency within the utility's service area to implement countywide or communitywide energy efficiency programs for qualified low-income persons.*[21]

Three investor-owned utilities operate in Iowa: Alliant Energy, MidAmerican Energy and Black Hills Energy. These utilities fulfill their state mandate to target low-income consumers with energy efficiency programs by helping to fund the Weatherization Assistance Program.

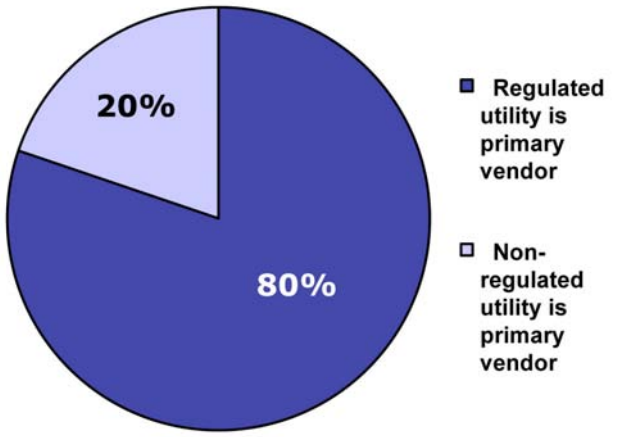
In 2006, Iowa's investor-owned utilities spent 3.36 percent of electric revenues and 2.8 percent of gas revenues on general energy efficiency programs. The IOUs pay for their energy efficiency programs by recovering costs through an automatic rate pass-through, which is reconciled annually.[22] So although the cost of the efficiency programs does not show up on customers' bills, all customers pay for these programs.

Iowa also is served by numerous smaller, consumer-owned utilities (COUs), a group that includes rural electric cooperatives and municipal utilities. State law also requires that COUs provide energy efficiency programs for their customers and that they submit these plans to the Iowa Utilities Board, but, unlike the IOUs, the Utilities Board does not have authority to modify or approve the plans. Consumer-owned utilities are also not required to target low-income households with specific energy efficiency initiatives.

Differences in regulation have led to differences in energy efficiency outcomes between types of utilities. A 2008 assessment of utility energy efficiency programs in Iowa conducted by the Iowa Utilities Board concluded that "[i]nvestor-owned utilities have achieved better results than the electric cooperatives and municipals, in terms of both incremental electrical and natural gas energy savings and cumulative energy savings."[23] The report recommends requiring all utilities in Iowa to comply with the same mandated approval process for energy efficiency plans that now governs investor-owned utilities.

In addition, because each utility may design its own energy efficiency plan, absent any minimum guidelines from utilities board as to what a program must include, there are differences not only between investor-owned and consumer-owned utility offerings but also among programs offered. For instance, each of Iowa's three investor-owned utilities offers a different rebate program for appliance purchases and home improvements, with rebates that vary by the types of appliances or home improvements that are covered as well as by the dollar amount of rebate.

Figure 7. Utilities' Energy Efficiency Plans Not Regulated for 1 in 5 Low-Income Households



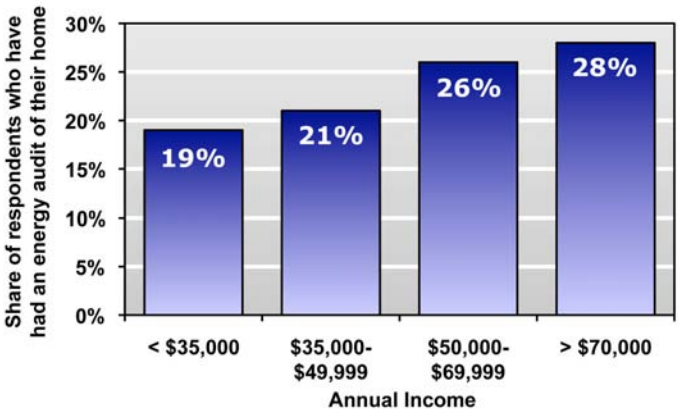
Source: Bureau of Energy Assistance database of FY2009 LIHEAP recipient households in Iowa

Such uneven regulation of utility energy efficiency programs means that not all consumers, including low-income consumers, have access to the same energy efficiency opportunities.[24] Investor-owned utilities account for three-quarters of electricity sales in Iowa (measured in kWh) and serve 72 percent of residential customers in the state, municipal electric utilities and rural electric cooperatives account for the remainder.[25] Analysis of LIHEAP recipient data in Iowa shows the distribution of households receiving energy assistance is similar, with investor-owned utilities serving as the primary vendor for approximately 80 percent of LIHEAP recipients (Figure 7).[26] This means that one in five

low-income households in Iowa does not have an investor-owned utility as its primary vendor and therefore does not have access to the regulated energy efficiency programs that these utilities must provide.[27]

Low-income Iowans are in fact less likely to access utility energy efficiency programs than are higher-income households. The first step in making residential energy efficiency improvements is conducting an energy audit of a house, which helps diagnose energy losses and identify the potential for energy savings. Iowa's IOUs offer free residential audits, but some of the COUs do not offer any audit at all.[28] According to the 2007 Iowa Residential Energy Survey, only 19 percent of Iowans with annual incomes below $35,000 have had an energy audit of their home, compared to 28 percent of Iowans with annual incomes above $70,000 (Figure 8).

Figure 8. Low-Income Iowans Less Likely to Receive an Energy Audit

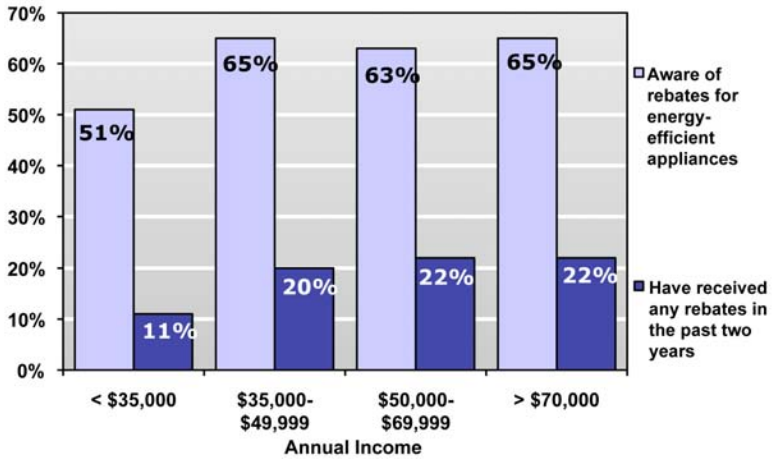


Another major energy efficiency initiative offered by many utilities — including all three of the investor-owned utilities — is an appliance rebate program. By reimbursing customers for a portion of the cost of an energy-efficient appliance, rebates make these purchases more attractive. However, this structure is less effective at encouraging low-income consumers to purchase energy-efficient appliances than it is for higher-income consumers.

To begin with, low-income households may be less aware of the types of appliance purchases that are rewarded by utility rebate programs. According to the 2007 Iowa Residential Energy Survey, only one-third of respondents with incomes below $25,000 had heard of the ENERGY STAR designation for efficient appliances, compared to two-thirds of respondents with incomes above $70,000.[29] In addition, rebates may not reduce the cost of an appliance enough to make them affordable for low-income households. While rebates make an energy-efficient appliance *competitive* with cheaper, less-efficient appliances, they do not necessarily make either option *affordable* for a low-income household.

These gaps in access to rebate programs are again born out by data from the 2007 Iowa Residential Energy Survey; about half of low-income Iowans have heard of rebate programs for appliances, but only 11 percent of these households have received a rebate in the past two years (Figure 9). Iowans with annual incomes below $35,000 were half as likely as Iowans with incomes above $50,000 to have received these rebates. Another cause of this lower rate of rebate usage may be the fact that, since low-income Iowans are substantially more likely to be renters than homeowners, they may not be responsible for appliance purchase decisions and may rely on landlords to apply for rebate programs. Often landlords do not pay the utility bills and so do not have the incentive to pay more for efficient appliances from which they

Figure 9. Low-Income Iowans Half as Likely to Receive Energy Rebates



will not recoup their extra investment. Despite these shortcomings, energy efficiency rebate programs are more accessible to low-income families than are non-refundable tax credits.

Rebate programs could be an effective vehicle for increasing access to energy-efficiency appliances for low-income households if they were improved two additional ways. They could be expanded to allow low-income families to receive larger rebates. And the program could be changed so that rebates could be redeemed at time of purchase. This is important because low-income households may not have the wherewithal to put up the extra cash at time of purchase and wait for the rebate check to arrive.

Energy Efficiency One Piece of Solution

Making sure that low-income Iowans have access to residential energy efficiency improvements is a key part of meeting greenhouse gas reduction goals as well as enabling all households to reap the benefits of efficiency improvements. The U.S. Congress recently considered climate change policy proposals that would encourage energy efficiency — as well as renewable energy — by putting a price on greenhouse gas emissions. Discouraging emissions by making them more expensive is a good way to get governments, firms and households alike to alter their energy consumption behavior in ways that will reduce the harmful effects of greenhouse gases. However, the fossil fuel based energy price increases that would occur as a result of effective climate policy would have a disproportionate impact on low-income Iowans, and greater access to residential energy efficiency improvements will not be sufficient to fully offset these costs. In fact, under a generic policy that puts a price on carbon, increases in home energy costs will account for only a little over a third of the resulting price increases.[30] Thus, improving access to residential energy efficiency programs for low-income Iowa households can and must be complemented by additional mechanisms in climate change policy that will deliver meaningful direct assistance to low-income households.

Conclusion and Recommendations

Low-income Iowans with access to residential energy efficiency opportunities can reduce their home energy bills and help lower Iowa's greenhouse gas emissions. Although energy efficiency cannot be the only solution that helps low-income Iowans respond to the dangers of unmitigated climate change — or to the higher prices that are a necessary component of our transition to a clean economy — it is an important one. Iowa's longstanding leadership in and energy efficiency can be a platform for expanding efforts to develop innovative energy efficiency initiatives that reach low-income Iowa households. Below are some recommendations:

First, continuing to fund **LIHEAP assistance remains an important part of making energy affordable** for low-income Iowa households.

Second, **the Weatherization Assistance Program can greatly reduce low-income Iowans' home energy use and costs** for years to come. But more funding and other programs are needed to reach the large number of families that would benefit from increased energy efficiency.

Third, future **tax credits that encourage energy efficiency should be structured so low-income Iowans can take advantage of them**. This would mean making the credit refundable so a low-income Iowan would be able to claim the benefits even if they do not pay income taxes.

Fourth, Iowa should **require all utilities, including consumer-owned utilities, to participate in state-regulated energy efficiency plans that mandate the development of programs targeted toward low-income populations in Iowa.** Iowa utilities with publicly regulated energy efficiency plans have proven more effective at delivering energy efficiency benefits to Iowa consumers than utilities whose plans are

not regulated by the Iowa Utilities Board. While the Weatherization Assistance Program reaches low-income households across the state, other energy efficiency benefits are not as accessible to low-income families. Iowa's utilities should also be encouraged to evaluate the success of their energy efficiency programs with attention to how outcomes vary across income groups. Little analysis is now done to assess whether programs are being accessed by households of different income levels, and this information could be an important tool in helping redesign or expand programs.

Fifth, Iowa's utility-run energy efficiency programs could be improved by the **creation of minimum standards for energy efficiency plans**. Current energy efficiency programs create a patchwork of inconsistent benefits that afford different customers with different opportunities. Minimum standards would mean that all customers, regardless of service area, could access a comprehensive, free energy audit and minimum rebate levels for lighting, appliance, and insulation improvements.

Sixth, Iowa should **prioritize energy efficiency in rental properties**. Almost two out of three Iowans living in poverty are renters, meaning that improving access to energy efficiency must include working with landlords. Policymakers should consider creating grants and tax incentive programs that encourage landlords to make energy improvements to rental properties while keeping rents affordable.

Teresa Galluzzo *(M.S., University of Montana, environmental studies) is a research associate at the Iowa Policy Project, focusing on environmental issues, including water quality and energy.*

Beth Pearson *(M.A., University of Oxford, development studies) was formerly a research associate at the Iowa Policy Project, specializing in economic and fiscal trends in the state of Iowa.*

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The Iowa Policy Project

Formed in 2001, the Iowa Policy Project (IPP) is a nonprofit, nonpartisan research organization that analyzes state issues on environment and energy policy, as well as budgetary and economic opportunity issues.

The mission of the Iowa Policy Project is to promote public policy that fosters economic opportunity while safeguarding the health and well-being of Iowa's people and the environment. By providing a foundation of fact-based, objective research and engaging the public in an informed discussion of policy alternatives, IPP advances effective, accountable and fair government.

Access this report and other IPP research at www.IowaPolicyProject.org.

Notes:

[1] Center for Climate Strategies, *Final Iowa GHG Inventory and Reference Case Projection*, October 2008, Table ES-1 and Table B3a.

[2] Energy Programs Consortium. *Income, Energy Efficiency and Emissions: The Critical Relationship*. February 2008, Table 6. Available at www.energyprograms.org/briefs/080226.pdf.

[3] See Table A2: Characteristics of Occupied Units by Year Built: 2001 in the U.S. Census Bureau's *These Old Houses: 2001*, February 2004.

[4] Energy Programs Consortium 2008, Appendix Tables 7, 8, and 9.

[5] Energy Programs Consortium 2008, Appendix Table 6.

[6] U.S. Department of Health and Human Services, Division of Energy Assistance, *LIHEAP Home Energy Notebook for Fiscal Year 2007*, June 2009. Data for Midwest households from Table A-3b.

[7] "Low income" households are those that meet LIHEAP income eligibility guidelines, which is income below 150 percent of the federal poverty level or 60 percent of state median income. Not all households in this category actually receive LIHEAP assistance, so "LIHEAP recipient households" is a subset of the low-income group. "Non-low income" households have incomes above LIHEAP eligibility thresholds.

[8] Home energy affordability burden defined by Fisher, Sheehan, and Colton and widely utilized in energy analyses. Fisher, Sheehan, and Colton. *On the Brink: 2008--The Home Energy Affordability Gap*, Iowa factsheet, April 2009.

[9] In the aggregate, energy bills in 2008 for Iowa's low-income households were $281 million above the affordable threshold, which is a $143.3 million increase since 2002. Fisher, Sheehan, and & Colton 2009.

[10] Fisher, Sheehan, and & Colton 2009.

[11] "Iowa Low-Income Energy Programs," LIHEAP Clearinghouse website. Available at liheap.ncat.org/profiles/Iowa.htm.

[12] Dalhoff Associates, LLC. *Report on the Impacts and Costs of the Iowa Low-Income Weatherization Program—Calendar Year 2008*. June 2009. Available at www.dcaa.iowa.gov/bureau_weath/pdfs/CY08SLICE.pdf.

[13] Iowa Bureau of Weatherization estimate.

[14] Iowa Bureau of Weatherization. "Iowa Low-Income Weatherization Assistance Program 2009 Fact Sheet." Available at www.dcaa.iowa.gov/bureau_weath/pdfs/2009%20Wx%20Fact%20Sht.pdf.

[15] American Community Survey, Table B25118, "Tenure by Household Income in the Past 12 Months (in 2007 Inflation-Adjusted Dollars)," 2005-2007 American Community Survey 3-Year Estimates.

[16] American Community Survey, Table C17019, "Poverty Status in the Past 12 Months of Families by Tenure," 2005-2007 American Community Survey 3-Year Estimates.

[17] Iowa Bureau of Weatherization.

[18] Changes to the weatherization program in the American Recovery and Reinvestment Act increased eligibility from 150 percent of the federal poverty level to 200 percent.

[19] For details of new federal energy tax credits, see www.energystar.gov/taxcredits.

[20] Maxim Shvedov, "Federal Income Tax Thresholds for Selected Years, 1996 through 2009." Congressional Research Service, Report RS22337, January 9, 2009.

[21] Iowa Code Chapter 476, Section 6 (16)

[22] Iowa Utilities Board. *The Status of Energy Efficiency Programs in Iowa*. January 1, 2008.

[23] Iowa Utilities Board. *The Status of Energy Efficiency Programs in Iowa*. January 1, 2008, p. 2.

[24] Andrew Johnson and Teresa Galluzzo. *Let's Be Number One: Improving Iowa's Utility-Run Energy Efficiency Programs*. The Iowa Policy Project, March 2008.

[25] Iowa Utilities Board. *The Status of Energy Efficiency Programs in Iowa*. January 1, 2008.

[26] Analysis of database query of FY2009 Iowa LIHEAP households approved through May 29, 2009.

[27] Even though only investor-owned utilities must contribute funding to the state Weatherization Assistance Program in order to satisfy their mandate to provide low-income energy efficiency programs, households in any part of the state and served by any type of utility are eligible for the program. However, each utility's funds may only be spent on customers of that utility, so households not served by an IOU have to be weatherized exclusively with state and federal funds.

[28] Many rural electric cooperatives do not offer residential audits, many that do, only do so via telephone or web sites, and possibly as few as six municipal electric utilities (out of 136) offer them. Johnson and Galluzzo. Iowa Policy Project, 2008.

[29] Mary Losch, Duoc Nguyen, and Tyler Byrnes. *2007 Iowa Residential Energy Survey*. Center for Social and Behavioral Research, University of Northern Iowa, December 2007.

[30] Dallas Burtraw, Richard Sweeney, and Margaret Walls. *The Incidence of U.S. Climate Policy: Alternative Uses of Revenues from a Cap-and-Trade Auction*. Resources for the Future, April 2009.