STRUCTURING A LOW-INCOME "WIRES CHARGE"

FOR INDIANA

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INTRODUCTION

This paper considers the outlines of a "wires charge" within the State of Indiana. Prepared at the request of Indiana Citizens Action Campaign (CAC) for presentation to one of the occasional "forums" on electric industry restructuring sponsored by the Indiana Utility Regulatory Commission (IURC), the paper will present a detailed outline, using Indiana-specific data, of a wires charge through which the State may generate revenues for low-income home energy assistance. The charge is not intended to address the broader issues of how activities such as research and development (R&D), non-low-income energy efficiency investments, and the like, might be funded in a restructured, competitive electric industry.

More specifically, the discussion below will concentrate on three major issues:

oWhat is the need for a low-income wires charge in the State of Indiana?

oWho should pay for the wires charge? and

oHow might a wires charge be structured?

Clearly, subsumed within these broader issues are other important discussions. How can a wires charge be made competitively neutral? On what basis should a wires charge be imposed? Who should collect and distribute the revenues generated by a wires charge? These other issues are highlighted in the text below.

Finally, the "decision points" identified by the discussion below will be collected in Appendix A and recommendations advanced on what is most appropriate from a public policy, and administrative feasibility, perspective. Tables are included in Appendix B.

THE NEED FOR LOW-INCOME ENERGY AFFORDABILITY ASSISTANCE IN INDIANA

An Indiana wires charge should seek to fill two needs for the State's low-income residents: (1) the need for cash fuel assistance; and (2) the need for energy efficiency improvements. Both of these needs will be considered below. The conclusion will be that there is a substantial need for cash assistance as well as for energy efficiency improvements.

The Need for Generating Cash Fuel Assistance through a Wires Charge

Indiana has a significant number of low-income households, most of which experience unaffordable home energy burdens. A home energy burden is the home energy bill as a percentage of income. In determining the need for fuel assistance, it is appropriate to look at low-income energy burdens. This is the approach now incorporated into the federal statute creating the Low-Income Home Energy Assistance Program (LIHEAP), which mandates that LIHEAP benefits be targeted to households who have the lowest incomes and the highest bills in relation to income taking into account household size.

While public policy has traditionally focused attention on home *heating* needs, this policy is too narrow in its coverage. Instead, two aspects of home energy should be considered: (1) home heating on the one hand; and (2) home electric usage (including home cooling) on the other hand. National figures show that home heating represents less than fifty percent (50%) of total low-income home energy consumption. State-specific studies by FSC have found, too, that while low-income heating *consumption* is less than non-heating consumption, low-income heating *bills* represent even a smaller percentage of total low-income energy bills.[1] Hence, for example, while heating consumption may represent 45 percent of total consumption, heating bills might represent 35 percent of total bills.

In sum, the home energy needs of low-income households in Indiana consist of two different components: (1) heating bills on the one hand; and (2) non-heat electric bills on the other hand.

Home Heating Bills in Indiana

Winter home heating bills in Indiana impose unaffordable burdens on low-income households when considered in light of household income. For purposes of demonstrating this conclusion, several populations will be used as a surrogate for the entire "low-income" population: (a) households who receive LIHEAP benefits; (b) households who receive benefits through Aid to Families with Dependent Children (AFDC);[2] (c) households who receive Supplemental Security Income (SSI); and (d) households who receive Social Security (retired widows and widowers).[3]

As Table 1[4] demonstrates, each of these populations of households experiences a winter home heating burden --these figures do not include winter non-heat electric burdens-- which likely push them beyond "affordable" levels. While LIHEAP recipients experience winter home heating burdens of roughly 17 percent, the home heating burden of AFDC households is well over 30 percent. Social Security recipients have burdens which are somewhat lower.

These home heating burdens can be beneficially compared to the "shelter" burdens which the U.S. Department of Housing and Urban Development (HUD) has defined to be "affordable." According to HUD, if a household faces a *shelter* burden exceeding 30 percent of income, that household is over-extended. Shelter burdens include rent/mortgage payments plus all utility payments other than

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[1] *See e.g.*, Colton, Sheehan, *et al.* (1995). ***An Assessment of Low-Income Energy Needs in Washington State***, Fisher, Sheehan & Colton, Public Finance and General Economics: Scappoose, OR; Colton (1996). ***Home Energy Assistance Review and Reform in Colorado***;, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA.

[2] AFDC is what most people think of as "welfare."

[3] Thus, not included in Social Security are disability recipients.

[4] All Tables are set forth in Appendix B.

telephone.[5] A household that is paying 17 percent of its income simply toward home heating --again, not taking into account electricity as well-- will not be able to fall below this 30 percent limit.

The significance of the home heating burdens imposed on low-income households is even more apparent when one considers the full range of incomes at which low-income residents of Indiana live. Most households who qualify for LIHEAP in Indiana by living at or below 115 percent of Poverty live *below* the ceiling rather than *at* the ceiling. Table 2 sets forth the actual distribution of income for Indiana LIHEAP recipients for the most recent year in which data is available. While it is a simple matter of arithmetic that energy burdens as a percentage of income will increase as dollar incomes decrease, the *magnitude* of the burden at the lower income levels may be somewhat stunning. As Table 2 shows, a household with an annual income of $0 to $2000 will have winter heating burdens[6] of more than 109 percent; households living with annual incomes of $2000 to $4000 will have winter heating burdens of roughly 36 percent; and households living with annual incomes of $4000 to $6000 will have winter heating burdens of nearly 22 percent.

The number of households with these extremely low levels of annual incomes (and thus high heating burdens) is not small. Table 3 shows that amongst the roughly 124,000 Indiana LIHEAP participants, 64,000 (52 percent) lived with incomes of less than $6,000 in Fiscal Year 1990 - 1991.

Non-Heating Home Energy Bills in Indiana

Focusing attention only on heating bills generally results in inadequate attention being devoted to the impacts of *electric* policy on low-income households. This focus is misplaced. Low-income electric *non*-heating consumption represents roughly 35 - 40 percent of low-income usage and 60 - 65 percent of low-income bills. As shown in Table 4, this is true nationwide as well as for each region of the country.

As can be seen, even for low-income households (who have less discretionary electric consumption than the population as a whole), heating bills are only roughly 35 - 40 percent of total energy bills. What happens to the price of electricity is thus important to low-income consumers.

Summer electric bills can be just as unaffordable to low-income households as winter heating bills are. As Table 5 shows, the summer electric bills for Indiana's five largest electric companies impose burdens as a percentage of income ranging from 13.5 percent to more than 17 percent of income. Again, according to HUD, if total shelter costs exceed 30 percent, a household is financially overextended.

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[5] Hence, for example, the utility payments would include home heating, electricity, water/sewer, and garbage and/or trash pick-up where appropriate.

[6] Remember, these do *not* include electric bills in addition to heating bills. Taking electric bills into account would drive burdens even higher.

The conclusions from this data are several fold *vis a vis* a wires charge for Indiana. The need for cash fuel assistance is great in Indiana, both in terms of dollars and in terms of the number of households in need. Second, with many of these households, the need for cash assistance cannot be alleviated through reduced bills generated by improvements in energy efficiency. Third, given the income of these households, virtually *any* energy bill will impose unaffordable burdens. Fourth, the energy problems of these households are not household budgeting problems. There is, instead, an absolute mismatch between household resources and expenses. Finally, given the energy burdens facing low-income households, there will be an inevitable need for a crisis intervention fund to prevent the loss of service due to inability-to-pay.

The Need for Low-Income Energy Efficiency Improvements through a Wires Charge

In addition to the need for cash fuel assistance to be funded through a wires charge, a significant number of low-income households in Indiana are in need of energy efficiency improvements. It is difficult, if not impossible, to quantify the precise number of low-income units in Indiana that are in need of energy efficiency improvements. Some rough estimates can be made, however, for the year 1990. In 1995, there were roughly 390,000[\7\] low-income households in Indiana.[\8\] The federal Weatherization Assistance Program (WAP) weatherizes roughly 5,000 homes a year in Indiana, yielding roughly 40,000 units treated in the eight years from 1988 through 1990.[\9\] In addition, in 1987, the Indiana legislature enacted a statute mandating that the state building code "must promote" energy conservation (amongst other items).[\10\] In December 1992,[\11\] the state adopted the 1992 Model Energy Code promulgated by the Council of American Building Officials (CABO MEC) as the Indiana Energy Conservation Code for new construction. The low-income households living in units constructed since 1992,[\12\] therefore, are assumed to not be in need of additional weatherization. Assuming no unduplicated fully weatherized homes treated by utilities in that time,[\13\] roughly

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[\7\] This is a calculated number. In 1990, there were roughly 380,000 low-income households in Indiana. According to HUD, Indiana experiences roughly 28,000 new housing units per year authorized by building permits, of which approximately 15 percent (21,000) are likely to be inhabited by low-income households. There will some duplicated households here, since some of the inhabitants of the new housing will come from the 380,000 existing low-income households. Nonetheless, the range of low-income households will be 380,000 to 400,000 households. The 390,000 presented here is simply the mid-point of that range.

[\8\] For these purposes only, "low-income" is defined to be at or below 150 percent of the federal Poverty Level. If, as recommended below, "low-income" is instead defined to include all households at or below 200 percent of Poverty, this total population would need to be increased.

[\9\] Due to changes in technology and program requirements, homes weatherized prior to 1988 are assumed to be in need of re-weatherization.

[\10\] IC 22-13-4-1 (1996).

[\11\] 675 IAC 19-3-2 (1996).

[\12\] There are roughly 12,600 of these.

[\13\] Homes treated by utility DSM programs are assumed either to be done in cooperation with the WAP program, or

335,000 low-income housing units thus remain to be weatherized in Indiana.[14] Assuming continuing WAP production levels of 5,000 units per year, assuming further that no weatherized house will ever need to be re-weatherized, and assuming finally that no expansion in Indiana's low-income population will occur, these un-weatherized homes will all be treated with energy efficiency improvements by the year 2062, roughly 67 years. Clearly, an additional source of low-income energy efficiency funding is needed.

Age of Low-Income Housing Units in Indiana

Two additional ways exist to develop a surrogate for energy efficiency needs in low-income housing in Indiana. While, as mentioned above, no direct measurement exists of the number of energy *in*efficient low-income housing units in Indiana, some correlation can be drawn between energy inefficiency and the age of housing units. Table 6 sets out the number of Indiana households, at different levels of "being poor," distributed by the age of the housing units in which they live. As can be seen, while it is impossible to conclude with any specificity the actual *extent* of energy inefficiency, it *is* possible to see the potential that hundreds of thousands of low-income Indiana households live in old, and presumptively energy inefficient, housing units. Nearly 300,000 households living at or below 50 percent of median income live in housing that was constructed before 1940. More than 420,000 households living at or below 80 percent of median income live in housing that was constructed before 1940, more than 55 years ago. Moreover, these households do not refer to all housing units, but rather simply to housing units that are affordable (*i.e.*, yield total shelter burdens at or below 30 percent of income) at those income levels.

Affordability of Housing Units

A different surrogate to be used to identify the need for energy efficiency improvements involves shelter burden. According to the U.S. Department of Housing and Urban Development (HUD), a household that devotes in excess of 30 percent of income toward shelter costs --shelter costs include rent/mortgage payments plus all utilities except telephone service-- are over-extended. Table 7 presents the number of Indiana households who are called upon to pay either more than 30 percent of their income or more than 50 percent of their income toward their shelter costs. As this Table shows, roughly 350,000 Indiana households living at or below 80 percent of median income pay more than 30 percent of their income, and more than 150,000 households at those income levels pay more than 50 percent of their income toward their total shelter costs.

Given the discussion above as to home energy burdens, it is clear that home energy bills contribute to the lack of shelter affordability. A review of monthly Fair Market Rents (FMRs),[15] and the extent

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assumed, in the alternative, not to have provided heating efficiency improvements.

[14]This is calculated as follows: 390,000 minus 40,000 weatherized homes minus 12,600 homes built after the energy efficiency code adopted. This yields 337,400 units, rounded down to 335,000.

[15]FMRs concededly do not include mortgage payments. FMRs set by HUD are based on area rents at the 40th percentile.

to which utility bills contribute to those monthly shelter costs, is set forth in Table 8. This Table shows that utility bills represent roughly 35 percent of total shelter costs in the three major Indiana cities for which data is available. To the extent that energy efficiency can reduce these energy bills, overall shelter affordability will improve. Conversely, the lack of shelter affordability indicates a potential for beneficial energy efficiency improvements.

Finally, Table 9 presents the number of Indiana units that are "affordable" but which have some type of physical problem associated with them. As can be seen, one-in-four affordable units for Indiana households at 0 - 30 percent of median income (24%), two-in-five affordable units for Indiana households at 31 - 50 percent of median income (44%), and one-in-five affordable units for Indiana households at 51 - 80 percent of median income (21%) have some type of physical problem. If one engages in the assumption that households with "physical problems" are likely to have energy efficiency problems as well, the extent of the acute need for low-income energy efficiency improvements in Indiana is evident.

Utility Benefits from Low-Income Energy Efficiency

In addition to looking at energy efficiency from the household perspective, it is necessary to examine the benefits of a low-income energy efficiency program from the perspective of the utility offering such a program. Extensive research has found that low-income energy efficiency programs result in substantial non-energy savings to utilities. These non-energy savings include reductions in working capital expense, uncollectible accounts, credit and collection expenses, and the like.[\16\] The results of one of the most recent studies are summarized in Table 10. Table 10 shows the results of the Pennsylvania Low-Income Usage Reduction Program (LIURP) for all Pennsylvania utilities. The Table presents pre-treatment and post-treatment payment patterns for the low-income households to whom energy efficiency was delivered. A payment of less than 100 percent means that the low-income household was not even paying the current month's utility bill. In contrast, a payment *exceeding* 100 percent means that the low-income household was not only paying the current bill, but was paying off its arrears as well.

As Table 10 shows, for every Pennsylvania utility but one, the delivery of energy efficiency substantially improves the payment patterns of the treated low-income households. Indeed, the general impact of the delivery of energy efficiency was a *substantial* increase in the payment coverage of the household energy bill. In most cases the low-income household moved from a situation where that customer was falling further and further behind by failing to pay the current bill to a situation where the household was paying the entire current bill and beginning to retire the arrears.

Summary

[\16\] Colton (1995). ***Energy Efficiency and the Low-Income Consumer: Planning, Designing and Financing***, at Chapter 7, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA (summarizing existing utility research examining non-energy benefits).

A wires charge to fund low-income programs in Indiana should be used for two different purposes. Each purpose is not only appropriate, but essential. The first purpose of a wires charge in Indiana is to generate cash fuel assistance to be delivered to low-income households. This cash assistance should include both a basic grant component and a crisis intervention component. The second purpose is to generate funding for the delivery of low-income energy efficiency improvements.

THE COST OF AN ALL FUELS "WIRE CHARGE" IN INDIANA

Having established the need for a "wires charge" in Indiana, the next question to be addressed is the costs which creating such a charge would impose on Indiana ratepayers. The assumption behind this analysis is that a "wires charge" is to be imposed on all fuels, including electricity, natural gas, and bulk fuel sources such as fuel oil, propane and kerosene. Fuels such as wood and "other" have been excluded due to their minor nature. The term "wires charge" is thus used for simplicity's sake, and not used to indicate that the entire burden of the charge is to be imposed on electric customers.

Tables 11 and 12 below are each set forth in four parts. Table 11 assumes that an Indiana wires charge is imposed only on residential ratepayers. Table 12 assumes that, in the alternative, an Indiana wires charge is imposed on all end-use consumption of the stated fuels for industrial, commercial and residential customers. Each Table assumes alternative levels of funding of $50, $65, $80 and $95 million. The Tables are intended to generate four pieces of data on a state-specific basis for Indiana: (a) the per unit of energy cost of a wires charge of the specified amounts for each fuel type; (b) the *total* cost allocated to each fuel type arising out of a wires charge of the specified amounts; (c) the difference caused by allocating program costs only to residential versus allocating program costs to aggregate residential, commercial and industrial end-use; and (d) the dollar contribution of each class of customers if spread over residential, commercial and industrial customers.

Methodology

The methodology employed in Tables 11 and 12 begins with the estimated funds that are desired to be generated through the wires charge. These funds are then distributed via an allocator. In the scenario where the funds are distributed solely to the residential class, the funds are divided by the total number of mmBtu consumed by the residential customer class in Indiana to derive a cost per Btu. That cost per Btu is then multiplied by the Btu's per unit of fuel to derive a per unit of fuel cost (*e.g.*, cost per MCF, cost per gallon, cost per kWh). The cost per Btu is further multiplied by the number of Btu consumed within each fuel class at the end-use level to determine the total dollars to be derived from each fuel source. The effect of this methodology is to assign a responsibility to each fuel source equal to the proportion of end use residential energy supplied by that fuel source of a per Btu basis.

The same process is used for the section that distributes the cost over all residential, commercial and industrial end-use consumption. The total dollars desired are divided by the total end use consumption from those three customer classes. The per Btu cost is then multiplied by the number of Btu in each type of fuel unit to derive a per unit of fuel cost, and multiplied by the total number of

Btu consumed at the end use level to derive the total contribution which each fuel type would make to the bottom line. This results in an allocation based not on the proportion of end use fuel type within only the residential class, but by the proportion of end use fuel type within all customer classes combined.

The $50 million scenario is set forth in Tables 11A and 12A, the $65 million scenario is set forth in Tables 11B and 12B, the $80 million scenario is set forth in Tables 11C and 12C, and the $95 million scenario is set forth in Tables 11D and 12D.

Allocating Costs Only to Residential Customers

A wires charge designed to generate $50 million in Indiana imposed only on the residential customer class would result in a price increase of the following for the two major fuel uses in Indiana:

oroughly 1.1 cents per CCF for natural gas users. Assuming an annual consumption of roughly 1,100 CCF per year, this results in an annual bill increase of roughly $12, or about $1 per month.

oroughly four one-hundredths of a cent per kWh for electricity users. Assuming a consumption of 9,000 kWh per year, this results in an annual bill increase of $3.30, or about 28 cents per month.

In addition, a wires charge designed to generate $50 million in Indiana imposed only on the residential class would result in a price increase of 1.5 cents per gallon for fuel oil, 1.4 cents per gallon for kerosene, and 0.9 cents per gallon for propane gas.

In contrast, a wires charge designed to generate $95 million a year in Indiana imposed only on the residential class would result in a price increase of the following for natural gas and electricity in Indiana:

oroughly 2.1 cents per CCF for natural gas users. Again, assuming an annual consumption of roughly 1,100 CCF, this results in an annual bill increase of roughly $23, or about $1.90 per month.

oroughly seven one-hundredths of a cent per kWh for electricity. Again, assuming a consumption of 9,000 kWh per year, this results in an annual bill increase of about $6.40, or just over 50 cents a month.

In addition, a wires charged designed to generate $95 million a year in Indiana would result in price increases of 2.9 cents a gallon for fuel oil, 2.7 cents per gallon for kerosene, and 1.8 cents per gallon for propane.

Clearly, the costs of generating $65 million and $80 million from the residential class alone fall somewhere in between. The precise costs for the $65 and $80 million are set forth in Tables 11B and 11C respectively.

Allocating Costs to Residential, Commercial and Industrial Customers

A wires charge designed to generate $50 million in Indiana imposed on the combined residential, commercial and industrial customer base would result in a price increase of the following for the two major fuel uses in Indiana:

oroughly 0.34 cents per CCF for natural gas users. Assuming an annual consumption of roughly 1,100 CCF per year, this results in an annual bill increase of roughly $3.80, or about 30 cents per month for the average residential consumer.

oroughly 1.2 one-hundredths of a cent per kWh for electricity users. Assuming a consumption of 9,000 kWh per year, this results in an annual bill increase of $1.09, or less than 10 cents per month for the average residential customer.

In addition, a wires charge designed to generate $50 million in Indiana imposed on the combined residential, commercial and industrial classes would result in a price increase of 0.47 cents per gallon for fuel oil, 0.47 cents per gallon for kerosene, and 0.29 cents per gallon for propane gas.

In contrast, a wires charge designed to generate $95 million a year in Indiana imposed only on the residential class would result in a price increase of the following for natural gas and electricity in Indiana:

oroughly 0.65 cents per CCF for natural gas users. Assuming an annual consumption of roughly 1,100 CCF, this results in an annual bill increase of roughly $7.20, or about 60 cents per month for the average residential customer.

oroughly two one-hundredths of a cent per kWh for electricity. Assuming a consumption of 9,000 kWh per year, this results in an annual bill increase of about $2.00, or just over 16 cents a month for the average residential consumer.

In addition, a wires charged designed to generate $95 million a year in Indiana would result in price increases of 0.9 cents a gallon for fuel oil, 0.9 cents per galloon for kerosene, and 0.56 cents per gallon for propane.

Clearly, the costs of generating $65 million and $80 million only from the residential class fall somewhere in between. The precise costs for the $65 and $80 million are set forth in Tables 12B and 12C respectively.

A PROPOSED STRUCTURE FOR AN INDIANA WIRES CHARGE

A proposed structure for an Indiana wires charge to fund low-income programs should address five issues:

(1)What benefits should the wires charge pay for;

(2)Who should bear the cost of the wires charge;

(3)What should the value of the wires charge be;

(4)How can the wires charge be made immune to bypass; and

(5)Who should collect and distribute the wires charge.

What Benefits Should the Wires Charge Pay For

For all of the reasons discussed in the first section of this paper, a wires charge should be developed to pay for: (a) basic cash fuel assistance; (b) crisis intervention assistance; and (c) energy efficiency programs.

Energy efficiency programs should include not only direct investment programs involving partnerships with local Community Action Agencies (or other WAP sub-grantees),[17] they should include innovative partnerships involving housing,[18] financial institutions,[19] community development financial institutions,[20] and other public and private housing programs.[21]

The Value of the Wires Charge

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[17] *See e.g.*, Colton (1994). ***Energy Efficiency and the Low-Income Consumer: Planning, Designing and Financing***, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA; Colton (1994). ***Securitizing Utility Avoided Costs: Creating an Energy Efficiency "Product" for Private Investment in WAP***, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA.

[18] *See e.g.*, Colton (1995). ***Funding Minority and Low-Income Energy Efficiency Programs in a Competitive Electric Industry***, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA.

[19] *See e.g.*, Colton (1995). ***Energy Efficiency as a Credit Enhancement: Public Utilities and the Affordability of First-Time Homeownership***, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA.

[20] *See e.g.*, Colton and Sheehan (1994). ***"Linked Deposits" as a Utility Investment in Energy Efficiency for Low-Income Housing***, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA.

[21] *See e.g.*, Colton (1996). ***A Model Partnership for Energy Efficiency and Public Affordable Housing Programs***, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA.

The value of the wires charge to be collected should be based on the total amount of funds desired by the state. The cost per Btu, and thus the per unit of energy charge, should flow from this broader decision. Hence, for example, the state should decide whether it wishes to generate $50, $65, $80 or $95 million rather than deciding whether to increase rates by 1.0%, 1.5% or some other factor. One difficulty with increasing rates by a uniform percentage is the inherent unfairness of the distribution of the levy. As shown by Tables 11 and 12, a one percent increase in natural gas rates is not equal in burden to a one percent increase in electric rates on a per unit of energy basis. Moreover, it seems most reasonable to decide what end result is desired before addressing the mechanism (*i.e.*, the per unit of energy charge) to be used to achieve that result.

This is not to say, of course, that the final dollar figure desired should not always be tempered by the impact which such fundraising has on rates. It is merely to state that the state should have an end-in-view as to total dollars desired before beginning the cost allocation process.

The value of the wires charge depends upon several underlying decisions. The first issue was addressed above. The wires charge should be sufficient to generate funds for: (a) basic cash fuel assistance; (b) crisis intervention grants; and (c) energy efficiency programs.

The Value of Cash Fuel Assistance: Basic Grants and Crisis Intervention

The amount of money needed to provide basic cash fuel assistance grants, as well as crisis intervention, depends upon four factors.

o**Defining the "energy bill" to be covered:** For all of the reasons outlined in the first section of this paper, a wires charge should be designed to address both heating and non-heating components of low-income bills. This focus supplants and replaces the current focus on heating bills with a new focus on total home energy bills (excluding transportation).

o**Defining "low-income":** The state must next define what it means by "low-income." Historically, the cap for LIHEAP participation has been established by federal statute as being either 150 percent of the federal Poverty Level *or* 60 percent of median income, at the state's discretion. In contrast, most HUD programs define "low-income" as extending up to 80 percent of median income. Table 13 below presents statewide figures on how this decision affects the number of households deemed to be "low-income" in Indiana. Based on the historical inadequacy of 150 percent of Poverty as an indicator of inability-to-pay,[22] our recommendation is that "low-income" be set at 200 percent of the federal Poverty Level.[23]

[22] While not having space to document the discussions in the literature, it should be noted that 150 percent of Poverty does not reach many of the "working poor" who do not qualify for public assistance, but who nonetheless lack the financial ability to pay ongoing household expenses. In addition, many Social Security recipients also fall over (not far over, but nevertheless over) the 150 percent of Poverty Level ceiling.

[23] As a rule of thumb, 200 percent of the federal Poverty Level is considered roughly equal to 50 percent of median

o**Making assumptions as to participation levels:** The third decision which goes into making a determination of how much money to raise through a wires charge involves the participation rate from amongst the eligible population. Nationwide, LIHEAP participation rates range from roughly 20 percent to roughly 40 percent of the eligible population. An assumed participation rate of 30 to 35 percent in low-income fuel assistance programs funded through an Indiana wires charge would not be unreasonable.

o**Targeting assistance:** The final decision that goes into making a determination of how much money to raise through a wires charge in Indiana involves the decision rule for targeting assistance. The most commonly used benchmark is to establish lowering low-income energy burdens (*i.e.*, energy bills as a percent of income) to the total population average as the "ideal." This goal, however, often involves expenditures beyond a magnitude that would be politically acceptable. Lowering total energy burdens to a range of 10 - 12 percent allows for reasonable success in making payments by low-income households while staying within reasonable budgetary constraints.[24]

As part of the decision on how much money to raise through a wires charge, it would be appropriate, also, to establish a cap on administrative expenses for both the fuel assistance and energy efficiency components of the program. A cap based on existing LIHEAP statutory restrictions (10 percent) is not unreasonable.

The Value of Low-Income Energy Efficiency Assistance

The low-income energy efficiency program funded through a wires charge should involve both adequate scope and funding. Adequate "scope" of the low-income energy efficiency program means that the state should seek to serve a wide-range of low-income constituencies. Adequate "funding" means that the low-income energy efficiency budget should increase until the program exhausts the available cost-effective measures, or until it exhausts the institutional capacity to deliver cost-effective measures, whichever comes first.

Determining the funding of low-income energy efficiency programs presents somewhat of a problem. While, in theory, a program should continue to fund energy efficiency measures until the marginal costs of those measures equal the marginal benefits, in reality, no such "full" funding is ever provided. In light of this, there seems to be no principled basis upon which to set a low-income energy

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income. The statewide data in Indiana tends to bear this out. While roughly 420,000 families live at 200 percent of Poverty, roughly 450,000 families live at 50 percent of median income.

[24]It would be reasonable, also, to vary the target energy burden by household size. Ten percent of income is more important to a household with eight persons than it is to a household with two persons.

efficiency budget. Why should the State of Indiana, in other words, spend $8.0 million a year and not $9.0 million? Why should the State serve 5,000 households rather than 6,000 households?

One principle does seem appropriate to guide low-income energy efficiency funding decisions. The extent of low-income energy efficiency funding should be sufficient to ensure that there are no lost opportunities in any given year. Lost opportunities arise when the accomplishment of some given task precludes the future accomplishment of additional work at that same dwelling. Some of the lost opportunities involved with existing programs include:

WAP weatherization: To the extent that WAP invests $1,800 in a home that has the potential for $3,000 of cost-effective conservation, there is a lost opportunity. It is highly unlikely that the home will be revisited to subsequently "finish" the remaining $1,200 of conservation improvements. Moreover, federal regulations generally prohibit WAP from retrofitting a home in which WAP dollars have previously been invested.

Low-income housing developments: Decisions made by low-income housing developers represent decisions that will hold for the useful life of the measures. Accordingly, if a developer installs a relatively inefficient furnace or hot water heater, or fails to install the most cost-effective level of insulation, it is not likely that the state or a utility will soon revisit that home to install more energy efficient measures. The opportunity to install high efficiency measures is lost at the time of the developer's initial decision.

Unused institutional capacity: Assume the institutional capacity of low-income service providers is 8,000 homes per year in Indiana. These service providers might include local contractors, CAAs, CDCs and other profit or non-profit institutions. If the combined budget of low-income programs funds only 6,000 homes a year, there is a lost opportunity to increase the energy efficiency in 2,000 homes. By assumption, the maximum capacity is 8,000 homes per year. That capacity thus cannot be pushed to 10,000 for a year to "make-up" the earlier lost opportunity.

The institutional capacity for delivering low-income energy efficiency, of course, should include the capacity of the state's utilities in addition to the private non-utility contractors.

As can be seen, one component of a low-income energy efficiency program funded through a wires charge is a periodic inventory of the institutional capacity to deliver low-income energy efficiency measures. The inventory should cover the planning period of the non-profit agency administering the wires charge funds. If that agency develops three year energy efficiency plans, in other words, its inventory should include the existing and projected capacity to deliver low-income services over that three year period. The budget for low-income energy efficiency should thus be sufficient to finance full utilization of the inventoried capacity.[25]

[25] The non-profit agency which administers the wires charge then needs to make commitments to fully fund the institutional capacity over an announced time frame. This type of commitment is necessary for low-income service providers to plan and develop their own capacity.

In sum, the upper limit on the budget for delivering low-income energy efficiency measures through an Indiana wires charge should be the point at which the marginal costs of such measures equal the marginal benefits. In reality, however, low-income programs rarely, if ever, spend to the margin. A substitute principle thus needs to be developed as a decision rule for the extent of low-income energy efficiency funding. The proposed decision rule is that funding through the wires charge[\26\] should be of sufficient magnitude to ensure that there is no unused institutional capacity to deliver cost-effective low-income energy efficiency services. Stated another way, funding should be adequate such that no lost opportunities occur within the realm of low-income energy efficiency.

How to Make the Wires Charge Immune to Bypass

The recommendation inherent in this analysis is that a wires charge be imposed "at the meter." This recommendation stands in contrast to some recommendations that propose to impose the wires charge at the provider level. The primary goal of such proposals, it appears, is to try to force responsibility for some portion of the wires charge back on the shareholders, as competitive energy providers choose not to pass on the charge in retail rates. That goal, standing alone, represents an insufficient reason to impose a wires charge at the provider level.

Moreover, full responsibility for a wires charge should not be subject to bypass, in whole or in part, by a customer switching fuels. For this reason, the wires charge should not be imposed on a flat percentage of revenue (or a flat per unit of energy charge) basis. As Tables 11 and 12 show, imposing the wires charge on a per Btu basis is not only "equitable" in that it assigns cost responsibility based on the proportion of fuel consumed, it creates the situation where a customer switching from one fuel to another does not change the proportionate responsibility he or she bears as a user of that fuel.

Proposals for a flat per customer charge are somewhat summarily rejected. Under such a scheme, each unit in a 50-unit multi-family building that is individually metered (50 customers) would pay the same wires charge as the entire 50-unit building which is master-metered (one customer). There is little equity in such a proposal.

How to Make the Wires Charge Competitively Neutral

The proposed wires charge for Indiana is competitively neutral. In this sense, the term "competitively neutral" means that the imposition of the wires charge does not change the competitive position of fuels that would otherwise exist in the absence of such a charge. This competitive neutrality is enforced by imposing the wires charge on a per Btu basis. As a result, there is no greater or lesser incentive to purchase one fuel rather than another because of the wires charge. Nor is there any incentive to purchase from one supplier rather than another (within the same type) as a result of the wires charge.

[\26\]Combined with WAP and other sources of revenues.

Who Should Collect and Distribute the Wires Charge

A wires charge should be collected through, and distributed by, a private non-profit agency modelled after an institution such as the Colorado Energy Assistance Foundation. Such an institution is a private, non-profit agency with an independent Board of Directors, who is subject to the additional oversight of a publicly accountable commission.

The Colorado Energy Assistance Foundation (CEAF) is a non-profit fundraising organization under the direction of the Colorado Commission for Low-Income Energy Assistance created by Governor Romer in 1988. In turn, in 1989, that Commission created CEAF, which was designed to bridge the gap between the growing need for heating assistance statewide and the decreasing availability of federal funds. In addition to its own Board of Directors, therefore, CEAF is subject to oversight by the Commission which consists of gubernatorial appointments from the various stakeholders in low-income assistance. Representatives of public and private utilities, relevant state agencies, and community-based organizations sit on the Commission.

Unlike a private non-profit agency organized to administer a wires charge fund, as a public/private partnership, CEAF's fundraising involves regulated and non-regulated energy providers, the public, and both the state and federal governments. CEAF's fundraising involves legislation, customer contributions, special requests during utility refunds, company matching programs, the Combined Federal Campaign, investment and interest earnings, events, corporate contributions, and settlement agreements. Nonetheless, CEAF awards an annual contribution to the state LIHEAP agency for winter energy assistance as well as for approved special projects.

Oversight of the private non-profit organization can be modelled after the oversight of the universal service fund created for telephone service in Illinois. The Illinois Telephone Assistance Program was created by state law and is based on voluntary contributions to fund assistance to low-income families who need basic local phone service. UTAC is the non-profit organization comprised of phone company and consumer, as well as low-income, representatives and created under direction of the Illinois State Commerce Commission to administer the new telephone assistance program.

Beginning February 1, 1993, inserts were included in Illinois phone bills soliciting contributions for UTAC. After the first nine months of the program (September 1993), and every six months thereafter, UTAC files a petition with the Illinois Commerce Commission asking the Commission to determine the type and amount of assistance, if any, that can be provided to eligible consumers. Depending on the amount of the fund, the Commission, after hearings, will order that the fund be used to provide additional assistance on installation, assistance on the customer's monthly bill, or both.

In a similar fashion, oversight of a wires charge non-profit should rest with a state commission created along the lines of the Colorado Commission for Low-Income Energy Assistance. Jurisdiction should not rest with the Indiana Utility Regulatory Commission, since that Commission does not have experience in dealing with bulk fuels or fuel assistance generally. Nor should the

wires charge be subject to the jurisdiction of either the state LIHEAP office or the state WAP office, since neither of those agencies has authority over --nor does it make sense to grant them authority over-- *both* low-income fuel assistance and energy efficiency programs.

A third model of the type of public oversight possible for such a public commission lies with the Oregon Oil Heat Commission. In 1989, the Oregon General Assembly created the Oil Heat Commission (OHC). The purposes of the OHC are, *inter alia*, to generate funds for low-income energy efficiency improvements. More specifically, the legislature said the OHC could provide:

1.* * *;

2.For programs to encourage energy conservation among oil heat users through home weatherization and through developing and disseminating educational materials regarding energy conservation.* * *

3.For programs to encourage energy conservation among oil heat users through the use of energy efficient oil heat equipment.

4.For programs to offer financial assistance to low-income oil heat users to help defray the cost of fuel, modern equipment installation and weatherization expenses.[\27\]

The Oregon OHC is financed through an assessment on each "oil marketer"[\28\] based on the "gross revenue derived from the business of being an oil marketer."[\29\] The revenue collected is limited so that it "will not substantially exceed the amount of the estimated expenditures stated in the final budget prepared by the commission."[\30\]

In sum, the recommended public commission to oversee a private non-profit wires charge organization would *not* be designed to develop detailed work plans for distribution of the wires charge funds. Instead, the commission would be charged with accomplishing three tasks:

oProviding direction on the general division of revenue between basic cash assistance, crisis intervention, and energy efficiency improvements;

oApproving, after hearing, a proposed annual work plan developed and submitted by the private non-profit agency administering the funds; and

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[\27\]ORS, §469.230.

[\28\]"Oil marketer" was defined as "a person who supplies heating oil at retail in this state." ORS, 469.228((6). "Heating oil" was defined as "number 1 or 2 heating oil that is delivered to a tank and used to create heat."

[\29\]ORS, 469.254.

[\30\]ORS, §469.254(3).

oProviding oversight such that the revenue collected will not substantially exceed the amount of the estimated expenditures stated in the final work plan approved by the commission.

Finally, the most reasonable means of local distribution of all types of assistance (basic cash grants, crisis intervention, and energy efficiency) would seem to be through existing LIHEAP and WAP distribution networks. In addition, however, the private non-profit and the commission should consider whether it is reasonable to expand the delivery network for crisis intervention beyond the existing LIHEAP sub-grantees.

Creation of a State Leveraging Incentive Fund

As part of the process of establishing a wires charge, the state legislature should create and fund a state leveraging incentive fund akin to the LIHEAP leveraging incentive fund created at the national level. This incentive fund would encourage local communities to bring local resources to bear on low-income energy affordability issues. Whether through energy efficiency programs through volunteer house repairs,[\31\] crisis assistance initiatives such as utility fuel funds, or some other mechanisms), the state should commit to encouraging (and rewarding) local initiatives.[\32\]

SUMMARY AND CONCLUSIONS

For all of the reasons outlined in this paper, a multi-fuel wires charge is a necessary and appropriate public policy response for low-income households in Indiana. A summary of the various decisions that might comprise the design of an Indiana wires charge is set forth in Appendix A below.

[\31\]The "Florida Fix" program coordinated and promoted by the Florida Housing Coalition (Tallahassee) is an excellent example of such a volunteer partnership. Florida Fix involves local groups of volunteers working to repair low-income housing.

[\32\]A broad ranging discussion of state and local fundraising initiatives can be found at Colton (1996). ***Funding Fuel Assistance: State and Local Strategies to Help Pay Low-Income Home Energy Bills***, Fisher, Sheehan & Colton, Public Finance and General Economics: Belmont, MA. A listing of the programs described in that publication is attached as Appendix C.

APPENDIX A:
SUMMARY OF RECOMMENDATIONS
STRUCTURE OF WIRES CHARGE IN INDIANA

1.A WIRES CHARGE SHOULD FUND TWO COMPONENTS OF LOW-INCOME ASSISTANCE.

a.Cash fuel assistance.

b.Energy efficiency assistance.

2.WHO PAYS FOR THE WIRES CHARGE.

a.All customer classes (residential, industrial, commercial) should pay the wires charge.

b.The "wires charge" should be imposed on all fuel sources.

i.Natural gas, electricity, propane, fuel oil, propane.

ii.The responsibility should be apportioned in proportion to usage of each fuel.

3.THE VALUE OF A WIRES CHARGE SHOULD CONSIDER THREE FACTORS.

a.A "wires charge" should include a component for both:

i.Fuel assistance

(1)Define who is poor;

(2)Determine percent who will participate;

(3)Targeting assistance: affordable percentage of income.

ii.Energy efficiency.

(1)Exhaust the institutional capacity;

(2)Eliminate lost opportunities.

b. A "wires charge" should fund assistance directed toward total home energy bills, including non-heat electric, not simply home heating.

c. There should be an administrative dollar cap.

4. HOW TO MAKE THE WIRES CHARGE NON-BYPASSABLE.

a. Impose the wires charge "at the meter," not at the provider level.

b. The charge should be calculated on a per Btu basis.

i. Not a flat percentage basis.

ii. Not on a flat per customer basis.

5. WHO COLLECTS AND DISTRIBUTES THE WIRES CHARGE.

a. The wires charge revenue should be distributed through a statewide private non-profit organization.

i. Similar to existing institutions:

(1) Colorado Energy Assistance Foundation

(2) Universal Telephone Access Corporation (Illinois)

(3) Oregon Oil Heat Commission

b. The non-profit should be overseen by a publicly-accountable agency.

i. Again, similar to Colorado Energy Assistance Foundation, Universal Telephone Access Corporation (Illinois), Oregon Oil Heat Commission.

c. Distribute through existing networks.

i. LIHEAP network for cash fuel assistance.

(1) May consider expanding distribution network for crisis assistance to crisis providers in addition to LIHEAP sub-grantees.

ii. WAP network for energy efficiency investments.

APPENDIX A:
SUMMARY OF RECOMMENDATIONS
STRUCTURE OF WIRES CHARGE IN INDIANA

6.MISCELLANEOUS "OTHER" ISSUES.

a.There should be a state-funded leveraging incentive fund.

i.Akin to federal LIHEAP leveraging incentive fund.

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 1:
AVERAGE WINTER NATURAL GAS HEATING BURDENS
VARIOUS INDIANA LOW-INCOME POPULATIONS
WINTER 1990 - 1991

	Average Winter Income	Average Winter Gas Bill	Bill as Income Percent
LIHEAP Recipients	$1,623	$273	16.8%
AFDC Recipients	$864	$273	31.6%
SSI Recipients	$1,121	$273	22.4%
Social Security:	$1768	$273	15.4%

APPENDIX B:
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TABLE 2: WINTER GAS BILL AS PERCENTAGE OF INCOME:
LIHEAP RECIPIENTS BY INCOME RANGE
WINTER 1990 - 1991

	AVERAGE WINTER NATURAL GAS BILL	INCOME $0-1,999	INCOME $2-3,999	INCOME $4-5,999	INCOME $6-7,999	INCOME $8-9,999	INCOME $10-11,999	INCOME $12-14,999	INCOME $15,000+
Indiana	$272.96	109.2%	36.4%	21.8%	15.6%	12.1%	9.9%	8.1%	7.3%

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TABLE 3:
NUMBER OF LIHEAP RECIPIENTS BY INCOME RANGE
WINTER 1990 - 1991

	TOTAL STATE LIHEAP RECIPIENTS	INCOME $0-1,999	INCOME $2-3,999	INCOME $4-5,999	INCOME $6,-7,999	INCOME $8-9,999	INCOME $10-11,999	INCOME $12-14,999	INCOME $15,000+
Indiana	124,292	6,960	18,271	39,028	2,970	12,802	7,706	5,966	4,102

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 4:
HEATING USAGE AS PERCENT OF TOTAL HOME ENERGY USAGE AND
HEATING BILLS AS PERCENTAGE OF TOTAL HOME ENERGY BILLS
NATIONAL DATA

	Usage (mmBtu)			Bills ($$$)		
	Total	Heating	Percent	Total	Heating	Percent
All Households	103.9	56.5	54.4%	$1,255	$406	32.4%
Low-Income Households	90.9	50.6	55.7%	$1,062	$364	34.3%
LIHEAP Recipients	98.7	59.9	60.7%	$1,067	$412	38.6%

SOURCE:

Low-Income Home Energy Assistance Program Report to Congress for FY 1993, at 17 and 20 (Oct. 1994).

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 5:
UTILITY-BY-UTILITY
SUMMER ELECTRIC BILL (500 KWH)
AS PERCENT OF INCOME, PUBLIC ASSISTANCE RECIPIENTS

State	Utility	Largest City Served	(June-Aug) Typical Bill	Avg Summer Public Assistance Income	Avg Summer Bill as Pct of Avg Income	No. of Public Assistance HHs in Largest Community
Indiana	Indiana-Michigan Power	Fort Wayne	$112.36	$833	13.5%	4,025
	Indianapolis Power & Light	Indianapolis	$121.17	$890	13.6%	17,828
	Northern Indiana Public Service	Gary	$156.42	$892	17.5%	6,969
	PSI Energy	Terre Haute	$114.03	$786	14.5%	2,047
	Southern Indiana Gas & Electric	Evansville	$114.01	$836	13.6%	3,893

SOURCE:

Colton, *The Other Part of the Year: Low-Income Households and their Need for Cooling, A State-by-State Analysis of Low-Income Summer Electric Bills* (1995).

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 6:
UNITS OF HOUSING AFFORDABLE AT DIFFERENT LEVELS OF HUD-ADJUSTED MEDIAN FAMILY INCOME (HAMFI)
BY YEAR OF CONSTRUCTION

Year of Construction	0 - 30% Median Income			31 - 50% Median Income			51 - 80% Median Income		
	Renter	Owner	Total	Renter	Owner	Total	Renter	Owner	Total
Before 1940	32,057	71,902	103,959	65,187	115,209	180,396	37,400	102,209	139,609
1940 - 1949	10,183	23,436	33,619	26,119	47,457	73,576	17,127	49,844	66,971
1950 - 1959	12,020	24,963	36,983	28,618	70,163	98,781	23,524	100,189	123,713
1960 - 1979	43,181	70,508	113,689	87,724	74,090	161,814	111,186	176,122	287,308
1980 - 1990	15,126	30,878	46,004	23,100	16,305	39,405	56,344	37,693	94,037

Source: CHAS Data Base: HUD: 1990

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 7:
INDIANA HOUSING AFFORDABILITY AT DIFFERENT LEVELS OF HUD-ADJUSTED MEDIAN FAMILY INCOME

Income Range	Housing Burden > 30%			Housing Burden > 50%		
	Renter	Owner	Total	Renter	Owner	Total
0 - 30% HAMFI	95,772	64,104	159,876	71,825	39,187	111,012
31 - 50% HAMFI	63,725	46,094	109,819	16,005	13,887	29,892
51 - 80% HAMFI	32,064	43,859	75,923	2,166	6,365	8,531

Source: CHAS Data Base: HUD: 1990

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 8:
CONTRIBUTION OF UTILITY COSTS TO TOTAL SHELTER COSTS: SELECTED INDIANA CITIES

State	City	FMR /a/	Monthly Winter Utility Bills for Selected Indiana Cities				Monthly Winter Utility Bill /b/	Percent of FMR Devoted to Utilities
			Natural Gas	Electricity	Water	Sewer		
Indiana	Fort Wayne	$480	$103	$49	$14	$8	$174	36%
Indiana	Gary	$527	$103	$69	$16	$13	$201	38%
Indiana	Indianapolis	$522	$113	$46	$15	$11	$185	35%

NOTES:

/a/Fair Market Rents (FMRs) include contract rent plus all utilities. Determined and published by HUD on annual basis.
/b/May have minor differences from sum of individual columns due to rounding.

SOURCES:

Natural Gas:NARUC annual winter natural gas bill survey.
Electricity:NARUC annual winter electric bill survey.
Water:Ernst and Young annual water bill survey.
Sewer:Ernst and Young annual sewer bill survey.

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 9:
UNITS OF HOUSING AFFORDABLE AT DIFFERENT LEVELS OF HUD-ADJUSTED MEDIAN FAMILY INCOME
BY YEAR OF CONSTRUCTION

Year of Construction	0 - 30% HAMFI			31 - 50% HAMFI			51 - 80% HAMFI		
	Renter	Owner	Total	Renter	Owner	Total	Renter	Owner	Total
Total Units	112,567	221,687	334,254	230,748	323,224	553,972	245,581	466,057	711,638
Units With Physical Problems	27,801	51,682	79,483	89,891	51,861	141,752	92,619	56,620	149,239

Source: CHAS Data Base: HUD: 1990

APPENDIX B:
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TABLE 10:
BILL PAYMENT IMPACT FOR CUSTOMERS WITH ARREARAGES: LIURP: PENNSYLVANIA

1992 LIURP	Heating Jobs		Water Heating Jobs		Baseload Jobs	
	Percent of Bill Paid Pre-Period	Percent of Bill Paid Post-Period	Percent of Bill Paid Pre-Period	Percent of Bill Paid Post-Period	Percent of Bill Paid Pre-Period	Percent of Bill Paid Post-Period
Duquesne	Not Applicable		91%	100%	78%	106%
Met Ed	78%	107%	79%	107%		
Pennelec	92%	95%	96%	99%		
Penn Power	Not Applicable		95%	93%		
PP&L	51%	95%	55%	105%		
PECO Electric	74%	118%	78%	109%		
UGI Electric	95%	105%	Not Applicable			
West Penn	126%	102%	129%	106%		
Columbia Gas	69%	133%				
Equitable	Not Applicable					
NFG	96%	125%				
PECO Gas	68%	133%				
PG&W	96%	106%				
Peoples	99%	106%				

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

T.W. Phillips	Not Available					
UGI Gas	89%	115%				
SOURCE: Pennsylvania PUC Evaluation of 1992 LIURP Program Results (1995).						

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 11A:
CHARGE NEED ON INDIANA RESIDENTIAL CONSUMPTION
TO GENERATE $50,000,000

$50,000,000	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG	Total
Billion Btu Consumption	166.1	265.1	12.3	1.4	13.6	458.5
Fuel units	164,000,000	77,707,000,000	88,620,000	10,626,000	158,298,000	
Btu/fuel unit	1,012,805	3,412	138,795	131,752	85,914	
Dollars/btu	$0.00000011	$0.00000011	$0.00000011	$0.00000011	$0.00000011	
Total dollars	$18,113,413	$28,909,487	$1,341,330	$152,672	$1,483,097	$50,000,000
Price per fuel unit	$0.11045	$0.00037	$0.01514	$0.01437	$0.00937	

NOTES:Natural Gas = MCF
Electricity = kWh
Fuel oil = Gallons
Kerosene = Gallons
LPG = Gallons

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 11B:
CHARGE NEED ON INDIANA RESIDENTIAL CONSUMPTION
TO GENERATE 1986 LIHEAP APPROPRIATION (1995$)

LIHEAP Dollars (1995$)	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG	Total
Billion Btu Consumption	166.1	265.1	12.3	1.4	13.6	458.5
Fuel units	164,000,000	77,707,000,000	88,620,000	10,626,000	158,298,000	
Btu/fuel unit	1,012,805	3,412	138,795	131,752	85,914	
Dollars/btu	$0.000000138	$0.000000138	$0.000000138	$0.000000138	$0.000000138	
Total dollars	$22,973,109	$36,665,691	$1,701,200	$193,632	$1,881,001	$63,414,633
Price per fuel unit	$0.14008	$0.00047	$0.01920	$0.01822	$0.01188	

NOTES:Natural Gas = MCF
Electricity = kWh
Fuel oil = Gallons
Kerosene = Gallons
LPG = Gallons

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 11C:
CHARGE NEED ON INDIANA RESIDENTIAL CONSUMPTION
TO GENERATE $80,000,000

$80,000,000	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG	Total
Billion Btu Consumption	166.1	265.1	12.3	1.4	13.6	458.5
Fuel units	164,000,000	77,707,000,000	88,620,000	10,626,000	158,298,000	
Btu/fuel unit	1,012,805	3,412	138,795	131,752	85,914	
Dollars/btu	$0.000000174	$0.000000174	$0.000000174	$0.000000174	$0.000000174	
Total dollars	$28,981,461	$46,255,180	$2,146,129	$244,275	$2,372,955	$80,000,000
Price per fuel unit	$0.17672	$0.00060	$0.02422	$0.02299	$0.01499	

NOTES:Natural Gas = MCF
Electricity = kWh
Fuel oil = Gallons
Kerosene = Gallons
LPG = Gallons

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 11D:
CHARGE NEED ON INDIANA RESIDENTIAL CONSUMPTION
TO GENERATE $95,000,000

$95,000,000	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG	Total
Billion Btu Consumption	166.1	265.1	12.3	1.4	13.6	458.5
Fuel units	164,000,000	77,707,000,000	88,620,000	10,626,000	158,298,000	
Btu/fuel unit	1,012,805	3,412	138,795	131,752	85,914	
Dollars/btu	$0.000000207	$0.000000207	$0.000000207	$0.000000207	$0.000000207	
Total dollars	$34,415,485	$54,928,026	$2,548,528	$290,076	$2,817,884	$95,000,000
Price per fuel unit	$0.20985	$0.00071	$0.02876	$0.02730	$0.01780	

NOTES:Natural Gas = MCF
Electricity = kWh
Fuel oil = Gallons
Kerosene = Gallons
LPG = Gallons

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 12A:
CHARGE NEED ON INDIANA RESIDENTIAL, COMMERCIAL AND INDUSTRIAL CONSUMPTION
TO GENERATE $50,000,000

$50,000,000	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG	Total
Billion Btu Consumption	511.9	869.5	49.4	2.0	27.6	1460.4
Fuel units	505,000,000	254,854,000,000	356,454,000	14,532,000	321,342,000	
Btu/fuel unit	1,013,663	3,412	138,587	137,627	85,890	
Dollars/btu	$0.00000003	$0.00000003	$0.00000003	$0.00000003	$0.00000003	
Total dollars	$17,526,020	$29,769,241	$1,691,317	$68,474	$944,947	$50,000,000
Price per fuel unit	$0.03470	$0.00012	$0.00474	$0.00471	$0.00294	

NOTES:Natural Gas = MCF
Electricity = kWh
Fuel oil = Gallons
Kerosene = Gallons
LPG = Gallons

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 12B:
CHARGE NEED ON INDIANA RESIDENTIAL, COMMERCIAL AND INDUSTRIAL CONSUMPTION
TO GENERATE 1986 LIHEAP APPROPRIATION (1995$)

LIHEAP Dollars (1995$)	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG	Total
Billion Btu Consumption	511.9	869.5	49.4	2.0	27.6	1460.4
Fuel units	505,000,000	254,854,000,000	356,454,000	14,532,000	321,342,000	
Btu/fuel unit	1,013,663	3,412	138,587	137,627	85,890	
Dollars/btu	$0.000000043	$0.000000043	$0.000000043	$0.000000043	$0.000000043	
Total dollars	$22,228,123	$37,756,110	$2,145,086	$86,846	$1,198,469	$63,414,633
Price per fuel unit	$0.04402	$0.00015	$0.00602	$0.00598	$0.00373	

NOTES:Natural Gas = MCF
Electricity = kWh
Fuel oil = Gallons
Kerosene = Gallons
LPG = Gallons

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 12C:
CHARGE NEED ON INDIANA RESIDENTIAL, COMMERCIAL AND INDUSTRIAL CONSUMPTION
TO GENERATE $80,000,000

$80,000,000	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG	Total
Billion Btu Consumption	511.9	869.5	49.4	2.0	27.6	1460.4
Fuel units	505,000,000	254,854,000,000	356,454,000	14,532,000	321,342,000	
Btu/fuel unit	1,013,663	3,412	138,587	137,627	85,890	
Dollars/btu	$0.000000055	$0.000000055	$0.000000055	$0.000000055	$0.000000055	
Total dollars	$28,041,632	$47,630,786	$2,706,108	$109,559	$1,511,915	$80,000,000
Price per fuel unit	$0.05553	$0.00019	$0.00759	$0.00754	$0.00471	

NOTES:Natural Gas = MCF
Electricity = kWh
Fuel oil = Gallons
Kerosene = Gallons
LPG = Gallons

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

TABLE 12D:
CHARGE NEED ON INDIANA RESIDENTIAL, COMMERCIAL AND INDUSTRIAL CONSUMPTION
TO GENERATE $95,000,000

$95,000,000	Natural Gas	Electricity	Fuel Oil	Kerosene	LPG	Total
Billion Btu Consumption	511.9	869.5	49.4	2.0	27.6	1460.4
Fuel units	505,000,000	254,854,000,000	356,454,000	14,532,000	321,342,000	
Btu/fuel unit	1,013,663	3,412	138,587	137,627	85,890	
Dollars/btu	$0.000000065	$0.000000065	$0.000000065	$0.000000065	$0.000000065	
Total dollars	$33,299,439	$56,561,558	$3,213,503	$130,101	$1,795,399	$95,000,000
Price per fuel unit	$0.06594	$0.00022	$0.00902	$0.00895	$0.00559	

NOTES:Natural Gas = MCF
Electricity = kWh
Fuel oil = Gallons
Kerosene = Gallons
LPG = Gallons

APPENDIX B:
INDIANA WIRES CHARGE DATA AND TABLES

Table 13:
Number of Low-Income Households in Indiana
at Different Measures of "Low-Income"

Number of Families					
Percent of federal Poverty Level /a/			Percent of Median Income /b/		
0 - 100%	0 - 150%	0 - 200%	0 - 30%	0 - 50%	0 - 80%
154,178	274,671	418,731	225,112	453,697	830,729

Sources:

/a/Census Bureau (1990)
/b/HUD CHAS data base (1990)

APPENDIX C:
SUMMARY OF FUNDRAISING INITIATIVES DISCUSSED IN
FUNDING FUEL ASSISTANCE: STATE AND LOCAL STRATEGIES
TO HELP PAY LOW-INCOME HOME ENERGY BILLS

Table of Program Suggestions

1.Utility bill checkoffs for fuel funds

2.Electronic funds transfer (EFT) billing

3.Early payment agreements

4.Contributions of utility refunds

5.Recapture of unclaimed deposits

6.Recapture of unclaimed utility refunds

7.Ratepayer assistance trust fund

8.Franchise fees--rental payments

9.Rate discounts

10."One Church--One Family"

11.Contributions in lieu of taxes

12.Universal Service Fund

13.Earned Income Tax Credit promotion

14.State Earned Income Tax Credit

APPENDIX C:
SUMMARY OF FUNDRAISING INITIATIVES DISCUSSED IN *FUNDING FUEL ASSISTANCE: STATE AND LOCAL STRATEGIES TO HELP PAY LOW-INCOME HOME ENERGY BILLS*

15.Promotion of circuit breaker property tax relief

16.State tax credits

17.Sales tax relief on home energy

18.Title IV-A: Emergency Assistance/Special Needs

19.Utility allowances in assisted housing: annual

20.Utility allowances in assisted housing: monthly

21.Bulk fuels: cash prices

22.Bulk fuels: across-the-board discount

23.Bulk fuels: margin over rack program

24.Bulk fuels: summer fill program

25.Bulk fuels: winter shutoff protections