

**REVIEWING UTILITY-FUNDED LOW-INCOME
ENERGY EFFICIENCY PROGRAMS:**

A Suggested Framework for Analysis

PREPARED BY:

Roger D. Colton
Fisher, Sheehan and Colton
Public Finance and General Economics
34 Warwick Road
Belmont, MA 02178
617.484.0597
617.484.0594

February 1995

These comments provide a step-by-step approach to evaluating a public utility's low-income Demand Side Management (DSM) programs. This paper was prepared because, of course, one of the most important aspects of getting to the right answers regarding a utility's low-income DSM programs is to ask the right questions. This paper is intended to set forth the "right questions." It does not undertake to provide answers.

The purpose of these comments is *not* to full discuss each of the points set forth below. Rather, the comments are to create a framework for analysis, and present sufficient cross-references to other discussions for person to seek out additional information and discussion should that additional material be desired. A check-list of questions is included at the end to help guide an inquiry into a utility's low-income DSM programs.

A review of a utility's low-income energy efficiency programs should include eleven separate inquiries, as follows:

1. Whether the programs adequately account for, and mitigate, the adverse rate impacts on low-income non-participants;
2. Whether the programs adequately identify and address barriers that tend to exclude low-income households from participation;
3. Whether the programs involve planning and design aspects that result in de facto discrimination;
4. Whether the programs have an adequate scope to reach low-income constituencies;
5. Whether the programs adequately fund low-income energy efficiency;
6. Whether the programs adequately identify and incorporate the full range of "avoided costs" into their cost-effectiveness determinations;
7. Whether the programs reasonably consider, adopt and implement a targeting principle;
8. Whether the programs adequately seek to "fit in" with other utility low-income initiatives;
9. Whether the programs take adequate advantage of "piggybacking" opportunities, including piggyback efforts with WAP and affordable housing initiatives;
10. Whether the programs take adequate advantage of potentially available partnerships; and
11. Whether the programs adequately take into consideration the "balance tippers" when benefit-cost ratios are close to, but not exceeding, 1.0.

Each of these inquiries is discussed in more detail below.

I. NON-PARTICIPANT RATE IMPACTS

Ironically, the first review of low-income energy efficiency involves an examination of *non-low-income* programs. These programs could involve residential programs generally (*non-low-income* programs), or they could involve programs for commercial, industrial and institutional customers (and the like). The issue to be addressed is whether the adverse rate impacts arising from these programs are adequately: (a) accounted for; and (b) mitigated, for low-income non-participants.

Accounting for adverse rate impacts will look at two different aspects of the issue. On the one hand, there are the direct costs of the programs. To the extent that low-income households are required to pay for programs, but receive none of the direct benefits, there is clearly an income-transfer in the wrong direction. On the other hand, there are the increased rates associated with spreading a constant fixed cost over a decreasing consumption base. It is undeniable today that rates can go up even while total costs go down. A proper accounting of the adverse rate impacts requires an identification and quantification of both types of impacts.

While accounting for the adverse impacts is a necessary first step in the process, however, it is certainly by no means the only step. One needs to *mitigate* those impacts as well. The need for mitigation seems clear for several reasons. First, the low-income households who will be burdened with such impacts are the customers who can least afford to pay them. These customers are already overburdened by energy and shelter costs. Second, these households are the customers who are most likely to be harmed further by retail wheeling. As with telecommunications and natural gas “bypass,” these customers will likely be the residual (or captive) customer class, paying an increasing share of fixed costs. Finally, these customers have the least ability to take affirmative actions to protect themselves. They are likely tenants, with an inability to make decisions as to heating systems or insulation, and the like. And they most probably lack the finances to seek out new, more energy efficient, appliances.

In light of these, mitigation can take several forms. It may mean co-payments by other classes. It may mean aggressive pursuit of energy efficiency using income, itself, as the basis for the program. It may mean rate design adjustments.

In sum, the first step in the review of a utility’s low-income energy efficiency programs is to review whether the efficiency programs adequately account for and mitigate adverse rate impacts on low-income non-participants.

II. IDENTIFY AND ADDRESS LOW-INCOME BARRIERS.

The second step in reviewing low-income energy efficiency programs is to determine whether the programs adequately identify and address low-income barriers to the

implementation of energy efficiency measures. Appropriate programs should be directed toward the elimination of barriers. Such low-income programs may, but need not, involve 100 percent direct investment. Two types of “barriers” should be assessed in particular: (1) market barriers; and (2) physical barriers.

Market barriers can be unique to low-income households. One such commonly recognized market barrier was identified above: tenancy. Another illustrative market barrier, however, involves hurdle rates. A hurdle rate is that return on investment necessary to prompt the investment in the first instance. While residential customers generally have hurdle rates of roughly 30 percent, low-income hurdle rates tend to approach 90 to 100 percent. Low income programs should be aware of, and seek to address, the barrier caused by such high hurdle rates. The first inquiry under this section will be into whether energy efficiency programs appropriately identify and address low-income market barriers.

A second type of barrier to low-income energy efficiency participation involves the physical quality of housing. Recent research in Arkansas found, for example, that from 20 to 40 percent of households at 30 to 50 percent of HUD Adjusted Median Family Income (HAMFI) had physical problems that would prevent effective energy efficiency improvements (if energy was viewed in isolation from other programs). This research is consistent with reports by the agency administering utility energy efficiency programs in Philadelphia that 40 percent of the otherwise eligible low-income households were rejected for the utility insulation program due to structural problems with the roofing.

In sum, the second step in reviewing a utility energy efficiency program is to determine whether the program identifies and overcomes barriers – including both market barriers and physical barriers – that prevent low-income participation in energy efficiency programs.

III. DE FACTO DISCRIMINATION

The third step in a review of utility DSM programs is to determine whether the programs result in *de facto* discrimination against low-income households. *De facto* discrimination against low-income households in energy efficiency programs can occur in a variety of contexts when public utility actions are judged by an “effects test.” The primary attribute of using an effects test is that the results of a practice urged to be discriminatory can be separated from the intention held by the defending party. The “effects test” relies not upon any improper intention by the challenged party, but rather upon the measurement of disparate impacts. The good or bad faith of the defendant, in other words, is irrelevant to any showing that a challenged practice does or does not discriminate against a protected class. The focus, instead, is on discriminatory results. The effects test is used to challenge a pattern or practice of the defendant that results in discriminatory impacts on particular classes.

The offer of energy efficiency programs by public utilities frequently results in *de facto* discrimination against low-income households. The seminal case is *Re. Western*

Massachusetts Electric Company. In that case, the Hampshire Community Action Commission (HCAC), a local community action agency, challenged both the overall conservation planning of Western Mass Electric Company (WMECO) and the design of specific conservation programs. Both the planning and design components, HCAC argued, were marred by assumptions which, though perhaps unwittingly, nevertheless resulted in the effect of excluding low-income households from conservation programs.

For example, WMECO's energy conservation planning assumed that any energy efficiency measure which met a hurdle rate of 30 percent would be implemented without financial assistance from the utility. According to evidence presented by HCAC, however, low-income hurdle rates reached up to 90 percent.

Moreover, WMECO's DSM planning implicitly assumed customer access to investment capital. Low-income households, however, do not have access to investment capital for conservation measures, even if those measures are recognized by customers as providing economic benefits. If a household does not have \$400 to invest in a new appliance, in other words, it makes no difference that the new appliance would return a savings of \$500 to the household.

These examples are intended to be illustrative, and not comprehensive. The discriminatory exclusion of low-income households from utility-financed energy efficiency programs as discussed in this section, when combined with the adverse financial consequences imposed on low-income households as discussed above, creates an unacceptable utility DSM program. The extent to which there is a discriminatory exclusion should be the focus of one inquiry.

IV. ADEQUATE SCOPE OF LOW-INCOME ENERGY EFFICIENCY

The fourth component of a review of low-income energy efficiency programs is to assess whether the low-income programs that *are* offered involve an adequate scope. Adequate "scope" of a utility low-income DSM program means that the utility seeks to serve a wide-range of low-income constituencies.

Reviewing whether a utility program has an adequate "scope" involves making a determination based on other inquiries discussed in this outline. Consider the following questions:

1. Does the utility program adequately seek to identify and address low-income market barriers to participation in energy efficiency;
2. Does the utility make affirmative efforts to include low-income customers within its DSM program (or is low-income participation simply assumed to flow from residential participation generally);

3. Does the utility make affirmative efforts to develop information regarding the low-income market and hard-to-reach constituencies (or is low-income participation simply assumed to flow from residential participation generally);
4. Does the utility seek to identify low-income market niches to serve, if a broad-based low-income program cannot be cost-justified;
5. Does the utility seek to create piggyback programs to reach a variety of low-income constituencies;
6. Does the utility seek to identify the full range of institutional capacity to deliver low-income programs;
7. Does the utility seek to develop a full range of partnerships with institutions serving low-income constituencies; and
8. Does the utility seek to develop programs and partnerships which involve something less than full payment for energy efficiency through direct investments, when that is what the partnership calls for?

V. ADEQUATE FUNDING OF LOW-INCOME ENERGY EFFICIENCY.

Having identified the “scope” of a utility’s DSM efforts, the next inquiry should be into whether the DSM programs are adequately “funded” as well. Adequate “funding” of a utility’s low-income energy efficiency program means that a utility’s low-income DSM budget should increase until the company exhausts its cost-effective measures, or until it exhausts the institutional capacity to deliver cost-effective measures, whichever comes first.

Determining the funding of low-income programs presents somewhat of a problem. While, in theory, a utility should continue to fund its DSM programs until the programs’ marginal costs equal the marginal benefits, in reality, no such “full” funding is ever provided. In light of this, there may seem to be no principled basis upon which to set a low-income DSM budget. Nonetheless, *one* principle does seem appropriate for regulators to adopt. The extent of low-income DSM 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 by the local utility 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 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 a given utility service territory. 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.

Clearly, the two parts of this analysis would need to be combined. There will be unused capacity both in the number of units done per year and in the investment per unit.

As can be seen, one component of a utility low-income DSM program is a periodic inventory of the institutional capacity to deliver low-income DSM measures. The inventory should cover the planning period of the utility. If the utility files three year DSM plans with state regulators, 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 DSM should be sufficient to finance full utilization of the inventoried capacity.

In sum, a utility's budget ceiling for delivering low-income conservation measures should be the point at which the marginal costs of such programs equal the marginal benefits. In reality, however, a utility rarely, if ever, spends to the margin. A substitute principle thus needs to be developed as a decision rule for the extent of low-income conservation funding by a utility.

The proposed decision rule is that utility funding should be of sufficient magnitude to ensure that there is no unused institutional capacity to deliver cost-effective low-income conservation service. Stated another way, funding should be adequate such that no lost opportunities occur within the realm of cost-effective low-income DSM. A utility's low-income DSM budget should increase until the company exhausts its cost-effective measures, or until it exhausts the institutional capacity to deliver cost-effective measures, whichever comes first.

VI. CONSIDERING THE FULL RANGE OF AVOIDED COSTS

The sixth inquiry should be into whether a utility has adequately sought to quantify the full range of “avoided cost” savings uniquely arising from low-income DSM. Avoided costs commonly associated with low-income energy efficiency would include savings such as reduced arrears, reduced working capital, reduced credit and collection expenses, and the like.

The existence of indirect financial benefits to utilities arising from energy efficiency programs targeted specifically to low-income households was first postulated in 1987 by Colton and Sheehan. In that analysis, they stated that targeted energy efficiency programs had advantages that went beyond the traditional energy and capacity savings associated with DSM measures:

The cost-effective reduction of system costs is relevant and important in every part of the business operations of the utility, not simply to the power supply function. Accordingly, a utility should be concerned with the problem of nonpayment, overdue payment, and partial payment of utility bills. Bad debt arises when ratepayers demand power from the system and then do not pay for it on a timely basis. * * * [A] new consideration program [can be proposed] that is justified on an avoided cost basis. The proposal rejects the historical view that avoided costs include only an energy and a capacity component. Instead, it introduces the notion of avoided bad debt. As long as the conservation program costs less than the bad debt it will avoid, the program is cost-justified.

Since that time, the existence and importance of such expanded avoided costs has become well-accepted. Analysts ranging from Oak Ridge National Laboratory, to Synergic Resources, to the Washington State Energy Office, to a variety of utilities, have found that low-income energy efficiency generates benefits beyond simply energy and capacity savings. Indeed, the existence of such benefits has been empirically confirmed and quantified by utilities such as Central Maine Power Company, Detroit Edison, Columbia Gas Company of Pennsylvania, Niagara Mohawk Power Company, Connecticut Light and Power Company, the Philadelphia Water Department, and the like.

In sum, the sixth step in a review of a utility’s low-income energy efficiency programs is to determine whether the utility has reasonably considered the full range of avoided costs in its determination of cost-effectiveness.

VII. MEANS OF TARGETING

The seventh step in the review of a utility’s low-income energy efficiency programs is to evaluate the means of targeting the low-income programs. Several potential decision rules exist:

- To engage in no targeting, such as “first-come, first-served.”

- To target those with the highest energy usage, believing that these households present the greatest potential for energy savings;
- To target those with the greatest payment problems, believing: (a) that payment problems and high usage are positively associated; and (b) that these households present the greatest potential for improved energy affordability.

The adoption of any one of a variety of decision rules could be justified by reasonable planning. The review of low-income targeting for energy efficiency, therefore, would consist of five inquiries:

1. Whether a targeting principle has been consciously considered and adopted? If not, why not?
2. Whether the targeting principle that has been adopted is a reasonable planning principle;
3. Whether the planning and design both of the programs and of the delivery mechanisms consciously incorporate the targeting principle;
4. Whether the resulting proposed or adopted programs are reasonably calculated to effectuate that targeting principle; and
5. Whether the targeting principle, if any, is carried out in fact.

VIII. MAKING DSM PROGRAMS “FIT IN” WITH OTHER LOW-INCOME PROGRAMS

The eighth inquire into a utility’s DSM program should examine whether the utility seeks to fully integrate its DSM functions with other low-income initiatives pursued by the company, itself. This integration may well most commonly fall within the marketing stage of the DSM program (or within the targeting phase).

The way to operationalize this inquiry is to inventory the non-DSM programs that a utility offers to its low-income customers, and then to assess whether targeted energy efficiency can help make those programs more effective, or more cost-effective.

Again, this process is best explained by illustration. The issue of a utility’s obligation to integrate its offer of energy efficiency measures with its deferred payment plans for low income households, for example, was raised in a 1991 rate case involving Central Maine Power company (CMP) before the Maine Public Utilities Commission (PUC). In that proceeding, the staff of the PUC submitted testimony concerning CMP’s marketing of “energy management services” to low-income customers. The company, according to the staff testimony, was not effective in its marketing.

According to information presented in that proceeding, there is a positive correlation between high arrears balances and high usage. The company, according to the PUC staff,

“should pursue the implications of the [recent study of payments plans] and undertake a marketing effort that targets high use, low-income customers. The company, according to the staff testimony, was not effective in its marketing.

The state Office of Public Advocate agreed. According to that office, CMP could significantly reduce its write-offs and collection costs by providing energy management services to high usage customers on special payment arrangements. The Public Advocate said that the utility could save as much as \$2 million a year “if CMP ha(d) been successful in delivering its Insulation Plus and Bundle Up programs to its special payment arrangement customers.”

The Maine PUC acted favorably on the criticisms of the lack of action by Central Maine Power. According to the Commission:

The successful marketing of energy management programs to low-income customers, particularly low-income customers on special payment arrangements, has a clear benefit above and beyond the capacity or energy savings generally associated with demand-side management programs. Low income customers that see a reduction in their bills will be able to manage their bills better. The Company’s carrying costs associated with late-paid bills and uncollectibles, which are generally passed on to other ratepayers, should be reduced.

The PUC directed the company to take remedial action.

Similarly evaluators in Ohio found that the low-income DSM programs in that state could beneficially be combined with the state’s discount rate. Specifically in Ohio, natural gas and electric utilities have a class of low-income customers taking service pursuant to the state’s Percentage of Income Payment Plan (PIPP). These households do not pay their current bills, when due, and are unlikely ever to pay those bills. The utilities know from the beginning that these households will be unable to compensate the utility for the “full” costs of the household’s consumption.

Ohio utilities, in other words, are under an obligation to provide continuing service even to low-income households who have an acknowledged inability to pay their monthly bill in full. Under the Ohio PIPP, low-income households may retain their service if they pay a designated percentage of their income toward their utility bill each month. So long as the households make their PIPP payments, they are protected from the disconnection of service. While households continue to “owe” the remainder of their bills, they may not have their service disconnect for nonpayment of that remainder.

Each year, Ohio’s PIPP participants face a “gap” of roughly \$46 million which they owe to their utility companies. This gap represents the difference between the households’ full utility bills – a “full” bill is that bill which would have been rendered to the household in the absence of PIPP – and the payments that are made from the households’ own funds or on the households’ behalf from fuel assistance.

While the arrears incurred by Ohio PIPP customers are of concern, these arrears could be controlled with proper attention by the utilities. One study performed by Cleveland State University took a look specifically at households with high arrears in the Ohio PIPP. That Cleveland State study found that “the vast majority (80-90%) of PIP households are managing to keep their debt at reasonable levels.” The study continued to note, however, that there is a group (11-12%) that “is accumulating debt at a very rapid pace.” According to Cleveland State, “this small group accounted for 40% and 34% of total gas and electric PIP debt respectively.” Cleveland State described these customers, saying:

The high debt segments are a relatively small percent of the total population. This small group has tended to accumulate debt at a high rate in the past; they being the program with 2.6 times higher debt, they have accumulated 3 times as much total net debt, and their annual increase in debt is 3 times greater than the majority of the PIP households.

The Cleveland State study continued, stating: Their annual usage (and their annual bills) are 1.6 times higher than the mid range segments.” The university study concluded that: “Targeting weatherization and energy education to the high-debt group seems to hold the greatest potential for minimizing the growth in debt.”

In sum, the question to be pursued in an evaluation of low-income DSM is whether the utility has adequately integrated its low-income DSM program into all aspects of the Company’s operation. As illustrated by Maine’s special payment arrangements, or by Ohio’s low-income discount rate, it is possible for a company to use low-income energy efficiency to improve the efficiency and effectiveness of other customer service, or credit and collection, activities.

IX. PIGGYBACK PROGRAMS WITH WAP AND AFFORDABLE HOUSING INITIATIVES.

The ninth component of a review of a utility’s low-income energy efficiency programs will be into whether the utility has developed appropriate piggyback initiatives to help increase a program’s cost-effectiveness and scope. These piggyback initiatives might involve the federal Weatherization Assistance Program (WAP), as well as affordable housing initiatives. Each of these inquiries is discussed separately below.

A utility low-income energy efficiency program should not operate in parallel with WAP, but rather the utility program and WAP should combine so as to maximize utility investment in cost-effective energy savings measures and maximize WAP investment in the non-energy savings measures that depress utility benefit-cost ratios. Through such a combined effort, utility-financed programs that might be *not* cost-effective from the perspective of the company and its ratepayers may be made cost-effective. Moreover, by targeting its funding in a joint effort with local utilities, WAP subgrantees can leverage millions of dollars in an additional low-income energy efficiency funds.

Two particular challenges are presented by low-income conservation programs: (1) the high relative transaction costs; and (2) the need for non-energy-saving home repairs. If a

utility raises either of these two issues, it is ripe for a proposal to pursue piggyback opportunities.

High transaction costs: A minimum amount of energy savings is considered necessary in order for the utility providing the conservation measures to recoup sufficient cost savings to overcome the fixed costs of program outreach and administration. Experience shows that the costs of program outreach and administration do not vary depending upon the amount of savings generated at a particular dwelling unit. The time devoted to intake is the same, the time devoted to oversight and monitoring is the same, the time devoted to travel is the same. If anything, transaction costs for low-income households may be somewhat higher than for moderate and upper income households. These fixed costs are referred to as transaction costs. With the small energy savings potential for low-income households, utilities often find that there is insufficient potential for savings to overcome the transactions costs of providing the conservation measures to the low-income household in the first instance.

Non-energy-savings repairs: A second problem experienced by low-income conservation programs is the frequent need for home repairs to occur before energy savings measures will have any impact. It makes no sense, in other words, to install insulation into a roof when there are holes in the roof with which to begin. Similarly, installing a new or repaired heating system will have no impact if there are structural problems with the house that eliminate the new system's effectiveness.

The problem is that while these home repairs may be a necessary precondition to the effective installation of energy savings devices, they do not save energy unto themselves. Every dollar spent on such repairs, therefore, adds a dollar of expense that must be offset by the energy savings generated by the conservation measures themselves. Given the problem first discussed above – that low-income households most often present small savings potential with which to begin – the probability is remote that the cost of home repairs can be added to the utility program and have that program remain cost-effective.

The utility is thus caught in a classic Catch-22 with low-income households. Without the home repairs, the energy conservation measures will not be effective, and thus cannot meet the cost-effectiveness tests. However, with the home repairs, the overall cost of the program will likely outstrip the overall savings, again with the program thus failing a cost-effectiveness test.

Piggyback with WAP Efforts.

One solution to this dilemma is for WAP dollars to be combined with utility dollars to form a single comprehensive program. In this fashion, utility funds can be use on cost-effective energy savings measures. In contrast, WAP dollars can be used as the source of financing for the non-energy savings components of the total program.

Since WAP funds are under no necessary constraint to be spent only in a cost-effective fashion, these funds can be earmarked for funding administration, outreach and intake, and major non-energy-saving home repairs.

The combination of WAP and utility dollars will eliminate parallel programs by the utility and the government. Instead, a single program can be created serving the combined populations of what the two programs would have served separately. The allocation of particular expenses to WAP responsibility or to utility responsibility will be an accounting function of which the low-income household is not aware.

The Oak Ridge National Laboratory (ORNL) recently published a report titled *Standard Practice: Estimating the Cost-Effectiveness of Coordinated DSM Programs* (December 1994). According to ORNL, it is possible to identify three distinct types of WAP/DSM piggyback programs (called “coordinated programs” by ORNL):

- *A parallel program*, in which a government agency runs two programs, one funded and designed by the agency and a parallel one funded and designed by an electric or gas utility;
- *A supplemental program*, in which the program relies on utility funding to support a government agency’s ongoing program, with no changes in the program’s design or operation; and
- *A coupled program*, in which a government agency and electric or gas utility fund, design, and implement the energy efficiency efforts.

According to ORNL, a parallel program is implemented by the government agency, but its design is heavily influenced by the utility. The utility program may differ significantly from the design of the agency-funded program. In contrast, the supplemental program involves no changes to the agency’s design and operation. The result of the utility participation is to allow the program to reach more people, to allow the program to more comprehensively treat those persons reached, or a combination of the two. Finally, a coupled program involves a discernible impact of the utility on program design. Different types of customers may be served, according to ORNL. In addition, different measures may be installed and the amount invested per participant may be different than in the pre-existing government program.

Piggyback with Affordable Housing Initiatives.

In addition to developing a piggyback program with WAP, utilities could seek to piggyback their energy efficiency programs along with affordable housing initiatives. The term “low income housing developers” encompasses a wide range of for-profit and non-profit institutions using a wide range of public and private dollars. This discussion is not intended in any fashion, to be a comprehensive review of the potential of utilities to work with low-income housing developers. Indeed, the proposal above is that one basic component of any utility low-income energy efficiency program is to do an “institutional

inventory” of the capacity to deliver low-income energy efficiency to housing developments (whether new construction, moderate, or substantial rehabilitation).

Amongst the initiatives a utility can seek out is to work with the agency that is responsible for allocating federal Low-Income Housing Tax Credits. These credits are used to create affordable multifamily housing in the state. The dollars are devoted to new construction, substantial rehabilitation, and rehabilitation/acquisition of low cost housing.

Moreover, each individual state is awarded millions of dollars in federal HOME (Home Investment Partnerships Program) funds. These funds may be used for rental rehabilitation, assistance to homebuyers and homeowners, and community housing development organizations (CHDOs). HOME funds can only be used to serve low- and very-low- income families.

In addition to the state housing finance and development efforts, local governments spend – and administer – substantial sums of housing dollars as well. Consider as just one example the extent to which public Community Development Block Grant (CDBG) funds are used for low-income housing. A recent study by the National Association of Housing and Redevelopment Officials (NAHRO) found that roughly 31 percent of all CDBG funds requested in small cities were for housing development and housing rehabilitation projects. Similarly, large cities reported requests for housing and rehabilitation projects in 1991 representing more than 50 percent of the cost of all funding proposals submitted. “Overall,” NAHRO found, “housing-related activities occupied the lion’s share of funding requests in 1991, representing 44 percent of total requests” for CDBG funds. Utilities should seek to ensure that these dollars are spent with the highest cost-effective energy efficiency improvements as one component of the project.

X. NON-TRADITIONAL PARTNERSHIPS.

The tenth inquiry into a utility’s low-income SM program should review whether the utility’s low-income DSM program adequately includes “non-traditional partnerships” in furtherance of comprehensive energy efficiency programs. Historically, utilities have tended to limit themselves to developing piggyback programs with other energy institutions. These might include Community Action Agencies, fuel assistance agencies, and the like. Utilities have, however, ample opportunity to work with other agencies serving low-income constituencies. Utilities could seek to work in cooperation with banks that have developed programs to implement CRA plans, to offer energy efficiency improvements. The following example is provided as one illustration of how such a non-traditional partnership might work.

Utility low-income DSM programs can beneficially be teamed with financial institution programs emphasizing reinvestment in local neighborhoods (small town, urban or rural). Notwithstanding the considerable attention devoted to financing housing development through bank Community Reinvestment Act (CRA) programs today, very little attention is devoted to including financing for energy efficiency in such efforts. The reasons for

this failure are several-fold. Historically, low-income residential energy conservations has been financed through publicly provided funds – including federal Weatherization Assistance Program (WAP) and oil overcharge funds – irrespective of traditional financing criteria such as rate of return, liquidity and risk. Large institutional investors have not been asked to participate, nor have they sought out such participation. In addition, because of the technical nature of determining conservation potentials, determinations of the efficacy of investment in low-income conservation/weatherization may entail specialized knowledge. Sources of repayment funds, the estimation and measurement of savings, and the valuation of risk have thus not fit into historical investment expertise.

Moreover, energy conservation measures often have greater payback periods than those required in the traditional terms of commercially available capital. Traditionally accepted payback periods for conservation measures reach up to seven (7) years. The longer term commitment of dollars required by energy conservation measures reduces an investor's liquidity. Conversely, the resulting short term of the bank loan increases the monthly debt service cost to the person seeking financing.

Teaming low-income DSM initiatives with CRA efforts would thus involve partner low-income DSM programs with bank CRA affordable capital to developers of low-income housing through a utility-based "linked deposit" program. In contrast, this might involve making available means to make energy efficiency lending more secure, such as through a utility-based loan guarantee program.

Moreover, utility DSM programs could be tied into first time homeowner initiatives. Notwithstanding the explosion of "first time homeowner programs" offered by institutions such as Fannie Mae and Freddie Mac (in conjunction with local lending institutions), homeownership is not "sustainably affordable" to many/most low-income households. Studies show that as many as 70 percent of the households who purchase homes through programs involving reduced down payments and closing costs default within the first seven years of homeownership. Unfortunately, first time homeowner programs that focus on down payment and closing cost assistance often miss a good deal of the "affordability problem" with low-income housing. The sustainable affordability of housing must take into account the affordability of energy as well.

In sum, the tenth inquire into a utility's DSM program should evaluate whether the company adequately seeks out, and implements, effective partnership initiatives. These programs can be with non-energy partners.

XI. CONSIDERATION OF THE "BALANCE TIPPERS."

The final inquire into a utility's low-income programs involves an assessment of whether the utility has adequately and appropriately considered any "balance tippers" in those instances where programs might be closer to being cost-effective while still having a benefit-cost ratio of less than 1.0. The "balance tipper doctrine" posits the principle that while the costs of low-income DSM are reasonably easy to identify and quantify, the

benefits are often difficult, if not impossible, to quantify and may flow back to the utility in indirect and consequential ways. The doctrine states further, however, that the benefits are no less real or substantial because they may be indirect rather than direct in nature.

In a “close call” situation, therefore, a balance-tipper should be qualitatively considered as a further justification for a program.

Two illustrations of “balance tippers” are provided below. These are intended to be only examples, and are in no means a comprehensive list.

- The first example involves the advantages of providing energy efficiency improvements to low-income housing. Providing utility capital for energy efficient low-income housing should be given particular consideration by utilities. Because buildings are occupied by primarily low-income tenants, this financing is severely needed and difficult to obtain. Low tenant income is generally accompanied by low rent rolls and low rents are generally only available in older, deteriorated building stock. Antiquated and deteriorated building energy components and systems are inefficient and expensive to operate. These economic conditions conspire to weaken the net operating income and cash-flow and threaten the future of the building as a source of habitable housing.
- A second example, involves the advantages of providing energy efficiency improvements from an economic development perspective. Well designed energy efficiency programs have been shown to produce substantial economic benefits for local and state economies. For most states the electric and gas utilities are poor performers in terms of their ratios of in-state jobs to sales and sales to in-state income generation. By comparison, the industry that does most of the home energy efficiency work – the maintenance and repair construction industry – has almost four times the jobs-to-sales ratio of the utility industry, and a 20 percent higher ratio for in-state income generation per dollar of sales. Using Arkansas-specific data, FSC found in that state that reducing energy bills by one million dollars through a one million dollar expenditure on efficiency construction results in a net increase of 33 jobs and about one-third million dollars in additional income for the state’s economy.

The “balance tipper” impacts of these considerations should be evident. To the extent that reduced operation costs through energy efficiency improvement can help make these buildings “bankable,” or can help expand the debt service which the building owners can carry, the efficiency improvements help contribute to maintaining the economic viability of neighborhoods, and the source of affordable, stable, long-term housing for its customer base. In this sense, the energy efficiency not only benefits the owners and tenants, but helps contribute to the utility’s own long-term economic viability. To the extent that low-income energy efficiency help create additional jobs and economic activity within the utility service territory, the utility will directly benefit by increased sales (and increased revenues).

SUMMARY AND CONCLUSIONS

The purpose of this document is not to present “new thinking” on low-income DSM. Rather, the purpose is to create a step-by-step process to use in reviewing a utility’s low-income DSM programs and to summarize previous FSC research that might help explain the purpose and basis for each of the identified steps. The comments seek to identify “the right questions to ask” in any review of a utility’s low-income DSM program. It seeks to provide cross-references to previous FSC work in the event that a reader wishes to obtain greater detail on the particular issues that have been raised.