PRIVATE INVESTMENT IN

LOW-INCOME ENERGY EFFICIENCY:

REPLACING RELIANCE ON GOVERNMENT AND UTILITY FUNDS

PRESENTED TO:

16TH WORLD ENGINEERING CONFERENCE
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USA

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INTRODUCTION

Advocates of low-income energy efficiency improvements have been forced to look for new means of financing those measures as federal Low-Income Weatherization Assistance Program (WAP) dollars, as well as oil overcharge funds, continue to dry up. No longer can decisionmakers afford to view the provision of energy efficiency improvements as simply a government benefits program. If, indeed, conservation and weatherization measures will save the energy, and thus the costs, historically claimed, it should be possible to make the case for the commitment of public and private *investment* funds on the promise that such funds will be returned with interest or profits based on the amount of energy saved.

New sources of capital *can* exist for low-income energy efficiency strategies. Such funds will not be made available as grants, but rather will be made available as investments in energy savings. Whether it be public sector pension funds investing debt, equity or near equity; governments investing through loan programs; or governments investing through the issuance of a variety of bond types, capital can be raised for such programs, if the potential of conservation is appropriately marketed and appropriate legal processes for capturing and providing a return are created.

To generate new funds to promote energy efficiency, careful attention must be given to identifying the self-interest of potential sources for capital. From an investor's perspective, either public or private, the commitment of capital to energy efficiency improvements must yield advantages in cash flow, rates of return and/or portfolio diversification. From the perspective of public sector investors, lesser financial advantages may be acceptable if, in return, the improvements yield other useful impacts such as increased tax revenue or a reduced need for social programs. Public sector investment may be warranted as well, if, from a societal perspective, new investment will fill in capital gaps and provide corrections to an inefficiently operating capital market, thus resulting in increased employment or economic development.

A project in pursuit of these goals is intended to pursue the financing of low-income conservation and weatherization programs from business investors.[1] The purpose of such a project is to identify the potential of low-income conservation to generate investment returns such that third-party financing can generate a new source of dollars to replace the cuts in federal appropriations and "oil overcharge" funds historically devoted to such a task. Integrally related to this task is to identify whether public sector or utility assistance

[1] Except to the extent that funds provided by government and utilities can pave the way for private sector investment, participation by utilities and by government is set aside for the moment.

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can complement private sector investment to make such investment more feasible and remunerative.[2]

IDENTIFYING THE CONSERVATION CAPITAL GAP

Marketing the financial opportunity of low-income conservation and weatherization must show that such measures not only will work in the real world, but that they are a "good buy" as well. From the perspective of an investor, a "good buy" can be shown by identifying energy efficiency improvements as yielding an expected return greater than that return associated with alternative investments of similar risks. Generally, this can be done by demonstrating that the market has not provided sufficient, competent attention to the potentials of such an investment. This often occurs where there is little institutional ownership or research in such investments. This represents the area where there is most likely to be an inefficient segment of the market.

The Problem of Displacement Financing

Identifying "capital gaps" and "market inefficiencies" helps low-income advocates avoid the problem of displacement financing. Displacement financing occurs when the "new" sources of capital generated by advocates merely fills a market that would have been filled by existing sources *even without* the efforts of the advocates. Taking pains to avoid displacement financing is necessary for several reasons. It will ensure that the efforts of advocate are productive, resulting in net gains for the low-income community. Moreover, it will help minimize the opportunity costs associated with the investments made in low-income energy efficiency improvements.

For the sought after advantages to arise from investments in low-income energy efficiency, the efforts of low-income advocates must actually *induce* the investment in the sought-after energy efficiency improvements. Inducement is to be measured by a "but for" test: the investment in low-income energy efficiency improvements would *not* occur but for the efforts of the advocates. If, in contrast, the new sources of funds are mere substitutes for existing funds, and the *total* capital available for low-income energy efficiency improvements does not expand, the efforts of advocates have borne no fruit.

In addition, low-income advocates should be concerned with the opportunity costs of "new" investments in circumstances where the investment supplants rather than supplements capital available for low-income energy needs. If the capital newly channeled to energy efficiency had not been spent on low-income energy improvements, would it otherwise have been spent on low-

[2] For example, perhaps it would be necessary to couple a limited amount of government or utility funds to cover administrative and management cost (transaction costs) with private sector investment covering the actual costs of conservation measures.

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income housing, or job creation, or education? To displace current investment capital by capital currently devoted to other projects with beneficial impacts for low-income households may very well result in net losses to the constituent community.

Market Inefficiencies

The search for new sources of capital to devote to low-income energy efficiency improvements should start with the fundamental proposition that market inefficiencies exist that prevent the devotion of an "appropriate" amount of investment capital to the task of providing such measures. In seeking to generate new sources of financing for the provision of low-income conservation programs, the advocate is simply seeking to fill this "capital gap."

The existence of such market inefficiencies, and, accordingly, the existence of such capital gaps, is not uncommon. Indeed, the low-income energy advocate can be well-informed by previous analysis in the areas of small business incubation, economic development and affordable housing, as well as by commercial, industrial and institutional energy conservation efforts.

Small business, housing and economic development programs share characteristics with energy efficiency programs that interfere with the generation of adequate sources of capital. The shortfalls in investment capital arise not so much because of inadequate rates of return or related reasons as because of market failures and inefficiencies. Acordingly, substantial sums of capital await discovery by the aggressive and creative low-income entrepreneur.

A lack of relevant investment expertise is one factor that prevents adequate private capital from flowing to small business incubation and energy conservation. Most banks, one researcher notes, "have had little experience in making loans for energy efficiency equipment and are not familiar with how energy efficiency equipment works or how it relates to the overall operation of a facility."

Lack of an established track record in producing results is a second factor that has been cited as interfering with the generation of adequate capital for energy conservation. This lack generates a skepticism, sometimes deservedly so, regarding the projected results. Accordingly, banks are generally unwilling to rely upon the stream of energy savings as a source of loan repayment. Articulated problems include the difficulty in measuring the savings as well as the unreliability of the savings projections. In response to one effort to generate bank financing for a shared savings project, one bank refused even an insurance policy that would have insured the estimated energy savings that would have been realized for the transaction.

Other barriers to private bank financing of energy conservation measures exist. In pursuing an industrial conservation pilot project, one company reported several barriers that "repeatedly arose":

1. **<u>High cost of bank loans</u>:** Banks which contemplated advancing a loan seemed interested in lending at the prime interest rate plus 2 to 5 percentage points. By the

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time the cost of financing the points and other expenses normally incurred by the borrower in a bank loan transaction were added in, the cost of bank financing would be very expensive.

2. **Short term of bank loan:** Most commercial banks were only interested in loans with a term of 2 to 5 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;

3. **Small size of the transaction:** Several potential financiers conceded that they were not interested in this transaction because of its small dollar size. The small size of the loans involved in such transactions limits the availability of financing because of the high transaction costs per loan.

A final barrier to bank financing of energy conservation equipment includes the lack of generally accepted collateral for the loan. The energy conservation measures themselves are infrequently of sufficient value to secure a bank loan. Moreover, even if the measures are sufficiently valuable, banks have posited that such measures are ill-suited to be collateral for a loan since the removal of energy conservation measures is both difficult and expensive. Moreover, there is a lack of a readily identified secondary market for such measures, even if removed. When coupled with the unwillingness of banks to rely upon the projected energy savings as a source of repayment, this barrier is fatal to many banking transactions.

THE CAPITAL GAP

In sum, application of the following criteria would seem to indicate that a capital gap exists in the low-income residential conservation sector that can be beneficially filled by new sources of investment capital:

1. **New opportunities:** Private sector investment in low-income residential energy conservation measures does not have a mature private industry in place. One result is that the procedures for estimating and measuring conservation savings do not have long track records, either of success or failure.

2. **Small loans:** Low-income residential energy conservation strategies would likely entail the need for a large number of small loans. When coupled with housing rehabilitation programs, maximum investments would not likely reach substantially beyond the range of $5,000 to $10,000 per home.

3. **Institutional investors:** Historically, low-income residential energy conservation 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

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investors have not been asked to participate, nor have they sought out such participation.

4. **Long lead times:** 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.

5. **Transaction and management costs:** Because of the need for large numbers of small investments, low-income residential energy conservation programs may well entail higher than average transaction and management costs.

6. **Specialization:** 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 may well not fit into historical investment expertise.

This list of factors can be used in two different ways. On the one hand, investors can use these factors as reasons not to become involved in financing low-income residential energy conservation measures. On the other hand, investors can use these factors as measures of the capital gap that is waiting to be filled by innovative and creative financing schemes. The list is indicative of the need for new thinking on the types of assistance to be provided, and the types of mechanisms to be used rather than being indicative of the need to avoid this investment opportunity altogether.

TWO NEW FINANCING MODELS FOR LOW-INCOME ENERGY EFFICIENCY

This paper proposes two new models for directing "private" investment capital into the financing of energy efficiency improvements for low-income housing. The low-income housing to be targeted in the early stages of testing these two models includes only multi-family housing. The multi-family housing to be targeted primarily involves complexes with more than 20 units. Housing developments as small as six to twenty units, however, will be considered as well.

The Common Problems

Both of the private investment models advanced in this paper will be directed towards low-income housing developers. These developers may include both for-profit and not-for-profit entities. They include property owners holding Section 8 housing, as well as property owners and managers who administrate other types of publicly assisted housing. Within this context, the term "publicly assisted housing" is intended to be used in its broadest context. It includes housing assisted in whole or part by Low-Income Housing Tax Credits, housing financed by a state's Housing Finance Authority (HFA), and similar development.

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Institutions involved with the development of low-income housing find several obstacles to the aggressive inclusion of energy efficiency measures within their effort. Perhaps the most significant obstacle is the "over-improvement" of the properties in the first instance. This "over-improvement" is significant for those seeking additional debt with which to finance energy efficiency measures, even if such measures are cost-effective over the lifetime of the project.[3] Those instances where a housing developer has borrowed at or in excess of traditional loan-to-value ratios, additional debt most often will *not* be provided for energy efficiency measures.[4] In this regard, traditional lenders view investments in energy efficiency as additional capital investments, while not taking into account the reduced operating costs that arise as a result of the energy savings (and thus reduced bills).

The situation identified above can be summarized as two problems: first, there is the inability to receive additional debt financing through traditional lenders, even for cost-effective energy efficiency improvements. Second, there is the unwillingness[5] of lenders to account for energy savings in their underwriting criteria.

A second major obstacle to the pursuit of energy efficiency measures in low-income housing developments is the "hassle factor." As one developer observed, developers are meeting an increasing number of mandatory regulations. As this developer pointedly put it, "when it comes down to lead paint abatement or energy efficiency improvements, energy efficiency loses." This problem is not so much a problem of financing –although financing overlays everything in the low-income housing development arena—as it is a problem of technical and human capacity (or rather lack thereof) to add another layer of "things to do" to any particular project.

The purposes of the two models outlined below, therefore, are three-fold: (1) to generate new sources of dollars for energy efficiency improvements in low-income housing; (2) to generate those dollars such that the savings attributable to the energy efficiency improvements will be taken into consideration in the financing scheme; and (3) to make the addition of energy efficiency improvements to the low-income housing as easy, automatic and "pain free" as possible.

The Point of Intervention

Th points at which energy efficiency can be introduced to low-income housing developers are broader than simply at the time of new construction or rehabilitation. Clearly, new construction and rehabilitation are important processes, but they are perhaps not even the most important point of intervention.

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[3] Cost-effective means simply that the life-cycle benefits from the energy efficiency improvements on a net present value basis exceed the life-cycle costs.

[4] Virtually every housing development experiences this situation. This is one reason why "soft dollars" (such as local Community Development Block Grant (CDBG) dollars and the like) are so essential to make low-income developments financially viable in the first instance.

[5] To say "unwillingness" may unfairly imply a misfeasance. These traditional lenders operate under regulatory guidelines that may restrict their discretion on such matters.

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A second point of intervention is at the time of refinancing. In Vermont, for example, the Vermont Housing Finance Authority (VHFA) holds most of the Section 8 housing mortgages. This housing might be refinanced in light of falling interest rates. A common time for refinancing, as well, of course, is at the time of a change in ownership.

In sum, the energy efficiency financing models proposed below are not applicable only when major structural work is being done to the low-income units in question. The models instead can be applied either to "new" or to "ongoing" projects.

THE TWO MODELS

The two models outlined below include: (1) the HFA model; and (2) the Community Based Lending model. They are separately examined below.

The Housing Finance Agency Model.

The Housing Finance Agency Model is graphically illustrated in Attachment A to this paper below. It involves five major players. The Developer is at the top of the process. The Developer, for whatever reason, has sought financing from the HFA for a low-income housing project. The HFA model posits that this Developer will enter into a contract with an Energy Services Company (ESCO). The ESCO will then package three sources of financing to gain the maximum cost-effective investment in energy efficiency improvements. The three financing sources include:

- **Utility DSM:** The utility's investment in demand side management (DSM) measures for the project. The utility should invest in any measures that are found to be cost-effective from the perspective of the utility.

- **Weatherization Assistance Program:** The federal WAP program should provide dollars for low-income weatherization. Funds are limited, however, both on a per unit and on an aggregate basis. Moreover, the uses to which WAP dollars can be put are limited as well.

- **HFA Financing:** HFA debt financing will be the "gap financing." The "gap" to be filled involves those dollars of energy efficiency investment that will not be met by either utility or WAP funds.

The three sources are all of different natures. The utility dollars are an investment in energy efficiency improvements. The WAP dollars are a grant to the low-income household. The HFA financing is straight debt financing, to be repaid with appropriate interest.

While the involvement of an ESCO is not required, it has been deemed beneficial. The purpose of the involvement of the ESCO in this process is several-fold. First, the ESCO is more likely

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than any particular housing developer –particularly a *small* housing developer—to be familiar with the various sources of energy efficiency financing which are available. Second, the involvement of the ESCO should lessen the burden on the Developer. The Developer will sign a standard contract with the ESCO as part of the HFA financing process. The packaging of financing, determination of appropriate energy efficiency measures, and the like, then falls to the ESCO. The involvement of the ESCO, in other words, will make the energy efficiency transaction both easier and more effective for the Developer.

In sum, the five major players within the HFA model include: (1) the Developer; (2) the ESCO; (3) the Utility; (4) the WAP agency; and (5) the Housing Finance Agency.

The HFA model sets forth two important arrangements.

1. **The Developer/ESCO Contract:** The first important financial arrangement is a contract between the Developer and the ESCO. From the ESCO, this contract will involve an estimate of savings to be generated; a guarantee of those savings; a commitment to maintenance of the energy efficiency improvements over the life of the project; and a commitment to raise the capital to finance the energy efficiency improvements. In contrast, from the Developer, the contract will involve a commitment that a service fee will be paid to the ESCO to compensate the ESCO for the above services. The intent here is to make the Developer/ESCO contract a standardized document that is simply another routine part of obtaining HFA project financing. Jut like standardized residential leases adopted by some state and local boards of realty, the ESCO contract should be the same in each energy efficiency transaction.

   In addition, the intent behind the ESCO/Developer contract is to remove the energy efficiency financing from the capital side of the equation of debt financing and to place it instead on the operating expense side of the equation. As such, it should *not* be considered in determining the loan-to-value ratio of the units being pursued by the Developer, since it is not a "debt" of the Developer.

   Moreover, even if the financier *does* consider the ESCO contract, the situation will have been created where the increased operating expenses attributable to the ESCO contract will be offset by the decreased operating expenses due to energy savings. Forcing the financier to focus on total operating expenses within the underwriting process is a positive development.

   In sum, either way, the ESCO contract serves its purpose. Either the ESCO contract is taken out of consideration altogether, or it is considered in conjunction with the decreased operating expenses the contract will generate.

2. **The HFA/ESCO Financing:** The second important financial arrangement is the debt financing provided by the HFA to the ESCO. Note, here, that the debt is *not* provided

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to the Developer, but rather to the ESCO, itself. The security for the debt is not the mortgage on the underlying property, but rather an assignment of the revenues arising from the Developer/ESCO contract.

Ascertaining and implementing the types of credit enhancements, or guarantees or other security necessary in order to make the HFA/ESCO financing deal work will be one of the primary problems to be overcome with the context of any pilot project testing this concept.[6]

While a limited number of institutions exist today that can play the role of the ESCO in this model, the intent of the project is to help build the groundwork for an expansion of that industry. In particular, assuming the model works as it is expected to, one future aspect of expanding this type of financing is to provide training and capacity building to agencies such as Community Development Corporations (CDCs) to become "community-based ESCOs." Further explanation of this process will await another day.

The Community-Based Lender Model

The Community-Based Lender Model is virtually the identical model as the HFA model, with different players being part of the process. The model still involves five major players. These include (1) the Developer; (2) the ESCO; (3) the Utility; (4) the WAP Agency; and (5) the Community-Based Lenders. The model is graphically illustrated in Attachment B to this paper below.

As is thus apparent, the major difference between the two models involves the institution providing the gap financing. While in the HFA model, it is the state (or local) Housing Finance Agency, in the Community-Based Lender model it is a financial institution such as a Community Development Credit Union, a Community Development Loan Fund, or the like, providing the financing.

A second major difference is the type of "developer" that will be reached. The Community-Based Lender model is directed primarily to developers that include land trust developments and the like.

In all other major fashions, the Community-Based Lender model is identical to the HFA model. There are two exceptions. First, within the Community-Based Lending model, there will likely be the need for a greater emphasis on providing some type of security. Actions to bolster the guarantees would thus need to be more prominent.

[6] In fact, in Vermont, for example, there would likely be no need for a guarantee or other type of credit enhancement. The VHFA is well aware of the nature of energy efficiency investments, and is comfortable with the potential for repayment. However, notwithstanding this particular comfort level in Vermont, any effort designed to create the *structure* necessary to provide comfort to an HFA in some other state will need to address the fact that the HFA in another state may not share the same comfort level.

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Second, since Community Development Loan Funds are not governed by the same regulatory structure as are banks and other traditional financial institutions, there would need to be an affirmative effort to develop underwriting criteria that would be appropriate for providing energy efficiency debt financing. The need is to develop and test these new underwriting criteria within the market of community-based lenders. Future advocacy would then be necessary to promote these new energy efficiency underwriting criteria to traditional lenders.[7]

In addition, the Community-Based Lender model will involve efforts to generate new community investment in the community financial institutions to permit them to make energy efficient loans. Unlike an HFA, in other words, which can generate its own capital through the issuance of low-cost bonds, a community-based financial institution depends on private investors. Hence, through the promotion of the Community-Based Lender model, not only will energy efficiency receive an influx of new private capital, but a growth in democratically-controlled financial institutions will receive support as well.

SUMMARY

Two new models for financing energy efficiency improvements have been developed. These models involve different players, different sources of capital, and different delivery mechanisms. Nonetheless, they are the same in that they seek private investment funds to help fill the "gap" left by WAP and utility DSM financing of energy efficiency improvements in low-income homes. The models will help bring HFA and community-based lending to the provision of low-income energy efficiency.

[7] Efforts to negotiate such underwriting criteria with traditional lenders within the context of the National Collaborative on Home Energy Rating Systems and Mortgage Incentives for Energy Efficiency, an effort organized by the U.S. Department of Housing and Urban Development (HUD), failed. According to the Final Report of the Collaborative, "members agreed to disagree" on point such as "how energy-efficiency improvements or construction costs should be reflected in the mortgage or how to incorporate energy cost savings into the procedures used to qualify people for [Energy Efficient Mortgages]." *A National Program for Energy Efficient Mortgages and Home Energy Rating Systems: A Blueprint for Action: Executive Summary*, at 3 (March 1992).

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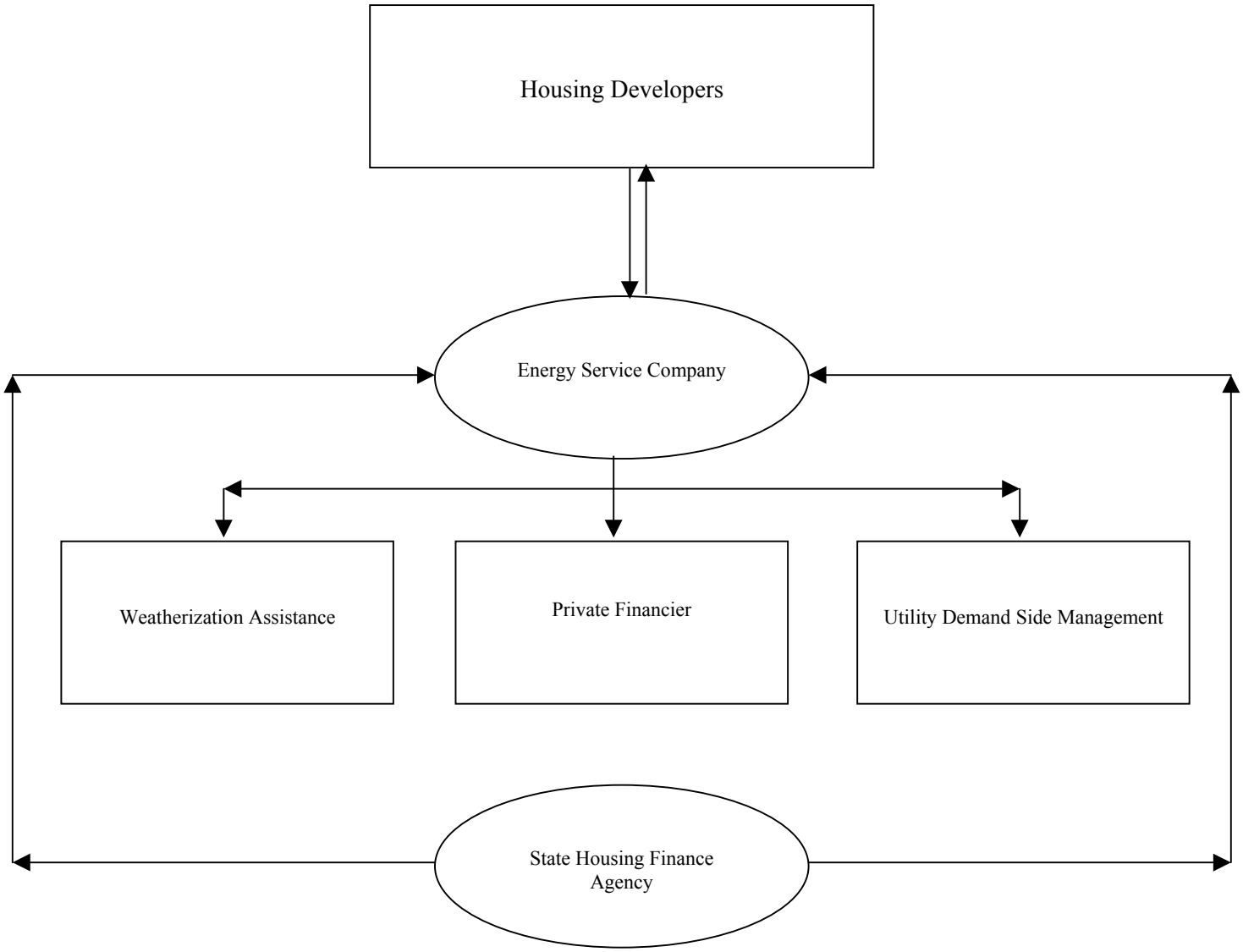
HOUSING FINANCE AGENCY LENDING MODEL



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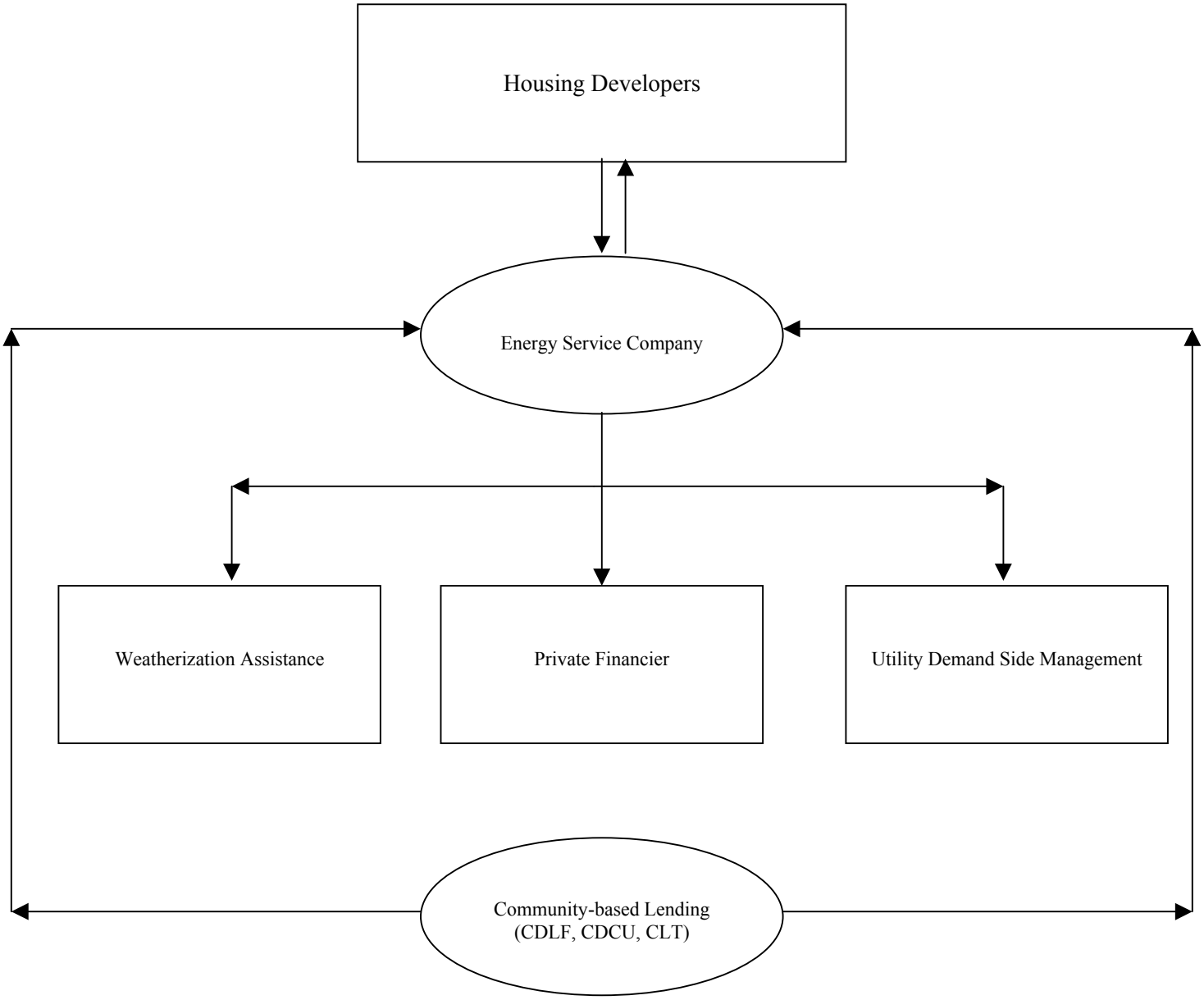
COMMUNITY-BASED LENDING MODEL



CDLF = Community Development Loan Fund
CDCU = Community Development Credit Union
CLT = Community Land Trust

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