

**PREPAYMENT METERS**  
**AND THE**  
**LOW-INCOME UTILITY CONSUMER**

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A prepayment meter consists of a meter which operates using a "credit card" inserted by a utility consumer. The consumer purchases might occur either at the utility company, or a local drug store, or any other utility pay station. Purchases might also be by mail.

Existing prepayment meters provide for the purchase of electricity in blocks of dollars. A consumer, in other words, would purchase \$50 of electricity rather than purchasing blocks of energy (*e.g.*, purchasing 500 kWh which happens to cost \$x).

A prepayment meter operates through use of a plastic card. The consumer purchases a designated amount of energy from a local vendor which amount is then encoded on a magnetic strip on this card. The card is then inserted into the home electric meter which will operate until the purchased amount of energy is exhausted. At that time, all energy through the meter is blocked. Generally, prepayment meters will give a warning of from two to four days prior to the dollars being exhausted.<sup>11)</sup> "Cold weather protections" can be programmed into the meters.<sup>12)</sup> Prepayment meters can also be programmed to reflect differing rate blocks: flat, inclining or declining.<sup>13)</sup>

## SUMMARY OF POSITION

Utilities should be required to make clear the purposes for which they seek installation of a prepayment meter. On the one hand, a utility might seek such installation as a credit and collection device. Under these circumstances, a prepayment meter will be posited as a less intrusive alternative than the disconnection of service. On the other hand, a prepayment meter might be posited as a new form of "limited service," similar to Local Measured Service (LMS) within the telephone industry.<sup>14)</sup>

Prepayment meters should be opposed as a collection device. They represent an inadequate response to low-income inability-to-pay. They tend to "hide" that inability-to-pay rather than seeking to redress it.<sup>15)</sup>

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<sup>11)</sup> The meter will project the day on which consumption will be exhausted based on existing rates of usage. In North Carolina, for example, in a 30 person pilot project, the PowerStat meter continuously blinks and emits an hourly "chirp" when the amount left on the meter is less than four times the amount used on the previous day.

<sup>12)</sup> Cold weather protections will permit continued consumption with service limiter constraints. If, in other words, the coincident demand placed on the meter exceeds designated levels after the purchased consumption amount is exhausted, the meter will provide an audible warning --most often times a series of beeps-- and then cutoff power for a designated period of time (measured in increments of an hour). At the end of that time, the meter will check to determine whether the demand has been reduced below the permitted levels. In Missouri, for example, Union Electric's 33 participant pilot project provided that power of not less than 2,000 watts shall be provided during the cold weather months when the "amount remaining" display on the PowerStat meter reaches \$0 from November 15 through March 31; the wattage is to be increased to 15,500 for electric heating customers. This limited electric service, Union Electric's tariff said, shall permit heating, lighting and refrigeration during the cold weather period. Any electric service used after the "amount remaining" display reaches \$0 during the cold weather months shall accumulate as a negative amount on the meter and be subtracted from any new card purchase. Participants with a negative balance are then required to make purchases of at least \$75 or the amount remaining, whichever is less, each 30 day period to avoid the disconnection of service.

<sup>13)</sup> It is not clear how customer charges are paid in a prepayment meter setting.

<sup>14)</sup> The difference is that LMS is thus priced less expensively due to the "lesser" service provided.

<sup>15)</sup> Prepayment meters are generally viewed as credit and collection devices. Virginia Electric and Power Company, for example, indicated it

Moreover, even if prepayment meters are effective in controlling receivables, such meters are not likely to be *cost*-effective, in that they do not promote overall least-cost service. Cost-effectiveness *vis a vis* alternatives is even less likely.

Prepayment meters are likely unlawful if they are installed by an investor-owned utility. They violate the utility's common law duty to provide service and to do so without unreasonable discrimination. Even if not a violation of a utility's duty to serve, prepayment meters violate important procedural safeguards to protect consumers against unnecessary service terminations.

Finally, assuming *arguendo* that prepayment meters are to be pursued, and are found to be lawful, they should only be permitted if customers using such meters are provided appropriate rate reductions reflecting the lesser service provided and lower costs incurred.

The discussion below considers prepayment meters as a credit and collection mechanism.

### **WILL PREPAYMENT METERS GIVE RISE TO BENEFICIAL IMPACTS**

This discussion will consider whether prepayment meters are likely to generate the beneficial impacts they are intended to generate. According to proponents of prepayment meters, beneficial impacts might arise to the consumer and to the utility. Each of these impacts will be addressed separately. The discussion concludes that for low-income consumers in particular, the assumptions underlying claims of benefits are unfounded and the beneficial impacts are unlikely to arise.

Proponents of prepayment meters have posited a variety of benefits to the use of such technology. These benefits tend to be variations on a common theme. Proponents assert that prepayment meters will allow consumers to gain control over their usage, will help impose discipline on consumer budgets, and will make consumers more aware of their energy consumption.

While the theme is common, each of these claims makes unwarranted assumptions and will be examined separately.

#### ***Allow Consumers Control Over Usage***

Prepayment meter proponents claim that such meters will allow consumers to gain control over their consumption. By allowing customers to monitor their consumption on a constant basis, these proponents assert, prepayment meters will thus provide the information necessary to make affirmative decisions as to which appliances and other consumption to pursue and which to forego.

This claim assumes, of course, that consumers have control over their usage and can make affirmative  
(..continued)

intended to solicit customers "who historically meet certain criteria, *i.e.*, transient nature, frequent disconnections for non-pay, fixed-income, difficult to access meters, etc." *Re. Virginia Electric and Power Co. dba North Carolina Power*, 145 P.U.R.4th 507 (1993).

adjustments in the extent of the energy they consume. In fact, that assumption is often in error.

Low-income energy consumption can be divided into two different genres: (a) discretionary consumption; and (b) nondiscretionary consumption. Nondiscretionary consumption is by far the biggest block of the two. Consider, for example, the three largest uses of electric energy in a typical electric household:<sup>16)</sup> (a) space heating; (b) water heating; and (c) refrigeration.<sup>17)</sup> Each of these is largely beyond the ability of the household to control.

Space heating usage in low-income households is often driven by factors largely outside of the ability of the low-income household to control. The age and efficiency of the space heating equipment, the age and energy efficiency of the dwelling unit, the number of household members, and the extent to which household members are home during the day<sup>18)</sup> are all factors that are beyond the household's ability to control. Moreover, the condition of the physical structure, including not only the structural integrity of the unit but factors such as the location of an apartment within the multifamily structure, the weatherization characteristics of the unit, the orientation of a home or apartment *vis a vis* direct sunlight, and the like, are all factors beyond a household's ability to control.

Water heating and refrigeration, too, depend largely on factors beyond a household's ability to control. The age and relative energy efficiency of the appliance, itself, is the primary driving factor in energy consumption of these household uses. In addition, high hot water consumption is often driven by leaks, particularly in low-income households.<sup>19)</sup>

It may be easy to create the image of people turning off lights, turning down thermostats, and taking other affirmative steps to control consumption by behavioral changes. The savings potential through such steps is insufficient to predicate the introduction of an entirely new generation of meters based upon such savings. Moreover, it may be easy to create the image of a vast savings potential that would arise if low-income households only turned off "wasteful" appliances. However, it is not the number of new appliances, but rather the age, condition and energy efficiency of basic appliances, that drives low-

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<sup>16)</sup> Prepayment meters are confined to electric usage, given the safety issues involved with "disconnecting" and reconnecting natural gas service.

<sup>17)</sup> In 1987, refrigerators consumed roughly 20 percent of all electricity consumed by households in the United States. U.S. Department of Energy, Energy Information Administration, *Housing Characteristics 1990, Residential Energy Consumption Survey*, at 19 (May 1992). Almost one-in-four (37%) households used electricity for hot water heating in 1990, an increase from 32 percent in 1980. *Id.*, at 13. Use of electricity as the main space heating fuel also increased from 1980 to 1990, from 18 percent to 23 percent. *Id.*, at 7.

<sup>18)</sup> This might be a function of whether household members are employed outside the home or not.

<sup>19)</sup> According to the American Housing Survey, performed by the Census Bureau and the U.S. Department of Housing and Urban Development (HUD), while only 13 percent of all occupied units in the country were occupied by households living below the Poverty Level, nearly 20 percent of all households with leaking pipes were in low-income homes. *American Housing Survey for the United States in 1989*, at Table 2-7, p 46 (July 1991). In addition, the AHS reports, nearly one-quarter of all leaks that were "unreported" but discovered upon inspection of the housing being surveyed were in homes occupied by households living below the Poverty Level. *Id.* Overall, nearly one in six low-income households (16%) had water leaks. *Id.* The AHS reports that 22 percent of the occupied households experiencing "severe" physical problems with their plumbing were low-income households, while in addition, 34 percent of the occupied households experiencing "moderate" physical problems with their plumbing were low-income households. *Id.*

income consumption levels.<sup>10)</sup>

### ***Helps Impose Discipline Over Consumer Budgets***

Prepayment meter proponents posit that these meters will help consumers impose a "discipline" over their family budget process. Within the context of low-income households, however, this argument erroneously assumes that inability-to-pay is a budgeting problem.

In fact, low-income households have an absolute mismatch between household income and household expenses. A recent study in Washington State, for example, found that actual median incomes for low-income households do not allow households to live a "minimum but adequate" quality of life. A 1-person LIHEAP household, for example, has an average income of \$4,334 in Washington State while the AFDC "standard of need" finds an income of \$8,340 necessary to lead a minimum but adequate quality of life.<sup>11)</sup> These households pay more than 19 percent of their annual income for their annual household energy bills. (In contrast, the U.S. Department of Housing and Urban Development [HUD] provides that households who spend more than 30 percent of their income on *total* shelter costs, including rent plus all utilities, except telephones, are spending too much.) The findings for Washington State households of various sizes are presented below:

<b>ANNUAL LOW-INCOME STANDARD OF NEED IN WASHINGTON STATE VS. AVERAGE LIHEAP INCOME BY FAMILY SIZE</b>		
<b>HH SIZE</b>	<b>AFDC STANDARD OF NEED</b>	<b>AVERAGE LIHEAP INCOME</b>
1	\$ 8,340	\$4,334
2	\$10,548	\$5,601
3	\$13,056	\$6,980

<sup>10)</sup> Consider, for example, new refrigerators in 1990 would be 96 percent more efficient than a new model in 1972. *Housing Characteristics 1990, Residential Energy Consumption Survey*, *supra* note **Error! Bookmark not defined.**, at 23, 25. According to DOE/EIA, however, more than 35 percent of all households eligible for federal fuel assistance had the older refrigerators. *Id.*, at 114.

<sup>11)</sup> M. Sheehan, *An Assessment of Low-Income Energy Needs in Washington State*, at 35 - 37 (November 1993) (prepared for Washington State Department of Community Development). Similar studies have reached similar conclusions in other states. A 1989 study in Utah, for example, found the cost of a minimum standard of living in that state to be \$9,708 (in 1986 dollars). In contrast, the average income of a Utah LIHEAP recipient (for a family of three) was only \$6,400. R. Colton, *Losing the Fight in Utah: Low-Income Households and Rising Energy Costs* (January 1989). Similarly, a 1986 study in Pennsylvania found that the minimum standard of living for a family of two was \$8,445, while in contrast, a two person Pennsylvania household living at 100 percent of the Federal Poverty Level had \$7,050 in annual income. C. Hill and R. Colton, *The Crisis Continues: Addressing the Energy Plight of Low-Income Pennsylvanians Through Percentage of Income Plans* (November 1986). A 1986 study of Nebraska found that the cost of a minimum standard of living in that state was \$8,854 for a family of four. In contrast, the average annual AFDC income was \$3,360; the average income of a household on unemployment was \$6,096. *The Minimum Cost of Living in Nebraska*, Bureau of Business Research, College of Business Administration, University of Nebraska--Lincoln (1986).

4 <sup>\12\</sup>	\$15,348	\$9,056
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In spite of this lack of household resources --or perhaps because of it-- research shows that low-income households tend to be excellent at household budgeting. A late 1985 Pennsylvania State University (Penn State) study looking at payment-troubled households in Pennsylvania,<sup>\13\</sup> for example, debunked the myth that nonpaying households are characterized by "deadbeats." The Penn State study found that "payment-troubled households are experiencing considerable socioeconomic stress when compared to the pattern for the average (general) customer sample."<sup>\14\</sup> The study noted that families encountering payment problems have a higher number of female heads of household, dependents, disabled members, nonmarried heads of households, and unemployed household members while also having lower levels of education, income and home ownership than households that do not experience difficulties.

Ultimately, the study concluded: "thus, with regard to their socio-economic and demographic characteristics, the groups that encounter payment problems have higher proportions of the type of customers intended for protection by public policy."<sup>\15\</sup>

The Penn State study found that six of ten customers who had utility payment problems indicated that some unusual condition hindered timely payment of their utility bill. Employment related problems (such as being laid off, having reduced working hours, or being unemployed) were most frequently cited as the cause for the receipt of a shutoff notice as well as for the actual termination of service (22% for shutoff notice; 18% for termination of service).<sup>\16\</sup> Unusually high medical expenses (resulting from hospitalization or illness) and unusually high bills (resulting from seasonal usage variations) were the second and third most common reasons cited for the termination of service. (19% and 18% percent respectively).

The Penn State study concluded: "in view of the lower-income levels and higher number of dependents in the payment-troubled households when compared to the general sample, it is not surprising that these difficulties readily manifest themselves in the form of overdue bills."<sup>\17\</sup> Moreover, Penn State

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<sup>\12\</sup> The average income calculated for the LIHEAP population aggregates all households with four or more persons in this category of "four person households."

<sup>\13\</sup> Hyman, et al., "Optimizing the Public and Private Effects of Utility Service Terminations," *Public Utilities Fortnightly*, at 29 (December 29, 1985).

<sup>\14\</sup> The statewide study examined representative samples of four groups of households involving over 1,800 interviews. The four groups included: (1) general residential utility customers; (2) customers who received a termination notice; (3) households whose service was actually terminated; and (4) households who sought to have a proposed termination mediated by the Public Utility Commission Bureau of Consumer Services. *Id.*, at 30, n. 1.

<sup>\15\</sup> *Id.*, at 30.

<sup>\16\</sup> *Id.*, at 32, Table 2.

<sup>\17\</sup> *Id.*, at 32.

found that 20 percent of the households with payment troubles reported that they simply lacked adequate income. The reasons underlying household payment problems are set forth in the Table below.

<b>COMPARISON OF THREE STUDY GROUPS ON CIRCUMSTANCES SURROUNDING THE OVERDUE BILL</b>			
<b>Unusual Condition for Overdue Bill</b>	<b>NOTICE</b>	<b>TERMINATED</b>	<b>PUC-BCS<sup>18\</sup></b>
<b>No income. No money</b>	18%	18%	6%
<b>Illness. Medical</b>	15%	19%	21%
<b>Extra high utility or other large bill</b>	22%	18%	16%
<b>Laid off. Less work</b>	21%	21%	32%
<b>Other</b>	14%	16%	11%
<b>No unusual condition</b>	10%	8%	4%

Finally, the Penn State study found that payment-troubled customers "made changes in their spending or lifestyle (or both) to deal with inflation and the high cost of energy." In general, the study found that "payment-troubled groups report cutting back more on essentials such as food, clothing and medical care than the general sample, and they also cut back more in other areas such as recreation, vacations, and gasoline for automobiles."<sup>19\</sup> Indeed, the Penn State study reported that "the payment-troubled groups, which may be living near or below the margin of adequacy for necessities, exhibit greater propensity to cut these items than the average residential consumer. Furthermore, the more serious the degree of utility payment problems, the higher the rate of reported cutbacks."<sup>20\</sup>

This Pennsylvania research has been confirmed by other empirical research in Washington, Quebec and Wisconsin.<sup>21\</sup>

### ***More Aware of Energy Consumption***

Proponents of prepayment meters claim that such meters will make consumers more aware of their energy consumption. These proponents assume, in other words, that customers can gain access to

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<sup>18\</sup> These include the complaints submitted to the Bureau of Consumer Services, Pennsylvania Utilities Commission, regarding service disconnections, payment plans, and the like. See, note **Error! Bookmark not defined.**, *supra*.

<sup>19\</sup> *Id.*, at 32.

<sup>20\</sup> *Id.*

<sup>21\</sup> See generally, R. Colton, *Understanding Why Customers Don't Pay: The Need for Flexible Collection Practices* (January 1991).

their meters, can accurately read their meters, and can translate the information provided by their meters into the operation of discrete home energy consumptive uses. These assumptions about consumer information are likely in error.

The first assumption made by proponents of prepayment meters is that households have ready access to their meter. Occasional access, of course, does not help since it would not permit the consumer to gauge the rate at which the meter was running as a function of different appliances operating at any given time. According to one study of prepayment meters, customers checked their meters for the dollar amount remaining as many as 28 to 35 times a week.<sup>122\</sup> The most common type of meter provides a myriad of information, including: (a) present dollars remaining; (b) present use; (c) amount used in past 24 hours; (d) amount used in last month; and (e) amount of last purchase.

Few low-income customers, however, particularly tenants in multi-family dwellings, will have ready access to their meters. And tenancy is the norm within the low-income community. If one assumes a multifamily dwelling in which access to meters is restricted generally, let alone the unlimited access assumed by arguments holding that consumers will link the operation of their meters with the operation of specific energy consuming appliances, it becomes unlikely that prepayment meters will help make payment troubled low-income consumers more aware of their energy consumption.

Even if meters are accessible, it will often be the case that low-income consumers will lack the education and training to make the calculations necessary to link the operation of their electric meter to the operation of specific energy consuming appliances. The federal government has found that consumers lack the education generally necessary to make such calculations. In the National Assessment of Educational Progress, for example, only thirty-nine percent of the adults tested were able to compare different-sized containers to determine the best price. In that study, also, only thirty-two percent of the adults were able to determine the square foot unit cost of housing space. Only thirty-five percent of adults were able to determine the unit cost of a utility bill.<sup>123\</sup>

Moreover, the lack of education has been found to be a barrier for low-income households in making the calculations necessary to determine whether investment in energy efficiency measures is justified.<sup>124\</sup>

The lack of education, too, has been found to prevent low-income consumers from being able to choose the least-cost telephone service available.<sup>125\</sup>

In sum, for low-income consumers, the assumptions about accessibility and usability of consumer

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<sup>122\</sup> Pacific Power and Light, *Walla Walla Credit Card Metering Project: Early Results*, at 3 (1988).

<sup>123\</sup> National Assessment of Educational Progress, *Mathematics Report No. 04-MA-02*, 1-3 (June 1975).

<sup>124\</sup> R.Colton, *Utility-Financed Low-Income Conservation: Winning for Everybody*, at 32, 38 (1991); see also, Cambridge Systematics, *Implicit Discount Rates and Consumer Efficiency Choices* (1986).

<sup>125\</sup> A. Quinn, *The Impact on Low-Income People of the Increased Cost for Basic Telephone Service: A Study of Low-Income Massachusetts Residents' Telephone Usage Patterns and Their Perceptions of Telephone Service Quality* (1992).

information provided by prepayment meters is likely to be in error. Consumers will not likely be able to gain access to meters, particularly in multi-family rental properties. Even if access is available, there is no reason to believe that the information which is "accessible" is any more usable in this context than in other consumer finance contexts.

#### **ADVERSE IMPACTS TO THE CONSUMER**

In addition to lacking the benefits claimed for prepayment meters, such meters will impose substantial adverse impacts on low-income households. Prepayment meters present problems for low-income households who have an absolute mismatch between income and expenses, problems for households on fuel assistance, problems for households who would otherwise benefit from budget billing, and households who are unable to pay due to extraordinary circumstances.

### ***Absolute Mismatch Between Income and Expenses***

Prepayment meters do not address the problems posed by low-income households who simply do not have sufficient funds to pay for their home energy costs. A recent study of low-income winter heating bills found that roughly 20 percent of the 5.2 million federal fuel assistance recipients had annual incomes of less than \$4000.<sup>126\</sup> No matter how such income is budgeted, no matter how small the increments of payments within any given month, these households will not be able to afford their home energy bills out of current income.

This recent study of natural gas winter heating bills gives an indication of the problems facing low-income households. According to the study, more than 1.0 million households with incomes less than \$6,000 would have winter home heating burdens exceeding 30 percent of their income in the absence of federal fuel assistance.<sup>127\</sup> Roughly 1.3 million households would have winter home heating burdens of more than 25 percent of income. Roughly 1.9 million households would have burdens exceeding 20 percent of income. More than 2.7 million households would have winter home heating burdens exceeding 10 percent of income, the ceiling of "affordability."

The report found finally that LIHEAP households would, *on average*, pay too much for their natural gas winter heating bills in the absence of LIHEAP in more than eight-of-ten utilities. Of the 199 natural gas utilities studied, 168 (84%) had LIHEAP recipients who would, on average, pay more than 10 percent of their income for their natural gas winter heating bill.<sup>128\</sup>

Clearly, if a person cannot afford to pay, a prepayment meter does not help.<sup>129\</sup>

### ***Low-Income Budget Billing***

Not only will prepayment meters not help low-income households who face affordability problems, but they will impose adverse consequences as well. Affordability, of course, has a time element to it. This time element, for example, will reflect seasonal variations in utility bills. Accordingly, prepayment meters will likely be counterproductive in helping low-income households budget for their home energy costs since such meters eliminate the possibility of leveled budget billing plans.

Prepayment meters do not allow low-income households to budget for high cost winter month energy bills. By requiring immediate payment of full bills in any given month, the advantages of leveled budget billing plans are foregone.

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<sup>126\</sup> M. Sheehan, *On The Brink of Disaster: A State-by-State Analysis of Winter Natural Gas Heating Bills*, at 16 (February 1994).

<sup>127\</sup> *Id.*, at 22.

<sup>128\</sup> *Id.*, at 78.

<sup>129\</sup> The observation of one poverty advocate was apt: "you can buy milk or refrigerate it, but not both."

Levelized budget billing plans and prepayment meters are at fundamental odds with each other. By definition, levelized budget billing plans do not require prepayment of winter heating bills. Instead, total annual bills are divided into twelve equal monthly installments. In this fashion, the burdens imposed by winter month bills are avoided by smoothing the peaks.

Eliminating the benefits which arise from levelized budget billing plans for low-income customers is unwise policy. Research has shown that one of the most beneficial utility assistance programs, short of utility discounts, is levelized "budget" billing.<sup>30\</sup>

### ***Low-Income Fuel Assistance***

Prepayment meters would likely pose insurmountable problems for households receiving federal fuel assistance through the Low-Income Home Energy Assistance Program (LIHEAP). Under current federal budget procedures, the program year for LIHEAP begins on October 1st of each year. As a result, households often apply for assistance during the late fall and early winter months of October and November. In most states, however, the date of *application* for assistance is, for the most part, irrelevant to the actual *receipt* of assistance. LIHEAP payments are made to households when states receive the federal funds. Those funds historically have not been received until well after the beginning of the program year. LIHEAP benefits are thus not actually paid, irrespective of date of application, until any time from late December through mid-January.

Under the prepayment metering system, therefore, these households would be placed in jeopardy in one of several ways. First, taking the Missouri situation described above as typical,<sup>31\</sup> if the household cannot afford to make the designated minimum payments out of current household income, the household is subject to shutoff. The unaffordability of the monthly payment, however, is, of course, what prompted the household to apply for fuel assistance in the first instance. Second, even if the household *makes* the minimum payment, that household is placed on a severely restricted "rationing" of electric use consistent with the service limiter.

Under the prepayment metering system, both of these results will obtain notwithstanding the fact that the household has applied for, and been found eligible for, federal fuel assistance dollars.

### ***Deferred Payment Arrangements***

Finally, prepayment meters eliminate the advantages of deferred payment arrangements. Due to the

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<sup>30\</sup> See e.g., Barnes, *A Study of Client Satisfaction: The Percentage of Income Payment Plan* (1987). This study, undertaken by a professor at Sooutheastern Massachusetts University for the Rhode Island Governor's Office of Energy Assistance, examined the Rhode Island Percentage of Income Payment Plan (PIPP). Under a PIPP, a household's energy bill is set equal to an affordable percentage of income. Households are required to make equal monthly payments year round. In exchange, the state pays the difference between the household payment and the actual bill. According to Barnes, the PIPP program was "overwhelmingly preferred over the old energy assistance program (70% vs. 17%), mostly due to the even copayments." *Id.*, at 11. Indeed, half as many households cited their even year round payment requirement (17%) as what they "liked best" about the PIPP as cited the lower, more affordable bills (40%). *Id.*

<sup>31\</sup> See, note **Error! Bookmark not defined.**, *supra*.

very nature of their poverty status, low-income households are more vulnerable to extraordinary expenses. These households lack the current month resources to pay such expenses, as well as the savings upon which to draw to pay such expenses. An extraordinary expense can involve anything from unforeseen medical expenses, to automobile or appliance repairs.

Unforeseen expenses can include the loss of income due to illness, weather or other short-term phenomenon, as well. Typical low-income employment opportunities do not present "salaried" positions. Instead, these job positions present hourly wages. If fewer hours are worked, for whatever reason, household income is correspondingly reduced.<sup>132\</sup>

The persons who are most likely to face these situations are the poor. Low-income households will more likely have older automobiles or household appliances that will present repair needs. Moreover, low-income households will more likely be hourly wage employees rather than salaried employees. It is not surprising that low-income households tend to be the customer class most protected by deferred payment arrangements.

It is precisely for these situations that deferred payment arrangements are designed. Yet, by requiring prepayment, these situations are prevented from ever reaching a utility or regulator's attention.

## PROCEDURAL PROTECTIONS

### *Pre-Shutoff Notice Requirements*

**Common law requirements:** Prepayment meters avoid all of the procedural protections now preceding a service disconnection. It is established law now that public utility service may not be disconnected at common law until after notice is given in accordance with the terms of the contract between the consumer and the utility.<sup>133\</sup> In *Carson v. Fort Smith Light Co.*,<sup>134\</sup> a mother-plaintiff successfully recovered damages for cold-weather-related illnesses caused by the utility's disconnection of service without prior notice. In *Carson*, a quarter gave the family a day's worth of energy from a coin-operated meter. The utility had increased its charges for service; this increase resulted in a retroactive overdue balance which was unknowingly unpaid.<sup>135\</sup> When the utility box collector arrived at plaintiff's home to take all the coins out, and to disconnect service for the unknowingly unpaid new balance, he eliminated the remainder of that day's quarter, not part of the money owed.

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<sup>132\</sup> *On the Brink of Disaster*, *supra*, at 29 - 30 ("While it is always dangerous to generalize about who constitutes the working poor, Table 11 sets forth both the actual hourly and actual weekly wages for selected "typical" low-wage employment opportunities. It is important to note that take home pay is a function of more than merely the hourly wage. In no instance of these jobs examined were employees provided 40 hour work weeks.")

<sup>133\</sup> 28 *C.J.*, *Public Utilities*, at §29(d), p. 567.

<sup>134\</sup> 108 Ark. 452, 158 S.W. 129 (1913).

<sup>135\</sup> Nineteen (19) days elapsed between the effective date of the increased amount and the day the utility came to the plaintiff's house to adjust the meter.

The *Carson* court found that plaintiff-family had not been notified that as a result of the increase, extra money was owed for past consumption, nor was the family notified of the utility's power to disconnect the heat in order to encourage payment. Without any discussion of the contract itself, the court held:

It may be true that the gas company had the right under its contract to shut off the supply of gas\* \* \*to compel payment of amounts already due\* \* \*but *it could not do so until after giving notice in accordance with the terms of the contract*\* \* \*.<sup>136\</sup>

Thus, it may be argued that a utility's common law right to terminate service to enforce payment is conditional upon its duty to notify the consumer of its intention to do so *prior* to exercising that right.

Indeed, the common law routinely has conditioned the exercise of a disconnection of service upon the proper issuance of a pre-disconnection notice.<sup>137\</sup> Such notice requirements are mandatory and binding on the utility. In *Mississippi Power Company v. Byrd*,<sup>138\</sup> the court held that damages were recoverable for terminating service without prior notice. The utility had issued a rule for the mutual benefit of the customer and the company that required a written notice be given to the customer five (5) days prior to the threatened cut-off date. The consumer-plaintiff had claimed actual damages for mental suffering and punitive damages resulting from the two (2) days he had no electric current. The court held that whether the utility complied with its notice rule, which was reasonable and binding, was properly before the jury.

The Alabama decision in *Peddicord v. Tri-City Gas Company* sets forth the holding that predisconnect notice is fundamental to the provision of utility service.<sup>139\</sup> The *Peddicord* court used common law reasoning to hold that a fundamental notice regulation is applicable to *all* obligations imposed on customers which carry a threat of termination for non-compliance, holding that "a sudden discontinuance of service may work hardship and even perils to the customer and his family."<sup>140\</sup> The court reasoned:

After the relation of a regular customer is established, the customer having made his outlays in the premises, and, in view of the loss, inconvenience, discomfort, and maybe hazard to health involved in a sudden discontinuance of service *without warning*, the general laws touching the reasonableness of rules, or discontinuance without rules, on the part of a public utility, are not the same as applied to many forms of contract,

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<sup>136\</sup> *Id.*, at 457. (emphasis added).

<sup>137\</sup> See generally, 64 *Am.Jur.2d*, *Public Utilities*, §62 (1972).

<sup>138\</sup> 160 Miss. 71, 133 So. 193 (1931).

<sup>139\</sup> 232 Ala. 445, 168 So. 166 (1936).

<sup>140\</sup> *Id.*, at 447.

wherein a breach on the part of one clothes the other with a right to terminate immediately.<sup>\41\</sup>

Indeed, a contract by a public utility with its customer is an agreement to furnish service for an indefinite period of time.<sup>\42\</sup> An implied term of such a contract is that service will not be suddenly terminated without reasonable notice.<sup>\43\</sup> The right to receive notice does not depend upon the right to contest the disconnection of service. "Regardless of whether the plaintiffs had a right to contest the discontinuance of service, they certainly had a right to know that service was being discontinued to enable them to protect themselves from the very damages that did occur."<sup>\44\</sup>

The provision of notice of an interruption in order to permit the customer to protect against resulting damages was found determinative in *National Food Stores v. Union Electric Company*<sup>\45\</sup> as well. According to the Missouri appellate court:

While we do not propose that public utilities\* \* \*are insurers or guarantors of the safety of persons or their property,\* \* \*we hold there is as a matter of law a duty on Union Electric to protect its customers from foreseeable damage from failure of electrical service.

In this case, it is incumbent upon us to determine if Union Electric's conduct in *failing to warn* National of its planned interruptions of National's service breached Union Electric's duty to avoid unreasonable risks of damage to National's property. (emphasis added)<sup>\46\</sup>

The Missouri court concluded that the electric utility had a duty to give reasonable notice of a service interruption when "the utility knows or should know that by so failing to give notice the interruption might result in loss or harm to its consumers."<sup>\47\</sup>

As can be seen, a common law duty exists to provide customers with written notice prior to the

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<sup>\41\</sup> *Id.*, at 447. (emphasis added).

<sup>\42\</sup> *Cates v. Electric Power Bd. of Nashville*, 655 S.W.2d 166, 170 (Tenn. App. 1983).

<sup>\43\</sup> *Id.*, citing, *First Flight Associates v. Professional Golf Co.*, 527 F.2d 931 (6th Cir. 1975); *Chattanooga R. and C.R.Co. v. Cincinnati N.O. and P.Ry. Co.*, 44 F. 456 (C.C. Tenn. 1890).

<sup>\44\</sup> *Cates*, *supra*, 655 S.W.2d at 170. "If plaintiffs had known of the discontinuance of electric service, they could and undoubtedly would have drained the pipes, or at least closed the water valve so that water would not flow profusely in event of a freeze and rupture of plumbing."

<sup>\45\</sup> 494 S.W.2d 379, 383 (Mo.App. 1973).

<sup>\46\</sup> *Id.*

<sup>\47\</sup> *Id.*, at 384.

disconnection of service. This duty arises not strictly from the contract, itself, although a duty to give notice may be implied as a contract term. Nor does the duty to give notice arise solely by the affirmative promulgation of some rule of a regulatory commission. Rather, the courts consistently hold, the obligation to provide notice arises by operation of law out of the special duty that a public utility owes the public it serves.

**Constitutional requirements:** In fact, if the affected utility involves state action, the use of a prepayment meter avoids constitutional due process protections and is thus unlawful. Where a utility's actions are found to involve "state action," the Due Process clause of the Constitution requires that certain elements of fundamental fairness inhere in the process leading to the denial of utility service.<sup>148</sup> There is, however, no consensus on what procedures minimum due process standards actually require.<sup>149</sup>

The Seventh Circuit decision in *Lucas v. Wisconsin Electric Power Company*<sup>150</sup> stands at one end of the spectrum. According to the *Lucas* court, Due Process requires only a five-day written shutoff notice joined with an informal utility review tempered by the availability of formal judicial remedies.<sup>151</sup> Moreover, the *Lucas* court held that requiring the customer to make payment of the disputed portion, subject to refund, was not constitutionally infirm.

The Texas district court decision in *Limuel v. Southern Union Gas Company*<sup>152</sup> stands at the other end of the spectrum. *Limuel* held that the minimum requirements of Due Process included: (1) written notice; (2) an opportunity to be heard in person with testimony and documentary evidence; (3) an opportunity to be represented by counsel;<sup>153</sup> (4) the right to confrontation and cross-examination; (5) a "neutral and detached" hearing officer; and (6) a statement of reasons, along with an identification of the evidence relied upon (though formal written "findings of fact" were not required).<sup>154</sup>

Within the bounds of these two extremes lies the bulk of constitutional Due Process doctrine involving the need to provide consumer protections to public utility consumers prior to the denial of service. In short, the courts have uniformly held that it is not sufficient to provide simply a disconnect notice informing the customer that unless an outstanding bill is paid by a designated date, service will be

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<sup>148</sup> *Memphis Light, Gas and Water Division v. Craft*, 436 U.S. 1 (1974).

<sup>149</sup> O'Brien, "Protecting the Consumer in Utility Service Terminations," 21 *St. Louis University L.J.* 452, 469 (1974) (citations omitted).

<sup>150</sup> 466 F.2d 638 (7th Cir. 1972), *cert. den.*, 409 U.S. 1114 (1973).

<sup>151</sup> *Id.*, at 647 - 653.

<sup>152</sup> 378 F.Supp. 964 (W.D.Tex. 1974).

<sup>153</sup> Counsel, however, need not be provided.

<sup>154</sup> *Limuel, supra*, 378 F.Supp. at 969.

disconnected.<sup>155</sup> The Due Process cases decided over the past twenty years can be summarized by the commentator who observed: "Essentially, the demand in the principal cases has been for adequate notice of termination coupled with a right to an impartial hearing where there is a dispute as to the propriety of the charge."<sup>156</sup>

**Duty of care requirements:** Finally, the use of a prepayment meter may violate a utility's legal duty of care in providing continuing utility service. In general, a supplier of water, gas or electric service is subject to a duty to exercise reasonable care to fulfill its obligation to provide continuing service.<sup>157</sup> In making a determination of whether a public utility acted "reasonably" in terminating a customer's service, the utility must "take into account the likelihood of damage to the customer."<sup>158</sup> This principle has been recognized for nearly 100 years. In the 1897 Indiana case of *Coy v. Indianapolis Gas Co.*,<sup>159</sup> the state courts found that a utility might be liable for the sickness and death of children occurring as a result of the unreasonable withholding of utility service. The court held that a natural gas company may not "at its pleasure, give or withhold the fuel at its disposal, and which may be the means necessary for the comfort, health, or even life of the inhabitants."<sup>160</sup> In a shutoff situation, therefore, a utility must act with the care that a reasonable person would exercise given the consequences of the shutoff.<sup>161</sup> The degree of care is heightened by the recognition that electric, gas and water services are essentials of life and the deprivation of such services is likely to be detrimental to life, health and property.<sup>162</sup>

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<sup>155</sup> *Bronson v. Consolidated Edison Company of New York*, 350 F.Supp. 443, 450 (S.D.N.Y. 1972).

<sup>156</sup> Ilardi, "The Right to a Hearing Prior to Termination of Utility Services," 22 *Buffalo L.Rev.* 1057, 1067 (1973).

<sup>157</sup> 26 *Am.Jur.2d, Electricity, Gas and Steam*, §112 (1966).

<sup>158</sup> See generally, "Wrongful Termination of Electric Service," 15 *Am.Jur. Proof of Facts* (2d) 125 (1978). "This article is concerned primarily with the question of the liability of an electric power supplier for the deliberate shutoff of electrical power furnished a patron. As used herein, the term 'patron' refers to a single or individual consumer of electric power, as distinguished, for example from the community as a whole, or persons having no contractual relations with the supplier." 15 *Am.Jur. Proof of Facts (2d)* 125, 129 - 30 (1978). (footnotes omitted).

<sup>159</sup> 46 N.E. 17 (Ind. 1897).

<sup>160</sup> *Id.*, at 21.

<sup>161</sup> A tort action should be contrasted to actions based on constitutional theories in this regard. In the constitutional cases, the courts acknowledge that utility service is considered an essential of life. See e.g., *Memphis Light Gas and Water Div. v. Craft*, 436 U.S. 1 (1978); *Palmer v. Columbia Gas Co.*, 342 F.Supp. 241, 244 (N.D. Ohio 1972); *Stanford v. Gas Service Co.*, 346 F.Supp. 717, 721 (D. Kan. 1972). The courts continue, however, to make clear that the nature of the service has no impact on whether utility service is a "property interest" the deprivation of which cannot occur without due process requirements attaching. According to the Seventh Circuit, for example, the question of whether utility service is an "absolute necessity of life" is "irrelevant to the question of whether there is an entitlement" subject to constitutional protection. *Sterling v. Village of Maywood*, 579 F.2d 1350 (7th Cir. 1978). The Seventh Circuit continued: "as the Supreme Court has made clear, it is the nature and not the weight or importance of the plaintiff's interest that determines whether a property interest exists." *Id.*, at 1354. Clearly, a different standard is applicable in a tort action. The duty of care is to be measured by the foreseeable consequences of the termination of service.

<sup>162</sup> See e.g., *Consolidated Edison Co. v. Jones*, 444 N.Y.S.2d 1018 (1981). Indeed, a number of utility tort cases indicate that, because of the consequence of the action, a utility owes the "highest standard of care" when seeking to terminate service. *Kohler v. Kansas Power and Light Co.*, 387 P.2d 149, 151 (Kan. 1963); accord, *Washington Gas Light Co. v. Aetna Casualty and Surety Co.*, 242 A.2d 802, 804 (Md. App. 1968).

The Maryland case of *Washington Gas Light Co. v. Aetna Casualty and Surety Co.*<sup>63\</sup> is a case in point concerning a utility's duty of care. *Washington Gas* involved a residence that had been sold to the plaintiffs. After the sale, but before the new owner moved into the home, the gas company disconnected service because the new owner had not yet requested service in his own name. The disconnection of service occurred on January 29th. When the new owner sought to occupy the home, the water pipes were found to have frozen and burst causing extensive damage.<sup>64\</sup> The utility was sued for damages in tort.<sup>65\</sup>

The court held that when the termination of service presents "an obvious danger of damage to the premises," the utility "owes an *absolute* duty to clearly and unambiguously inform the customer of its company regulations and policies and what action it intends to take."<sup>66\</sup> (emphasis added). The court found that the temperature "had dipped below freezing nightly from January 10."<sup>67\</sup> It held that "in light of the imminent danger of freezing," the failure of the utility to notify the customer of the company's disconnect policies prior to the termination of service "would amount to negligence on its part."<sup>68\</sup>

**Regulatory Requirements:** The use of prepayment meters would eliminate important regulatory safeguards protecting low-income consumers against the unnecessary or unreasonable termination of service. In Minnesota, for example, Otter Tail Power Company implemented a prepayment meter program without seeking variances from a variety of shutoff protections promulgated by the PUC. Indeed, the Commission noted that in implementing the program, the "company emphasize[d] that the validity of the information gained from the project depended in large part on the customer's understanding the finality of their situation, *i.e.*, that they must pay 'on delivery' and that when that 'delivery' is used up, they will be 'out of' electricity without further notice."<sup>69\</sup>

The Minnesota PUC then found that Otter Tail Power's prepayment meter program violated the following shutoff protections: (1) permissible reasons for disconnecting service;<sup>70\</sup> (2) disconnect (..continued)

<sup>63\</sup> 242 A.2d 802 (Md. App. 1968).

<sup>64\</sup> *Id.*, at 803.

<sup>65\</sup> A similar case, with similar results, is found at *Cates v. Electric Power Board of Metropolitan Government*, 655 S.W.2d 166 (Tenn. App. 1983).

<sup>66\</sup> *Washington Gas Light*, *supra*, 242 A.2d at 805.

<sup>67\</sup> *Id.*, at 803.

<sup>68\</sup> *Id.*, at 805.

<sup>69\</sup> *Re. Otter Tail Power Co.*, 1992 WL 230579 (Minn. PUC 1992).

<sup>70\</sup> There were nine "permissible reasons" to disconnect service, of which failing to make a payment toward a prepayment meter was not one.

notice requirements; (3) required premise visit; (4) emergency reasons to suspend disconnections; (5) information provided in billing;<sup>71\</sup> and (6) declaration of inability to pay and cold weather protections.

**Summary:** In each instance above, the pre-shutoff duty of a public utility extends beyond making available an opportunity for the customer to pay his or her bill. The duties of a public utility in the instance of a regulated utility are, of course, defined by PUC regulation. Those duties might require a reasonable time within which to apply for fuel assistance; an opportunity to pay an arrears over an extended period of time; and an opportunity to prevent disconnections due to a medical emergency. Mere payment is not the only remedy which would prevent or delay the termination of utility service. And, a household is entitled to reasonable notice of these rights and remedies prior to the termination of service. Finally, irrespective of the right of a consumer to dispute the disconnection of service, the consumer has a right to written pretermination notice.

### **THE EFFECTIVENESS AND COST-EFFECTIVENESS OF PREPAYMENT METERS**

The following analysis looks at examining the cost-effectiveness of the use of prepayment meters as a credit and collection technique. Cost-effectiveness is measured in terms of whether the use of prepayment meters results in the least-cost provision of service. The analysis posits that the ultimate goal of *any* utility activity is to provide reasonably adequate service to its ratepayers at least-cost. This goal is enforced through the dictates of such seminal cases as *Hope* and *Bluefield* that utility management be "efficient and economical."

The requirement that utility activity contribute toward the provision of least-cost service pervades every aspect of a utility's business. It governs whether a utility should provide coal, oil or nuclear capacity; whether a utility should pursue new central station capacity, cogeneration or conservation; whether a utility should self-insure or purchase insurance policies; whether a utility should maintain compensating bank balances or pay bank fees; whether a utility should raise debt or equity capital. The requirement of least-cost service, too, should govern utility collection activities. In reviewing these alternatives, expenses devoted to the prevention or collection of arrears through prepayment meters should be measured by the same least-cost tests as any other utility expense.

#### ***The Analytic Framework***

The purpose of this discussion is to present a framework within which to examine the economics and finances which underlie the use of prepayment meters. Unfortunately, on too frequent of a basis, utility adoption of techniques such as prepayment meters are based entirely on supposition and presumption. Little effort goes into identifying the specific purposes that underlie the specific credit and collection effort; examining whether the means proposed bear some reasonable relationship to those purposes; and calculating what the financial and economic consequences are should those means be pursued.

In order to perform this type of analysis, several tasks must be performed. The first task is to define

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<sup>71\</sup> Hence, it was not simply the disconnect regulations which were implicated. A prepayment meter implicates PUC regulations regarding the process of billing as well.

with precision the function played by installation of a prepayment meter. Second, the effectiveness in accomplishing that function must be measured. Third, the total system costs incurred in accomplishing that function must be determined.<sup>172)</sup> Finally, the weighing of costs and benefits must occur both for the prepayment meter itself and for the prepayment meter *vis a vis* available alternatives.

Having established the purposes of a prepayment meter, in other words, a utility must ask two questions:

1. Is the prepayment meter "effective" in accomplishing those purposes? and
2. Is the prepayment meter "cost-effective" in accomplishing those purposes.

As discussed above, the second test may well be the more difficult of the tests to satisfy. The purpose of a collection device is not simply to collect money, but to provide least-cost service. If the collection device ends up costing more than it collects, even if it is effective, it is not "cost-effective." In order to respond adequately to this question, therefore, the utility must determine the magnitude of costs implicated by installation of prepayment meters. Moreover, the utility must determine the magnitude of savings arising from a prepayment meter.

### *Analysis Relative to Alternatives*

Finally, a prepayment meter cannot be simply "effective" and "cost-effective" unto itself. It must be "effective" and "cost-effective" *when compared with available alternatives*. The response to this inquiry, therefore, must identify what alternatives exist to prepayment meters. Having identified these alternatives, the utility must determine how those alternatives compare as to effectiveness or cost-effectiveness *vis a vis* the purposes. The utility must also determine how those alternatives compare as to beneficial impacts and adverse consequences.

In sum, from a utility's perspective, the cost-effectiveness issue with prepayment meters is not: "do we like prepayment meters." It is instead: "do we *prefer* prepayment meters, given the alternatives."<sup>173)</sup>

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<sup>172)</sup> Note, for example, that in Missouri, not only does the meter, itself, cost nearly \$800, but the Company's tariff commits to making the wiring repairs or upgrades necessary for the home to support the meter. Inadequate wiring is an ongoing problem in low-income households. According to the *American Housing Survey*, *supra* note **Error! Bookmark not defined.**, more than half of all occupied households with "severe" electrical problems were low-income households, even though low-income households represented fewer than one-in-eight of all occupied households overall.

If prepayment meters are considered primarily a credit and collection device, directed in substantial part toward low-income households, *see e.g.*, note **Error! Bookmark not defined.**, *supra*, there will thus be the additional expense involved of upgrading household wiring.

<sup>173)</sup> As discussed elsewhere, this is no different from any other utility least-cost decisionmaking, reviewable by regulators. The question is, in other words, not simply "will an oil-fired plant generate electricity" but rather "will an oil-fired plant generate electricity more cost-effectively than some other type of plant." The question is not simply "will this insurance policy protect us against loss," but rather "will this policy protect us against loss more cost-effectively than self-insurance."

Particularly given the cost of prepayment meters,<sup>174\</sup> perhaps the most readily evident alternative to the use of prepayment meters for credit and collection purposes is the installation of cost-effective utility-financed demand side management measures. Such measures have been found to be both effective and cost-effective in accomplishing not only improving credit and collection, but in achieving each of the budgeting and energy consciousness advantages discussed above.

Energy conservation programs offer benefits to a public utility as more affordable energy bills may avert high arrearages and consequent uncollected bills and thus the administrative costs of account collection, service termination, and, often service reinstatement.<sup>175\</sup> In a recent study of low-income energy services in Wisconsin and Washington State, for example, the authors found that weatherization programs dramatically reduced arrearages for low-income customers and could significantly lower administrative collection costs and uncollected debts of utilities.<sup>176\</sup> The authors concluded:

In low-income households occupied by payment-troubled customers, the delivery of conservation services can benefit not only customers, but utilities as well. Program investments can yield conserved energy resources *and* the financial benefits of long-term reductions in uncollectible revenues and collection costs.<sup>177\</sup>

Wisconsin Gas Company, too, recognized the legitimacy of special low-income conservation and weatherization programs when it implemented a pilot program explicitly designed to use conservation measures as a means to reduce the costs associated with delinquent payments and bad debt. The purpose of the study, Wisconsin Gas said, was "to examine the effects of Wisconsin Gas Company's Weatherization Program on the arrearages of low-income customers."<sup>178\</sup>

The Wisconsin Gas results were dramatic. For single family homes, Wisconsin Gas experienced an overall therm savings<sup>179\</sup> of 23.4 percent.<sup>180\</sup> Moreover, therm savings based on heat load were computed, producing "an overall single family heat load savings rate of 30.7 percent\* \* \*."<sup>181\</sup> Two-

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<sup>174\</sup> The cost is roughly \$800 *plus* the cost of upgrading household wiring.

<sup>175\</sup> Colton and Sheehan, "A New Basis for Conservation Programs for the Poor: Expanding the Concept of Avoided Cost," 21 *Clearinghouse Review* 345 (1987). Of course, conservation programs offer many other benefits to the utility, but we are here concerned with benefits of conservation programs compared to a regime of service terminations.

<sup>176\</sup> Quaid & Pigg, *Measuring the Effects of Low-Income Energy Services on Utility Customer Payments* (1991) (mimeo). (hereafter *Quaid and Pigg*).

<sup>177\</sup> *Id.*

<sup>178\</sup> See, Wisconsin Gas Company, *Weatherization Arrears Savings* (April 1988).

<sup>179\</sup> Quantities of natural gas are measured in therms, just as quantities of electricity are measured in kilowatthours (kWh).

<sup>180\</sup> While the savings ranged widely between units, the company noted that 64 percent of the single family homes fell in the 10 percent to 35 percent savings range. *Id.*, at 2.

<sup>181\</sup> *Id.* Again, while the savings ranged widely between units, 60.2 percent of the single family homes fell in a range of 25 percent to 50 percent savings.

family homes generated similar results.<sup>182\</sup>

Wisconsin Gas found that not only did the program reduce energy consumption for participating households, but the households recognized significant *arrears savings* from the program as well. According to that utility, its conservation program reduced the number of members of the study group who would have had arrears of \$100 by 300 percent; moreover, Wisconsin Gas reported, its program reduced the number of households having *any* arrears by 400 percent. "This reflects favorably on weatherization potential as an arrears eliminator," the Company said. Indeed, Wisconsin Gas found that it received a 20 percent return on its weatherization investment in the first year of the program, *strictly* from the reduced nonpayment, and *before* considering traditional avoided costs.

In sum, Wisconsin Gas concluded: "The study indicates that single family dwellings generated on average \$353 less *annual* arrears after weatherization. For the two family group, weatherization reduced arrears \$502 *annually*." (emphasis added).

In a different program, participants in an energy education program offered by Niagara Mohawk Power Company in conjunction with its company-financed weatherization program improved their payment patterns in two ways, according to Niagara Mohawk's evaluation.<sup>183\</sup> "First," the utility's report said, "through the affordable payment plan --which guaranteed that their utilities would not be shut off as long as they made a mutually agreed-upon payment amount-- they increased the frequency of their monthly utility payments to almost 100 percent. In contrast, Groups 1 and 2 participants made their monthly utility payments about 50 percent of the time."<sup>184\</sup> Second, although the monthly payment amount was as low as \$10 per month for participants with very low incomes (and as high as \$190), Education participants "increased the average amount of total dollars paid to the utility over the pre-treatment period."<sup>185\</sup>

According to the company's evaluation, while all low-income households incurred new arrears, those who had received the weatherization services had fewer new arrears than those who did not.<sup>186\</sup> Moreover, the company found, the new arrears for the weatherized households likely arose because the provision of weatherization services was matched with a decrease in fuel assistance. "If those [fuel assistance] dollars had been received at the previous level, it is probable that [the weatherized] households would on average not have built up new arrears."<sup>187\</sup>

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<sup>182\</sup> *Id.*, at 5. Over 70 percent of the dwellings fell in the 10 percent to 35 percent savings range.

<sup>183\</sup> Merrilee Harrigan, (1992). *Evaluating the Benefits of Comprehensive Energy Management for Low-Income, Payment-Troubled Customers* (Washington D.C.: Alliance to Save Energy).

<sup>184\</sup> *Id.*, at 2, 47 - 61.

<sup>185\</sup> *Id.*

<sup>186\</sup> *Id.*

<sup>187\</sup> *Id.*

Finally, consider Connecticut Light and Power (CL&P), a Connecticut subsidiary of Northeast Utilities (NU). In NU's December 1991 evaluation of the CL&P low-income weatherization program, the utility found:

Overall, the data indicated an improvement in the average *monthly* change in arrearage of \$9.73 for the 1989 participants and \$18.77 1990.\* \*(One plan)<sup>88\</sup> was specifically targeted to payment-troubled customers, with the express purpose of reducing arrearages.\* \*(This plan) was highly successful in this regard. The average (monthly) improvement in arrearages among plan E4 participants was approximately \$40.00 for 1989 and \$28.00 for 1990.<sup>89\</sup>

The Northeast Utilities effort, begun in 1989 in conjunction with other interested parties in Connecticut, implemented a pilot weatherization program directed at low-income payment-troubled customers.<sup>90\</sup> The program, called Plan E4, provided for a maximum investment in energy efficiency of \$1500. Participants must have annual income at or below 200 percent of the Federal Poverty Level and the customer's account must be "seriously delinquent." An account having \$200 or more in arrears qualified.

In each of these instances, it would appear that the utility DSM effort would have generated not only greater absolute benefits than a prepayment meter, but would generate greater *rates* of benefits as well.

In sum, particularly given the expenses associated with prepayment meters, questions should be raised both as to the cost-effectiveness of prepayment meters in their own right as well as the cost-effectiveness of prepayment meters *vis a vis* available alternatives. Would the expenditure of the same amount of funds on direct weatherization and energy efficiency investments, in other words, generate the same or equal benefits for the company? If prepayment meters fail this cost-effectiveness screening in relation to other strategies, they should not be permitted.

#### **PREPAYMENT METERS AND ACCOMPANYING DISCOUNTS**

Prepayment meters may not be entirely adverse to low-income interests if they are properly implemented according to appropriate utility ratemaking principles. In fact, if the offer of prepayment meters is accompanied by an adequate discount, such meters may offer an appropriate mechanism for low-income households to control their home energy bills.

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<sup>88\</sup> This plan was called Plan E4.

<sup>89\</sup> ICF Resources, Inc., *Program Evaluation: Weatherization Residential Assistance Partnership (WRAP) Program: Volume I, Final Report* (December 1991).

<sup>90\</sup> Other programs were implemented at the same time directed toward other populations.

Discounts accompanying prepayment meters can be justified on two different grounds. First, prepayment meters constitute a "lesser" service which should be accompanied by a lesser charge. Second, prepayment meter customers impose fewer costs on a utility system, which limited costs should be reflected in lower rates. Each of these justifications will be discussed briefly below.

### *Prepayment Meters as New Service*

Prepayment meters do *not* represent the same type of residential service provided to all customers with simply an alternative means of paying for such service. Instead, prepayment meters represent a *new* service, a lesser more limited service, which merits its own rate class along with the appropriate cost-based discount.<sup>91)</sup>

Prepayment meters represent a more limited service than service which is provided and then billed for retrospectively. There are at least four ways in which prepayment meters represent a lesser service. First, receipt of service is not automatic for an entire month. Indeed, depending on ability-to-pay, a household might be able to afford to purchase only a few days or weeks of service at any given time. This stands in sharp contrast to normal retrospective billing. If a customer has paid his or her December bill, that customer is assured of receiving service throughout the month of January irrespective of whatever he or she does.

In contrast, under a prepayment meter system, the consumer must be ready, willing and able to make the calculations necessary to determine how a myriad of factors will affect his or her rate of consumption within any given month. Consumers would need to realize, for example, that holiday visitors will likely increase their rate of consumption. Consumers would need to realize that an extended cold spell will mean increased electric consumption, even if the household does not have electric heat.<sup>92)</sup> Consumers would need to realize that Thanksgiving week (when the entire family is home for two additional week days) will result in a greater rate of consumption than an ordinary work week. Consumers would need to realize that weekend days might be more energy intensive than weekday days.

Second, the responsibility for what is in essence the "meter reading" and "billing" functions of utility service has been transferred from the utility to the consumer. The consumer must read the meter to determine whether dollars remain for continuing service. The consumer must read the meter to determine the rate of daily or weekly consumption in relation to the dollars remaining. The responsibility falls to the household, in other words, not only to know that the meter has \$40 worth of energy left, but that energy is consumed at the rate of \$10 a day.

Third, the information functions of the public utility have been eliminated under a prepayment meter

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<sup>91)</sup> These reduced rates can be beneficially compared to interruptible customers, who also receive reduced rates for the "lesser" service which they receive.

<sup>92)</sup> More frequent operation of a forced air gas furnace, for example, will increase electric consumption as the electric furnace fan operates more continuously.

system. Notification of payment plan opportunities, level billing plans, fuel assistance, shutoff protections, and the like, will all be foregone under the service provided by prepayment meters. The responsibility for knowing that inquiry should be made about such services, and then discovering the source of the information, and then making the inquiry, all fall upon the customer under a prepayment meter.

Finally, as discussed above, the implementation of prepayment meters means that an entire set of shutoff protections are gone. These protections include not only the procedural protections regarding notice, and the like, but the protections offered by deferred payment plans, leveled budget billing, and federal fuel assistance.

### ***A Cost-Based Rate Reduction***<sup>193\</sup>

In addition to taking a lesser service, customers on prepayment meters impose less of a cost on the utility and are thus entitled to lower rates as a result. Cost savings that will be realized by the utility will arise in a variety of areas. These might include:

- o Due to the prepayment of utility service, the utility will receive working capital benefits rather than experience working capital expenses for this class of customers. The reduced working capital, including the tax effects on working capital returns for an investor-owned utility, should be included in the calculation of lower rates.
- o Due to the prepayment of utility service, the risk of the class of customers is reduced for the utility. Accordingly, the class revenue requirement should reflect a lower rate of return. Rates of return are largely driven by class risk.
- o Due to the prepayment of utility service, the expenses associated with much of the utility's credit and collection functions should be eliminated from the class revenue requirement. Bad debt, negotiation of payment plans, the costs of disconnection and reconnection (including sending notices), and the like would not be caused by the class of prepayment meter customers and should not be paid by those customers.
- o Because of the elimination of certain aspects of the utility service, the expenses associated with providing such services should be eliminated from the class revenue requirement. The most obvious examples of such foregone expenses would be those expenses associated with meter reading, billing and collection, and customer accounting.

Finally, the utility should consider whether the installation of prepayment meters actually does result in a noticeable change in energy consumption patterns by prepayment meter households. If these

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<sup>193\</sup> These reduced rates are not "discounts," since they are cost-based. It is a reduced rate for a different type of service, again akin to interruptible rates provided to industrial customers.

households do, in fact, systematically reduce their use of appliances and the like, the reduction in class demand should be reflected in reduced rates.<sup>1941</sup>

While this analysis does not seek to calculate the extent of a the rate reduction, the fact that a reduction is warranted cannot be disputed. If prepayment meters are accompanied by a substantial enough reduction in rates, partially to reflect the lesser level of service and partially to reflect the reduced costs imposed on the system, prepayment meters may be an appropriate technology for low-income consumers to embrace.

## SUMMARY AND CONCLUSIONS

In sum, prepayment meters are bad public policy and the benefits attributed to them are not likely to arise. Low-income payment problems do not occur because of a lack of budgeting discipline or an inability or unwillingness to control consumption. In fact, given the absolute mismatch between low-income household expenses and resources, a prepayment meter is likely only to hide the problems of inability-to-pay rather than to redress them.

Moreover, prepayment meters will likely be counterproductive because they preclude reasonable billing and collection approaches such as deferred payment arrangements, receipt of federal fuel assistance, and reliance on levelized budget billing plans.

In assessing the benefits of prepayment meters, regulators should consider both the effectiveness and the cost-effectiveness of such meters as a credit and collection strategy. Not only should prepayment meters accomplish the goals that the strategy's proponents claim for it, but they should do so while advancing least-cost service in the broader context as well. To be cost-effective, also, prepayment meters must be considered not only in their own right, but *vis a vis* their alternatives as well.

Prepayments meters are likely unlawful. They violate the common law duty to provide pretermination notice. They fail to provide adequate notice and information regarding alternatives to shutoffs, including payment plans, medical certificates, application for fuel assistance and the like. They violate constitutional notice and hearing requirements when state action is present.

Finally, should prepayment meters be adopted as sound public policy, and should they be found lawful, they should be offered only in conjunction with appropriate rate reductions. These reductions are appropriate because prepayment meters constitute a lesser, more limited service, than ordinary metering, billing and collection. Moreover, prepayment meter customers do not impose certain costs on the utility system, which lack of costs should be reflected in reduced rates.

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<sup>1941</sup> This assumes that heating and air conditioning would have demand components to them.