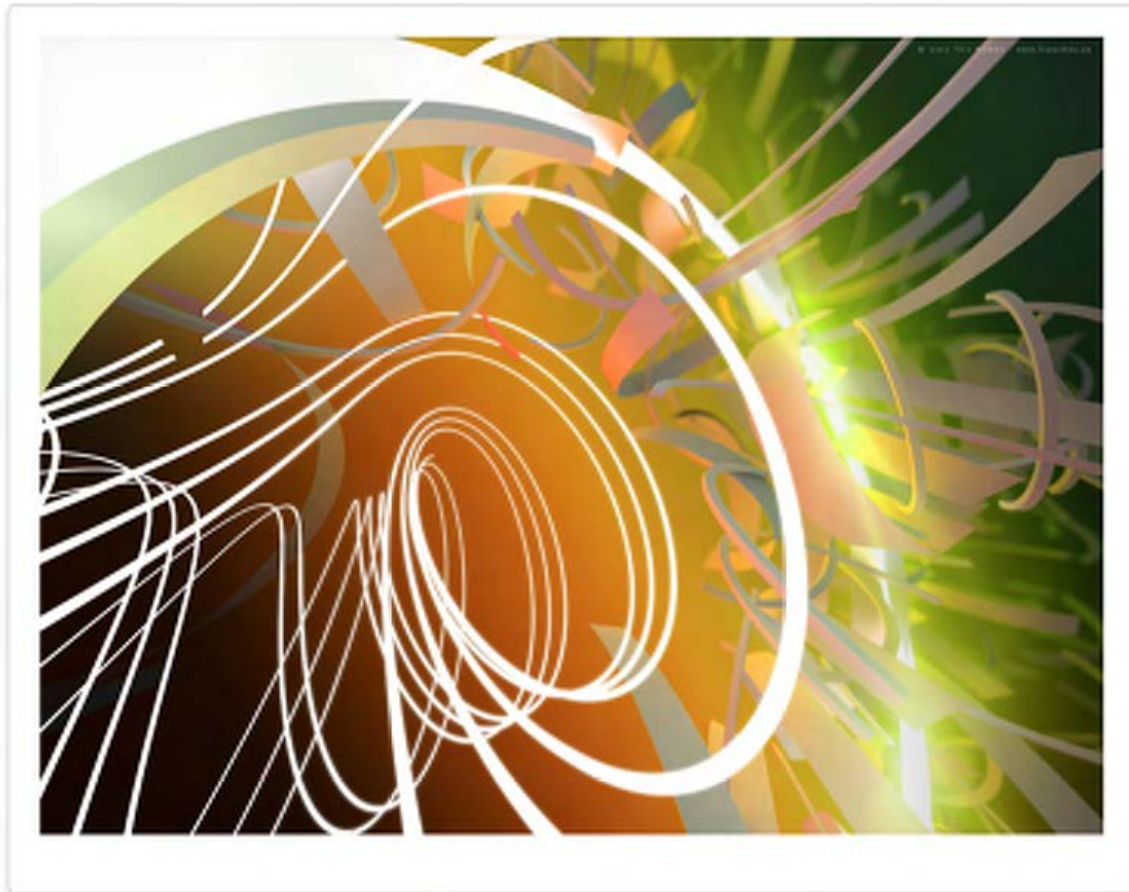




## Low Income Consumer Decision Making



*Prepared By:  
Judith Schwartz  
To the Point*

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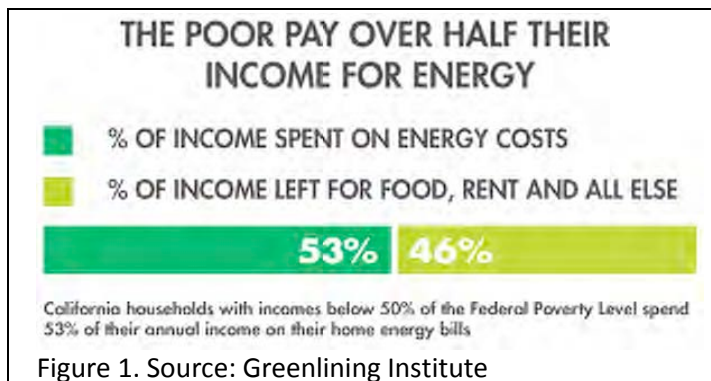
## Introduction

**With the advent of grid modernization, digital technologies allow utilities to offer new programs, pricing, and services to their customers, including the ability to let individual households choose among different options that best meet their needs.**

To examine the decision-making process for low-income consumers, it is necessary to first reflect on who these residents are. The definition for low income, referred to by DEFG’s Low Income Energy Issues Forum, is 150% of the poverty level<sup>1</sup> though many of the source documents used for this meta-analysis include people with incomes at 200% of the poverty level.

People with incomes falling in this range may include those who are highly educated and have chosen a low/variable paying profession such as artists, writers, community activists, etc.; formerly middle class customers adversely affected by widespread unemployment and shifting job opportunities; retirees on limited fixed incomes; unskilled and semi-skilled workers in low-wage jobs in retail, hospitality, and health services sectors; and those with disabilities or other challenges who are dependent on public assistance or charitable support for survival.

**On a practical basis, for those whose total income is near or below the poverty line, utility expenses represent a significant portion of their household income. This increases the importance of decisions with respect to energy consumption and opens the door for participation in meaningful energy literacy education, variable price saving opportunities, incentive programs, and timely feedback mechanisms.**



Debates during rate cases often focus on the percentage of customer household income or cost of the meter relative to individual savings rather than the utility’s system-wide cost to improve service delivery or reliability. This emphasis can discourage examination of whether infrastructure upgrades are desirable to these consumers or whether cross-subsidies or additional bad debt—socialized across all customers—are affecting utility bills of disadvantaged households.

**For everyone living paycheck-to-paycheck, decision making about energy consumption and utility programs becomes a trade off in priorities.** The issues are similar to the pressures, risks and solutions associated with other financial services, as examined by the Consumer Financial Protection Bureau<sup>2</sup> (CFPB) with an important distinction. Utilities have collaborated with regulators and consumer advocates or municipal oversight boards over the past 30 years to achieve fundamental protections and support. Smart Grid deployment provides an opportunity to reinforce good policies and practices, while introducing improvements enabled by technology.

According to a report compiled by the American Gas Association (AGA) “utilities contributed nearly \$3.7 billion in assistance to low-income customers in 2012—via discounted rates, arrearage forgiveness, weatherization, and efficiency programs and support provided to charitable organizations that provide resources for customers in need, roughly equal to the fiscal year 2012 federal energy assistance funding of \$3.47 billion.”<sup>3</sup> Significant numbers of eligible families are not receiving assistance, nor are they taking advantage of other programs that could reduce their bills.<sup>4</sup> Utility discount programs often do not require formal means testing. There is anecdotal evidence that people who don’t meet the criteria are signing up for discounted rates. This suggests more examination is needed so funds reach the intended households.

## Goal: Close the Gap and Avoid the Debt and Despair Vortex

A sense of abundance allows people to feel they have **options** and a degree of **control** over their lives. When families have income adequate to cover their expenses—both expected and unforeseen—paying the electric bill is a simple matter (even if one perceives prices are higher than desired). When one is truly operating from a place of scarcity, the lack of options and control often contributes to feeling overwhelmed with a spiraling sense of desperation.

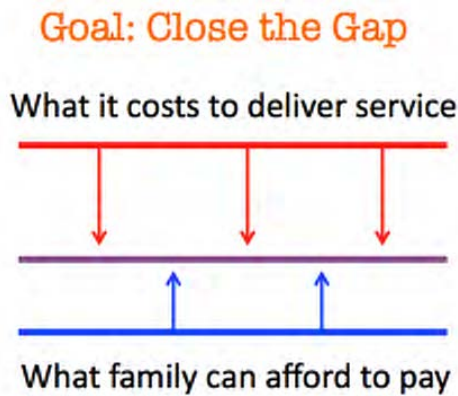


Figure 2. Source: To the Point

Given that many people who are eligible for subsidy and rebate programs are not taking advantage of them, better participation can translate into greater ability to pay.<sup>5</sup> Smart Grid enabled services and pricing, coupled with fair and adequate protections, allow bills for individual families to be lower than they would be otherwise.

**Ideally we can minimize the gap between what disadvantaged consumers can afford to pay and what it costs the utility to provide them service.** How direct costs are burdened with allocations of system-wide expenses and when to use subsidies are complex subjects appropriately suited for a future discussion on simplifying cost allocation and rate design.

The electric bill exists in the **context** of other utilities (gas, heating fuel, water, garbage, phone) and vital necessities like food, clothing, transportation, healthcare, childcare, and shelter. In the current economy, millions of families are having difficulty meeting their basic expenses and are, too often, falling behind on their utility payments and into debt.<sup>6</sup> Other important influencing factors are personal motivation, habitat quality, family usage patterns, cash flow, and the physical ability to pay now that so many utilities are reducing overhead by closing neighborhood offices.

The research supports that when low-income families have reasonable **options** for their energy use, **assistance** in understanding the tradeoffs, and the ability to **manage** their choices, they will choose to exercise **control** for the simple reason it will free up cash they can apply to other expenses. **It is in the utility's and other ratepayers' interest for these customers to avoid the "debt and despair" vortex.** Regulators and municipal oversight boards can help low-income consumers become active energy partners to the fullest extent possible by supporting effective policies, technology investments, and protections.

For this meta-analysis, we examined over 70 studies, presentations, and articles (see bibliography). **Collectively, the research highlights seven elements that consistently yield the greatest possibilities for success by combining context, literacy, options, advice, feedback:**

1. Basic protections and policies that encourage people to be engaged and empowered;
2. On-going education from trusted advisors from the utility or through other social service agencies, consumer advocacy offices, and community-based organizations (CBOs);
3. Integrated program information to solve the family's situation (rather than loosely coordinated utility silos of energy efficiency, weatherization, demand response, dynamic rates, etc.);
4. Optional program and pricing bundles that reflect the family's home usage patterns, habitat realities, and priorities, as well as alternative payment plans that align with cash flow;
5. Subsidies, discounts, and payment plans optimized to allow families to remain current;
6. Elimination of numerous extra fees that are punitive for people barely scraping by;
7. Appropriate use of technology to facilitate communication and convenience.

Model programs in Wisconsin and Massachusetts have found that threatening termination simply doesn't work with customers who do not have the means to pay and more creative solutions yield better results.<sup>7</sup> There is strong evidence to suggest that **when low-income customers are supported and enrolled in appropriate programs so they can pay to the best of their ability, they avoid impossible balances. Utilities and other ratepayers subsequently benefit from decreased collection costs, bad debt, and increased revenues.**<sup>8</sup>

This combination of approaches is not currently the norm among jurisdictions nationwide and we recognize that change in this sector is slow and gradual. However, the benefits to both customers and utilities are so positive and strong, that we encourage members of the LIEIF and their respective organizations to include these principles in discussions with other stakeholders.

## Contents

This paper will explore relevant decision-making criteria for low-income residents, identify available data, examine how utilities or other industries are responding to these concerns, and suggest opportunities for greater synergy and adoption as well as future research to consider.

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## Section 1: Decision Making Criteria



Figure 3: Decision-Making Model

Source: To the Point

### 1. Personal Motivation and Relevance

The attitudes of low-income consumers reflect the same range of energy worldviews as the general population. These perspectives will be a factor in their decision-making as programs and messages must be seen as relevant to them.

### 2. Habitat Type, Quality, and Ownership

A fundamental factor is whether the family resides in a single family home, apartment, or semi-detached unit. They may have central AC, room AC, or no AC, and any possible heating source. Many low-income households live in substandard housing, and because a majority are renters, there is a critical interdependency with landlords for families to be able to achieve energy usage goals.

### 3. Home Usage Patterns

What is the family structure? Do residents live alone, with related people, or unrelated housemates who share space and expenses? Do they work at home or offsite, stay home during day, have pets?

### 4. Household Cash Flow and Credit

How frequently cash comes in, and how variable is that income, are important factors related to payment terms or programs. Income may or may not cover actual expenses. Low-income families often have no bank accounts, savings or extra resources available, so survival is a balancing act. Predatory and deceptive financial products and service providers are too often focused on this population.

## **5. Competing Priorities**

This factor contributes to the hot button nature of the low-income conversation. Can someone live within their means if the “means” are meager at best? What constitutes basic necessities vs. luxuries are often in the eyes of the beholder.

## **6. Choices and Options**

A key decision-making question is: does the utility offer options that customers find attractive or to be a good value? The differing nature of people’s energy worldviews and their circumstances relative to the other criteria means that not every low-income customer will respond to the same messaging nor voluntarily choose the same technology, pricing or payment plans. If the ultimate goal is to encourage a significant percentage of consumers to contribute to a more efficient energy grid, then a range of options is needed.

## **7. Education**

A contributing factor to the decision-making process is how consumers learn about the programs and options that are available to their families. There is widespread agreement that some form of education is needed to take full advantage of programs. How are low-income consumers made aware of their eligibility for subsidies and discounts?

## **8. Advice from and Relationships with Trusted Advisors**

Who delivers the information is also a critical component of the decision calculus. Is the local utility considered a trusted advisor? Does the utility work with other low-income support agencies and 3<sup>rd</sup> party community-based organizations that speak their language literally and figuratively? Do family members participate in other programs like weatherization, energy efficiency, lighting, etc. so they have existing relationships? How critical is word of mouth validation from family, friends, and neighbors?

## **9. Behavioral Triggers**

From a behavioral perspective, energy saving contests, comparisons or cooperation with neighbors, gamification, and energy budgeting services all demonstrate increases in attentiveness and reduction in usage with residential consumers who choose to engage. For low-income customers facing greater risk associated with bad debt, the reduction of exposure can be a motivating factor as can positive reinforcement of achievement.

## **10. Physical Ability to Pay**

Convenience and technology play a critical role in the decision-making process. When consumers (often unbanked) lack flexibility in controlling their work schedules, having the opportunity to pay bills when it is most convenient for them and not when utility offices are open affects the decision-making process.



# 1. Personal Motivation and Relevance

The attitudes of low-income consumers reflect the same range of energy worldviews as the general population. These perspectives will be a factor in their decision-making as programs and messages must be seen as relevant to them.

## Energy Worldviews

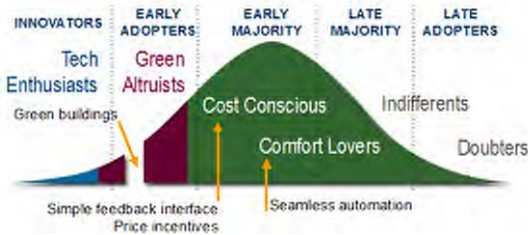


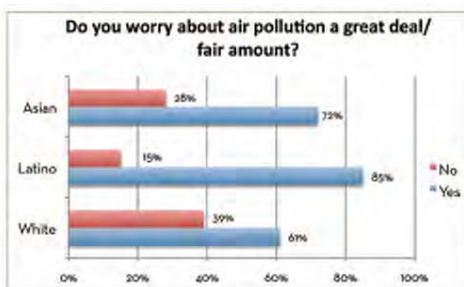
Figure 4. Source: To the Point

While industry discussions and utility programs often treat low-income customers as a monolithic group, research that delves into personal reasoning finds a **mix of attitudes that includes and goes beyond simply saving money**. A study conducted by Carnegie Mellon and Cornell researchers found that low-income households across two states creatively engaged in energy conservation under a wide range of constraints. Their **motivations were more similar to affluent green households than expected, even when they didn't pay their own utility bills.**<sup>9</sup>

This similarity is affirmed in the work of social scientist John Marshall Roberts for DEFG's EcoAlign<sup>10</sup> and Smart Grid Consumer Collaborative (SGCC) *Spotlight on Low Income Consumers* (2012). Reasons for supporting Smart Grid vary. When asked about desirability of various smart grid-enabled products and pricing, results are comparable to general population studies conducted by SGCC.<sup>11</sup>

**Just as with other customers, low-income consumers are interested in programs that are meaningful and relevant to them.**<sup>12</sup> The California Institute for Energy and Environment has sponsored "reviews of the psychological literatures on information, attitudes, and behavior change also suggest that energy efficiency and conservation messages have to be intelligible to the consumer (i.e., make sense from his or her point-of-view and understanding), be concrete, vivid and impactful, personalized, action-oriented, and offering advice about choice and behavior that is perceived to be fair, just, and equitable. At the same time, everyone doesn't receive the message, they don't "get" the same message, and they process the information in different ways. **The messenger is important in terms of perceived legitimacy, credibility, and trustworthiness of the information.**"<sup>13</sup>

While lowering bills is certainly an important motivator, the annual Greenlining Institute Economic Summits<sup>14</sup> and their research studies reaffirm that low-income communities of color are very concerned about the environmental impact of carbon-intensive generation and the value of new jobs associated with a sustainable economy. Residents of disadvantaged communities directly experience the connection between their families' high rates of asthma and smog. Older, dirtier cars' and aging utility power plants are more likely to be located in their neighborhoods. There is a tremendous amount of community enthusiasm for green energy, smart technology, EVs, etc. although the barrier to purchase such products is often insurmountable for people on limited incomes. Clean car sharing and sustainable public transportation can offset rising gas prices and contribute to economic mobility.<sup>15</sup>



California's Latinos and Asians are more concerned about air pollution. The same poll also finds that while only 22% of whites worry a great deal about global warming, 50% of Latinos and 46% of Asians polled are concerned about global warming. Source: LA Times/University of Southern California poll, 2010.

Figure 5.<sup>16</sup>

In pilot after pilot and with full deployments, we see that **enabling technology increases energy savings dramatically and allows people to take advantage of dynamic and time based pricing plans**. Facilitating access to these innovations either through equipment donations, subsidies, micro-financing, or tax incentives will increase adoption and allow this audience to better participate (when accompanied by appropriate education).<sup>17</sup>

## 2. Habitat Type and Quality

A fundamental factor is whether the family resides in a single family home, apartment, or semi-detached unit. They may have central AC, room AC, or no AC, and any possible heating source. Many low-income households live in substandard housing, and because many are renters, there is a critical interdependency with landlords for families to be able to achieve energy usage goals.

### Rent vs. Own

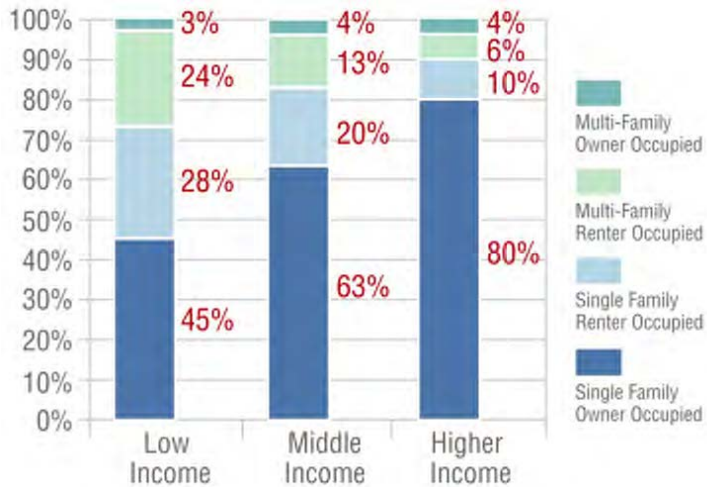


Figure 6. Source: LBNL/2010 Census

Lawrence Berkeley National Laboratory conducted a comparison of housing type and owner/renter status across income groups. Data from the 2010 Census, showed a significant number (45%) of LI households own their homes including manufactured homes.<sup>18</sup>

A review of data from eight of Opower's utility partners that reported territory-wide information on housing type revealed that in almost half of the programs, the percentage of low-income customers living in single-family homes was equal to or greater than that of non-low-income populations.<sup>19</sup>

An Interagency Technical Working Group looking at developing new poverty metrics identified that a significant number of low-income families own a home without a mortgage, lowering their shelter expense requirements and providing incentive for making home energy improvements.<sup>20</sup> Property taxes remain an issue so local tax incentives for weatherization could be an opportunity for engagement.

**Unless people find themselves in a new development, the building envelopes for LI family residences are likely to be less energy efficient than the average American home.** Considering housing costs represent a high percentage of family income (29% of families spend over 60% on rent), there may little or no money available for improving the structure or purchasing more energy efficient appliances.<sup>21</sup> Yet there is **tremendous potential for making bills more manageable and increasing energy efficiency, if these structures are improved.** From the consumers' perspective, learning about programs that fund Weatherization Assistance Programs, deep energy retrofits, new windows or HVAC/water heating equipment is critical for homeowners and beneficial even when utilities are included in the rent.

DEFG surveyed consumer use of voluntary prepaid electric service in the Pacific Northwest and found comparable savings occurring "among renters and homeowners, the young and the old, and poor and the wealthy."<sup>22</sup> Tenants could save just as much as homeowners (~11%) and were more likely (as compared to homeowners) to change thermostat temperature settings, use appliances less, and change out thermostats. Renters were less likely to make major investments and apply weather stripping.<sup>23</sup>

The comprehensive *2013 ACEEE Multifamily Building Report*<sup>24</sup> is recommended reading and goes into great detail into the local characteristics and types of housing stocks, fuel sources, and geographic climate patterns. In regions with extreme weather conditions, Opower data from seven programs found "low income populations in some cases exhibiting higher energy use than their higher-income counterparts"<sup>25</sup> suggesting untapped potential to address substandard housing or other money-saving possibilities.

### Dynamics Between Tenants and Landlords

There are substantial perceptual and practical barriers to working with landlords for renters. Tenants are unlikely to decide (or be able) to participate without subsidized loans or guaranteed savings from a sponsoring



agency. In addition to the barrier of being able to afford improvements, dominant fears for disadvantaged consumers include trusting the landlord, getting permission to make changes, and finding reputable contractors to do the work. Another concern for working residents is the ability to be home to let the contractor in, even if the weatherization program is free. Elderly or disabled residents who might be home during the day worry they are going to be taken advantage of by less scrupulous service providers (a realistic expectation). When a utility-qualified verification program is in place, it generates positive feelings towards the utility from both tenants and landlords.<sup>26</sup>

### When Utilities Are Included in Rent

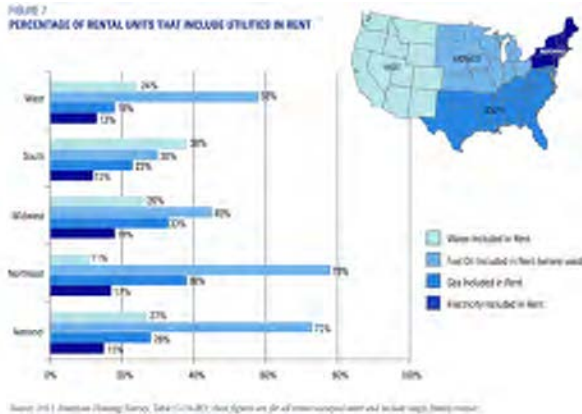


Figure 7

Energy efficiency adds value by direct energy savings and lower maintenance costs. **Improved building comfort and savings attracts and retains tenants**, who are learning to expect energy efficiency because of greater awareness of green building practices and the recent increase in municipal disclosure ordinances and green community labeling schemes. A well-designed multifamily energy efficiency program appeals to all of these motivators.<sup>27</sup> The benefits of energy efficiency may not be immediately obvious to building owners who have never before improved the efficiency of their buildings.

Local utilities are often in stronger positions than individual tenants to make the case or point out the availability of new cost-effective products (like the ThinkEco modlet used as part of the ConEdison CoolNYCProgram or the Quirky Aros smart window air conditioner from GE) that are coming onto the market.

### Reaching the Landlords

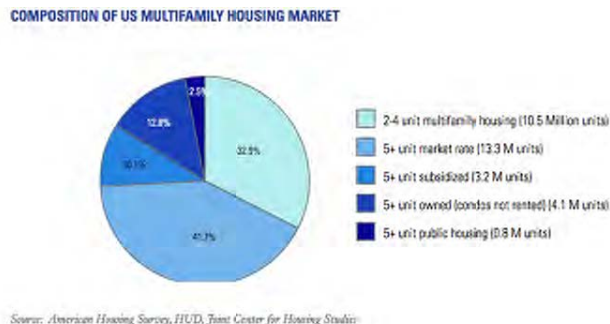


Figure 8

Market-rate apartments are the largest segment of rental buildings. Millions of privately owned market-rate apartments are considered affordable because their rents are sufficiently low that they fit within the budgets of moderate- and low-income renters without subsidies. These buildings remain affordable by virtue of low competing rents in the local market. Buildings with local, state, or national subsidies and public housing may be termed “affordable” as well.<sup>28</sup> A second category of rental housing is subsidized.

In 2011, 4.8 million low-income households were assisted by the main rental housing subsidy programs of the U.S. Department of Housing and Urban Development (HUD). Two million units were subsidized through the Low Income Housing Tax Credit (LIHTC) program administered by the IRS.<sup>29</sup> There are two main types of housing subsidies: tenant-based subsidies, where the tenant receives a voucher to obtain housing in any market-rate privately owned building of their choice, and project-based subsidies that are tied to specific units.

**The multifamily industry has numerous trade associations and tight local networks in communities nationwide. That facilitates conversations and outreach about energy efficiency programs, the convenience enabled by AMI so account identities can be changed remotely, and opportunities for rebates and financing associated with appliances, HVAC, and rooftop solar.**

### 3. Home Usage Patterns

What is the family structure? Do residents live alone, with related people vs. unrelated housemates? What is the routine? Do they work at home or offsite, stay home during day, have pets?

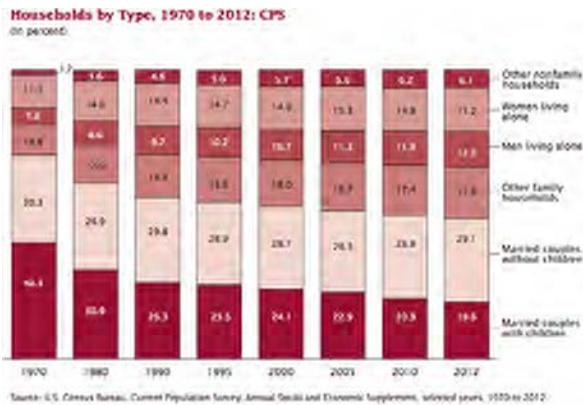


Figure 9

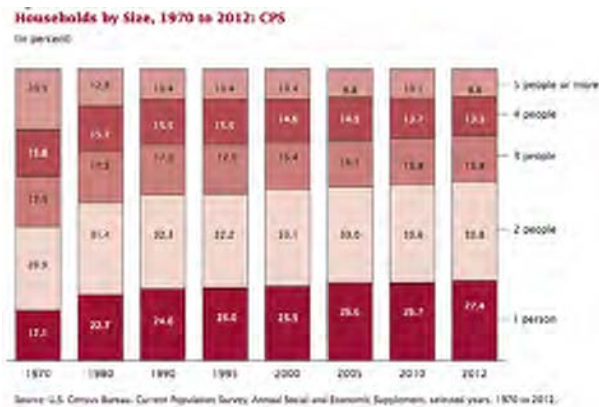


Figure 10

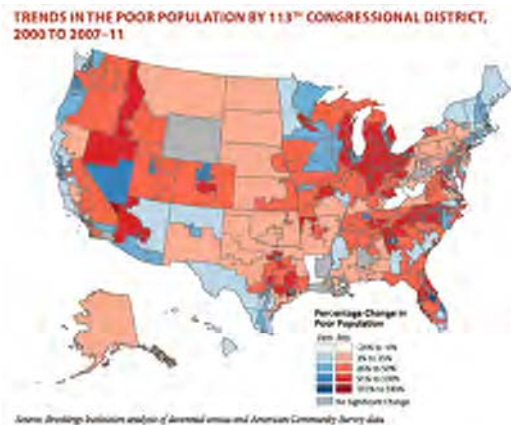


Figure 11

For the most part, families have become smaller since 1970 with more people living alone and more single parent households. The number of households living with unrelated family members has increased with economic downturns. More distant relationships affect how responsible people feel about the account holder and the utility bill.

Multigenerational households are more likely to be in poverty. In 2012, 19% of multigenerational households were below 100% of poverty compared with 12% of all family households. Poverty was especially pronounced for multigenerational households with a Black (26%) or Hispanic head of household (24%). Reports analyzing census data suggest that forming a multigenerational household is one strategy for coping with poverty and offers a financial safety net for some families.<sup>30</sup>

A new book, *Confronting Suburban Poverty in America*, by fellows from the Brookings Institute<sup>31</sup> and a series on poverty in the *New York Times* examine trends in rural and suburban communities as well as urban settings.<sup>32</sup> There have been seismic shifts of people who previously considered themselves comfortable, who are now having difficulty paying rent/mortgages and utility bills. Significant numbers of low-income households include either elderly or disabled members.<sup>33</sup>



Figure 12

In discussions of dynamic pricing, the narrative of large low-income households with frail elderly and young children trapped at home during hot afternoons looms large. While this is a widely held concern among consumer advocates, in trying to verify and identify precise concentrations, it was difficult to find data to confirm or disprove this assumption. More research and analysis of census data is needed here.

## 4. Household Cash Flow and Credit

*How frequently cash comes in and how variable is that income are important factors related to payment terms or programs. Income may or may not cover actual expenses. Low-income families often have no bank accounts, savings, or extra resources available so survival is a balancing act. Predatory and deceptive financial products and service providers are too often focused on this population.*

Common income patterns for economically vulnerable Americans include:

- Fixed income payments like Social Security or Temporary Assistance for Needy Families (TANF);
- Variable or cash income rather than regular paychecks;
- High-interest debt such as payday loans or credit card dependency;
- For the unemployed, dependency on savings or lines of credit;
- Allowance or scholarship payments for students (possibly offset by student loans).

**Throughout the literature, consumer comments suggest that people want to pay their bills because it provides a sense of financial freedom, dignity and self-respect. If one can stay current on the utility bill, it helps the person catch up on other bills.**<sup>34</sup> Well-designed programs encourage people to keep paying their bills throughout expensive winter or summer (depending on climate) months when their utility is prohibited from terminating service for non-payment.

In the 1980s, the Wisconsin Public Service Commission studied how they could reduce the number of disconnections and help the utility limit losses and arrears. They were surprised to learn only 12% of “payment-troubled” customers were found to have adequate funds and the ability to pay on time. The other 88% were not “deadbeats” who only paid bills if threatened with termination: 47% were simply too poor to pay their bill and 41% had the funds but were not good money managers.<sup>35</sup> **By using advisors to work with customers to design flexible and achievable payment goals, the utility saw fewer terminations, less employee burnout, and better than industry average collection performance.** Early intervention and personal contact were seen as key to success. Similar positive experiences are echoed by the Ohio Partners for Affordable Energy whose 58 member agencies serve as customer service reps for utilities yet obtaining funding via the regulatory process for personalized contact continues to be elusive. (More about this in sections **7. Education** and **8. Trusted Advisors**.)

People who have not learned good budgeting skills and don’t have a comfortable cushion understandably may have difficulty allocating limited incomes. For those with computer and Internet access, there are financial software services to help with budgeting and cash flow management. Community service organizations have both mission and opportunity to help their clients be successful and get the small things under control. **If community representatives are informed about utility programs and encouraged to help people enroll in the range of options available to them, then they can help their clients take advantage of the opportunities and manage their cash flow better.**<sup>36</sup>

The Earned Income Tax Credit (EITC) has been a boon to millions of Americans yet not everyone eligible takes advantage of the program. The Consumer Financial Protection Bureau learned that “front-line direct service staff and case managers who serve low-income consumers often feel ill-equipped to inform clients about resources that can help improve their financial lives, such as EITC or budget-management tools.”<sup>37</sup>

### Adding to the Difficulty

In 2011, the Consumer Financial Protection Bureau (CFPB) identified 8.2% of U.S. consumers as “unbanked” and 20.1% as “underbanked” to describe households who do not have credit cards or checking and savings accounts at banks or credit unions. They rely on alternative financial service providers who charge very high fees. Products include pawnshop loans, auto title loans, rent-to-own products, payday loans, check cashing at non-banks, money orders, and non-bank wire transfers.

This means already disadvantaged consumers pay, on average, 5% of net income on service fees, making it even harder to accrue assets. Without safe places to keep money, they are at greater risk for becoming victims of crimes or finding themselves without access to funds during a disaster.<sup>38</sup> On top of that, if they save too much, they may lose SSI, Medicaid, or TANF (Temporary Assistance for Needy Families) benefits.

Tax refund anticipation loans and checks (known as RALs and RACs) are common vehicles for low-income consumers to pay high fees to tax preparation companies and banks. “A number of free and low-cost RAL providers exist around the country, the oldest of which is Alternatives Federal Credit Union. These programs provide free tax preparation or are linked to VITA (Volunteer Income Tax Assistance) sites that provide free tax preparation. The programs emerged largely as a way to entice taxpayers away from higher-cost RALs. They do not provide a large number of RALs—from fewer than a hundred to a few thousand—but they do provide a workable model for cheaper alternatives to conventional RALs.”<sup>39</sup>

“Industry stakeholders note that many individuals spend ahead or fail to make payments on rent, utilities, or other expenses during the holiday months with the expectation that they will receive a large lump sum in late January or early February.” This allows families to get through the winter holidays and then catch up on unpaid utility and other bills using their EITC refund. The non-profits who provide the free services use the interest in these tax refund checks as an opportunity to teach financial literacy so people can learn more about how to manage cash flow, open bank accounts, and avoid getting into debt. Those that are expanding their services nationally such as the Self-Help Credit Union also help their customers rebuild their credit, refinance their homes, and improve their financial literacy.<sup>40</sup>

As will be discussed further in section **10. Physical Ability to Pay**, 59% of unbanked consumers have mobile phones, restricted time available, limited access to convenient banking or payment locations, so mobile banking is likely to be increasingly attractive to underserved populations.<sup>41</sup>

### **Juggling Expenses and Disconnection Policies**

Protection policies vary from state to state but in most jurisdictions there are 30-60 day grace periods (hard won by consumer advocates) before the electricity is shut off for non-payment and possibly longer if there are extended heat waves or cold snaps. This allows a consumer more time to gather the money for the utility bill, though it also increases the balance to be paid. A key concern of consumer advocates over the ease of disconnection with AMI, is that the technology will allow/cause the utility to ignore or modify those policies. It is recommended that utilities confirm protections, especially for those with medical conditions or for weather-related situations, in any discussion of disconnection/reconnection policies.

Ironically, AMI—especially when supported by pay-as-you-go payment plans—makes same day reconnection with small amounts of money possible. **If non-punitive payment policies are in place and reconnection fees reduced or eliminated entirely, it is far easier for cash-strapped people to maintain service.** During their SG pilot, Central Maine Power demonstrated they could reconnect customers in less than an hour, instead of waiting to schedule crews on the next business day. This provided greater convenience to customers who did not have to take time off work to wait for utility personnel to arrive.<sup>42</sup>

Energy budgeting programs that provide consumers with proactive text alerts or calls (as frequently as desired by the consumer) as to how they are performing against their goal or balance (in the case of a voluntary prepay agreement) seem to be minimizing disconnections in the first place or reducing the length of time families are disconnected. In the U.K., where 13% of customers are enrolled in such services, there are far fewer disconnections, no reconnection fees, less time disconnected, and fewer customers with utility debt than in the U.S. As a frame of reference, in the U.K. (with 1/5 the population of the U.S.) 6,000 customers are disconnected each year, compared to 6,000,000 in the U.S.<sup>43</sup> Surely, there are lessons we can learn to reduce the number of disconnections in North America.

## 5. Competing Priorities

*This factor contributes to the hot button nature of the low-income conversation. Can someone live within their means if the “means” are meager at best? What constitutes basic necessities vs. luxuries are often in the eyes of the beholders.*

**People living in poverty experience general insecurity (energy, food, transportation, healthcare, childcare, etc.).** *Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure* (March 2010) looks at the family resources considered in developing poverty thresholds. “The resource definition should indicate the resources the [entire] family has available to meet its food, shelter, clothing, and utilities needs, ‘plus a little more.’”<sup>44</sup>

Extreme weather events have not only challenged utilities’ ability to keep the lights on but have increased food prices as well. SNAP (food stamp) programs are being cut. A recent New York Times editorial attributes the drop-off rate in free school lunch program as children get older as the result of embarrassment and bullying. “It’s 81 percent in elementary school, 61 percent in middle school and 38 percent in high school. Many teenagers, it seems safe to assume, would rather go hungry or eat junk from vending machines than get caught in the wrong line for turkey and beans.”<sup>45</sup> As a society, we don’t expect grocery stores or restaurants to adjust prices or extend credit on a needs-based approach, but we do expect utilities with monopoly status to exchange a guaranteed rate of return or cost recovery for universal access.

**The utility business model socializes costs across all consumers yet elements of fairness and cross subsidies are often overshadowed in the complexity of rate design.** Among the impacts of flat rates or tariffs based strictly on volume rather than wholesale price that varies by time of use is that frugal lower-income consumers subsidize more affluent homeowners who waste energy at peak times. In discussions of net metering and distributed generation, it can be lost that those who purchase solar to offset their bills will still require the utility to maintain guaranteed levels of service at night and during rainy weather. Disadvantaged residents are further penalized as they are disproportionately represented among those less able to finance investments in energy saving and generation technology.<sup>46</sup> Policies that allow low-income consumers to become and to be seen as part of the larger solution foster pride and minimize resentment.

### **So What Is Included In That ‘Little More?’**

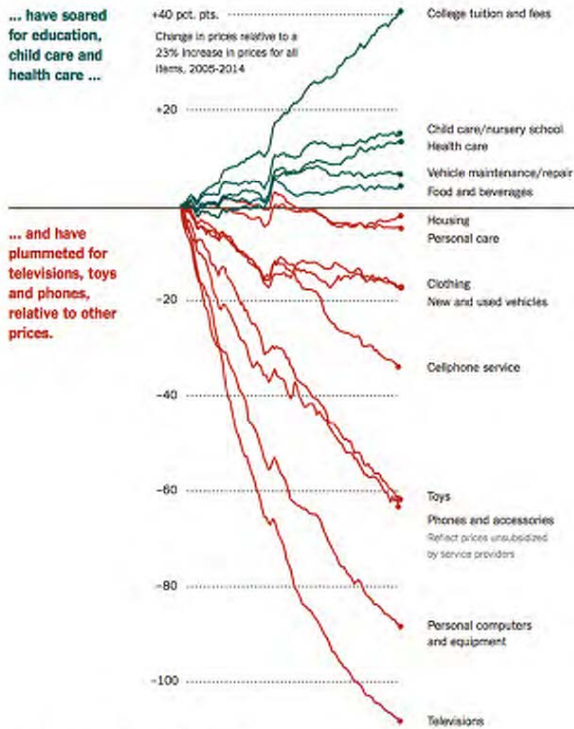
Universal access to telephone service is preserved as a regulatory right but as the carriers shift their infrastructure and business to mobile, consumers are expected to shift to more expensive mobile plans, often co-marketed with cable TV and Internet service. True landline phones, the preferred communication channel for many older customers, and simple text phones for young people, are shrinking segments that may become obsolete in the next few decades.

On one DEFG Low Income Energy Issues Forum conference call we talked about people who paid their cable bills ahead of utility bills because they believed the former would be cut off for non-payment, but the latter would not. Most current and SG-enabled utility feedback systems assume, sometimes incorrectly, customers have access to Internet, email, and smart phones. This raises the question that **if energy and telecommunications services are so interdependent, have both become necessities to be informed and efficient energy consumers?**

Consumer spending on the Internet, online services, mobile phones and multimedia entertainment costs is on the rise. A 2012 iYogi research study found approximately 63% of people spend about 35% more on technology bills than utility bills—gas and electricity costs—nowadays and they expect the difference between those two numbers to rise. The title for the study is “63% prefer to stay connected rather than warm.”<sup>47</sup> While this study is neither definitive nor focused on low-income consumers, it reflects the environment in which they reside. It also reflects the standard program design practices for utilities and their creative agencies and leaves those without good broadband connections at a disadvantage.



### Costs for Americans ...



BY LARRY BUCHANAN and ALICIA PRADEPANO  
 Source: Bureau of Labor Statistics  
 Note: Based on the Consumer Price Index for All Urban Consumers. Data is collected from major stores and adjusted by specialists to reflect changes in quantity offered in a product or an increase in quality. Much of the drop in prices for electronics reflects an increase in quality over the past 10 years.

Figure 13. Source: New York Times

### Rainy Days

Family budgets must also contend with unexpected expenses including loss of employment and income or displaced family members moving in to the home. One's car needs a major repair. A medical crisis impacts the family beyond the doctors' bills and medications as the patient and/or caretaker will often not have paid sick leave. The Affordable Care Act will no doubt have a positive impact but does not cover everything. Without the cushion and credit many families take for granted, any significant disruption can lead to severe compromises or homelessness.

### Helping with the Basics

EPB, a Chattanooga municipal utility, recognizes that not all their low-income customers have access to air conditioning so they offer free fans in the summer as well as "Power Share," a year-round program that encourages customers to donate funds to families in need through their utility bills. Where charity is required to pay the utility, should that help be limited to those trying to be more efficient and/or those whose lives will truly be threatened by a loss of power?

## 6. Choices and Options

*A key decision-making question is: does the utility offer options that customers find attractive or to be a good value? The differing nature of people's energy worldviews and their circumstances relative to the other criteria means that not every low-income customer will respond to the same messaging nor voluntarily choose the same technology, pricing or payment plans. If the ultimate goal is to encourage a significant percentage of consumers to contribute to a more efficient energy grid, then a range of options is needed.*

A regulatory model that treats everyone the same, as the means to avoid discrimination, may inadvertently create a barrier for the implementation of personalized and targeted energy plans that would help low-income families. As will be described in more detail below, pilots of different rate structures, payment, or technology bundles confirm that some consumers (of all income levels) prefer to establish regular routines while others are more willing to adjust energy use on an occasional basis. Unless otherwise noted, for the purposes of this discussion, "choice" and "programs" refer to utility products and services: combinations of pricing, technology, rebates, and payment plans or bundles, rather than alternative competitive suppliers.

As noted earlier, low-income consumers are interested in programs that are beneficial and relevant to them. In a 2012 Smart Grid Today webinar,<sup>48</sup> consumer advocate Nancy Brockway summarized what she believes is needed for program choice to be effective:

- Services consumers want
- Services consumers know about
- At a price consumers are willing to pay
- From a vendor consumers trust

## What Do Consumers Want?

The short answer is “it depends.” Utilities such as APS, SRP, Georgia Power, and Bluebonnet Electric Cooperative that already offer portfolios of programs observe certain patterns that relate to our low-income decision factors. SRP finds students, people living with unrelated roommates, and people who are paid weekly on a cash basis respond well to prepay programs. People on fixed incomes who value **predictability** are attracted to budget billing and discounted flat (hedged) rate pricing programs, perhaps tied to automatic payment plans if social security checks are deposited directly. Those who are at work all day or have flexibility in their schedules may be motivated to adopt a dynamic market or time-based rate that will let them achieve the greatest possible savings.

FIGURE 33. RATINGS OF USABILITY AND USEFULNESS FOR EQUIPMENT AND INFORMATION (5=EXCELLENT)

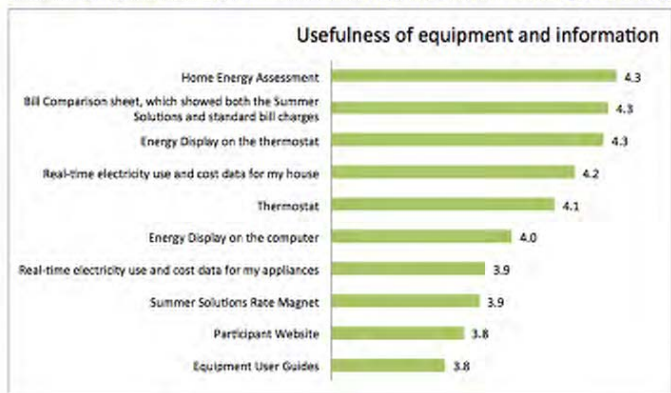


Figure 14: SMUD’s Summer Residential Solutions Study (2012)

The SMUD SGIG (Smart Grid Investment Grant) Program pilot emphasized customer choice. Their data show that when people select a pricing plan or technology, they are more responsive, reduce use, and have higher satisfaction.<sup>49</sup> This chart shows that not everyone finds the same information and equipment useful. Interestingly, the study found that all but one of 265 participants who signed up for the peak rate expected a family member to be home during the 4-7 pm weekday peak.<sup>50</sup>

In competitive markets such as Texas or Pennsylvania, where choice includes different service providers rather than a designated utility, product differentiators are central to the strategies of TXU Energy, Reliant Energy, Direct Energy, et al. For example, free or reduced cost electricity service on nights and weekends is a widely advertised concept.

## The Value of Choice

The issue is often raised if low-income residents have the flexibility in their routines to take advantage of technology-enabled energy efficiency. The literature overwhelming suggests there are tremendous opportunities—especially with policies that leverage SG capabilities.

SMUD studies indicate that age, income, and education do not have high correlations for performance. Of the behavior changes that had a statistically significant impact, most can be done by low-income consumers: pre-cooling on event days, closing blinds or drapes, wearing lighter clothing, going to a cooler destination (friends’ house, mall, public swimming pool) on a hot event afternoon, and avoiding taking a hot shower if one has an electric water heater.<sup>51</sup>

**And almost 80% of low income customers win even before they respond**

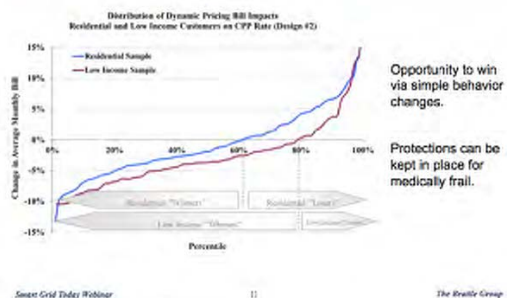


Figure 15. Source: The Brattle Group

Data from over 100 dynamic pricing pilots assembled by the Brattle Group indicate low-income households are likely to be structural winners even if they do not change behavior. If they change behavior in manageable ways, then the opportunities to lower bills are even greater.

An analysis of 2007-8 Real Time Pricing (RTP) data from ComEd<sup>53</sup> found that households with limited usage common to many low-income households did not automatically fare better with RTP, again reinforcing a mix of voluntary rate options will best protect vulnerable consumers. SDG&E customers found Peak Time Rebates (PTR) to be a no-lose way to participate though active engagement is needed for statistically significant impact.<sup>54</sup>

## Validation

Collecting anecdotes, featuring testimonials and leveraging social media are important for other residents to see there are options available. **When it's clear that other people with whom they can identify can lower their bills, help the environment, feel empowered, etc. then people will be more enthusiastic.** While winning a contest helps a few families, allowing everyone to achieve a “personal best” has broader appeal. Supporting data are more important for regulators and consumer advocates, than for consumers themselves. (This is discussed further in the section **9. Behavioral Triggers.**)

Understanding about what individuals care about and their specific circumstances, as well as the conditions and structure of their home makes it easier to offer them relevant programs. A good Customer Relationship Management System makes a significant difference in customer satisfaction.<sup>55</sup> Insuring customer data is kept private should be true for everyone. Allowing consumers to share in any monetization of their data, would be a persuasive factor for this audience.

## 7. Education

*A contributing factor to the decision-making process is how consumers learn about the programs and options that are available to their families. There is widespread agreement that some form of education is needed to take full advantage of programs. How are low-income consumers made aware of their eligibility for subsidies and discounts?*

### Conversations Not Commercials

As the former board members of the non-profit that managed the PowerCentsDC pilot (which studied low-income consumer response to dynamic pricing)<sup>56</sup> still likes to quote: “energy literacy requires a series of conversations, not a commercial.”<sup>57</sup> People with limited resources are not likely to be able to respond immediately to a comprehensive list of all the possible changes and improvements.

However, **if it is easy to sign up once and then use the same information for multiple programs, people are much more likely to participate.** Proving eligibility once, updating as circumstances change, and working with a coach/advisor is much more likely to be effective, avoid fraud, and highlight opportunities for additional rebates/programs when work is being done. This includes the building owners if rentals, particularly multifamily units, are involved.<sup>58</sup> When auto-enrollment in energy efficiency programs is used instead of opt-in, low-income customers generate savings comparable to higher income groups.<sup>59</sup>

Ohio Partners for Affordable Energy (OPAE) deliver energy efficiency programs to 15,000 homes per year. Weatherization program participants average a 29-34% reduction in use in single-family homes. Changing out refrigerators and approximately 16 bulbs per home reduces energy use 8-11%. Their LIHEAP intake workers, who engage in energy education during the time (typically 18 minutes) they spend with a customer, cost \$24 per hour all in—pay, benefits, computer, and facility. While such efforts are cost-effective in terms of savings and more effective than literature and websites, funding is harder to obtain.<sup>60</sup>

Studies such as the *Review of the In-Home Energy Education* funded by California’s Low Income Energy Efficiency Program<sup>61</sup> examine how energy education is delivered and what content and materials resonates, what is ignored, and what customers say would be appealing. In addition to examining secondary research, they conducted in-home interviews, focus groups, and a telephone survey. As noted in earlier sections, saving money is a key motivator and while improvements to the customers’ physical envelope are obvious, the value of energy literacy education is not always apparent to the intended audience.

With larger households, dealing with cooperation among family members or unrelated roommates is a challenge to be addressed. The study found that at the time of home energy assessments customers are more likely to be willing and motivated students. It’s important to prioritize offerings and explanations as offering too much

comprehensive information can feel overwhelming. **Two-way exchanges provide the opportunity to find out what is meaningful to different members of the household.**

### Point of View

Content of energy literacy education often focuses on the utility's perspective, either from the physical infrastructure, terms of art for programs (demand response, dynamic pricing, distributed generation, etc.), or business considerations. Few low-income residents own any stock so attributing policies to pressure from shareholders is not meaningful and may suggest to the media and advocacy community that the utility lacks compassion for its vulnerable customers. However, the supply side perspective of the utility can be relevant and positive if framed as savings being passed along to consumers.

### Integration of Subject Areas and Collaboration with Stakeholders

ACEEE documented emerging programs that reach out to underserved markets. "The most effective multifamily program designs provide integrated packages that address energy use (both electricity and natural gas where applicable) within individual units and the larger building systems and common areas. A key to success is bringing together key stakeholders including utilities, housing authorities, and financial organizations to collaborate and leverage available resources and work towards common goals."<sup>62</sup>

The telecom and financial services sectors seem to be more comfortable than utilities in developing targeted campaigns and designing products specifically tailored to cash-strapped customers. Utilities devote significant resources to this segment of their customer base. They have an opportunity to generate higher levels of customer satisfaction and goodwill by emulating the best innovative approaches.

## 8. Advice from and Relationships with Trusted Advisors

*Who delivers the information is a critical component of the decision calculus. Is the utility considered a trusted advisor? Does the utility partner with other low-income support agencies and 3<sup>rd</sup> party community-based organizations that speak the customers' language literally and figuratively? Does the family participate in other utility programs like weatherization, energy efficiency, lighting, etc. so they have existing relationships? How critical is word of mouth validation from family, friends, and neighbors?*

Anyone can feel overwhelmed if you offer him or her too many things to do at once. The literature confirms that **when those who benefit from even small adjustments get into the habit of trying a few simple steps, they will move on to others. This is why a home energy assessment and access to a trusted coach or advisor can be so transformative.** The former activity screens for a basic level of interest on the part of the customer and creates a context so the advisor can learn about the particular family's circumstances. This allows multiple conversations and an on-going relationship to be developed so the advisor can credibly suggest **relevant** adjustments, adding other recommendations over time.<sup>63</sup>

As Apple has demonstrated so convincingly with its high touch retail stores, people appreciate technical assistance when it is delivered in a respectful way—especially for new experiences or those that are not routine. All the research and case studies of AMI deployments confirm the field expert or guru model is very effective in general.<sup>64</sup> Compassionate and helpful people from the utility who interact with them proactively are seen as positive. This skill is desirable for employees dealing with stressed customers having trouble keeping their accounts current.

**For hard-to-reach customers (language, remote or dangerous locations, personally isolated), it might not be cost-effective for the utility to always deliver this level of high touch service itself.** By making relatively minor investments in appropriate affinity or support groups, the utility can improve its collection rate as well as increase its credibility in the community. The degree of subject matter accuracy may be less important than the

benefits of trusted social networks (online or in-person) particularly for culturally and linguistically isolated groups and digital natives.<sup>65</sup> It is also the best way to deliver persistent results.

Neighbors who have a good experience with a utility or third party energy ambassador will validate programs and open doors for broader participation in a community. In California, a 2013 Needs Assessment for the four investor-owned utilities (IOU) found that most ESA (Energy Savings Assistance) participants learn about the program either from friends/family/colleagues as much as from IOU outreach programs. Non-participants who have a life event that makes them eligible for support tend to learn about programs from a social worker or other professional.<sup>66</sup>

San Diego Gas & Electric (SDG&E) has been especially effective in this area. Over the past several years, they have built up their partner program with environmental and other community based organizations (CBOs). A key element to their success is that the CBOs serve varied income levels—not just low-income. The utility has found it is cheaper to leverage other groups with grants and training than to hire utility personnel to reach all these different audiences plus these groups help with translations, outreach during peak events, and general energy literacy training.<sup>67</sup>

SDG&E uses historical billing data to identify anomalies and manage by exception. For example, after new smart meters were installed, they ran reports to see whose bills would be significantly higher, indicating that the old meter had probably run slow. Before the first new bill was sent out, a skillful customer service rep proactively contacted the household to explain the situation (confirming the resident would not be charged for the previously unbilled electricity).

For low-income households who typically consume at a certain level of usage, a major variance could indicate a problem needing support. If the utility has an on-going relationship with local social service agencies and CBOs, an exception report could provide a flag to be shared with a group better suited to investigate with an onsite visit.

### **Choosing the Right Partners**

People who might be eligible for discount rates (but are not availing themselves of subsidies) may be very sensitive to thinking of themselves as receiving a “hand out.” Therefore, working with a church or other community group may minimize the stigma. Being visited by the utility before, during, and after a program is not always seen as a good thing in communities where authority figures are not always perceived as supportive.

Several of the studies asked if the person believes the program being offered is something they really need. Reasons given for not participating include: they don’t feel their bills are so high, don’t really see what new information could help them, they don’t know about the programs or they are not sure they qualify.<sup>68</sup> Without the connection being made, “benefits” can be seen as barriers. Community-based groups and other social networks can help make those connections.

The CFPB met with representatives of a wide range of social service, legal services, housing, and other agencies that co-locate or link financial counseling and coaching to the delivery of other services.<sup>69</sup> “Embedding or nesting empowerment services into the existing social service delivery system is emerging as a key strategy around the country, practiced both by local governments and nonprofit institutions. Communities such as New York City that have already begun to employ this strategy are looking both to expand and replicate their financial empowerment efforts more quickly, and to achieve improved outcomes in existing programs by bundling services.”<sup>70</sup>



## 9. Behavioral triggers

*From a behavioral perspective, energy saving contests, comparisons or cooperation with neighbors, gamification, and energy budgeting services all demonstrate increases in attentiveness and reduction in usage with residential consumers who choose to engage. For low-income customers facing greater risk associated with bad debt, the reduction of exposure can be a motivating factor as can positive reinforcement of achievement.*

### Proactive Visibility

Multiple studies indicate that customers who participate in energy budgeting programs use less electricity after signing up for the program than they did before. Almost all programs involve some sort of display informing participants of their account balance, generally expressed in days of electricity left based on current usage rates. These displays serve as a continuous feedback mechanism, making customers constantly aware of the rate at which they are using electricity.<sup>71</sup> With prepay, the awareness that it is the customer's own money reinforces the value of the account balance.

When the Federal Reserve examined the use of mobile phones in financial decision-making, consumers in general appear to respond to low-balance and payment due alerts. The low-balance text alert, for example, triggered action by over 85%. Payment due alerts improved the customers' ability to pay on time a lot (50%) or a little (27%)<sup>72</sup>

### Timely Positive Reinforcement

Timely feedback can affirm consumers saved money by lowering usage in response to a DR alert. As part of the introduction of its peak time rebate program, BGE provided next day feedback on how much each customer saved with the rebate.<sup>73</sup> They delivered a message directly to consumer phones reinforcing the benefits while it was fresh in their minds.

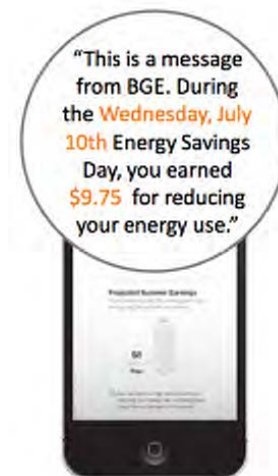


Figure 16

### Community as Motivator

Industry players understandably have a tendency to view themselves as the experts in energy literacy which lead them to overlook the **significant role that peer influencing has the potential to play in disadvantaged communities**. The sense of empowerment and skills for self-advocacy has tremendous potential but is not yet commonplace in the U.S.

One design methodology, Intrinsic Motivation, promotes the idea of “positive deviants.” “Families that have not successfully navigated through a power structure to promote their own well-being may convey subtle or direct messages to their children that the system is all-powerful, impenetrable, and arcane. A sense of having to accept or become resigned to poor circumstances may be unconsciously fostered and sustained through generations of family life. Individuals may grow up without a strong sense of control over their daily experiences.”<sup>74</sup>

This behavioral model differs fundamentally with the concept of competing *against* the neighbors. When people in underserved communities see examples of how other people like themselves are getting ahead they see that “success is possible.” Feedback loops are needed to give one a sense of progress. While they can't overcome structural barriers, methodologies like this provide possible paths and advocates for policies and institutional practices that provide resources and capital to low-income families so they can take advantage of economic opportunities.<sup>75</sup>

During the 2011 *Green Today, Growth Tomorrow Community Summit* sponsored by National Grid and the City of Worcester, MA, the Appreciative Inquiry design methodology used at the event, emphasized participant opinions and creativity.<sup>76</sup> Young people from low-income families enrolled in a GED program and recruited by the local LIHEAP administrator, picked up quickly on the benefits of energy efficiency and smart grid potential and became prominent and valued participants during the 2-day gathering of 300 political and community leaders.

### Social Networks (Neighborhoods)

“Lifeline systems” are network infrastructure for power, transit, and communications that are crucial during disasters and extreme weather events. Some solutions are capital intensive and high tech and other are low or no-tech approaches. A 2013 article in *The New Yorker* described “the case of a deadly 1995 heat wave in Chicago, during which people living in neighborhoods with stronger social networks fared better than people who lived in comparable, but less socially cohesive, neighborhoods. Since 1995, officials in Chicago have begun to take these factors into account. City agencies have maintained a database that lists the names, addresses, and phone numbers of old, chronically ill, and otherwise vulnerable people, and city workers call or visit to make sure they’re safe.”<sup>77</sup>

### Honoring One’s Commitments



When people pledge their participation in a program and that pledge is reinforced, the behavior changes are persistent.<sup>78</sup> Keeping one’s promise to a known entity is much more compelling than it is to a faceless utility.

With digital technology at each location, better customer information systems, and personalized energy profiles and outreach, utilities are in a better position to offer specialized support for vulnerable residents. The tradeoffs between privacy and security need to be part of the stakeholder conversations.

Figure 17

## 10. Physical Ability to Pay

*Convenience and technology play a critical role in the decision-making process. When consumers (often unbanked) lack flexibility in controlling their work schedules, having the opportunity to pay bills when it is most convenient for them and not when utility offices are open affects the decision-making process.*

Disadvantaged communities are so often on the receiving end of punitive fees and extra service charges, utilities have an opportunity to improve collections by adopting proactive strategies that support rather than penalize their realities. The obvious benefit to the utility is the easier it is to pay, the more likely they will collect the money owed from low-income consumers.

### How to Pay

While elderly consumers (of all income levels) may be more comfortable with the classic bill in the mail to be paid with a check each month and others might favor credit cards (most helpful if there are not additional payment surcharges by the utility attached), more low-income consumers have access to mobile technology than they do banks.

“People often make the wrong conclusion about who uses a smart phone. While premium plans such as those at Sprint, Verizon, or on the iPhone platform cost a lot and tend to serve a lot of well-off people, smart phone usage is still very high among low-income households. MetroPCS focuses on youth, lower-income, ethnic minorities.”<sup>79</sup>

These are the fastest growing segments of the population and not coincidentally, among the fastest growing segments of the ‘new-unbanked’ and ‘never-banked,’ the Federal Reserve<sup>80</sup> acknowledged in a fall research piece. The research found that minorities were more likely to own a smart phone than were non-Hispanic whites. Among people under 24, approximately half had a smart phone by the end of 2011.”<sup>81</sup>

Comparing the results of a SGCC 2014 study with national data provided by the Pew Internet Project, the “digital divide” does not appear to be based so much on income as on age. Cell phone use is 84-90% for individuals earning below \$50K.<sup>82</sup> In contrast to Internet use and broadband adoption, blacks and whites are equally likely to own a cell phone of some kind with identical rates of smart phone ownership. Some 92% of black adults are cell phone owners, and 56% own a smart phone.

Cell phone ownership is much more common than Internet use among older African Americans. Just 45% of African Americans ages 65 and older use the internet, but 77% are cell phone owners (most of these seniors own basic cell phones, as only 18% are smart phone owners). Overall, 72% of all African Americans—and 98% of those between the ages of 18 and 29—have either a broadband connection or a smart phone.<sup>83</sup>

Accessed the Internet in the Past 6 Months (By Age)

	TOTAL	18-34 years	35-64 years	65+ years
Have accessed the internet in the past 6 months	77%	91%	77%	53%
Have not accessed the internet in the past 6 months	23%	9%	23%	47%
n	531	190	233	108

Figure 18

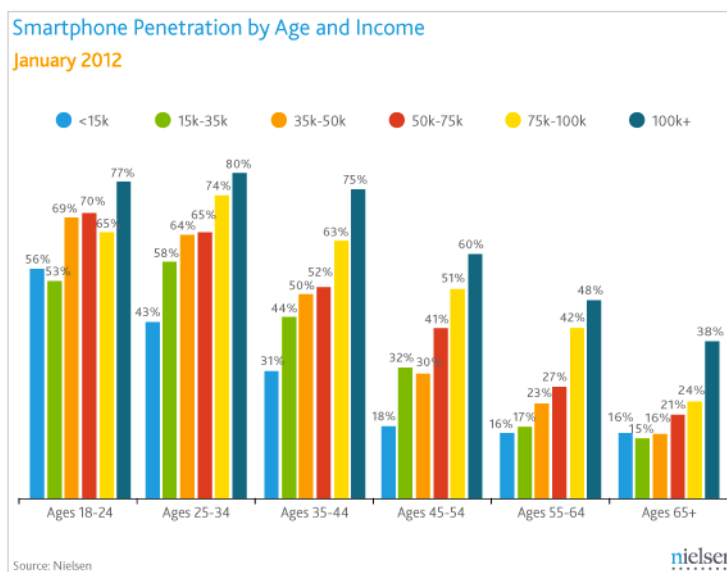


Figure 19.<sup>84</sup>

Affluent, educated African Americans follow the same patterns as whites as do younger, American-born Latinos. “Internet use is uniformly low for whites (32%), Hispanics (31%), and African Americans (25%) who have not completed high school. However, 41% of Latino adults have not finished high school, compared with about one in ten non-Hispanic whites and one in five African Americans. English language proficiency also has an impact on Internet use.”<sup>85</sup>

### Where to Pay

One difficulty of paying by phone or online is how the customer gets money into their account. According to the Federal Deposit Insurance Corporation, nine million households in the United States do not have access to a checking or savings account. An additional 21 million households have a checking or savings account but rely on alternative financial services. Research by self-service provider TIO Networks indicates about 40 million

individuals in the United States fall into the unbanked or underbanked category—approximately 15 percent of the U.S. population.<sup>86</sup>

As utilities look for ways to cut overhead, remote offices and bill paying centers are being closed throughout many communities. If people are unbanked, they need access to places for payment and may be forced to go to an agent—authorized or unauthorized—who often charges additional fees or has a lag time before turning in the payment to the utility. Convenience is an important factor, especially if you don't have easy access to flexible transportation (especially in rural areas) or control of your schedule. When kiosks are readily available in safe locations such as grocery stores and other retail establishments open for extended hours, 24 hour access is possible through text based cell phone<sup>87</sup> as Phoenix utility Salt River Project (SRP) has implemented.<sup>88</sup>

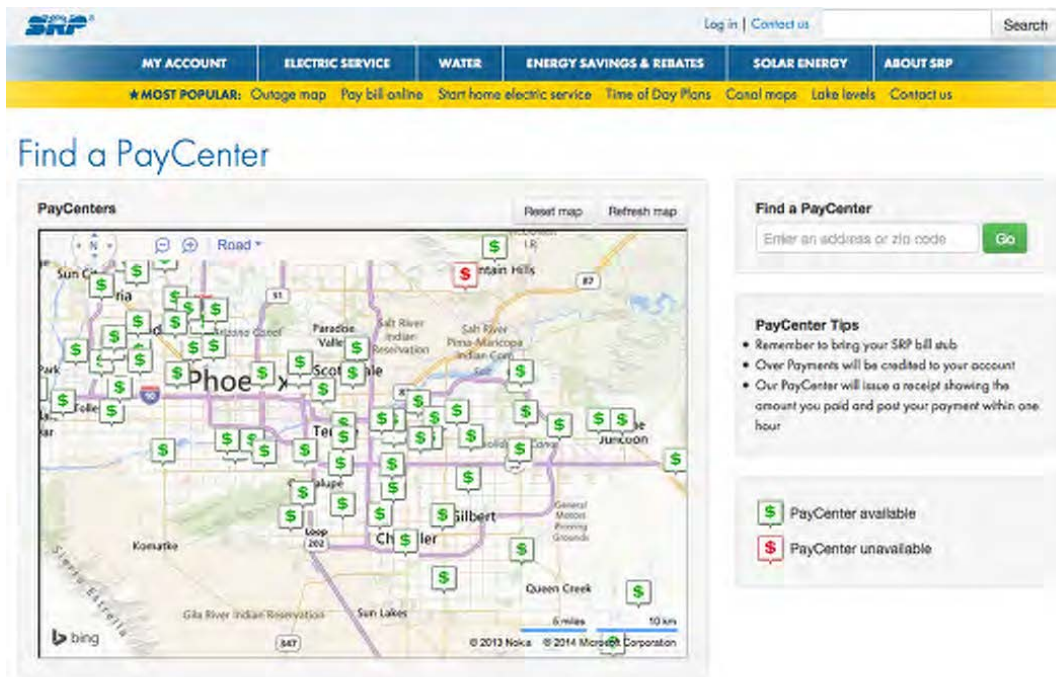


Figure 20

## When to Pay

Customers with financial resources can choose to pay when it is most advantageous to them, earning interest until a bill's due date or obtaining early payment discounts if available. For low-income consumers, people pay when money becomes available and this generally involves juggling competing bills. This stress point is at the crux of much of the debate over programs like prepay.

For low-income customers who pay with standard monthly plans, the big challenge is having enough funds available at the time the bill is due so one will not be forced into a high-rate loan or fall hopelessly behind in payments. **There are examples of successful (for both the utility and customers) arrearage management programs (AMPs) offering flexible payment terms or forgiveness of some portion of past charges if the household consistently makes regular, on-time payments for new/current charges.** "Instead of threats of disconnection, the utility offers the customer a bonus for making affordable payments."<sup>89</sup> The Massachusetts model not only gives people an opportunity to gain control, it provides a path for participants to learn to budget more effectively. However, customers who miss payments and get disconnected may have difficulty getting reinstated into the program.

In general, prepay cards are popularly used to support transactions confirming widespread consumer acceptance. In a study of 52 different prepaid cards, the Pew Trusts found that most did not allow overdraft



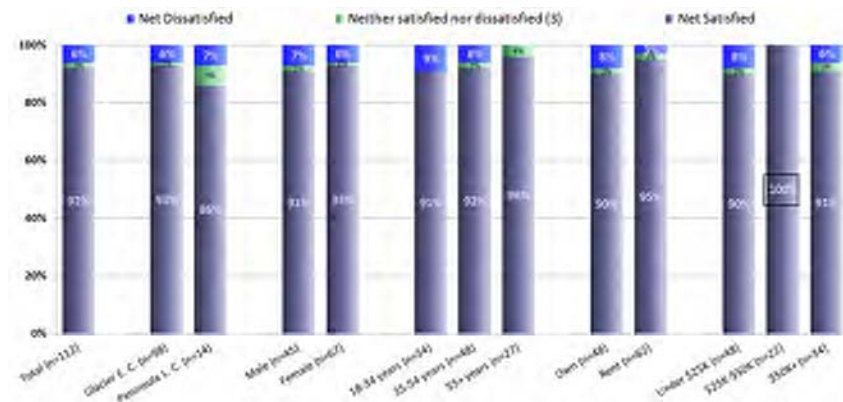
fees, which can keep costs for consumers low. On the risk side, often consumers are not adequately informed if the prepaid card automatically signs them up for overdraft protection with high fees. The cards may not have FDIC insurance protection and it is more difficult to identify fraud (which would not be the case for utility accounts tied to specific locations). Problems occur with the incidence of hidden fees or deceptive practices.<sup>90</sup>

DEFG has done several studies on prepay and for the purposes of this discussion of consumer decision making, we are focusing on the attitudes of our segment. **The transformational opportunity for utilities is to use prepay in a non-punitive manner, i.e. voluntary, marketed to all customers (not just ones with credit issues), and without extra fees for each transaction.** It should also be discussed whether collecting the customer’s money in advance should result in an early payment discount.

Salt River Project (SRP) has a long-standing, successful program—MPower—that is favored by students and vacation home owners as well as low-income customers. It provides frequent feedback so people can better manage their usage, and does not charge customers a service charge each time they put money into their account. It uses a hedged flat rate rather than seasonally or time adjusted rates.<sup>91</sup>

There are time-based prepay offerings in Texas. Direct Energy offers a prepay product with Free Saturdays and TruSmart Energy offers two options: Free Sundays or ½ off Nights and Weekends. Over the next several years, migration to AMI will make time-based rate plans for prepay customers more commonplace.<sup>92</sup>

### Customer Satisfaction with Prepay



DEFG recently studied customer satisfaction with prepay service at two Northwest electric coops. The high levels of satisfaction were consistent with their national surveys on prepay. Given the large percentage of respondents with income levels less than \$25K or in \$25K-\$50K range, this study (to be released in June or July 2014) may help address the perception of the appropriateness of voluntary prepay service for lower income consumers.

Figure 21. Source: Summary Findings Northwest Utility Prepay Study (2014)

### Recap of Decision Making Criteria

Low-income consumers do not represent a monolithic group or a customer segment likely to respond to the same set of messages and programs in the same ways. Just as with more affluent customers, personalized advice or tools are needed to help people determine the best choices from a portfolio of options.

- The behavioral science research shows that opportunities for personal achievement, dignity, self-respect and community validation are powerful motivators.
- Personal attitudes will determine what messages are most persuasive.
- Physical structure and ownership of the home will shape what tips and opportunities are relevant.
- Protections for physically vulnerable people are critical and ideally will not limit choices for the healthy.
- Cash flow, access to and ease with technology are key factors in determining payment and budgeting tools that will be most attractive and effective.
- Who delivers the message is particularly important for people and communities that have good reasons to be distrustful. Fair practices and policies are needed to earn their trust.



## Section 2: Creating a Path for Improvement

In order to close the gap between what people can afford to pay and what it costs to provide their electric service, a combination of subsidies, policy changes, structural improvements, and behavior modifications are needed. For example, if the utility charges \$100 per month to provide a family's electricity (when used unconsciously) but the family can only afford \$50, how do we make it affordable and reduce the impact on other ratepayers, shareholders, and taxpayers?

*A 38-year old home health care aid, interviewed for this paper, illustrates what is possible. Her attentiveness was triggered when her daughter was crying when forced to study for the SAT exams by candlelight because their electricity had been turned off. Ms. O, a PG&E customer, lowered her utility bill from \$200/month to \$48/month over the course of a year. She did all the right things: enrolled in CARE (the discounted low-income rate), home assessment, and weatherization programs. She used rebates to purchase Energy Star appliances and power strips. She likes the smiley face/Opower and other feedback reports because they shows how much progress she's made though she hasn't yet used the website. Ms. O has a business degree, owns her own house, and has a daughter in enrolled in a state university. On months with less money coming in she has taken advantage of the utility's "promise to pay" program and was interested in learning more about prepay, PG&E's SmartRate, and said she'd like to provide a testimonial to share her experience with others.*

Bill amount	% reduction	
\$100		Starting point based on average usage
		Energy Coach/Advisor either from utility, social service agency, or CBO helps family assess what is possible to improve in structure and determine eligibility for incentives, discounts, budgeting services and rebates.
\$90	10%	25%-33% Discount Rate in CA, CARE is funded through a rate surcharge paid by all other utility customers. <sup>93</sup> In most states, the discount is 5-10%.
\$60	30%	Subsidized investment in structure and technology: weatherization, PCT, CFLs allows family to lower bills further. OPAE averages 29-34% reduction for weatherization and 8-11% for CFLs/Refrigerators.
\$55	5-10%	Reasonable adjustments in behavior reduce bill (turning off lights not in use, adjusting thermostat a few degrees unplugging vampire load).
\$50	5-10%	If dynamic pricing available, then price/cost to deliver can be reduced further if family shifts non-critical activities to nights/weekends.
\$50		Target Achieved. Quid pro quo: If a family is clearly trying to meet their energy budget, working with an energy advisor or enrolled in an energy literacy program, there would be an incentive for the utility to either forgive or provide very favorable terms to keep this customer current in case of a reduced or missed payment.
		Ability to pay may be improved if family can pay \$12/week using text payment or cash kiosk. Text alerts (or calls) keep them on track for how they are doing against their energy budget (data supports the 10-15% reductions based on conservation and load shifting).
	5%	Family enrolls in hot water heater demand response or direct load control program.
	10-15%	Prepay programs generally show behavioral reductions in this range.
	1-3%	Feedback reports inserted in bill.

## Section 3: Conclusion

Low-income Americans are facing an uphill battle. Wages at the low end of the spectrum are stagnant or losing ground. It's not clear if the minimum wage will be increased in many parts of the country. Critical safety net programs being cut nationally (LIHEAP, SNAP, extension of unemployment insurance, etc.). Food deserts in disadvantaged neighborhoods make it costly and difficult to obtain healthy nutrition. Jobs are scarce for this audience in many communities and the cost of relocation makes searching for work in other regions difficult.

There are extra energy efficiency challenges associated with substandard housing and the financial pressures on landlords, local governments, and charities. Expansion of Medicaid through the Affordable Care Act will help recipients in some states obtain health insurance but others will not be as lucky. If all of that weren't enough, our disadvantaged neighbors are regularly demonized in political discourse, which contributes to the shame of asking for or accepting help.

The number of punitive fees and predatory practices targeted to this audience is daunting. The literature abounds with examples of special and extra transaction fees for non-standard payment methods, particularly when bills are paid in smaller increments than the total amount due. If the ultimate goal of the utility is to recoup as much of the cost of the service as possible and keep people current on their bills, we submit it is in the best interest of the utility (and other ratepayers) to treat whichever channel or method a low-income consumer uses to pay neutrally, without tacking on additional service fees.

Utility policies and practices that optimize keeping households current on their bills and allowing flexibility for those demonstrating conscious energy use will result in more people being able to pay for more of the energy they use. Closing the gap between the customers' ability to pay and the cost of providing service avoids the vortex of debt and despair is in everyone's best interests.

The fundamental approach to consumer engagement that will be most effective for low-income consumers mirrors the best practices for all consumers.

1. Basic protections and policies that encourage people to be engaged and empowered;
2. On-going education from trusted advisors from the utility or through other social service agencies and community-based organizations (CBOs);
3. Integrated program information to solve the family's situation (rather than loosely coordinated utility silos of energy efficiency, weatherization, demand response, dynamic rates, etc.);
4. Optional program and pricing bundles that reflect the family's home usage patterns, habitat realities, and priorities, as well as alternative payment plans that align with cash flow;
5. Subsidies, discounts, and payment plans optimized to allow families to remain current;
6. Elimination of numerous extra fees that are punitive for people barely scraping by;
7. Appropriate use of technology to facilitate communication and convenience.

Rather than viewing the various types of EE/DR/pricing/payment programs, policies, and technology in competition with each other, as often occurs in discussions of Smart Grid investments, we recommend looking at the opportunities holistically to see potential benefits for low-income consumers.

## Section 4: Suggested Research

*Consumer advocates are concerned that the protections they fought to secure over the past 30 years will be eliminated as a result of the easy disconnection/reconnection capabilities of AMI.*

### **Visualize the current state of consumer protections**

Create a framework, map and matrix of the cut off and payment policies in North America to make it easier to see where more effective approaches to closing the cost to consume/ability to pay gap could be implemented and where there will be a harder climb. This will also allow Forum members and regulators to see any patterns in a context of climate (i.e. more health risk to consumers in areas with extreme climates both hot and cold) and to discuss the value of a national policy or a general recommendation to state regulators.

Conduct a survey of consumer advocates, regulators, and utility executives (including people responsible for revenue recovery, low-income outreach, and utility financials) regarding payment and disconnection policies. Use the survey results as a basis for interactive workshop, ideally at a NARUC/NASUCA joint meeting.

Conduct a survey of low-income retail consumers to understand what payment programs are available to them, what they use and what they like. Collect information about their energy worldview, climate region, state, and whether their utility is a municipal utility, electric cooperative or investor-owned utility.

## About DEFG

DEFG is a management consulting firm specializing in energy. We believe that customers are the future of energy. Since 2003, we have helped clients create value in a commodity marketplace. In our rapidly changing marketplace, customer engagement is key to success, and our clients learn to better engage with residential and commercial customers. These customers provide unique resources, reduce risks and increase revenue potential. (<http://defgllc.com>)

## About the Low Income Energy Issues Forum

The Low Income Energy Issues Forum is a large and diverse group, comprised of consumer advocates, program administrators, regulatory commissioners and representatives from energy utilities, retail energy providers, non-profit agencies, and vendors. The goal of the LIEIF is to propose innovative and integrated policies and approaches that help close the widening gap between what vulnerable energy consumers can pay and their current utility bills. To join, contact Nat Treadway, Managing Partner at [ntreadway@defgllc.com](mailto:ntreadway@defgllc.com) or 713-729-6244.

The work products of the Low Income Energy Issues Forum do not necessarily represent the views of any participating organization, state regulatory agency, sponsoring company or individual participant.

## About Judith Schwartz

**Judith Schwartz** is a nationally recognized expert in consumer engagement, smart grid communications, dynamic pricing and energy literacy programs. Her company, To the Point is a strategic marketing and systems consultancy working on the leading edge of human-centered design, communication and marketing programs, systems analysis, and applied technology since 1987. Since 2007, Judith has been on the forefront of sustainability issues, the Smart Grid, alternative energy, and the digital home. Working at the nexus of public policy, technology, communications, and business; she brings an unusual perspective that crosses functional disciplines to cut to the heart of the problems and solutions.

To the Point has been building a viral stakeholder education program, Renewable Reality, with such utilities as SDG&E, Hydro One, National Grid, PG&E, leading scientists, analysts, and technology companies. A panelist at the FERC Technical Conference for the National Action Plan for Demand Response, Judith was the Strategic Communications Consultant to the NAPDR Coalition of Coalitions. She was a member of the leadership team for the Department of Energy Smart Grid Consumer Engagement Working Group identifying best practices in customer and stakeholder outreach and the CPUC Technical Working Group on Smart Grid Goals. She was program manager for the IEEE PES Community Summit Program, and has written or co-authored publications for the Smart Grid Consumer Collaborative, Association for Demand Response and Smart Grid, National Action Plan on DR, the Institute for Electric Efficiency, and DEFG.

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