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Low Income Consumer Issues and Voluntary Prepaid Energy Offerings: Perspectives from Three Industry Thought Leaders

By: Cynthia Boland O'Dwyer

With Contributing Authors:

Martin R. Cohen, Judith Schwartz and James Steffes

DEFG's Series of Regulatory Choices explores the federal, state and local regulatory decisions that expand the choices available to energy consumers as they construct and inhabit buildings, purchase and maintain energy-consuming devices, purchase energy, or manage their consumption of energy. Greater choice increases efficiency.

◄ ***All agencies make a series of choices*** ►

Introduction

Extensive research conducted by DEFG in 2010 revealed that prepaid energy[1] could be transformational as it touches upon many of the more challenging regulatory questions facing the energy sector today. DEFG thus launched the 2011 Utility Prepay Working Group to further explore leading regulatory and consumer opportunities and challenges presented by prepaid energy. Regulatory issues include disconnect and reconnect policies, weather moratoriums, forms of account notification, cost and benefit allocation, fees and rates.

While these issues need to be addressed to implement a prepay offering for all customers, they present greater concerns when dealing with low-income customers. Consumer advocates argue that prepaid energy invites low-income customers to make tough choices, potentially opting to disconnect electric service to keep money available for other necessities such as food, clothes and gasoline. Yet, existing prepay customers provide positive feedback, primarily the convenience, flexibility and control that goes with paying any amount at any time. Consumers find that prepayment allows them to budget in a manner most compatible with their lifestyle and income (e.g., make payments weekly or every other week).

Any benefits in support of a prepaid offering business case however must be balanced against the regulatory issues. Part of the 2011 Working Group efforts included commissioning essays authored by three industry thought leaders representing divergent perspectives on low-income specific issues presented by a voluntary utility prepaid energy offering. The contributing authors are: Martin R. Cohen, Judith Schwartz and James Steffes (brief biographies included below).

Each author drafted an essay consisting of introductory paragraphs framing their point of view, responses to a set of ten questions prepared by DEFG, and a conclusion. To ensure consistency, they worked with the same definition of a low-income population taken from the U.S. Department of Health and Human Services, Low Income Home Energy Assistance Program (LIHEAP).[2]

The objective is to present different points of views around prepay issues specific to low-income customers to facilitate discussion and a consensus-building process where differences may be narrowed and recommendations introduced. Following the essays prepared by Cohen, Schwartz and Steffes, and DEFG presents a summary and findings.

Biographies

Martin R. Cohen currently runs his own consulting firm based in Illinois, Martin Roth Cohen & Assoc., specializing in energy regulatory policy. His clients include government agencies, consumer advocacy organizations and environmental protection groups. Martin recently was a lead facilitator of the Illinois Statewide Smart Grid Collaborative. Previously, Martin held positions including: Director of Consumer Affairs with the State of Illinois, Office of the Governor; Chairman, Illinois Commerce Commission; and Executive Director, Citizens Utility Board (CUB). While at the CUB, Martin led the

[1] When supported by smart technologies, prepay may be linked with a two-way communication channel between the supplier and consumer. Energy consumption data is made available to suppliers in regular intervals (fifteen-minute, hourly, daily, etc.), which allows for different types of pricing structures. Consumers may also opt to receive communications regarding payment and account updates, price signals (potentially using dynamic pricing), and energy management options. Prepay enabled by smart grid is thus a billing option with a consistent feedback loop delivered via SMS, email, web-based portal, in-home display, or perhaps a combination of these options. The information flow allows consumers to monitor their usage, creating opportunities to reduce energy consumption and costs. With prepay, moreover, the usage data is tied to the payment transaction in real time, so consumers can directly relate energy consumption with dollars.

[2] Referring to the online LIHEAP Fact Sheet, the program's "Target Population" is defined as: [A]n eligible household's income must not exceed the greater of 150 percent of the poverty level or 60 percent of the State median income (In FY 2009, 75 percent of the State median income). Grantees may not set income eligibility standards below 110 percent of the poverty level, but they may give priority to those households with the highest home energy costs or needs in relation to income (source: http://www.acf.hhs.gov/programs/ocs/liheap/about/factsheet.html).

organization through the restructuring of the Illinois electricity industry, and was instrumental in negotiating language of the Electric Service Customer Choice and Rate Relief Act of 1997, including its consumer protection and rate provisions.

Judith Schwartz is all about action through collaboration: how to identify opportunities, strategize and plan, communicate and align. For the past several years, she 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, Judith brings an unusual perspective that crosses functional disciplines to cut to the heart of the problems and solutions. Judith is the Strategic Communications Consultant to the National Action Plan on DR/SG Coalition, a member of the steering committee for the Worcester Green today/Growth Tomorrow Community Summit, and a regular speaker at industry conferences and webinars. She organizes cross-stakeholder Consumer Symposia and produces a viral education resource library, Renewable Reality. Recent video productions may be seen at www.powercentsdc.org. Her publications include the 2011 State of the Consumer Report for the Smart Grid Consumer Collaborative and the National Action Plan Communications Action Guide for the NAP Coalition. She is a co-author of Costs and Benefits of Smart Meters for the Institute for Electric Efficiency. Judith is a graduate of Cornell University's College of Architecture, Art, and Planning.

James Steffes is Vice President and General Manager, Texas Residential, for Direct Energy, part of the Centrica group of companies and one of the largest multi-state providers of retail energy services in North America. The North American operations have grown to more than 6 million residential and commercial customer relationships. Through its Direct Energy, CPL and WTU brands, the company is the third largest competitive retail energy provider in Texas. Jim oversees the sales, marketing, customer operations, and business results for Direct Energy's presence in Texas. As part of that role, Jim leads the prepaid electricity business, which launched in 2010. Previously at Direct Energy, Jim was Vice President of Customer Operations for the residential organization, managing customer relationships for almost 2 million households. Prior to that role, Jim led the US Northeast Business Services team, selling natural gas and electricity to commercial, business and institutional customers throughout the Northeast and Midwest US. Jim started with Direct Energy managing public affairs while directing the US Government and Regulatory Affairs organization. He has worked in different capacities in the electricity and natural gas industries since the early 1990s.

Introductory Paragraphs

Martin R. Cohen

Unlike most transactions, public utility services are usually paid for only after consumption, measurement, and billing. While prepaid meters have been available since the dawn of electricity service, they are seen in just a handful of jurisdictions in the US today. But as AMI is deployed across the country, prepayment has been added to the growing list of potential smart meter applications. That doesn't necessarily make it an idea whose time has come.

Core questions arise: Is providing a prepayment "option" to payment-challenged customers contrary to the spirit (and perhaps the letter) of laws prohibiting discrimination in provision of utility services? Do potential negative consequences for some customers appear to outweigh the benefits of prepayment programs? Most consumer advocates answer "yes" to these questions and believe that the introduction of prepayment programs would create more problems than it solves.

Identifying and prioritizing the goals of prepayment programs is the first step in assessing their efficacy and judging their success. If the primary intent is to reduce the utility's bad debt, enhance cash flow and working capital, and lower the costs of billing, collection and customer service, prepayment programs can be effective to the extent they achieve significant penetration. There is little doubt that elimination of reconnection fees and deposits would reduce barriers to service for some customers under some circumstances. However, if the central goals of regulatory policy regarding service to low-income customers are to make electricity more accessible and affordable, then the key metrics for judging a prepayment program may be the change in number of households that remain connected to electricity service and the

average costs they experience.[3] The value proposition for customers is quite different for a prepaid service that offers a discount versus one that charges a premium.

Higher electricity costs makes service less affordable, yet the only sizeable prepay program in the U.S. raises basic rates for participants.[4] The "M-Power" program of the Salt River Project (SRP) has attracted 112,000 participants, more than 12% of households in the Phoenix area. How much more an M-Power customer pays for electricity compared to a standard rate customer with identical usage depends on load shape and volumes.[5]

Are higher rates justified by the costs of prepayment programs? SRP estimates $300 in annual utility avoided costs per prepay account (billing, collection, notices, truck rolls, write-offs, etc.).[6] The large gap between the operational cost savings expected by the utility and the higher rates charged to program participants suggests a high cost for program investment and implementation. While deployment of smart meters promises to significantly reduce the incremental costs of prepayment (and perhaps produce net cost savings), comprehensive cost-benefit analyses should be conducted prior to any decision about introducing a program.

Evaluation of costs and benefits should focus particularly on the financial, social, health, and other effects of prepayment programs on low-income customers -- who will clearly be the core participants (unless and until rate discounts are offered for prepaid service). Potential negative and unintended consequences due to prepayment incentives should be an important part of the discussion. For example, cutting energy usage in response to the meter account quickly ticking down toward zero during a heat wave or cold snap may endanger a household's health and safety.

Judith Schwartz

Environmental, regulatory, economic pressures facing the utility industry are forcing electricity providers to consider new technologies, business models and transformed relationships with customers. Considerable public funding has driven grid modernization to enable greater efficiencies of usage, delivery, and integration of distributed generation. In advance of fully automated solutions priced for mass adoption, a reasonable interim strategy is to encourage and incentivize consumers to develop more conscious consumption habits. Consistent with the common public view of electricity as a cheap, reliable commodity, utilities have treated residential consumers as a single customer segment. Limited exceptions have been made for income-qualified households as if that one factor results in common perceptions and attitudes across the board.

In fact, just as high-income consumers are not a monolithic group, neither are low-income consumers. People who consume resources like electricity or water frugally versus unconsciously or wastefully exist at all levels of society. The same array of motivations: cost-consciousness, technology enthusiasm, green altruism, comfort loving, indifference, resistance; appear in people who have been raised in poverty, are trapped in low wage jobs, have suffered a blow to their middle class lifestyle due to an illness or job loss, or have retired on a modest fixed income. Renters may spend a

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[3] Other countries where prepayment is more common have often seen higher costs for prepay customers. For example, according to British regulatory agency Ofgem, (Office of Gas and Electricity Markets) prepaid customers in the deregulated UK market pay more than $300 higher annual electricity and gas costs than standard payment customers; see: http://www.energychoices.co.uk/reclaiming-prepayment-meter-charges.html However, a discount for prepaid service was proposed for a pilot in India; see: http://www.dnaindia.com/mumbai/report_opt-for-prepaid-meter-reduce-electricity-bill-in-mumbai_1330985 and http://www.thinkindia.net.in/2011/03/prepaid-electricity-meters-to-be-installed-in-pune-soon-.html

[4] Some much smaller co-op programs appear not to raise rates for participants; see: http://www.mvec.net/payment/prepay.asp and http://www.okcoop.org/account/prepaid.aspx

[5] For a residential customer with average usage in each season, the annual difference amounts to $83. However, a customer with a flat load shape that uses the same number of annual kilowatt-hours pays $250 more than the same usage would be on standard rates.[5] Because low-income customers tend to use less air-conditioning and therefore have flatter than average load shapes, it is reasonable to conclude many of them are paying substantially more on M-Power than they would pay on standard rates.

[6] According to RW Beck's 2009 analysis; see http://www.comedamifuture.com/WorkshopDocs/V2-Prepaid%20Electric%20Service_White%20Paper_3-10-09_.pdf

great deal of effort overcoming the structural inefficiencies of their homes. Individual households often contain a mix of attitudes with decisions on program participation likely to be made by the member of the household who pays the bill.

The Smart Grid Consumer Collaborative's (SGCC) 2011 State of the Consumer Report describes how consumer segmentation taxonomies across a wide range of research studies have fairly consistent characteristics including the EcoAlign analysis in Green Gap Redux, Green Words Gone Wrong. While the percentage mix of "energy worldviews" varies locally, as do regional variations of poverty level, the same patterns appear nationally and internationally. In work with cross-stakeholder groups such as the National Action Plan on DR/SG Coalition, SGCC, the PowerCentsDC board (SMPPI), and the City of Worcester/National Grid's "Green Today / Growth Tomorrow" Community Summit steering committee, one can also observe how often personal perspectives inform policy positions. Programs like prepay need to be evaluated in the larger context of energy worldviews, consumer choice, adoption of other technologies such as mobile phones, as well as personal finances.

James Steffes

Prepaid electricity is not just a new way to pay for electricity. It is fundamental shift in the customer experience around how and when to consume electricity, brought about by advances in metering technology, communication solutions and customer service.

Prepaid electricity is not a novel concept in the global industry. It has been used in various countries such as the UK (70 years), South Africa (21 years), New Zealand (18 years) and Northern Ireland (10 years) for many years. Here in the US, the most recognized example of prepaid electricity has been the effort in Arizona's Salt River Project (10 years)[7].

Moreover, prepaid as a service solution for many products is a widely understood structure for many American households – for instance, prepaid cellular service and prepaid debit cards.

US Utilities are now updating their electricity delivery infrastructure with smart grid technologies, which include meters capable of two-way communication and recording multiple consumption interval data. These meters allow utilities to read consumption without having to send a meter reader. These meters also allow the utility to perform service actions, such as connecting and disconnecting electricity to the premise, from a central control system. All these benefits help utilities become more efficient; in combination they also enable new products, such as prepaid electricity.

This new metering technology, when combined with the ubiquity of electronic messaging through mobile phones and the web, enables a "smart" prepaid electricity offering – one that leverages new technology to provide consumers with increased awareness and control over their electricity usage.

Prepaid electricity plans designed for the budget-conscious consumer can help people get control over their electricity bills. Prepaid service allows customers to choose when they pay, how they pay, and what they pay. In combination with two-way meters which provide consumption information, consumers have far greater control over when and how much they consume. Ultimately, as time-of-use offerings increase in conjunction with prepaid, further options and control will be provided to energy customers – allowing consumers to align spending with value.

[7] Source: Allen Co., ABS Energy Research, Ofgem, SRP annual reports, NIE annual reports

Responses to Questions Regarding Low-Income Specific Issues Presented by Prepay

1. Under what circumstances do you envision low-income consumers enrolling in a voluntary prepay option offered by a utility?

Martin R. Cohen

Rules governing the circumstances under which customers may be required to post a deposit to acquire or be reconnected to electricity service vary from state to state, as would the circumstances under which low-income customers would enroll in a prepayment plan. However, for some customers, prepayment would be the only way to avoid an unaffordable deposit or to be reconnected while retaining an arrearage. These circumstances call into question whether prepayment would be truly "voluntary" for payment-challenged customers. For some customers, prepayment might be a good choice from among an array of pricing and payment options. For others, it might be an offer they can't refuse.

The first enrollment principle ought to be that customers must be fully informed prior to opting in. This means disclosure in plain language of relevant rates, rules, and projected effects on the customer's annual bills compared to other options. If prepayment is to be offered, it should be an option provided by regulated utilities operating transparently. Predatory and or misleading marketing of prepayment by unregulated providers would harm unwary or vulnerable consumers.[8]

Judith Schwartz

Research supports the contention of many consumer advocates that people should be permitted to choose pricing programs that best reflect their perspectives. Most pilots to date have assigned households to specific rates, thereby missing the opportunity to measure the impact of choice. The same holds true for payment options. I submit that consumers of all income levels will benefit if permitted to enroll in payment plans that reflect their personal preferences around cash flow, predictability, or opportunity to capture the greatest savings.

Rather than positioning prepay as punishment for delinquent customers, it will be most attractive if presented as a one offering in a portfolio of options to intelligently manage costs with minimal cash flow required. M-Power, offered by SRP (Salt River Project), finds low-income consumers enrolled in the prepay program prefer the flexibility and conscious control that results from participation. This aligns with findings from a Cornell/Carnegie Mellon study[9] that suggest that since energy represents such a high percentage of monthly household expenditures, the low-income audience has strong incentive to make the reasonable behavior adjustments necessary to result in a lower bill.

James Steffes

Direct Energy's experience with the competitive electricity market in Texas demonstrates that voluntary enrollment into prepaid options is not just a vision, it is now a reality. Out of the more than 30 Retail Electric Providers (REPs) active in Texas, six REPs now offer AMI-based prepaid electricity.[10] Consumers have a choice not only between pre- and post-paid electricity, but among prepaid providers as well.

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[8] Problems have cropped up in Texas, where competitive suppliers are allowed to offer prepaid service; see: http://www.khou.com/news/local/Consumer-group-Electricity-companies-have-big-fees-hidden-in-small-print--121014164.html. In England, where 14% of customers are on prepaid service, high costs and unjustified charges are commonplace; see: http://news.bbc.co.uk/2/hi/business/8383837.stm, http://www.energychoices.co.uk/partner-lp_prepayment-meters/prepayment-meters-a-scourge-penalising-the-poor.html.

[9] *It's Not All About "Green": Energy Use in Low-Income Communities* by Tawanna Dillahunt, Jennifer Mankoff, Eric Paulos, Susan Fussell of Carnegie Mellon University and Cornell University. October 2009

[10] Direct Energy, LP, http://www2.directenergy.com/powertogo/index.aspx; Ambit Energy, http://ambitenergyprepaid.com/, First Choice Power Special Purpose, LP, http://www.firstchoicepower.com/plans-services/electricity-plans/prepaid-electricity-service.aspx, Reliant Energy Retail Services, LLC, http://www.reliant.com/en_US/Page/Shop/Public/misc_smartstart_landingpage.jsp?txtPromocode=WK3583&s.campaign=APR_BR_2011JulySmartStart, Smart Prepaid Electric (Tara Energy, Inc.), http://www.smartprepaidelectric.com/ContactUs/AboutUs/tabid/65/language/en-US/Default.aspx, and TXU Energy Retail Company LLC, http://www.txu.com/residential/promotions/mass/plan-flex-power currently offer smart meter based prepaid electricity (August 5, 2011).

And while the smart meter based prepaid electricity market in Texas only started in middle of 2010 (driven by metering technology roll-out timelines), Direct Energy sees a large and growing market forming as consumers begin to understand the value prepaid electricity offers. Speaking to the relevance of this product to low-income consumers, currently 1 out of 5 of Direct Energy's prepaid customers qualifies for and receives a low-income discount.[11] And every one of these customers has made a voluntary decision to take this product from Direct Energy. Consumers are not only voluntarily choosing this product – they are staying on it. Direct Energy's prepaid business continues to see average customer tenure on the product increasing month after month even with a growing customer count.

Prepaid electricity is not just a new way to pay for electricity. It is fundamental shift in the customer experience around electricity consumption, brought about by advances in technology and customer service.

Prepaid electricity is what Direct Energy calls a smart, flexible, convenient, and responsive product. "Smart," because customers learn about their consumption in kilowatt-hours and dollars in a timely enough manner so they can take appropriate action. "Flexible," because prepaid allows customers to make better informed (and smaller) purchase decisions around their electricity, adapting their payments and usage to their household cash flow. It is "convenient" because it removes the traditional barriers to obtaining electric service, such as credit checks and deposits. Finally, it is "responsive" – over 90% of Direct Energy's prepaid customers get reconnected in two hours or less, with a mean reconnection time of less than 30 minutes; and this significantly improved customer experience is provided during the technology pioneer phase when retailers rely upon the wires company and its new metering technology. Imagine the response time in a regulated utility market where all the components to deliver this service are operated by the same entity (i.e. utility, municipality, or electric cooperative) using well-understood technology.

Overall, prepaid electricity significantly raises the bar around customer experience. In designing its prepaid product, Direct Energy conducted focus groups and surveys to understand what consumers want from a prepaid service. Overwhelmingly, customers wanted payment convenience, no deposit requirements, daily usage information, payment flexibility, no reconnection fees and quick reconnections. Through Direct Energy's prepaid product, customers, including low-income households, are receiving these benefits – and at a price consistent with post-paid products.

The best test for voluntary adoption of prepaid electricity is to listen to what real customers who have chosen prepaid service have to say about it. "With pay-as-you-go, you know each day what you spend," said Tonie Page. "You can remember what you did yesterday versus what you did a month ago. It took all the guesswork out of what my bill was going to be. I love the program."[12]

2. If a low-income customer simply did not have money available to purchase energy and contacted the utility requesting help, how should the situation be managed? Would credit be extended for a certain amount of time or does the prepay model require automatic disconnection after a certain period of time? If credit were extended, what period of time would be deemed reasonable?

Martin R. Cohen

Prepayment programs could include hardship rules, disconnection delays, temporary credit extensions, amperage reductions, and other means to help participants to avoid loss of service. Indeed, they must include some of these measures to be acceptable. But at the core of the prepayment concept is the fact that if you do not have money in your electricity account, you will not have service. Ameliorations of that fact to make its effects less immediate and less harsh undermine the concept of prepayment and reduce its benefits while raising its costs, calling into question whether prepayment programs are worthwhile in the first place.

[11] The LITE-UP TEXAS program is designed to help qualified low-income individuals reduce the monthly cost of electric service. The program provides discounts to eligible customers. See http://www.puc.state.tx.us/consumer/lowincome/Assistance.aspx.
[12] Direct Energy prepaid customer quote from taped interview in May 2011.

As regulators begin to consider the policy implications of AMI technology deployment, before considering prepayment program rules they will confront a raft of contentious new issues surrounding "traditional" disconnection practices which arise from the remote connection/disconnection functionality embedded in most smart meters. Utilities today often have discretion in applying disconnection rules and negotiating payment arrangements. Outcomes are influenced not only by personal history and circumstances of individual customers, but by weather, truck availability, staffing, volumes, seasonality, and other variables affecting when and where disconnections occur. Many utilities have automatic rate adjustment mechanisms in place to reduce or eliminate under-recovery of uncollectibles, which may reduce incentives for aggressive disconnection practices. Lengthy periods between receipt of a final notice and actual disconnection are common in some jurisdictions. Technology facilitating automatic and immediate remote disconnection of non-paying customers – whether on prepay or post-pay service – requires rethinking disconnection rules and practices.

Judith Schwartz

I assume that we are distinguishing here between someone who might like their own place but cannot really afford all the expenses involved in maintaining an independent household, as opposed to someone who has minimal income and is trying to choose how to allocate limited resources and manage cash flow. Free or subsidized access to vital services, be they shelter, medical care, food, water, or electricity in American society generally requires enrollment in a public or private program. With the current economic downturn and reduced funding to agencies that deliver the social safety net, more households are going to be challenged and pressure on utilities to help is going to increase.

PG&E, for example, has well-subscribed income-qualified programs including the CARE (California Alternate Rates for Energy) discount program, REACH (Relief for Energy Assistance through Community Help), FERA (Family Electric Rate Assistance), an Energy Savings Assistance program, and a medical baseline allowance (qualification for the last is not income based). They provide a 66-day customer outreach resolution cycle that encourages people to provide partial payments and apply for financial assistance to avoid disconnection. (These programs can be models for other utilities that have not put such programs in place: http://www.pge.com/energypartners/.)

Collaborating with agencies already in the business of vetting and supporting people enrolled in these types of programs would reduce the administrative burden, minimize exposure for either fraud or declining a deserving account, and allow the utility's contribution to be focused on delivering service with a managed payment plan. Requesting minimal but regular contributions might be required at certain periods to avoid disconnection. Furthermore, there is ample evidence to support that building relationships with these same groups who are trusted sources of information for disadvantaged communities increase the likelihood of participation in other smart energy and demand response programs.

James Steffes

Whether or not prepaid options exist, households that consume more than they can afford inevitably become unable to maintain electric service without external help. The amount of credit any entity can extend consumers is limited, and electric service will become unavailable as those credit lines dry up. Prepayment helps these households by allowing them to make informed decisions about their usage, and by limiting the amounts that fall in arrears so that recovery is not as difficult. Daily usage updates encourage customers to monitor and change their energy-consumption habits. Customer feedback shows that prepaid service as a budget management tool works. "My prepaid electricity has been running $25 to $30 a month whereas my bill used to be somewhere between $100 and $180," said Marilyn Evans. "I think it is a lot, lot better to give people not having a lot of money the control over what they're getting in electricity."[13]

That being said, providers of electricity, whether prepaid or post-paid, should work with energy and other assistance agencies so that deserving households receive the reprieve they need in order to maintain electric service. Later in this discourse, Direct Energy discusses how prepaid lends itself very well to agency assistance.

[13] Direct Energy prepaid customer quote from taped interview in May 2011.

One stigma around prepaid electricity is the concept of immediate disconnection. While conceptually possible, in practice disconnection actually takes a little more time. AMI meter reads need to go through the VEE (Validation, Estimation, and Editing) process to ensure that the reads are billable-quality. Then the customer needs to be notified of their new balance, and whether or not they will be disconnected that day. Then a grace period of a few hours may apply so that the customer can "cure" their situation, before the disconnection signal is sent to the meter. This process can take up to 36 hours.

Combined with the practice of not disconnecting during nights and weekends, and during weather- or other- related moratoria, there is a nominal amount of credit that is actually extended to prepaid customers.

Customers need to be given a chance to avoid disconnection, as it provides for a better customer experience. Some of the ways to do this include the grace period mentioned above, allowing a certain amount of "overdraft" protection to consumers, and appropriate communication activities to keep consumers informed.

3. Would friendly-credit periods (meaning no disconnection during night or weekends) alleviate any concerns around service disconnection? Is this flexibility necessary with a prepay option?

Martin R. Cohen

Most jurisdictions prohibit disconnection during certain time periods, including seasonal and/or temperature and weather emergency moratoria. These rules protect health and safety and should be retained regardless of the customer payment plan. With or without "friendly credit" periods, the potential for immediate disconnection under a prepayment plan should be matched by a requirement for immediate reconnection upon payment. Quick payment, processing, and reconnection would be essential for a prepayment regime that allowed immediate disconnection, but it would be difficult to accept 24-7 payments from those low-income customers who do not have bank accounts and instead use cash to pay bills.[14] Easy access to account management tools is crucial to a positive prepay experience for participants. The advent of smart meters, smartcards, smart phones, smart keypads, in-home displays and devices, and online banking may make prepayment a desirable service for some customers – though much less so if the cost savings to the utility from prepayment are not passed on to the participating customer in the form of lower rates. However, low-income households, who are most likely to choose prepaid service, are least likely to have access to these technologies and services.

Judith Schwartz

Policies around disconnection should be grounded in common sense and good customer service practices. Turning off anyone's electricity in the middle of the night or when there is no one to call at the utility is pointless and makes the company look heartless and punitive regardless of the resident's payment plan, income level, or technology embedded in the meter itself.

The beauty of digital technology attached to each service location is the ability to make it practical as the account limit is approaching to send advance notices automatically via text message, email, or automated call to the person responsible for the account. (Designated backups can be prompted on behalf of elderly residents who live alone but are becoming less able to manage their affairs). This allows proactive intervention in the form of at least a partial payment to maintain service. Giving this type of early-warning feedback certainly will reinforce that the prepay option is "smart" and humane and will generate valuable goodwill for the utility.

James Steffes

In principle, policy should protect consumers from being disconnected during periods when a remedy is not available. Disconnecting at night, or when utility service for reconnection is not available does not allow the customer to remediate their disconnection and creates an untenable situation. The same applies when the customer's health and

[14] A study found that 4% of utility customers paid with cash in 2010. It is reasonable to assume that most of these are low-income customers without banking access. See: http://www.utilityreceivables.com/pdfs/UtilityThoughtLeadershipPiece.pdf

well being can be endangered by an interruption of electric service, such as during weather emergencies and seasonal moratoria. In Texas, where there are alternative prepaid solutions, policy outlines a general framework and then allows companies to offer subsequently varying degrees of customer flexibility for competitive and customer experience purposes. One could envision a day when companies are marketing different disconnection rules than required by regulation (for instance, "No Monday Disconnections"). The experience in Texas can help guide utilities and regulatory agencies in crafting the right level of function, consumer protection and customer experience.

4. What would the parameters of a friendly-credit period look like? How would a negative balance be handled following a friendly-credit period?

Martin R. Cohen

If a credit period is truly friendly to the customer, it will begin to look like the regulated utility credit policies we already have: allowable arrearage amounts for certain periods, deferred payment plans, customer contact attempts, notifications, and fees to cover added costs – in short, all the things that "pure" prepayment is supposed to do away with (see answer #2). The need for these correctives suggests how difficult it is to design a workable prepayment program that will not be pulled apart by adding necessary consumer protections. That said, these measures are essential components to prepayment program design. The difference between prepay and post-pay credit rules might lie primarily in the amount and timing of credit extension. Negative balances in a prepay account should be deferred and paid over time, with the lion's share of the amount allocated to the current account. SRP requires 40% of prepayments to be allocated to arrearages existing at the time of prepay signup. For a low-income payment-challenged customer, maintaining service while paying down a past due amount at this level may be extremely difficult.

Judith Schwartz

Independent of the payment mechanism, households who are consistently having problems paying their bills in a timely fashion would benefit from human intervention. Community-based organizations like GreenDMV (www.greendmv.org) conduct "Sustainability Assessments," a more welcoming term than "energy audit." During a 60-90 day "friendly-credit period" demonstrating a willingness to participate in weatherization, CFL replacement, and other energy literacy programs, would indicate to the utility that this household is willing to partner to reduce usage. Helping the family obtain a simple feedback device to monitor and manage their usage would be a worthwhile investment. A good trade off would be to allow any negative balance to be paid off in manageable amounts while continuing service.

For those who are not willing to make an effort, are not eligible for subsidies, and who choose to invest their resources in other non-essential priorities, it is difficult in my mind to make the case to the public that they should receive extended terms and be subsidized by other customers.

James Steffes

The parameters of a friendly credit period need to be consistent with policy intent to offer consumers needed basic protection as described in the response to Question No. 3 above. One thing to note is that not all consumers do well in regimes with generous credit. The benefit of properly structuring credit is that consumers don't dig a themselves into a hole too deep for them to climb out of.

That being said, Direct Energy's experience during lengthy weather moratoria (e.g. in Texas almost all of August 2010 was a weather moratorium), is that prepaid customers still tend to keep their balances positive. This is a testament to the consumer's level of responsibility when given the understanding, information, and incentive needed to manage their finances.

Prepayment also offers a new way to handle negative balances. Rather than simply require full repayment, prepaid solutions can work wherein a percentage of each customer's future payments can be used to pay down their arrearage in a deferred payment account. While it will take longer for the debt to be paid off, it offers an easier way for consumers to pay off large balances while maintaining electric service.

Customers should be allowed this deferred payment option after acquiring a negative balance during the friendly-credit period. It increases the amount of credit extended by the electricity provider but keeps the customer satisfied and able to maintain electric service.

5. Does technology that limits amperage (in place of disconnecting service) alleviate any concerns around service disconnection? What are the benefits and/or concerns? Do you know whether this technology been employed successfully / unsuccessfully?

Martin R. Cohen

Amperage reduction technology would allow a minimum level of service to be retained for a period of time, which would help alleviate but not eliminate some concerns about service disconnection. Reduced current may be preferable to no current at all, but it is a still a form of self-disconnection that could harm low-income households. A "current choke" system certainly would add a new dimension to the concept of demand response, as a household might choose to unplug the refrigerator in order to be able to take a hot shower. And it could be dangerous during weather emergencies. Determining the circumstances under which current would be reduced rather than shut off, what would be the appropriate amperage limit, for how long, whether to decrease it as a deficit balance grows, and related policies will add another new set of challenges to AMI-era regulation.

Judith Schwartz

The concept of selective management of devices within the home so that refrigerators or medical equipment can be kept running longer while other usage is limited, is a very interesting and powerful idea for storm and emergency response as well as avoiding blackouts during critical peak periods. As a means of motivating the consumer to pay, reduced electrical flow requires careful discussion and education, if it is not going to become a backlash issue. Reaching out to people in an open, collaborative way so they understand that a few hundred hours each summer is responsible for a significant portion of their annual energy costs can be very persuasive.

James Steffes

Amperage limitation may sound good in concept, but will be difficult to implement in reality. Every household may vary in terms of the minimum required amperage needed to maintain the use of essential electric appliances, just as the definition of what constitutes an essential electric appliance may vary from customer to customer. It would be difficult to determine how much amperage reduction each household should be subject to. Generally speaking, consumers don't think in these types of terms. Given that, this type of solution could end up creating significant unintended consequences and result in very poor customer experience.

6. How should a utility manage service disconnection – what triggers service disconnection, what form(s) of notification would be required and when? How would low-income persons with no internet access and/or SMS (texting) capability be managed?

Martin R. Cohen

Service disconnection should be managed with customers' health and safety given highest priority and the same concerns addressed for prepay as for post-pay customers. Moratoria for weather, nights and weekends, medical conditions and other health and safety issues should be observed. As the balance in the meter account shrinks below a threshold level, a notice should be communicated through whatever means is accessible to the customer. As with post-paid service, that should include an attempt at personal contact. An IHD associated with the service should also be used to provide an easily observable notice mechanism. When an account reaches a zero balance, it should switch to a credit system for a limited period, long enough to assure a reasonable opportunity for the customer to become aware of the deficit and to make a deposit. Subsequently, the amperage could be reduced to allow minimal usage for another period, perhaps including further reductions over time. Notices and customer contact attempts would continue throughout the period, as well as subsequent to a disconnection, including information about payment arrangements and available

subsidy programs. As suggested in #4, upon payment, the lion's share of the amount should be allocated to the current account, with a smaller portion assigned to reduce the balance for past usage.

Communications to customers without phone or computer access would have to be handled in the old-fashioned way: by mail and direct utility contact. These appear to be inefficient methods, particularly given that prepayment eliminates the monthly bill cycle and the often lengthy period preceding a conventional disconnection.

Judith Schwartz

(See Response to No. 7.)

James Steffes

Service disconnection on any electricity or utility product should be based on a predefined agreement between the provider and the customer that the customer willingly and consciously agrees to. For prepaid products, a disconnection threshold when the balance goes to zero is typical, and it is the most intuitive for customers to understand.

Customers should be given ample communication regarding their outstanding balance, their consumption levels, and a reasonable estimate of how much longer their electricity will last. They should be given enough advance warning before their power shuts off, so that they can make the necessary payments and avoid an interruption to their service. In Direct Energy's experience, customers typically make a payment with one day's worth of power left in their accounts. They receive their warnings when Direct Energy estimates that the customer has three days remaining or less, followed by continuous warnings every day during that period.

Prepaid service presents new opportunities for communicating with the customer. The typical cycle time of a paper bill does not meet the need to provide consumers more frequent information regarding their balances and consumption in a meaningful way. Electronic methods deliver information to consumers more quickly and efficiently, and should be employed to give customers timely warning when they have low balances.

These electronic methods may be through SMS and email, as implied in this question. They can also be through automated outbound phone calls, through an in-home device, or through pagers. Customers should also be provided this information when inquiring about their account through a "pull" channel, such as when viewing their account online or when calling into a customer service number.

Arguably, customers without access to these electronic means of communication should not be placed on a prepaid program. It is Direct Energy's experience that very few customers seeking prepaid service are turned away because they do not have SMS or email access; furthermore, companies such as Assurance Wireless and TracFone have programs to provide free mobile phones to low income consumers and make SMS access almost ubiquitous.[15]

7. How do you envision communication with low-income consumers for the purposes of account status information / alerts? What means of communication would be most effective? Would prepay entirely eliminate paper billing?

Martin R. Cohen

Lack of customer connectivity poses a significant challenge to operation of a prepayment program, even in an AMI environment. First of all, convenient means for making and accepting payments from customers without online payment capability must be in place. Because prepay customers tend to "top off" the meter frequently in small increments – averaging almost twice a week in summer months in the SRP program – neighborhood cash payment opportunities

[15] See information about Assurance Wireless at http://www.assurancewireless.com/Public/FAQs.aspx#faq1. See information about TracFone at http://www.tracfone.com/redirect_landing.jsp#/includes/content/questions/Lifeline.jsp?a=13124318.

would be needed to accommodate low-income customers.[16] (Another alternative, of course, would be to follow the lead of India, South Africa and parts of the UK that use coin operated meters!)

Judith Schwartz

(Responses to Nos. 6 & 7 combined)

This audience is familiar with the "prepaid" concept for phone cards. There is also a nearly ubiquitous penetration of mobile phones for younger to middle-aged consumers. People who are paid in cash, are employed on a variable hourly basis, or work long shifts across conventional 9-5 business hours are likely to appreciate a mechanism where one can pay at one's own convenience at any hour or day. The ability to receive warning texts in advance of their balance reaching its limit and then to use the text function to pay for more electricity whenever they have the cash will fit a known set of standard operating practices. This could definitely minimize the need for paper billing (available upon request) as the person would receive a text "statement" and/or an email bill that could be printed on demand or shared with a support organization.

Every account will have a usage pattern associated with it that could be the basis for an automated approach either via text, email, in-home display, or robo-call. For example, a friendly monthly balance feedback notification could shift to a weekly pattern in the "final" month and then to daily to an hourly warning in the 24 hours approaching the deadline. The robo-call could shift to a customer rep call in the final weeks and daily for those who qualify for the program but do not have a digital connection. With the countdown of their "energy account balance" nearing zero, consumers have both time and an added incentive to be frugal while they identify a source of funds to keep the account open. Links to energy saving tips, support programs, and payment options can be embedded in the site or text message to raise energy consciousness.

The utility could use the amperage limiter to keep the essential service (for the refrigerator, for example), with intervention needed to reset service for the grace period of 60 days. The grace period could be extended for severe heat waves or cold snaps. The emphasis in the text messages, emails, and calls during the grace period should focus on the flexibility of payment options and the speed in which service can be restored after payment (a matter of seconds).

Older customers are likely to want to receive written notification as that mechanism will be more familiar for them. They are also likely to want a phone contact and access to a customer service center to resolve their situation. If a customer has neither Internet access, nor a mobile phone with a text plan, and/or simply could not function safely with reduced service, then one might question whether this person would qualify for the prepay program. Rather than argue in the abstract, it would be worth quantifying within a given service area how many people would actually fall between the cracks and are not already covered by a comprehensive energy assistance or Caduseus program. If this represents a manageable number of individuals then it might make better business sense to request a regulatory exception and enroll those households into one of the existing subsidy programs even if they do not meet the means test.

James Steffes

(See Response to Question No. 6 above.)

8. Assuming that a prepay offering would not require a security deposit or assess late fees, how might the credit cycle for low-income consumers be impacted? What are the potential benefits and/or concerns?

Martin R. Cohen

Prepayment may not require a security deposit, but participation in M-Power requires a $99 equipment deposit, which presents a similar hurdle for many low-income customers.[17] AMI and back office software could functionalize

[16] See Table 4-4, of the Electric Power Research Institute study: http://www.srpnet.com/environment/earthwise/pdfx/spp/EPRI_MPower.pdf
[17] See: http://www.srpnet.com/payment/mpower/default.aspx.

prepayment without additional in-premises equipment, so perhaps upfront fees and deposits could be eliminated. However, an IHD to show usage, account status and messages would still be necessary.

The question of how to address an existing arrearage or past due amount from a previous address is problematic regardless of payment plan. States have varying requirements for maintenance of service or reconnection, but maintaining service generally requires sticking to a payment plan to eliminate any past due amount in a specified time period; in many cases reconnection require full payment of amounts due. The terms for handling existing past due balances of customers switching to prepaid service would be crucial drivers of a customer's choice of payment plan.

Judith Schwartz

Prepay programs like SRP M-Power are finding that even low-income consumers are happy to trade a slightly higher cost per kWh in exchange for eliminating the need for security deposits or late fees.[18] They have seen that with greater energy usage awareness, the household bills tend to be lower overall. When one is on a limited income—living check to check—avoiding the need to accumulate funds for deposits, and applying one's resources in a pay-as-you go fashion, is more practical.

James Steffes

Security deposits are not typically required for prepaid plans, despite the nominal credit that is still extended to prepaid customers (see Response to Question No.2 above).

Historically, security deposits have been an inevitable part of post-paid electricity where credit is extended, as the service provider needs to manage credit risk and remain viable to continuously serve all its customers. This presents a hurdle to consumers with poor credit and/or limited cash flow.

Prepaid electric service alleviates a substantial portion of this risk and allows service providers to feasibly serve "riskier" customers both without charging the consumer high deposit amounts and without penalizing the rest of the customer base.

In addition, in what will probably be the largest market for prepaid in most utility territories, Direct Energy now has experience voluntarily converting post-paid customers onto a prepaid program. Under this process, the Company is seeing increased recovery of past debt, extended customer tenure and favourable customer comments. When converting customers to prepaid, prepaid plans enable gradual payment of arrearage amounts through a deferred payment plan that allocates a portion of each future payment towards bringing down the debt. Consumer acceptance of this has been extremely favourable.

Therefore, while the customer receives much less credit while on a prepaid program, the additional control they obtain over their finances seems to make it quite appealing and actually increases the affordability of energy.

9. Taking question no. 6 into consideration (no deposit, no late fees), would it be reasonable for utilities to charge transaction fees associated with each payment? What fees if any would be deemed reasonable or should fees be prohibited?

Martin R. Cohen

Transaction fees are justifiable only to cover net incremental costs of a transaction and only to the extent that the costs are appropriately assigned to the participating customer. If social goals are advanced through prepayment programs and if costs and risks to other customers (for bad debt, collections, working capital, customer service, etc) are reduced, it would be appropriate to socialize all or a portion of prepayment program costs. Smart meters and advanced payment processing and meter data management systems may reduce these incremental costs to a de minimus level. In the SRP

[18] azcentral.com/Arizona Business & Money, "SRP's prepaid electricity plan found to have higher rates" http://www.azcentral.com/business/articles/2010/07/11/20100711biz-prepaid-power-srp-rates0711.html.

program, participants average seven payments per month during the summer, indicating that many customers are only buying a few days of electricity at a time.[19] Because low-income prepayment customers are likely to make frequent purchases of relatively small amounts of electricity, any transaction fees could add up to a significant cost.

Judith Schwartz

I would argue that slightly higher rates rather than transaction fees are a better way to go and easier for the low-income consumer to absorb. Recognizing that this population is likely to move more often than other groups, the ability to take one's account with them with instant transition from location to location, without extra fees or the need to be on site for the changes (if AMI is installed), would be helpful and reward responsible usage.

The questions raise the larger question of what is reasonable? Utilities in most jurisdictions exchange monopoly status and a guaranteed rate of return (something few other businesses enjoy) for regulatory oversight and the obligation to serve the public interest. On the other hand, is it really practical to extend unlimited credit or subsidies to everyone if the utility is to operate and thrive? At the end of the day, the expenses must either be borne by other ratepayers or by the investors and taxpayers (in the case of municipal utilities) who are providing the investment capital.

As we entertain the idea of other potential industry participants and re-vamped business models for utilities, we need to make sure that sustainability extends to the entities running the operation. Greater transparency of actual costs and rate choice would help consumers understand how the energy ecosystem works and how they can be partners in their smart energy future.

James Steffes

Most utilities incur costs for processing payments, such as in-house labor for processing payments, fees from payment network vendors, and credit card merchant fees. Prepaid customers, in Direct Energy's experience, pay many more times a month than post-paid customers, increasing the cost burden of handling payments. There needs to be a balance between how these costs are passed on to consumers and the resulting burden of these fees, so that the prepaid experience does not become unappealing.

These fees can be woven into the price of the product, or structured such that consumers incur it as they use it. The benefit of building the price into the product is that it simplifies the product for consumers. However, it introduces distortion: 1) customers who consume more electricity subsidize this cost more than consumers who use less; and 2) customers who make larger payments (and therefore pay fewer times) bear a disproportionate amount of the cost burden. Charging these fees on an a la carte basis drives the right behaviors by making consumers aware of the costs they generate. In a way, when consumers behave properly they help fellow consumers by not increasing the costs required to serve everyone.

10. What efforts would be required to make prepay compatible with government energy assistance programs? What challenges do you foresee with this process?

Martin R. Cohen

A tariff that provides lower rates to low-income customers, whether subsidized through public or ratepayer funding, would not require modifications to accommodate prepayment. However, other programs to reduce electricity costs for low-income customers would pose different types of challenges. Some energy assistance programs appear not to be compatible with prepayment. For example, a percent of income payment program (PIPP) has a varying subsidy tied to income and generally includes a method of reducing initial arrearages over time. Customers on a PIPP who pay a specified monthly amount are not disconnected for accruing an arrearage within certain limits. Reconciling a PIPP program with prepayment would be difficult and perhaps pointless.

[19] See Table 4-4, of the Electric Power Research Institute study: http://www.srpnet.com/environment/earthwise/pdfx/spp/EPRI_MPower.pdf.

Budget billing programs, under which estimated annual costs are spread evenly through the year (and popular with customers at all income levels), also would be difficult to incorporate into prepayment, as would any other payment plan based on extension of credit to the customer. In jurisdictions that implement dynamic pricing, seasonal rates and corresponding variations in monthly bills are likely to increase, making budget billing even more popular and necessary for household money management, yet even more difficult to reconcile with prepayment.

Direct voucher programs provide monthly or seasonal offsets to bills, raising the question of how to apply lump sum subsidies to prepayment. Weekly credits could be deposited in an eligible customer's prepayment account, which, combined with "friendly credit" policies discussed above, could help maintain uninterrupted service or at least avoid lengthy periods of disconnection. "Crisis" subsidy programs to address seasonal emergency needs of prepay customers would have to be far more nimble in order to help maintain service before the meter balance hits zero, instead of being directed to prevent a scheduled conventional disconnection.

Implementation of prepayment programs should be preceded by development of new approaches to energy assistance that can accommodate the needs of prepayment customers. But at its core, the prepayment model relies on automatic disconnection, which may be irreconcilable with the intent of low-income assistance programs.

Judith Schwartz

As noted earlier, I believe that prepay will be attractive to a range of consumers if it is positioned properly. The greatest efficiencies and fewest instances of fraud would occur if those customers who qualify for government energy assistance could have their credits applied directly to their utility accounts, thereby providing the baseline energy budget for the household. Simultaneously enrolling those households in sustainability assessment programs either run by the utility or local community-based organizations (CBO) would help the families learn how to stay within those boundaries.

The challenge to implement this would be to persuade regulators and government agencies to eliminate program-specific funding silos that currently discourage overlapping initiatives from being implemented in an integrated fashion. Consumer advocates could play a powerful role by communicating the big picture to their constituents and partnering with the utilities to facilitate the connections with the CBOs currently providing similar programs. Utilities, for their part, would benefit if they invite the consumer and environmental groups to the table so everyone has incentive for their collective success. This collaborative model is not the norm in most jurisdictions today though it is increasingly standard procedure for the most successful communities.[20] [21]

James Steffes

The purpose of government assistance programs is to make electricity as affordable as possible to as many as possible. The beauty of prepaid service is in the timely awareness of usage and cost that helps prepaid consumers budget their electricity and spend in a responsible and conscious manner – ultimately, making electricity affordable. In fact, prepayment solutions support low-income assistance programs by providing workable structures to allow funds to be paid quickly and efficiently into consumer accounts so electricity can stay on and provide the benefits American consumers need.

Prepaid service, conceptually, creates a special kind of "bank" account that can only be used for electric service. Government and other assistance agencies today go to great lengths to ensure that assistance provided is indeed going towards electricity use; the prepaid account eliminates a lot of paperwork that would otherwise go into auditing and validating the use of assistance funds. In addition, it allows for direct charitable contribution of money to prepaid customers with the confidence that funds will be used towards electric service.

One challenge is that most assistance agencies have optimized their operations for the slower monthly cycle of a post-paid product. Agency assistance payments typically arrive 30 - 45 days after the assistance pledge is made; this creates a

[20] Case Study: PowerCentsDC Pilot: A Model for Stakeholder Collaboration, National Action Plan Coalition, 2011.
[21] Driving Demand for Home Energy Improvements, Lawrence Berkeley National Lab, 2010.

dilemma as the funds arrive way after consumers expect to have those funds applied to their accounts. Direct Energy has developed an innovative process that allows the consumer to experience the benefits of the pledge while the funds are still in transit.

Another challenge is in the suspicion and distrust that assistance agencies have for prepaid products. Utilities, agencies, and the competitive market need to openly collaborate on new ways to use prepaid electricity to help consumers. Denying consumers a better product, which can lower overall spending and which can allow consumers to manage their cash flow, because of misunderstanding or distrust is not in the interest of our industry or consumers.

Authors' Conclusions

Martin Cohen

Putative benefits of prepayment include lower utility costs, new options for customers, and enhanced motivation for energy management. Much has been made of the conservation effect of prepayment, but systematic analysis separating prepayment from other variables has not been conducted. In other parts of the world where prepayment is more common, the evidence of sustained usage reductions is mixed at best.[22] In Arizona, SRP found that annual usage of prepay customers dropped by an average 8%, however, it is not clear that prepayment itself was responsible.[23] Other factors attenuating usage for M-Power participants include higher basic rates, the allocation of a large part of current payments to arrearages (which can dramatically increase the effective per-kilowatt-hour cost), and temporary self-disconnections (whether inadvertent or due to financial circumstances).

Rising interest in the potential of prepayment stems primarily from the search for new applications of the AMI systems under deployment across the U.S. However, AMI pilots to date suggest that time-variant pricing, efficiency investments, and direct load control programs are more effective than prepayment in achieving incremental changes in consumption patterns and volumes.[24] The "Prius Effect" -- the tendency to reduce consumption in response to usage information – appears to be a driver of consumer behavior in an AMI environment. Participants in today's prepayment programs already receive near real-time consumption data that will become available to all customers when smart metering is in place. A wide range of factors needs to be considered before concluding that prepayment alone causes significant usage reductions, much less that such reductions are beneficial, not harmful to low-income consumers. The implications for low-income customers of combining dynamic pricing with prepayment also need careful evaluation before a regulatory decision about the merits of prepaid electricity service.

A comprehensive utility-specific study should be required to sort out costs and benefits of any proposed prepayment program. To the extent feasible, it would be valuable to disaggregate costs and benefits to study the net effects of prepayment programs on identifiable customer groups. Determination by regulators that the benefits of a prepayment program exceed incremental costs for both participants and non-participants should be the first level of analysis. A decision on whether the program advances the public interest should also consider social factors and other regulatory goals.

Judith Schwartz

At the ConnectivityWeek Consumer Symposium sponsored by Clasma Events and co-hosted by SGCC, we brought together a mix of stakeholders to discuss controversial issues (privacy, health effects, and dynamic pricing and low-

[22] Other countries have often not seen reductions in usage associated with prepayment. For example, a study of Northern Ireland, where 30% of customers take prepaid service, found higher usage by those customers. See: http://www.eprg.group.cam.ac.uk/wp-content/uploads/2011/02/1108_main-text.pdf; (p.16) A study of prepaid service in Argentina found that usage increased over time, relative to post-pay customers. (Note: This may be related to factors in the program design, which included a 5% lower rate for prepaid service.) See: http://www.sandiego.edu/business/documents/Casarin.pdf and http://www.iae.edu.ar/pi/Documentos%20Investigacin/Working%20Papers/DT%20IAE01_2009.pdf p.13

[23] See chapter 5, page 5-10 of the Electric Power Research Institute study: http://www.srpnet.com/environment/earthwise/pdfx/spp/EPRI_MPower.pdf

[24] See: http://www.brattle.com/_documents/uploadlibrary/upload772.pdf

income consumers). It was obvious that everyone, including the utilities, shared a common desire to see low-income consumers paying fair rates for electricity and being supported safely during dangerous weather periods.[25] The biggest barrier to solutions for all these topics—as identified by the group in 30 different breakout discussions—is **trust** among the parties and consumers. Sitting down and talking through the issues is one valuable step. Reports like this one afford a basis for constructive dialog.

James Steffes

Prepaid electricity brought about by advances in metering and communication technology holds great potential for consumer benefits, especially for low-income consumers. It provides an option that was not meaningfully available before, and raises the bar as consumers begin to expect faster cycles of delivery, better technology, and better customer service from their electricity provider.

While dialogue and education are critical before industry, consumers, regulators and other stakeholders become truly comfortable with the change, it is important to keep in mind that consumers are already voluntarily demanding this product in many parts of the world, including in Texas. If the technology exists to offer prepaid electricity in other areas of the US, waiting for additional studies to validate consumer preference seems unnecessary.

Moving forward will require a fresh perspective unburdened by preconceptions about prepaid products and by entrenched thinking from decades of post-paid electricity. In addition, views around the benefits and costs of this solution for low-income consumers must recognize the reality of our current structure – lights are going out when payments aren't made today; prepaid electricity won't change that fact except by giving more timely information so that disconnects become less of a reality. Prepaid electricity gives consumers, including low-income consumers, a better tool to help them help themselves. Prepaid electricity won't be chosen by everyone, but it can and should be a voluntary option wherever the technology exists.

DEFG's Summary and Findings

With the introduction of advanced metering infrastructure (AMI) and communication capabilities, the relationship between electric consumers and providers will soon undergo significant changes. AMI offers utilities the opportunity to provide prepaid electric service with relative ease and without the costs associated with older prepay technology. In an AMI world, prepaid service can be fully integrated with utility back office and meter operations. There is remote connect/disconnect capability and customers can add money to their accounts by methods already available to all customers (i.e., check, cash, and credit card via telephone, internet, or smart phone application). Thus, as AMI technology is rolled out, offering prepaid service becomes a real option for many utilities.

The different perspectives presented here by Cohen, Schwartz and Steffes were shared with the DEFG 2011 Prepay Working Group and incited detailed discussion. A mix of industry representatives – from utilities, public utility commissions, energy retailers, and consumer advocate groups – participated in a conference call exploring low-income consumer issues presented by a voluntary prepaid offering. Prepayment is a catalyst, raising legitimate concerns around consumer protections, and exposing tensions and incompatibilities between existing regulatory constructs and new technological capabilities. Cohen noted that, in an AMI world, the rulebook in fact needs to be re-written. All stakeholders agreed, at minimum, that disconnect policies need to change with automation and thus, consumer protections need to be reviewed in light of new capabilities.

A summary of additional points made by industry stakeholders include:

Consumer Preferences

- Utilities and regulators should ask—are we meeting the needs of the people we are trying to serve?

[25] CW11 Consumer Symposium: conversation, listening, collaboration, To the Point, 2011

- States need to focus on how much the consumer likes services such as prepaid and allow for preferences
- Utilities must be transparent and offer choices that customers can understand
- Texas experience is that more timely information has a significant impact on customer experience and usage

Notification and Disconnect

- With prepaid service, perhaps e-communication channels and forms of e-payment need to be requirements
- Increased and new forms of communication are a part of smart grid implementation as a whole, not just a challenge specific to prepaid service (e.g., dynamic pricing)
- While disconnect is easier with new technologies, reconnect has also improved – two sides to the coin

Energy Consumption

- There are questions around achieving reduced energy consumption with prepaid service (where the transaction and usage feedback are coupled) and achieving reductions when employing only usage feedback with post-paid service; what are the range of impacts with information-only vs. information and transactional combined?
- Must explore the drivers for load reduction, e.g. marginal cost of energy, increased information around usage, and/or the transactional element
- Information regarding usage and energy conservation tips may be essential to the success of prepaid service
- The tie between price and consumption will be strengthened with smart grid

Costs, Benefits and Allocations

- Price / affordability is critical, can see a path where prepaid service is cheaper
- Prepaid being a cheaper service could be a game changer
- "The devil is in the pricing details"
- Perhaps increased flexibility provided by prepaid service is worth extra cost to customers
- Provision of electric service is in the "public interest" – the impacts reach beyond economics
- Need to look at new rate recovery mechanisms – when costs are accounted for (e.g., capital expenditures recovery), what is the timeframe? Who is paying for it?

Low-Income and High-Risk (elderly) Specific Issues

- Perhaps prepaid will be an "impossible voluntary choice" for some customers
- Yet, how do you allow for voluntary expression of preferences for all consumers if low income protections are the tail that wags the dog?
- May need elements that feel "paternalistic" in order to maximize goals, even if prepaid service is just an option
- Participation should be limited to customers who really could benefit
- "It is expensive to be poor"; concerns expressed around prepaid transactional fees and potentially higher rates being similar to the payday loan atmosphere
- Federal funding is rapidly declining for energy assistance, especially LIHEAP. Need to go back to fundamentals around how energy assistance projects are structured, and absolutely need new mechanisms
- Similar to current piloting programs, an educational component should be directly tied to prepaid service as part of an energy budgeting effort. The counselor will know where the client is at a given point. These issues cannot be viewed in a vacuum, but need to be part of the "next level of low income energy assistance"

There is a tension between the possibilities enabled by new technologies and consumer protections. Consumer protections are grounded in principles regarding how society should treat people. Opponents of prepaid service argue that it deprives the low-income customer of the necessary financial assistance and flexibility available with post-paid service. Consumer advocates are concerned that low-income consumers might find themselves without electricity for extended periods because they elect to forego power in order to pay for other necessities such as food, clothing and gasoline. Yet feedback, at least anecdotally, shows that credit-challenged consumers like prepaid service, expressing satisfaction with increased budget control and convenience.

Two key questions are – how can a balance be struck between allowing consumers to exercise their preferences and ensuring that adequate consumer protections are in place? And, how can regulatory rules and practices, including for low income consumers, be revised or updated to allow for innovation and new offerings such as prepaid energy or other new services enabled by smart grid yet maintain the intent of the original regulatory rationale?

A broad consensus exists that consumer protections do and will exist for a prepaid service offering as they have been in place for post-paid consumers for decades. For example, nobody is arguing that moratoriums for extreme weather events or rules around disconnection should be done away with. Rather, the question is how those rules and regulations should govern new products and services given that many regulatory rules and practices were first implemented decades ago, long before the Internet and smart grid. In addition, many stakeholders would agree that limiting the form of communication for disconnect notifications to letters and/ or a knock on the door may not only be impractical but counterproductive when considering consumer credit issues. We live in different times. Prepaid service, being the first customer-facing application from smart grid that touches the body of bill pay and consumer protection rules, is highlighting the need to update the regulatory rulebook and separate intent from practice.

Regulatory "straw man" proposals for different policy areas were developed out of DEFG's research initiative conducted in 2010 (*see* Appendix). The proposals were not intended to be solutions, but rather to encourage discussion. The 2011 Prepay Working Group is now working to move the discussion forward by identifying points of consensus and clarifying differences related to these areas.

Critical policy areas touched by prepay include: 1) service disconnect, moratoriums, and notifications; 2) specific concerns for low-income and high-risk customers; 3) cost allocation, recovery, and treatment; 4) tariff; and 5) billing & accounting. Consumer protections cut across each of these areas, and considering how these issues potentially impact low-income consumers further intensifies concerns and makes the issues even tougher to address.

The Debate around Disconnection and Finding Common Ground

Disconnection policies are no doubt the leading concern among opponents of prepaid service. There are numerous issues to debate (e.g., the timing of disconnects, maximum time lag between payment and reconnect, the form of notice for service disconnection, protections during extreme weather, etc.), but some common ground can be found.

Schwartz aptly framed the discussion above – *policies around service disconnection should be grounded in common sense and good customer service practices*. Texas, for instance, recently implemented new consumer protections for prepaid service offered by retail electric providers, and prohibited prepaid service to customers dependent on medical devices. Likewise, most stakeholders agree, and Texas rules require, that weather moratoriums must apply to all customers, including prepaid customers. These policies reflect common sense and are grounded in the principle that consumers should never knowingly be placed in a dangerous or life-threatening situation.

Furthermore, different stakeholders agree that prepaid can only work with a certain minimum level of flexibility and accommodation for customers. Steffes dispels the notion that there is immediate disconnection with prepaid electricity, at least in the Texas market:

> While conceptually possible, in practice disconnection actually takes a little more time. AMI meter reads need to go through the VEE (Validation, Estimation, and Editing) process to ensure that the reads are billable-quality. Then the customer needs to be notified of their new balance, and whether or not they will be disconnected that day. Then a grace period of a few hours may apply so that the customer can "cure" their situation, before the disconnection signal is sent to the meter. This process can take up to 36 hours.

Additionally, existing prepaid programs offered by retailers in Texas and the Salt River Project (Arizona) do not disconnect service during nights and weekends, or during weather or other moratoria (e.g., holidays). Thus, there is a nominal amount of credit that is actually extended to prepaid customers. Schwartz concurs with the need for baseline customer accommodation, "[t]urning off anyone's electricity in the middle of the night or when there is no one to call at

the utility is pointless and makes the company look heartless and punitive regardless of the resident's payment plan, income level, or technology embedded in the meter itself." Steffes further confirms that customers need to be given a chance to avoid disconnection, as it provides for a better customer experience. These limitations and accommodations reflect common sense, and thus should be part of any consumer protection regulatory scheme for prepaid service.

In addition to friendly-credit periods and a certain amount of "overdraft" protection, there is an absolute need for appropriate communication to keep consumers informed of their account status. Cohen points out that easy access to account management tools is crucial to a positive prepay experience for participants. He notes the advent of smart meters, smart phones, in-home devices, online banking, etc. can make prepay a desirable service for certain customers, but also asserts that "low-income households, who are most likely to choose prepaid service, are least likely to have access to these technologies and services."

Some would object and note that more and more people have mobile phones with at least basic SMS capability to receive account balances and notices. As noted by Steffes, companies such as Assurance Wireless and TracFone have programs to provide free mobile phones to low income consumers and make SMS access almost ubiquitous. Moreover, as Steffes asserts, customers without access to electronic means of communication should (arguably) not be placed on a prepaid program.

Steffes shared details of Direct Energy's prepay offering during the recent Working Group conference call. Direct Energy only communicates via SMS and email with prepaid customers (no IHD, no robo-dial), sending daily messages regarding usage and account balances. Daily texts appear to be the right "touch point" or daily "pocketbook event," according to Steffes, as customers have anecdotally confirmed that the daily texts, or information exchange, provide them "increased control." The feedback from Direct Energy's prepay customers is that they feel better informed regarding usage and payments, find prepay to be convenient, and enjoy the flexibility and adaptability to personal cash flow. Moreover, speaking to the relevance of this product to low-income consumers, currently 1 out of 5 of Direct Energy's prepaid customers qualifies for and receives a low-income discount.[26]

Placing an optimistic spin on the opportunities presented by new technologies, Schwartz writes:

> The beauty of digital technology attached to each service location is the ability to make it practical as the account limit is approaching to send advance notices automatically via text message, email, or automated call to the person responsible for the account … Giving this type of early-warning [and regular] feedback certainly will reinforce that the prepay option is 'smart' and humane and will generate valuable goodwill for the utility.

Current disconnect policies, however, may require in-person or written notice by the US Post Office, and thus are incompatible with a prepay option. Prepay thus invites a discussion around re-writing consumer protections such as service disconnection notification policies. Certain jurisdictions will naturally be more or less willing to embrace electronic communication as a substitute for traditional mail or in-person visits. As consumer protections for prepaid service in an AMI world have been addressed in the Texas retail energy market, they can conceivably be worked out elsewhere as well.[27]

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[26] The LITE-UP TEXAS program is designed to help qualified low-income individuals reduce the monthly cost of electric service. The program provides discounts to eligible customers. See http://www.puc.state.tx.us/consumer/lowincome/Assistance.aspx.

[27] Under Texas Administrative Code, §25.498(j) relating to Prepaid Service offered by REPs, service may be disconnected by a REP only with a "timely warning" when a customer falls below the disconnection balance or fails to comply with a deferred payment plan, with the following exceptions -- no disconnection on a weekend day, or when mechanisms used for payments specified in the customer's PDS (Prepaid Disclosure Statement) are unavailable, or during an "extreme weather" emergency. Further, within one hour of a customer establishing a connection balance (or any otherwise satisfactory correction of the reason for disconnection), the REP must reconnect service or request that the TDU reconnect service. Under §25.498(c)(5), covering REPs offering Prepaid Service, a REP may choose the means by which it communicates required information to a customer (i.e., IHD, USPS, email, telephone, mobile phone or other e-communications), but must describe the means of communication in the Terms of Service (TOS) and Prepaid Disclosure Statement (PDS). Further, §25.498(c)(7) requires that a customer's current balance, including the date and time the current balance was calculated and the estimated time or days of credit remaining, be available to the customer either continuously via internet, phone or IHD, or within two hours of the REP's receipt of a balance request via the means of communication specified in the TOS. Additionally, under §25.498(c)(7), the REP shall provide a warning at least 1 day but not more than 7 days before the current balance is

Prepay: A Billing and Budgeting Preference … or an Offer that Can't Be Refused?

Certain stakeholders view remote disconnection and prepay as advanced meter features providing new opportunities, prepaid service being just one bill pay option within a portfolio of choices. Certain consumers, for instance, may prefer to make several small prepay payments each month as cash becomes available, and avoid paying the security deposit and potential late payment penalties assessed under traditional monthly post-paid plans. Should service be disconnected for a day or two, certain consumers may prefer losing power on a limited basis to not being able to make a payment on a post-paid bill which results in a late payment penalty and potentially falling into a negative credit cycle.

Prepay is an alternate payment option and invites the question – should consumers be permitted to choose a payment plan that best suits their preferences around cash flow and lifestyle? Or, looking at the question from a different angle, why should monthly post-paid plans be the sole bill payment option offered by electric utilities?

Views presented by consumer advocates starkly contrast with the notion that low-income consumers can benefit from a prepaid option. Consumer advocates have voiced strong disapproval for prepaid service. During our 2010 research efforts, an advocate asserted that equitable access to energy is a right and access to energy is a necessity – that there is a societal responsibility to make sure access is provided in a manner as fully as possible without reducing a person or group to the category of a second-class citizen or second-class service. Another advocate expressed "deep philosophical problems with prepaid energy service," finding that it invites customers to place a value on saving money versus reliability and a commitment to energy being available; those for whom money is dear will potentially make a trade off, devaluing the ubiquity of energy services and turning it into a commodity. There are real concerns shared by advocates, perhaps the primary one being that payment-challenged consumers will not really have a choice but in fact opt for prepaid service to avoid overwhelming deposits or penalties.

Cohen notes above that prepaid service might be a good choice from among an array of pricing and payment options for some customers, yet for others it may be an offer that they just cannot refuse. Cohen asks, "[i]s providing a prepayment 'option' to payment-challenged customers contrary to the spirit (and perhaps the letter) of laws prohibiting discrimination in provision of utility services?" The position that consumers should be able to select prepaid service as a payment option in line with their cash flow and lifestyles preferences is indeed radically different than seeing prepaid as potentially discriminatory or predatory with regard to low-income consumers.

Quite different from Cohen's skeptical approach, Schwartz highlights potential benefits tied to prepay. Schwartz notes that research supports and many consumer advocates contend that people be permitted to choose pricing programs that best reflect their perspectives (yet most pilots to date have assigned households to specific rates, missing the opportunity to measure the impact of choice). Schwartz thus submits that the same thinking be applied to payment options – consumers of all income levels will benefit if permitted to enroll in payment plans that reflect their personal preferences around cash flow, predictability, or opportunity to capture the greatest savings.

Schwartz further expounds:

> Just as high-income consumers are not a monolithic group, neither are low-income consumers. People who consume resources like electricity or water frugally versus unconsciously or wastefully exist at all levels of society. The same array of motivations: cost-consciousness, tech enthusiasm, green altruism, comfort, indifference, resistance; appear in people who have been raised in poverty, are trapped in low wage jobs, have suffered a blow to their middle class lifestyle due to an illness or job loss, or have retired on a modest fixed income.

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estimated to drop to the disconnection balance. Under §25.498(h), prepaid customers may request a Statement of Usage and Payment (SUP) at any time and a REP shall provide the SUP within 3 business days of the request, and deliver it by electronic means providing a downloadable and printable record, or by USPS if requested.

And, while the smart meter based prepaid electricity market in Texas only started in middle of 2010 (driven by metering technology roll-out timelines), Direct Energy sees a large and growing market forming as consumers begin to understand the value prepaid electricity offers. Direct Energy's prepaid business continues to see average customer tenure on the product increasing month after month even with a growing customer count. Steffes notes that prepaid electricity is "not just a new way to pay for electricity. It is fundamental shift in the customer experience around electricity consumption, brought about by advances in technology and customer service." Direct Energy deems prepaid electricity to be a "smart, flexible, convenient, and responsive product."

Again, we see the tension between the possibilities presented by new technologies and philosophies that underlie regulatory constructs such as consumer protections around electric service. Steffes describes prepaid service as a "fundamental shift in the customer experience" brought about by new technologies, while Schwartz challenges segmentation by income, cutting through the notion that all low-income consumers should be treated the same way. These concepts test the perspective that low-income consumers are a monolithic group requiring blanket protections.

Who Bears the Costs? Who Benefits?

Certain benefits will accrue to customers, some to the utility, and others to society. Identifying what costs and benefits in fact exist and to whom they accrue is critical to garnering support in a regulatory environment. Anticipated benefits of prepaid programs include: reduced utility delinquency costs; reduced utility costs for truck rolls managing service connection and disconnection in the field; increased customer satisfaction resulting from a stronger sense of budget control and related lifestyle management and convenience; and a reduction in energy consumption and accordingly lower bills.[28] Furthermore, the elimination of reconnection fees and deposits will reduce barriers to service for certain customers. These anticipated benefits have different dimensions and may touch on one or more of the following: 1) cost 2) affordability; 3) energy management / usage; and 4) lifestyle.

Cohen proposes that, if the central goals of regulatory policy regarding service to low-income customers are to make electricity more accessible and affordable, then the key metrics for judging a prepaid service program may be the change in number of households that remain connected to electricity service and the average costs they experience. Cohen adds that the value proposition for customers is quite different for a prepaid service that offers a discount versus one that charges a premium.

Steffes offers that, "[o]verall, prepaid electricity significantly raises the bar around customer experience. In designing its prepaid product, Direct Energy conducted focus groups and surveys to understand what consumers want from a prepaid service. Overwhelmingly, customers wanted payment convenience, no deposit requirements, daily usage information, payment flexibility, no reconnection fees and quick reconnections." Direct Energy's prepaid customers, including low-income households, are receiving these purported personal benefits and at a price consistent with post-paid products.

Some advocates and regulators, however, believe that automatic disconnection for failure to make a prepayment and any potential tradeoffs made to keep the lights on leading up to disconnection may result in potentially grave and detrimental consequences for low-income consumers, making prepaid service entirely unworkable from their perspective. This position represents a strict principle – society has an obligation to protect certain populations from potentially harmful conditions.

As a next step, Cohen proposes a comprehensive utility-specific study to sort out the costs and benefits of proposed prepaid programs. To the extent feasible, he holds that it would be valuable to disaggregate costs and benefits to study the net effects of prepaid service on identifiable customer groups, recommending a particular focus on the financial, social, health, and other effects of prepaid programs on low-income customers. A determination by regulators that the

[28] For instance, AZ's Salt River Project has reported the following relative to their "M-Power" prepaid program: Data from FY07 to FY10 suggests M-Power customers who were satisfied or very satisfied ranged between 85 and 89%; and data shows an average annual household reduction of energy consumption by 12%. (*See Paying Upfront: A Review of the Salt River Project's M-Power Prepaid Program*. EPRI, Palo Alto, CA: 2010. 1020260.)

benefits of a prepaid program exceed incremental costs for both participants and non-participants should be the first level of analysis, according to Cohen.

DEFG's Series of Regulatory Choices white paper No. 4, "Regulatory Issues and Questions Presented by Voluntary Prepay Options Offered by Utilities," presented summary points from interviews with regulators across the country. Cost allocation recovery and treatment played a critical role in the discussion. Different scenarios were raised around treatment of costs and benefits.

Program costs, for example, might be baked into the total cost of the tariff, or alternatively passed through as a fee to the individual prepaid consumer on the occasion of each payment. Regarding the treatment of benefits, ideas included the utility retaining any savings (which ultimately in some form would pass through to the entire customer base), the utility passing savings through to only the customers enrolled in prepaid service, or potentially implementing a shared-savings model with a direct benefit to the prepaid customers and an additional benefit to the utility that in some way would positively impact the entire customer base.

The points raised by Cohen, however, go beyond dealing with the math of costs and benefits, and seek answers around "the financial, social, health, and other effects of prepayment programs on low-income customers." Questions around the different dimensions of anticipated benefits and costs associated with prepaid service, and how the benefits and costs will be handled and allocated, need to be more closely examined for prepaid service to be supported as a customer offering in a regulated utility environment.

Lack of Certainty around the Conservation Effect of Prepaid Electricity

Conservation effects of prepaid service in particular have not been well researched or documented. An interesting development occurred earlier this year when the Arizona Corporation Commission approved a prepaid option to be offered by the Arizona Public Service Company (APS) as part of a residential demand response (DR) pilot program. APS' stated goal for the pilot is to test a variety of technologies currently available, as well as customer response to the technologies and DR program design, which in turn will provide essential information for rolling out of a full-scale residential DR program.

Furthermore, the DEFG 2011 Prepay Working Group recently commissioned research to explore critical questions around this conservation issue, including: what relevant data is available and supports a linkage between prepay and energy conservation, what are the gaps in the data and research, how evidence supporting a linkage could potentially tie in with utility energy efficiency mandates and strategy around integrated resource planning, what would be required for regulatory credit to be given to utilities or other parties for energy efficiency gains and/ or for other regulated services such as resource adequacy or ancillary services, and what improved methodologies can be implemented to collect and analyze data necessary to establish a linkage.

Findings from the DEFG-sponsored research and the APS pilot should reveal critical information regarding the potential linkage between prepaid service and reduced energy consumption.

DEFG's Conclusion

A lack of trust among stakeholders has been palpable during the course of DEFG's research and conference calls around the potential of utility prepaid offerings. While some stakeholders consider prepaid service a positive innovation for consumers, others view it as potentially predatory or discriminatory against low-income consumers. Schwartz makes the critical observation that stakeholders, including utilities, attending a recent industry symposium shared a common desire to see low-income consumers paying fair rates for electricity and being supported safely during dangerous weather periods, and that the biggest barrier to policy solutions (as identified by the group in 30 different breakout discussions) was trust among the parties and consumers.

To advance the discussion and frame the regulatory issues, it is helpful to identify a basis for the challenges, concerns and opportunities presented by prepaid service. Below are four "screens" to apply as an analytical framework to existing regulations. For example, to inquire whether a fundamental principle is involved (e.g., everyone must be served equally). Perhaps a rule formulated decades ago might be based on a practice involving older technologies, and with new capabilities there might be potential for change. And, with new capabilities, there are new services and products, which challenge boundaries or the degree to which consumers are permitted to make choices and express preferences. Or, perhaps a rule or practice is rooted in an ideology or policy position (e.g., supporting or opposing the role of competition in energy markets).

Analytical Framework:

Regulatory Basis	**Definitions**
Principle / Value	Underlying rationale
Practice	How implemented
Preference	Degree of allowing customer options/ preferences
Ideology / Policy Position	Extent / Role and degree of government oversight required

For instance, the analytical framework may be applied to disconnection policies and prepaid service. Disconnection policies, or more specifically weather moratoria, do not permit shut off during extremely hot or cold weather. This rule is grounded in a principle – society should protect people from potentially harmful or life-threatening circumstances. This is a widely-shared view, thus most people would support weather moratoria applying to all electric service customers, including prepaid customers.

With regard to disconnect notifications, existing rules are mostly based on older technologies, so various forms of e-communication available now are just not addressed. The basis for a rule therefore may be tied to a practice. With new practices, come new circumstances and a need for new rules. When dealing with degrees of customer preference or choices, rules are tied to the options that are available at the time, but there is also a focus on limiting or expanding the degree to which options are made available to customers. An element of protection may be in play. With prepaid service, a customer might opt to let their credit run to zero and disconnect service for two days. This customer may prefer to manage their credit in this manner and, while unconventional, is merely a preference. Regulations can prohibit or permit such an option.

Last, prepaid service and the notion of self-disconnect may be unacceptable from an ideological perspective. The act of self-disconnecting may be seen by some as a "bad" decision, and certain stakeholders may assert that government's role is to help people not make" bad" decisions.

With new capabilities and offerings enabled by AMI, there is a need for fresh thinking in the regulatory arena. Further investigation into the anticipated benefits, costs, and impacts of prepaid electric service, combined with a better understanding of customer preferences, will provide much needed answers. This process is critical to develop trust among stakeholders and move forward in a new world.

Appendix A

Regulatory "Straw Man Proposals"

1. Disconnect, Moratoriums & Notification	2. Low-Income & Credit	3. Cost Allocation, Recovery & Treatment	4. Tariff	5. Billing & Accounting
- Prepay alerts are part of increased feedback and account management options - Moratoriums apply to prepay customers - Do not offer to elderly or persons dependent on medical devices - Redefine what is life-line / emergency service to use limiting amperage - Require either a security deposit, credit card or linked bank account to cover float - Upon disconnect fall back on traditional service as default	- Make prepay compatible with energy assistance programs - Consistent (potentially daily) messaging via customers' preferred means of communication - Standard consumer protections hold for prepay	- Define mechanism; is prepay a rate case or a rider? - Utility keeps any savings - Utility eats any program-related costs and passes any savings onto the customer - Shared-savings model between utility and consumers - Energy conservation is a treated as a savings factor - Utility is simply a pass through; service is offered by a 3rd party	- "All-in" option without future adjustment (covers fuel adjustment, taxes, fees, etc.) - Competitive states look at TX model - Regulated states look to Salt River Project as a model - For pilot programs, seek waiver as a temporary measure - Consider prepay from a fresh perspective - where the customer needs to earn credit	- Break tie with paper billing - Shared savings for going paperless - Tie into energy conservation and goals - Hybrid offering with traditional plan as back-up system satisfies requirement for monthly bill

Appendix B

Cynthia Boland O'Dwyer is a Vice President with DEFG LLC, and a lawyer with LEED G.A. Certification, the U.S. Green Building Council's Leadership in Energy and Environmental Design Green Associate designation. She leads DEFG's activities in legal and regulatory matters. Prior to joining DEFG, Ms. O'Dwyer was a practicing attorney in New York City. Most recently, she handled general business and commercial matters with Leader & Berkon LLP. Prior to joining Leader & Berkon, Ms. O'Dwyer practiced litigation with Paul, Weiss, Rifkind, Wharton & Garrison LLP, and served as counsel to Riverkeeper, a non-profit organization dedicated to protecting the ecological integrity of the Hudson River.

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