

APPENDIX A
TO INITIAL COMMENTS OF PUBLIC COUNSEL
DOCKET U-180525
Cindy O'Dwyer, The Costs and Benefits of Prepaid
Energy Service



The Costs and Benefits of Prepaid Energy Services



**By
Cindy O'Dwyer, Esq.
DEFEG**

**A research project commissioned by DEFEG's Prepay Energy Working Group
February 2016**

Executive Summary

With electricity prepayment, households receive the same electricity, over the same wires, yet they have the ability to pay in advance (any amount, at any time) and closely monitor their usage (weekly usage, daily usage or near-hourly updates should they choose). The relationship between the energy provider and prepaid energy consumer is notably different as compared to traditional post-pay utility service, as responsibility shifts to the consumer to monitor their account balance and usage, and to “top up” (add money to their account) as needed. Prepaid energy is truly a paradigm shift for the industry, and consequently draws both support and opposition.

Since 2010, when DEFG launched the Prepay Energy Working Group (PEWG),¹ the energy industry has been evaluating the benefits and risks of residential prepaid electric service. One of several critical issues is what does prepaid service cost and who bears these costs? For example, there are quantifiable costs to launch and support prepaid service (operating and investment costs), and there are also hard-to-measure (intangible) costs and impacts.

Prepayment obviates the surprise of a potentially unmanageable bill, and permits consumers to actively manage their consumption and dollars. Some consumers and industry stakeholders assert that prepaid service is a positive innovation, providing convenience, flexibility, predictability, and a better understanding of electricity usage and dollars in closer-to-real-time (that is, on a day-to-day basis). The choice of service, furthermore, can empower individuals who know best what their households value and need, and who prefer to act on daily information.

The dissenters, on the other hand, are primarily concerned with remote service disconnection,² and they contend that prepaid service is a predatory, second-rate, or even discriminatory service targeting low-income consumers. The notion is that these consumers are more likely to struggle to pay their monthly post-pay bill, and prepaid service will permit energy providers, with the push of remote shut-off buttons, to forcibly keep these households current and avoid the accumulation of arrearages.

This paper identifies the costs of electricity prepayment (the costs to launch and support prepaid service), who bears these costs and over what period of time. In the utility environment, the costs incurred to offer and support innovative services must be balanced against core regulatory goals. Employing new technologies and service features, such as prepayment, can indeed benefit consumers and service providers, but first the costs and characteristics of the offering, and any impacts on the consumer and provider, must be considered. There are challenges with fitting innovative services into traditional regulatory models, and this paper is just one in a series from DEFG and PEWG looking closely at the leading regulatory and policy issues presented by prepaid service.³

Introduction

Though prepaid service has been around for more than twenty years in the U.S., it has evolved from a version requiring special hardware (prepaid meters; in-home devices; card systems) to a more nimble, software-based e-platform. Until several years ago, the service had only been offered by member-owned cooperative utilities and citizen-owned

¹ The Prepay Energy Working Group (PEWG) sponsors in-depth research exploring the challenges and opportunities presented by prepaid energy offerings in North America. To ensure a broad spectrum of perspectives and experiences, working group members include utilities, energy retailers, regulators, consumer advocates, and metering and software solution vendors.

² Remote disconnection is a capability enabled by advance meter infrastructure (AMI) also referred to as the smart grid. The technology gives electricity providers the option to remotely disconnect service via software capability. This avoids dispatching a technician for manual shut off. Long-standing electric service regulations, however, may require technicians to visit a residence to attempt to provide in-person notice to an adult prior to service disconnection. See, for further discussion, O’Dwyer, C. *Remote Disconnection: A Fresh Look at Long-Standing Customer Protection Regulations* (February 2015).

³ See, for example: O’Dwyer, C. *Remote Disconnection: A Fresh Look at Long-Standing Customer Protection Regulations* (February 2015); O’Dwyer, C. *Security Deposits and Fees: Leveraging New Technologies to Create Greater Flexibility and Opportunities for Improved Budget Management* (August 2014); and O’Dwyer, C. *Prepaid Energy: A Regulatory Path Forward* (September 2012).

municipal utilities, which, for the most part, operate independently, without direct jurisdiction of state regulatory commissions.

But today, as the business case is more compelling and the customer experience much improved, energy retailers and regulated utilities nationwide are evaluating the launch of prepaid service using advanced metering infrastructure (AMI). New, smart offerings, such a prepaid service, require investment by the utility, and identifying the costs and who is responsible is a necessary initial step in the planning and regulatory process. This paper examines the cost elements and benefits touching the consumer and the utility.

Generally, the costs and benefits fall into one of four categories:

1. The utility business case for a prepaid offering
2. Cost-related reasons that consumers choose prepayment (i.e., the “household business case”)
3. Cost-related prepaid program design issues (fees and such)
4. Regulatory approval issues

At the design phase of a prepaid offering, decisions must be made regarding cost-items touching the consumer—namely: the tariff, security deposits, required starting balance, service disconnect and reconnect fees, late payment penalties and program fees. Decisions related to these items can be justified by operational (technology, personnel) investments and ongoing expenses to support the service, or mitigated due to savings or benefits realized.

Additionally, business case elements must be balanced against consumer issues. For example, the utility waiving disconnect and late payment fees as the prepaid consumer acts as a creditor and the utility a debtor, or the decision to leverage already sunk technology costs to allow prepaid consumers to utilize the full functionality of the offering and platform.

What Does Prepaid Service Cost & Who Pays?

The following tables are valuable tools for utilities at the initial stages of planning a prepaid offering. Identified below are the direct and indirect costs and benefits to both the customer and the utility. As the costs and benefits stretch across the utility company, there is a blended business case for prepaid service. This can complicate planning around cost allocations and benefits realized. An equally important and challenging exercise is to isolate and minimize any costs to customers, and identify the more indirect or intangible benefits realized by prepaid customers.

Table 1: Costs & Benefits to the Utility⁴

| Direct Costs to the <i>Utility</i> | Direct Benefits to the <i>Utility</i> |
|--|--|
| <ul style="list-style-type: none"> • AMI (investments and operations) • Communications (investments and operations) • MDM (investments and operations) • CIS (investments and operations) • Business change • Systems build / integration • Call center (staffing; training) • Prepay software leasing (if any) • Transaction fees (should 3rd-party charges be covered by the utility) • Regulatory approvals • Legal • Marketing | <ul style="list-style-type: none"> • Improved cash flow • Increased revenue recovery • Avoided costs for paper billing • Avoided collections and termination costs (less regulatory intervention, less demand at call center, fewer truck rolls and associated legal & insurance costs) • Reduced customer abandonment • Reduced theft • Low-cost conservation program • Measurable impact on energy efficiency targets and/or climate-related goals |
| Intangible Costs to the <i>Utility</i> | Intangible Benefits to the <i>Utility</i> |
| <ul style="list-style-type: none"> • Criticism by consumer advocates • Bad press coverage • Perception that utility is solely motivated by revenue recovery • Efforts to secure buy-in of management | <ul style="list-style-type: none"> • Improved call center morale (reduced high bill and shut-off complaints) • Improved customer satisfaction • Utility no longer responsible for shut-off / accountability assumed by customer • Perception that utility serves customers by offering more choices • Perception that pressure on rates is reduced • Perception that utility is leveraging AMI • Perception that utility is pursuing energy efficiency targets and/or climate-related goals |

⁴ Source: DEFG presentation and discussion, PEWG Workshop, September 2015.

Table 2: Costs & Benefits to the Participant⁵

| Direct Costs to the <i>Participant</i> | Direct Benefits to the <i>Participant</i> |
|---|---|
| <ul style="list-style-type: none"> • Tariff (if different from standard) • Program fees (if any) • Security deposit (if any) • Late payment surcharges (if any) • Service disconnection fee (if any) • Service reconnection fee (if any) • Starting balance (if any) • Transaction fees (if any, 3rd-party charges) • Communication Costs (text messaging) | <ul style="list-style-type: none"> • Energy efficiency / conservation savings • Relevant & timely information and associated potential savings • Increased control over household budget • More convenient payment options • No deposit, penalties or fees |
| Intangible Costs to the <i>Participant</i> | Intangible Benefits to the <i>Participant</i> |
| <ul style="list-style-type: none"> • Increased time it may take to pay attention to daily bill / account balance • Increased time to investigate drivers of electricity use and behaviors of members of the household • Potential stigma around prepaid service | <ul style="list-style-type: none"> • Reduced stress (no bill surprises; manageable payment plans for arrearages) • Increased convenience & flexibility (cash flow options) • Increased choice (choosing among payment options) • Increased agency / power & information (knowledge re: & power to make decisions around usage and dollars / electricity cost drivers) • Reclaimed time for some (no longer working out payment arrangements) |

Direct Costs

Rates

In the AMI context, the current trend is to charge prepaid customers the same rate per kilowatt-hour as post-pay customers. To date, all prepaid pilot programs offered by regulated utilities have charged prepaid customers the same rates as post-pay—either flat or time-of-use, or tested both. Charging a higher rate is most certainly a non-starter with regulatory commissions and consumer advocates. As the customer pays ahead for energy, the household does not accumulate negative debt (arrears) and, thus, is no longer a financial risk to the utility. By eliminating risk, the cost to serve the customer stabilizes and there is no justification for charging a higher prepaid rate, unless perhaps the customer is using new prepaid-specific technologies: services that cost more for the utility to support. Such costs would then likely be managed through a program fee charged to each prepaid account (not via the kWh price). The need or strategy around whether to charge a program fee is discussed below.

Deposit, Starting Balance

To date, all state-regulated utilities offering a prepaid program have opted to not require a security deposit. In fact, most prepaid programs (whether a municipal utility, cooperative or retailer) do not require deposits. Instead, the common approach is to require a minimum starting balance to initiate service. This typically is a small amount, perhaps \$25, which is immediately applied to pay for electricity. Prepayment eliminates the need for a security deposit as the utility

⁵ Source: DEFG presentation and discussion, PEWG Workshop, September 2015.

no longer extends credit, or only extends small amounts (e.g., overnight or holiday hours). Additionally, the elimination of a security deposit, which can range from \$100 to \$250, makes electricity service more accessible to households on extremely tight budgets.

Disconnect and Reconnect Fees & Late Payment Penalties

Assuming the functionality of AMI is fully leveraged, an electricity provider can have access to a customer's latest payment and usage information, and opt to remotely stop or start service. This "flip of a switch" capability means the time to disconnect and to reconnect has become significantly quicker. This capability can be profound. The impact on the household can be minimized (e.g., a two-hour loss of power versus a two-day loss of power),⁶ and the utility no longer needs to roll a truck and incur the associated expenses and risks (equipment, personnel, insurance, liability). Also, the utility does not have to offer credit for an extended period, avoiding the accumulation of bad debt and the decision to charge late payment penalties.

Thus, as the speed of reconnect has greatly improved and related operational costs have decreased, charging fees for disconnect and reconnect would likely be a non-starter with key stakeholders. Put differently, customers may have already paid for AMI installation, and therefore should not be penalized for use of the platform's functionalities.

Furthermore, disconnect and reconnect fees create a financial impediment for customers electing to leverage AMI capabilities by using shut-off as a budget and usage management mechanism (e.g., prepaid customer may be comfortable letting her balance run down to zero and posting a payment one hour before arriving back home). This accountability handover—control of household service connections being transferred away from the utility to the prepaid customer—is just too extreme for some industry stakeholders. At odds with this paradigm shift (the consumer managing their budget, usage and service access in near real-time) is a long-held principle holding that electricity is a necessity and must be universally accessible. Indeed, a set of consumer protection regulations have been put in place to avoid disconnections at nearly any cost and always keep the customers lights on.

Program Fees

Basically, there is a decision to either forego a program fee, or, alternatively, to charge a small monthly fee but perhaps only until the program is fully established (this fee can also be reduced at certain intervals over time). There are costs associated with the launch and support of prepaid service, but certain outlays are mitigated over time.

Costs to the utility both to launch and support a prepaid offering include customer service training, and the purchase, integration and support of various systems (AMI, MDM, CIS, prepaid-specific software). Effective programs allow consumers to access critical information at any time through both inbound channels and online platforms, and concomitantly, generate automatic alerts to inform customers of key and potentially time-sensitive information (e.g., remaining balance, pending disconnect, etc.). Thus, ongoing operational costs include additional e-communications and payment transactions (weekly prepaid payments are typical).

Notably, Westar Energy, (the largest electric provider in Kansas, serving nearly 700,000 customers) received approval from the Kansas Corporation Commission in 2014 to offer a prepaid pilot program to 1,000 residential customers, and has opted to charge prepaid customers a program or service fee of \$4.00 per month to offset a portion of the costs associated with the service.⁷ Over time, however, this fee can likely be reduced or even eliminated as benefits are realized across different parts of the utility business.

For example, as customers move to prepayment, and rather quickly develop confidence and autonomy on the service, the paper bill is eliminated, contact with the customer service center decreases, and regular payments become more

⁶ See O'Dwyer, C. *Remote Disconnection: A Fresh Look at Long-Standing Customer Protection Regulations* (February 2015).

⁷ For more info., see <https://www.westarenergy.com/kcc-approves-pay-as-you-go-pilot>.

reliable. Ultimately, with less expense to serve these customers in certain areas and improved cash flow, the utility can offset the additional e-communication and transaction costs. Thus, the business case as a whole must be taken into consideration. Key metrics of the various business case benefits realized across the utility business are captured in the Appendix.

Benefits

Measurable Benefits for the Customer

There is a large measure of convenience, flexibility and increased control for the prepaid customer. Being able to choose when to pay, how much to pay and among multiple payment channels are significant shifts away from the monthly post-pay (post usage) billing cycle. Permitting the prepaid customer to actively manage their account has measurable benefits. The customer can opt for daily (or even hourly if wanted) messaging regarding usage, cost and other factors that can directly result in savings (e.g., responding to peak vs. non-peak rate alerts, impact of upcoming weather, energy efficiency tips, etc.). Through an improved understanding of the cost of electricity and timely awareness of potential efficiency or conservation measures, prepaid households can act to reduce usage and thus save dollars.

Furthermore, as noted above, prepaid offerings typically do away with security deposits, and late payment and disconnect and reconnect fees, saving certain customers money previously spent on these penalties and directing these dollars towards purchases.

More Intangible Benefits for the Customer

Harder to measure but equally valued are emotional, and quality of life benefits, such as reduced stress, increased agency (sense of being more in control over budget and usage), more cash flow options and reclaimed time. Bill surprise no longer being an issue, customers can feel more in control and less stressed. Perhaps the prepaid household has set up a deferred payment plan, and can manage to both prepay for electricity and pay down debt in smaller, more frequent and manageable increments. Conceivably, the household can better handle \$50 per week versus \$200 monthly lump sum, and with a new level of spend awareness, can knock the weekly cost down to \$42 through behavioral changes and free up \$8 to pay down debt. The prepaid customer may feel accomplished and more self-directed (set free in a way), and can reclaim energy and time previously spent calling customer service to ask for payment extensions and avoid shut-off. The overall convenience and flexibility of prepayment can have immeasurable value for certain households.

The Compelling Business Case for Prepaid Service

Cost allocations and revenue tied to prepaid service are not static. Over time, upfront costs for the utility diminish, program revenue grows more certain, and a subset of customers that were formerly non-paying customers convert to paying customers. There is a change in the pattern of cash flow—more customers become paying customers, thus improving debt recovery and reducing outstanding debt. This also translates to less pressure around payment collection efforts (customer service phone calls, regulatory and stakeholder intervention in proceedings, truck rolls, etc.). The convergence of all these factors, at some point when the prepaid program is relatively mature, should result in an increase in cash flow for the utility.⁸

⁸ Some stakeholders would even assert that, with prepaid service fully established (e.g., 20% of customer base on program), there is potential for a utility's revenue requirement to decrease, allowing rates for prepaid customers, or even all customers, to be lowered. The regulated utility's revenue requirement is effectively the sum of expenses plus rate base x the cost of capital: *Utility Revenue Requirement = Expenses + (Rate Base x Cost of Capital)*. "Expenses include operating and maintenance costs, depreciation and amortization on assets, income and general tax expenses. Rate Base, representing investor-supplied capital, is made up of plant in service (net of depreciation to date) and working capital less deferred income tax and other miscellaneous adjustments. Cost of Capital includes the cost of debt or the average interest rate paid on outstanding debt. It also includes the cost of equity – the return an investor expects to receive when they buy stock. That return includes dividends and growth in stock value. The total revenue requirement can be distributed across customer groups, including residential, industrial and commercial, based on the cost of

While there are costs to launch and support prepaid service, some outlays are mitigated and benefits realized over time; for example:

- Reduced paper bills and collections costs
- Reduced call center volume (as prepaid customers become familiar with the service and grow increasingly confident in the automated delivery of critical e-notifications and the available channels for accessing account information, they typically stop relying on customer service)
- Reduced truck rolls and related liability and insurance costs (when prepaid service is supported by AMI, in theory at least, there is no need to send a technician to disconnect service – however, remote disconnect lacks support in regulatory rulebooks and is an example of how the huge investment in AMI is not being fully leveraged)
- Benefits from a low-cost energy conservation program, hitting measurable EE targets
- Improved debt recovery and cash flow (more customers become paying customers, thus improving debt recovery and reducing outstanding debt, which also translates to less work around payment collection efforts, i.e., customer service phone calls, regulatory and stakeholder intervention in proceedings, truck rolls for former post-pay late payers)

Conclusions & Proposals

Overall, prepaid electricity significantly raises the bar around customer experience. 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. Oklahoma Electric Cooperative, offering prepaid service since 2006, conducted a consumer survey and found nearly all their prepaid customers to be satisfied with the service (45% very satisfied; 40% satisfied). Moreover, 85% of respondents reported feeling more conscientious and conservative about their electricity use on prepay, and 50% reported that monitoring usage had led to dollar savings.⁹

This paper provides a framework and starting point for key stakeholders considering the launch and regulatory approval of a prepaid offering. At the initial planning stages, decisions must be made around program design (i.e., what rate to charge, and whether to collect security deposits, transaction fees and/or program fees, etc.). These seemingly more straightforward decisions, however, require an all-encompassing look at the direct and indirect costs and benefits to both the consumer and the utility. As the intangible or harder-to-measure impacts are significant and the benefits realized by the utility are spread across the business, the complete picture can be somewhat complex. Thus, the traditional cost-benefit analysis used by regulators is not a neat fit for a “smart” segmented offering like prepaid service.

The benefits to be realized by the utility occur over an extended time as program adoption grows and customers gain confidence in the platform (e.g., increased revenue recovery, positive cash flow, hitting energy efficiency targets). This time element can be an obstacle to launching prepaid service, as regulators and utilities focus on significant initial costs and avoid more complex, yet beneficial, metrics to be realized by both the utility and customer over time. Lack of a concrete time dimension can lead to uncertainties and delay. Since the various costs and benefits identified are not all equal, next steps point to the development of a weighing process to prioritize key costs and benefits, and a rethinking of the underlying methodology and rationale for the traditional cost-benefit analysis.

service for that group.” See <https://www.duke-energy.com/south-carolina/assets/pdfs/Understanding-a-Regulated-Electric-Utility-Rate-Case.pdf>.

⁹ O’Dwyer, C. B., Cohen, M., Schwartz, J. & Steffes, J., “Low Income Consumer Issues and Voluntary Prepaid Energy Offerings: Perspectives from Three Industry Thought Leaders,” Series of Regulatory Choices No. 6 at p. 6, Distributed Energy Financial Group LLC, Washington, DC, September 2011; U.S. Dep’t of Energy, “Bridging the Gaps on Prepaid Utility Services,” September 2015 (http://www.energy.gov/sites/prod/files/2015/11/f27/Bridging%20the%20Gaps%20on%20Prepaid%20Utility%20Service_0.pdf).

About the Author

Cindy 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. Ms. O'Dwyer works closely with the Prepay Energy Working Group, and DEFG's activities in consumer protection, legal and regulatory matters. For inquiries regarding this paper, Cindy can be contacted at codwyer@defgllc.com.

About DEFG

DEFG is a management consulting firm specializing in energy (<http://defgllc.com>). We believe that retail customers are the future of the energy industry. Since 2003, we have helped utility clients and other market participants create value in a commodity marketplace. In the rapidly changing marketplace of utility service, customer engagement is key to success, and our clients learn to better engage with residential and commercial customers.

About the Prepay Energy Working Group (PEWG)

Currently in its sixth year, the Prepay Energy Working Group sponsors in-depth research exploring the challenges and opportunities presented by prepaid energy offerings in North America. To ensure a broad spectrum of perspectives and experiences, working group members include utilities, energy retailers, regulators, consumer advocates, and metering and software solution vendors. For inquiries regarding DEFG or the Prepay Energy Working Group, contact Jamie Wimberly at jwimberly@defgllc.com.

The work products of the Prepay Energy Working Group do not necessarily represent the views of any participating organization, state regulatory agency, sponsoring company or individual participant.

APPENDIX: Prepaid Business Case Elements¹⁰

| Business Case Element | Impact / Benefit | Quantified? |
|---|---|---|
| Collections and revenue | <ul style="list-style-type: none"> • Improve debt recovery • Reduce outstanding debt • Reduce number of payment arrangements • Reduce extended due dates • Reduce collections costs | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. |
| Financial and treasury | <ul style="list-style-type: none"> • Change patterns of cash flow • Increase cash flow • Reduce interest payments on deposits • Improve credit rating | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. |
| Bill rendering and delivery | <ul style="list-style-type: none"> • Reduce paper billing • Increase “daily billing” (account balance adjustment) • Increase electronic bill payment and remittances • (Cost: increased messaging costs) | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. |
| Channel utilization and optimization | <ul style="list-style-type: none"> • Increase the use of mobile channels • Increase the choice of channel by consumers • Increase coordination with mobile payment approaches | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. |
| Customer contact center impacts | <ul style="list-style-type: none"> • Reduce calls to call center • Reduce complexity and frequency of call center contacts • Reduce deal-seeking behavior by consumers | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. |
| Field operations | <ul style="list-style-type: none"> • Reduce the number of shut offs • Reduce truck roll and other operations/resource needs to relating to shut offs | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. |
| Energy conservation/ EE targets | <ul style="list-style-type: none"> • Increase behavioral energy savings • Increase offerings in the DSM/EE portfolio | <ul style="list-style-type: none"> • Yes. Statistical analysis. |
| TOU/ dynamic pricing programs | <ul style="list-style-type: none"> • Increase the use of smart grid functionality • Increase cross marketing of prepay with TOU offerings | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. Plus qualitative. |
| Resource adequacy (long-term) | <ul style="list-style-type: none"> • Increase use of long-term energy savings that results from prepay as a resource | <ul style="list-style-type: none"> • Qualitative at this time. |
| Low income/ cash assistance optimization | <ul style="list-style-type: none"> • Lower consumer bills • Spread limited assistance dollars further | <ul style="list-style-type: none"> • Yes. Statistical analysis of bills (see EE). |
| Marketing | <ul style="list-style-type: none"> • Reduce churn in places where customers have a choice | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. |
| Customer satisfaction | <ul style="list-style-type: none"> • Increase customer satisfaction • Offer an additional bill payment option • Reduce customer churn where customers have a choice | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. |
| Employee satisfaction | <ul style="list-style-type: none"> • Reduce unpleasant interactions with customers • Increase employee satisfaction • Reduce employee turnover and training costs | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. Plus qualitative. |
| Regulatory | <ul style="list-style-type: none"> • Reduce customer complaints • Complement other regulatory requests • Improve relations with intervening parties and improve conversations about other offerings • Improve the dialogue with adversaries | <ul style="list-style-type: none"> • Yes. Compare to baseline metrics. Plus qualitative. |

¹⁰ Source: DEFG, PEWG “Business Case Conference Calls,” October 2014.