7/19/18

WG4

Three Ps Submissions

Compiled and Grouped into General Categories

(summarized and abbreviated; full submissions posted on WG4 shared drive)

1. Low and Moderate Income
    a. Utility Program Bundling: To streamline program delivery across utility divisions in order to present a comprehensive package of options individualized for each customer, ComEd and Ameren should explore ways to combine energy efficiency, demand response, voluntary pricing programs, payment assistance and other services for LMI customers. Offering a "bundle" of options which a customer can use to better control their energy usage will hopefully lead to efficiencies in program delivery and program enrollment. For example, customers who receive LIHEAP assistance or participate in the PIPP program could be given a free energy consultation that reviews utility programs and investigates what programs may be useful to assisting that customer. Enrollment could be done for multiple programs at one time in that consultation. Alternatively, those customers who apply but are not able to participate in either program could be prioritized for outreach and participation in utility programs. At a bare minimum, anonymous usage data could be combined with census data to identify high priority areas within a utility service territory for consultation events where combined program enrollment could take place.
    b. Low-Income Hourly Pricing Display: Initiate policies and pilot programs that better equip low-income customers with access to hourly pricing information by not requiring WiFi access, and doing so in a format that is more easily understood and actionable. For example, leveraging existing utility paging networks to send regular hourly pricing signals to display devices provided as needed to those low-income customers on hourly pricing.
2. Customers and Communities (general)
    a. Peer to Peer Energy Exchange: Allow individual customers to share their kilowatt hour savings from energy efficiency programs, credits from peak time rebate programs or generated capacity from investments in DER. For example, an individual saving 10 kWh from an energy efficiency investment could choose to pass those savings along to another individual in their community or donate to a pool to benefit LMI customers. Members of a community solar program could choose to donate their generation credits to the host site, such as a church, or share those credits with others. The goal would be to build investment in community energy planning as well as allow direct benefits to individuals or nonprofits.
    b. Peer to Carbon Trading Market: Utilities should explore how individuals interested in reducing carbon could trade credits or attributes associated with non-carbon generating resources.
    c. EE/DER Community Donation: Energy Efficiency policies and pilot programs allowing, for example, participants to redirect their own energy savings to specified community organizations, or allow rooftop and community solar customers to "donate" energy produced to specified community organizations.
    d. EE Trading: policies and pilot programs allowing customers to capture additional financial value from their assets by selling the carbon attributes, RECs, or kWh to interested third parties such as corporations, local governments, individuals, and/or non-profits. Under the current regulatory environment, an initial pilot program could begin with assets tradeable between peers, such as the carbon credits associated with Energy Efficiency measures.
    e. EE Opt-in for large customers: FEJA exempted very large customers, those with greater than 10 megawatts of demand, from the utilities' electric energy efficiency portfolio standard. [220 ILCS 5/8-103B(l)]. However, some large hospitals, and perhaps other public institutions, were unintended victims of the blanket exemption placed in FEJA, and may want to participate in EE programs. One possible

remedy would be to allow large users to opt-in to the utility efficiency programs. Changing this policy would require revising 220 ILCS 5/8-103B, and implementing a change effectively would require a process that gives utilities the notice they need to plan their program portfolios.

f. Primary Research of Non-Energy Benefits: As a result of FEJA, energy efficiency programs and base customer operations are more integrated concerns to a utility, however utilities are generally still structured to deliver them separately. Further, utilities may be discouraged from changing this structure because of how rates are currently designed. However, there are three major reasons why these customer experiences should be more fully combined:

   1) Customers don't likely know the difference between an efficiency program offering and their basic utility service. The business model of the provider should match the customer experience expectation, and where possible, the value proposition to the utility customer, the utility, and any third-party service providers should be aligned. (e.g., if a customer is induced to get an efficiency benefit because of a new program, the utility increases their revenue and reduces their pass-through expense, which benefits ratepayers. The new program provider needs to be compensated for providing the benefit, but only to the degree that it reduces ratepayer costs and doesn't increase the burden on the customer or utility).
   2) Providing a uniform benefit structure to a third-party service provider enables more efficient program delivery, as a service provider may be able to expand their features to provide more benefit if they can increase revenue without duplicating efforts or providing a separate experience.
   3) Utility pass through expenses such as uncollected accounts and arrears are still covered by ratepayers and when they are not valued in the same way as the rate base they may create a perverse incentive. There may be costs that are more effectively rate-based to prevent this, or there may be other ways to encourage reducing these costs.

   In order to accurately determine these costs and provide price signals for service providers to develop customer beneficial programs, they need to be studied and demonstrated. Currently secondary research conducted by third parties provides insight into their potential, but these benefits need to be better tracked and interventions properly researched to demonstrate value to the customer. Efforts to do so are in motion with the Illinois Stakeholder Advisory Group and should be aligned with NextGrid efforts. See http://ilsagfiles.org/SAG_files/Evaluation_Documents/Draft%20Reports%20for%20Comment/ComEd_EPY9_Draft_Reports/ComEd_Income_Eligible_Programs_NEBs_Secondary_Research_Report_Draft_2018-03-06.pdf for some thoughts on current efforts.

3. Billing, Pricing, Data Access

   a. Bill Smoothing for Hourly Pricing: Develop policies and pilot programs to help "smooth" monthly billing for utilities' hourly pricing customers. For example, utilities could explore additional ways to leverage customer AMI data to offer enhanced budget billing programs for low-income hourly pricing customers.

   b. Utility Time of Use (TOU) Pricing: Flat rate prices mask true system costs of making, moving and using electricity, which vary by time and location according to electricity demand. Time-variant pricing reflects the fact that electricity is more expensive at high-demand times and sends customers the proper price signal. When customers pay for the true cost of electricity at the time they use it, they better understand the financial and environmental impact of their usage and can choose to modify their behavior accordingly. Many customers can save money using time-variant pricing without changing their usage pattern. In addition to lowering electricity bills, TOU has the potential to reduce air pollution, improve grid resiliency, and optimize our use of renewable energy.

      Although Illinois has hourly pricing programs, customer participation is low. This could be partially because of price uncertainty. A TOU rate structure establishes a set price per kWh for particular periods. The Commission should study the potential costs, benefits, and other impacts of TOU rates.

That study should include the appropriate times for on-peak, off-peak, and potential super peak or super off-peak. It should also study how to set the appropriate prices for each period.

c. Hourly Pricing Program Enhancements to Reduce Monthly Bill Variations: Some low-income customers are not able to tolerate the monthly bill variability associated with hourly pricing programs. While budget billing is currently compatible with hourly pricing participation, program enhancements, such as a savings guarantee, marketing in conjunction with budget billing programs, or other mechanisms, can bring the potential for total savings to low-income customers while reducing or eliminating the risk of month-to-month bill fluctuations.

d. On-bill Finance Expansion: Utility on-bill financing programs have proven to be an effective tool to help customers manage the up-front costs of energy efficiency upgrades. It could also be a useful tool to help customers lower their energy costs by investing in low-cost renewables. On-bill finance could also be helpful to customers who would like to invest in water conservation measures. While NextGrid focuses on the electric sector, some customers are most aware of and engaged with their water bills. Allowing this program to assist with water conservation measures would likely bring awareness of energy finance mechanisms, in a very positive way, to a group of customers that may not otherwise engage with their energy utilities. Illinois should expand on-bill financing programs to allow customers to use them to finance distributed renewable generation systems and water conservation measures. Doing so would require changes to 220 ILCS 5-16/111.7 (electric) and 220 ILCS 5-19/140 (gas) and to ensure smooth implementation, the program's administrator would need to have some experience financing these systems.

e. OpenID Connect for Utilities: Green Button Connect provides a way for a customer to share their utility data with a third party in order to unlock beneficial services created by other companies. However, as it is currently implemented, Green Button Connect is not able to provide the best customer experience to deliver this benefit, and many customers will fail out of onboarding. Currently, in order to give permission to a third-party, a user needs to separately authenticate with a utility website to flip a switch and then be sent back to the third-party experience. This is clunky, and should be done with software instead of a user interaction. Many large services with similar sensitive data, such as banking, provide this functionality already. Encouraging a utility to become an OpenID provider would allow a third-party service to provide the utility as an authentication option. This has a dual benefit of making the experience more user friendly while keeping the utility's brand and control consistent with the current Green Button Connect approach and the current desire of utility commissions to allow a utility to maintain control of data and personally identifiable information (PII) of customers. Utilities could additionally or separately enable authentication through other OpenID Connect offerers such as Facebook and Google.

   We propose a project to study this issue and provide recommendations to the Commission on how to implement the approach. There are other ways to do it, such as simply expanding their existing OAuth2 capabilities to provide a more direct connection to third party services. However, OpenID may allow a utility to maintain its brand with the service while giving third party service providers the ability to provide their users with a better user experience. Examples of OpenID in practice include logging into websites with Facebook, Google, or Twitter. Information on OpenID: https://openid.net/developers/specs/

4. Planning and Policy

   a. Community Energy Plans: Current energy efficiency programs and renewable energy programs operate in silos – incentivizing specific technology or programs limited in scope, with no overlap in marketing, incentives, or economic impact.

      The development of a Community Energy Planning model would enable communities to organize around creating energy initiatives on a local scale, layering energy efficiency, distributed generation, resiliency, and workforce development programs and incentives into an agreed Community Energy Plan, opening the door to additional benefits in the communities themselves. Community Energy Plans would

help communities lay out the programs and paths that best meet their local needs, enabling outreach to and greater participation by residents and small businesses often left out of energy initiatives. Community Energy Plans would also allow communities to create a closer tie between transportation electrification, transit, and transportation alternatives, targeting shared infrastructure to community needs, particularly in communities where car ownership is not the first option. Statutory and regulatory changes should be considered to create a Community Energy Plan initiative that works within the new Energy Efficiency, Adjustable Block Program, Solar for All Program, and Community Solar programs, to allow communities to approve a plan to design and direct program investments in geographically targeted areas, and open the door for new electrification incentives.

This could create pathways for communities to create projects with complementary benefits, such as a community that works to pair a rooftop solar group purchasing project with a housing retrofit effort and a corresponding workforce development initiative. Or an environmental justice community that works with a local trucking facility to electrify its fleet, while investing in a community solar project to offset its peak demand impact on the local distribution system. It could even be a community that works through its schools to create community energy efficiency challenges, or a community economic development agency that invests in last mile electric shuttles to move more residents and visitors to mass transit.

b. Reduce uncertainty of SREC incentives for non-profit and public facilities: Examples of practical ways to achieve this may include (but are certainly not limited to) technical assistance programs to navigate project planning and budgeting, publicizing annual budgets for SREC categories (this category and others), and publicizing timelines for funding announcements and project submission deadlines as applicable. Many large governmental agencies have significant rooftop space, open areas, and electric loads that would make them good candidates for solar installations. However, they may lack the significant administrative capacity, budget flexibility, and capital planning flexibility required to navigate the development of a successful installation project. Timely availability of published SREC incentive levels could enable more public institutions to take advantage of this new FEJA program.

c. Implement Integrated Distribution Planning: IDC would broaden system planning to include more stakeholders and consider DER options in order to maximize value for customers and reduce system costs. (*Note: this is discussed in WG1 report)*

d. Mapping: Utilities publish maps where solar and other distributed resources at different scales would most benefit the system.

e. Study Applicability of Block Chain Technology: Blockchain is a system for maintaining distributed ledgers of facts and a history of updates and transactions. The technology reduces the need for third-party interveners and provides near real-time and immutable records replicated of transactions among all participants. As distributed energy resource markets grow in Illinois so too may the case for using blockchain to facilitate market transactions. The fact that the value/cost of delivering energy to customer is not static makes such transactions very difficult to model. Blockchain is good at assigning the true value/cost of energy over time and by location by utilizing smart contracts instead of post-event reconciliation. With blockchain, utilities or distribution system operators can identify participating distributed energy resources on the network, determine what those resources can contribute to future energy management events, and assess the value of the contribution quickly after the event.

   ICC should hold a series of workshops to educate stakeholders on the blockchain technology and its application. The goal of these workshops will be to explore and define the best use cases for this technology and, possibly, develop pilot projects with the aim of facilitating more efficient, scalable, and accurate integration of distributed energy resources.

f. Explore expanding the data sharing capability of utilities and demonstrate the benefit through one or more sandbox pilots: Data sharing with third party service providers currently follows a one-way data dump approach, providing data to third parties once per day data on the users they have permission to reach. This is in line with the current limitations of most utility backend services, which were built to deliver billing on a monthly basis, and also allows the utility to review data for integrity before creating a

bill. There are benefits to testing more real-time capability before enabling the capability for all customers, as there are significant cost increases with managing larger amounts of data. The benefits of providing this information by a utility may not be outweighed by the costs.

Allowing a utility to offer this level of granular data to a third party in a sandbox (an isolated software testing environment) for a small number of customers may enable fully demonstrating the benefits to inform the Commission about the costs and benefits of providing more granular data to customers without requiring them to purchase and install a separate in-home smart meter connected device. This also allows developers to experiment with real data, which speeds up product development and reduces the time to market for new products. This initiative could be tagged on to the existing Green Button connection, but would require upgrades to the existing Green Button Connect service at a cost to the utility or ratepayers.

5. Engagement, Empowerment, and Behaviors
    a. Customer Study: Conduct a robust empirical study to better learn what customers want after being properly educated on the possibilities of emerging business models and technology; explore possible segmentation or broader market structure and business models to give customers different, simple options based on what they want and can afford; but importantly, consistently nudge them (while still providing options) in directions that create benefits and savings for all.
    b. Better Protect Consumers: The Illinois ARES market has been tarnished by bad actors which take advantage of customers. Energetic enforcement of stricter standards for marketing, sales and service for essential energy services should be the norm.
    c. Create utility online marketplaces featuring an energy efficiency scoring system: Because consumer products have multi-year useful lifetimes – as high as 10 to 20 years for most of the major end-uses, like domestic appliances, HVAC equipment and LEDs – purchasing inefficient products is costly to customers. Data and analytics are available to make efficiency visible and actionable. Market transparency largely eliminates the need for mass market incentives on energy-using consumer products and can be accomplished by employing a utility online marketplaces featuring a dynamic, zero to 100 energy efficiency score on every energy-using consumer product (from appliances to vehicles) The market transformation opportunity presented in this proposal requires full product market and retail offer data and cannot be captured by the type of simple ecommerce site currently operated by ComEd.
    d. Pilot Daily Load Management Programs: Connected devices are key to providing daily load management and Illinois consumers would benefit from the following program design principles when considering their use for daily load management:

        1. The customer should be in control of device automation.
        2. Customers should be able to bring their thermostat data back to the utility to be integrated into the customer experience. Coupling AMI with thermostat data could provide a more targeted and impactful insight on energy management for the customer.
        3. Interoperability among devices, load management technology, and the utility system should be required.
        4. Behavioral nudges achieved through personalized coaching should be viewed as a load management strategy.

        Pilot programs should use behavioral nudges as well as load control through connected devices. Also, expansion of programs relying on If-This-Then-That (IFTTT) technology as a means of achieving customer-centric load management. The interoperability of this technology provides a pathway for ultimately integrating demand response management systems into utilities' automated demand management systems and, ultimately, into a single dispatch network management system.
    e. Study Daily Load Management: While piloting daily load management programs, utilities should study the cost impact on their operations, capital costs, and customer bill impacts. Utilities should work with stakeholders to design this study and consider non-energy benefits in addition to avoided energy costs.

In particular, the study should identify the cost impacts of reducing peak consumption by incremental amounts.

6. Transportation Electrification
    a. Hourly Pricing Program Enhancements: Charging behaviors will determine whether EVs support the grid or have negative impacts. Hourly pricing programs provide one mechanism to incent customers to charge at times of low demand. Additional marketing and outreach efforts should target EV owners.
    b. EV Managed Charging: Electric vehicles have the potential to lower electric rates for everyone if their contribution to fixed system costs exceeds the overall incremental costs of serving them. However, EVs also have the potential to increase system costs if their usage primarily occurs during peak times or creates new peaks. Incentivizing charging to off-peak times and managing charging to avoid ramping issues will ensure beneficial electrification that lowers bills and creates environmental benefits.

        Managed charging could be designed to take advantage of pricing programs and/or other incentives and provide system benefits with little to no effort on the part of EV owners. Customers with smart electric vehicle charging infrastructure (smart chargers) or equipped vehicles could opt to allow a utility or third party to activate charging at the most beneficial times and to adjust charging loads based on real-time circumstances.

        Designed and incentivized properly, policies could turn electric vehicle charging into a flexible and manageable distributed resource that can improve the system load shape, reduce carbon pollution, and save customers money.
    c. Street Light Charging: Many potential EV owners do not own a garage or have access to electricity where they park their car. Customers may live in an area with only street parking or may have a driveway but no garage. These concerns are more prevalent in dense, urban areas, and for residents of multi-family housing. Street lights present a significant opportunity to expand charging access at a marginal cost. Street lights are near the street, have electric connection already, and are dispersed plentifully. New street light systems can incorporate simple pay-per-use Level 1 connections that can be inexpensively added to many poles. With the shift to more efficient LED streetlights, there is likely significant existing capacity on street light electric distribution networks to accommodate the charging of vehicles at low power.

        However, street light electricity (or assets) are often charged on a separate rate structure, if served by the utility, or provided free to a municipality and recovered through a franchise fee. The Illinois Commerce Commission can study how to work within these rate structures or franchise agreements to enable cities a cost-effective new option to support transportation electrification for all their residents.
    d. EV Charging Coordination: Require utilities to create publicly available maps or mapping tools that indicate to what extent grid infrastructure is sufficient to support high-powered EV charging infrastructure at different locations. This information would enable prospective EV charging station hosts to estimate necessary infrastructure upgrade costs by location and plan for cost-effective siting. The tool could also serve as a platform for tracking planned installations so that multiple hosts could coordinate if beneficial.
    e. Modify Class Definition to Support Transportation Electrification: Define a new class -- the equivalent of the "railroad" rate class for public transit electric rail fleets – for public transit electric bus fleets. The railroad rate class has historically received a discounted demand charge ("distribution facilities charge"), in part based on the fact that electric rail transit service provides public benefits. It is an affordable, low-emissions transportation mode that encourages compact development. Public transit electric bus fleets provide the same benefits. This concept could be broadened to other public fleets (i.e., non-transit public fleets such school buses or emergency response vehicles).

General Comments and Views:

1. Throughout this process we must keep in mind that customers and communities throughout Illinois are hurting as their cost of living increases and wages remain stagnant. The natural monopoly caused by delivering this

essential service through a single distribution system is unlikely to dramatically change in the near future. And while utility rates should not be set at their absolute minimum and forego benefits to customers and the public interest, the public interest requires that future efforts do a better job at empowering customers and empirically ensuring realization of customer benefits and the delivery of promised value.

2. Ground future policy changes in empirical analysis and benefits with a robust and ongoing Cost Benefit Analyses to ensure the delivery of value to customers.
3. Future regulatory changes should do much better at ensuring—or in some cases even guaranteeing—the accrual of empirical customer benefits. Recent legislation amending the Public Utilities Act has been lopsided in how it treats the companies and customers. While this NextGrid process should not be about re-litigating the past, the past can be helpful in illustrating ways we can improve on Illinois' past efforts.
4. Making the ICC more than a rubber stamp: Leading up to the passage of the 2011 EIMA modernization law the ICC warned that the formula system flips the burden of proceedings from the utility to the Commission and stakeholders. Since then the level of scrutiny applied to utility programs has been insufficient or the Commission has believed itself too hamstrung by statue. The ICC should be actively protecting the public interest as the utilities and markets cannot flourish without strict oversight and leadership. Future legislation should include robust oversight of the utilities, ARES, and other third parties and include the funding and staff expertise to properly regulate this essential service in the public interest of Illinois.
5. Rather than offer programs or policy ideas that advance the interests of DER proliferation, electrification, and the availability of smart grid data, we instead encourage the report focus on how it maintains the below policies/principles for customers. Any programs or policies that come from this report should focus on ways that customers can adapt to the implementation of new technologies, rather than prescribing their onboarding.

Competition in energy rates and programs

We appreciate the ICC's efforts to ensure Illinois remains competitive in the 21st Century. With that, we need to also ensure that while Illinois strives to provide electricity efficiently and responsibly, it maintains its leadership of competitive energy costs. Competitive electricity rates in Illinois help retain businesses and leads to economic growth. We encourage the Commission to be continually mindful that energy costs are vital to the competitiveness of energy-intensive industries, such as manufacturers, hospitals, and data centers, and are critical to economic development statewide. Programs should not adversely impact businesses' ability to manage costs and make investment decisions. With that, any new programs must be pilot tested, subject to competitive RFP's, open to the private sector to provide, and economic impacts studies should be conducted to determine the impact on all customer classes. It is also important that any activity by the state not interfere with technologies, services, or programs that can be competitively provided by the market.

Market-based Solutions that Promote Competition

We encourage this process to prioritize market-based programs and policies to drive competition, and ensure a level playing field for all market participants. If the market is solving a need or a void, or has the ability to solve it, let it. The report should encourage promoting competition among energy and technology resources and not facilitate the success of any one type over another. The more access we have to affordable energy, the more opportunities we as a society have to advance ourselves, grow our economy and care for our planet. Legislative or regulatory mandates impede the functioning of competitive markets and can raise energy costs needlessly. We encourage this process to continue ensuring that Illinois' energy market design promotes competition to safeguard efficient market outcomes that deliver reliable, affordable electricity to customers.

Customer Perspective vs. Resource Perspective

Maintaining the strength of the grid is critical to providing customers with affordable, reliable, and safe access to electricity. This report should not prescribe that the state look at how customers can adapt to the use of DER proliferation, electrification and access to smart grid data, but instead how customers can adapt to any new technology and what framework should exist to maximize the benefit to the customer. That framework should include, but not limited to, examining how a technology could impact each customer class; what the cost implications could be to the customer; ROI and service improvements; and security and reliability implications. The priority should be maintaining the reliability of our grid infrastructure to the benefit of the customer.

Adaptable

The ICC's grid resolution stated that the State needs to have a regulatory process that can evolve and adapt to new innovations. That should be a key tenet to any policy or program that State implements. The recommendations set forth should be adaptable so unseen technological changes, new energy resources, and environmental considerations are not unfairly prevented from participating because the resulting recommendations were too prescriptive.