

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the
Commission in regard to
Reforming the Energy Vision

Case 14-M-0101

COMMENTS OF THE MISSION:DATA COALITION
SECOND TECHNICAL CONFERENCE REGARDING CUSTOMER AND AGGREGATED
ENERGY DATA PROVISION AND RELATED ISSUES

1. **Introduction**

In a number of fora before this Commission, The Mission:data Coalition (“Mission:data”), a national coalition of more than 35 technology companies, has articulated its support for empowering consumers with convenient access to their energy data and the ability to share that data with third parties of their choice as a critical step to advance key objectives of the REV initiative such as animating markets, promoting distributed energy resources (“DER”s) and realizing value for consumers.

On January 20, 2016, the Commission hosted a conference to discuss best practices regarding customers’ access to their own energy data, as well as to discuss potential adoption of the U.S. Department of Energy’s DataGuard Program. The *Notice of Second Technical Conference Regarding Customer and Aggregated Energy Data Provision and Related Issues*, dated December 23, 2015 (“Notice”), invited parties to provide information about the best practices other states and utilities have adopted to ensure that consumers realize the full benefit from access to energy data. The original deadline of February 5 was extended to February 19. While Mission:data was not able to participate in the Second Technical Conference in person, Mission:data is pleased to share its experience as to best practices and privacy protection in response to the questions posed in the Notice.

2. Comments

As with our comments to the first Technical Conference, Mission:data focuses on questions addressing consumers' data access to their *own* energy data:

Q. What are utility best practices in the U.S. regarding providing customers with access to their own energy data in a manner that customers understand and which facilitate an informed purchase decision? What information, tools and assessments are available for residential customers? Under what conditions should utilities charge for providing this information, including raw data, analysis and assessments?

A number of jurisdictions and utilities across the country have developed best practices to ensure convenient customer data access in a manner that animates markets and promotes innovation. As the Commission knows, there are two distinct interfaces by which data can be provided to customers: (1) historic (interval) usage, bill, and tariff data provided by utilities to third parties such as DER providers, preferably through a national standard format and RESTful web service such as "Green Button Connect My Data," also known by its technical name, the Energy Services Provider Interface ("ESPI"), a principal advantage being that consumers can obtain data and energy saving tools automatically without having to purchase equipment; and (2) real-time data provided through the Home/Premises Area Network ("HAN") radio contained in the smart meter and provided directly to a consumer, typically a gateway or other HAN device capable of receiving the signal from the consumer's meter. Our comments address best practices with respect to both interfaces.

As a preliminary matter, Mission:data strongly believes it is critical to avoid imposition of any utility charge or fee for standard usage, cost, and tariff data made available to consumers and third parties of their choice. A large part of the total value proposition of advanced metering infrastructure ("AMI") – perhaps 40% of the total benefits of AMI -- represents consumer value from demand-side savings, and the IT improvements needed to provide customers access to their data represent a small fraction of the total cost of an AMI deployment. Before implementing AMI infrastructure, data access through RESTful web services, better access to machine readable meter readings, cost, and tariff data will start removing costly and time consuming obstacles to energy benchmarking and measurement and verification.

Charging consumers or third parties for data when ratepayers have already shouldered the cost of AMI will deter consumers from adopting data-enabled technologies -- essentially

reintroducing costs and frictions that technology has largely eliminated -- and put third parties at a distinct market disadvantage compared to utility-provided offerings. Consumer access to meter data should be provided as basic utility service, without charge to consumers, as is the case in states like California, Colorado and Texas.

Mission:data is encouraged that the Consolidated Edison (ConEd) representative clarified on the record that ConEd's intent is to offer Green Button Connect: "Green Button Connect will help us -- as part of our plan, to ... connect with third parties on a machine-to-machine basis" and that ConEd will provide "a base set of data for no charge... that data will likely be hourly day-to-day behind."¹

As to the granularity of data provided without charge, Mission:data notes that Texas has required 15-minute meter intervals and urges that as more granular data becomes available it should also be made available to consumers without charge. This decision as to the granularity of data to be provided as basic utility service is critical to market animation and enabling the development and scale of cost effective energy management services for consumers. First, the interval provided should be enough to enable a third party to reconstruct the customer bill. Second, it should match the interval required by NYISO to settle demand response transactions. Finally, it should be at least as granular as the interval used for demand charges. For example, if demand charges are based on 15-minute interval usage, interval data provided through the meter should be at least as granular as 15 minutes so that consumers can access affordable products to avoid or reduce demand charges.

An additional consideration is that the granularity provided should support techniques such as disaggregation – the use of algorithms to determine what devices in the home or building are being used. Disaggregation represents a key tool in supporting more powerful energy savings. Hourly data supports only the most basic disaggregation: shorter intervals enable disaggregation of appliances at greater detail. (The most powerful data for disaggregation is the usage data provided in intervals every few seconds, typically through the HAN.)

With respect to current best practices for data access through either of the interfaces described above, Mission:data recommends adoption of the following best practices:

a. Best practices to enable access to interval data

¹ Transcript of Technical Conference held January 20, 2016 in Albany, NY, page 75.

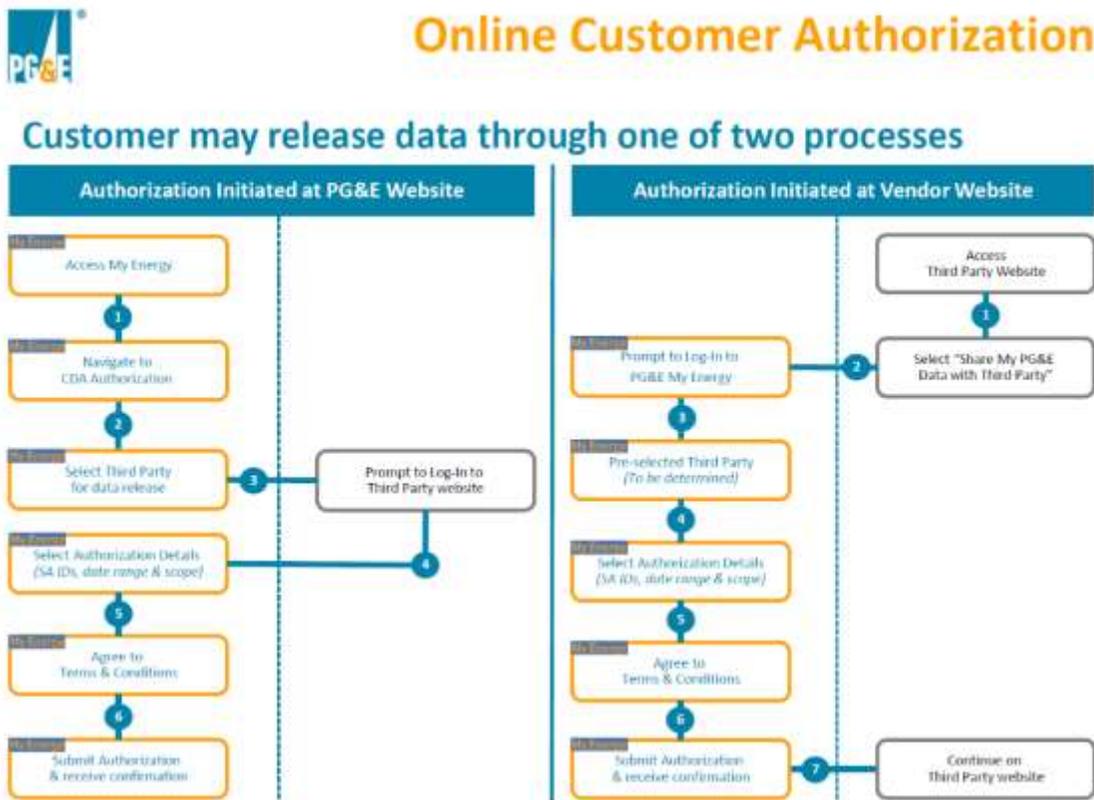
i. Establish a simple registration process. Because market animation depends on lowering barriers to market entry, the third party “registration process” -- the process for determining a third party’s eligibility to receive interval data on behalf of consumers -- needs to be simple and avoid putting the utilities in a “gatekeeper” role or imposing liability on them once a consumer has authorized data sharing.

The Commission should establish the rules governing third party eligibility to receive interval data. Mission: data recommends adoption of rules similar to those used in California, initially proposed by Southern California Edison, which require simply that third parties provide each utility (1) the third party’s basic contact information; (2) an acknowledgement that the third party has reviewed the Commission’s privacy rules; and (3) a demonstration of the third party’s technical capability to interconnect with utility systems for securely receiving the data. Further, no third party may receive data if it is on a Commission list of third parties barred from receiving such data. These simple rules promote innovation and vigorous competition that will afford consumers wide choice.

ii. Enable simple customer authorization processes. The authorization process -- i.e., the process by which consumers authorize a utility to share their energy data with a specific third party of their choosing -- should be as convenient and simple for the customer as possible and accommodate multiple processes: via the utility’s website, telephone, email and text message. The easier it is for customers to engage with DER providers, the more animated the marketplace will be. In addition, if the Commission wishes for customers to be apprised of their rights to rescind authorization or file formal complaints against a third party, the Commission should issue standardized authorization language that all utilities must display to customers, as is being developed in Illinois. Variations in authorization language or vagueness in Commission orders will inevitably lead to implementation problems and utility reluctance to proceed.

The best practice of ESPI’s authorization process allows for two possibilities. In the first case, the customer visits the utility’s website, logs in with his/her credentials, selects a third party from a list of registered companies, and clicks to authorize that third party. In the second case, the customer begins at the third party’s website, logs in with his/her credentials with the third party, clicks a link that says “authorize your utility company here” (or something similar), is

redirected to the utility’s website to provide a login and password, and then is returned to the third party’s website to complete the process. This latter case is similar to how Facebook, Twitter, LinkedIn and other services provide a user experience for simple authentication and authorization with third party websites. It is important to note that these two cases are equally secure – one is not inferior to the other in terms of security or authenticity. A flow diagram outlining these two cases is provided below by Pacific Gas & Electric, having recently enabled its ESPI functionality.



At a minimum, the Commission should require utilities to implement both of the scenarios described above for ESPI. ESPI is standardized, and these two methods are in practice throughout the state of California today. It is reasonable to expect the same authorization processes to exist in New York.

The best practices of authorization processes include non-web-based methods as well. An authorization on paper could still enable a third party to access usage data through ESPI, for example; web-based authorization and ESPI are not incompatible. Paper-based authorization

processes might be necessary to accommodate customers without computers, certain business customers, or others who do not have an online utility account established. One can imagine any number of authorization processes involving faxes, text messages, or emails in which customers affirm their intention of sharing usage data with a third party. What is important is not so much the medium (paper, fax, text, etc.) but rather that the customer's identity is reasonably determined. If the utility has the customer's cell phone number on file, then texting a four-digit temporary key to the cell phone could be used to establish identity. (In that case, the customer would enter the temporary key in the third party's website, and the third party would transmit the key to the utility for validation.) Therefore, while we encourage the Commission to require, at a minimum, the utilities to implement the ESPI authorization processes described above, we believe there are other methods that can and should be sanctioned that provide flexibility to different customers while assuring that the authorization is not fraudulent.

Finally, Mission:data notes that Commission rules should envision continuing improvements for customer convenience: for example, the process should be flexible enough to allow customers the ability to authorize multiple accounts and meters at one time. And the imposition of arbitrary limits on the period of authorization should be avoided so that the authorization may last as long as the customer desires to use the service without risk of interruption, as California and Colorado permit.

iii. Allow third party led authorization. To make things simple and convenient for consumers -- essential to the scaling of energy management and realization of large-scale energy savings -- third parties should be able to lead the authorization process on behalf of a customer. In other words, a third party should be able to present a utility with information about a customer (name, address, account number, etc.) and the customer's authorization, and those two elements should be sufficient to gain access to usage data.

One of the barriers to market animation in several other states is that the authorization process is clumsy and difficult when utilities have no incentive to make it simple. Third parties, on the other hand, have every incentive to quickly and easily sign up new customers. It therefore makes sense for third parties to be able to present a customer's consent to the utility on the customer's behalf. For example, the utility could create a location on its website where

registered third parties that provide customer identifying information (information which could not be obtained *without* valid consent, such as the combination of zip code, account number, etc.) are immediately authorized and begin receiving data via ESPI.

Third party led authorization has been adopted for retail energy providers in Illinois and other states. The challenge for Commissions with respect to third parties not subject to Commission regulation involves how to ensure that third parties do not violate customer privacy or misrepresent customer consent. In this regard, Mission:data believes that the models provided through the U.S. Department of Energy’s Data Guard program or through regulatory solutions such as those adopted by California, which contain similar privacy protections – whereby the Commission can enforce rules through its power to direct utilities not to share data with third parties engaging in a pattern or practice of violations – are worthy of the Commission’s attention. These are discussed in more detail below.

b. Best practices to enable access to real-time data. To ensure that customers have the option to receive real-time data through the HAN, utilities deploying AMI should immediately offer HAN functionality using ZigBee, certified by the ZigBee Alliance. Independent certification by the ZigBee Alliance is important because adherence to the standard ensures technical interoperability. ZigBee is widely adopted and used in California, Illinois, Oklahoma and Texas, and we note that the AMI vendor recently selected by ConEd and Orange and Rockland Utilities – Silver Spring Networks – provides this capability. Other proprietary radios or protocols should not be relied upon for the HAN, as they severely limit the choice of consumer devices. Furthermore, the ZigBee radios contained in the meters should be delivered with all of the necessary firmware and security certificates to function in the field as soon as possible after deployment.

Furthermore, with respect to enabling customers to receive real-time data through the HAN, Mission:data recommends that the device “pairing” process is easy for consumers and that the testing and certification process for HAN devices should be centralized and streamlined to minimize barriers to entry.

i. Centralize device certification. A HAN device should be able to work if a consumer moves to new utility territory in the same way that a Bluetooth device adhering to national standards can be used with any phone, anywhere. In states early to adopt smart meters

with HAN radios, the challenge has been that there is no centralized testing and certification process, leaving utilities to individually test and certify a multitude of devices, an unnecessarily repetitive and costly process. (Some testing labs charge \$6,000 per device, a very expensive proposition for vendors who must certify each version of a HAN device, and sometimes for each firmware upgrade.)

The obvious solution is for a nationwide testing and certification process that is honored by every utility, and, in the absence of that, a single, state-wide testing and certification process honored by each of New York's utilities. The California Commission directed the utilities to collaborate on just such a process. New York should do the same. Mission:data recommends coordination with the commissions of California and Illinois to the extent practicable so that a single, uniform process can be implemented.

ii. Make it easy for consumers to pair devices. It is critical that customers who purchase a gateway or other HAN device be able to easily “pair” it with their own meter so that it can receive real-time usage data. The goal should be to enable instantaneous pairing with a self-service portal on the utility website. Rather than waiting days or weeks for a utility to process a form, the customer should be able to instantly connect any HAN device of his/her choosing and begin using it immediately. This is critical to achieving broad adoption and scale. In California, utilities have been required since January 2015 to support an unlimited number of HAN activations and PG&E in particular has embraced a self-service process through its website. In Illinois, Commonwealth Edison is currently using a manual process whereby the customer must phone the utility, but expects to transition to an automated process as well. In Texas, a single web portal (www.smartmetertexas.com) was established to enable self-service pairing by customers throughout all competitive areas in the state.

Furthermore, utilities should be required to provide an Application Programming Interface (“API”) for DER providers to pair and manage HAN devices on behalf of their customers. If a solar installer, for example, provides HAN gateways to its customers, that solar installer should be able to automatically request pairing by making an API call. With potentially dozens or hundreds of customers going solar every day, an automated API will be essential to streamlining this process.

Q. Do existing practices and tools regarding customer-specific usage information provide customers, as well as vendors, receiving usage information with customer authorization, accurate information in a timely manner, and if not, what improvements can and should be made?

Real-time data read directly from the meter via the HAN provides the same quality of data (and in fact can provide much more granular data) as that read by the utility via the AMI network. As to interval data, Mission:data points the Commission to our discussion on Page 2 as to the need for intervals supplied to support disaggregation and critical services such as enablement of customer demand response.

As to improvements that can and should be made, Mission:data has previously urged the Commission to provide customers and third parties with access to tariff and bill data in an electronic format, through the same web service gateway as meter data. Customers do not find presentation in kilowatt-hours compelling. Instead, they want to know how much money they will save. Access to tariff and bill data is important so that services can provide information to consumers on the exact bill impacts of their energy decisions. Currently, bill data is either entered manually, or machine readable bill data is reverse engineered by scraping pdf bill images, retrieved by companies authorized by customers to automatically log in to the utility provider's website with their own login and password. Not only are these ways of retrieving data not cost efficient, they are also prone to error. Additionally, customers should not have to share their own login info to give consultants access to utility bill images and usage history, as is currently the case. The solution is a portal for third parties that does not include customer banking information. Customers should be able to delegate access to third parties and manage permissions from either their own online account or through the third party-led processes described earlier for data retrieval via RESTful web services.

Q. As the Commission considers how its privacy requirements should be revised to reflect technology and market changes, should the Commission adopt the U.S. DOE's DataGuard program as high level guidance regarding data privacy?

Facilitated by the Department of Energy's Office of Electricity Delivery and Energy Reliability and the federal Smart Grid Task Force, and developed by a working group that included AEP, Southern Company, Edison Electric Institute, Green Mountain Power, and Xcel

Energy, the DataGuard program is a voluntary standard intended to provide “customers with appropriate access to their own Customer Data” and assurances that utilities, their contractors and third parties will protect the privacy of consumer personal information and individual energy use.

DataGuard provides a mechanism to ensure that third parties authorized to receive customer usage data from utilities -- but who are not themselves subject to commission jurisdiction -- can be required to abide by basic privacy rules and be held accountable for violations. DataGuard encompasses the Voluntary Code of Conduct (“VCC”) including five high-level requirements that

- (1) the customer be provided notice and awareness of how his or her customer data (“Customer Data” is defined as a combination of individually identifiable data and usage data) will be used and shared;
- (2) the customer have control of her Customer Data and the choice to share Customer Data with third parties via a consent process that is “convenient, accessible, and easily understood” and free of charge;
- (3) the customer should have access to her Customer Data and the ability identify and have corrected possible inaccuracies;
- (4) Customer Data should be accurate and secured against unauthorized access; and
- (5) Utilities and third parties commit to enforcement mechanisms to ensure compliance.

Under the Data Guard program, third parties voluntarily agree to abide by the VCC principles in the collection, handling and disposition of Customer Data. Third parties who violate these public commitments are subject to enforcement by the Federal Trade Commission or for claims of misrepresentation or unfair business practices under state law.

Generally speaking, the VCC principles of empowering consumers with access to their own energy data – and choice about whether and with whom they share that information -- is consistent with the growing trend in privacy rules to give consumers access to the information collected about them. At the technical conference, concern was expressed that aspects of the DataGuard principles are vague and in need of further refinement. Mission:data agrees that some of the principles would benefit from clarification, but notes that DataGuard is intended to “provide companies with a consumer-facing mechanism for demonstrating their commitment to

protecting consumers' data and thus increase consumer confidence.” Mission:data does not believe it should be treated as a regulatory tool or that adoption must be a pre-condition to access through Green Button Connect.

As a general recommendation, Mission:data urges the Commission to avoid unique privacy requirements that would delay data access or add unnecessary costs to solutions developed for a national market and develop approaches consistent with those adopted in other states like California or Colorado. With respect to enforcement, the Commission may wish to also consider the approach adopted by California which provides that any third party engaging in a “pattern and practice” of violating privacy rules risks loss of its ability to access utility data by virtue of the Commission’s oversight over utilities.

In California, an enforcement framework² establishes that utilities and third parties receiving data: (1) must provide consumers meaningful, clear, accurate, specific, and comprehensive notice regarding the collection, storage, use, and disclosure of individually identifiable energy usage information, (2) must disclose to consumers each category of covered information collected, used, stored or disclosed by the covered entity, and, the purposes for which it will be collected, stored, used, or disclosed, (3) must provide to customers upon request access to their covered information, (4) may share, with few exceptions, individually identifiable covered information only with customer consent, or under a “chain of responsibility” approach whereby parties that receive covered information may disclose such information without consent to another party only for a primary purpose and only if the contract requires that party to adopt restrictions no less restrictive than those adopted by the providing entity; and (5) must ensure that the covered information they collect, store, use and disclose is reasonably accurate and complete and use reasonable safeguards to protect it.

The rules do not regulate the consumer’s own decision as to with whom to share data, and the rules do not hold the utility responsible for policing the acts of entities who receive information. But the Commission holds a huge stick to ensure compliance: the Commission can order utilities to terminate data sharing with third parties who the Commission has found exhibit a “pattern and practice” of violating privacy rules.

² California Public Utilities Commission (CPUC) Decision 11-07-056

One last point is that if the New York Commission were to reconsider implementation of a data exchange as proposed in its Phase 1 Straw Proposal, it would need to ensure that participants who access data through such an exchange can be held accountable if they misuse customer data. In such a case, the Commission might consider participation in the Data Guard program as an option to direct regulation for third parties desiring to participate.

Q. What other issues regarding access to customer and aggregated energy data by ESCOs, other vendors of DER products and services, and other third parties for the purpose of furthering REV objectives, should be considered by the Commission at this time?

Data quality is important to facilitate new products such as demand response. In California, initial decisions such as D 13-09-025 did not address data quality in detail. IOUs are required to notify third parties whether customer usage and pricing data is, or is not, revenue quality. “Revenue quality” is generally understood to mean the usage readings that are used to generate bills. Data become “revenue quality” after the validating, editing and estimation (“VEE”) process.

Unfortunately, the Commission’s lack of specificity regarding data quality, and the IOUs’ resulting regulatory filings documenting their ESPI implementation, led to protests by Mission:data. The IOUs explained that backhauled data from the previous day are not necessarily revenue quality right away, but rather bills must first be generated in order for data to be deemed revenue quality. The problem for third parties was that settlement of demand response or ancillary services with the Independent System Operator (“ISO”) require revenue-quality data. If the IOUs did not provide revenue-quality data through ESPI, then an entire class of services that save ratepayers money and that were originally envisioned as consumers of data through ESPI would be jeopardized.

The issue of revenue quality has yet to be definitively resolved by the Commission, but the IOUs have filed their responses to the protest. We would like to draw the New York Commission’s attention to PG&E’s amended advice letter dated August 14th, 2014, in which PG&E (i) pledges to use the “Quality of Reading” (“QoR”) flag in the ESPI specification, with a QoR value of 19 to mean “revenue quality”; (ii) will transmit any data updates automatically to authorized parties; and (iii) affirms that third parties can request historical data multiple times (in order to get the highest-quality data possible) at no charge. In particular, we would draw the Commission’s attention to Attachment 2 of PG&E’s amended advice letter, because it contains a

