



Working Group 2: Metering, Communications, and Data

Meeting No. 2 “Data Overview”

March 26, 2018

Meeting Summary

[Note: descriptions of presentations and discussion are condensed summaries and paraphrases]

NextGrid Working Group 2 Leader: Matthew Olson, assisted by Chris Raider

NextGrid Senior Facilitation Consultant: Annette Beitel

Agenda Item I: Opening and Data Overview

Working Group Leader Matt Olson opened the meeting and welcomed participants. The main topic of discussion in this meeting is data and information, and how it may be used.

Mr. Olson recapped last meeting’s discussion on metering:

- Want to make sure we are not just a group think. The focus is on capturing points of agreement, disagreement, or in middle. We are not tasked with solving disagreements. This is very important to understand going forward.
- The working group previously engaged in a great conversation on “what is a meter?” Understand that the meter is changing. Sensor on the communications network. There will need to be more communications - talking to more devices behind the meter - possibly into one homogenous network.
- Today we are set up to talk through Zigbee chips to devices in the home – in the future, some devices might be directly participating in mesh network. Outstanding question – how is that communication is going to get embedded there. Will there be a socket that module goes into, pre-done with manufacturer, or Ethernet device/port?
- What should we be driving in standardization process. This will take a while. There should be an open, common, consistent good way of moving forward.
- Customers must like the technology, the experience, and the services offered, while offered at a reasonable price. The next question then becomes whether that new technology is a want or need?
- Challenges –
 - Consumer education – share the benefit and the why.
 - Data and who owns it?
- Unanswered Questions

- Is there an unfair market advantage by the regulated utility building out infrastructure if using it to offer retail services? Should this technology and the implementation be something owned by regulated utility, or be unregulated and financial transaction between regulated and unregulated? If offering retail service, doing it with technology, building out that technology as an asset owned by regulated business, would that give your service offering unequal advantage over unregulated?
- How centralized is this infrastructure? Metering? Utility owned devices/com network/metering? Or way more distributed and coming in 6 different ways – internet, other channels, AMI mesh. (*Communications will be discussed at the next meeting.*)
- How do we trust and manage trust of devices? Do we trust things that aren't in meters? How to establish trust? Metering application on network, and participating in communications network? Ex. talking to a thing vs. a meter. I know it is your meter, I trust metering code hasn't been altered.
 - Do we think we can establish that trust?
 - Must be a standardized way. Certification process on network – whether IP addressable application. Various pieces of proving and vetting of devices. Sounds like it's a standard based, or at least a process to vet and accept devices.
 - True for communication standpoint, what about metering? How do I go about trusting that thing as a meter? Brought into lab and ran test and know it is not missing electrons that go by?
 - Comparable certification process – ZigBee – certification process to validate compatibility with network. Whether meter or direct to network, need a handshake.
 - Certifying Tesla wall. Compatible, revenue meter. EV side, and charging stations. Sub metering standards. Devices under NIST—treated as a gas pump. Fall under gas pump or C12 revenue standards?
 - We cannot regulate the hardware and certify the standards. Apps are what customers choose.
 - We can certify it, and know that it did function today to pass certification, but how to maintain integrity of meter (seal) – how to do that when rely on Tesla's code or ChargePoint's code, or Iphone code? Rate at which they change their code is faster than we get around to certify things. See that maybe metering code gets digitally signed and don't mess with code, just see it show up in Tesla charging wall release.
 - We sample meters we own and test for accuracy. It is a big leap to go test a meter we don't own.
 - Benefits for public municipalities and co-ops. Ex. when public EV charging takes off, street lights may be able to dim and move around by using the nodes as the metering point.
 - What about devices connected directly to the grid? Are there different requirements or certifications? Streetlights are not metered. Power is flowing. What certification is needed. Maybe different certification levels are needed.

- Metering data will not just come through AMI network or metering communication network. Going to be other communication paths. Ex. – the internet and vehicles.
- While we talk about communication outside of utility network, it cannot be a barrier for the customer.

Agenda Item 2: Ameren Current State Overview

Presentation by Joe Solari, IT Director – Smart Grid technologies, Ameren Illinois

- *See presentation.*

Agenda Item 3: ComEd Current State Overview

Presentation by Dave Doherty, Director AMI Implementation, ComEd

- *See presentation.*

Agenda Item 4: Working Group Member Discussion

- It is difficult for commercial and Industrial customers to receive and review their data. Ex. CTA metering, challenged with various metering locations under one bill. How do we continue to improve data access to these types of customers? Or what about customers who move in and out of high rise buildings?
 - Substation meter is a different system. Meters used for real time control, interval reading.
- ***What data are we collecting? How is the data used? Do we need to collect more data?***
 - We need to figure out when data needs to be collected and the reason for collecting the data at a specific time interval(s).
 - Different answer for residential versus C&I.
 - Who is the we? The “we” is different answer from different perspectives.
 - Collecting data is different from available data. Utility is collecting kwh. Can make other things available. There are third parties that want real time voltage from the meter – DR voltage response programs. Do want to make sure using words correctly in context of discussion. What are we collecting?
 - There should be a base case for kwh – consistent format and variety consistent across state for third party developers – programs. If customers want additional or real-time data, can get it through their home area network.
 - The meter doesn’t get everything. Ex. must program meter to collect voltage and receive alerts.
 - It may be more efficient to collect voltage and other data over the home area network. It can be stored and provided only if customer wants it, rather than have it packaged with the rest of the data.
 - Would app or smartphone be better to provide that information to customer for viewing?

- Voltage information may have operational benefits.
- **What frequency should we be collecting data? How should it be used?**
 - Right now, we treat everything as a change to all meters. Might become rate or customer class rates. Different classes, different needs – utility or third party based.
 - Don't see a significant difference in how information needs to be presented. Think more challenges will occur on the home area network side.
- **How are we sharing access to meter data, and how secure is it?**
 - How are we properly securing that information? Third party integration and connectivity? Can customers share their information rather than a central authentication?
 - Protection and security not as much of an issue today. But DER distribution levels – compensation for third party, generation or compensation, and changes in financial incentives, changes the level of threat to attack. Information is all about money. If there was a way to make money, would agree it changes perspective.
 - Currently, an account number is needed and customer consent for customers who want to use green button connect my data. Customers must log onto utility websites to authorize the download.
 - Other states participate in a quick thru authorization process. Customers just click consent and don't have to login.
 - It's a matter of streamlining. The customers don't pick the provider to share, but providers request it and give consent to transaction. Simpler, like a text message and other methods.
 - Third party providers have discovered there are too many screens for customers to click through – decrease in customer participation.
- **Who owns the meter data and how is permission given to share it? Who should have access to data?**
 - The customer owns data in state of IL. How is permission given? Individual user data. Can get anonymized data. Can get through request. 15/15 rule.
 - Utilities currently keep data for two years. Is that an appropriate amount of time?
 - Since so much energy consumption is tied to weather –two years seems to be good. Don't need detailed data for two years, but high-level data would be preferred.
 - Data destruction versus availability? - ComEd stores data for seven years for audit purposes. Monthly billing summary, not detailed interval data is available upon request.
- **How can customers better leverage data to coordinate DERs? What data is most important to customer?**
 - Today, a lot of data is not being used. What can we do with all the available information we have today? How does that change with an increase in DER, and what data becomes most important? In real time market, demand is way more important. If customers are balancing and trying to be net zero house hold, TOU value, etc. Marketing TOU rates –

need some sort of educational component to inform customers what they can do with the meter.

- Real time control scheduling should be defined now rather than waiting 10-15 years – meter acting as control node, incentive programs to users, fraud protection, hooking up to your house while on vacation, and sharing – if running out of charge do I hook into house?
- Should explore EV charging without investing in more infrastructure. Any special rates today for EV charging?
 - two hourly rates is best option now.
- Metering could benefit public transportation networks when powering electric rail systems and powering electric buses. Would improve operation efficiency and demand placed on the grid.
 - Would have to be a dynamic system. Huge optimization question.
- How do we give people a reason to access their data? Why would someone want to access smart meter data/ TOU rates?

Adjourn