Illinois Energy Efficiency Stakeholder Advisory Group
Large Group Meeting

Thursday, August 27, 2020
12:30 – 3:00 pm
Teleconference Meeting

Attendee List and Meeting Notes

Meeting Materials:
- Available on August 27 meeting page: https://www.ilsag.info/event/thursday-august-27-sag-teleconference/
- August 27, 2020 SAG Agenda
- ComEd Presentation: Midyear Budget Updates + Leveraging AMI Data
- Opinion Dynamics Presentation: Leveraging AMI Data (Ameren Illinois)
- Guidehouse Presentation: Using AMI Data for the ComEd Evaluation

Attendees (by webinar)
Celia Johnson, SAG Facilitator
Greg Ehrendreich, Midwest Energy Efficiency Alliance (MEEA) – Meeting Support
Matt Armstrong, Ameren Illinois
Jean Ascoli, ComEd
Brady Bedeker, ComE
Kathia Benitez, Franklin Energy
Jordan Berman-Cutler, ComEd
Rick Berry, Guidehouse
Carmen Best, Recurve
Shonda Biddle, Walker-Miller Energy Services
David Brightwell, ICC Staff
Madeline Caldwell, CLEAResult
Mike Chimack, ICF
Mark DeMonte, Whitt-Sturtevant, on behalf of Ameren Illinois
Leanne DeMar, Nicor Gas
Kevin Dick, Delta Institute
Julie Drennen, Center for Energy & Environment
Gabe Duarte, CLEAResult
Deb Dynako, Slipstream
Jeff Erickson, Guidehouse
Jim Fay, ComEd
Jason Fegley, Ameren Illinois
Julia Friedman, Oracle
Michael Frischmann, Ecometric Consulting
Omayra Garcia, Peoples Gas & North Shore Gas
Pace Goodman, Illume Advising
Jon Gordon, Enervee
Andrey Gribovich, DNV-GL
Paul Grimyser, ComEd
Walid Guerfali, ICF
Mary Ellen Guest, Chicago Bungalow Association

Randy Gunn, Guidehouse
Vince Gutierrez, ComEd
Cliff Haefke, Energy Resources Center, UIC
Mark Hamann, ComEd
David Hernandez, ComEd
Travis Hinck, GDS Associates
Brian Hoeger, Nexant
Julie Hollensbe, ComEd
Nick Horras, CEDA
Hannah Howard, Opinion Dynamics
Michael Ihesiaba, ICF
Jim Jerozal, Nicor Gas
Amy Jewel, Elevate Energy
Kara Jonas, MEEA
Kristen Kalaman, Resource Innovations
Lalita Kalita, ComEd
Haley Keegan, Resource Innovations
Chester Kolodziej, Northern IL Summits and Expos
Larry Kotewa, Elevate Energy
Ryan Kroll, Driftless Energy
Molly Lunn, ComEd
Marlon McClinton, Utilivate
Brady McNall, DNV-GL
Rebecca McNish, ComEd
Nishant Mehta, Guidehouse
Gina Melekh, Franklin Energy
Tim Melloch, Future Energy Enterprises
Mark Milby, ComEd
Abigail Miner, IL Attorney General's Office
Bruce Montgomery
Jennifer Moore, Ameren Illinois
Oscar Mora-Diaz, Energy Resources Center, UIC
Phil Mosenthal, Optimal Energy, on behalf of IL Attorney General's Office
Sarah Moskowitz, Citizens Utility Board
Chris Neme, Energy Futures Group, on behalf of NRDC
Rob Neumann, Guidehouse
Charles Newborn, SEEL
Victoria Nielsen, Applied Energy Group
Jarred Nordhus, Franklin Energy
Eric O'Neill, Michaels Energy
Maria Onesto Moran, Green Home Experts
Randy Opdyke, Nicor Gas
Antonia Ornelas, Elevate Energy
Hanh Pham, Willdan
Michael Pittman, Ameren Illinois
Reine Rambert, MEEA
Chad Ritchie, TRC Companies
Zach Ross, Opinion Dynamics
Kristol Simms, Ameren Illinois
Ramandeep Singh, ICF
Holly Spears, SEEL

Tristan Stamets, SEEL
Emily Startz, Power Takeoff
Jacob Stoll, ComEd
Mark Szczygiel, Nicor Gas
Chris Townsend, CJT Energy Law
Desiree Vasquez, Franklin Energy
Andy Vaughn, Ameren Illinois
Ted Weaver, First Tracks Consulting, on behalf of Nicor Gas
David Whittle, Leidos
Jessica Williams, Green Home Experts
Ken Woolcutt, Ameren Illinois
Cate York, Citizens Utility Board
Joel McManus, TRC Companies
Christina Pagnusat, Peoples Gas & North Shore Gas
Patricia Plympton, Guidehouse
Arvind Singh, DNV-GL
Chris Vaughn, Nicor Gas
Sara Wist, Cadmus Group

Meeting Notes
Follow-up questions indicated in red font.

Opening and Introductions
Celia Johnson, SAG Facilitator

Purpose of meeting:
1. For ComEd to update SAG on 2020 portfolio rebalancing.
2. To educate SAG participants on Advanced Metering Infrastructure (AMI) data use; discuss potential future use of data (Ameren Illinois and ComEd).

ComEd 2020 Mid-Year Budget Updates
Molly Lunn, ComEd
- ComEd provided a similar update around the same time last year. Today's presentation will share mid-year updates and significant changes from the last 8 months or so. We monitor program performance toward meeting year end budget and savings goals; this is a mid-year deep dive to assess where, if any, shifts need to be made.
- COVID-19 has been this year's biggest driver of the shift. Didn't want to do anything before now because everything was in flux. It has settled down now. Right now, residential was about 21% under budget, so have shifted that to Income Eligible and Business. We are now on track to meet savings goals about 2% under budget.
- Downward trends: Residential program 21% under budget. Almost $13M. 4 program elements, appliance recycling, HEA, product rebates, and HVAC rebates. Those programs wouldn't recover by year end, even though others might recover. Virtual HERs has not seen the demand that would return that to earlier levels, as an example.

    [Chris Neme] When you say residential programs, is that inclusive or exclusive of IQ?

    [A: Exclusive of income qualified]

- Appliance recycling was suspended due to COVID and we aren't resuming in 2020 due to contractor performance. Assessing in Plan 6 how we will relaunch that. There are a handful of programs that have held steady (HER, lighting, MF).
- Outside of residential, some drops including R&D/Emerging Tech (both COVID and pipeline issues), biz new construction, biz custom, RCx, and facility assessments.
- Upward budget shifts: Most significant in small business program. Strong demand since Q1 and continued in Q2. No major COVID impact. Rather than shut it down, able to add $10M to program and is now 22% above initial budget. Also added some funding to biz standard, industrial systems, and non-profit offering. None of those were huge additions but some additional funding went there.
- Income eligible programs also increased with unspent funds. Though initially impacted by COVID, expect to recover by year end for most. Some have stronger demand than their initial budget could handle. Food bank program, IE SF, and kits all on track and took additional funding this year.
- Conclusion: As a result of mid-year review, on track to meet or exceed goals and about 2% under budget. Will meet carve-outs for portfolio as well. Across IE program, expect about $49M (instead of stipulated $48). On track for 4-year averages as well. In MF and public housing, programs are under what we wanted to spend, but we are trying to find ways to increase the spend throughout this year and will look for ways to do additional work in 2021. On track with the commitments we have made, however.

  [Chris Neme] Six months ago, you thought IE MF retrofits would be lower. COVID dropped it down, still consistent with stipulation minimum. Is that ramping back up and are you expecting, absent another stay-at-home, that it will be back up to 11-12M range next year?

  [Molly Lunn] I don't want to commit because we are still discussing budgets for next year but we expect to be on track to rebounding in IHWAP and Elevate channels. Trying to shift comprehensive work more from SF to MF, but don't want to say it will be $11M next year because we are just starting the process.

- On track with business programs to spend $37M, which is more than the FEJA requirement. In Third Party program, expect to spend $27 (with a FEJA budget of $25M). That is of course barring new stay-at-home orders which could affect these numbers, but right now we think we are in good shape. Will monitor over the remainder of the year and look for prudent ways to spend additional funds.
- We look at all options on the table, what levers could we pull to increase spending and savings. Lots of scrutiny to make sure they are prudent and thinking about balancing future year savings as well.

  [Cate York] On home energy assessments, I have been tracking the virtual offering. Just checked a couple of days ago, and there still wasn't an online scheduling option available. Customer confusion previously could have been an issue.

  [Julie Hollensbe] Good point Cate. We did launch It online. It's both customer awareness and retraining staff with new offering. So, it has been slowly rolling out. Getting folks retrained for in person and trained for virtual side. Did first launch it with a growing waitlist. We did a soft launch with the virtual to work out kinks, reached out to that list, then promoted by call-ins, and now at the point where we can openly push it out more broadly through website and other promotional channels. Hopefully will be

cleaner and clearer now. We didn't want to "shout it from the rooftops" before the technology and staff was ready. Given the months we weren't in the market, we won't be able to surge to the same level but should reach a new steady state even if we can't backfill.

Leveraging AMI Data
Presenters: Molly Lunn, ComEd; Zach Ross, Opinion Dynamics; and Jeff Erickson, Guidehouse

ComEd AMI Data Overview:
- Presentation will highlight some of the non-evaluation ways we use AMI data, including current and potential future uses.
- First is the business energy analyzer – this is a web-based tool that is free for business customers, based on account-level interval data. Also, virtual retro-commissioning – energy advisor remotely analyzes AMI data and recommends low- or no-cost improvements for facility operations. Parallel to that is the residential "My Account" for residential customers to view their hour by hour usage data. Typical use is month-to-month or year-over-year but can drill down deep. Layering on that is smart meter connected device, where a customer can register for an in-home display that can wirelessly connect to their smart meter and display real-time usage data. Small customer pool for this, not a lot of customer interest. Finally, R&D pilots and customer targeting and recruitment that we sometimes use AMI data for – e.g. baseline study, save & share pilots. In the process of working with data vendors to see if can cost-effectively target customers.
- Challenges: Desire of customers to interact with AMI data is not high. Tools built on that data (e.g. BEA) have interest, but smart meter connected devices are not big with residential customers. Other piece that is a challenge is security requirements for transferring data to vendors – significant challenge. Has delayed pilots and program launches. It's delayed evaluations. We're trying to work through internally. Has to be a lot of rigor on how we manage that data, and we are required to have it. Have to balance. Doesn't mean it's impossible to use it.

> *[Leanne DeMar] How much data is displayed to the customer (for My Account), in what timeframe?*
>
> *[Molly Lunn] If I'm a customer and I go in and look at the previous month, I can look at hourly data day by day. Julie, does it go back to the full year?*
>
> > *[Follow-up response from ComEd]: We display 2 years of any data type (billing, AMI, etc.) through our customer interfaces, which includes both MyAccount data browser and Green Button Download.*
>
> *[Molly Lunn] If I'm a customer and I go in and look at the previous month, I can look at hourly data day by day. Julie, does it go back to the full year?*
>
> *[Cate York] I'm wondering whether administrative costs for pricing program recovered through the EE rider?*
>
> *[A: Separate from EE Rider]*
>
> *[Molly Lunn] AC Cycling is one offering from ComEd.*

[Cate York] Is there coordination between AC Cycling and DR programs?

[Molly Lunn] Perhaps that's something we can discuss at a future meeting. There is a lot in the works about where AC cycling should be going and how that and EE and DR and EE are working together.

[Cate York] As AC Cycling incorporates smart thermostats, everything connects. For Green Button you can download up to a year of data. I rarely interact with a customer that knows that data is available to them. Wonder if enough has been pursued with how to translate that to customers to build awareness and make it accessible in a way they can actually use.

[Molly Lunn] I had green button connect on the slides originally and took it off. That is another avenue and a fair comment. Basing some of this on what we have seen with connected devices and the customer interest. But worth looking whether we have done enough on the awareness side.

[Kevin Dick] The value of the data is not the data itself, it's what you do with it. The Agentis analytics that serve the customers the data with commercial customers, look at their heat maps and things to make decisions, is super useful. But only available through Agentis vendor contract. Issue that data with utilities in general. Using Green Button that allows customers to share data with others, not really a robust API and not well supported. Don't seem to be much on the radar. Is there any policy for how utilities in IL are going to be providing data to third parties without vendor contracts, or is it just off the table? If Green Button Connect isn't going to be supported, then it's waste of time. It's nice to play with and pilot, but if it's not going to be used is it worth it?

[Molly Lunn] Good feedback. Conversation on some of this can't just be limited to EE group. There is value in sharing data beyond EE too probably. Potential for it to help on the EE side but don't feel like we can be the only driver of that conversation in our utility.

[Kevin Dick] It is a larger issue. Not suggesting we should go in that way. I think Green Button Connect (GBC) should be used to demonstrate in small pilots and then an API that would be a better way to transfer data. ComEd did a good job putting the API in place. It's very secure. There is a whitelist of domains. The API is not useful as a modern API for large data sets, however. It's super useful for a couple hundred people. Small pilots. Good for a standard data schema. The vendor approach seems to be the approach, might need some more R&D and pilots. A certain number of pulls through GBC or some other API where customers could get permission to do that.

[Mark Milby] If we're talking about a limited pool of participants, assume residential here. It's possible you could use the GBC and customer permission to conduct a test that way. A lot of what Molly was talking about though, is engaging with vendors taking large data sets with lots of customers. These are two different approaches.

[Kevin Dick] It might be useful for the sake of innovation to allow some of this smaller data connection. For example, our product the value of the data is to build a proactive subsidy based on data on a daily, weekly, and monthly basis. Couldn't do that without

having real-time interaction with customer data. Need to understand the interaction with the user end. The bar is too high for small innovative pilots to have to go through the full vendor data connection. Would be useful to have a limited API for pilot data.

[Mark Milby] Useful suggestion. I agree there should be an approach that looks at different levels. It matters whether it's a contracted pilot with the R&D group compared to a vendor trying to develop a project.

[Kevin Dick] Yes. GBC is not useful for production level API. Need a direct pull API like you are getting from other vendors for large scale production. The missing part is for people who are trying to test new innovative ideas in the EE space with real customer data without using a vendor contract or the non-robust GBC API.

Opinion Dynamics AMI Data Overview for Ameren Illinois:
- Ameren asked us to present on AMI data on their behalf, so we will start there, then will talk about how we use it in evaluation.
- Ameren's AMI rollout has been a little behind ComEd. Ameren has been deploying in geographic pockets for 6 years for electric & gas. Elec is basically complete as of EOY 2019. Gas AMI rollout for small gas has been completed and large customers are in testing. 6-8-month completion estimate.
- Current and future AMI for Ameren programs: Virtual commissioning pilot similar to ComEd. Business Behavior Pilot with analyzer tool. Other key thing is supporting the voltage optimization program – both Ameren and OD using it to assess the changes form that program. There are some other future considerations as well. Ameren leverages AMI for other non-EE program offerings. Power Smart Pricing and Peak Time Rewards both use AMI. They are opt-in programs. Starting to explore how to leverage those programs or work with those programs for EE as well.
- There is some use of AMI right now around program targeting. Trying to identify electric space heating for future program targets.
- Ameren is actively exploring program concepts to leverage AMI data for next plan.

  [Cate York] It would be great to hear more about the efforts to connect EE and DR, especially for residential customers.

  [Zach Ross] I don't have more concrete examples to share today. Looking for opportunities – e.g. bundling measures with pricing, looking for increased customer engagement.

  [Cate York] One of the reasons we see lack of participation is that low number of events called and only $0.17 reward.

  [Zach Ross] Opportunities might be a bit less for those programs than elsewhere in the state. Reason we want to look at how to couple with other offerings, could leverage these programs a little more since right now participation isn't probably where we want it to be.

- Challenges in AMI data: Data transfer issues. Have integrated with subcontractors for some of the programs. Working on how AMI will go for transfer for evaluation. Molly did a good job talking about security and we will be developing protocols to make sure it is anonymous, confidential, and disposed of when no longer needed.

- Benefits and costs of using AMI data – can be powerful and valuable but want to make sure it is actually providing value. Additional evaluation costs around using the data. Want to make sure we are using the best use cases.
- AMI data use in evaluation. Approach reflects what Ameren is doing from the implementation side. We see it site-by-site, entire programs, and portfolio level. Need to ensure that we are using it where it is providing the most value and economies of scale. Specific use cases include implementation areas I just mentioned – and areas where we anticipate and have used in the past. E.g. site-specific use if the project suggests it can be useful. Will use it for advanced thermostats as that goes forward, Using it for hourly pricing. Expect to use it to look for interactions between that pilot and other parts of the portfolio. Expect in 2021 evaluation plan to use some advanced M&V feasibility assessments – using AMI data to remote screen projects for evaluation purposes and only have to go on-site for evaluation as we really need to.
- Snapshot of Virtual Cx pilot. Contracted with Power Takeoff. They analyze AMI data on regular intervals to identify possible participants and persistence of actions. OD will be using it to develop the modeling approaches and early savings estimates, to explore what is driving the savings in the projects, and will identify the best analytical approach to estimate savings form these types of programs going forward.

Guidehouse Overview of AMI Data Use in Evaluations for ComEd:
- We have some categories of how we use AMI data for the evaluation. A bit of a case study approach. Econometric analysis, Site-specific analysis, and the Smart Tool. Also, voltage optimization, but it's distribution data we use for that and not customer level AMI data, though there has been discussion about how we /could/ use that data.
- Residential advanced thermostats: We have been working with a large set of historical AMI data from ComEd at the half-hour level to use a daily regression model. Higher level of resolution on the correlation between thermostat use and temperature. Very helpful to be able to look at the daily level for this. Can create hourly load shapes for groups of customers and segment the data in different ways to give more insight into how smart thermostats might change how air conditioning is operating.
- Virtual Retro-commissioning: This has been running long enough that we have one evaluation report completed from last year. Use hourly data and match with weather data, and program information about what customers did and when they did it. Line up changes in energy use with changes we see from the program. Then use regression model to calculate savings model for each customer. Imagine that this kind of approach will be used in pilots and could be useful in the future.
- Small business thermostat: There are enough programmable thermostats that we could estimate savings for those thermostats from AMI data, with matched controls and minimal distance algorithms to update estimates in TRM.
- Site-specific analysis: This is something we have been doing since AMI data was available. Exclusively on the business sector, typically on large projects. Will use it in customer engineering model to estimate consumption over time and normalize to consumption over time. Custom, Data Centers, Industrial Systems, RCx common approaches.
- Smart Tool pilot: As Zach mentioned for Ameren, they are implementing pilot on this as well. We have a bit of a head start on that. Takes AMI data for whole population, weather normalizes, and uses it for various purposes. Allows us to analyze from a desk instead of the expense, time, customer hassle to go on-site and meter things. Exploring using it for TRM research.

- Newer area we are exploring where we can use the regression Smart Tool to see whether the data is supporting that the TRM is over- or under-estimating savings. For example, 2019 data says we might need to look more closely at compressed air and some of the refrigeration measures.

Question for Discussion: Do SAG participants have any specific questions or feedback on how AMI will be used for implementation and evaluation?

[Tim Melloch] Is there potential for a new residential behavior program using AMI data – providing more real-time data to customers about use trends? When OPower first proposed home energy reports, seemed like fiction, but it was hard to argue with the data. My thought with AMI, for the first few days I logged in and looked at the data and then it dropped off. I always look at my weekly reports now. Some function like that along with recommendations could help increase that. Is there a new opportunity for behavior change in the residential arena?

[Kevin Dick] We did that a couple of years ago with a daily text message with IDO and has been done in Michigan and piloted a little in ComEd. It's hard to scale something like this without small pilots that require daily data to do. The current APIs don't provide a cost-effective way to get this daily data out of the utility currently in a way that is able to do that, without being essentially a vendor. And then the data is still two days old by the time you get it. A trigger for someone to react to and act on requires data APIs that can provide more real time data that just don't exist.

[Tim Melloch] We try to train people to turn off lights and worry about vampire loads, and then they don't see their energy use change much. I don't need real-time but week to week trends have helped me. Example turning off my dehumidifier. Can we drive more magnitude than in a monthly report?

[Kevin Dick] Example of a July 4th customer got a big usage report. They thought it was an issue. They had no idea that the daily cost was that much, and looked into weatherization and downsizing their AC. The trigger is the immediacy and it definitely does drive reductions of 4-7% in the small pilots. Needs to be immediate and actionable and that's what is missing from analytics reports. No trigger to make a change.

[Molly Lunn] I think one challenge, Tim, is that although there might be opportunity there, because of the framework we operate under – with CPAS and because of limited life of behavioral programs – tending to put more priority on longer life measures. Constantly looking at how to make HER fit better into that framework. Effort is going into things with long measure lives of 10+ years.

[Kevin Dick] You get the reduction in behavior and customer recognition that they can do something about. It's about setting up the planning process to make the change. Especially with homeowners who aren't doing it all at once. Less of a measure, more of being part of the marketing effort to trigger them to start looking.

[Molly Lunn] Yes, we have looked at whether we can use it for marketing instead of claiming savings.

[Julie Hollensbe] This is an in-between, but in addition to paper reports we have high usage reports which give them trending usage. People can set thresholds. Also, weekly usage reports that show week-to-next. It's not AMI data, but it is a tighter horizon than a month after the fact. It's a challenge to think about how to really engage customers. Real-time can be a challenge. Sometimes there is a one-time novelty interest, but engaging them to take ongoing action can be a challenge. We do have some more nudges though.

[Kevin Dick] One of the reasons we've been moving away from that approach because it is already being covered by utilities pretty well. We want to use it for targeted customers to help with proactive payments and proactive subsidies that require not looking back but with immediate trigger. Your usage was $15 yesterday, here's what you can do now. Need the motivation to pay attention to it and most customers don't keep up with daily spending, that's why we focus on income eligible.

[Cate York] There is a need to commit to programs like AC Cycling – automated DR programs. Measures that aren't as specific to real-time response by the customer. Wanted to ask a question about using more AMI data to refine TRM assumptions and using the data about electric use to better estimate savings. Was hoping for more clarity on that process and way to accomplish that.

[Jeff Erickson] I think the main thing we have used the smart tool for is to point at areas in the TRM where we need more attention, though it's probably a different analysis that leads to the TRM update. A realization rate could be calculated on a TRM estimate, though we haven't done that in Illinois. IF AMI data tells us it is consistently over or under estimating savings, one could put in a factor that increases or decreases savings accordingly. Nothing technical that prevents that, though it hasn't been done before.

[Chris Neme] One of the limitations of using AMI data for savings estimation, in TRM or not, is that it really only works for pre-/post- differences where the baseline is the pre-installation condition. Many measures are promoted as time of natural replacement measures. Savings bought relative to standard new one as opposed to high efficiency new one as a baseline – not useful for AMI savings estimation. Would also argue for some measures that the savings numbers also need to be large enough to really be able to get a value that the accuracy isn't lost in the noise. Could probably use AMI data to help inform TRM assumptions about things like run time for example. Given the mix of measures that utilities promote, there are significant limitations.

[Bruce Montgomery] Are there geographic and demographic analytics available from AMI data?

[Jeff Erickson] Actual AMI data itself, no. Marry that with other data that the utility has – like address information – can give geographic. To the extent the utility has any customer demographic data in their customer management system, it can be done. Some of the demographic data is top notch, other less so. Also, possible to purchase demographic data from the market like DNB and other sources.

[Bruce Montgomery] Are there publicly accessible AMI dashboards to monitor some of the applications discussed today?

[Molly Lunn] I can't think of a public dashboard on the tools we have. Our quarterly reports provide some updates. But as for a dashboard that shows how many people are using it or what they get out of it, we don't have that.

[Zach Ross] I'm not aware of anything like that at the moment either.

[Travis Hinck] People have been talking about integrated programs and services for a long time. Not just EE. Could convince to sign up for EE, DR, and time of use and package is worth more than any independent. AMI is the through line for that. We can lay the groundwork now.

[Zach Ross] Not currently EE, not funded the same way, but there is opportunity to work with those programs coupled with widgets to try to draw more value out of it.

Next Steps
- SAG Facilitator will add the topic of leveraging Demand Response with EE to the 2021 potential topics list.