IL EE Stakeholder Advisory Group
Non-Energy Impacts Working Group

Tuesday, October 6, 2020
9:00 am – 11:00 am
Teleconference Meeting

Attendees and Meeting Notes

Meeting Materials

- October 6 Working Group Meeting Page
- October 6, 2020 NEI Working Group Agenda (updated)
- October NEI Working Group Meeting Presentation (Guidehouse)

Attendees (by webinar)

Celia Johnson, SAG Facilitator
Greg Ehrendreich, Midwest Energy Efficiency Alliance (MEEA) – Meeting Support
Matt Armstrong, Ameren Illinois
Sophie Berne, Guidehouse
Erin Daughton, ComEd
Leanne DeMar, Nicor Gas
Sagar Deo, Guidehouse
Nick Dreher, MEEA
Gabe Duarte, CLEAResult
Brian Eakin, Guidehouse
Jim Fay, ComEd
Jason Fegley, Ameren Illinois
Kevin Grabner, Guidehouse
Sophie Gunderson, Guidehouse
Randy Gunn, Guidehouse
Katherine Johnson, Johnson Consulting
Jim Jerozal, Nicor Gas
Aaiysha Khursheed, Opinion Dynamics
Maddie Koolbeck, Slipstream
Monique Leonard, Ameren Illinois
Bruce Liu, Nicor Gas
Marlon McClinton, Utilivate
Samarth Medakkar, MEEA
Jake Millette, Michaels Energy
Abigail Miner, IL Attorney General's Office
Jessica Minor-Baetens, Guidehouse
Fernando Morales, Ameren Illinois
Jennifer Morris, ICC Staff
Chris Neme, Energy Futures Group, on behalf of NRDC
Rob Neumann, Guidehouse
Victoria Nielsen, Applied Energy Group
Eric O'Neill, Michaels Energy
Randy Opdyke, Nicor Gas
Christina Pagnusat, Peoples Gas & North Shore Gas
Michael Pittman, Ameren Illinois
Zach Ross, Opinion Dynamics

Kyle Schultz, Opinion Dynamics
Ellen Steiner, Opinion Dynamics
Shannon Stendel, Slipstream
Jacob Stoll, ComEd
Mark Szczygiel, Nicor Gas
Andy Vaughn, Ameren Illinois
Chris Vaughn, Nicor Gas
Ted Weaver, First Tracks Consulting, on behalf of Nicor Gas
Bridget Williams, Guidehouse
Angie Ziech-Malek, CLEAResult
Patricia Plympton, Guidehouse
Ethan Young, Guidehouse

Meeting Notes
Follow-up items are indicated in red and summarized at the end of the meeting notes.

Opening and Introductions
Celia Johnson, SAG Facilitator

Purpose of the October 6th meeting:
1. To update Working Group participants on gas non-energy impact (NEI) research for Nicor Gas, Peoples Gas & North Shore Gas.
2. To discuss a policy question on apportioning NEIs between electric and gas utilities.
3. To provide a status update to Working Group participants on Non-Energy Impact (NEI) research for Ameren Illinois and ComEd.

Gas Non-Energy Impacts Research
Kevin Grabner, Ethan Young, Patricia Plypton and Sophie Gunderson, Guidehouse

Background
- This research extends the NEI work to the gas utilities, leveraging the work that had been done for ComEd previously.
- Memo sent describing NEIs in April, presented in May Working Group. July WG meeting as well. That work has been continuously updated. Extended those sources where they could be applied on the gas side, including which sources would apply to gas utilities. Several were joint gas-electric studies. Also did secondary research for gas-only sources for NEIs. Emissions modeling that had been done for ComEd was extended to gas. Worked with EPA to extend the models to the gas side. Memo sent to Nicor on Aug 26. It looks very much like the ComEd memo, because we want to keep this all lined up and consistent.
- Received some comments from Nicor Gas and produced a second draft on Sept. 11. Worked through the Nicor memo comments and developed a similar memo for PG/NSG. Nearly identical except for some specifics, especially emissions modeling.

NEI Overview
There are three types of NEIs we have been analyzing. Maturity of analysis and assessment of the monetized NEI's "readiness" to be included in the cost-effectiveness tests in Illinois.
- Societal – worked with EPA and developed a methodology. Updating and refining since May. Analysis is mature and vetted and those values are ready for CETs. Finalized and will be given to utilities by the end of the week for their planning.

- Participant – benefits accruing to people living in homes that have had improvements, resulting health impacts and perhaps reduced missed work. Those are the most robust and repeatable and what we focused on for IL. We have been working with the studies that have been presented to MA in 2016 for SF and 2018 for MF. We believe that methodology is most closely aligned to our primary research in IL.
- Utility – proved to be the most difficult to work with the data set. We do have values from secondary research, also have primary research from ComEd. Currently ongoing. We don't have values for the utility NEI category for the draft plans. Will be finalizing and presenting in December, and if it is repeatable and robust, then we will recommend it for utilities to use for their final plans. Much smaller percentage of the overall NEI picture.

Societal NEI Recommendations

- Methodology flow – programs reduce use, that reduces emissions, provides health benefits. Using COBRA. High and low sensitivity assessments.
- Using emissions factors to estimate reductions and plugging those into COBRA.
- Generated annual schedule of lifetime savings for all CY19 programs for Res and Non-Res sectors. Over 25 year period. Health benefits should track with savings. Will use Nicor as the illustrative example and then will show all results.

[Chris Neme] When we had this discussion about the ComEd analysis, one of the challenging issues was that EPA's model only had impact estimates that they felt comfortable with for a few years, so you were only including a few years of impacts even though measures might have 10-15 year lives. You were going to try to account for the full life cycle. Was that done?

[Ethan Young] It was done. Main difference for the gas utilities is that for ComEd we had AVERT. For gas utilities we had emissions factors. On the AVERT side, the EPA was only relatively confident in their baseline forecast until 2022. We came up with a bounding approach based on secondary research and will present some of that.

[Ted Weaver] This shows the gas savings through 2043. Presumably in 2040 if there is a molecule of NO2 that comes out of a smokestack and causes smog and a health effect, those continue into the future. Might take a long time to materialize. Are you looking even further into the future? There is the timeline of emissions and the timeline of health effects. How do you deal with that?

[Ethan Young] Each year has 2019-2021 gas reductions. That impacts air pollution and outcomes. Both acute and chronic health outcomes from day of exposure to 20 years in the future. In 2019 you are exposed to pollution, then COBRA models that over 20 years and then discounts back to the base year. That is repeated on an annual basis.

[Ted Weaver] So there are actually two lags. Those measures in 2019 last 15 years, and reductions every year from those. Is that all being taken into account?

A: Yes

[Chris Neme] The graph is saying that Nicor saved 6 million residential therms, those last for 10 years, and then the remaining part lasts another 10 years, am I reading that right? I would have thought behavior programs would have shown a precipitous drop earlier.

[Ted Weaver] Nicor didn't launch behavior until late 2019 maybe or 2020.

[Ethan Young] Flow chart of the analysis, to put it all into context. Lifetime savings per schedule, aggregated to sector level, multiplied by emissions factors from EPA, annual emissions input into COBRA, discounted annual benefits to base year. Output is PV of health benefits.

[Chris Neme] If you had a measure with a 20-year life, the savings from each of the 20 years and the NPV of the reduced exposure in whatever year. You discount all back to the emission year and then discount the whole thing back to implementation year?

A: Yes

[Ethan Young] We applied these emissions factors from EPA. First table is our factors for PM2.5, NOx, SO2, NH3, VOD. The left side is the residential emissions reductions.

[Chris Neme] What is the significance of the 2022 number on the table?

[Ethan Young] We are taking CY2019 programs – most recent set of vetted lifetime savings. Assuming then that those savings will occur in a 2022 implementation.

[Chris Neme] In order to develop a factor that can be incorporated starting in CY2022?

A: Yes

- Using the emissions reduction estimates, we get into the COBRA analysis on an annual basis. CY19 programs and associated savings are estimates used for the 22-25 programs. Sector level emissions are different from how this is used. We wanted to break out Res/Non-Res in COBRA so we generated using respective emissions tiers within COBRA. Input and apportioned along the emissions tier sources within the service territory counties for both Res/Non-Res. Used a custom valuation file with a 2.4% discount rate deemed by the IL TRM v9. Future adjustments to discount rate were considered but there is uncertainty where that would be.

[Chris Neme] That 2.4% discount rate is a nominal discount rate – would only make sense to use if value of emissions reduction were expressed in numbers that included inflationary impacts, which I wouldn't expect.

[Ethan Young] COBRA does include inflationary impacts, good point.

- From here we settled on taking the average of low- and high-sensitivity estimates. We did more research and found two peer reviewed studies with good statistical handling. Neither was better. We settled on using the average.
- Estimated sector level health benefits. Question becomes how do we apportion that to different programs. That will be split across three slides. Annual sector and health benefit curve. Benefit per therm in middle plot. Discounted sector level benefits divided by sector level annual net savings. Then multiply by program level savings to get program benefits. Program level estimation is not as possible in later years – too low of savings from single program in later years. Sector level apportionment let us get at that later year estimate better.

[Chris Neme] The graph on upper left says that Res total benefits about $1M in first year and declining eventually to near zero. Second graph says $0.167 per them in 2022, declines over time. Why does benefit per therm decline over time?

[Ethan Young] First curve is a discounted curve. If this was not discounted, then it would be a more constant line. This shows discounting and slight reductions of benefits per therm independent of discounting are also being addressed here.

[Chris Neme] So it was relatively constant in nominal dollars but the discount is largely why it slopes down in the second graph?

A: Yes, because it is all expressed in 2022 dollars.

[Chris Neme] I would have thought the benefits in real dollars would stay relatively the same, what I heard is that is relatively the same in nominal dollars but going down in real dollars. That intuitively doesn't make sense.

[Ethan Young] Looking at a 2046 happening in 2022, assigning a value to it. Should logically assign a lower value per therm saved in 2046 as compared to 2026.

[Chris Neme] The real discount rate is very small, like 0.5%. If in real dollars it was worth the same, it wouldn't be 16 cents down to 10 cents, it would maybe be down to 14. Makes me wonder why the value of emissions reductions in 2040 is worth less than today. I can' intuitively understand it.

[Ethan Young] We can take a deeper look into this issue and make sure everything lines up.

[Chris Neme] I'm wondering if the values in the future should be discounted with a real discount rate. Another clarification, if the middle graph is right, then if I have a measure that saves 1 therm over 20 year life, the value of that therm would be 16 events in 22 and dropping to 2046, and that would about $2.50 over those years.

[Ethan Young] Yes. (Explains the math).

[Chris Neme] So it is not insubstantial – 16 cents to 10 cents a therm over a lifetime of the program.

[Ted Weaver] First year therm.

- We provide our health benefits estimates here (slide 10). 12.95M for res and 47.78M for non-res. Recommend that these are used two ways. First is multiply sector dollar estimates by program lifetime savings. Second is multiply annual dollar per them found in report appendices by the program level CPAS.

[Ted Weaver] That's the way we'd like to use it. We track cumulative therm savings. What I think you said is that you'd give us a value that's in present value discounted dollars to that year, divided by the therm savings in that year. So that's how our models specify and we can plug that into our mode.

[Chris Neme] Like an avoided cost per year, essentially.

[Ethan Young] We can provide that. Make sure that you aren't holding over savings from a prior implementation year – only use the lifetime savings from the implementation year. Otherwise you end up double counting.

[Ted Weaver] What we are hoping to get, I think is that middle graph on the previous slide. Expressed in PV dollars for each year instead of all back to 22. If we got that stream of numbers, we would multiply by the cumulative savings that occur in that year, the discounting would work out. We could calculate the benefits in each year and then discount those back. I think that would work out. I know this is tricky to explain.

[Ethan Young] That makes sense, I think we are on the same page.

[Chris Neme] Why is non-residential per therm greater?

[Ethan Young] In COBRA apportionment, a lot of that tier is in metro Chicago. It's a weighting issue. More populated regions.

[Ted Weaver] These are effectively levelized benefits, so they last longer.

[Chris Neme] I though these were annual, not lifetime.

[Ted Weaver] They are kind of levelized, we should talk about that too.

[Chris Neme] But this is normalized for measure life?

[Ethan Young] It's more about what population these occur for.

[Ted Weaver] I think it accounts for measure life. Think about the residential stream – it drops off more quickly. These are expressed in per annual therm saved in the first year. The annual therm saved in residential has a lower WAML than the non-residential.

[Chris Neme] If I had a non-res and a res with a 1 year measure life, then they are worth 16 and 14 cents respectively?

[Ethan Young] If you took a 1-year measure life, a measure that is implemented in Res will yield a slightly lower benefit per therm than Non-Res. We believe it is because the commercial mix is more heavily in heavily population areas where people are more affected by the reduction.

[Ted Weaver] It doesn't matter because that's not how we are going to use is. But in terms of the report, I think you want to calculate a levelized value. The way it is calculated here is a little bit off.

[Chris Neme] Need to discount at a real discount rate, not a nominal one.

[Ted Weaver] I don't think that's right. (some back and forth). When you do a levelized cost, you should get the same value back. But we're not going to use it that way, so that's fine.

[Ethan Young] I propose we have a call to review results further and get on the same page on the lifetime savings curves.

- Here we also present the PG and NSG tables. We will provide the same tables for the two options mentioned before. Sounds like the Option 2 is preferable for Nicor, not sure for PG/NSG.

  [Chris Neme] Makes the most sense if it is consistent. What confuses me on this one is that intuition is that PG should be higher than Nicor because denser population. Why is NSG so much lower than both?

  [Ethan Young] NSG is primarily Lake County. We were thinking about population density, vintage of equipment being slightly newer due to being a higher income area. Could be any number of factors on how emissions are distributed across the county compared to Cook.

  [Chris Neme] Okay, that's the difference between Cook and Lake, what about Nicor?

  [Ethan Young] Nicor is some metro Chicago, lots of rural areas. It is a midpoint between the PG and the NSG results. Mix of demographics. We thought through this issue too because we were surprised a little by the findings.

Participant NEI Recommendations

- Income eligible joint programs with participant NEIs – focus for our proxy values and the programs we will be doing our primary research. Public Housing, MF IHWAP, MF Elevate, SF IHWAP, SF Elevate.
- The methodology we used when evaluating our proxy participant NEI values. Started with some MA research for their cost effectiveness tests of MF and SF income eligible. Also a climate similar to climate here. Then adjusted recommended values for inflation for 2022-2025. Then apportioned adjusted values to each utility's investment (will detail in following slides), finally created NPV for the lifetime NEI using the WAML.

  [Chris Neme] Did you also translate that into a per therm set of numbers?

  [Sophie Gunderson] We did not. These will be per household.

  [Ted Weaver] I think we're going to use per first-year household. At the program level. We do have to talk about that. It's for comprehensive retrofits, so it will be at the measure level because it applies only to those participants.

  [Victoria Nielson] About the estimate at the participant, in our model we have participation at the measure level – air sealing, insulation, per measure not per participant or per project. I think it would be tricky to avoid double counting. We can have an offline conversation.

  [Sophie Gunderson] Good context and we can explore that with you.

- Secondary sources – two research studies. First is MF homes from 2018, second is on SF homes and from 2016. Both from Massachusetts.
- To adjust the values recommended by the secondary studies to the years we are hoping to forecast, we used a CPI historical values and a long-term inflation forecast to model these predicted values. First table is the MF values in 2018 dollars, inflated to 2022-2025. Same process done for SF program in bottom table, though it started in 2016.

[Chris Neme] Is the first number $27.19 for thermal comfort, that's per household from MF whole building? Is that NPV over the life of the retrofit or the first year's value that gets repeated each year?

[Sophie Gunderson] The latter. Guidehouse elected to do our own NPV using the WAML of the programs to make it more specific to our programs.

[Chris Neme] These are not NPV, they are all single year values?

A: Correct.

Policy Question: How to apportion non-energy impacts between electric and gas utilities?

Patricia Plympton, Guidehouse

- The apportionment between the utilities on joint programs. When you have a joint program that offers electric and gas measures, we suggest one method to apportion NEIs is to use utility investment in the program. Defined by total program costs spent on the program – incentive plus non-incentive costs. This slide shows an overall basis how the program cost allocation works out between ComEd and the gas utilities. This is an overall perspective. Any given program would be split between ComEd and just one utility. This is the ComEd perspective shown on this graph really.
- These are SF programs on the next slide (slide 18). The benefits are apportioned, if this is how we proceed, would be between ComEd and one gas utility. For example, SF CBA program between ComEd and PG – ComEd would be 79% and PG would be 21%.
- The next slide shows apportionment across utilities for SF IHWAP. Total benefit about $300 per individual participant. ComEd gets 66% on average, and 34% goes to the gas utilities. Gas side benefits to Nicor, PG and NSG.

[Ted Weaver] Are you going to give us a set of tables for each utility?

[Kevin Grabner] Yes, one set of tables for each utility. For example, for this program if we assume equal share of investment, then ComEd would get 66% and PG would get 34% of the benefit for their participants. For each individual participant, benefits would be 34%. Would vary by program and utility.

[Chris Neme] From a practical standpoint, why do we have to apportion? Allocations could get done between ComEd and gas utilities by how they actually split costs. That could change over time. Nicor has programs running by themselves, if they start sharing it would require different apportioning. It seems to me if we use these kinds of apportion numbers, it locks in an assumption about the cost sharing.

[Kevin Grabner] There could be differences in the next plan cycle and even variances by program.

[Chris Neme] It seems like the important number is the $303.36. And if we agree to apportion by spending, then the utilities can figure it out for their plans.

[Kevin Grabner] It could be done that way.

[Ted Weaver] I think we agree with you on that Chris. We'd apply the $303 to our 100% Nicor homes and then some sharing. Plus Kevin, I think your sharing is on the overall investment, which reflects both sharing per house and number of houses. Worried we would end up double counting if not careful.

[Chris Neme] Or double allocating. We should focus on that bottom-line number and apportion by what part of the customer you paid for. Don't have to worry then about the apportionment in these tables.

[Kevin Grabner] Given all the variations, we could go through and track down the numbers that we have and produce tables for each utility. Given that those might change, might make more sense to just give the total.

[Jennifer Morris] It would make sense for Guidehouse to provide a table to each utility for planning, but for post cost effectiveness could use that top number.

[Ted Weaver] Agree we need something for the plan that reflects the allocations we think we will use.

[Jennifer Morris] If the utilities share that they could produce tables for each utility.

[Ted Weaver] These allocations are completed because of so many ways we are delivering to this sector. Let's start with the $303 and build that up for Nicor and we could share that and show you what we did. Chris's original point on starting with the $303 and allocating for each utility and delivery approach is better than using historical investment.

[Patricia Plympton] Understood and agreed.

[Ted Weaver] On previous slide values, do those bottom numbers add up to $303? (slide 16).

A: Yes. These are the annual benefits over the life of measures.

- On Slide 20, illustrative example. The apportioned values applied over the WAML of the SF IHWAP program. The different utilities have variable WAMLs. When you are applying the values from the previous slide it is an annual value across that WAML for the program.

[Chris Neme] What is the WAML for the portfolio?

[Sophie GUnderson] It was 17.5 but for each of the specific utilities was calculated using their specific WAML. ComEd was 14.8, whereas PG was 18.9. Some variability in the differences in participants in the program, how many get longer lasting measures and how much of the portfolio those measures make up.

[Chris Neme] Could take that $303 and for your utility, if you know your WAML, you could take that and using a simple formula turn that into a lifetime number. That's what you would need the program level. Use the PV function in Excel and turn it into a lifetime value for screening participants?

[Sophie Gunderson] Yes take that $303 multiply by apportionment and multiply by WAML.

[Chris Neme] Needs to be PV over the WAML.

[Ted Weaver] And taking a real discount rate because we aren't inflating the $303?

[Chris Neme] Yes. If it was a number that was inflated over the years, then you would NPV it back. Otherwise you do it with the real discount rate.

[Sophie Gunderson] For this approach we multiplied. We can do that.

[Ted Weaver] Should be a NPV using a discount rate. Then that's the PV of the future participant benefits for each participant in a whole house retrofit. So we could apply that one time to capture all the benefits?

A: Yes.

[Chris Neme] I heard that PG/NSG wants it at the measure level.

[Ted Weaver] We can talk about that.

[Patricia Plympton] Great discussion. This helps move the ball forward.

Utility NEIs

- ComEd Update: Utility NEIs for selected programs. Both secondary sources. Still receiving data from ComEd on primary research. This is the smallest impact and influence. May be reaching diminishing returns on the analysis – is juice worth the squeeze?
- Primary data that we have recently received, there are a number of things going on. Calls and collections and notices and payment programs. Noisy data set. Hard to find the signal. Difference in difference approach, the polar vortex made it hard to normalize. Still working with billing dept at ComEd and up and down the food chain. Recognizing this is really from left field if you are at a utility. We are determining what will be the best available data to use.

[Chris Neme] Any sense of timeline?

[Patricia Plympton] Anticipated before December, but there are many moving parts.

[Ted Weaver] Can the secondary sources be used for now?

[Patricia Plympton] That's where we are leaning.

[Jennifer Morris] You have primary data, not finding anything significant. Maybe there is nothing to add here.

[Patricia Plympton] True. We may need to have a meeting about the secondary source values.

[Chris Neme] First bullet under data sources for ComEd, did you also look at arrearages and whether they change and what the carrying cost savings changes are?

[Patricia Plympton] Yes, I wish I had put that on a bullet. That also falls into the difficult to parse out category. We're strongly looking at the percentage that is in the MD PSC order of 2% to represent the reduced carrying cost. A conversation for another day.

[Ted Weaver] Since we still need to have a conversation about how to apply these, when we present 2022-2025 Plans in October, we are putting in zeros – is that right?

[Chris Neme] Until we have that conversation.

[Patricia Plympton] We have not determined any investment-grade numbers yet. If we pass our rigor and repeatability test, we will offer them between now and March.

[Victoria Nielson] Is expectation that utilities will incorporate Participant and Societal for October presentation?

[Celia Johnson] Are you in a position to do that from a modeling standpoint?

[Victoria Nielson] I can make it work, but trying to finalize plans and get the templates and presentation itself together. There is not a lot of time to get this into the structural model. Concerned that we are rushing it.

[Ted Weaver] I'm with you. Not even sure how we're going to do the participant ones. Maybe we just don't try to do that one. We can get the pollution ones in there because that' show the model is set up.

[Victoria Nielson] There is also some confusion on societal with real vs nominal and lifetime measurement. Would have to take some time to understand how to properly and thoughtfully get that into the model.

[Celia Johnson] If it needs to be provided later, that's fine

[Jennifer Morris] There were some concerns that came in about including NEIs at all. I proposed that two sets of results be provided by utilities, one that includes NEIs and one that doesn't – then the Commission will have everything that they need and we won't have to litigate including them at all.

Status Update: NEI Research for Ameren Illinois and ComEd

Aaiysha Khursheed, Opinion Dynamics and Patricia Plympton, Guidehouse

<u>Ameren IL Update</u>

- For Societal NEIs, we have generated using AVERT and COBRA and working on getting results to Ameren Illinois this fall. Can present at December WG meeting. For Participant, working on cognitive pretests of the survey – using Guidehouse's survey with some minor changes. C&I business assessment NEI work have included some survey question and gathering data now, or getting into the field now. Hopefully can present at December meeting as well. Utility NEIs, waiting for data to do a primary analysis. That's the brief status update of the work we are doing for Ameren Illinois.

[Jennifer Morris] Do you anticipate getting the utility data on the NEI analysis?

[Zach Ross] We have been working on getting data from Ameren for a while now, under the impression that Ameren has figured out who needs to pull the data, no timeline yet.

[Jennifer Morris] That pretest of the survey, is that with customer?

A: Yes, both participants and non-participants.

[Jennifer Morris] How are you reaching the customers?

A: Tracking database and direct outreach – small sample of 15-20, so low effort.

[Jennifer Morris] After cognitive pre-test, how long before we have results? Early December?

[Aaiysha Khursheed] Yes. This is a pretest of how the survey works – some clarity and sensitivity issues. We do the survey together live and discuss what they think of the questions. Make sure we're testing what we think we are testing and have the questions right and accurate. Then we will modify the survey and do the pre- and post- test with participants and then wait a year and follow up with those same participants. And will match a non-participant group.

[Jennifer Morris] So we are a long way from results. Are you doing any secondary research?

[Zach Ross] No. We understand that Ameren doesn't intend to use NEIs in their plan.

[Chris Neme] I think that's a problem. We've gone through this process to quantify where we can other societal benefits which is what the statute says need to be included.

[Zach Ross] We are not at the point as of these draft plans that we have Ameren-specific results. Our general position is that we wanted to have Ameren specific numbers to use. Weren't planning on doing secondary research. Ameren we understand doesn't plan to include them if we don't have the primary Ameren-specific research. They certainly could use what has already been developed for ComEd or other utilities.

[Jennifer Morris] Perhaps Ameren could include societal NEIs in the plans if they are done by December.

ComEd Update

- ComEd Societal NEIs – finalized and will be looking at real vs nominal discount rates as per the discussion today. Changed since July. Emissions are bounded over the CPAs timeline. Per FEJA societal NEIs should include health benefits for whole US. Have had some back and forth but appears that we are all on the same page now. Have been using CY19 savings as proxies for Plan 6 NEIs. Conducted sensitivity checks on portfolio level and program level estimation. Not statistically or practically significant difference. 1-4% depending on savings years. Bounded vs unbounded emissions rates found that Societal are 7-20% lower than under unadjusted emission rates.

[Chris Neme] Can you clarify bounded vs unbounded?

[Ethan Young] Under ComEd analysis, we had savings. AVERT underlying issue is that EPA is only reasonably confident for 2018-2022. We know on trends from PJM that mix is getting cleaner. Wanted to incorporate the changes over time to whittle down the total reductions from AVERT to account for the 25-year changes in the emissions. That's the bounding.

[Chris Neme] So unbounded is just assuming the grid stays the same?

A: Correct.

- Results for CY2022-2025. Recommend use of a program level societal NEI estimate. Have those in other slides. Can primarily contribute the reduction in later years due to bounding of emissions.

  [Chris Neme] This is lifetime savings from each calendar year?

  A: Yes.

  [Ethan Young] We provided the other results for review but won't go over those now.

  [Chris Neme] Can we have that value applied each year or turned into a different number for each year for a 25 year period and just apply it for every measure in every program?

  [Ethan Young] If ComEd is happy using the same methodology, then yes, we could provide that for the future years for each implementation year. You can skip over the program-specific slides.

ComEd Participant Research Update

- Guidehouse is working to finalize language with ComEd and will be taking the edits from the pretest to customize questions. Also translating to Spanish.
- The invitations are ready to go and printed with a diverse supplier. We are close to getting this into the field for the 12-month collection.
- Anticipate preliminary findings in ~6 months.

Closing & Next Steps

Celia Johnson, SAG Facilitator

- A follow-up Working Group meeting on secondary source values was suggested during the meeting. SAG Facilitator will follow-up with Guidehouse on timing.
- The next scheduled Working Group meeting is on December 8, to discuss additional NEI research updates for Ameren IL and ComEd.