

Illinois EE Stakeholder Advisory Group Evaluation Working Group

Wednesday, July 14, 2021

10:00 am – 12:00 pm

Teleconference

Attendees and Meeting Notes

Meeting Materials

- Posted on the [July 14 meeting page](#):
 - [July 14, 2021 Evaluation Working Group Agenda](#)
 - [SAG Facilitator Presentation: Evaluation Working Group Overview](#)
 - [Ameren Illinois Market Effects Pilot Presentation](#)
 - [Guidehouse Memo to ComEd: Eligibility of Renewable Energy Measures within Energy Efficiency Programs \(June 21, 2021\)](#)
 - [Guidehouse Presentation: Eligibility of Renewable Energy Measures within Illinois Energy Efficiency Programs](#)
- Visit the [SAG Evaluation Working Group page](#) for information on the Working Group and prior meetings.

Attendees (by webinar)

Celia Johnson, SAG Facilitator

Greg Ehrendreich, Midwest Energy Efficiency Alliance (MEEA) – Meeting Support

Brian A'Hearn, CLEARResult

Alexis Allan, Brio

Matt Armstrong, Ameren Illinois

Tyler Barron, Environmental Law & Policy Center

Shonda Biddle, Walker-Miller Energy Services

Kumar Chittory, Verdant Associates

Jane Colby, Apex Analytics

Hannah Collins, Leidos

Andrew Cottrell, Applied Energy Group

Erin Daughton, ComEd

Faith DeBolt, SBW Consulting

Jeff Erickson, Guidehouse

Jim Fay, ComEd

Jason Fegley, Ameren Illinois

Scott Fotre, CMC Energy

Kevin Grabner, Guidehouse

Andrey Gribovich, DNV-GL

Randy Gunn, Tierra

Vince Gutierrez, ComEd

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Selena Bell, Brio

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Brian Hoeger, Nexant

John Lavalley, Leidos

Rohith Mannam, Nicor Gas

Marlon McClinton, Utilivate
Jake Millette, Michaels Energy
Abigail Miner, IL Attorney General's Office
Jennifer Morris, ICC Staff
Melanie Munroe, Opinion Dynamics
Chris Neme, Energy Futures Group, representing NRDC
Rob Neumann, Guidehouse
Victoria Nielsen, Applied Energy Group
Randy Opdyke, Nicor Gas
Bryan Overman, Indoor Climate Research & Training, U of I
Patricia Plympton, Guidehouse
Hilary Polis, Opinion Dynamics
Zach Ross, Opinion Dynamics
Clayton Schroeder, Nexant
Cynthia Segura, Citizens Utility Board
Tyler Sellner, Opinion Dynamics
Sepideh Shahinfard, SBW Consulting
Kristol Simms, Ameren Illinois
Arvind Singh, DNV-GL
Ramandeep Singh, ICF
Grant Snyder, IL Attorney General's Office
Samantha Stahl, Ameren Illinois
Ellen Steiner, Opinion Dynamics
Jacob Stoll, ComEd
Mark Szczygiel, Nicor Gas
Harsh Thakkar, Franklin Energy
Eric Van Orden, Copper Labs
Sanjyot Varade, Nexant
Andy Vaughn, Leidos
Will Wilson, Leidos
Cate York, Citizens Utility Board
Hameed Yusuf, Nexant
Jim Dillon, Ameren Illinois
Joel McManus, TRC Companies
Noel Stevens, Opinion Dynamics
Chris Vaughn, Nicor Gas

Meeting Notes

Follow-up items and next steps are indicated in red and summarized at the end of the notes.

Opening and Introductions

Celia Johnson, SAG Facilitator

The purpose of the July 14th meeting:

1. For the SAG Facilitator to present an overview of the Evaluation Working Group;
2. To educate the Working Group on a market effects pilot for Ameren Illinois; and
3. To introduce a question to the Evaluation Working Group on whether renewable energy measures should be considered EE.

Evaluation Working Group Overview

Celia Johnson, SAG Facilitator

- Purpose is to discuss evaluation questions that are technical in nature – not large group interest.
- Establishing a working group is better than “small group” meetings that can confuse participants.
- Creating an ongoing working group for evaluation makes sure we can address those questions that aren’t appropriate for large group SAG, increasing transparency and allowing for easier participation.
- July is the only scheduled meeting so far, another will be scheduled this year. Annual evaluation plan and NTG process will stay in the large group SAG as in previous years.
- There is a dedicated working group website. It also links to other SAG meetings that had to do with evaluation.
- It is a self-selected working group, open to all that are interested unless there is a topic which has a financial conflict of interest.
- There are a couple of open discussions on heating penalties and negative savings, from Guidehouse in 2020. There was a need to talk about it again and we can circle back on that draft resolution in this working group.
- Other topics will be scheduled as needed – though there is nothing else on the list right now.

Ameren Illinois Market Effects Pilot

Hilary Polis and Noel Stevens, Opinion Dynamics; Matt Armstrong, Ameren Illinois

- This presentation will provide an overview and talk about the plan and design of the pilot. ODC team will provide an update on the market research for Ameren Illinois on heat pump water heaters and HVAC. Will discuss design and refinement of design that was informed by the market results. Then the framework for tracking and claiming the results from the pilot.
- Market effects – based on IL TRM. Definition from TRM shown. Engaging on pilot project to explore potential of market effects in residential portfolio. Explored efforts historically – looked back at our evaluations and program documentation to see if effects had occurred. Identified there were some changes in customer behavior and identified there was more need for evidence of market effects, to generate them throughout the supply chain. If evaluations and market data find a change and we have the info and data needed, we can begin quantifying.
- Leveraging the definition and the historical programs, we built this pilot to support development and what the feasibility and rewards of a program framework to capture market effects savings. Objectives are testing the framework, exploring cost impact, thinking about efforts required to engage actors and customers and how that interacts with the effects generated. Leveraging pilot efforts to further develop staff skillset to deliver programs that change behavior and market structure. Identify and execute best practices in teaming strategy – implementation, planning, evaluation, market research. Deepening relationships with supply chain & program allies to aid in delivery and data collection. We will evaluate market progress and develop methodology for claiming effects, working hand in hand with OD throughout. Last, working with the stakeholders to review the plan and results and establish market effect savings. As we went through 2022-25 plan process, we heard from Chris Neme suggesting that utilities weren’t possibly capturing all savings generated from traditional resource acquisition efforts –

spillover piece, I recall, and other savings not being captured. Interested to hear your thoughts and other stakeholders about where we are headed.

- With this pilot, we are partnering with Brio, Leidos, and Opinion Dynamics – Brio is the new piece who was brought on for strategy and design. They bring program design and supply chain expertise, coupled with the deep background on strategy for developing tools to generate market effects. Ameren is deeply involved providing overall strategy and guidance to the program teams as we work through implementation.
- Timeline & Design: Important to mention the nuances about the pilot and history. Ameren is not new to HVAC or heat pump water heater market, but recently transitioned to a midstream approach working with different partners in the supply chain. With that we have changed our focus on the relationship with the supply chain and created a learning opportunity. Reforming our approach as it is implemented. Design of the pilot is focused on leveraging existing program framework to create champions in the market – supply chain actors that advocate for the programs. From a customer perspective, important to insure we are working with our customers as well. Recognizing that if it is easy to participate and desired technologies are promoted and customers get the benefits, we are creating long-term advocates for the programs. Want to be able to pivot if something isn't working.
- From the slide, currently in the implementation phase, wrapping up in early 2022. Evaluation and review is ongoing throughout the pilot. We engaged OD early to review the logic model and the program design, to ensure the market indicators, activity and logic could be evaluated at the end of the day. We have leveraged market research that OD will present to continue refining of the pilot approach. Evaluation team hand in hand during the pilot is critical to make sure we don't impact the ability to evaluate the work.
- We launched the pilot design phase in Q4 2020 and leveraged learnings from previous work on the historic potential of market effects. Articulating the effects we anticipated, what we were trying to accomplish and when we expected to see the changes – and when we would identify and document. Logic model on slide is small and hard to see, it's a demonstration of where we are. This is the logic model for heat pump water heaters. It goes hand in hand with a work plan that was developed to provide more detail and call out the activities we have planned to address the barriers in the two markets.

HVAC and HPWH Baseline and Market Characterization Research

- Goal was to before the pilot launched to characterize the conditions to support future characterization of market effects. We will overview the research and methods, key findings, and then approach to evaluation of market effects.
- We have been an engaged partner throughout the process and the market characterizations are to characterize the market structure and size and conditions in the market that may be affected. Market size. Supply chain from manufacturer to installer to end customer. Distribution channels between the market actors. We looked at barriers and drivers for acceptance – stocking and selling, installing and patterns in how customers are purchasing the equipment. This identifies future opportunities and recommendation to generate market effects.
- Research methods used for the study started with secondary data review. Team has completed other market characterizations e.g., New York and California. So, we looked at our previous knowledge and additional sources. Leveraged HARDI and HHI data sources to understand HVAC market size. Developed a strawman of the supply chain in AIC service territory. Developed a map of the supply chain and did interview with market actors to answer research questions.

- Providing contextual information about the data and how it ties to claiming market effects. We are looking at market sizing and structure metrics – baseline numbers for the metrics listed on the slide. Additionally, interview gathered info on what I'm calling the market effect factors. These characterize the structure and size to explain the trends we see in the numbers.

Results – Heat Pump Water Heaters Market Characterization

- HPWH market size is very small in AIC territory and has room to grow. This aligns with national data. Smaller than national avg 2.5%. Estimate 185k water heaters will need to be replaced in 2021-2022.
- Good sign for market effects – nascent market with room to grow and create structural changes. High prevalence (80%) gas water heating currently – implications are that HPWH are electric and that can mean a conversion and potential barriers such as space and conditioning on installed area. If you are switching it might mean a panel upgrade as well. May impact the market size that can be impacted. New construction is well suited to HPWH installations because builders can take into account the space requirements. Also, more likely to be electric. Market actors expect modest growth in sales over 5-10 years.
- We mapped out the supply chain for HPWH. Overall, 50% go to distributors, 50% to big box/hardware. Installers install all from distributors and a lot from the big boxes – only a quarter to a third DIY install. For HPWH installs, they are usually done by a plumber but require interaction with electricians. In terms of end customer installation that wouldn't necessarily be covered by a midstream model – those customers need to buy incentivized equipment as well.
- We explored drivers and barriers. For end customer, cost consciousness is primary consideration on new water heater. Interesting in AIC territory is water hardness – heaters have 7–10-year lifespan. HPWH has 10-year warranty which could be a selling point for the customer. Incentive of \$1000, has been reduced to \$800. Market actors thought \$1000 was comparable to a gas furnace and could generate interest but \$500 would be too low.
- Barriers to acceptance at distributors are stocking practices driven by installer demand – on HP HVAC side, distributors dictate to contractors. It is not this way for HPWH. Only 1-2 kept in stock to meet current demand but to really induce change, they need to increase stocking practices. Contractor might need to purchase multiple units that aren't available. Installers have very low awareness of HPWH and low understanding of the energy efficiency. Strong sentiment of installers that nothing is more efficient than tankless but HPWH are actually more efficient. Initiative needs to work to overcome this.
- Also technical barriers – space and conditioning, condensation, etc. Still trying to figure out the installation and technical challenges. Commonly people want a new heater replace on burnout with similar equipment. This is a challenge when the predominant equipment is gas WH. There is low customer awareness and they are concerned with high cost.

Key Opportunities and Recommendations for Generating Market Effects

- Current HPWH market is very nascent. To induce changes, distributors have to stock. Incentive has to be at a level to encourage changeover of dominant equipment type. High prevalence of gas is a barrier to adoption and incentive has to be high enough to

encourage replacement. Potential selling point is savings over time and ten-year warranty. Make sure customers get the marketing.

- Ameren has executed a number of activities to increase our relationship with the WH market. As you can see from the slide, we still are refining the implementation approach and marketing and exploring for the “sweet spot” for the incentive that will encourage the behavior change and drive to more efficient HPWH products.
- A key finding is that end customers DIY over 25% - need downstream POS rebates to remain as an incentive mechanism. New construction is a market opportunity for installations and recommend that continue to explore – though there is limited new construction growth in AIC territory. There is misperception among installers about the efficiency and other aspects, so provided recommendations about items to educate installers about in trainings.
- Similarly, you can see we’re taking those findings and putting them to work in implementation and using those supply chain actor engagements to share the findings from this work and gathering feedback on our engagement. And trying to work on educating to get past these barriers and misconceptions.

Results – HVAC Market Characterization

- Talking about the equipment in the midstream HVAC – SEER 16+ CAC and ACHP. About 474k HVAC units shipped to IL in 2020. About 7% HP and 15% of CACs were SEER 16+. Still a nascent market but bigger than HPWH. Market actors expect natural growth but incentives will play a role. Policy drivers and growth in customer interest will drive demand. Percent of households with gas heating and cooling is 45% and will present a challenge for equipment replacement. That presents similar barriers – electric panel, etc.
- The HVAC supply chain in AIC territory for efficient equipment is more straightforward than the HPWH side. Distributors sell to installers who sell to end customers. Found that there is a lack of trained and certified HVAC installers – could be a barrier to market. Trend across the country that installers are retiring and there is not a new workforce. Distributors are promoting high efficiency equipment and training installers who they view as the sales force. Installers view distributors as a trusted source. COVID impacted demand for HE HVAC equipment – was hard to get the materials to build equipment. So pent up customer demand in 2021. Supply probably has not caught up yet.
- We explored drivers of acceptance of HE equipment. Similar to HPWH. Cost conscious customers interested in HE equipment for operational savings, as well as environmental benefits. Installers consider home characteristics such as fuel type, fit, customer budget, and the efficiency of equipment. Installers see incentives as important for customer interest and feel that incentives may be too low to stimulate demand.
- Barriers to acceptance for distributors are few. There has to be correct system sizing for EE potential to be realized. On installers, strongly believe misconceptions on cold climate performance such as always requiring backup systems. Also cautious about setting the switch-over point at much higher than it needed to be. There are also concerns about HP not lasting as long. No significant challenges with actual installation. Customers have low awareness and don’t understand that HP does both heating and cooling. Upfront cost is primary concern, and cold weather performance.

Key Opportunities for Market Effects from the HVAC Initiative

- Large margin to grow, but recognize the demand for HE equipment seems to be growing naturally – meaning really important to track interventions and ensure they are well documented to disentangle initiative impacts from naturally occurring changes.
- Lack of trained workforce provides a barrier and need to support internships, career opportunities, engage high school students. Installers are unlikely to sell to gas HVAC customers – need to target to customer that currently have electric heating and cooling.
- Supply chain is straightforward. Distributors do a lot of training and installers trust distributors – so utility should work with distributors to host any trainings on the midstream HVAC initiative.
- Like the HWPB market, we are leveraging the research to inform the pilot and the activities. We're focusing on deepening relationships with the market and the supply chain and getting the right messages to the right customers. We are hosting morning briefings and roundtables to help on some of the barriers and provide a forum for discussion with our partners. We believe that by investing in these activities, we will be able to recognize market effect savings and increase the throughput of efficient products.
- One of our most important findings is the cold weather misconception. Contractors have additional misconceptions as well. Recommend working with distributors to focus on training on cold weather performance including installers who have installed in Vermont or New York or other cold weather environments. Customer awareness is low and we recommend customer marketing/education/outreach on the benefits of HE HVAC – especially operational and environmental savings.
- Some market actors would like to see higher incentives – should monitor the market and make sure incentive levels stay competitive.
- AIC continues to explore the sweet spot on incentives and refining our marketing messaging and deepening our engagement with the supply chain.

Approach for Evaluating Market Effects

- We're going to build on Brio's logic model and the foundational research on the market structure and existing industry frameworks. The activities that have gone on so far show AIC is set up for a set of programs that are designed to transform the market over time and should provide indicators of market effects over time. The measurement of the entire market.
- The theoretical basis of a market effects study. The diagram shows the smallest bubble, the direct program induced savings – tied directly to program rebates through the midstream program. That behavior is tracked by the tracking records and the info reported by the distributors. But those aren't the only savings. You are changing how people function in the supply chain. Over time there are additional savings from other distributors and other market actors from outside that bubble – program induced market spillover savings in the second bubble. Then the third bubble is non-program induced savings like natural savings in the market. Focus of market effects work is identifying and isolating that second bubble from the other two. The savings associated with how market actors are acting in the market that generate program-induced but not rebated spillover savings.
- Our approach is to use the HARDI data as the top line of the existing market, and bump that up for how much is not sold through distributors that could be occurring. Then tracking the metrics shown on the left through a series of different primary research

activities. A sample of interview with market actors, while the ongoing efforts are on actors in the program, we will focus on a broad array of contractors and non-participating distributors. To get to that non-rebated activity. As contractors become more aware, they will demand more. Not only participating, but also non-participating distributors should start responding over time. Those are the non-tracked sales we want to capture. Right now we are going to finalize a memo summarizing our approach to quantifying program attributed market effects – delivered to WG by early August.

[Jennifer Morris] On that list on the left [see slides], those are the items that are in the baseline assessment, so you can compare changes?

[Noel Stevens] Yes, in parallel. Baseline will continue to track the program participating distributors, this effort will look at non-participating distributors and track the same metrics through manufacturers and contractors. That should show how much activity is happening inside and outside of program. We'll use a Delphi panel to explore how those differ.

[Jennifer Morris] In baseline assessment – interviewed 2-3 manufacturers. Will you go to the same manufacturers, or different ones? Could there be an error there? Why use a Delphi panel?

[Noel Stevens] The reason to use the Delphi panel to complement the interview is to offset the need for a statistically significant portion of the market actors. Can interview a smaller set. Ideally, we could go to a different set of manufacturers, but there aren't that many.

[Jennifer Morris] Could you do a census of them?

[Noel Stevens] It could end up that way, but the Delphi will help keep the costs down. We plan to recruit people knowledgeable about a broad spectrum of the industry. In the past we've done very large samples of contractors and installers and distributors in treatment and control groups...instead of doing that a Delphi panel will help home in on what we think the realistic level of variation should be within the relevant factors.

[Jennifer Morris] Who would be on the Delphi panel?

[Noel Stevens] Not certain, but definitely representatives from each of the groups of market actors – whether that's homebuilders or ABC or something like that, knowledgeable about national and local. DRI who publishes the HARDI data could help us find distributors. And probably a manufacturer. Maybe an academic.

[Randy Gunn] What is the applicable market for these programs – is it only all electric customers or existing gas as well?

[Matt Armstrong] I think we are targeting electric resistance, but as a dual fuel utility we're looking to provide what the customer is after – if they want to move from gas to electric, we're interested.

[Randy Gunn] Initially at least, primary market is customers with electric equipment?

[Matt Armstrong] Not focused on fuel switching, but customers may still see cost and environmental benefits and make the choice.

[Jim Fay] You mentioned training going on in water heater and HVAC markets. Are you working with OEMs to design and formulate the training?

[Matt Armstrong] We have some OEM contacts. We just got the HVAC market characterization results and are developing that training material. Manufacturers have the most knowledge and good points about their products, so it's important we engage them as we develop those materials.

[Celia Johnson] Next steps on this – Matt mentioned an objective of working with stakeholders to review results and develop savings. Can you distribute the evaluation memo to this group? Is future discussion needed?

[Matt Armstrong] It will be important to get that memo out and then get some discussion on that framework – sometime after early August.

[Jennifer Morris] After framework is out there and agreed to, is this something that would be posted on the SAG site, added to the TRM, etc.?

[Matt Armstrong] Not sure we have discussed how that would be addressed – if it would go in policy manual or TRM. It's a good point that we need to start considering how we memorialize that framework and we're happy to get feedback.

Next steps:

- Memo is being finalized by Opinion Dynamics in early August; the memo will be circulated to the Working Group for questions or comments. A follow-up discussion on market effects will be scheduled.

Open Question on EE Measures

Andrey Gribovich, DNV-GL; Jeff Erickson, Guidehouse

- Background on open question: We have received some questions from the market – contractors primarily – about various PV technologies such as a PV street light and battery rather than running wires. Some questions regarding interior lights in warehouses where instead of a skylight they would put in a PV panel to run 10% of the quantity of lighting fixtures. Initially our reaction is if it is connected to the grid, it might make sense for efficiency but if it is stand-alone then it would fall under renewables. But we started looking and the legislation and rules seem a little open to interpretation whether these systems can be accepted in the efficiency portfolio. We started talking with ComEd and Guidehouse and got some positive and optimistic feedback, so we opened up to some stakeholders and also got similar positive feedback.
 - Key question: Where the line is between EE and renewables? These are pretty niche applications but we wanted to explore the topic and get some consensus of where that line is.
 - Goal of discussion: Establish a consensus policy. Draft policy language will be circulated for review.
- List of issues – started off looking largely at PV electric, but there are gas effects, other renewable measures that might get rolled in. There are PV lights, mostly.
- Key question is it connected to the grid or not – that's key when we get to the legislation. Solar thermal. Space conditioning that includes some solar thermal, attic fans, direct PV to HVAC or pump systems. Might be PV on other equipment. Might be renewable fuels reducing consumption of natural gas that could also be wrapped into this conversation.

- There are two pieces of relevant legislation. Key definition of EE – reduces electricity or natural gas consumed. The ultimate goal is to reduce those as defined in legislation.
- Definition of renewable – Energy and its associated renewable energy credit. and distributed generation device “interconnected at the distribution system level.”
- We drew the conclusion that there is room to use a RE measure that offsets electricity and natural gas. Connected to the grid is a thing to be considered. Doesn’t make it ineligible on its own – but if it can get credits and provide back to the grid that is clearly RE. Is there an inverter seemed like an easy definition, but there are cases where measures are not connected to the grid. But what would happen in the absence of the program.

[Chris Neme] Can you remind us what eligibility for RE credits means?

[Jeff Erickson] This is just some of the language from the legislation but RE credits aren’t my specialty.

[Chris Neme] This defines them but doesn’t indicate what has to be demonstrated to earn a credit. On the proposed conclusion, I think NRDC is comfortable with “if it isn’t on the grid” part of the definition. Not sure we are comfortable with the notion that if it is putting power on the grid but not eligible for a REC then it could count as EE. I struggle with that.

[Jeff Erickson] The proposed conclusion states [a measure] would be ineligible if it could sell back to the grid.

[Chris Neme] NRDC would struggle with renewables as an EE measure for anything connected to the grid. I’m reacting to how it is written in the conclusion. It says you have to meet two conditions to be ineligible – either not connected, or connected but not eligible for RECs. But you have an “and” there not an “or” so maybe I’m misreading.

[Jeff Erickson] The conclusion could be clearer. As an example: If we have a PV-powered light and the sun goes behind the cloud, it can still draw power from the grid but never feeds power onto the grid.

[Chris Neme] So anything that is configured to put power on the grid?

[Jeff Erickson] Yes, there are some measures that could be wired to put power onto the grid but if they are not wired that way, then they could. This could be a problem with a solar field set up to not feed the grid but just to run things when the sun is shining.

[Jennifer Morris] Could there be a size limitation?

[Chris Neme] Could I put PV panels on my roof, not have them feed the grid but meet my own load? That doesn’t seem like EE. But an outdoor light that doesn’t need to be wired because it has a battery and collects light and I don’t have to run wires, that seems like a reasonable EE measure. It seems like “standalone” generation is not eligible but something integral to the end use or uses – something along those lines could be a criteria to consider.

[Cate York] We are not talking about measures using less energy, but using less energy from the grid?

[Jeff Erickson] In the simplest terms, yes. That gets to the definition in the legislation. Natural gas seems clear – it's either from the gas company or not. Electric from the sun is still electricity consumed but not from the utility.

[Andrey Gribovich] We have a solar lighting customer example: They could install with a wire to the grid or with a PV panel that stands alone. That light wouldn't be covered by the renewable portfolio. If this wording also excludes it from the EE side, we're going to miss out on that measure because of this linguistic nuance.

[Jennifer Morris] Only concern with that is that the incremental cost is lower with a PV panel lighting instead of wiring to the grid, so they already have an incentive.

[Andrey Gribovich] That was just one example and there are many more.

[Jeff Erickson] There are issues to work through on what the baseline would be for both the savings and the cost. If baseline is met need or baseline is cost if you had to run wires, that's different.

[Chris Neme] Appreciate this being teed up, it's not as simple as it first seemed. In the example Andrey reference, maybe the PV system is dedicated to the end use if not integral to the end use – not reducing general facility/building load but only that particular end use. Not comfortable with PVs on a roof just providing the electricity needs of the building.

[Andrey Gribovich] Another example: what if those lights are connected to the grid – they are a "hybrid" connect but can't sell back to the grid. Cloudy day, at night the light uses the grid, next day is sunny and battery charges. In this case the incremental cost would be positive because it has both wires and PV.

[Jennifer Morris] That seems like something with an easy baseline and easier to qualify as EE.

[Zach Morris] I think the incremental costs are a different topic. It isn't necessarily addressing the core question of whether it is eligible considering its RE status. To the observation a few minutes ago in the case of the incremental cost of the solar PV lower than wired, so it shouldn't be incentivized – that's not actually answering our overall question.

[Jeff Erickson] If in principal some measures could be eligible under clear criteria, then the cost is integral to the baseline and net to gross. If it isn't handled in the gross calculation then it has to be in net to gross because it is a question to be answered.

[Chris Neme] Off the table, at a minimum, should be anything that can put power back onto the grid. In addition, anything that can't put power on the grid but is designed to generate electricity to meet facility/area/building need instead of electricity for specific end uses. Are there other restrictions and constraints? There may be; need to think about it.

[Andrey Gribovich] Things that seem clearly eligible are included in Guidehouse memo. We have also been working with Ameren. For example: A solar attic fan is producing cooling impacts for the home and isn't having the primary impact of the energy used by the fan itself.

[Chris Neme] Challenge is what's the difference between the PV or the electric. Isn't it the same thermal savings?

[Jeff Erickson] That hits the baseline question. Is it a cost difference, if the savings are the same?

[Chris Neme] I'm not sure the cooling is the savings because you could also install attic fans that use utility electricity. But it is dedicated to a defined end use and doesn't send to grid, so it would be in.

[Jeff Erickson] Would we include the reduced AC load savings in the baseline or just the electric for the fan?

[Andrey Gribovich] We allow daylighting measures like light tubes, right, I know there is no PV panel installed but doesn't the idea hold. Presumably you install that instead of a wired lighting measure.

[Chris Neme] Absolutely. Taking it further, anything solar thermal would be in as well for similar reasons.

Next steps:

- Guidehouse to draft proposed policy resolution and circulate to the Evaluation Working Group for comments; a follow-up discussion will be scheduled if needed.

Closing & Next Steps

- **Ameren Illinois Market Effects Pilot:** Memo is being finalized by Opinion Dynamics in early August; the memo will be circulated to the Working Group for questions or comments. A follow-up discussion on market effects will be scheduled.
- **Open Question on Eligibility of Renewable Measures:** Guidehouse to draft proposed policy resolution and circulate to the Evaluation Working Group for comments; a follow-up discussion will be scheduled if needed.