ComEd Income-Eligible Electrification Workshop #2 Agenda

June 1st

10 – 1:30 pm central

Zoom

Time	Topic	Discussion Lead
10 – 10:15	Review agenda & recap workshop 1	Molly Graham, MEEA
10:15 – 10:30	Refresher on ComEd's goals	Kara Jonas, ComEd Mark Milby, ComEd
10:30 – 11	Review Miro boards and priorities	Molly Graham, MEEA
11 – 12:05	Small group discussions	Stacey Paradis, MEEA Maddie Wazowicz, MEEA
12:05 – 12:35	Lunch Break	
12:35 – 12:55	Finish small group discussions	Stacey Paradis, MEEA Maddie Wazowicz, MEEA
12:55 – 1:15	Report out and large group discussion	Molly Graham, MEEA
1:15 – 1:20	Next steps, wrap up, and adjourn	Molly Graham, MEEA

ComEd Electrification Workshop 2 - Meeting Notes:

Molly shared the agenda for this meeting and shared the purpose for this workshop.

Molly shared a review of workshop 1.

- We reviewed the imperatives within CEJA and ComEd's stipulation agreement.
- We heard from two guest speakers, representing programs further along in their implementation.
    - NYSERDA: New York's Clean Heat Program. Goal of 2 million electrified or electrification-ready homes by 2030 – 800,000 must be low-to-moderate income. NYSERDA reviewed several initiatives: piloting and demos in income-eligible homes, designing incentives, customer education strategies, non-incentive strategies: thermal as a service and community thermal service networks.
    - California, AEA (Association for Affordable Energy) presentation on multifamily weatherization and electrification. Acknowledge different climate zone and political climate. California makes these programs more conducive to electrification and early success. State licensing board allows HVAC contractors to install measures.
- Small-group discussion and MIRO boards. Identified several key strategies and barriers that will be further discussed in workshops 2 & 3.

Kara Jonas, ComEd, gave a refresher on CEJA provisions.

- Law allows for fossil-fuel fuel switching. Dictates how savings are calculated. Includes limitations for how much savings can be claimed, but the limit for this program year is still a significant amount of savings.
- 25% of savings must come from income eligible housing.
- Utility must provide customers with estimate of impact on monthly electric bill and total annual energy savings.

Kara reviewed stipulation agreement.

- Full electrification needs to be pursued. This makes economic sense (customers are on a lower rate and eliminates gas connection charges) as low-income customers must see a reduction in energy bills. Without eliminating gas fixed charges, it will be very difficult to deliver an energy bill savings.
- Weatherization needs to be considered.

Kara shared budget breakdown and ramp-up:

Revised Plan 6 - Income Eligible Electrification Budget				
2022	2023	2024	2025	4 - year
$ 1,620,000	$ 8,502,500	$ 12,695,000	$ 16,820,000	$ 39,637,500

Revised Plan 6 - Income Eligible Electrification First Year Energy Savings				
2022	2023	2024	2025	4 - year
1,238	7,752	11,465	14,910	35,365

Mark Milby, ComEd, shared other relevant research efforts. Current parallel electrification research includes:

- New partnership with Elevate. They have an independent pilot underway to electrify SF and MF homes in Chicago. ComEd will provide some cost-share and will learn from this pilot.
- Communicating fuel switching to customers. Determining best methods for communication for all residential customers and framing fuel-switching savings to income-eligible customers.
- Interviewing contractors and builders to understand their awareness and attitudes on electrification.
- How to identify propane customers. Working with Cadmus. Want to confirm that this is the initial target segment for the SF homes in the first year.
- Working with Center for Energy and Environment to build out basic framework of customer bill impacts. Working on case study that will likely be shared with this workshop group.
- Will work with MEEA on research for best practices in building electrification programs nationally. Programs across the country are still young.
- Will be sharing results for these research areas; many results will be available in summer. Relatively near-term.

Kara reiterated focus and goals of this workshop:

- Inform SF and MF electrification program design. We are at the juncture where we need to launch programs this year. We need to scale as well.

- In small group exercises – program process and design questions. If you feel joint infrastructure can be leveraged before a separate electrification channel, encourage this group to consider what this looks like. If the group feels that joint infrastructure shouldn't or can't be leveraged, individuals should be prepared to answer questions on establishing new channels.
- Brainstorm phase coming to a close; need to begin implementation phase.

Question from Jim Heffron: Confirm, are we targeting unit or building level electrification for multifamily?

Answer: The intent is tenants should see positive bill savings; weatherization + electrification opportunities; zero cost-share. Stipulation provides an exception; we have seen doing all end-uses in a building, particular those not on tenants bills, can be cost prohibitive and can present logistical challenges. Can be hard through electrification to achieve positive bill impacts for tenants and program managers/owners. For a larger building, we have more flexibility requiring property owner cost share and leaving some fossil fuel end-uses. As long as we are fully removing the gas bill for the tenant. The burden will be on us to develop that screen: demonstrate where the cost prohibitive and cost-effective line is. Ultimately serve tenants with benefit.

Question from Kristen Kalaman: We haven't talked through different partners and how we would collaborate. Is this something we can share at this point?

Answer: We have brought together implementers of SF and MF eligible programs. RI is the prime contractor on SF; Franklin on MF. Elevate's services are leveraged for both sectors. Strategic partners are also invited: CEDA, CBA. CMC Energy on Heat Pump initiative. Guidehouse on evaluation. CLEAResult on R&D. This should give context of who is in this workshop. More or less, everyone here has a role in delivery of income eligible programs, including expertise on electrification.

Molly reviewed thoughts put forth in Workshop 1 and walked through Miro boards. Ensure that we did not miss anything and gave participants another opportunity to contribute ideas. Orange stickies identified as near-term priorities and big-picture questions we need to understand in the near term. See the discussion guides prepared by Molly and shared.
Single Family: https://miro.com/app/board/uXjVO80rKmQ=/?share_link_id=137164100093
Multifamily: https://miro.com/app/board/uXjVO7yd6QQ=/?share_link_id=143059652338

Question from Gina Melekh: Is this an all or nothing approach? Can tenants opt-out

Answer from ComEd: I don't think we've dug into this and it remains unclear. I agree this could be useful – how would we go about partial building electrification? Assessing bill impacts for party responsible.

Question from participant: It sounds like we have flexibility if the total building energy consumption needs to be dropping vs. individual tenants. For the whole building energy consumption need to go down, how many tenants would need to participate for there to be savings?

Answer: It's crucial that tenants bills are lowered. Tricky in situations where tenants are responsible for one utility vs the other.

➔ What do we need to know to answer these questions? Will need to think through in the multifamily group.

Group was split back into single family and multifamily breakout rooms again. Each group was given a discussion guide ahead of time with topics and questions pulled out from the Miro boards in Workshop 1.

Instructions:

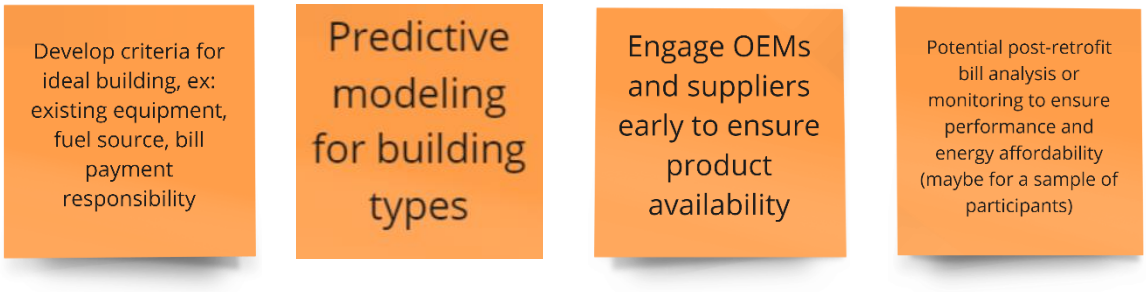
We spent workshop #1 brainstorming what ComEd needs to understand and implement in an electrification program, today's activity will now focus on brainstorming solutions. The orange boxes below represent barriers or opportunities that need to be addressed to successfully electrify income-eligible homes. These boxes have been identified as the top priorities or biggest challenges pulled from the Miro boards previously developed. Workshop #2 will focus on *how* we design solutions or strategies for each box. All of this information will ultimately inform an action plan for ComEd.

The group will break back into two smaller groups, one focused on single family and one focused on multifamily. You'll have 25 minutes for each project role (implementation team, customer, and EE service provider), 75 minutes total to get through this exercise. If there are additional barriers or opportunities you'd like to identify as a top priority, you can create an additional box, however your group must still address all of the boxes that have already been identified. Initial discussion prompts are provided to help spur discussion and problem solving. There are likely additional points of discussion that have not been already posed, feel free to identify other questions you have.

The discussion guides from each breakout group are provided below:

Multifamily Discussion Group Notes

Implementation Team



Initial discussion prompts:

Box 1 & 2:

- ***What is the best way to identify multi-family buildings that are a good fit for electrification?***
    - *Jim Heffron, Franklin: By building type and building equipment. Of the different equipment and building types, we identify the best candidates.*
        - *Molly: Agree, this is a helpful way of prioritization.*
    - *Dan Maksymiw, CEDA: Another criterion – which building owners are bought-in? Secondly, categorizing building infrastructure; large MF will be challenging. Partner with implementation folks to develop list of candidates. Centralized heating plants are more of a challenge than individually heated/cooled apartments.*

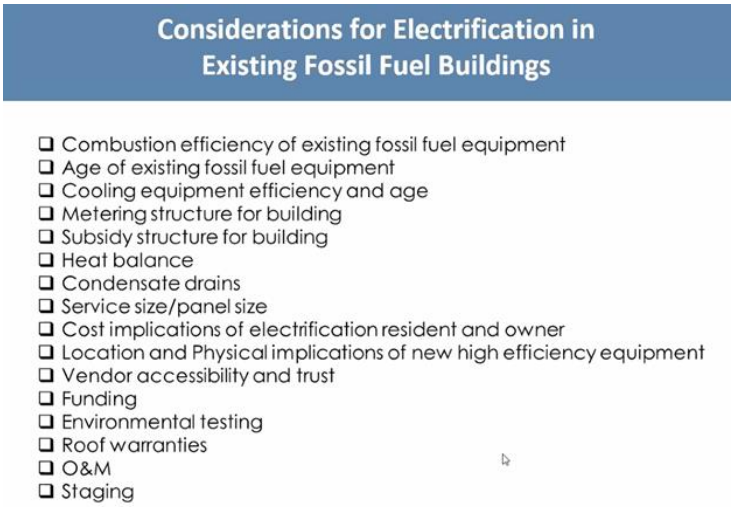
        - *Jim Fay: Regarding outreach to address building owner buy-in. Do we reach out to the entire community of building operators/ owners and recruit proactive members. Do we already have an interested owners list? Would it be worth expanding the scope for owners/operators who haven't participated in the past?*
            - *Dan M: Yes. In addition, there are many owner operators with larger portfolio of properties. We leverage this opportunity. Another note - the goal is for tenant benefit. If tenant is paying their own utility bill, there isn't motivation for property owner to get involved. But if they pay for gas, this could be a huge benefit for this program.*
        - *Kara: Question for Dan: What makes large MF building with shared system is a challenge?*
            - *Dan M: It's building specific but speaking generally. Buildings with large hydronic heating plant buildings have units that are typically cooled by window ACs. So each unit need heat pumps. These retrofits could be very costly.*
    - *Brody Vance: Criterion: Select buildings that have gone through building envelope measures. These are low-hanging fruit. Projects to replace more costly equipment, like heating system, would take less time and be ideal for first year. Projects for this year may not be ones that are from scratch.*
        - *Jim: Already weatherized buildings may be one criterion for buildings that are a good fit.*
        - *Molly: especially considered length of project might take. Need some early MF wins and we need to find buildings that are already weatherized.*
        - *Kara: We collect information on program participants, so we can filter down to what the systems and age look like. Could ensure a timely outreach effort – target when systems are at the end of their useful life.*
    - *Dave Hernandez: 1. Prioritization of building type. 2. Organizing outreach in such a way that we are creating a relationship with property owners and developing a waiting list to move through the pipeline. By prioritizing prime budlings by type and equipment, these owners/operators could be success stories that support outreach and education. Consider that customers are making major changes. Convey that because they are income-eligible, there are incentives. I see these owners as small business – need to make them more comfortable.*
    - *Jim Heffron: we don't necessarily convince owners to do large capital projects; CIC is an example. Owners go to them for a loan or capital upgrade. Owners at this point is a good time to offer this program.*
        - *Kara: So program should identify good candidate as they come in?*
        - *Jim: all the above*
        - *Jim Fay: it would be part of outreach effort.*
    - *Neil Curtis, Guidehouse: Involved in NYSERDA's program research. Consider that there is a significant difference in terms of fuel cost. Found it is challenging for some owners and renters. If a heating system last several decades, these must be replaced with an electric system. Emphasize that because of the cost of installation is so high, we must target buildings with*

gas heating systems at the end of their useful life. At this point is when the fuel switch makes economic sense.

- *Kara: thoughts on education related to this?*
  - *Brody: if a contractor is involved, customer is already considering it. Aiding contractor, helping them understand the program and big-picture to convey to customer, or bring ComEd at the right time. Wholesalers and contractors are a significant opportunity.*

- *Participant: Another criteria, point of resale*

Sample list of considerations needing investigation for each building:



- ***Should there be a geographic component/focus for targeting homes for electrification?***
  - *Brody: Yes. Target certain building types within a disadvantaged community*
  - *Dave: Agree. Once we identify disadvantaged communities, you see patterns and can better target.*

Other questions (indirectly addressed or not addressed):

- *Are there building types that we know are not a good fit for electrification?*
  - *Example – buildings that do not have an obvious space for heat pump technologies?*
  - *How should the program navigate situations in which the building owner is responsible for certain energy bills? For example, in a situation where the building owner pays for gas and the tenant is responsible for electric?*
  - *What if landlord pays heating bill as part of leasing agreement?*
- *How might shared systems versus individual units impact electrification viability?*
- *What types of qualitative questions might be asked of the building owner to identify a good candidate for electrification?*
- *To what extent do we feel building owners can be screened upon intake, prior to having anyone visit the property? Are there additional questions that need to be added upon intake?*
- *To what extent can Energy Efficiency Service Providers be leveraged to identify electrification candidates?*

- *What additional data may need to be reviewed / collected during an assessment of the property?*
- *To what extent can the joint program infrastructure be leveraged for screening?*
- *Beyond screening, to what extent can the joint program infrastructure be leveraged?*
    - *At what point does the building owner / manager branch into a new channel for ONLY electrification projects, to ensure separation between jointly funded activities and ComEd ONLY funded activities?*
- *If throughout the process it is identified that the building is not a good candidate for electrification and/or the building owner / manager does not wish to move forward with the project, how can the program still ensure they are served with energy efficiency?*
    - *To what extent can they be routed back to the joint program infrastructure to be served?*
- *How can we ensure this is a streamlined process for the building owner and the customer?*
- *Are there certain multifamily property owners that are more likely to be interested in electrification?*
- *How do we adapt screening / criteria overtime based on learnings?*
- *Is it possible to leverage predictive modeling or other data/ tools to identify good candidates for MF electrification?*
- *How much engineering is needed for SOW development?*

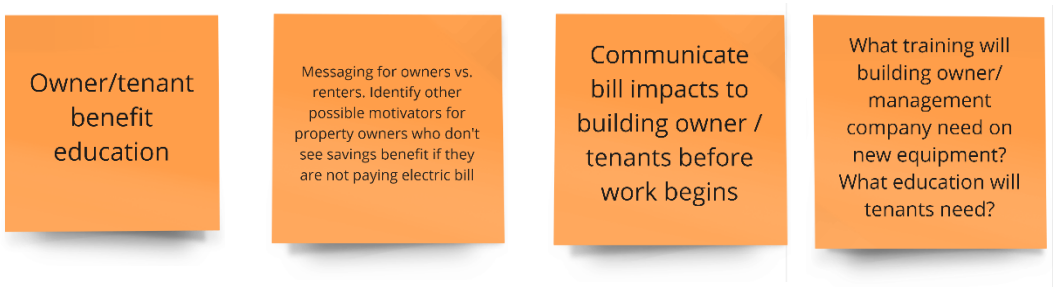
What can be deemed vs. prescriptive **Box 3:**

- *How do we ensure the eligible measures are in stock and available?*
- *Are there any measures we know are having large supply chain issues currently?*
- *What level of support can supply houses/distributors provide to mitigate supply disruptions?*

Box 4:

- *What additional follow-up do we need to do with the customer after the work is complete to ensure satisfaction and/or bill saving realization?*
    - *How does that follow-up change for the property owner vs. the customer/tenant?*
- *What types of information needs to be captured in a post-retrofit customer report?*
- *How do we ensure the estimated bill impacts are realized?*
- *What happens if estimated bill impacts are not realized?*

<u>Building Owner / Customer</u>



Initial discussion prompts:

Box 1 &2:

- ***What role might the program play in educating customers on electrification benefits?***

- ***How does the messaging change for buildings owners vs. renters/tenants?***
  - *Question, Jim Heffron: How significant is the savings when customers go on the lower rate?*
    - *Molly Lunn: it's enough that it does make a difference for some customers. Don't know the exact customers.*
  - *Kara: What's the value proposition?*
    - *Dan M: Decreasing one utility bill and increasing another. Perception is key – tenants electric bill could go up. Non-energy impacts could help offset this perception, but this could be a barrier. Healthier living environment.*
    - *Kara: Messenger matters: is it ComEd? Could be perceived as a benefit only for ComEd.*
      - *Jim Hefforn: Solution is transparency – before and after and dollar impact is needed.*
    - *Dan M; for buildings with central systems, rent may decrease. Sales pitch may have to be tweaked based on property and who pays what.*
  - *Maddie: How do we deal with partial electrification in buildings?*
    - *Brody V: If someone wants to do a portion of the building, we have to move forward. May have to do smaller bites. Water heating up front or two years down the road, at the end of their useful life. Real estate investment trust owners won't touch it. Multi-measure incentives.*
      - *Eve Pytel: High-cost appliances that may be gas; are we looking at stoves, ovens dryers and other things. This could also be part of the challenge, owners may not want to replace all these in-unit.*
      - *Dan: Goes back to incentives; who's paying the bill. If tenant is paying cooking gas, little incentive for owner to electrify and provide infrastructure for those appliances.*
      - *Owner owns the building and equipment; seldom is someone bringing in their own appliance. So there really isn't an opt-out opportunity;*
        - *Gina: tenants opt out would be moving out. Regarding owners choosing to upgrade end-uses in different phases. Would there be a situation where along the way, bills could go up. Would that be acceptable?*
          - *Kara: depends on for who: Bills going up for IE tenants not allowed.*
        - *Jim Hefforn: A decent share of cost savings for tenants is a drop in natural gas connection charge. Is this the dominant screening criterion?*
          - *Kara: hoping that bill impact calculators consider various scenarios. Goes back to transparency.*
        - *Brody: Goes back to who's name the bill is in. Central gas system would benefit owner typically. Who pays for the stoves, furnaces, etc. Could be scenario*

    - *How does education transfer to new tenants?*
- ***What negative impacts/detriments do we believe might exist, but need to be studied/verified? (ex: higher equipment maintenance cost)***
    - *Kara: Performance of cold-climate heat pumps. What can customer expect in subzero extreme cold temperatures? Something to consider.*
    - *Dan M: If tenants want to maintain the same temperature that they formally had, this could raise the bill. They need to know this. Putting demand on the system could have impact on life cycle of system. Keeping equipment clean is also important factor.*
    - *Gina M: Who bears cost of sealing natural gas infrastructure?*
        - *Dan M: What if buildings doesn't have sufficient service from electric side. Cost associated with this.*
        - *Kara: We do have a health and safety budget; up to 15% of budget. We don't have to but we have to budget for this env if it's not needed. This could be considered a health and safety issue.*
    - *What role might an energy efficiency service provider play in educating customers on electrification upgrades (pre-installation)? What resources may need to be developed for EESPs to leverage to educate customers?*
- *What energy and non-energy impacts do we know exist?*
- *What impacts do we believe might exist, but need to be studied / verified?*

Other questions (indirectly addressed or not addressed):

Box 3*:

- What happens if building owner doesn't want to pursue *full* electrification?
    - Can the building owner still receive some electrification work, without eliminating all gas end-uses? Ex: electrifying shared systems versus tenant units.
    - Can we still deliver energy bill savings if *full* electrification isn't pursued?
- What happens if building owner receives estimated bill impacts and decides to change the scope of work?
    - Does a new bill impact estimate need to be done?

Box 4:

- *What role might an energy efficiency service provider play in educating customers/tenants on electrification upgrades (post-installation)?*
    - ***How do we ensure that tenants use their equipment properly and understand how to maintain this equipment?***
        - *Brad Warrenburg: with heat pump program, educating tenants and maintenance/management. We leave instructions for future tenants. Our worry has been with future tenants. Maintenance tends to have high turnover.*
        - *Dan M: educate tenant; convey expectations with our equipment will work differently.*
        - *Brody: Include in move-in and move-out procedure. Can't just be leave behind and education of current tenant*
        - *Neil Curtis: Due to IL focus on bill reduction for tenant, this could be a point of evaluation down the road. If we collectively want to verify.*
    - *How might this education vary for renters versus building owner?*

    - *What resources do need to give building owners post-retrofit on equipment maintenance and servicing, such as connections to qualified contractors?*
- *How might ComEd inform and equip EESPs to thoroughly understand the benefits?*
- *What role might other stakeholders play in educating tenants on electrification upgrades (post-installation)?*
- *What training do property management companies or O&M service providers need on managing new equipment?*

[*Note: other teams at ComEd are working on determining how to build out the bill impacts calculator, including the types of data that will need to be collected and how the bill impacts will be communicated with the customer. For this workshop, don't worry about the mechanics of the calculator]

<u>Energy Efficiency Service Provider</u>

Initial discussion prompts:

Box 1:

- ***How can the program assess EESPs for 'electrification readiness'? What are the knowledge & skills gaps?***
    - *Brody Vance: Many HVAC contractors will need to partner with good electric contractors. Energy advisors are working with ESPs. Why not have them play matchmaker? Contractor doing HVAC wants to do heat pumps, could partner with ESP.*
    - *Kara: Do we have participating ESPs that do electrification upgrades> Or at least heat pumps? Do we have a good understanding of the skills and gaps to build up the network?*
    - *Dave Hernandez: From a training perspective, lowest denominator. There are probably more ESPs that don't know rather than do know.*
    - *Gina Melekh: Identify contractors who are most excited.*
- ***How might these partnerships help alleviate supply chain delays? Or provide intel / insight into the state of the supply chain?***
    - *Brad W: There are issues due to covid. On one job, we had the unit heat pumps but not exterior heat pumps. Try to incorporate different brands to alleviate this. Over the next year or two, realistic issues that could pop up.*
        - *Kara: Do you find having direct relationships with suppliers could benefit the program?*
            - *It can help, but consider they are sales people and give you what you want to hear. Have to recognize personalities and identify the*

right people. In this particular situation, contractor we were using dug up what we needed. Distributor was saying we can handle it (because they want the work). Learn how to read the people your working with. Having extra places or people to go to get things moving is important. Work with different brands that meet the criteria.

- *Brody: have an up-front stock*
  - *Kara: Agreed, and set expectations with customers.*
- *Brody: If pool is limited to ComEd programs, it would help. Low-income could be priority, we could make that work. Experience from Consumers program, we switched to a different provider. Had to pay $700-800 more per heat pump. Without secondary or tertiary sourcing, this may be an challenge.*
- *Kara: To that point, we need to make sure education is manufacturer agnostic.*

Box 2:

- ***Are there trainings needed beyond the 'technical' scope? Ex: trainings focused on 'selling' electrification, disproving myths, servicing equipment, etc?***
  - *If contractors are not seeing the light, and they eventually don't have a viable business model, they won't be able to say we weren't warned. At what point do we warn and nurture them? Suggests possibly being hard-nosed.*
  - *Brad W: There will be some contractors who are eager to learn, others who will be stubborn. Educate and see if you can gain interest. A lot of times, smaller contractors are more nimble and willing to take new projects.*
    - *Agree: Larger contractors, with clientele built up and repeat business, they will be less willing.*

Misc Discussion:

Brody: We discussed training. What about MF BOC for building operators to learn about electrification. Could this be a good way to educate the property management team and maintenance team to apply to their properties?

Similar question - Jim fay: Recall that we did BOC that could be tweaked to include electrification?

Molly: Maybe. There could be an opportunity. We've designed trainings to be fuel agnostic. For ComEd specific customers, we may be able to layer in electrification.

Molly: To Jim fay's question, we talked about these technologies. BOC could be a vehicle for electrification. It didn't formerly have an electrification push.

Other questions (indirectly addressed or not addressed)

Box 1:

- *How can the program build up future EESP electrification capacity knowing it must scale over time?*
- *Do new 'types' of contractors need to be identified?*
  - *Ex: who installs electrical panel upgrades? How do the various contractor types work together?*
  - *What types of measures that might require a different contractor/trade to install?*

- *Can HVAC contractors install a heat pump water heater in IL, or is a plumber required?*
- *Do ComEd's EESPs have existing plumber and electrician relationships to subcontract work?*
- *To what extent might EESP existing relationships with suppliers / manufacturers be leveraged?*

Box 2:

- *What existing trainings or entities might be leveraged to build up contractor capacity?*
- *What are the long-term maintenance considerations for the new electric equipment and is there an adequate contractor network to support maintenance needs?*
- *How do we identify the top tier EESPs for electrification work?*

Box 3:

- *Is there a logical contractor hierarchy, with one acting as a general contractor and managing the subs?*
    - *Who is ensuring all aspects of the SOW are completed on time, including any weatherization and standard EE retrofits, electrical work, plumbing, and HVAC?*

Single Family Discussion Group Notes:

Implementation Team

Initial discussion prompts:

Box 1 & 2:

- Is there a value in focusing on replacing propane for the near term, and looking to replace natural gas in later plan years?

Kristen K noted that should be thinking about how this ramps up beyond year 1. But for current year lets start with propone.
Julie H noted that this is a narrowing focus. Focus on early learnings. Leverage structure we have in place.
Kristen K noted that the regularly ask about fuel. Is there a way to monitor this and partner with other utilities to identify this
Julie talked about not wanting to set aside 99% of potential. Knowing through the utility funded programs there are lots of limitations in the HVAC space. Limits for emergency replacement. Generally push people to IWAP if not an emergency.

- *Would the screening criteria be different if a customer was currently using propane vs. natural gas?*

Stacey clarified.
Julie noted that we know some of the propone customers from a geographical standpoint. Maybe not from an income standpoint. Admittedly don't have a definitive list.
We don't know what we don't know. Then look into screening criteria.
Elizabeth N noted from her experience while at CEDA. Far different housing stock for this audience.
Stacey noted about previous research with manufactured homes. EN noted that weatherization is a totally different beast then for other homes.
Sam mentioned fuel oil, aka heating oil. He's encountered this in the city. General agreement from a few others.
Stacey asked about age of the heating oil homes. Sam cited an example from early 1900s. Elizabeth confirmed this.
Unclear how to find these homes, joked about following the fuel trucks.

- Should there be a geographic component/focus for targeting homes for electrification?

Note that mobile homes and propone is primarily outside cook county
Kristen K mentioned central IL/crossover territory
Sam had a convo with DNR the Kane Co

- What types of qualitative questions might be asked of the customer to identify a good candidate?
    - What questions are already asked to identify good candidates for a retrofit?

    Kristen K shared her screen, posted below, showing outline of the process. Team has started to brainstorm other questions to ask, including about fuel type. Dream is to incorporate bill analysis during screening at some point. Are there qualitative questions that would be helpful, for example are you a snowbird, before go in the home. She noted all this could be a hard sell
    Liz Connolly noted that this logic makes a lot of sense. Wondering if people who had recent weatherization might be a good candidate, typically they are turned away but this might be an option for them.
    Julie H mentioned 3 routes where they could potentially be guided to BE. She also envisions a decision tree similar to what Kristen K showed. She's thinking about near term, midterm, longterm. EG this year is non natural gas customers. Then idea of incorporating recent customers

    - What questions should be added to identify a good candidate for electrification?

    Fuel type might be the only question to add in 2022

- To what extent do we feel customers can be screened upon intake, prior to having anyone visit the home? Are there additional questions that need to be added upon intake?
- Do any steps need to be added to an energy audit to assess for electrification viability? Including new data collection requirements on electrical panel, electrical outlet availability, additional data on all household appliances, etc.

Julie clarified that this would be for candidates that were identified for BE for the audit
Elizabeth noted that it is unclear who visits the home. Would be good to have a set group of auditors. HEA DI only looks at a portion of the home

Julie named some delivery partners. There's the retrofit path and the braided path. Asking if the question depends on those 2 paths.
Kristen noted that there are still a large volume of customers that are referred to HEAS. She thinks that potential candidates for BE would be sent to other programs.
Jackie noted that they are finding it important to include contractor earlier in the stage then for other programs.
Scott Ye talked about a layer needed on top of the typical assessment.

- To what extent can the joint program infrastructure be leveraged for screening?
- At what point does the customer branch into a new channel for ONLY electrification projects, to ensure separation between jointly funded activities and ComEd ONLY funded activities?
- *If throughout the process it is identified that the customer is not a good candidate for electrification and/or does not wish to move forward with the project, how can the program still ensure the customer is served with energy efficiency?*
    - *To what extent can they be routed back to the joint program infrastructure to be served?*
- *How can we ensure this is a streamlined process for the customer?*
- *To what extent to does homeowner lifestyle come into play when identifying a good candidate for electrification?*
- *How do we adapt screening / criteria overtime based on learnings?*
- *How much engineering is needed for SOW development?*
    - *What can be deemed vs. prescriptive*
- *Is it possible to leverage predictive modeling or other data/ tools to identify good candidates for MF electrification?*

Box 3:

- *How do we ensure the eligible measures are in stock and available?*

Sam K noted that heating and cooling appliances, central ac and such, have a long delivery time.
Julie H confirmed then asked about what additional contractor networks may be needed. For example, electricians.
Scott suggested a need for match making existing partners with contractors who do this type of work. He mentioned a ComEd midstream program and the relationships they have that could inform what is coming.
Stacey mentioned the ICC certification requirement that's new. Kristen noted they are already requiring this. Julie confirmed that this is not new
Julie asked if we have a sense from existing networks of who has experience with heat pumps and such
Elizabeth noted the DNR has established relationships with contractors they utilize regularly for work that is outside of their specialty. Reiterated need for more electricians. Likely common roadblock in getting buildings up to code. Unlikely the networks and contrators have existing rlxn needed.

- *Are there any measures we know are having large supply chain issues currently?*
- *What level of support can supply houses/distributors provide to mitigate supply disruptions?*

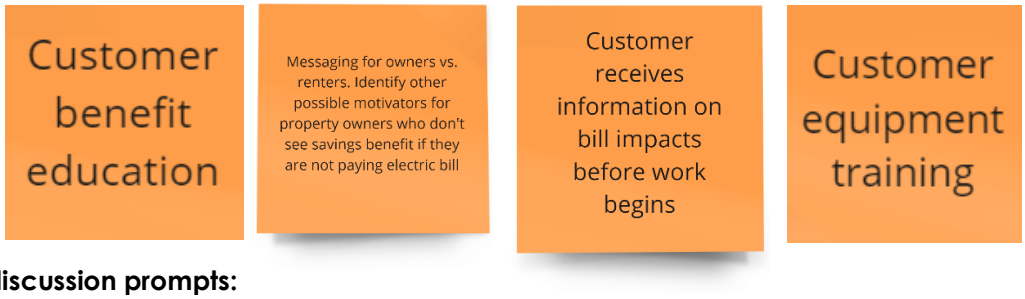
Box 4:

- *What additional follow-up do we need to do with the customer after the work is complete to ensure satisfaction and/or bill saving realization?*

Kristen and Julie wondering if we have to? Good question for larger group.
Kristen noted there is benefit in collecting the data for internal analysis.

- *What types of information need to be captured in a post-retrofit customer report?*
- *How do we ensure the estimated bill impacts are realized?*
- *What happens if estimated bill impacts are not realized?*

<u>Customer</u>



Initial discussion prompts:

Box 1 &2:

- *What role might the program play in educating customers on electrification benefits?*
    - *How does the messaging change for owners vs. renters?*

  Slow to responds.
  Julie talked about messaging the bill impact savings, reduced maintenance, health, env'l benefits. Could look different if owner occupied vs renter.
  Elizabeth talked about ghg reductions likely being of interest to renters who are likely younger and socially activated. Maintenance message of less interest to renters.
  Stacey asked if health impacts might get more traction for low income communities.
  Sam noted that this might be the biggest thing to emphasize. No need to worry about fuel leaks, in home combustion. Generally health and safety should be a key message
  Elizabeth noted that need to be careful when talking about asthma since that is generally more tied to water and mold issues.
  Julie noted the need to strike balance between informing and using fear tactics. Likely not much of a worry that message with be a scare tactic but noting it anyway. Noted that renter may also need to be educated on how to operate it. Challenge is that renters turn over frequently and new tenants may not get the education
  Lorraine talked about research they've done on NEBs that could be leveraged here.

- *What role might other partners (community organizations, etc) play in educating customers on electrification benefits?*
- *What energy and non-energy impacts do we know exist?*
- *What impacts do we believe might exist, but need to be studied / verified?*
- *What negative impacts/detriments do we believe might exist, but need to be studied/verified? (ex: higher equipment maintenance cost)*

Stacey mentioned higher replacement cost in the future. Scott confirmed.
Sam asked about customer satisfaction. Homeowner likes the blast of hot air that they don't get with the heat pump. Heat pump water heaters can cool the room they are in.

- *What role might an energy efficiency service provider play in educating customers on electrification upgrades (pre-installation)*
    - *What resources may need to be developed for EESPs to leverage to educate customers?*

Stacey noted that this is sensitive to gas utilities.
Kristen shaking her head yes. Asking if they need a customer liaison because contractors may not be willing/able to provide the education. She cited Elevate's healthy home program as an example that had this. Maybe the person only gets sent once they've determined that it is a BE candidate. Might be an interim step.
Julie really likes this idea. Provides some continuity if multiple contractors. But a lot to tease out here.
Liz noted that this conversation could continue after the installation.
Elizabeth noted that this could help with data collection.
Stacey noted that this is an oppty to train people from these communities to fill this role

Box 3*:

- What happens if customer doesn't want to pursue *full* electrification?
    - Can the customer still receive some electrification work, without eliminating all gas end-uses?
    - Can we still deliver energy bill savings is *full* electrification isn't pursued?

Kristen noted that this is ComEd's call. Her assumption is that they just go back.
Julie noted that some customers may not have another options from ComEd. There may be oppty do give customers something less than a full electrification project but not a full retrofit.

- What happens if customer receives estimated bill impacts and decides to change the scope of work?
    - Does a new bill impact estimate need to be done?

Box 4:

- *What role might an energy efficiency service provider play in educating customers on electrification upgrades (post-installation)?*
    - *How do we ensure that customers use their equipment properly and understand how to maintain this equipment?*
    - *How might this education vary for renters versus homeowners?*
    - *What resources do need to give customers post-retrofit on equipment maintenance and servicing, such as connections to qualified contractors?*
- *What role might other stakeholders play in educating customers on electrification upgrades (post-installation)?*

[*Note: other teams at ComEd are working on determining how to build out the bill impacts calculator, including the types of data that will need to be collected and how the bill impacts will be communicated with the customer. For this workshop, don't worry about the mechanics of the calculator]
Kristen noted that immediate post installation discussion lives with the contractor and may be most appropriate here.
Stacey asked how long that is true. Kristen noted likely a 1 year warranty.
Kristen asked if/who has experience with customer reachbacks. Noted that can be a challenge.
Jackie noted that Elevate has tried a couple of different approaches. Including troubleshooting if bill went up. Had success if offering something like free services. Even still less than half would respond. Mentioned a pilot with DOE that includes a leave behind packet that includes cookware and instructions.
Liz asked if customers want the education. What would they want to hear from the utility.

Elizabeth noted that it's all how you sell it from the front end. Good to present it at the front end as a way to ensure that the equipment is working well for them. Typically less than 3 months until follow up,

Energy Efficiency Service Provider

Initial discussion prompts:

Box 1:

- How can the program assess EESPs for 'electrification readiness'?
    - What are the knowledge & skills gaps?

Elevate working with BPI contractors who go through a training series on Mitsubishi products. If finish the training are added to the Mitsubishi Diamond list. Challenge is that not many have the years of experience needed.
Haley mentioned that we'll likely have to expand the data collection intake sheets. Calculators still need to be developed so there are so many unkowns. Training will have to be consistent with the training forms so still a lot that is unclear.
Stacey asked about how to do this for the long term.
Kristen has been talking with IHWAP about the training center they have in Urbana. Could potentially send some instructors to Cook Co.

- How can the program build up future EESP electrification capacity knowing it must scale over time?
- Do new 'types' of contractors need to be identified?
    - Ex: who installs electrical panel upgrades? How do the various contractor types work together?

Electricians, as mentioned earlier.
Kristen mentioned that some of their current subs may already have subcontractors that they partner with. She personally does want to play matchmaker and potentially partner contractors that don't work well together so would want to support people building relationships.
Jackie noted that most of the contractors have electricians and serve as a GC. Noted the cost of an upgrade can be prohibitive. Would be good for help from ComEd. Contractors can't promise anything for more than 30 days because cost or so volatile.
Mark agrees with Kristen, thinks electrician piece may be easier. But could be a challenge as want to bringing them in for the market rate programs and EESP network.

- Can HVAC contractors install a heat pump water heater in IL, or is a plumber required?

Don't know. Scott thinks people are self-installing them so could be done by existing contractors. Mark noted that may be a training.
Jackie noted that could depend on how the plumber feels. Similar to electricians lots of the contractors have an existing rlxn.
Noted that there is a big difference for SF v MF regarding plumbers. Mark noted concerns about lack of availability of the units. Likely to be a challenge for this year at least.

- Do ComEd's EESPs have existing plumber and electrician relationships to subcontract work?
- To what extent might EESP existing relationships with suppliers / manufacturers be leveraged?
- How might these partnerships help alleviate supply chain delays? Or provide intel / insight into the state of the supply chain?

Box 2:

- What existing trainings or entities might be leveraged to build up contractor capacity?

Mistubishi has a facility in the western suburbs that Elevate is working with
Sam noted that lots of manufacturers are able to train. Question is where to do the training. IHWAP has mobile labs that can travel to Chicago area for the trainings. Already includes manufactured homes.

- Are there trainings needed beyond the 'technical' scope? Ex: trainings focused on 'selling' electrification, disproving myths, servicing equipment, etc?
- What are the long-term maintenance considerations for the new electric equipment and is there an adequate contractor network to support maintenance needs?

Some of this needs to be assessed.
Jackie noted that they are starting discussions about refrigerants. Does contractor return in a year for maintenance.
Stacey mentioned meeting where discussion of the concerns about refrigerants used in US are now being banned in EU which raises concerns.

- *How do we identify the top tier EESPs for electrification work?*

Box 3:

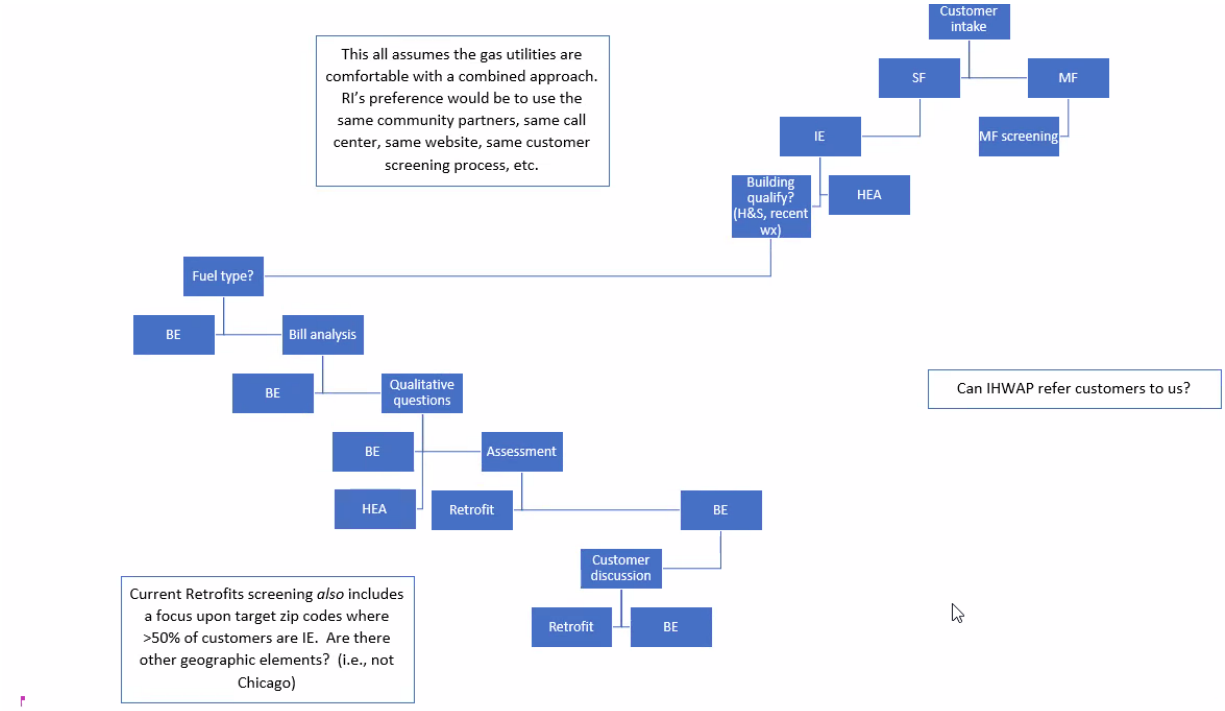
- *Is there a logical contractor hierarchy, with one acting as a general contractor and managing the subs?*
    - *Who is ensuring all aspects of the SOW are completed on time, including any weatherization and standard EE retrofits, electrical work, plumbing, and HVAC?*

Have talked about electrification and plumbing
Sam note that weatherization role may be in house with the current contractor network

What haven't we talked about?

Kristen asked how IHWAP could fit in to this. Typically they don't want to refer customers to the utility but might that be different here?
Elizabeth thinks would be helpful to know their cutoff point and try to swoop in to serve those customers.
Kristen specified their cutoff. Maybe they could help refer propone customers or others
Julie noted in chat, could CAA deliver electrification projects as retrofits, even outside of IHWAP braided?
Jackie noted that they are partnering with CEDA. They are leveraging funding outside their budget to braid funding.
Out of time.

Sample draft decision tree discussed for single family:



Final Report-Outs

Single Family Discussion Group Report Out:

Exciting to get more into the how – how do we operationalize these activities

Implementation team:

1. What makes a good customer?
    a. Identified propane and fuel oil customers as near-term targets for this year. We understand it might be difficult to find these customers.
    b. Kristen Kalaman: to what extent could we look at the leads that have already come into the program.
        i. This will require further digging, but we can use existing infrastructure.
2. Short term, how might we add to eligibility criteria for customers?
    a. Could we do bill analysis on the fly for projects? Would there be additional qualitative questions?
    b. Need to think through if already weatherized homes will be a good fit for electrification.
3. Energy audits, how might this look?
    a. Existing contractors might be best positioned to do this audit, more so than energy advisors who do home energy assessments.
4. Supply chain challenges
    a. Heat pump challenges
5. Additional follow-up after the work is complete?

a. To what extent are we required to calculate the actual bill savings realized? This may not be required. Customer benefit for doing so but may not be required.

Customer:

1. Would be helpful to have a customer liaison in the field, not the contractor, who talks to the customer at certain stages in the process. This could also be relevant for multifamily since they already utilize a single point of contact.
2. Anticipate potential negative impacts. I.e. satisfaction.
3. What if customer doesn't want to pursue full electrification? Need to think through this.

- Jackie from Elevate discussed re-engaging customers post installation. Could be helpful to provide more resources to encourage customer to engage, but they don't always want this follow-up. Can also develop their buy-in. If follow up information is required, it's helpful if there's a further incentive to get them to engage if we want more information from them. Communicate upfront with the customer about follow up steps and the importance of it

4.

EESP:

1. Trainings
    a. Mitsubishi Cold Climate Products training series. Offered to BIPOC contractors. IWAP training.
    b. Supply and price are ongoing challenges.
    c. General contractor approach. Currently the basic approach. Want to avoid a situation where we force a GC to work with a sub, ComEd doesn't want to play matchmaker between contractors.

Multifamily Discussion Group Report Out:

There generally seems to be a lot of overlap in some of the discussions has between the two groups. Multifamily group spent a lot of time identifying the best fit for electrification – identifying easier building types and trying to find low-hanging fruit.

Implementation team:

1. MF projects are time consuming depending on size and complexity. Low hanging fruit could be targeting those buildings that already had weatherization, laying information on equipment.
2. Discussed timing: reaching building owner at the right time. Education could be a role that EESP could play.
3. Neil Curtis emphasized that ComEd needs to convert all the equipment upon failure to electric. Reiterate the importance of getting the timing right. This is the ideal point where they would switch.
4. Importance of owner buy-in and understanding the value proposition beyond bill impacts and savings.
5. Brody shared a sample checklist of criteria (pasted above)
6. Geographic component: spatial understanding of building types and good candidates in disadvantaged communities.
7. Trusted individual: SPOC and building relationship with some individuals.

Customer:

1. Discussed value proposition: transparency of bill impacts. It's important how this is conveyed. Even if we're modeling off bill impacts, end-user is going to see electric increase and not see net reduction. Need to get ahead of this.
2. Talked about the potential negative impacts. Maintenance costs. Different in the way the equipment performs and feels.
    a. Who bears the cost of shutting off the gas?
    b. Performance issues with heat pumps in extreme cold temperatures.
3. Tenant education: educating end-user on how to maintain equipment. Tenant turnover – how is information shared and carried over? We need to ensure they know how to use the system.

EESP:

1. Assess current contractor network. Could we have a shared electrification contractor network between single family and multifamily?
2. Two touchpoints needed? Decommissioning equipment maybe one set of contractors and installation of new equipment another.
3. Supply chain issues – relationships with suppliers, while understanding they are sales-people. Have different manufacturers.
4. How we get contractors on board. Smaller contractors may be more nimble and easily bought-in. Larger ones may be resistant to change.