Illinois EE Stakeholder Advisory Group
Fuel Conversion Working Group

Monday, April 26, 2021 (Meeting #2)
9:00 am – 12:30 pm
Teleconference

Attendees and Meeting Notes

Meeting Materials

- Posted on the April 26 meeting page:
  - April 26, 2021 Fuel Conversion Working Group Agenda
  - Fuel Conversion Measure Spreadsheet (All Utilities, updated 4/28)
  - Responses to Fuel Conversion Policy Questions:
    - Summary Table – Responses to Fuel Conversion Policy Questions, updated 4/23 (compiled by SAG Facilitator)
    - Ameren Illinois Responses
    - ComEd Responses
    - ICC Staff Responses
    - Natural Resources Defense Council Responses
    - National Consumer Law Center Position Statement
    - Nicor Gas + Peoples Gas / North Shore Gas Responses
  - Site and Source Calculations (prepared by VEIC, IL-TRM Administrator):
    - VEIC Presentation with Illustrative Examples
    - Site and Source Calculations (Word)
    - Site and Source Calculations (Excel)
    - Additional Information on Calculations

Attendees (by webinar)
Celia Johnson, SAG Facilitator
Samarth Medakkar, Midwest Energy Efficiency Alliance (MEEA) – Meeting Support
Brian A'Hearn, CLEAResult
Charles Ampong, Guidehouse
Matt Armstrong, Ameren Illinois
Rick Berry, Guidehouse
Joe Birschbach, Leidos
Patrick Burns, Brightline Group
Leonel Campoy, Franklin Energy
Leanne DeMar, Nicor Gas
Sam Dent, VEIC (IL-TRM Administrator)
Ram Dharmarajan, Gas Technology Institute
Nick Dreher, MEEA
Gabriel Duarte, CLEAResult
Allen Dusault, Franklin Energy
Jeff Erickson, Guidehouse
Jim Fay, ComEd
Scott Fotre, CMC Energy
Jean Gibson, Peoples Gas & North Shore Gas
Pace Goodman, ILLUME Advising

Kevin Grabner, Guidehouse
Molly Graham, MEEA
Vince Gutierrez, ComEd
Amir Haghighat, CLEAResult
Travis Hinck, GDS Associates
Hannah Howard, Opinion Dynamics
Jim Jerozal, Nicor Gas
Rohith Mannam, Nicor Gas
Thomas Manjarres, Peoples Gas & North Shore Gas
Mark Milby, ComEd
Abigail Miner, IL Attorney General's Office
Jennifer Morris, ICC Staff
Phil Mosenthal, Optimal Energy, on behalf of National Consumer Law Center
Chris Neme, Energy Futures Group, on behalf of NRDC
Eric O'Neill, Michaels Energy
Randy Opdyke, Nicor Gas
Stacey Paradis, MEEA
Reine Rambert, MEEA
Joseph Reilly, Applied Energy Group
Adam Roche, Franklin Energy
Zach Ross, Opinion Dynamics
Andrea Salazar, Michaels Energy
Tyler Sellner, Opinion Dynamics
Hardik Shah, Gas Technology Institute
Grant Snyder, IL Attorney General's Office
Jacob Stoll, ComEd
Mark Szczygiel, Nicor Gas
Andy Vaughn, Leidos
Ted Weaver, First Tracks Consulting, on behalf of Nicor Gas
Ken Woolcutt, Ameren Illinois
Brittany Zwicker, CLEAResult
Jim Dillon, Ameren Illinois
Taso Tsaiganos, IL Attorney General's Office

Meeting Notes
Action items are indicated in red font.

Opening and Introductions
Celia Johnson, SAG Facilitator

The purpose of the April 26th meeting:

1. To educate the Working Group on fuel conversion measures and Combined Heat and Power (CHP) projects incentivized by Illinois utilities in 2019 and 2020; and
2. To discuss comments from interested parties on fuel conversion policy questions; determine whether there is consensus and discuss next steps.

Fuel Conversion Measure Table – All Utilities

- Briefly walked through utility tables that were circulated on fuel conversion and CHP measures from 2019 and 2020.

ComEd Table
Rick Berry, Guidehouse

- Low-income SF retrofits has an ASHP measure that hasn't had fuel switching to date, but will in 2021 due to IL TRM update that allows gas baseline.
- Also applies to ASHP residential HVAC program. No fuel switching to date but will.
- GSHP measure does have fuel switching. Residential HVAC program. Tracks which baseline fuel and has had a number of projects.
- Ductless mini-split also has fuel switching projects to date. Will continue to in the future.
- There are a few CHP projects. There have been 4 projects that follow the TRM.
- GSHP measure in the commercial standard program. Implementer assumes GSHP baseline, so there's no fuel switching from those projects.

[Chris Neme] When you call something a fuel switching project, how do you define this? Is it based on heating system previously there? Or if the customer previously had a gas appliance, and they were wanting to switch on their own; how do you deal with that?

[Rick Berry] TRM spells this out pretty well but I can't speak to this level of detail. If the existing system was gas, even if it was at EUL, we would still use baseline of the same heating fuel type. With GSHP, the incremental cost is so massive, it's not commonplace to upgrade.

[Chris Neme] Baseline is what would have happened if not for the program. If customers are choosing to fuel switch on their own. For example, there are some customers adding central AC for the first time. But when they take a rebate, we treat the baseline as the standard appliance they otherwise would have purchased. My question pertains to whether the program is driving the fuel switch and/or early retirement.

[Rick Berry] That's probably accurate. I don't have a deeper perspective, and what you're asking requires a greater level of detail than received on an application.

[Chris Neme] I think it's important contextual point to make as we get into these discussions. Important consideration.

[Chris Neme] The point earlier applies in both directions; you can have customers who have propane furnaces install a high efficiency gas furnace and get a rebate. That not necessarily a fuel switching measure for the same reason.

Follow-up: A future question that may require discussion is considering whether the EE program is driving the fuel switch and/or early retirement.

Ameren Illinois Table
Ken Woolcutt, Ameren Illinois

- You can see the quantity of measures installed.
- Addressing Chris' question, we were thinking that fuel switching is any time you're switching fuel. The way you allocate credit for EE component is a two step process – 1. Fuel switching, 2. Efficiency gain. Difficulty is determining baseline from an efficiency gain perspective.

[Jennifer Morris] The way I am reading this, Ameren isn't claiming any fuel switch at all. It looks like the numbers are on electric heat.

[Andy Vaughn] That's correct. There's been no conversion on the types of measures claimed. There are probably times where customers have gas heat, i.e. time of sale situation; but we don't ask so it's assumed to be electric heat. No conversion: only one to date, a VRF project that wasn't a standard measure (so isn't on this list).

[Travis Hinck] Clarification: this is the potential impacts if we were to start claiming fuel switch. Ameren IL has not done any gas CHP projects to date.

Nicor Gas Table

Randy Opdyke, Nicor Gas

- This table shows the TRM measure for CHP.
- We have one project in 2020 that is currently under impact evaluation. This is a joint project led by a feasibility study with a customer. Related to full on engineering plans for a CHP system that would generate electric on site and remote heat recovery to offset heating load. One project through thermal heat recovery in the TRM.
- In 2021, another customer that has gone through a complete feasibility study and engineering analysis that Nicor and ComEd both contributed to. In 2021, there may be another project to claim savings from thermal heat recovery for CHP system.

[Chris Neme] Savings were computed using existing CHP TRM method?

[Randy Opdyke] Yes

Peoples Gas & North Shore Gas Table

Thomas Manjarres, Peoples Gas & North Shore Gas

- We don't have incentives any fuel switching to date and are not planning in the future.
- There was an interesting opportunity in 2020 that we're still in talks for with the customer. That situation is a greater than 10 MW customer exempt from electric efficiency programs. They're looking to do some lighting upgrades, but can't move forward because of exemption. They have a CHP system. They were going to reduce lighting load, so reduce needed CHP, resulting in natural gas savings. In 2020, number of conversations with evaluators on how to work it out. Settled on a methodology. If we move forward with the project, the therm savings at the CHP generator could be 120k therms.

  [Chris Neme] Is the project that you would help them with lighting efficiency measures; byproduct of which they would run their CHP system less often and consumer less gas?

  [Thomas Manjarres] Correct.

Additional Questions / Discussion

[Ted Weaver] Ameren mentioned they have one customer project not in the table. Did ComEd have any custom projects that involved fuel switching?

[Rick Berry] Will check; CHP projects are in the custom program.

[Ted Weaver] As we were talking through CHP, the way CHP algorithm works, for the gas utility, it tracks efficiency gains not fuel switching. Because gas utilities don't count all the savings, it's really an efficiency measure instead of a fuel switching measure.

[Chris Neme] Assuming gas utilities have rebated customers previously heated with electric resistance. Is that not true and do you track the pre-existing fuel?

[Jim Jerozal] I'm not aware that we done that; will need to check.

[Chris Neme] If you extend your service line for a new gas customer, do you provide any rebates for a higher efficiency furnace?

[Jim Jerozal] In that case, yes. That would be a case of a propane to gas switch.

[Chris Neme] In ComEd's case, there are a small number of heat pumps where the heating fuel is not electric. I expect that is that's happening on the gas side too. Goes back to original question, is this really fuel switching and what is the baseline?

[Andy Vaughn] Ameren IL doesn't track that. I could anecdotally tell you about instances but mainly because we don't incentive many of those measures from early replacement, we're incentivizing from a time of sale or new construction perspective.

[Chris Neme] I believe the same is true with ComEd, I imagine the HP measures referenced earlier were not early replacement but time of sale. Is this true for ComEd?

[Rick Berry] Something I can't speak to, whether there's a split incentive for different baselines.

[Phil Mosenthal] Confused about ComEd ASHP baselines. To me, baseline means you're counting savings from what the customer otherwise would have done. So why is it a gas baseline?

[Rick Berry] Probably TRM wording.

[Jennifer Morris] When we sent out the sheet, we tried to specify if there's a gas baseline; my guess is in these instances, may not know what the baseline was. Treated as electric anyways.

Follow-up question: Does Nicor Gas capture the original / pre-existing fuel in CHP projects? Do any of the gas utilities track this?

- Nicor Gas, Peoples Gas & North Shore Gas to check

Fuel Conversion Policy Discussion

- The policy discussion will start with the site vs. source questions, as requested by VEIC.
- VEIC is hoping SAG will decide if source calculations are required at all, so that, if they are, the TRM TAC group can work on the details around the heat rate calculation while the SAG continues with the policy issues around what calculation is appropriate, and when.
- The goal is to understand the rationale for parties' responses to each policy question, and provide an opportunity to ask clarifying questions.

VEIC: Site and Source Calculations
Sam Dent, VEIC (IL-TRM Administrator)

- Overview of current TRM methodology. There are quite a few open questions about a lot of assumptions within it that we will need to revisit if it's determined that the source calculation is the appropriate methodology.
- Shared new construction fuel switch example of ASHP. TRM: methodology for any baseline to be characterized and EMV would appropriately weight baselines to determine savings.
    - In this example, gas furnace w/ central AC to ASHP; Both units have a certain consumption (new electric consumption)
    - ASHP provides cooling savings and a certain heating consumption. For illustrative purposes, we will use a certain heat rate; we can discuss this number further if necessary. Gas distribution not included in this calculation consistent with TRM.
- Gas utility only scenario
    - What's the total electric impact compared to therms? Total impact of ASHP is heating consumption minus cooling savings
    - Note we're not assuming distribution losses on gas side
    - If done at site, end up with larger savings.
- When there's a gas and electric utility, TRM tries to figure out what portion of savings should be allocated to which utility. Raises question about whether the split is appropriate. Once we know source vs site calculation, the TAC will take up this question.
- Currently, electric utility gets heat savings from baseline ASHP minus what the efficient ASHP consumers.
- On the gas side, the current methodology is to compare the gas furnace to the baseline ASHP. The similar question is what is the baseline heat consumption of the baseline ASHP. In this case, the gas utility ends up with negative savings, increase in consumption.

  [Ted Weaver] Two odd things related to electric and gas utility; one is the gas utility gets penalized if working with electric utility. Moreso, gas heat consumption is 531 therms, and you'd think this would be the final savings they claim, but algorithm doesn't work that way.

  [Sam Dent] The fact that this ends up as a negative value for me isn't necessarily wrong, just a bad decision for the gas utility to participate. We provided the methodology to evaluate whether it's a measure that makes sense. I think the way we split electric and gas savings is an issue. Electric gets more savings than gas. We probably should review this regardless of site vs source.

  [Ted Weaver] If we're going to determine if the measure lowers total BTUs, on what part of the system are you looking? Fuel switch is only on heating. And what efficiencies are you using? You could make the case that this project wouldn't have moved forward.

  [Chris Neme] I disagree. You're comparing the baseline heat pump to the baseline efficient heat pump. Also think that the cooling savings are not analogous to lighting, it's inherent in the system.

  [Ted Weaver] The reason gas is showing negative savings is because the conversion is not producing total BTU savings. We need to resolve how this total BTU savings works.

[Phil Mosenthal] Agree, but part of this is part of this is because of the heat rate conversion factor. So that should also be a focus.

[Ted Weaver] I agree the policy needs to address the heat rate.

[Chris Neme] There's no loss rate assumed on the gas side?

[Sam Dent] Correct. We decided at the end of last year not to touch it. On the electric side, for the heat rate, both in the HVAC fuel switch measures and CHP, line losses are to be included. On the electric side, we assume the heat rate of the grid

[Erik O'Neill] Has there been discussion about potentially using 531 fuel conversion factor for the baseline for electric utility savings? Might be a way to get rid of negative therm savings, and not give credit for baseline system at source BTU level.

[Travis Hinck] This is also an intermediate step; if this were a dual fuel utility, you'd favor the positive savings, but would not be done by a gas utility.

[Sam Dent] This split between electric and gas needs attention. Will be taken up on the TAC side, but I think we should focus first at SAG on site vs source question.

Follow-up: Question to add to Working Group list – how do total BTU savings work?

Question 1

There is a 2-phase question around Section 8-103B(b-25) in the Future Energy Jobs Act (FEJA) – does the statute require the same methodology? If not, is another methodology / conversion factor more appropriate?

a. Does Section 8-103B(b-25) relate to measures / programs that save both gas and electric for joint programs (or non-joint programs)?
b. Since FEJA states that claiming savings from "other fuels" is permissible for measures or programs that save both electricity and other fuels, what does that mean (specifically "measures or programs that save both electricity and other fuels?")

Ameren Illinois Response:

- For 8-103b25; yes, both joint and non-joint measure programs.
- Since the law says claiming savings for other savings in other fuels is permissible, what does that mean? Ameren believes the other policy questions would need to be answered. We would follow the TRM. Measures that would be beneficial to customers would be considered.

ComEd Response:

- Agree with Ameren, language covers both joint and non-joint programs; it becomes clearer when we answer the other policy questions on counting savings on the premises

ICC Staff Response:

- We interpreted the law as outlining the method to use in cases of join programs, the BTU conversion at the site level; and for duel fuel savings measure, that other fuel would be converted using site method as well. Did not interpret b-25 as referring to fuel switching, which results in more use of a certain fuel. ICC Staff's position is that Commission has

authority to determine its own methodology. Conversion is from gas to electric equivalent.

NCLC Response:

- Fuel switching measures do not apply to section b-25. Applies to converting gas savings and converting to kWh.

  [Chris Neme] Question about applying to electric utility measures that have ancillary measures. What about whole building programs that are electric only utility run?

  [Phil Mosenthal] I don't have a problem with including program but not sure it makes a difference if you're counting individual measures or bundle of measures.

Nicor Gas & PG/NSG Response:

- We agree with everyone else. Part a applies to joint programs where gas runs out of money and b applies to everything else. It only applies to savings measures. In general, you really need to think about the law applying to three groups of measures. 1. Saves utility's own fuel; 2, Saves another fuel; 3. Fuel switching.
- We think it's pretty clear that b-25 only applies to cases where utility has savings measures for a different fuel and does not apply to fuel switching.

NRDC Response:

- With respect to part a, same answer as everyone else.
- With respect to part b, our read is that it applies to measures that saves both electricity and any other fuel saved in the building.

Question 2

Should site or source savings be used for screening criteria (whether a project qualifies as an energy efficiency measure)?

Ameren IL Response:

- In principle, Ameren agrees sources savings used for screening criteria should qualify if a measure qualifies, if there is an agreed method for screening. The source savings is part of the up-front screening process.

ComEd Response:

- We believe there's nothing in the legislation that speaks to this, but we believe having a source savings screening criterion is consistent with the way the TRC is set up and think it's good from a policy perspective to ensure that measures that aren't efficient on a total fuel basis aren't included.

ICC Staff Response:

- Did not take an official position; determined that the total BTUs needed to be reduced, using either source or site.

NCLC Position:

- The statement here isn't going to screening criteria so much as how to count savings, and we didn't explicitly answer this. We agree that a measure should reduce total BTUs to qualify. Interpret fuel switching as an eligible efficiency measure as site. The term at the premises implies site savings.

Nicor Gas and PG/NSG Response:

- We tried to answer this question using the three aforementioned types of measures. Source and site only come into play for fuel switching. We think source savings is good policy. If it isn't saving energy at the source, we don't think it should qualify. We determined this policy before FEJA, and we thought it was excellent policy at the time. There's nothing written in FEJA that changes that, and don't see justification for changing it.

NRDC Response:

- We went back to the statutory language. It says that an efficiency measure reduces total BTUs of energy to meet end use or uses. The phrase on total BTUs seems to be aligned to site BTU rather than source BTU. BTU of electricity vs. btu of fuel mix of electricity in IL. Source BTU only relevant for fossil fuels, not relevant to wind and solar generation. As the grid is getting cleaner, starts raising questions on the applicability of the source, so our position is the site is more appropriate at this stage.

Discussion

[Jennifer Morris] Is Nicor Gas and Peoples / North Shore position that source calculation should be done at the heating savings level or the total savings?

[Ted Weaver] We think it's complicated, but we think it should be at the fuel switched end use. How you do it needs to be worked out at the TAC.

[Thomas Manjarres] Clarification; it is possible for a measure to save source energy; site savings is counted at the site. It is possible for a measure that saves site energy to actually increase the total BTUs required to achieve end-use when incorporating distribution losses which would be incorporated in source savings method. Using source is the only way to guarantee that total BTUs are reduced.

[Chris Neme] If I have a heat pump (assuming source) that would result in slight increase in source BTUs, but comes with great efficiency on the cooling side, but results in net savings due to cooling savings, are you saying this shouldn't qualify?

[Ted Weaver] Yes; you can get all the savings on the cooling system by buying an efficient cooling system.

[Chris Neme] Then you have to buy 2 pieces of equipment. Also, statute says "reduces total BTUs to meet end use or uses", plural.

[Phil Mosenthal] I tend to agree with Chris, in looking at impact of the measure if you're doing the measure. To be clear, we did address what we think should be eligible and based on bill savings and cost-effectiveness.

[Ted Weaver] You could take that to the extreme though, Chris; you could retrofit a whole campus, with various measures, but include terrible fuel switching, but net savings.

[Chris Neme] But you've jumped from one measure to multiple measures.

[Ted Weaver] I think reducing total BTUs is best policy,

[Chris Neme] Does your definition apply to CHP?

[Ted Weaver] I think it would but haven't thought it through. In general, this is how the CHP algorithm is intended to work. As mentioned, this is complicated; but fundamentally, the screening ought to happen where the fuel switch is occurring (i.e. heating).

[Thomas Manjarres] From our perspective, CHP is not a fuel switching measure, but a conservation measure. It reduces electricity and natural gas usage.

[Chris Neme] Right but it doesn't reduce the amount of gas used.

[Thomas Manjarres] The gas companies are only incentivizing measures that are more efficient than a baseline system. The customer has made a decision to implement a certain system. There are cheaper, less efficient systems. Gas company steps in to offer incentive to purchase a more efficient system.

[Chris Neme] Agrees this makes sense for gas only. But for both utilities promoting this, we need to look at total fuel impacts.

[Phil Mosenthal] Agreed.

[Q] If we were to limit screening just to heating side, does that introduce further complications in evaluation?

[Ted Weaver] I don't think so but I agree it's tricky because of the different efficiencies for the formula.

Additional Comments:

[Erik O'Neill] Does it matter that a cost of BTU of fuel varies? A BTU of electricity isn't the same as a BTU of Gas. Lower entropy, more energy to get to the state, reflected to the cost. Not sure if the cost would impact anyone's decision here. Question goes back to how each fuel is produced.

[Phil Mosenthal] I agree with all that and think this is a cost-effectiveness test question.

[Sam Dent] It seems to me that the eligibility and calculation question is more complicated. If there is potential to reach consensus on the eligibility question, that would give the TAC a heads up on whether source calculation is needed.

[Phil Mosenthal] We may not be able to agree on eligibility until we determine how to count savings. I think we agree that fuel switching in some instances is an eligible measure.

[Sam Dent] In the meantime TAC will schedule an initial Working Group meeting.

[Thomas Manjarres] In response to Phil's comment re consistency, moving to a site savings criterion would be a departure from where the TRM is now and has been since 2014, when CHP and GSHP measures were added.

Question 3

If using source energy is the SAG decision, how is "source energy" or "carbon equivalency" defined for each fuel?

a. What losses, if any, should be included in source energy?
b. Should historic, current or forecast be used, or a blend?

Ameren IL Response:

- With a changing grid, there are more losses that could be included, but right now there are standard line losses that should be included. Line losses are significant on the electric side.
- We are on board with source savings for the screening piece but want to agree on the details.

ComEd Response:

- We believe losses should be included for all fuels in the comparison. In terms of looking at the projects or forecasts, we believe the approach should be, for a measure that goes in, we should be projecting the generation efficiency of the fleet that will be in place over that time frame. It must be a forecast and future looking, and that shouldn't be a problem; we just did it when we did NEI for TRC. We can do the same thing to determine a forecast of heat rates.

NCLC Response:

- We didn't explicitly answer this because we took a position that site savings should be used for savings calculations.
- But in the case of using source, our position is consistent with ComEd's, losses should be counted for all fuels. We should be reflecting the changing grid over long measure lives of some measures, i.e. CHP. Unsure about what the details of the forecasts would look like.

Nicor Gas + Peoples Gas / North Shore Gas Response:

- Agree; losses should be accounted for all fuels. We think it should be up to the entry to the grid for simplicity. i.e. start of nat gas transmission system. If it's simple to calculate upstream savings for mining etc, we're not opposed. For the long-term marginal heat rate, that's the way to go (life cycle of the measure). Should incorporate greening of the natural gas grid.

NRDC Response:

- If source BTUs were to be used, which is not in agreement at the moment, then losses should be included on both fuels. If we're using source BTUs, we should use a forecast of future heat rates for loads met with renewables.
- The key point about marginal rates is that it's not what the last unit to be dispatched at any given hour will be in the 2028 or 2035. That's a short-term marginal (relative to 20 yrs out) and we should be use long-term marginal. Definition of marginal should be long-term and this should apply to all fuels. If there was a gas RPS, although I haven't thought through this logic, if there was a reason to treat RNG differently than fracked gas, gas RPS should be applied the same way.

Question 4

Should site or source savings (or carbon equivalency) be used for counting savings?

a. Does the decision depend on whether it's an energy conservation measure vs. a fuel switching measure?
b. Define "energy conservation measure"
c. Define "fuel switching"
d. Is there a difference between switching between a regulated fuel and a non-regulated fuel?
e. For CHP, does the carbon equivalency need to change (given there is no methodology in the gas statute)?
f. Should the answer to the site vs. source question be different in different use cases?
g. How does the site vs. source decision impact custom measures?

Ameren IL Response:

- Using site savings is consistent with the way other efficiency measures are treated in the TRM and site savings should be used with these measures. We also believe this is consistent with FEJA.
- We don't promote fuel switching but we do offer incentives beneficial to our customers.
- On fuel switching of unregulated and regulated fuels, it would appear savings methodology applies to all fuels.
- On CHP methodology carbon equivalency, TRM methodology appears to capture benefits of measure for EE purposes.
- Other than CHP, measures should use site. CHP's primary benefit points to analysis on source level.
- Custom measures should use the same framework to be as consistent as possible with prescriptive measures.

  [Chris Neme] Why would CHP be treated differently than anything else?

  [Andy Vaughn] As the grid moves away from carbon-based fuel, that might change the view of CHP. We were thinking of where the grid currently is today.

  [Phil Mosenthal] I'm not sure how it's different than other fuel switching measures.

  [Travis Hinck] Question is, is CHP efficiency?

  [Phil Mosenthal] Yes, because you're reducing electric purchases, increasing gas purchases, and as long as you're saving energy it's an efficiency measure.

  [Travis Hinck] If we're defining efficiency as reducing purchased energy, couldn't the same be said about PV panels? There may be some nuance to CHP.

  [Chris Neme] I think the one difference between PV panels is it isn't just generation, like CHP.

  [Thomas Manjarres] If you look at the customer site, everything that was powered by electricity before CHP is still fueled by electricity. And all the heat from burning NG is still used to fuel the same appliances previously fueled by NG.

[Chris Neme] If you looked just at the electricity side, you're going to consume more fuel to run the generator, generally speaking. The amount of gas consumed to produce a kWh with CHP will be more than the amount of gas consumed to produce a kWh for combined cycle.

[Thomas Manjarres] We have to take into account all of the energy required to get the CCNG to the customer.

[Chris Neme] Even with those losses that's generally going to be true

[Thomas Manjarres] That's how we arrived at carbon equivalency. If there are no source savings, then there wouldn't have a carbon equivalency to claim.

[Chris Neme] Not true; you're saving carbon on the gas side due to waste heat. It's the combined effect of the two fuels that reduces carbon.

[Phil Mosenthal] I see carbon as a form of source savings, but recognizing what we really care about is carbon. It matters whether a 40% efficient coal plant is on the margin instead of a 40% efficient CCNG plant.

[Chris Neme] Its fuel switching because you'll be consuming more gas with the CHP system in order to consume less electricity.

[Phil Mosenthal] I think the distinction being made is that mechanically it's generating electricity like a solar panel, but I look at it like the boundaries of our effort is the customer side of the meter. Once you're in the building how efficiently are you using the end-uses.

[Chris Neme] If you look at the customer site, the total electricity consumption coming from the grid is less but the total number of gas being burned is more. Substituting more gas with less electricity.

[Thomas Manjarres] Does this apply for lighting?

[Chris Neme] Yes because of waste heat, any electric efficiency measure on site, the effect is there too. This is by design, we're trying to use more gas to use less electricity.

[Ted Weaver] The energy saving measures saves source energy by definition. The only screen you need is for fuel switching.

[Thomas Manjarres] Specifically to avoid the unintended consequence of implementing a measure that increases global energy consumption.

[Chris Neme] On a source and site BTU basis, CHP does not increase total energy consumption. But it is still a fuel switching measure.

[Phil Mosenthal] To me, the difference with waste heat, CHP is fuel switching because you're buying equipment that uses gas to reduce electricity. Whereas with lighting, your using electricity to reduce electricity with some ancillary benefit on the gas side.

ComEd Response:

- Site savings should be used when counting savings for a measure.
- 4f, No, including CHP. We should be applying the same set of rules to all measures in the portfolio. Further, we don't think we should be creating new categories of measures or definitions not currently in the legislation.

NCLC Response:

- We support site BTU conversion. It doesn't make sense to count a kWh as being different depending on what measure you're doing. TBD on the other questions. Not sure of conservation as synonymous with EE but fuel switching can be energy efficiency.
- Don't think we need to recognize difference between regulated and unregulated fuels.

Nicor Gas Response:

- We started from the definitions. Understand ComEd's point about not creating definitions not in the legislation, but we think it's important because FEJA has three different rules for three different measures, all under the umbrella of efficiency. We think the legislation addresses these in different ways. We think fuel switching should be done at source, for all the reasons from 2014. Whatever fuel switching policy we decide should be consistent across all fuel switching measures.

  [Jennifer Morris] When you're talking about the same policy for whichever fuel switching, do you think if carbon equivalency is used for CHP that should be the same with GSHP/ASHP?

  [Ted Weaver] Yes, or vice versa, and we use the heat pump method, apply to CHP. Right now, we can't think of a reason to have a different policy.

NRDC Response:

- Generally speaking, we're aligned with ComEd in that site BTUs makes the most sense. I have a suggestion on edits to the definition of fuel switching that Phil described, but I also think we need to be careful not to create new definitions.

PG/NSG Response:

- Encourage everyone to read our full submission. We include excerpts from the TRM CHP measure where it clearly outlines different things going on based on utility.

Closing & Next Steps

- Follow-up items:
  - Questions that may require Working Group discussion:
    - Considering whether the EE program is driving the fuel switch and/or early retirement
    - How do total BTU savings work?
  - Did ComEd have any custom projects that involved fuel switching? Rick Berry (Guidehouse) to check. CHP projects are included in the custom program.
  - Do the gas utilities capture or track the original / pre-existing fuel in CHP projects? Nicor Gas, Peoples Gas & North Shore Gas to check.
  - SAG Facilitator to follow-up with Chris Neme on fuel switching definition.
- The April 26th meeting covered responses to Questions 1-4; there are 6 additional questions that need to be discussed.