Memorandum

COVID-19 Evaluation Impacts

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| **To:** | Illinois Stakeholder Advisory Group |
| **From:** | The Opinion Dynamics and Guidehouse Evaluation Teams |
| **Date:** | August 10, 2020 |
| **Re:** | Impacts of COVID-19 on CPAS |

On June 11, the Illinois independent evaluators (Guidehouse and Opinion Dynamics) presented to the Illinois Stakeholder Advisory Group (SAG) on potential challenges for impact evaluation of custom measures during the 2020 Illinois program year. The evaluation teams presented three possible options for evaluating custom measures in the 2020 program year:

Option 1: "Normalize" energy savings achieved from measures installed in the 2020 program year for all years of a measure or intervention's life to best represent the savings that would have been achieved had COVID-19 not occurred.

Option 2: Do not normalize savings achieved in the 2020 program year; normalize all future years of savings from measures installed in the 2020 program year.

Option 3: Apply no normalization to either the 2020 program year's savings or any future year's savings.

As part of the ongoing SAG discussion on how to evaluate savings in light of the COVID-19 pandemic, the Illinois Attorney General's office posed a number of questions for SAG consideration. The evaluation teams have prepared this memo with responses to those questions.

AG Question #1

How much savings would be impacted? Is this a rounding error, or is this potentially a large impact?

Evaluation Team Response to AG Question #1

Providing an accurate actual estimate of the change in savings we might see between these approaches is not feasible in advance of the evaluation actually being conducted. However, we can easily put outer limits on the size of the effect on the annual applicable incremental goal (AAIG) for electric savings and first year savings for gas based on what we expect from the programs in 2020. In addition, we can conduct sensitivity analysis around what changes we could expect in these parameters if we make assumptions around the size of the COVID-19 impact on individual projects or measures.

For this purpose, we have used our best understanding of the utilities' 2020 forecasts based on the Implementation Plan Savings Goals in their 2020 Q1 reports, supplemented with information for 2019 evaluation results as needed.

**Electric**

For AIC’s 2020 portfolio, we expect about 26% of net electric energy savings to be evaluated using custom methods, and therefore be subject to normalization adjustments from COVID. Fifteen percent of net portfolio savings are from Voltage Optimization (VO), which we don’t expect to necessarily see much or any change in for AIC in 2020 as a result of COVID due to how AIC’s VO evaluation methodology works. That leaves somewhere in the realm of 11% of verified net electric energy savings for AIC’s 2020 portfolio that would be likely to change as a result of these considerations.[[1]](#footnote-2) For AIC, these savings fall nearly entirely in the Business Program’s Custom and Retro-Commissioning Initiatives. This 11% is currently estimated at 40,158 MWh. AIC’s 2020 AAIG is 172,012, so therefore we are discussing an adjustment that could take an absolute maximum of no more than 23% of AIC’s 2020 AAIG.[[2]](#footnote-3)

For ComEd’s 2020 portfolio, we expect about 23-30% of net electric energy savings to be evaluated using custom methods, and therefore be subject to normalization adjustments from COVID (the range depends on whether or not Home Energy Report [HER, aka Residential Behavior] savings are normalized, note ComEd’s proposal not to normalize HER). The majority of these savings come from VO and HER. Note that VO savings are estimated differently for ComEd than Ameren and are subject to adjustment (if VO were not normalized the percentage would fall to 10%). The rest of the savings come from Custom, Retro-Commissioning, Industrial Systems, Strategic Energy Management (SEM), and a couple measures within Standard. This 22.5-29.8% is currently estimated at 387,882-514,244 MWh. ComEd’s 2020 AAIG is 1,021,810 MWh, so therefore we are discussing an adjustment that could take an absolute maximum of no more than 38-50% of ComEd’s 2020 AAIG. Note that in our mid-year review of savings, we have found that none of the projects in samples for Custom or Retro-Commissioning were impacted by COVID, so the effect may be low for these programs.

Once we set these outer limits, further analysis is based on conjecture only and is presented as a hypothetical to aid the SAG in understanding how large changes to AAIG could be. Table 1 presents the current utility projections of AAIG achievement for 2020, based on Q1 SAG reports, and shows revised projections of AAIG achievement if COVID affected savings at various levels (-100% through +100%). Our teams feel that it is possible that actual savings could increase or decrease because of COVID.

Table 1. Projected AAIG Achievement with COVID Adjustments – Electric Utility

|  |  |  |  |
| --- | --- | --- | --- |
| Projected Share of 2020 AAIG Achieved | AICa | ComEd (no HER)b | ComEd (w/ HER)c |
| -100% | 70.9% | 65.9% | 53.6% |
| -50% | 82.6% | 84.9% | 78.7% |
| -20% | 89.6% | 96.3% | 93.8% |
| -10% (assumes COVID decreases actual savings by 10%) | 91.9% | 100.1% | 98.9% |
| **Based on Q1 SAG Report (assumes normalized savings or no impact of COVID)** | **94.2%** | **103.9%** | **103.9%** |
| +10% (assumes COVID increases actual savings by 10%) | 96.6% | 107.7% | 108.9% |
| +20% | 98.9% | 111.5% | 114.0% |
| +50% | 105.9% | 122.9% | 129.1% |
| +100% | 117.6% | 141.9% | 154.2% |

a Projections for AIC do not consider changes to VO. VO is a custom impact analysis, but the evaluation team does not expect VO results to differ as a result of COVID-19 as AIC’s baseline usage for VO is deemed.

b These projections for ComEd do not consider changes to HER, in line with ComEd’s proposed modification to Option 1.

b These projections for ComEd do consider changes to HER.

**Gas**

For AIC, 31.3% of the first year therms savings goal is subject to normalization adjustments from COVID. Like on the electric side, these savings fall nearly entirely in the Business Program’s Custom and Retro-Commissioning Initiatives.

For Nicor Gas, between 27.2 and 35.5% (depending on whether or not HER savings are normalized) of the first year savings goal are subject to normalization adjustments from COVID. These savings come from HER, Custom projects (including Retro-Commissioning) and SEM.

For Peoples and North Shore Gas (PG/NSG), between 13.3 and 20.2% (depending on whether or not HER savings are normalized) of the first year savings goal are subject to normalization adjustments from COVID. These savings come from HER, Custom projects (including Retro-Commissioning) and SEM.

Again, once we set these outer limits, further analysis is based on conjecture only and is presented as a hypothetical to aid SAG in understanding what magnitude of adjustments could be possible. Table 2 presents the current gas utility estimates of savings goal achievement for 2020, based on Q1 SAG reports, and shows revised projections of goal achievement if adjustments to savings were made at various levels (-100% through +100%).

Table 2. Projected First-Year Savings Goal Achievement with Adjustments - Gas Utility

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Projected Share of 2020 First-Year Goal Achieved | AIC | Nicor Gas (no HER)a | Nicor Gas (w/ HER)b | PG/NSG (no HER)a | PG/NSG (w/ HER)b |
| -100% | 68.7% | 72.8% | 64.5% | 79.8% | 66.5% |
| -50% | 84.4% | 86.4% | 82.3% | 89.9% | 83.3% |
| -20% | 93.7% | 94.6% | 92.9% | 96.0% | 93.3% |
| -10% (assumes COVID decreases actual savings by 10%) | 96.9% | 97.3% | 96.5% | 98.0% | 96.7% |
| **Based on Q1 SAG Report (assumes normalized savings or no impact of COVID)** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |
| +10% (assumes COVID increases actual savings by 10%) | 103.1% | 102.7% | 103.5% | 102.0% | 103.3% |
| +20% | 106.3% | 105.4% | 107.1% | 104.0% | 106.7% |
| +50% | 115.6% | 113.6% | 117.7% | 110.1% | 116.7% |
| +100% | 131.3% | 127.2% | 135.5% | 120.2% | 133.5% |

a These projections for Nicor Gas and PG/NSG do not consider changes to HER, in line with ComEd’s proposed modification to Option 1.

b These projections for Nicor Gas and PG/NSG do consider changes to HER.

AG Question #2

Is there a way to quantify what type of savings impact this would have, in option 1 vs option 2?

Evaluation Team Response to AG Question #2

Only using hypothetical assumptions about the degree to which we would see changes, as presented in our response to Question #1.

AG Question #3

What is the true evaluation cost impact of option 2? If the outer bound of the cost is 1.5 times what is initially estimated, what does that mean?

Evaluation Team Response to AG Question #3

We could step through the same process as detailed above from a cost perspective. Please note that these assumptions are rough and the true impact will be very hard to understand until the evaluations are fully in progress.

For AIC, impact evaluations for custom evaluations that may be impacted by this issue cost around $330,000, roughly 10% of our annual evaluation costs. Using the (extremely rough) 1.5x assumption the evaluation teams developed, that suggests we could potentially see somewhere around $160,000 in increased costs for AIC custom impact analysis work (a variance of about 5% in our overall annual evaluation budget). This cost would not be feasible to absorb within our existing budget.

For ComEd, impact evaluations for custom evaluations that may be impacted by this issue cost around $1.7 million, roughly 18% of our total evaluation budget. Using the (extremely rough) 1.5x assumption the evaluation teams developed, that suggests we could potentially see somewhere around $850,000 in increased costs for ComEd custom impact analysis work (a variance of about 9% in our overall annual evaluation budget). This cost would not be feasible to absorb within our existing budget.

For Nicor Gas, impact evaluations for custom evaluations that may be impacted by this issue cost around $240,000 roughly 25% of our total evaluation budget. Using the (extremely rough) 1.5x assumption the evaluation teams developed, that suggests we could potentially see somewhere around $120,000 in increased costs for Nicor Gas custom impact analysis work (a variance of about 13% in our overall annual evaluation budget). This cost would not be feasible to absorb within our existing budget.

For Peoples and North Shore Gas, impact evaluations for custom evaluations that may be impacted by this issue cost around $220,000 roughly 28% of our total evaluation budget. Using the (extremely rough) 1.5x assumption the evaluation teams developed, that suggests we could potentially see somewhere around $110,000 in increased costs for Nicor Gas custom impact analysis work (a variance of about 14% in our overall annual evaluation budget). This cost would not be feasible to absorb within our existing budget.

Although our original estimate was that doing option 2 could cost 1.5x the cost of doing option 1 or 3, we’d like to note that upon further reflection that costs could be higher for some programs (particularly those where we evaluate individual projects separately, like RCx). While calculating normalized and non-normalized savings are not fully separate evaluations (for example, we will not need to conduct two separate on-site visits for a given site), we would need to come to resolution with the utilities, implementers, and any other involved parties on two separate sets of calculations (see more about this in response to question 4 below). We think that there are likely to be many questions and disputes about exactly how we differentiated between normalizing and non-normalizing that will result in significant amounts of budget being spent in meetings on this topic. Therefore, we think that the 1.5x budgets presented above may be a lower bound on cost increases.

AG Question #4

Why would option 2 essentially require two evaluations?

Evaluation Team Response to AG Question #4

For individual projects or programs, Option 2 would ask us to estimate savings both in their actual state for 2020, as well as a hypothetical state for future years. In Option 1, we might rely on past data to understand expected occupancy patterns for both 2020 and future years, or past data to understand production in 2020 and in future years. In Option 3, we might measure actual conditions in 2020 and use them into the future. For Option 2, we will need to **both** gather 2020-specific data as to occupancy, production, energy usage, etc., as well as develop expected occupancy, production, energy usage, etc. in future years. While this is not a fully separate evaluation, we will need to proceed down two separate analysis pathways for every project or program being evaluated.

Furthermore, and perhaps more important from an evaluation clarity perspective, there are significant difficulties in drawing a clear dividing line between the Option 1 approach of normalization for COVID and the Option 3 approach of not normalizing for COVID.[[3]](#footnote-4) We approach our impact evaluation relative to best estimates of what they will be, on average, over time, in order to account for the long-term benefits of energy efficiency most appropriately. As a result, we typically conduct at least some normalization for custom evaluations. For example, we typically normalize for weather to ensure that unusual weather in an evaluation year does not lead us to substantially over- or understate the long-term benefits of a custom project. Similarly, if other data are available (e.g., production data for a manufacturing facility), we typically attempt to normalize our savings estimates for production to at least some degree, to ensure that we provide a savings estimate that is going to most appropriately represent the long-term performance of an energy efficiency project.

Therefore, in Option 1, we will likely conduct some normalization as per usual (e.g., weather), and conduct more aggressive normalization for certain items (e.g., if a manufacturing facility discontinued all shifts during the shutdown period, but has now resumed production, we would likely “ignore” the period of 2020 during which shifts were discontinued). In Option 2 or 3 for the “unnormalized” years, we would “partially” normalize on items like weather – but then the question becomes – how do we provide a separate, independent estimate where we “don’t” normalize on other information? Estimating savings exactly as they occurred in 2020 would be a different approach than we typically take, so some degree of normalization is required – but there will be a very large degree of judgement necessary to determine where to draw the line, which is highly likely to produce confusion around evaluation results if both “normalized” and “unnormalized” results must be produced. This is the point being made in response to question 3 above where we think significant amounts of budget will be spent resolving questions about the differences.

AG Question #5

What do we do next year if COVID continues? Will we be revisiting this decision in future years?

Evaluation Team Response to AG Question #5

This is an excellent question that our conversation with SAG to date has not explicitly addressed and which we believe should be discussed further. We certainly do not think that this decision should be binding and final for future years as long as the COVID situation will be evolving. However, it will likely be reasonable in 2021 to view the conversation to date as basic precedent from which further decision-making can stem, as some of the issues we have thought through and discussed would be applicable in future years as well.

1. All other portfolio savings are assessed using the Illinois TRM and therefore would not be subject to change as a result of this discussion. [↑](#footnote-ref-2)
2. 40,158 MWh (custom savings less VO) as a share of 172,012 MWh (2020 AIC AAIG). [↑](#footnote-ref-3)
3. Note that for SEM in particular (at least for ComEd and the gas utilities where SEM includes more than just capital projects), the methodology used to evaluate that program does not allow for alternative scenarios (i.e., normalized and non-normalized) to be run. The Guidehouse team does not believe it will be possible to produce a value which does not normalize the effect of COVID. [↑](#footnote-ref-4)