

ILLUME

Impact Evaluation Considerations in light of COVID-19

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As we continue to think through the implications of the novel coronavirus, we need to consider how to quickly adapt our evaluation frameworks to provide meaningful results given (1) the inability to collect data using some of our most common methods and (2) the challenges of accurately assessing program impacts during large-scale and coincident changes in energy consumption across all sectors.

How can we ensure our evaluations will accurately assess the impacts of the programs and pilots we've invested in while also adhering to local and federal guidance for health and safety?

We hope this memo provides you with high-level guidance for how to address ongoing measurement and near-term data collection, including thoughts on how to keep methods valid, given significant changes in work and life energy consumption patterns.

How can we collect data to inform our ongoing or near-term impact evaluations?

For ongoing evaluations, we will need to get creative with data collection efforts originally planned to utilize customer contact and/or in-person site visits. Here are some potential paths forward.

PHONE OR WEB-BASED CUSTOMER VERIFICATION

First, consider whether direct-to-consumer research will create an undue burden on the participants. ILLUME provides guidance on that in our memo, *If, When, and How to Conduct Research in a Time of Crisis*.

If your organization **has decided against contacting** customers during this time, *consider using the most recent previously calculated verification rate* in lieu of rates you planned to derive from such a survey. Such a rate can be used directly or adjusted to reflect current participation. Where you do not have such data, consider using the in-service rate from a relevant published evaluation or referenced in a technical reference manual.

If your organization **is still contacting** customers during this time, consider how you can *combine other priority questions of interest into a survey* that can also be used for verification. We know that being attentive to customer concerns, even if outside the explicit topic of the research interaction, may be even more valuable at this time of crisis. As we discuss in *If, When, and How to Conduct Research in a Time of Crisis*, a recent memo, participants are likely to address research staff as representatives of the utility and approach them with questions beyond their ability to answer or address. We therefore recommend equipping research teams with information and resources/referrals so that if a customer has a question about, for example, bill payment, deferrals or disconnections, they can provide them specific and concrete information, such as a number to call. Finally, *ensuring that incentives are delivered promptly and in a format that customers can use as desired* will be of increased importance.

SITE VISITS (VISUAL VERIFICATION, SPOT-MEASUREMENTS, ETC.)

For evaluations with planned site work and for which a high-level rigor of evaluation is still required, think through ways to conduct supplemental measurement and verification (MV&) without an in-person visit. This might include:

Using web-based software and/or photos to allow residents or facility staff (who have remained onsite) to provide visual verification of specific installations.

Working with facility staff to take spot measurements of power. Facility staff will generally be equipped with the power meters, training, and personal protective equipment necessary to safely take such measurements.

Requesting and using trend data from specific building end uses. This data can nearly always be pulled and sent remotely via a secure file transfer protocol.

 **FOR UPCOMING EVALUATIONS**, ensure evaluation plans propose data collection options that are feasible and include redundancy to ensure critical data can be collected in more than one way.

How can we optimize the accuracy of our ongoing or near-term impact evaluations?

Here, we provide high-level guidance to support your need to measure and quantify the impacts of ongoing programs and pilots. The best path forward, however, will vary by program and customer segment and depend on whether you are evaluating impacts achieved in 2019 or 2020. No matter the path you select, we recommend thinking through all potential implications with your evaluation team and requiring that all evaluation results include clear and transparent methodologies to clarify all assumptions made.

ENGINEERING REVIEWS

If you are evaluating 2019 program performance – *no methodological adjustment is needed.* Programs that occurred in 2019 are unimpacted by COVID-19.

If you are evaluating the 2020 program performance of a measure that contributes a small amount of total savings and/or for which you believe COVID-19 impacts are minimal – *consider using existing assumptions and deemed values.* While it may ultimately be necessary to revise load shapes and energy consumption assumptions in a post-COVID-19 world, for many measures, using current assumptions to estimate 2020 impacts is likely sufficient. The data collection necessary to update these assumptions may require customer contact and/or a full year of energy consumption data which will be impossible for some ongoing or near-term evaluations to accommodate.

If you are evaluating the 2020 program performance of a measure that is a large contributor to total savings or where especially high uncertainty is likely to exist because of the impact of COVID-19 – *work with your evaluation team to determine whether billing or AMI data analysis might be more appropriate.*

 **FOR UPCOMING EVALUATIONS,** consider for which measure, if any, an engineering review would provide a meaningful assessment of impacts achieved in 2020. For all remaining measures, work with your evaluation team to select the most appropriate and cost-effective evaluation method. Also, seek to find alignment upfront regarding what the most appropriate baseline will be for each measure.

BILLING OR AMI DATA ANALYSIS

Where you have the need to assess and attribute energy and/or peak savings to **interventions implemented in 2019** – *consider restricting the post-participation period for participants from the 2nd half of 2019* to analyze only months through February 2020 or whenever stay-at-home orders were in place for your community.

Where you need to assess impacts **occurring in late 2019 or during the post-COVID-19 time period**, here are some potential paths forward:

Forego billing or AMI data analysis. For programs that are in consecutive years, consider using the most recently completed pre-COVID-19 evaluation savings as the basis for estimating consecutive year savings. In some instances, these data can be adjusted using 2020 program participation data to provide a reasonable estimate of impacts.

Consider the ability to use a comparison group design. Constructing a comparison group after a program or pilot has launched is not ideal, but it can be done. A comparison group of non-participants would need to match the energy consumption profiles and other key characteristics of treated customers in the pre-COVID-19 time period, a task that may be labor intensive, but for certain interventions, it may provide the cleanest way to parse out the savings achieved by the intervention. It is important to note that the proper identification of what other characteristics are key is critical for this method to produce reliable results. For example, some residential customers may be working from home while others are working outside of the house, and your evaluation team would need to ensure the comparison group matches the treatment groups as close as possible. **A variation in adoption approach** is a similar but alternative approach where the evaluation team uses later participants as the comparison group for earlier participants. Here again, care would need to be given to assure meaningful similarities exist between groups.



Normalize, where possible. For example, when conducting billing analysis of industrial customers, it may be possible to normalize for production volume. This would only apply to those participants where you believe there is a strong chance of observing predicted savings in billing data (e.g., where the evaluation team and implementer expect to find savings greater than 15% of usage and certainly no less than 10%).

FOR UPCOMING EVALUATIONS, plan ahead to develop a process to control for the effect of COVID-19 on usage and approximate how the results for 2020 may be different from other years. An experimental design that uses a control group, for example, is most easily done ahead of program enrollment, so that the impacts of participation can be measured longitudinally. As another option, **consider a recruit and delay design.** This design creates a control group while still allowing everyone who is interested to participate.

Finally, **it will be important to mitigate expectations.** Impact evaluation results in 2020 (billing analysis or otherwise) are probably going to be different than 2019 or 2021. Work with program and planning teams, as well as commissions and regulators, ahead of time to ensure that pilots and programs will not be judged against 2020 impact findings solely, especially where impact evaluations uncover that program performance was affected by these extraordinary circumstances.

What about performance-based programs that use meter-based M&V?

The ability to estimate savings for ongoing programs is particularly important for program designs that involve performance payments. For such programs, changes in energy consumption may be best measured against a carefully selected comparison group so that the performance of projects and programs is measured directly. However, because COVID-19 is likely affecting the energy consumption of different businesses and different people in different ways, the identification and selection of a comparison group would need to be done very carefully.

Proceed cautiously: It should be noted, however, that it may not always be possible to ensure the accuracy of such a model. Issues with the comparison group and/or outlier energy use data may make M&V results inaccurate. As such, consider engaging with your M&V2.0 supplier to discuss other viable options, including looking at other performance incentive mechanisms and/or revisiting the high and low caps placed on payments or performance.

Reimagining what we can learn from impact evaluation

Additional use cases for impact evaluation will likely emerge as the impacts of COVID-19 continue to evolve. For example, we can use our current evaluation tools to identify the impacts of COVID-19 shelter-in-place orders on energy use within sectors. Our evaluation framework might also be leveraged to help us track our progress, its pace, and what it looks like, as our regions recover and evolve. Here are some other use-cases we offer as food for thought:

IDENTIFYING WHETHER WE WILL NEED NEW BASELINES

Baselines are something the industry will need time to grapple with and figure out. Impact evaluation methods, including the use of AMI data, will be able to help us identify the magnitude and persistence of changing work patterns, or even leisure patterns, and how they affect sector-specific load shapes.

UNDERSTANDING ENERGY USE DURING SHELTER-IN-PLACE ORDERS

Should we need to prepare for another shelter-in-place order in the future, we can use an evaluation of AMI data to better understand patterns of energy use to provide customers better information on how to control energy costs.

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Key Takeaways

To summarize our guidance here, we provide five key takeaways:

1. Create communication early and often between program administrators and evaluation teams.
2. Recognize you may need to shift methods and that the feasible methods may be imperfect.
3. Require transparency on methods used and their benefits and drawbacks.
4. Consider leveraging the data you can collect to better understand energy usage patterns throughout the phases of the pandemic.
5. Proactively engage and inform stakeholders on any potential implications of COVID-19 on evaluations and methods.