

To: NRDC
CC: ComEd, Nicor Gas, Peoples Gas and North Shore Gas, Jennifer Morris, ICC
From: Navigant Evaluation Team
Date: February 21, 2018
Re: Comments on Four-Year Evaluation Plan

Introduction

Navigant received comments from stakeholders on the four-year evaluation plans for ComEd, Nicor Gas, Peoples Gas and North Shore Gas. Navigant took those comments into account as we revised the evaluation plans. This memo summarizes how we responded to those comments and, where relevant, addresses questions.

Response to Comments

NRDC Comments on Draft Evaluation Plan for ComEd's 2018-2021 Programs

Comment:

The draft 2018-2021 multi-year evaluation plan for ComEd generally appears to be well constructed and to appropriately address most key evaluation topics, particularly with respect to impact evaluation. However, NRDC believes the plan could be improved in a few areas. Most importantly, we think it is imperative that evaluation now include estimates of job impacts, endeavor to quantify other non-energy benefits (ComEd's plan expresses a general commitment in this area, but needs more specifics), focus increased attention on assessment of measure lives or savings persistence for business behavior type programs for which there is likely significant uncertainty regarding savings persistence, and the effectiveness of new program strategies (particularly for income qualified customers) to inform planning for the next four-year cycle. Specific recommendations are as follows. NRDC also supports other (mostly related, but in some cases more detailed) comments from the Energy Efficiency for All (EEFA) group.

General

- **Non-energy benefits (NEBs).** The discussion of NEBs is quite limited. More detail should be provided regarding plans for assessing Low Income NEBs, building on discussions with Stakeholders over the past couple of months. This would include clarity about which low income NEBs will be estimated in 2018 evaluation, including reductions in utility credit and collection costs. In addition, the plan should specify a commitment to assessing NEBs for at least one or two major programs per year over the balance of the plan. After low income, we suggest assessment of NEBs be prioritized for the major C&I Standard and Custom programs.
- **Portfolio estimates of job impacts.** Interest in clean energy job creation was one of the drivers of passage of the legislation now governing the utilities' 2018-2021 efficiency programs. Thus, NRDC believes it is important for the utilities and their evaluators to develop estimates of job impacts, at least at the portfolio level. Those estimates should account for the several different ways in which efficiency programs can create jobs: (1) direct hires to plan, run and evaluate programs; (2) jobs created for trade allies to deliver efficiency measures (e.g., insulation contractors, HVAC contractors, lighting vendors, etc.); and (3) jobs indirectly related to efficiency

as a result of customers having more disposable income to spend at local restaurants, clothing stores, etc. (i.e. the economic ripple effects of saving money on energy). These estimates don't have to be perfect and can even be presented as ranges if necessary. Ideally, the methodologies for estimating them should be consistent across utilities.

- **Single electric/gas evaluation for joint programs.** ComEd delivers several programs together with the gas utilities. The evaluation plan makes reference to close coordination with the gas utility evaluation teams. However, it is not clear what that means. It seems as if joint programs should have a single joint evaluation, perhaps with over-sampling to enable statistical precision for individual utilities. This should save money. Is that what is contemplated? If not, why not?
- **Load shape research.** Load shape research is flagged as part of potential cross-cutting technical research. It is not clear why this should be a priority, particularly since it can be an expensive endeavor. What is driving this?
- **Cost-Effectiveness analysis.** The benefit-cost formulas are missing avoided water costs (required by statute), avoided O&M costs (required by statute) and other quantifiable societal benefits. Consistent with the principles laid out in the new *National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources*, cost-effectiveness analyses other quantifiable benefits should include quantified participant NEBs, including those quantified for the first time through this evaluation plan.
- **Persistence, R&D, etc.** We appreciate and endorse the plan's focus on these important topics.

Response:

- **Non-Energy Benefits:** We expanded our discussion of NEBs in both the introductory sections of the four-year plan and the individual plans. In part based on previous Stakeholders' discussions regarding NEBs, we conducted secondary research on NEBs associated with income eligible programs, including the sources reviewed by the SAG. In CY2018, we are focusing on quantifying NEBs associated with income eligible programs. In addition, we are adding screening questions for NEBs in our participant surveys. Based on the responses, we will select two programs each year that are good candidates to quantify NEBs in CY2019-CY2021. For income eligible programs, we plan to study job (direct, indirect, and induced), reduced collection/arrears/shut-off costs, health improvement benefits, and safety improvement benefits. For other programs, we will conduct secondary research to determine what are the most likely NEBs associated with the individual programs.
- **Job Impacts:** We are conducting research to quantify job impacts as one aspect of our NEBs research.
- **Electric/Gas Coordination:** Navigant has added additional language about coordination in the Affordable Housing New Construction, Single Family, and Multi-family income eligible program plans; we do plan to coordinate on all applicable activities, have the same leads across programs and to sample with the aim of creating efficiencies between the utilities.
- **Load Shapes:**
 - Load shapes were deemed by the TRM technical advisory group as a high priority item for update. There are several reasons why, among them: The current load shape library was last updated in 2012 and is not based on rigorous primary data collected in Illinois. Several of the existing load shapes are sourced from simplified eQuest building model inputs never intended to be used for utility program evaluation and planning. Based on preliminary review, several of the current load shapes differ considerably from actual metered load shapes of similar customers groups and jurisdictions around the country.
 - In the TRM, load shapes are used for evaluation and cost effectiveness analyses and are an integral part of measure characterization. The load shapes are used for HVAC,

kitchen, laundry and other measures throughout the TRM; they provide the base data set to calculate coincidence factors and hours-of-use.

- The load shape library are primary inputs into the cost effectiveness analysis (Rating Period Factors are used for mapping variable avoided costs)
- End use load shapes highlight the temporal consumption of equipment and provide input into the drivers and contributors to peak load. Foundational load shape research will support evaluation as well as program planning and design.
- Navigant is preparing several load shapes research plans to be distributed separately with the opportunity for further review and input by stakeholders.
- **Cost-Effectiveness:** The TRC cost-effectiveness evaluation is undertaken with full participation by ComEd and ICC Staff. Water costs will be included within the TRC analysis, along with any other costs and benefits, as required by Illinois law and regulation. Navigant will propose including additional NEBs on the basis of our research on a program by program basis.
- **Persistence / R&D:** Navigant is planning further evaluation research to address these topics and will distribute these evaluation research plans separately for stakeholder comment.

Residential Sector

Comment:

- Demographic characteristics of program participants. NRDC would like to see efforts to assess the demographics of participation in different programs and even for different measures. Data presented by Nicor from its past data collection efforts suggest that a non-trivial fraction of participants in its non-low income programs are low income. It would be very useful to collect this kind of information for ComEd (and other utilities) as well.

Response:

- The ComEd process evaluation team is planning to assess participant demographics across residential programs. As for measures, we will assess if program tracking data detail is available. It should be noted that, while this information may be useful, it is not typically a part of evaluation, and is an area that can be more easily reported by the utilities, given available data.
- Some characterization of business demographics would seem valuable – by size of company, by location (including in economically challenged communities), etc.

Business Sector

Comment:

- Ameren and ComEd have made different assumptions in program design regarding whether larger incentives are required for the same measures for public entities than for private ones (with Ameren assuming higher incentives are required). This assumption should be tested or assessed in some way through evaluation.

Response:

- Public Sector incentive levels is a high-priority research area to be assessed and undertaken during the next 12-18 months. Evaluation research plans for this topic will be developed separately and made available for stakeholder comment.

Program Specific

Income Qualified

Comment:

- The assessment of NEBs planned for this program should examine both impacts on the low income households and on multi-family building owners. It isn't clear from the write-up if that is the intention.

- The assessment of NEBs for this program should include an assessment of reduced ComEd credit and collection costs (i.e. benefits to the utility of system of making it easier for customers to pay their bills and related reductions of frequency of being in arrears and the costs to the utility of managing customers in arrears). It is our understanding from previous discussions with ComEd and Navigant that this is the plan, but it was not clear from this plan.
- There is reference in the multi-family approaches table (2) to possible billing analysis, but it is not listed among the Core Data Collection activities table (3). And there is no mention of billing analyses in the single family program. Why not? to assessing depth of savings. That should include assessment (thru on-sites) of missed opportunities for greater levels of cost-effective savings, whether programmatically or for individual service delivery agents.
- The impact evaluation seems to focus solely on desk review and TRM application. Why not some billing analysis too?
- The program delivery is going to have some complexity – around both integration with IHWAP (for those with incomes below 200% of poverty) and non-IHWAP (those above 200% of poverty but below 80% AMI); a related split in delivery between CAAs and possible other delivery infrastructure; new challenges in recruiting multi-family buildings; and imperatives to emphasize all-electric buildings as much as possible. These complexities should be addressed as part of process evaluation, including:
 - How well has integration with IHWAP gone (for the segment for which that is possible)?
 - Is there clarity (or any confusion) among income eligible customers and the rest of the “market” around who to go to for service, how to participate, etc.?
 - Are there any “trust” or other barriers to associated with either the IHWAP or the other aspects of ComEd’s new delivery infrastructure? How can they be addressed?
 - Are incentive levels for moderate income customers (where different) reasonable? Or creating barriers?
 - Are multi-family incentives for building owners about right, or in need of refinement?
 - Are there differences in participation (and barriers and necessary incentive levels) between master-metered multi-family and individually-metered multi-family?
 - Are efforts to identify and recruit all-electric buildings (including multi-family) effective or running into barriers? How can they be addressed?
 - How often are health and safety issues a barrier to participation? How often must the program “walk away” from such jobs?
- There do not appear to be any planned “on-sites” to assess program comprehensiveness, quality of installation and/or missed opportunities. That seems like an important omission.

Response:

- Navigant added additional language on the non-energy benefits research in the beginning sections of the evaluation plan. Navigant’s non-energy benefits research will first be focused on quantifying utility and health and safety benefits for the income eligible single-family and multi-family programs. In addition, Navigant will add screening questions regarding non-energy benefits to our participant surveys. Based on the responses, Navigant will conduct research on selected programs to quantify additional non-energy benefits. Navigant is developing a research plan for the quantification of non-energy benefits in income eligible homes in Q1 2018.
- We will also capture the above issues outlined by NRDC and make sure to include those points in the NEBs research effort.
- Navigant added additional language on conducting billing analysis for both SF and MF Income Eligible programs, occurring in 2019. We have added language for on-sites which will occur in 2018 and 2020. We have also added process language to address many of the additional questions/metrics outlined. Navigant agrees these are important points to evaluate and appreciates this feedback.

Small Business DI

Comment:

- It would be useful to assess comprehensiveness of treatment of savings opportunities, extent of missed opportunities (particularly for major, non-lighting measures), etc.

Response:

- This is a process research question that will be discussed with ComEd, our SB DI evaluation team has this comment and will move forward with discussions.

Retro-Commissioning/SEM

Comment:

- These are largely business behavioral savings. It would seem that some assessment during the four-year planning period of measure/savings life would be appropriate. That may require some “longitudinal” studies, assessing how much of the savings realized in 2018 is continuing in subsequent years. That didn’t seem to be addressed in the plan.

Response:

- A separate Seventhwave EUL analysis is already underway and being managed by ComEd. The Navigant RCx evaluation team understands this focus and will discuss and incorporate this into our EUL and persistence discussion with ComEd.

Custom C&I

Comment:

- The evaluation plans says process evaluation will be done “as needed” and will be triggered by changes to the program, goals or implementation team. Given the importance of this program, we wonder whether there shouldn’t be a planned process evaluation designed to assess opportunities for program improvement – in how to drive more large customer to participate, in how to drive deeper levels of savings (e.g. are incentives big enough for complex/expensive measures, would more technical support be helpful, would custom incentive offerings make sense, etc.), or both.
- The evaluation plans says there will be 15 on-sites (capped at 25) and an additional 5 project desk reviews. What if that is not a large enough sample to get to a 90/10 (or other appropriate) level of statistical precision given the program ramp up efforts?

Response:

- The Custom evaluation team captured this comment and will discuss it with ComEd - driving customers into the program is a central process point and will certainly be considered.

Standard C&I Rebates

Comment:

- The evaluation plan suggests that there will be 40 on-sites. We are confused about how these will be prioritized and used? Will these be targeted to a specific technology or two? If not, what info would be collected that would justify a gross impact savings adjustment? For example, if metered run hours for 2 lighting projects are different than suggested in the TRM, there would be no statistical basis for changing assumptions, would there?

Response:

- On-sites are targeted to high-impact savings, but mainly based upon a representative sample of many projects (e.g., large, medium and small projects). This approach isn’t targeted to specific

technologies, it's a representative assessment across all measures so that it's a balanced evaluation.