

ILLUME

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COMMERCIAL BEHAVIORAL PROGRAM EVALUABILITY ASSESSMENT FINAL MEMO

TO: Utility Client

FROM: Amanda Dwelley and Shannon Kahl, ILLUME Advising

ILLUME Advising, LLC (ILLUME) has been conducting an evaluability assessment of our Utility Client's Commercial Behavioral Program (CBP) since May 2016. The overarching objective of the evaluability assessment is make sure that the program is on track to (a) collect and measure what is needed for future evaluation, and (b) deliver metrics and customer insights that can help program staff and implementers optimize the program throughout the pilot.

This memo summarizes ILLUME's findings regarding the evaluability of the CBP as it was implemented and provides guidance for a future-state program which may focus more on community outreach and awareness than driving energy savings. The purpose of this memo is to summarize the work ILLUME has done for the evaluability assessment to date, outline data requirements for programs like CBP, including key performance indicators (KPIs) and to document how well the pilot addressed evaluation needs.

I. PROGRAM OVERVIEW

A. PROGRAM DESIGN

This section contains an overview of the program design based on ILLUME's initial review of program materials, and ongoing discussions with program and implemental staff. A complete summary of the original program design is provided in the Commercial Behavioral Program Theory and Description document provided December 2, 2016.

Our client, in partnership with the City, launched the CBP in June 2016. This is a program aimed at office, retail, lodging, and health care businesses in the downtown area. The program encourages stakeholders at all levels of an organization—building owners, property managers, facility managers, tenants and employees—to take simple actions to change how and when equipment operates. Through the program, the City hoped to become a national model for how collective action, technology, and smart building operations can empower energy efficient choices and better bottom lines and create a healthier, more desirable place to work.

Our Client hired a team of vendors to implement the program. The outreach vendor's Social Marketing team leads the program implementation and is responsible for project management, marketing, branding, and outreach strategies. The implementation vendor is actively involved in developing Strategic Energy Management (SEM) content, workshops, some large facility engagement and measurement and verification (M&V) work, and survey

design and analysis. Another consultant is responsible for the Energy Management Information Systems (EMIS) tools and collecting the energy use data. Outreach vendors provide the outreach staff who work with participants. There are two Account Managers, one for large and target customers and one for small and medium business (SMB) customers, who serve as the main points of contact for participants from recruitment and onboarding to the walkthrough, planning and further engagement.

The initial program goals were to enroll 200 out of 700 targeted businesses and reduce participants' collective annual energy use by 5% (16,000,000 kWh) in two years while raising awareness of the Client's other energy efficiency programs.

The program planned to achieve those goals by using a variety of approaches, drawing on SEM and Community Based Social Marketing (CBSM). Participants receive the following through the program:

1. Planning support and training from program staff, including an initial energy opportunity assessment ("Energy Treasure Hunt") and periodic check-ins with program staff.
2. Access to EMIS for monitoring energy use and reporting on progress.
3. Assistance with occupant and employee engagement campaigns.
4. Rewards and recognition for taking action and meeting goals.
5. A forum to share successes, working collaboratively and networking with other participants (quarterly networking meetings).

The program also provides toolkits with the following resources for succeeding with the program and creating a culture of energy-savings:

- **Building a Green Team.** One of the first things recommended for succeeding with the program is building a green team of employees from various departments who work together to promote sustainability, energy efficiency, and best management practices. The toolkit guides participants through recruiting and organizing their green team, implementing actions and programs, and then following up to report on successes.
- **Workplace engagement campaigns.** There are four campaigns aimed at getting building occupants and colleagues engaged in saving energy by making it easy and fun.
 - *Workstation Domination* – Safely power off or unplug workstation equipment and devices
 - *Inspector Gadget* – Power off or safely unplug unused equipment in common areas in the workplace
 - *Flip that Switch* – Turn off the lights more frequently
 - *Take Flight* – Take the stairs instead of the elevator
- **Engagement guides.** Large and target participants receive internal and tenant engagement guides while SMB participants receive an internal engagement guide. These guides provide detailed guidance on how to get employees and tenants involved and engaged in the process of saving energy.
- **Energy competition guide.** Energy competitions can be used to inspire participation to save energy, encourage healthy competition around energy management best practices and to provide an opportunity to recognize success.
- **Suggestion programs.** The program toolkits also provide instructions on how to run successful employee and tenant suggestion programs to tap into energy-saving ideas.

CBP members use the resources explained above to work toward milestones like becoming a 'Planning Wiz' when they have registered for the software and created an Energy Action plan.

The Commercial Behavioral Program Theory and Description document provided December 2, 2016 provides additional information on the program theory and implementation approach.

B. PROGRAM CHANGES

This section contains a summary of the program changes ILLUME heard about through a limited number of program and implementation staff phone calls in 2017.

As program implementation progressed, program staff made the following observations:

- **Participation levels were lower than expected.** As of June 2017 (the last time ILLUME spoke with implementation staff and with outreach vendor), program participation was lower than expected, at about 100 CBP members. Utility account managers said they were continuing recruitment efforts but were more focused on “participant support” i.e., moving members along through the program milestones.
- **CBP members were not interested in the EMIS tools.** These software tools were intended to be a primary program benefit while providing a way for the program to track the energy-saving actions taken and changes to load profile. However, adoption of these tools was extremely low.
- **The program surveys were not effective data collection tools.** The implementation vendor developed two surveys to collect information for program implementation and evaluation.
 - CBP members must complete the *enrollment survey* to provide baseline information prior to gaining access to the program. The enrollment surveys were filled out by every participant as built into the program design. However, the outreach vendor noted that data quality was often poor, with many incomplete or missing responses. As a result, the account managers had to verify responses and fill in missing pieces of information during their first visit with the member.
 - In addition, members complete *quarterly surveys* throughout their participation to report on actions taken and changes to building occupancy, maintenance, or operations. According to the outreach vendor, the quarterly surveys have been quite laborious and difficult to complete.
- **Program energy savings were lower than anticipated.** Preliminary energy savings models estimated by the implementation vendor showed lower-than-projected savings. Program staff reported, that despite a lot of initial interest in the program at sign up, participants do not follow through with actions that result in energy savings.
- **The program was successful in driving cross-program savings.** Program staff reported that the program successfully drove participation in the utility’s Small Business Direct Install program.

These factors led the utility’s program staff to consider shifting the focus of the program to community outreach rather than driving energy savings leaving two options:

1. **Continue with a program that attempts to drive energy savings.** Under this option, the program continues with the current program design.
2. **Develop a community outreach program without energy savings.** Under this design, management of CBP (or the next version of the program) would move to the utility’s Small Business Direct Install outreach team. This team would offer the program to cities that are interested in using it as a way to engage with their community. Within the city, they have begun to explore the possibility of promoting voluntary

benchmarking among CBP members because the City is very interested in benchmarking and the businesses participating in CBP could be good targets.

Under option #2—as a community outreach program—the **three primary goals** of the program would be to **(1)** increase awareness of other energy efficiency programs offered by our client, **(2)** increase participation in our client’s other energy efficiency programs, and **(3)** increase overall positive perceptions (satisfaction) of our client in support of the J.D. Power measurements of awareness and corporate citizenship.

C. EVALUABILITY ASSESSMENT

ILLUME has provided program documentation and recommendations to improve the evaluability throughout the program implementation. The complete list of research activities and documents delivered to our client is in Appendix A.

This memo is meant to consolidate findings from these previous deliverables, that were specific to the CBP, and also provide guidance on data collection that could be used for the next iteration of the program. As such, the data collection guidelines provided below are meant to be forward-looking for a “future state” program. To craft these recommendations, we assumed that a future program would have the following four goals:

TABLE 1. PRIMARY GOALS OF FUTURE STATE PROGRAM

CATEGORY	GOAL
Energy Savings Goals	1. Electric savings for program overall and per customer
Non-Savings Goals	2. Awareness of our client’s energy efficiency programs 3. Increased participation in our client’s other energy efficiency programs 4. Increased positive perceptions of our client

II. DATA REQUIREMENTS

The four overarching goals for the “future state” program as outlined in Table 1 were defined by our client in August 2017.

Each of these goals could be measured **directly**, e.g., in an impact analysis at the end of the program (for #1), periodic surveys (to understand #2 and #4—awareness and perceptions), or participant database analysis (#3). In the sections below, we provide some guidelines for collecting the data needed to support direct measurement of these goals.

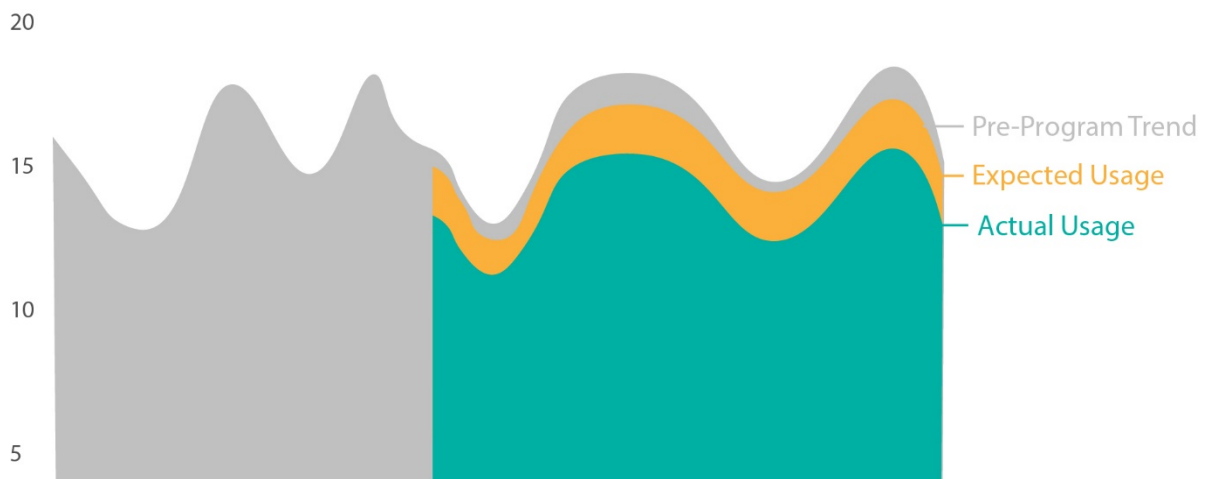
However, some of the methods for measuring progress against these goals may not be possible to apply until the middle or the end of the program, providing gaps or lags in the type of information that may be needed to manage the program day-to-day. Therefore, you can imagine a second category of metrics that provide **indirect** measurement of progress against these goals. We call these indirect metrics “**engagement metrics**”. These are the measures of how engaged participants are with the program on an ongoing basis. They can provide insight into what to expect in terms of the four direct metrics.

This section outlines the data required to assess the four key measures of program success.

A. ASSESSING ENERGY SAVINGS GOALS

For the CBP, the implementation vendor estimated gross impacts using building-specific and weather-adjusted regression models. The models use pre-date and weather data to build a baseline or expectation of what customers would have used in the absence of the program and compare that baseline (expectation) to actual consumption during the program period (Figure 1). The implementation vendor started with a basic model specification for each building, and reviewed model diagnostics to determine if a more custom approach was required. To our knowledge, there is no written description of their approach; rather, results have been presented in spreadsheet format.

FIGURE 1 . GENERALIZED APPROACH TO IMPACT ANALYSIS



Based on our understanding of the impact analysis approach used by the implementation vendor, we identified the following data points as necessary for supporting a gross impact (energy savings) analysis for a program like CBP:

- Minimum requirements:
 - Utility account numbers
 - Utility billing history, ideally using daily data starting two years prior to program start
 - Weather data corresponding with the billing history
- Additional data needed for QA/QC and improved model fit:
 - Business sector (to understand usage patterns)
 - Building square footage (to QA/QC account data)
 - HVAC and water heating characteristics
 - Occupancy rate history (starting 1 year before CBP)
- Additional data needed to understand program influence:
 - Energy efficiency or capital improvements *through* other Utility programs (starting 1 year before CBP)
 - Energy efficiency or capital improvements *outside* of Utility programs (starting 1 year before CBP)

Building-level billing analysis will pick up energy savings from *all* changes made during the program period, program-related and non-programmatic (like increased vacancy rate or the weather and other changes that may or may not be a direct result of program participation). Therefore, additional data is needed to understand program influence.

Billing analysis is typically conducted at least six months into a program and often not until a full year of the program. This allows time for customers to fully engage in the program, take recommended program actions, and start to see savings. Because there is often such a lag in estimating energy savings through billing analysis, it is important

to identify engagement metrics (described below) that can serve as early indicators of savings, for example, *what evidence do we have that participants are taking actions that will save energy?*

B. ASSESSING NON-SAVINGS GOALS

As presented above, our client expressed interest in measuring program effects on three non-savings goals:

1. Awareness of our client's energy efficiency programs
2. Increased participation in our client's other energy efficiency programs
3. Increased positive perceptions of our client

Awareness and Perceptions: The first and third goals relate to J.D. Power utility satisfaction surveys which measure customer satisfaction in six key areas¹: Power quality and reliability, price, billing and payment, corporate citizenship, communications, and customer service. The J.D. Power surveys also include questions regarding awareness of energy efficiency programs. Programs like Commercial Behavioral program are best suited to affect the corporate citizenship and awareness ratings.

The most critical aspect of measuring increases in our client's program awareness and perceptions of our client is to capture **baseline** program awareness and brand perceptions. Without baseline measurements, there is nothing to measure post-program awareness and brand perceptions against.

At a minimum, the program should track the following prior to, during, and after program participation:

- General and specific program awareness
- Satisfaction with our client and the program
- Perceptions of our client's brand and the program
- Qualitative feedback provided to account managers
- CBP member participation in our client's other programs

Specific recommendations for integrating these questions into the data collection process are included in the Data Collection Recommendations section, B2, under Outreach and Awareness

Additionally, because of the interest in using the program to improve J.D. Power corporate citizenship scores, we developed the following questions that could be included using the Customer Impact Report: Corporate Citizenship and Community Involvement² executive summary for insight:

- Does your utility make an effort to improve its impact on the environment?
- To what extent do you agree that your utility supports the economic development of your local community?
- To what extent do you agree that your utility gives back to your community?
- Is your utility involved in any environmental or charitable causes?
- Are you aware of any volunteer programs your utility sponsors?
- Have you noticed utility representatives volunteering in the community?
- To your knowledge, does your utility sponsor any community events?

¹<http://www.jdpower.com/press-releases/jd-power-2016-calendar-year-electric-utility-business-customer-satisfaction-study>

²Executive summary available at: <https://store.jdpower.com/products/customer-impact-report-corporate-citizenship-and-community-involvement>

Participation in Our Client’s Other Programs: We understand that our client has been tracking cross-participation in their other programs and has concluded that the CBP drove an increase in Small Business participation. We have not discussed or reviewed the methodology for determining lift in cross-participation. In our experience, there are a couple of approaches to measuring effects of a community outreach program on cross-participation:

1. **Pre/post among participants:** A basic pre-post analysis would compare the participation rate for CBP members during the program period to their participation rate during a pre-period.
2. **Comparison group approach:** Another approach would be to form a comparison group of non-CBP members made up of businesses of similar sizes and sectors as CBP members. After testing the differences in pre-program participation to make sure there is not a significant difference in participation between the two groups, subtract the change in participation rate between the program period and pre-period for the control group from the same change for the CBP members. This “difference-in-differences” represents the cross-participation attributable to participation in CBP. The equation looks like:

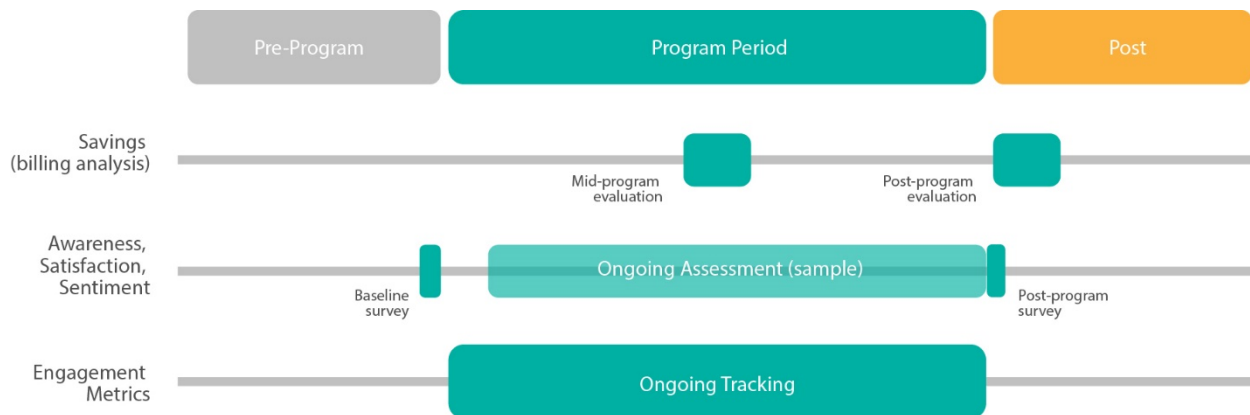
$$\begin{aligned}
 & (\text{Program period CBP Member participation rate} - \text{Pre-period CBP Member participation rate}) \\
 & - (\text{Program period Control group participation rate} - \text{Pre-Period Control group participation rate}) \\
 & = \text{Participation Uplift}
 \end{aligned}$$

Ideally, the pre-period used in either method will cover the same date range as the program period in the previous year to help control for seasonal variations in participation. When conducting an analysis of cross-participation lift it is necessary to allow time for businesses to take action (at least two months) and then additional time for rebate applications or other program forms to be submitted, processed, and available for analysis in a program tracking database before beginning the analysis.

C. ENGAGEMENT METRICS

As discussed above, the typical approaches for measuring progress against the four key program goals—billing analysis, surveys, and database analysis—often have a time lag, and may not be useful for ongoing program management. Therefore, we see value in creating and tracking some engagement metrics to understand program performance earlier (Figure 2).

FIGURE 2. ROLE OF ENGAGEMENT METRICS



Examples of engagement metrics for CBP (and a future state program) could include metrics like:

- Total number of participants
- Number of participants that registered (or are using) the program software

- Number of businesses that completed a walkthrough/Energy Treasure Hunt
- Number of businesses that established an energy action plan
- Number of businesses that have launched at least one campaign
- Number of businesses reporting that they took energy saving actions

Engagement metrics, which are typically measured throughout a program period, are extremely important because they support the evaluation of both energy savings and non-energy savings metrics such as awareness, satisfaction and sentiment, that are often only measured at the end of a program period. For example, when measuring energy savings, engagement metrics are needed during the program to tell us whether we can expect savings and after impact evaluation to tell the story of why or how the program achieved the savings it did (or did not). When evaluating non-savings metrics, engagement metrics are needed during the program to tell us whether we can expect increases in other metrics, and after the program to tell us what program components influenced the outcomes measured. Figure 2 displays the relationship between engagement and other metrics.

III. CBP PILOT EVALUABILITY ASSESSMENT

This section discusses how well the pilot addressed data collection and EM&V objectives described above, including what was done well and what could be improved moving forward.

A. ASSESSMENT OF APPROACH

In this section, we document the state of savings verification as of the May 10, 2017 savings report³, data collection, and reporting and share our assessment of each of the activities. For the most part, data collection and M&V activities are successful and have been implemented as planned, though data collection has been less “self-serve” than anticipated, and account managers have had to take a more active role in collecting and recording information.

A1. SAVINGS VERIFICATION APPROACH

The implementation vendor provided a draft Program Measurement and Verification (M&V) Plan in April of 2016 and currently leads the evaluation planning under the direction of the outreach vendor. The draft plan proposed methodologies for (a) verifying energy savings from energy management activities, and (b) tracking and verifying participant actions, including behavior change and uptake of our client’s other programs. The primary objectives of the measurement and evaluation activities outlined in the plan were to estimate the energy impacts of the CBP and to show a causal relationship between program design and resulting savings.

At the outset of the CBP, our client was interested in understanding the influence of the program on energy savings. There are two primary approaches for estimating program savings net of free ridership and spillover—one is to conduct bottom-up analysis where only savings associated with program-influenced actions are included, and the second is to conduct top-down analysis to estimate all savings achieved during the program period, and subtract out non-program savings. The original M&V plan took the second approach, and we agree that this approach is preferable because (a) the variety of actions taken will be too diverse to cost-effectively develop expected savings, and (b) some of the organizational actions promoted, like setting energy goals or policies and establishing a green team, would be very difficult to develop savings expectations for, though they could have a measurable impact.

³ As of our 8/18/2017 interview with the utility Program Manager, this was the most recent savings report.

In December 2016, we provided a summary of the impact analysis approach proposed in the M&V plan and provided additional comments after our review of the implementation vendor's first analysis of energy savings in June 2017. Both are summarized below:

1. **Determine interval of billing data.** Participants have different types of interval data (monthly, daily or hourly) which will determine the type of analysis performed.
2. **Assess baseline data for validity.** The program assesses the availability of sufficient baseline data for the analysis as participants enroll to allow for additional data collection or alternative M&V approaches. Buildings without sufficient data can still participate but their actions and behaviors are only included in the qualitative analysis.
3. **Aggregate meter level data to business or building level data as needed.** Using the premise level ID, the program aggregates individual meters into whole businesses or the whole building, as appropriate.
4. **Estimate program electric savings through weather-adjusted regression models.** Regression analysis is performed at the facility or building level. Regression models are used to calculate an adjusted baseline, and calculate savings as the difference between post-treatment energy use and the adjusted baseline. The adjusted baseline will account for weather at a minimum, and the M&V plan stated that analysts will also investigate the usefulness of other independent variables such as occupancy/vacancy, operating hours, day of week or time of day (if AMI data is available).
 - a. The implementation vendor uses two types of automated models internal to Energy Manager on each premise:
 - i. DaysOfWeekSegmentedModels - for daily data (majority of models)
 - ii. Nonmodal - for hourly data
 - b. The automated models adjust for weather, but do not account for occupancy patterns.
 - c. The implementation vendor is using adjusted R-squared to identify buildings where automated models do not fit the baseline data well, and will build custom models for this subset of buildings. Custom analysis may involve (a) review of additional data on building conditions and changes captured in surveys, the EMIS, or SalesForce notes, and (b) additional discussions or emails with building stakeholders to understand if any changes in building equipment or operations may have changed energy usage patterns.
 - d. Given data collection challenges related to capturing actions taken and some baseline information, as of May 2017, the implementation vendor did not seem to have a systematic way to construct "stories" of what individual buildings are doing to achieve energy savings.
 - e. ILLUME expressed interest in hearing from the implementation vendor after they had an opportunity to investigate individual buildings and troubleshoot baseline models with a poor model fit. As of the time of this report we have not received any additional information or feedback from the implementation vendor.
5. **(As needed) Estimate individual savings for large and highly engaged participants.** The M&V plan calls for a "standardized" approach to modeling using Energy Manager, where weather is a key control variable. If the facility's billing history does not show strong enough weather sensitivity, the implementation vendor will assess whether a custom regression analysis model is needed for a given participant. The evaluation will proceed with a custom regression model if the Energy Manager regression model is found to be inaccurate. Custom modeling may include evaluating Energy Use Intensity (EUI).
6. **Remove savings from individual equipment projects.** Savings from our client's other programs (e.g., lighting or custom installations) will be removed. Removing savings from our client's other programs is necessary to avoid

double-counting energy savings. The M&V plan stated that analysts will subtract program-verified savings from the CBP gross savings as a separate step, rather than including program-verified savings in regression models. The M&V plan does not describe how savings from capital improvements NOT associated with our client will be accounted for (e.g., any planned or routine changes that occurred without the influence of the CBP or another program).

- a. The automated models do not account for capital projects or energy efficiency program participation (e.g., through other programs).

Overall, the program appears to have a systematic method for estimating savings, though given the difficulties the program has had with collecting data through the EMIS tools and quarterly surveys, the implementation vendor has not yet been able to account for occupancy changes or successfully remove energy savings that were not influenced by the program.

A2. DATA COLLECTION APPROACH

To inform impact analysis, support program implementation, and possibly support a future process evaluation, the program gathers information through the following means, originally documented in December 2016 and updated in June 2017.

1. **Enrollment** – The first information the program has regarding participants and potential participants comes through the following avenues and is entered into Salesforce.
 - a. Online enrollment form on CBP website
 - b. Recruitment conversations (entered into Salesforce by account managers)
2. **Program Surveys** – The implementation vendor developed two surveys used to collect information for program implementation and evaluation. CBP members must complete the *enrollment survey* to provide baseline information prior to gaining access to the program and members complete *quarterly surveys* throughout their participation to report on actions taken and changes to building occupancy, maintenance, or operations.
 - a. As noted earlier, the enrollment surveys have suffered from poor data quality leaving account managers to follow up with participants to fill in missing information and the quarterly surveys have been very difficult to complete as well.
3. **Energy Management Information Systems** – Originally, the two online Energy Management Information Systems for members were intended to provide a method for collecting data on actions taken and changes to load profile, in addition to delivering value to members by providing insight into energy use. Specifically, the implementation team hoped that (a) Energy Manager users would enter actions taken (e.g., campaigns, operational or maintenance changes) into “Notes” functionality (an overlay to the energy usage data charts) and that (b) users would indicate actions taken through the software’s Energy Action Plan.
 - a. Few members have taken advantage of these tools. The implementation team is working to increase usage of the tools through encouraging member attendance at program workshops.
4. **Account Managers** – Account Managers track interactions with participants and the status of various program activities throughout the program using Salesforce.
 - a. While the program design relied heavily on the account managers from the beginning, the account managers are doing even more of the data collection than anticipated. The increased involvement of the account managers is primarily due to the lack of uptake of the EMIS tools (e.g., for tracking building actions and changes) and low completion rates for the quarterly surveys. At present, with the current level of participation, the outreach vendor believes this level of one-on-one engagement has been manageable with their office support.

5. **SalesForce** – The implementation team has developed what they refer to as the “Participation Tracker” and the “Action Tracker” within SalesForce to track all aspects of acquisition and participation. The Participation Tracker captures key milestones in the CBP member journey such as completing the Energy Treasure Hunt and completing software training. The Action Tracker is used to track the in-office campaigns and other energy-saving actions taken by CBP members, including changes to building operations, maintenance, or equipment when that information is reported to the program via the account managers or quarterly surveys.
 - a. Implementation staff use and closely monitor the Participation Tracker as planned.
 - b. The initial plan for the Action Tracker was to incorporate data from the EMIS Tools (via weekly downloads from the tools that would be imported into SalesForce), account manager interactions with participants, and actions noted in the quarterly surveys. At this time, the SalesForce Action Tracker does not import from EMIS tools directly and 90% of action tracking is coming through the account managers who record the actions taken directly in SalesForce. Actions are also housed in other sources and combined in Power BI (Power BI is a Microsoft analysis tool that the outreach vendor uses) to populate the Action Dashboard.
6. **Energy Action Plans** – Per the original program design, all members using Energy Manager are expected to create Energy Action Plans with the guidance and support of their account managers. These Excel-based plans are being completed as planned and the outreach vendor can run a report out of SalesForce on the number completed. As explained above, Energy Check users were expected to use the software to create an Action Plan but with the low adoption of the software to date this has not been happening.
7. **Tenant Engagement App** – Employees of CBP members have the ability to use the Happen App to track their participation in campaigns. The program app is live, but not widely used. The implementation vendor reports that the app is not working as a way to track individual employee engagement at a member site, that it is more effective to track “the old-fashioned way”. For example, one member found success by leaving a note in the stairs for people to hashmark as they walked by rather than asking employees to record the times they take the stairs in the app.
8. **Ad-hoc/New** – The outreach vendor has developed a client engagement Google sheet which facilitates communication between account managers and CBP members and aids in tracking member activities.

Overall, the implementation team is successfully tracking program milestones and participant engagement with program offerings, although the methods for data collection and tracking have changed from the original program design. However, as mentioned in the Savings Verification Approach section above, it has proven difficult to capture information on what actions participants are taking outside of scheduled program activities – e.g., operational & maintenance improvements and individual behavioral changes, because the EMIS tools and program app have not been embraced as the program hoped.

A3. REPORTING APPROACH

Program reporting consists of a quarterly meeting and four tracking tools. The implementation team holds Quarterly Business Review (QBR) meetings with the client to share progress toward goals, a quarterly activity summary, forecasted activity, success stories and lessons learned, external impacts on the program and next steps for the team. The outreach vendor also reports this is where they report out and track (in the meeting notes) the process-related insights gained through account manager interactions.

In June 2016, we provided a summary of the four reporting/tracking tools the implementation team uses:

- **Weekly “Hot Sheet”:** The outreach vendor maintains a Word document which is the primary communication tool between the outreach vendor, implementation vendor, and our client. Aside from

information on the number of participants and participant engagement, it provides primarily operational updates, tracking communications and follow up rather than what members are doing in the program. It also includes links to the next two tracking tools listed.

- **Full Member Update:** We also use a spreadsheet listing CBP members, next steps for the implementation team, and list of actions the member has completed. This is a text-oriented report, not dashboard or summary level information, and it appears to be populated from Salesforce notes. This is also included in the weekly Hot Sheet.
- **Recruitment Tracker:** The recruitment tracker provides a listing of members by category (Large, SMB, Tenant) and a summary of recruitment totals by week. This is also included in the weekly Hot Sheet.
- **Commercial Behavioral Program – Energy Savings Analysis.xlsx:** This file, produced by the implementation vendor, contains the following three worksheets:
 - **Participation Report:** This is a comprehensive export of all participant milestones (such as Energy Treasure Hunt Completed, Energy Action Plan Completed, and Last Quarterly Survey Taken) as recorded in Salesforce at a participant level in spreadsheet form. It is unclear whether all fields are complete and filled in, for example, in the 5/10/2017 update that ILLUME received, there were no entries in the “Energy Action Plans” column. To the best of our knowledge, key indicators from this Report are not wrapped up into a dashboard or a pivot table showing the counts or percentage of members that have completed each milestone.
 - **Baseline Report:** This tab is for impact analysis, and contains baseline start and end dates for each member, the impact analysis model type and the average kWh/day change.
 - **Savings Report:** This tab is for impact analysis and includes the estimated program savings totals and savings detail at the member level.

The reporting tools emphasize recruiting metrics, program status, and actions taken or needed by implementation staff whereas reporting on engagement metrics is less developed. As of May 2017, the ILLUME team had not seen a tool that provides aggregate metrics on program milestones or actions taken by participants. Additionally, reporting on data collection and data gaps appears similarly under-developed. The program does not track whether members have provided key pieces of data such as baseline occupancy levels, capital improvements, operational or maintenance changes, or behavioral changes made since starting the program. While the Participation Report tab in the Energy Savings Analysis spreadsheet (referenced above) contains columns for data collection milestones such as the enrollment and quarterly surveys and energy actions plans, it does not capture whether members have provided key pieces of data such as baseline occupancy levels, capital improvements, operational or maintenance changes, or behavioral changes made since starting the program.

Despite the lack of a program dashboard or comprehensive reporting on data collection and gaps, our client’s staff report that they had the information they felt was necessary to manage the program successfully, noting that they were able to request ad-hoc reports as needed.

B. RECOMMENDED IMPROVEMENTS

The recommendations below are drawn from the December 2016 Evaluability Memo and the June 2017 Evaluation Status Update memo.

B1. SAVINGS VERIFICATION RECOMMENDATIONS

If the program continues to track energy savings, data collection has two main roles to support this: (1) record baseline conditions and actions taken during the program period that can improve model fit (e.g., explain electricity usage trends during the baseline period, as well as non-program-related usage trends in the program period), and

(2) tell a story of what actions members took to achieve energy savings. Item #1 of this list is important to improve model fit and detect savings, and also important if gross energy usage increases or remains flat through the program period (e.g., due to increases in occupancy or other non-programmatic factors). Item #2 is important to understand how participants achieved savings, and to link any savings observed through impact to the program.

In our opinion, the program is doing a good job of tracking program milestones, such as completing training, workshops, energy action plans, etc., which gets the program part-way toward Item #2 above. **However, based on our discussions with the implementation vendor, outreach vendor, and review of data tracking tools, it is not clear whether data on baseline conditions and changes made/actions taken during the program period is being systematically and comprehensively tracked, either through surveys or account manager discussions.** Therefore, we recommended the following steps:

- Review data completeness to date of key EM&V metrics on a per-member basis to understand current gaps.
- Provide Account Managers with protocols for gathering information about actions taken as part of their regular and ad hoc customer interactions.
 - For example, develop a script with basic questions for determining actions taken in key categories, and a place in Salesforce for recording them.
- Modify the surveys to improve data quality and collection of data necessary for modeling energy savings and explaining why a member did or did not achieve energy savings.
 - Remove the “nice-to-have” questions from the enrollment survey and focus on baseline-related questions needed for EM&V.
- Consider ways to promote use of the EMIS tools, especially as a way to track what non-program (maintenance, behavioral) actions have been taken. These changes to load profile can be noted in Energy Manager using the “Notes” functionality. Members can indicate actions taken through the software’s Energy Action Plan.
 - Develop alternative methods for tracking operational, maintenance, and other energy-saving activities for customers who do not use the software.
- Consider alternative, flexible systems for tracking actions taken – For example, leaving a sheet of paper in the stairs for people to hash mark as they take the stairs, and reporting those to the program.

This combination of “high tech” and “low tech” approaches will allow program staff and evaluators to tell the story of what actions participants took to achieve energy savings. **This strategy recognizes that although surveys and EMIS may seem like a more systematic and comprehensive approach, in reality, customers will not always use these tools.** As noted above, survey completion rates and adoption of EMIS tools and the program app were lower than expected.

B2. DATA COLLECTION RECOMMENDATIONS

If our client continues to track energy savings for the program or implements a similar program in the future, we strongly urge program and implementation staff to (a) refine and streamline participant surveys, (b) address potential gaps in tracking energy saving actions, (c) develop an approach for capturing baseline levels of any actions reported during the program, and (d) identify opportunities for further data integration. Specific recommendations for each of these items are outlined below.

If our client establishes non-energy savings goals for the program (e.g., awareness, cross-participation, and customer sentiment), the implementation team will need to adjust data collection to support these goals. We also provide recommendations on how to adjust data collection to support these goals in the Outreach and Awareness section below.

Participant Surveys

The Organizational Profile survey (administered at enrollment and then quarterly), was planned to be one of the primary tools for gathering information on baseline conditions and activities taken during the program period. Though the enrollment survey completion rate is high, the enrollment surveys, from our “evaluator” perspective, appear bloated with “nice to have” information rather than the type of baseline information that could be valuable for evaluation. The length and complexity of the baseline surveys may also dissuade customers from taking follow-up surveys which to date have not proven to be an effective mechanism for capturing actions taken.

Based on discussions with our client and the implementation vendor in late 2016, we understand that program staff made some revisions to data collection instruments but the latest versions we reviewed did not fully address recommendations. **There are four primary ways in which the participant surveys can be refined to ensure complete and accurate responses:**

1. Focus enrollment survey on limited number of baseline characteristics and activities
2. Identify key questions needed to support impact analysis (including program influence). Ensure collection of this information for all participant tracks, not only large customers.
3. Edit question wording and design for clarity. Specific recommendations based on the version of the surveys we reviewed include:
 - a. Be specific in references to time periods, e.g., rather than asking about the past year ask, “in the year prior to enrolling in program” or “in the time since your business enrolled”
 - b. The current operating hours question does not align with common working hours or the EMIS tools. We recommend a more flexible approach such as dropdowns with 15-minute increments.
 - c. References to ‘you’ throughout the survey should be changed to ‘your organization’ unless the intent is truly to ask the respondent if they have done something.
 - d. References to ‘energy’ and ‘energy projects’ could be more specific and provide more context to ensure the respondent is understanding the scope of the question. E.g., does energy refer to energy savings or energy efficiency or electricity use?
 - e. References to ‘Green Team’ should be explained, especially in the first version of the survey when participants may not have formed one yet as part of the program.
4. Carefully evaluate the survey to include only the additional implementation/process questions (listed in Table 6) that cannot be answered through other means. Many of these items are already tracked in Salesforce and some are collected through the current organizational profile survey for large customers. Table 6 lists questions that could be asked *in addition to* the data points described in Tables 1 and 2.

Additionally, the program should consider ways to increase the collection of the type of information the quarterly surveys were designed to collect, namely actions taken and changes made since each member enrolled in the program (capital improvements; operational, maintenance and behavioral changes; employee campaigns, occupancy changes). Options could include:

- a. A reward system for completing quarterly surveys.
- b. A protocol for collecting this information on a quarterly basis through the account managers’ interactions with members.

The Outreach and Awareness section includes additional considerations for a program focused on community outreach.

Action Tracking

As discussed in the Data Collection Approach, the initial plan for tracking actions was to incorporate data from the EMIS Tools (via weekly downloads from the tools that would be imported into Salesforce), account manager interactions with participants, and actions noted in the quarterly surveys into the Salesforce Action Tracker. At this time, the Salesforce Action Tracker does not import from the EMIS tools directly and 90% of action tracking is coming through the account managers who record the actions taken directly in Salesforce. Actions are also housed in other outside sources.

If our client continues to track energy savings for the program, we recommend working toward implementing the Salesforce Action Tracker as originally planned. This would include, as a first step, evaluating the list of actions currently recorded in Salesforce, other outside sources, and the EMIS tools (if any actions were tracked) for completeness and consistency. It is possible that the level of detail currently tracked does not provide the level of detail such as frequency and duration needed for evaluation. It is also possible that actions are not tracked in a standardized fashion because this information is currently coming from different sources and may not be recorded consistently across them. If the actions are not well-standardized, try to create a more standardized list or data entry guidelines to ensure more standardized entry.

After completing an assessment of the actions tracked and relevant information for each, we recommend considering the following options to streamline and standardize action tracking:

1. Determine an alternate tool for participants to use instead of the EMIS tools to record actions taken.
2. If the information recorded in the Salesforce Action Tracker contains the necessary details of the action taken, the program could consider removing questions regarding actions taken from the *quarterly* organizational profile survey to reduce the survey burden.
or
3. The *quarterly* organizational profile survey could be used as a verification exercise if actions taken from Salesforce can be read into the survey and respondents can simply confirm that they took the action. Additional questions on duration and frequency could be inserted at this point if needed.
or
4. If the survey cannot accommodate reading in a customized list, other options include (a) having account managers ask about a standardized list of the most common actions on a quarterly basis, (b) asking about a standardized list of the most common actions, or (c) reading a customized list into the EMIS tools and asking participants to verify the list quarterly.

Integrated Data Collection

We identified several potential opportunities for data integration during our review of program software and interviews with program staff. **If our client continues to track energy savings for the program, we recommend that implementation staff consider the following opportunities for data integration.**

1. Collect the following information through the initial enrollment web form and early recruiting conversations so that it does not need to be included in the initial organizational profile survey:
 - a. Payment of utility bill at site enrolling in program
 - b. Owner/decision maker(s) names with respect to energy decisions

- c. Facility manager/property manager names and contact information
 - d. Building ownership (own/lease)
 - e. Responsibility for building operations (internal staff or vendor)
2. If the program, or a similar program in the future, continues to use the EMIS tools, request that the staff overseeing the tools complete initial data entry in EMIS “Site Information” so that all data collected through the Organizational Profile Survey is populated in the EMIS at the time participants activate their accounts. Include all “Site Information” questions in the Organizational Profile Survey. This has two benefits:
 - a. Participants are not asked to provide the same information twice
 - b. Ensures site information is entered which results in better recommendations
3. Rather than collecting all baseline activities through the baseline organizational profile survey, this information could be collected by the account manager during the site visit/Energy Treasure Hunt and entered into the Salesforce Action Tracker or a separate “Action Tracker” created for past actions. This information could be collected using a paper checklist that could be provided to an outreach coordinator for data entry.
4. Track the recommendations made to participants in their Energy Action Plan via the Salesforce Action Tracker or separate tracker for recommended actions so that (a) this shorter list could be used to ask participants what actions they’ve taken, or (b) it could be easily extracted for evaluation purposes.
5. As mentioned in the previous section, leverage data stored in the Salesforce Action Tracker in quarterly surveys to either ask participants fewer questions (if the completeness of action list is confirmed) or read in the list of actions and have them verify actions.

Outreach and Awareness

Our client’s staff has listed increasing awareness of and participation in their programs and increasing positive perceptions of their utility as the primary goals of the Commercial Behavioral Program as a community outreach and awareness program. **Program design and data collection will both need to shift to support these objectives.** Most importantly, the program will need to develop methods to capture **baseline and post-program utility awareness and brand perceptions** among a broad cross-section of member buildings and employees in the City. Current data collection has not focused on these metrics, nor on surveying beyond member contacts (e.g., building stakeholders). **To measure and track awareness and brand perceptions, we recommend the following:**

- Revise surveys to focus more on program awareness, brand perceptions, and satisfaction (and remove/reduce content necessary for impact evaluation):
 - Capture baseline awareness and customer sentiment in the enrollment survey.
 - Introduce questions about awareness into quarterly survey and/or account manager check-ins.
 - Include questions that will assess corporate citizenship.
- Develop larger-scale survey approaches to capture awareness and brand perceptions among a broader range of stakeholders and employees, to understand who is being reached and affected by the Commercial Behavioral Program.
- Work with implementation team to develop a system for recording and communicating member feedback to the client (for example, what program components are most valuable)
- Track and report on CBP member participation in our client’s other programs.

B3. REPORTING RECOMMENDATIONS

It appears that the program is capturing nearly all important data elements related to a participant’s journey within Salesforce, though the program has not yet transformed them into regular reports or internal dashboards to inform program implementation.

We recommend that the program establish metrics that are key indicators of program progress and engagement and distribute them through an internal dashboard or regular reports to all of our client and implementation staff involved in the program. Based on our experience, creating and regularly distributing a standardized set of success metrics that cover the whole process—from acquisition to engagement—can put all program and EM&V staff on a “level playing field” of understanding how the program is performing at each stage, and facilitate discussion around program performance and improvements.

SUMMARY OF EVALUATION ACTIVITIES

A. RESEARCH ACTIVITIES

ILLUME conducted several research activities between June 2016 and August 2017 as part of the CBP evaluability assessment. These activities are listed below:

- Initial program staff interviews – We spoke with and emailed with program staff—including client and implementation contractor staff—between June 2016 and December 2016, including discussions related to program design, the customer experience (including EMIS platforms), program processes, data collection and tracking.
- Materials review – We have reviewed all available customer-facing and internally-facing program materials, including the program website, program toolkits, internal workflow documentation, recruiting and onboarding process plan, market characterization, social marketing plan, recruiting presentation, and the stakeholder feedback presentation.
- Evaluation Plan review – ILLUME reviewed an early version of the M&V plan, provided by the implementation vendor in April 2016. We understand that this plan is still the most current version but is subject to change pending the first M&V cycle (expected to occur in Q1 2017).
- Data collection instrument review – ILLUME reviewed existing data collection instruments, including the Energy Management Assessment tool, the Organizational Profile Survey, and data capture capabilities of EMIS.
- Program data tracking review – ILLUME reviewed Salesforce training documentation, gathered additional information about how it is used through conversations and emails with implementation team staff and received an overview of its use via webinar.
- Best Practices Review – ILLUME conducted a best practice review of four related programs⁴ to understand differences in the customer experience and implementation, and identify opportunities to enhance the Commercial Behavioral Program. As part of this review, we also investigated how other programs have been tracking participant actions (“Action Tracking”), a cornerstone of evaluability for all of these programs.
- Follow up Staff Interviews – ILLUME met with the implementation vendor and the outreach vendor during May and June 2017 to learn how the M&V and data collection activities have been implemented as the program has ramped up. ILLUME also met with the client during August of 2017 to hear their perspective on the status of the program M&V and data collection activities.

B. DELIVERABLES

ILLUME has delivered the following documents to the client through the course of this evaluability assessment:

1. Commercial Behavioral Program – Comments on Implementation vendor M&V Plan
 - Description: ILLUME reviewed the draft M&V plan provided by the implementation vendor and provided comments and questions in the document.
2. Commercial Behavioral Program – Survey Prioritization Memo
 - Description: Provided explanation of program data collection to date with some recommendations for tracking and standardization, opportunities for data integration and a data collection evaluability assessment which built off of a 10/5/2016 memo. This memo included detailed tables outlining the types of questions that need to be asked for different purposes and

⁴ BC Hydro Workforce Conservation Awareness, Duke Smart Energy in Offices, Envision Charlotte, and PG&E Step Up, Power Down.

how and when each data point should be collected. This memo was intended to be a guide for the implementation vendor to improve evaluation data collection.

3. Commercial Behavioral Program – Program Theory and Description
 - Description: This documented the program processes and data collection end to end. It included a program overview, targeting and recruitment approaches, an explanation of the participant experience and program data collection for both M&V activities and program implementation.
4. Commercial Behavioral Program – Evaluability Assessment Memo
 - Description: This document summarized the research activities taken and deliverables provided as of 12/22/2016. It included an overview of the program, a summary of the proposed impact analysis approach, tables detailing data points needed to support different types of analysis, an overview of the current data collection process, additional metrics for consideration, and an overview of current success metrics. This document also included recommendations for: impact analysis approach, data collection, and program success metrics
5. Commercial Behavioral Program – Best Practices Review
 - Description: This slide deck contains the results of ILLUME's review of four similar programs:
 - BC Hydro - Energy Wise Network
 - Duke Energy - Smart Energy in Offices
 - PG&E Step up and Power Down
 - Envision Charlotte
6. Commercial Behavioral Program – Evaluability Assessment Update
 - Description: This memo shared ILLUME's understanding of the current status of the program based on meetings with the implementation vendor and the outreach vendor. It included key evaluability findings and recommendations related to data collection and evaluation activities and presented recommendations for the remainder of the pilot program.