

NAVIGANT

ENERGY

ComEd

Energy Efficiency and Demand Response Evaluation PY4 Evaluation Plans Presentation to SAG

*Navigant with Subcontractors Itron, Inc.,
Opinion Dynamics, and Michaels Engineering*



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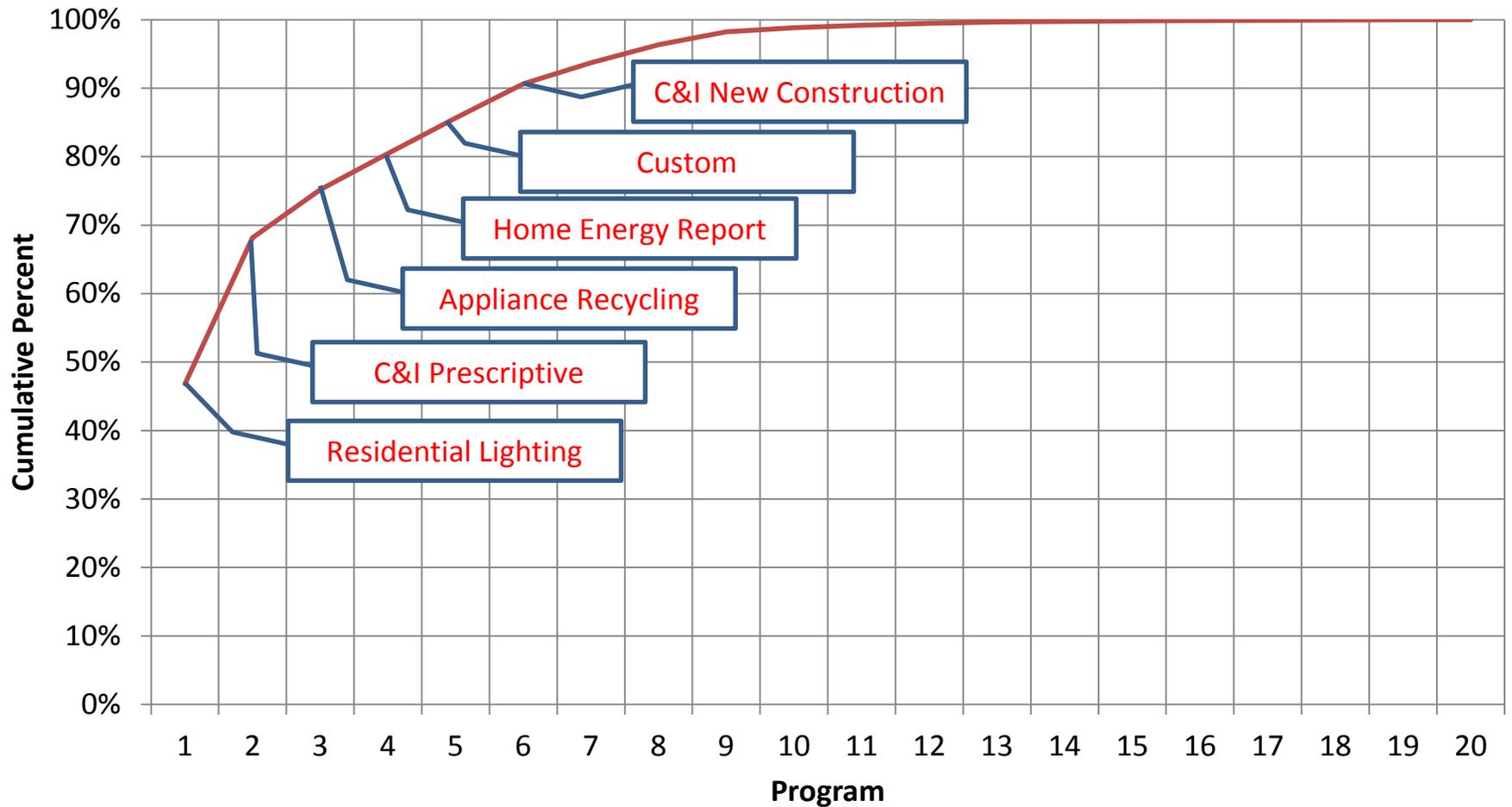
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Agenda

1	Overview
2	Program Specific Evaluation Plans
3	Summary Issues
4	Key Contacts

Cumulative Percent of Portfolio Savings



Business Programs

- » Expected Savings 260,250 MWh, 21% of Portfolio Savings
- » Data Collection
 - 110 Participant surveys
 - 90 Engineering reviews
 - 45 on-site measurement and verification
 - 25 trade ally and account manager interviews
 - 15 recipients of the Smart Ideas Opportunity Assessments and Facility Assessments.
- » Impact Analysis Approach
 - Participation verification
 - Site-specific measure savings verification
 - Engineering review of deemed and default savings assumptions and examination of tracking system calculation of claimed savings.
 - Sample stratified in two phases by project kWh with representation by measure technology and business type
 - NTG approach = Self-Report
 - Spillover approach = Self-report with follow-up

- » Process Analysis Approach
 - Research on trade ally involvement in the program and the effectiveness of the modified trade ally reward program
- » PY5 – PY6 Key Issues
 - Largely consistent with PY4 approach
 - Significant implications if evaluation focus changes to TRM input support
- » Consistency and Coordination Across EM&V Workplans
 - Same evaluation lead for ComEd and Integrys.
 - Consistent approach with Ameren.
 - Differences are mainly in the size of the effort

- » Expected Savings 63,342 MWh, 5.2% of Portfolio Savings
- » Data Collection
 - Phone surveys (66) with participant decision makers
 - Trade ally interviews – with participating equipment vendors (suppliers and/or installers)
 - Staff interviews
 - Account manager interviews to inform the process evaluation
 - Program representative interviews to inform program influence
- » Impact Analysis Approach
 - Engineering review and on-site verification audits
 - Sample (33 sites) stratified in two phases by project kWh.
 - Expect lighting (6 projects sampled) is 50% of applications, 20% of savings, and in smallest strata
 - RFI and Data Centers projects census
 - NTG approach = Self-Report
 - Spillover approach = Self-Report

- » Process Analysis Approach
 - Assess changes to customer and trade ally program participation between PY3 and PY4
- » PY5 – PY6 Key Issues
 - Largely consistent with PY4 approach
- » Consistency and Coordination Across EM&V Workplans

Retrocommissioning

- » Expected Savings 37,617 MWh, 3.1% of Portfolio Savings
- » Data Collection
 - On-site measurement and verification
 - Participant phone survey
 - Interview participating providers
- » Impact Analysis Approach
 - A site-specific measurement and verification approach will be used for estimating impacts
 - Analysis of post-installation data from automation systems and/or end-use metering will be required for a majority of projects.
 - Steps: (1) assessment report review (30), (2) on-site post installation review (up to 14), (3) verification analysis (24) and (4) site-specific ex post net energy impacts
 - Sample stratified by project kWh.
 - Within the strata sites will be selected to ensure a diversity of measure types.
 - Census of continuous monitoring and campus participants
 - NTG approach = Self-Report
 - Spillover approach = Self-Report

Retrocommissioning

- » Process Analysis Approach
 - In-depth interviews with staff, participants, and service providers
- » PY5 – PY6 Key Issues
 - Largely the same approach each year
- » Consistency and Coordination Across EM&V Workplans
 - Same evaluation lead for ComEd, Nicor, Peoples, North Shore, Ameren.
 - Approach largely the same

New Construction

- » Expected Savings 60,608 MWh, 5% of Portfolio Savings
- » Data Collection
 - In-depth interviews with participant decision makers (including the customer and relevant program partners)
 - Staff interviews
 - Focus groups with active non-participants
 - Onsite M&V (18)
- » Impact Analysis Approach
 - Verify installation and review the model of the building in a computer simulation or engineering model.
 - Sample stratified by project kWh.
 - NTG approach = Self-Report: 12 Systems, 6 Comprehensive
 - Spillover approach = Self-Report
- » Process Analysis Approach
 - Conduct research among active non-participants to better understand the drivers and barriers to participation and to determine the best approaches, including target audiences, messages, and timing

New Construction

- » PY5 – PY6 Key Issues
 - Largely the same approach each year
 - Focus group may not be needed in subsequent years
- » Consistency and Coordination Across EM&V Workplans
 - Same evaluation team for ComEd and Ameren. Nicor just starting.

C&I Midstream Incentives

- » Expected Savings 32,080 MWh, 2.6% of Portfolio Savings
- » Data Collection
 - Program Implementer Interview
 - End-User Surveys (200)
 - Distributor Surveys (10)
- » Impact Analysis Approach
 - Engineering review
 - End-User Survey stratified across customer size, business type and bulb type purchased
 - Distributor Survey stratified by size of the lighting distributor and distributor type
 - NTG approach = Customer Self-Report and Supplier Self-Report
 - Spillover approach = Self-report
- » PY5 – PY6 Key Issues
 - Largely the same, process questions could be dropped from participant survey in PY5
- » Consistency and Coordination Across EM&V Workplans
 - No comparable program

Residential Programs

Program: Residential Lighting

- » Expected Savings 57,000 MWh, 47% of Portfolio Savings
- » Data Collection
 - Coupon and Upstream Tracking Data
 - In-store Intercept Surveys (800)
 - In-store Shelf Surveys (10)
- » Impact Analysis Approach
 - An engineering review of savings calculations will be performed.
 - Analyze program tracking data collected to verify sales and understanding of the characteristics of installed measures that drive savings. This data will also be analyzed to determine the impact of sales promotions on the resulting bulb sales.
 - In-store intercept surveys: estimate many of the gross impact parameters, such as the installation rate and location of program bulbs (by bulb type).
 - NTG approach = Customer Self-Report
 - Spillover = Assume zero

Program: Residential Lighting

- » Process Analysis Approach
 - How aware are customers that the CFL and LED bulbs are discounted? How effective are the marketing initiatives?
 - How aware are customers of changes in available lighting products as a result of EISA 2007 implementation?
 - Do customers expect their lighting purchasing decisions will be affected by changes in available options?
 - What does the marketplace currently look like within ComEd for 75 and 100-watt equivalent bulbs?
- » PY5 – PY6 Key Issues
 - May add another metering study in PY5
 - May do more extensive process research in PY5
 - May examine interactive effects
- » Consistency and Coordination Across EM&V Workplans
 - Most aspects of the evaluation strategies are in sync. Surveys are quite similar.

Program: Appliance Recycling

- » Expected Savings 74,463 MWh, 6% of Portfolio Savings (Note: Includes FFRR – AC Units)
- » Data Collection
 - End use (in situ) metering study of 100 refrigerators and 35 freezers.
 - Telephone survey of participants (200)
- » Impact Analysis Approach
 - Regression analysis of in-situ metering data feeds updates to the regression formula used to calculate impacts
 - Comprehensive market assessment to provide a full understanding, for each sub-segment of the program (retailer pick-ups, traditional recycling) of how the unit would be disposed of absent the program.
- » Process Analysis Approach
 - Has the program as implemented changed from PY3. If so, how, why, and was this an advantageous change?
 - The process evaluation component of the participant telephone survey will obtain information on sources of program awareness and program satisfaction.
- » PY5 – PY6 Key Issues
 - No further metering studies.
 - Telephone survey with nonparticipants in PY5
- » Consistency and Coordination Across EM&V Workplans
 - In communication. Same approach with the exception of the in-situ metering.

Program: Home Energy Report (HER)

- » Expected Savings 64,053 MWh, 5% of Portfolio Savings
- » Data Collection
 - Data comes from monthly billing data of participants and a matched set of randomly selected nonparticipants.
- » Impact Analysis Approach
 - Compare energy use by treatment and control households in the pre-treatment year to verify that control and participant households are the same with respect to energy use.
 - Conduct the econometric analysis to estimate energy savings.
 - Evaluate the effect of the HER program on the uptake of other ComEd residential programs.
 - Investigate the effect of coupons and promotions, if appropriate.
- » PY5 – PY6 Key Issues
 - Largely the same
- » Verify consistency and Coordination Across EM&V Workplans
 - Coordinate approaches with Ameren

Program: Multi-Family Residential Program

- » Expected Savings 7,497 MWh , 0.6% of Portfolio Savings
- » Data Collection
 - Interviews with ComEd and gas utility managers and implementation contractors.
 - Telephone interviews with onsite building management representatives (≤ 10).
 - Telephone surveys with participants stratified by tenants and condo-owners.
- » Impact Analysis Approach
 - Calculate savings assumptions through review of program tracking system inputs, algorithms used by the program, and survey-based adjustments to input assumptions.
 - Review ComEd occupancy estimates as part of water measure savings review and compare estimated savings to those developed through the Illinois TRM process.
 - Independent research of impacts for programmable thermostats.
 - NTG approach = Customer Self-Report
 - Spillover approach = Customer Self-Report
- » PY5 – PY6 Key Issues - Largely the same
- » Consistency and Coordination Across EM&V Workplans
 - Single evaluation manager across utilities.

Program: Single Family Residential Program

- » Expected Savings 612 MWh, 0.05% of Portfolio Savings
- » Data Collection
 - Program management and implementation contractor interviews
 - Participant Telephone Surveys (in coordination with gas utilities)
- » Impact Analysis Approach
 - Verify the installation and persistence of direct install measures.
 - Review the program tracking system to determine ex-ante and ex-post gross energy savings and compare deemed measure savings with those developed in the Illinois TRM process.
 - Engineering desk review of the implementation contractor's modeling tool for a sample of completed projects that implemented weatherization measures.
 - Telephone survey will provide baseline, occupancy, operating conditions, and persistence.
 - NTG approach = Customer Self-Report
 - Spillover approach = Customer Self-Report
- » PY5 – PY6 Key Issues - Largely the same
- » Consistency and Coordination Across EM&V Workplans
 - Evaluation lead is the same for ComEd and Nicor. Schedule coordination with Ameren

Program: Residential Central Air Conditioning Efficiency Services (CACES)

- » Expected Savings 2,484 MWh, 0.2% of Portfolio Savings
- » Data Collection
 - Program tracking database for participating customer contacts and equipment performance metrics
- » Impact Analysis Approach
 - The tracking database has sufficient data to calculate unit-by-unit savings due to tune-ups. The evaluation team will calculate unit-by-unit demand and energy pre- and post-service and it will be applied to previously determined operating hours by region and housing type to estimate savings.
- » Process Analysis Approach
 - There will not be any process evaluation in PY4 for this program.
- » Verify consistency and Coordination Across EM&V Workplans
NA

Program: RFP – Efficiency 2.0

- » Expected Savings 425 MWh, 0.03% of Portfolio Savings
- » Data Collection
 - Billing data on participants and a matched set of nonparticipants
- » Impact Analysis Approach
 - Two-way linear fixed effects regression model. The estimate of program savings derived from an LFER model is essentially a difference-in-difference (DID) estimate of savings.
 - Do savings represented by the Efficiency 2.0 Program exist through implementation of a ComEd program?
- » Consistency and Coordination Across EM&V Workplans
 - NA

Other Programs

- » Evaluation plans still under development for
 - Compressed Air
 - Small Business Direct Install
 - Elementary Education (with Nicor)
 - Complete System Replacement (Residential Rebate) (with Nicor)
 - Appliance Rebate
- » No PY4 Savings, and thus no fully-developed evaluation plans for
 - Commercial Real Estate
 - Commercial Building Behavioral Pilot
 - RSG Commercial Building Computer Power Monitor
 - Residential New Construction

Summary Issues

- » Sample for PY4 Evaluations largely targeted to get precision at the program level, not the measure level.
 - Statistical precision typically on the realization Rate and Net-To-Gross ratio
- » If evaluation research is to help improve assumptions for the TRM. Sample design and field research will need to target specific measures and assumptions
- » Cannot do both.

Key CONTACTS



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