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AMEREN ILLINOIS COMPANY 2022-2025 ENERGY EFFICIENCY PORTFOLIO EVALUATION PLAN

Presentation to Illinois SAG



February 22, 2022

Agenda

- Portfolio Background and Overall Evaluation Approach
- Program-Specific Multi-Year Evaluation Plans
- Portfolio-Level Evaluation Activities
- Budget Overview

Opinion Dynamics Team



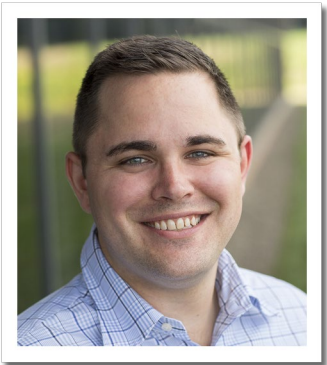
Hannah Howard
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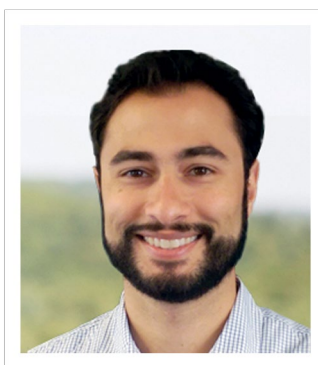
Zach Ross
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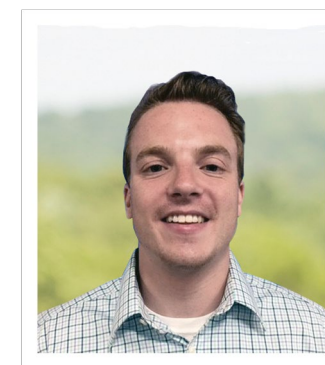
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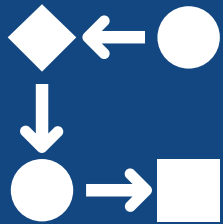
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PORTFOLIO OVERVIEW & GENERAL 2022-2025 EVALUATION APPROACH

2022-2025 Ameren Illinois Portfolio

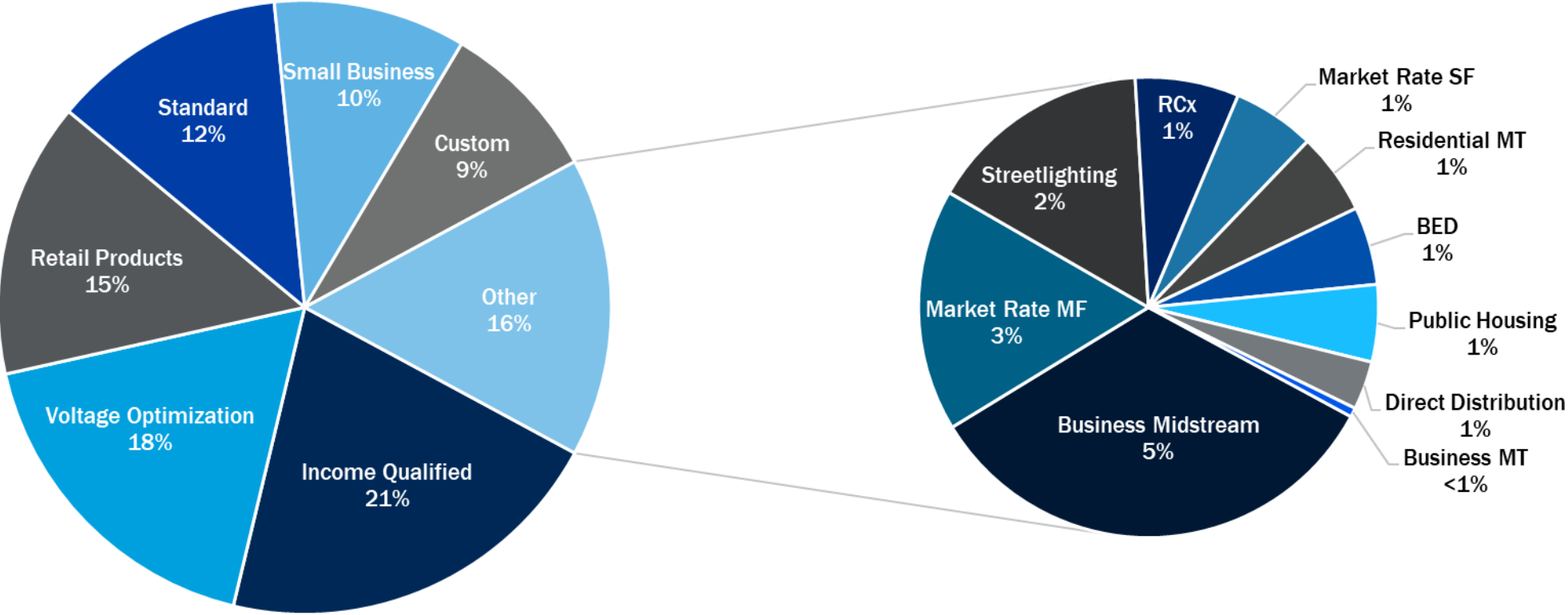
PROGRAM

Voltage Optimization Program		Residential Program		Business Program
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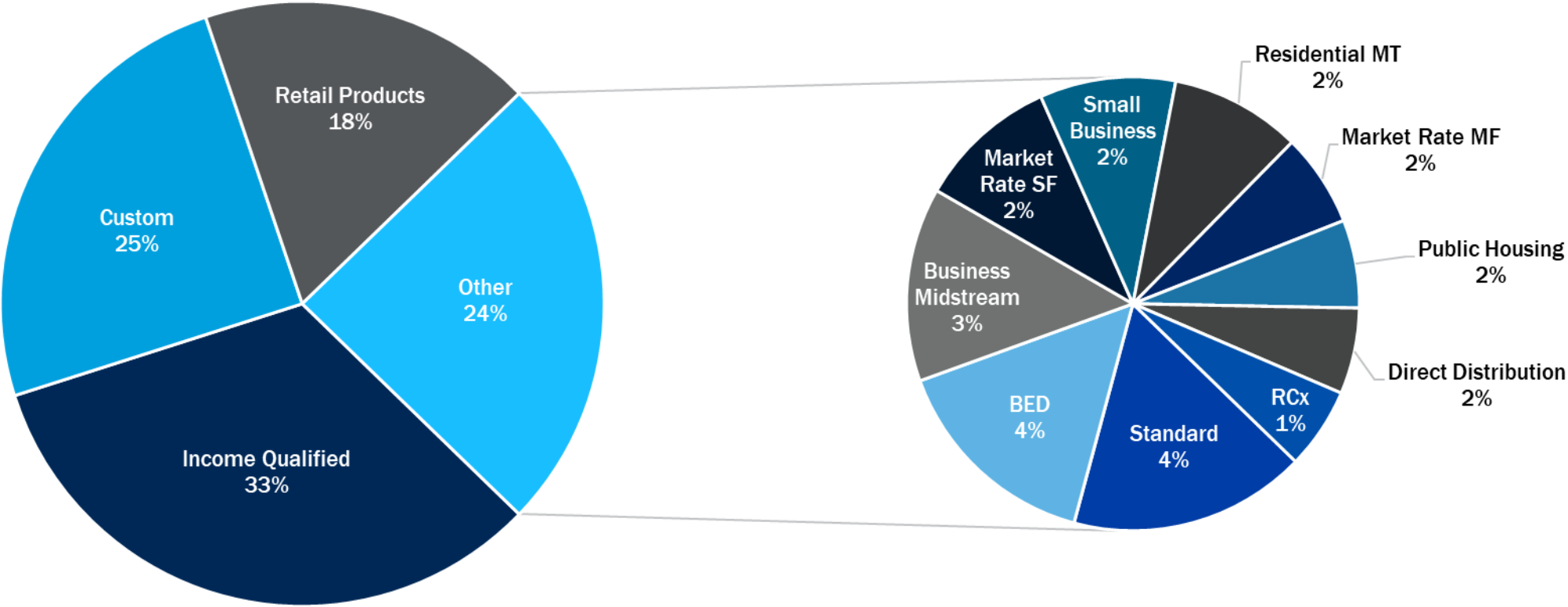
INITIATIVES

		<ul style="list-style-type: none">▪ Market Rate SF▪ Market Rate MF▪ Direct Distribution▪ Retail Products▪ Income Qualified▪ Public Housing▪ Electrification▪ Market Transformation		<ul style="list-style-type: none">▪ Standard▪ Small Business▪ Midstream▪ Custom▪ Retro-Commissioning▪ Streetlighting▪ Market Transformation
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Electric Annual Savings Summary 2022-2025



Gas Annual Savings Summary 2022-2025



Key Multi-Year Evaluation Objectives

Impact

- Estimate verified first-year and cumulative persisting annual savings
- Utilize phased data collection and analysis where feasible and appropriate
- Update net-to-gross ratios (NTGR) for each initiative at least once per plan period

Process & Market Research

- Explore key initiative-specific issues including:
 - How well educational information, energy savings opportunities, and the implementation process are understood
 - Reasons behind the success or inability of initiatives to penetrate the market
 - Opportunities for improvement
- Market research activities are conducted on an as-needed basis to support AIC in key areas at key times

Key Evaluation Objectives, cont.

Non-Energy Impacts

- Research, characterize, quantify, and monetize benefits produced by the AIC portfolio that go beyond energy and water savings
- Estimate the job and macroeconomic impacts created by AIC's portfolio

Verified Cost-Effectiveness

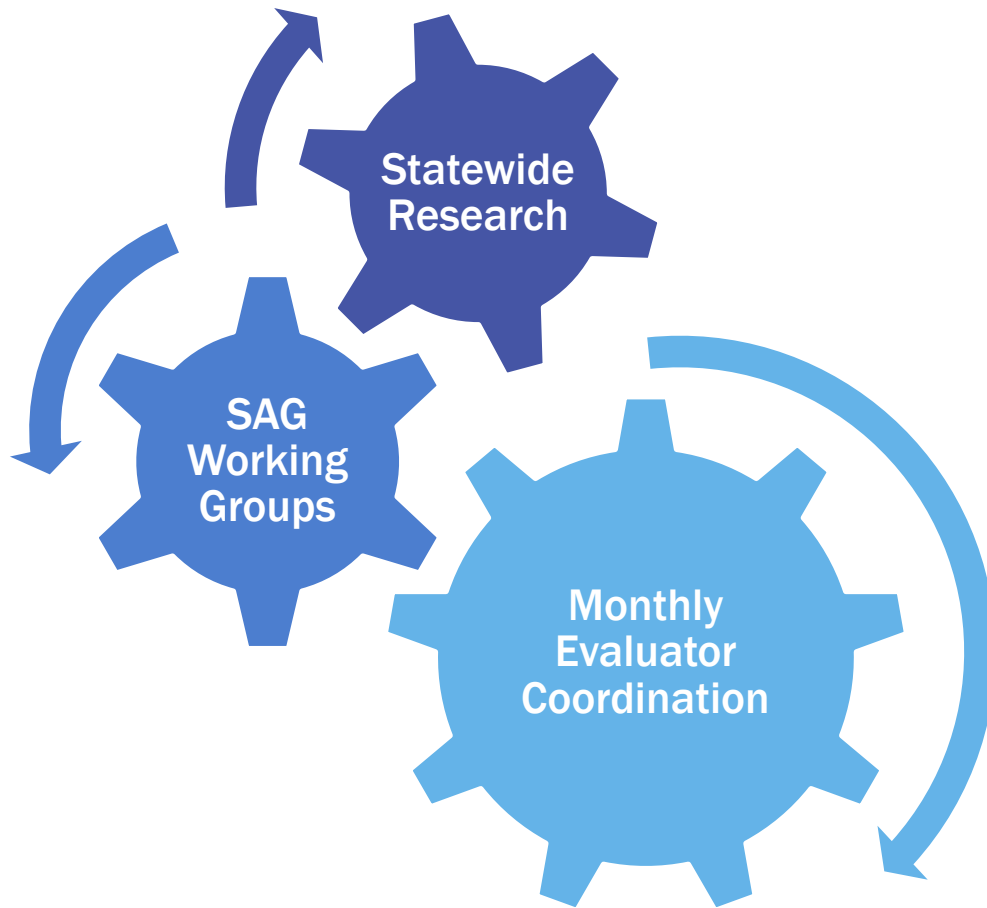
- Conduct cost-effectiveness analysis using the Illinois TRC to ensure AIC meets its statutory requirement of operating a cost-effective portfolio
- Interpret results of analysis and assist AIC in using findings to improve its portfolio

TRM Research

- Support the Illinois TRM update process through ongoing participation in the TAC and TRM working groups
- Conduct distinct research studies to support TRM updates of importance to AIC's portfolio



Evaluation Collaboration



- Ongoing collaboration occurs between the Illinois evaluation teams:
 - Monthly evaluation coordination meetings keep the teams connected and up to date
 - SAG meetings and Working Groups provide a framework for formal methodological collaboration:
 - Illinois TRM Technical Advisory Committee (TAC)
 - Illinois NTG Working Group
 - Illinois Non-Energy Impacts Working Group
 - Formal collaboration occurs when key pieces of evaluation work are determined to be best handled as statewide research:
 - Compressed Air Repair EUL study (in progress)
 - Ad-hoc collaboration also occurs on key statewide issues; recent examples include:
 - COVID-19's effects on CPAS
 - Negative savings
 - Evaluation of Building Operator Certification



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PROGRAM-SPECIFIC EVALUATION PLANS

Organization of Evaluation Activities

- We organize our evaluation activities to most effectively use evaluation resources, minimize customer touchpoints, and provide research insights, considering the delivery strategy and unique characteristics of each AIC offering
- As a result, evaluation efforts are not always organized in a way that perfectly aligns with portfolio organization
- We subdivide our program evaluation efforts into four sectors:
 - Residential Sector
 - Income Qualified Sector
 - Business Sector
 - Pilots & Emerging Sector



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RESIDENTIAL

Retail Products

- The objective of the Retail Products Initiative is to increase awareness and sales of high efficiency products through retail and online stores. The Initiative provides discounts for a range of products, including omnidirectional and specialty LEDs, advanced thermostats, and a range of appliances and consumer electronics.
- Key areas of evaluation focus including updating NTGRs for lighting and non-lighting measures.
- Planned to make up 26% of annual portfolio electric savings and 20% of annual portfolio therm savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
Retail Lighting NTG Update	✓			
Retail Non-Lighting NTG Study	✓			
Participant Survey	✓			

Market Rate SF Initiative – Midstream HVAC Channel

- The Midstream HVAC channel is designed to influence distributor stocking and sales practices related to high efficiency HVAC and HPWH measures. 2022 is the second year of this offering.
- In addition to ongoing process research, the evaluation team will update NTGRs for this initiative in 2022 based on research with distributors and participating customers.
- Planned to make up <1% of annual portfolio electric savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
NTG Research	✓		✓	
Contractor Interviews	✓		✓	
Distributor Interviews	✓	✓	✓	✓
Participant Survey	✓		✓	

Market Rate SF Initiative – Home Efficiency Channel

- The Home Efficiency channel focuses on providing home weatherization/envelope efficiency measures to market rate customers and operates in conjunction with the IQ Initiative's Single Family channel.
- Evaluation includes an early focus on the program ally and participant experience to identify barriers to participation and understand the impact of additional incentives offered for 2022 projects.
- Planned to make up <1% of annual portfolio electric savings and 2.5% of annual portfolio therm savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
NTG Research	✓			
Participant Survey	✓		✓	
Program Ally Interviews	✓		✓	

Direct Distribution Initiative

- The Direct Distribution Initiative provides energy savings kits targeted to IQ and underserved communities through two delivery channels: School Kits and Community Kits.
- As a part of the 2022 evaluation, we propose reviewing the initiative's community targets and conducting a community mapping exercise to identify any additional communities that should be prioritized.
- Planned to make up <1% of annual portfolio electric savings and 2.6% of annual portfolio therm savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
Teacher/Parent Surveys			✓	
Community Mapping & Community Partnership Research	✓			

Residential Nonparticipant Spillover Research

- In 2023 we plan to perform a residential general population survey
- Key goals of the survey will be to update estimates of residential nonparticipant spillover (NPSO) and collect additional information that may be beneficial to initiative implementation (e.g. awareness of AIC offerings and consumer preferences)



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INCOME QUALIFIED

Income Qualified Initiative – Whole Home Channels

- The IQ Initiative includes two channels that provide low- and moderate-income households with in-home audits, direct install measures, and building shell and HVAC upgrades (Single Family and CAA channels)
- Planned to make up 2.7% of annual portfolio electric savings and 22% of annual portfolio therm savings
- Beyond estimating savings, evaluation will focus on providing rapid and early feedback from customers, program allies, and Community Action Agencies about design changes and new offerings

Activities	2022	2023	2024	2025
Initiative Material & Database Review	✓	✓	✓	✓
Initiative Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
In-depth Interviews with Community Action Agencies	✓		✓	
In-depth Interviews with Program Allies		✓		✓
Site Visits (health and safety opportunities)		✓		
Evaluation of New Offerings (as applicable)		✓	✓	✓

Income Qualified Initiative – Smart Savers Channel

- Free advanced thermostats sent to customers in IQ zip codes; includes self-install and Program Ally install options
- Planned to make up 3.9% of annual portfolio electric savings and 3.0% of annual portfolio therm savings
- Follow-up survey research based on results of in-depth interviews with participants in 2021
- Focus on verification; potential incentive models; influence on participation in other Initiatives; thermostat installation experience; and use of advanced features
- Will determine every year whether additional research is needed

Activities	2022	2023	2024	2025
Initiative Material & Database Review	✓	✓	✓	✓
Initiative Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
Smart Savers Participant Survey	✓			
Additional Research (as applicable)		✓	✓	✓

Multifamily Initiatives

- AIC’s multifamily offerings provide audits plus in-unit, common area, and whole building measures targeting three distinct segments: market rate, income-qualified, and public housing. Services are delivered using a recently adopted “one-stop shop” approach.
- Planned to make up 5.0% of annual portfolio electric savings and 4.1% of annual portfolio therm savings
- Property manager surveys will focus on NTGR and ISR updates in 2022 and process topics in 2023; we will determine the focus for 2025 at a future date based on evaluation or planning priorities

Activities	2022	2023	2024	2025
Initiative Material & Database Review	✓	✓	✓	✓
Initiative Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
Property Manager Surveys	✓	✓		✓
Analysis of Participation Trends	✓		✓	

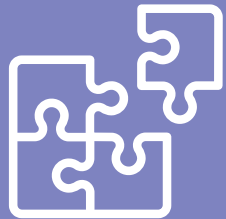
Additional IQ Sector Research



Fuel
Segmentation
Study



Manufactured &
Mobile Homes
Study



Low Income
Needs
Assessment
Follow-up



Empower
Communities
Follow-up





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BUSINESS

Standard Initiative

- The Standard Initiative provides prescriptive rebate-based incentives to private- and public-sector nonresidential customers
- Primary areas of focus include lighting and lighting controls, motors, HVAC, specialty applications (refrigerator, food service, agriculture), and steam traps
- Planned to make up 12.4% of annual portfolio electric savings and 4.1% of annual portfolio therm savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
NTG Research	✓			
Joint Process Activities w/ Custom	✓	✓		

Custom Initiative

- The Custom Initiative provides incentives for custom measures that do not have IL-TRM algorithms
- Primary areas of focus include compressed air, lighting, HVAC, refrigeration, motors and drives, wastewater treatment, and industrial process upgrades, as well as new construction projects
- Planned to make up 8.6% of annual portfolio electric savings and 24.7% of annual portfolio therm savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (Site-Specific M&V)	✓	✓	✓	✓
NTG Research			✓	
Joint Process Activities w/ Standard	✓	✓		

Joint Standard and Custom Process & Market Research

- The Standard and Custom Initiatives are operated in an integrated manner with the same implementer and resources shared across initiatives (e.g. Energy Advisors)
- In addition to our initiative-specific evaluation activities, we propose a number of evaluation activities that support both Standard and Custom (and to a lesser extent other initiatives)

Activities	2022	2023	2024	2025
Energy Advisor Interviews	✓			
Program Ally Interviews		✓		

Small Business Initiative

- Initiative will target small businesses, non-profits, schools, and public sector customers with energy efficient products and energy saving retrofits
 - Includes Small Business Direct Install (SBDI) and Small Business Energy Performance (SBEP) channels
- Planned to make up 10.1% of annual portfolio electric savings and 2.4% of annual portfolio therm savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
PTLM Development	✓			
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
SBEP NTG/Process Research	✓			
SBDI NTG/Process Research			✓	
Small Business Market Study		✓		

Midstream Initiative

- Targets distributors and wholesalers of lighting, HVAC, and food service equipment to increase adoption of high efficiency equipment through providing incentives at a midstream level
- Planned to make up 5.3% of annual portfolio electric savings and 3.4% of annual portfolio therm savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
Midstream Lighting NTG & Process Research	✓			
Midstream HVAC NTG & Process Research		✓		
Midstream Food Service NTG & Process Research		✓		

Retro-Commissioning Initiative

- Includes a survey of buildings systems (e.g., automation systems, industrial refrigeration) to identify opportunities to optimize operations, install no/low-cost energy efficiency measures, and larger capital projects.
- Planned to make up 1.1% of annual portfolio electric savings and 1.4% of annual portfolio therm savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (Site-Specific M&V)	✓	✓	✓	✓
NTG Research		✓		

Retro-Commissioning Initiative – Virtual Commissioning

- Leverages the AMI data of small and medium businesses to identify opportunities for energy savings improvements
- Scaling up from a 2020 pilot to a more substantial component of the portfolio

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Annual Impact Analysis (AM&V)	✓	✓	✓	✓
NTG Research*		✓		

*Pending NTG Working Group discussion in 2022

Streetlighting Initiative

- Provides incentives to municipalities for upgrades to energy efficient street lighting and works to encourage LED upgrades to utility-owned streetlighting
- Planned to make up 2.5% of annual portfolio electric savings

Activities	2022	2023	2024	2025
Program Material & Database Review	✓	✓	✓	✓
Program Staff Interviews	✓	✓	✓	✓
Gross Impact Analysis (TRM Application)	✓	✓	✓	✓
Municipality NTG Research		✓		

Business Nonparticipant Spillover Research

- To update Business Program-wide nonparticipant spillover (NPSO) estimates, we will conduct a non-participant survey with eligible AIC business customers who have not participated in the Business Program within the past three years. The non-participant survey will focus on assessing non-participant spillover (NPSO) resulting from the Program, as well as on barriers to participation that AIC can overcome to boost engagement among key market segments.
- We are currently exploring with the other Illinois evaluators if there is an opportunity to conduct this effort at a statewide level with statistically significant subsamples for each of the Illinois utilities.



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PILOTS & EMERGING

Key Annual Evaluation Activities for Emerging Program Designs

- Efficient Choice Tool Channel of the Retail Products Initiative
- Luminaire Level Lighting Controls (LLLC) Pilot
- Other Market Transformation (MT) support
 - Participation in statewide discussions related to ENERGY STAR Retail Products Platform and Code Support/Enforcement Initiatives with the goal of staying engaged and ensuring discussion considers any specific characteristics of the AIC customer base
 - General MT evaluation support

Retail Products Initiative - Efficient Choice Tool (ECT) Channel

- In 2021, AIC launched the ECT, which is implemented by Enervee. The goal of the initiative is to provide AIC residential customers with information on the relative energy efficiency of various household appliances to influence customers to pursue more efficient options.
- While we plan to conduct participant surveys at least once per year over the next plan cycle, in 2022 we will begin applying NTGRs prospectively based on research from the previous year.
- Planned to make up 0.7% of annual portfolio electric savings and 3.8% of annual portfolio gas savings

Activities	2022	2023	2024	2025
Program Material & Database Review	X	X	X	X
Program Staff Interviews	X	X	X	X
Gross Impact Analysis (TRM Application)	X	X	X	X
NTG Research	X	X	X	X
Participant Survey	X	X	X	X

Luminaire Level Lighting Controls (LLLC) Pilot

- In 2022, AIC launched the LLLC Pilot with the long-term goal of transforming the controls market by increasing familiarity with and understanding of LLLC technology and offering incentives to reduce upfront costs.
- Early evaluation activities include refining the LLLC pilot program theory and logic model (PTLM) and market progress indicators (MPIs), along with estimating baseline familiarity with LLLC technology.
- Throughout the next plan cycle, the evaluation team will interview and/or survey targeted populations to assess the degree to which savings from LLLCs installed in AIC's territory are attributable to pilot activities.
- Savings estimation activities will include review and development of a natural market baseline and calculation of unit energy savings based on the latest TRM algorithms.

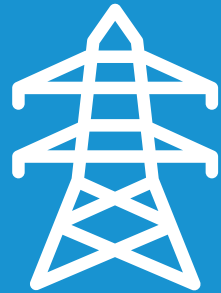
Activities	2022	2023	2024	2025
Review PTLM and MPIs	X		X	
Baseline Research	X			
Post-Webinar Interviews with Market Actors	X	X	X	X
Participant Interviews	X	X	X	X
Savings Estimation	X	X	X	X

Market Transformation (MT) Initiatives

- Over the past year, AIC has started to explore different MT initiatives
 - ENERGY STAR Retail Products Platform (ESRPP)
 - Code Support/Enforcement
- Engagement with MT evaluation discussions with Illinois stakeholders
 - Ensure statewide discussions related to potential future MT offerings (e.g., ESRPP, code support, etc.) consider the AIC customer base
- Provide “as needed” evaluation support on other MT topics or potential initiatives throughout the next plan cycle



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VOLTAGE OPTIMIZATION

Voltage Optimization Program

- VO Program was launched in 2018; implemented at the distribution substation or circuit level; optimizes voltage levels along distribution circuits to reduce electricity usage
- Evaluation uses analysis of AMI data to determine voltage reduction at the feeder level after VO is enabled coupled with algorithms and assumptions from the TRM to estimate energy and demand savings
- Given the importance of VO to AIC’s electric portfolio (VO is expected to account for 17-18% of AIC’s electric savings annually throughout the upcoming plan), Opinion Dynamics will conduct three interim energy savings analyses annually in addition to the year-end evaluation of energy savings and peak demand savings during the upcoming cycle

Activities	2022	2023	2024	2025
Program Staff Interviews	✓	✓	✓	✓
Program Data Review	✓	✓	✓	✓
Energy Impact Analysis (Voltage Modeling & TRM Algorithm)	4x	4x	4x	4x
Peak Impact Analysis (Voltage Modeling & TRM Algorithm)	✓	✓	✓	✓
Verification of VO Deployment	✓	✓	✓	✓



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PORTFOLIO-LEVEL



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TRM RESEARCH

IL-TRM Research Topics

2022

- Hydraulic oils verification guidance
- IQ-focused TRM baseline updates using existing data
 - HVAC baselines
 - Shell baselines
- Potentially other IQ-focused TRM updates from the LINA
- Steam trap parameter review using existing data
- Business LED cost update

2023-2025

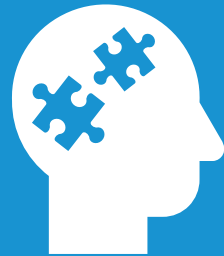
- HVAC metering update
- Prescriptive air sealing study
- Connected LED savings factor study
- Appliance baselines
- Others as they emerge

IL-TRM Research Topics - Electrification

- Understand the need for the IL-TRM to update quickly to support electrification offerings
- Opinion Dynamics has significant experience electrifying TRMs in other states and expects to work closely with AIC, its implementers, and the TAC in 2022 to ensure the IL-TRM electrifies in a transparent and consistent manner
- Example: will need to ensure that alternate fuel baseline equipment calculations (e.g. propane furnaces and water heaters) are incorporated into IL-TRM to ensure transparent quantification of electrification impacts beyond natural gas



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NON-ENERGY IMPACTS

NEI Scopes

- Residential

- Health and safety
- Pre-treatment survey wrapped up
- Post-treatment survey beginning in Q2 2022, ending Q1 2023
- Societal NEI update in 2023 with updated EPA tools/data

- Business

- Proof of concept business NEI study wrapping up
- Further discussion with AIC and stakeholders needed
- Envision very targeted NEI research to support specific measures as part of program work (e.g. LLLC)



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OTHER ACTIVITIES



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2022 SPECIFICS

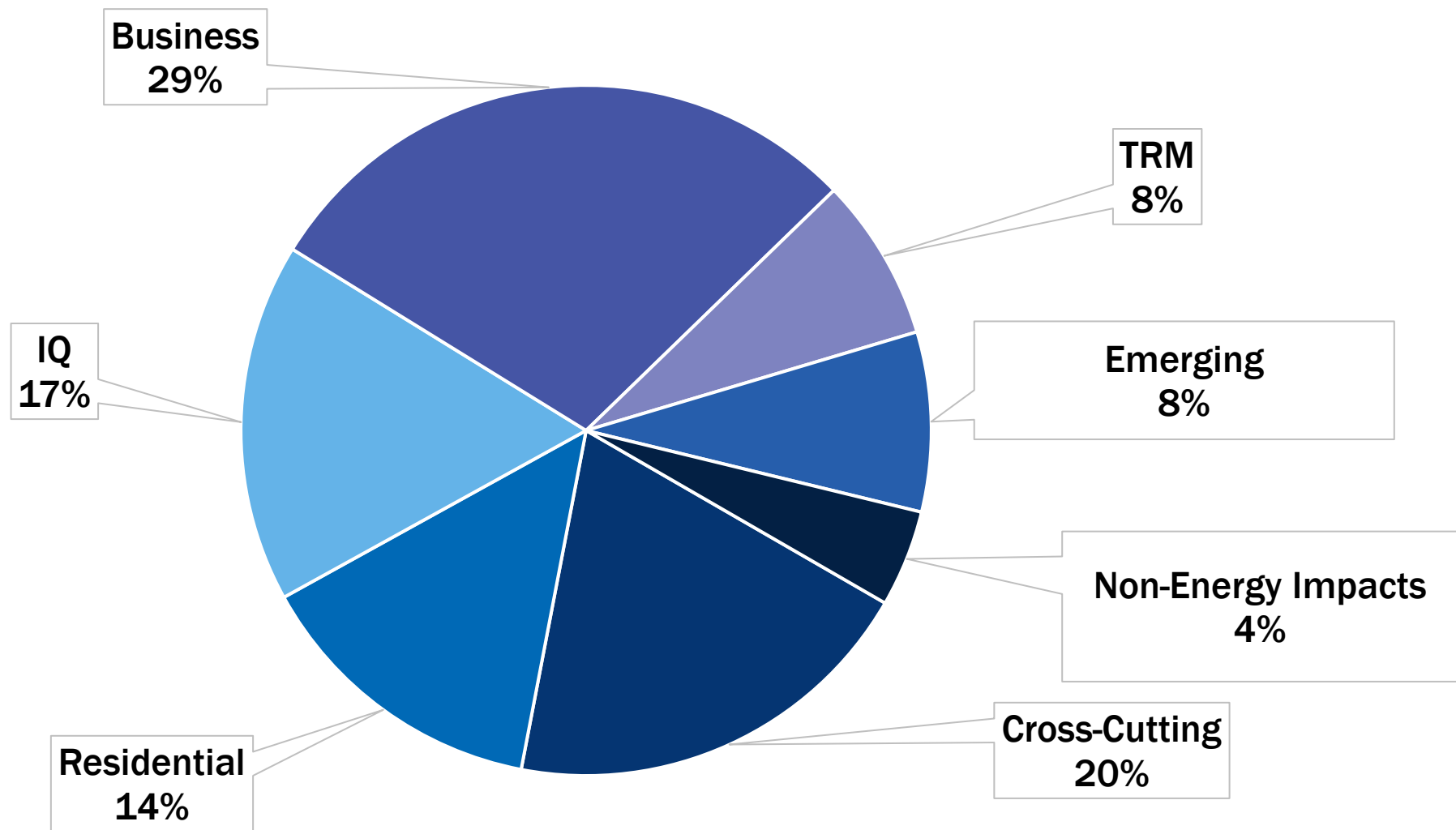
Anticipated 2022 NTG Updates

- SAG NTG Process to deem NTGRs for 2023 begins on September 1
- Opinion Dynamics will provide recommended 2023 NTGRs by August 1 to allow stakeholder time for consideration and questions
- Expected updates for 2023
 - Retail Products - Upstream Lighting (Method TBD)
 - Retail Products Non-Lighting (Participant Self-Report)
 - Efficient Choice Tool (Participant Self-Report)
 - Residential Midstream HVAC (Midstream Protocol)

2022 Evaluation Budget Overview

- Budgets are split between initiative-specific and other evaluation efforts
 - Initiative size and/or expected savings is a guiding factor taken into account - but not used as a rule - in determining budget allocations
- AIC is a dual-fuel program administrator, and therefore budgets are also split between electric and gas evaluation activities
- Budget is reserved for ad-hoc requests as items emerge from AIC/ICC/SAG discussion

2022 Draft Evaluation Budget Breakdown





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