



# NICOR GAS

## 2020 EVALUATION PLANS

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PRESENTATION TO THE ILLINOIS SAG

November 13, 2019

# AGENDA

**Purpose:** To provide SAG participants with an overview of the draft Nicor Gas evaluation work plan for 2020

## 1. Introduction to 2020 Evaluation Activities and Timeline

## 2. Program-Level Research

- Impact, Net-to-Gross (NTG), Process
- Pilots, Market Transformation
- Income Qualified

## 3. Portfolio-Level Research

- IL-TRM, Non-Energy Impacts (NEI), Effective Useful Life (EUL)

## 4. Evaluation Methods

## 5. Budget

## 6. Coordination

## 7. Q&A and Stakeholder Feedback

# INTRODUCTION

- Completing GPY4 through GPY6 evaluation reporting
- 2018 – Currently working on summary reporting and TRC
- 2019 – Currently working on impact verification, NTG, process, and other research
- 2020 – Evaluation Plans
  - First Draft 11/22/2019
  - Policy manual:
    - First Draft by 12/15/2019
    - Comments 1/15/2020
    - Revised draft 1/30/2020
    - Comments 2/12/2020
    - Final 2/28/2020

# 2020 EVALUATION SUMMARY TIMELINE

## ○ Impacts

- ❑ Waves of 2019 impact research in 2019
- ❑ Final 2019 data available January 30<sup>th</sup> 2020
- ❑ Final 2019 Impact Reports due (Best Efforts) April 30<sup>th</sup> 2020
  - Final reports by June 2020
- ❑ 2019 TRC report produced in Q3 2020
- ❑ 2020 interim impact reviews begin mid-2020

## ○ Net-To-Gross (NTG)

- ❑ Memos as soon as research is done, before July 1, 2020
- ❑ Draft recommendations September 1, 2020
- ❑ Final values October 1, 2020

## ○ Process results presented near time of research

## ○ TRM, NEI, EUL, and other research studies are ongoing

# 2020 EVALUATION OVERVIEW

Program Offering	Impact	NTG	Process	Notes on NTG and Process
<b>RESIDENTIAL</b>				
Home Energy Efficiency Rebates	✓	✓	✓	2019 participants
Home Energy Savings	✓			
Residential New Construction	✓			
Energy Savings Kits	✓	✓	✓	2020 participants
Elementary Energy Education	✓		✓	2020 participants
Multi-Family Direct Install and Retrofits	✓	✓		NTG research on retrofits only
Home Energy Reports	✓			
<b>Income Qualified</b>				
Single Family Retrofits	✓		✓	2019 IHWAP participants
Multi-Family Retrofits	✓			
Public Housing	✓			
Affordable New Construction	✓			
<b>Business and Public Sector</b>				
BEER (Prescriptive Rebates)	✓			
Custom Incentives, including CHP	✓	✓	✓	2020 participants, investigate non-participant spillover
Joint Retro-Commissioning	✓	✓	✓	2019 participants
Nicor Gas Only Retro-Commissioning	✓	✓	✓	2020 participants (new program in 2019)
Strategic Energy Management	✓			
Non-Residential New Construction	✓	✓	✓	2019 and 2020 participants
Small Business Direct Install and Retrofits	✓	✓	✓	2019 participants
<b>Emerging Technologies Program</b>	✓			
<b>Market Transformation</b>	✓			

# 2020 EVALUATION ACTIVITIES AND TIMELINE – VERIFIED IMPACTS

Activity	Task	2020				2021			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Annual Impact Evaluation and Reporting	2019 Program-Level Impacts		★						
	2019 Portfolio Summary, TRC								
2020 Interim Impact Reporting	TRM-Based Programs								
	Custom Projects			Wave 1	Wave 2				
Annual Impact Evaluation and Reporting	2020 Program-Level Impacts						★		
	2020 Portfolio Summary, TRC								

## Annual Impact Reporting

- Provide draft reports by March 15.
- Report estimated impacts by March 15 if draft reports are not available.
- ★ Best efforts are made to complete gas utility impact reports by April 30.
- After reports are final, complete portfolio summary reporting, including TRC analysis.
- Verify adjustments to energy savings goals have been performed accurately in Q4

## Interim Impact Reporting

- Begin interim analysis and reporting for TRM-based programs when data is ready – June/July to September
- Conduct custom project sampling and verification when there is a sufficient number of completed projects
  - Our preference is to sample projects prior to end of year
  - Core Custom Program generally sampled Q3, Q4
  - Some programs sampled quarterly (RCx) or as a census when projects are complete (Small Bus custom, MF custom)

# 2020 EVALUATION ACTIVITIES AND TIMELINE – NTG AND PROCESS

Activity	Task	2019	2020			
		Q4	Q1	Q2	Q3	Q4
Net-to-Gross with Process, 2019 Participants	Home Energy Eff. Rebates					
	Small Business					
	Joint Non-Res NC					
	Retro-Commissioning					
Process-Only, 2019 Participants	SF IHWAP Participants					
Net-to-Gross with Process, 2020 Participants	Energy Saving Kits					
	Joint Non-Res NC					
	Nicor Gas Only RCx					
	C&I and Public Sector Custom					
Process-Only, 2020 Participants	Elem Energy Ed Teachers				TBD	

Net-to-Gross and Process	
	Survey Design and Sample Prep
	Fielding
	NTG Analysis and Reporting
	Process Analysis and Reporting

NTG research on 2018 Multi-Family Retrofit participants did not reach a statistically significant sample – we will need to re-open that survey when the project population is replenished.

## Pilots and Market Transformation

- We evaluate pilot and market transformation efforts when proposed or launched by Nicor Gas if savings will be claimed
  - These may include new offerings within existing programs or customer segments
  
- Evaluation activities may include impact, process, or NTG research
  - (Complete) Connected Savings Pilot – Regression-based impact analysis
  - (Complete) Connected Savings Pilot – Participant survey
  - (Complete) Weatherization kit measures – Secondary research on In-Service Rates
  - (Complete) Residential New Construction – Secondary research on NTGs
  - **(Active) Food Service – Secondary research on NTGs, review baseline development, impact evaluation**
  - **(Active) Emerging Technologies Program – Engineering review on studies**

## Income Qualified Programs

- Gross impact evaluation
  - All programs
    - Interim
    - End-of-year
  
- Process evaluation
  - (Complete) – Affordable Housing New Construction developer survey
  - (Complete) – Single Family Community Action Agency focus groups and interviews
  - **(Active) – Single Family IHWAP participant survey**

# PORTFOLIO RESEARCH ACTIVITIES

Activity	Status	2018	2019	2020	2021
<b>Residential and Income Qualified Research</b>					
Residential Insulation and Air Sealing Billing Analysis and TRM Workpapers	Completed	1Q-3Q			
Emerging Technologies Program Connected Savings RCT Pilot Impacts	Completed	1Q-4Q	1Q		
Residential New Construction – Update Calibrated Simulation Models	Completed	4Q	1Q		
Kits In-Service Rate and Satisfaction Survey	Planned			3Q-4Q	1Q-3Q
Air/Duct-Sealing & Insulation Participant Research	Planned			4Q	1Q-2Q
Residential NC Market Actor Interviews	Planned			4Q	1Q
Residential Advanced Thermostat Billing Analysis	Under Consideration				
Water Saving Measures Billing Analysis	Under Consideration				
Residential Furnace Quality Installation Impacts and Upstream Program Delivery Secondary Research	Under Consideration				

# PORTFOLIO RESEARCH ACTIVITIES

Activity	Status	2018	2019	2020	2021
<b>Business and Public Sector Research</b>					
Steam Traps – Background Research on Viability of Impact Study	Completed	2Q-4Q	1Q		
Steam Traps – Process Research Study	Active	2Q-4Q	1Q-4Q		
Steam Traps – Support TRM Algorithm Update for Condensate Recovery	Active		4Q	1Q	
Custom Gas Measure EULs	Active		2Q-4Q	Ongoing	Ongoing
Commercial EMS Billing Analysis	Active		4Q	1Q	
Non-Residential Pipe Insulation – Thermal Regain Factors	Active	4Q	1Q-4Q	1Q	
Small Business Thermostats – Savings Benchmarking, Power Analysis	Active	4Q	1Q-4Q	1Q	
Small Business Thermostats – Billing Analysis †	Under Consideration			Standard	Smart
Non-Residential Heating System EFLH	Under Consideration				

† Study is under consideration, but decision to proceed and timing depend on future Nicor Gas implementation plans.

# PORTFOLIO RESEARCH ACTIVITIES

Activity	Status	2018	2019	2020	2021
<b>TRM, NEI and EUL Research</b>					
Participate in IL-TRM TAC Update Process	Active	Q1-Q3	Q1-Q3	Q1-Q3	Q1-Q3
Nicor Gas/GTI Emerging Technologies IL-TRM New Technology Workpaper Engineering Support	Active	Ongoing	Ongoing	Ongoing	Ongoing
Effective Useful Life (EUL) Custom Gas Measures	Active		2Q-4Q	Ongoing	Ongoing
Non-Energy Impacts (NEIs) Jobs Impact Modeling	Active		4Q	1Q-2Q	
Non-Energy Impacts (NEIs) Secondary Research	Planned		4Q	1Q-2Q	

## Gross Impact Evaluation Overview

- Estimate verified gross impacts annually on every program
  
- Four main gross impact methodologies:
  1. TRM-based measure verification
  2. Custom project engineering review and on-site verification
  3. Billing usage regression analysis
    - Randomized Control Trial (RCT) can be considered if the program or pilot was set up as a randomized control trial
    - Quasi-Experimental Design (QED) can be considered for research studies to update TRM impacts
  4. Calibrated simulation (calibrated to billing usage)

# GROSS IMPACT METHODOLOGIES

Program Offering	TRM	Custom	RCT/QED	Notes
<b>RESIDENTIAL</b>				
Home Energy Efficiency Rebates	√			
Home Energy Savings	√			
Residential New Construction	√	√		Calibrated simulation realization rate for legacy 2019
Energy Savings Kits	√			
Elementary Energy Education	√			Survey data used for some TRM inputs
Multi-Family Direct Install and Retrofits	√	√		Custom verification for non-TRM measures
Home Energy Reports			√	
<b>Income Qualified</b>				
Single Family Retrofits	√			
Multi-Family Retrofits	√	√		Custom verification for non-TRM measures
Public Housing	√	√		Custom verification for non-TRM measures
Affordable New Construction	√	√		Custom verification for non-TRM measures
<b>Business and Public Sector</b>				
BEER (Prescriptive Rebates)	√			
Custom Incentives, including CHP		√		
Joint Retro-Commissioning		√		
Nicor Gas Only Retro-Commissioning		√		
Strategic Energy Management		√		
Non-Residential New Construction		√		
Small Business Direct Install and Retrofits	√	√		Custom verification for non-TRM measures
<b>Emerging Technologies Program</b>				
		√		
<b>Market Transformation</b>				
	√	√		Custom verification for non-TRM measures

## Net-to-Gross Research

- **Conduct research once per four-year planning cycle**
  - Mature programs, stable markets, large samples
  
- **Conduct annual or biannually**
  - Small annual population of custom projects
  - Market or program is changing
  
- **Follow the TRM NTG protocols**
  - Billing regression may provide net savings
  - Conduct free ridership and spillover research, although research may be done separately

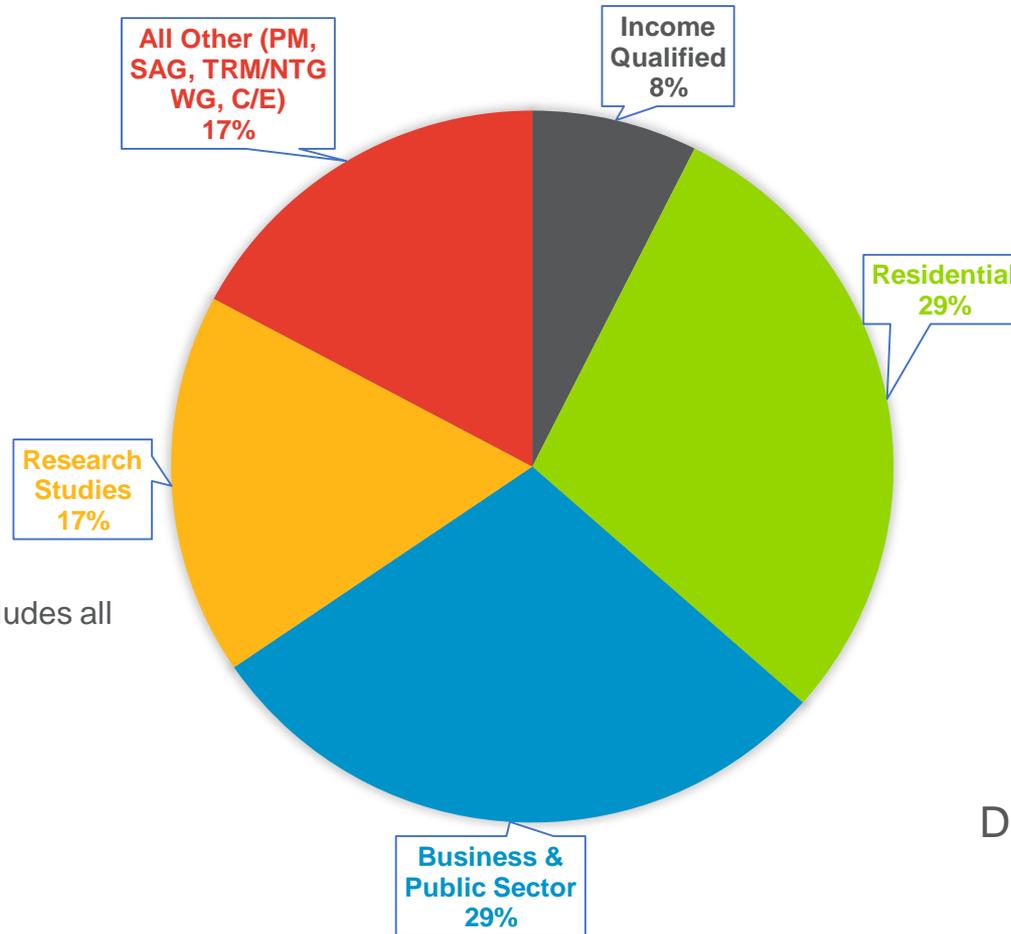
## Prioritizing Resources

- Meet Requirements for Savings Verification and Reporting
- Program Contribution to Portfolio Net Savings
- Program Spending within Portfolio
- Program Maturity
- Program/Implementer Needs and Effectiveness
- SAG Input and ICC Orders
- High Impact Measures
- Savings Uncertainty

## Budget for TRM Requests and Additional Research

- We participate in TRM TAC and conduct workpaper review
- We conduct secondary research and engineering analysis for TRM
- Primary TRM measure research will be considered, but funding is limited
- Can we leverage joint studies?

# 2018 (YEAR 1) EVALUATION EXPENDITURES



Research Studies includes all steam trap research

Diverse Suppliers 15%

# COORDINATION ACROSS UTILITIES

**Navigant coordinates with the other utilities and their evaluation teams on an ongoing basis - this includes Ameren, ComEd, Peoples Gas and North Shore Gas**

## **Coordination beyond specific programs occurs as follows:**

- ❑ SAG meetings on specific topics and issue management
- ❑ Via e-mail on Illinois-wide key issues or issues that are program specific and may impact multiple utility programs
- ❑ Illinois NTG Framework and Protocol Working Group
- ❑ Illinois TRM Technical Advisory Committee
- ❑ Coordination calls (monthly)

## **Gas/Electric Joint Program Evaluations (with ComEd evaluation team)**

- ❑ Some evaluations are being done jointly (Non-Res NC, RCx, SEM, EEE, 2019 RNC, Income Qualified)
- ❑ Joint programs can be evaluated separately in some cases

## **Support Coordination on Research Studies**

- ❑ TRM measure research considered on a case-by-case basis

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