



# NICOR GAS

## 2018-2021 EVALUATION PLANS

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PRESENTATION TO THE ILLINOIS SAG

December 5, 2017

NAVIGANT

# OBJECTIVES FOR TODAY'S PRESENTATION

## Nicor Gas Multi-Year Evaluation Plans for 2018-2021

- 1. Overview of programs being evaluated**
  - Impact or process?
  - What year(s) will the evaluations be completed?
- 2. Methodological approach**
  - When will AMI data (billing usage for natural gas) be used?
- 3. Coordination with other programs and utilities**
- 4. Budget priorities**
  - General approach for prioritizing resources
  - Budget for responding to TRM requests?
- 5. Additional research (e.g. EM&V studies?)**
- 6. Q&A and stakeholder feedback**

# 2018-2021 NICOR GAS PORTFOLIO OVERVIEW

Program	Portfolio Net Therm Savings
<b>Income Qualified (SF &amp; MF)</b>	<b>11%</b>
<b>Residential</b>	<b>40%</b>
Home Energy Eff Rebates	22%
Outreach and Education (Kits & Behavior)	10%
Single Family DI & Weatherization	3%
Multi-Family DI & Comprehensive	3%
Res New Construction	1%
<b>Business &amp; Public Sector</b>	<b>49%</b>
Custom Incentives	21%
Business Energy Eff Rebates	17%
Strategic Energy Management	6%
Small Business	3%
Business New Construction	2%

# 2018-2021 – OVERVIEW OF MULTI-YEAR EVALUATIONS

**The tables that follow are preliminary plans for each evaluation, covering:**

- Process Evaluation Research
- NTG Research
- Gross Impact Evaluation

**In several cases, the table rows show “Evaluated Components” of comprehensive programs when different evaluation approaches are applied to components of a comprehensive market delivery approach**

**First, background on approaches**

## **Process Research**

- In-Depth Scope – Once per four-year planning cycle, timed with NTG
- Limited Scope – Annual review with PM/IC, materials
- Ad-hoc process research

# 2018-2021 – OVERVIEW OF MULTI-YEAR EVALUATIONS

## Net-to-Gross Research

- **Conduct research once per four-year planning cycle**
- **NTG research timing criteria:**
  1. Is the most recent research result valid for deeming?
  2. How many years since the last research?
  3. Program maturity: When is the right time?
  4. How large are the program impacts in the portfolio?
  5. How much variation do we expect?
  6. Joint or not-joint? What are the plans for ComEd and Ameren?
  7. Balance the evaluation effort over the four years
- **Move toward more real-time (RT) and on-line survey research**
- **Include free ridership and spillover in NTG, although research may be done separately**
- **Follow the TRM NTG protocol or notify parties of divergence**
- **No NTG research when billing regression provides net savings**

# 2018-2021 – OVERVIEW OF MULTI-YEAR EVALUATIONS

## Gross Impact Evaluation Overview

- **Estimate verified gross impacts annually on every program**
- **Five main gross impact methodologies:**
  1. TRM-based measure verification
  2. Custom project engineering review and on-site M&V
  3. Billing usage regression analysis
  4. Calibrated simulation (calibrated to billing usage)
  5. Review data and apply previous year's realization rate
- **More real-time research** – impact evaluation during the program year
  - Mid-year evaluation verification of TRM-based measures
  - Conduct one to three waves of custom project verification
- **End-of-Year (EOY) final verification – compressed reporting timeline**
  - Attempt to have at least 75 percent of custom project savings verified during the program year

**Verified Net Savings = Verified Gross x Deemed NTG**

# 2018-2021 – OVERVIEW OF MULTI-YEAR EVALUATIONS

## Use of AMI (billing usage) data

- **Billing Usage Regression Analysis**
  1. Behavioral Programs: Home Energy Reports
  2. Smart Thermostat impact analysis (residential)
  3. Air Sealing and Insulation billing analysis (ongoing)
  4. Other TRM measure research will be considered, but no studies are planned at this time
- **Calibrated Simulation/Calibrated Engineering Models**
  1. Residential New Construction
  2. Strategic Energy Management
  3. About one in four custom project verifications use billing usage history (for process and difficult to model savings)
  4. Deep Retrofit / Whole House Retrofits (potential research topic)
  5. Affordable Housing NC (depends on savings volume)

# 2018-2021 – RESIDENTIAL PROGRAMS

Evaluated Components	Evaluation Activities by Year				
	In-Depth Process Research	NTG Research Timing	NTG Approach	Annual Gross Impact Approach	Gross Impact Timing
<b>Home Energy Efficiency Rebates</b>					
Equipment Rebates	2020	2020	Protocol On-Line / RT	TRM Based	Mid-YR & EOY
Upstream	2021	2021	TBD	TRM Based	Mid-YR & EOY
Smart Tstat	TBD	None	N/A	TRM Based / Billing Analysis	Mid-YR & EOY / One-time TRM Update 2019
<b>Education and Outreach</b>					
Behavior	TBD	N/A	N/A	Billing Analysis	EOY
Energy Educ. Kits	2019	None	Deem 1.0	TRM Based	Mid-YR & EOY
Energy Saving Kits	2019	2019	Protocol/ On-Line / RT	TRM Based	Mid-YR & EOY
<b>Home Energy Savings</b>					
Audit / DI	2018	2018	Protocol/ On-Line / RT	TRM Based	Mid-YR & EOY
Air/Duct Sealing & Insulation Rebates	2018	2018	Protocol/ On-Line / RT	TRM Based	Mid-YR & EOY
Deep Retrofit	2020	2020	Protocol	Engr. Review / Calibrated Simulation	EOY, Alternate Years



# 2018-2021 – RESIDENTIAL PROGRAMS

Evaluated Components	Evaluation Activities by Year				
	In-Depth Process Research	NTG Research Timing	NTG Approach	Annual Gross Impact Approach	Gross Impact Timing
<b>Multi-Family</b>					
<b>Assessment / DI</b>	2018	2018	Protocol/ On-Line / RT	TRM Based	Mid-YR & EOY
<b>Rebates</b>	2018	2018	Protocol/ On-Line / RT	TRM Based	Mid-YR & EOY
<b>Custom Projects</b>	2018	2018	Protocol / RT	Engr. Review	Waves & EOY
<b>Residential New Construction</b>					
<b>Res New Construction</b>	2019	2019	Protocol	Engr. Review / Calibrated Simulation	EOY Conduct Calibrated Simulation in 2019

# 2018-2021 – INCOME QUALIFIED PROGRAMS

Evaluated Components	Evaluation Activities by Year				
	In-Depth Process Research	NTG Research Timing	NTG Approach	Annual Gross Impact Approach	Gross Impact Timing
<b>Single Family and Multi-Family Weatherization and Rebates</b>					
Assessment / DI	2018	None	Deemed 1.0	TRM Based	Mid-YR & EOY
Equipment Rebates	2018	None	Deemed 1.0	TRM Based	Mid-YR & EOY
Air/Duct Sealing & Insulation Rebates	2018	None	Deemed 1.0	TRM Based	Mid-YR & EOY
Whole House	2018	None	Deemed 1.0	TRM Based / Engr. Review	Mid-YR & EOY
Smart Tstats	2018	None	Billing Analysis	TRM Based Billing Analysis	Mid-YR & EOY One-time TRM Update 2019
<b>Public Housing Authorities / Multi-family Buildings</b>					
Assessment / DI	2018	TBD	TBD	TRM Based	Mid-YR & EOY
Rebates	2018	TBD	TBD	TRM Based	Mid-YR & EOY
Custom Projects	2018	TBD	TBD	Engr. Review	Waves & EOY
<b>Affordable Housing New Construction</b>					
New Construction	2018	TBD	TBD	Engr. Review	EOY

# 2018-2021 – BUSINESS PROGRAMS

Evaluated Components	Evaluation Activities by Year				
	In-Depth Process Research	NTG Research Timing	NTG Approach	Annual Gross Impact Approach	Gross Impact Timing
<b>Business Energy Efficiency Rebates (includes Public Sector)</b>					
Assessment / DI	2018	2018	Protocol/ On-Line / RT	TRM Based	Mid-YR & EOY
Rebates	2018	2018	Protocol/ On-Line / RT	TRM Based	Mid-YR & EOY
Steam Traps	2018	2018	Protocol / RT	TRM Based	Mid-YR & EOY
Upstream	2021	2021	Protocol / TBD	TRM Based	Mid-YR & EOY
<b>Custom Incentives (Includes Public Sector)</b>					
Custom Projects	2020	2020	Protocol / RT	Engr. Review; On-Site M&V	Parallel Path; Waves & EOY
Retro-Commissioning	2021	2021	Protocol	Engr. Review; On-Site M&V	Waves & EOY
Combined Heat & Power	Combine with NTG	As needed	Project-Specific Research	Engr. Review; On-Site M&V	Parallel Path; Project Specific
<b>Strategic Energy Management</b>					
SEM Cohorts	All Years	None	Deem at 1.0	Engr. Review; On-Site M&V	EOY

# 2018-2021 – BUSINESS PROGRAMS

Evaluated Components	Evaluation Activities by Year				
	In-Depth Process Research	NTG Research Timing	NTG Approach	Annual Gross Impact Approach	Gross Impact Timing
<b>Small Business</b>					
<b>Assessment / DI</b>	2019	2019	Protocol/ On-Line / RT	TRM Based	Mid-YR & EOY
<b>Rebates</b>	2019	2019	Protocol/ On-Line / RT	TRM Based	Mid-YR & EOY
<b>Custom Projects</b>	2019	2019	Protocol/ On-Line / RT	Engr. Review	Waves & EOY
<b>Business New Construction</b>					
<b>Joint New Construction</b>	Combine with NTG	2019 and 2021	Protocol On-Line / RT	Engr. Review	Waves & EOY

# COORDINATION ACROSS UTILITIES

- **Navigant coordinates with the other utilities, today, on an ongoing basis - this includes Ameren, ComEd and PGL & NSG**
- **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 – updating the framework is an ongoing discussion
  - Illinois TRM Technical Advisory Committee
  - Coordination calls (schedule monthly)
- **Gas/Electric Joint Program Evaluations (with ComEd evaluation team)**
  - Some evaluations will be done jointly (BNC, RCx, etc.)
  - Joint programs can be evaluated separately in some cases
- **Support Coordination on Research Studies**
  - Smart Thermostat billing analysis (residential)
  - ComEd Non-Energy Benefits research
  - Steam trap NTG and process (check in with ODC regarding Ameren research)

# 2018-2021 – BUDGET PRIORITIES

## **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**

- Annual allocation for participation in TRM TAC & workpaper review

## **Additional Research**

- Participate in an updated residential Smart Thermostat billing analysis
- Steam Traps Process and NTG
- TRM measure research will be considered
- Other topics will be considered
- Budgets comparable to GPY4-6
- Can we leverage joint studies?

# CONTACTS

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