



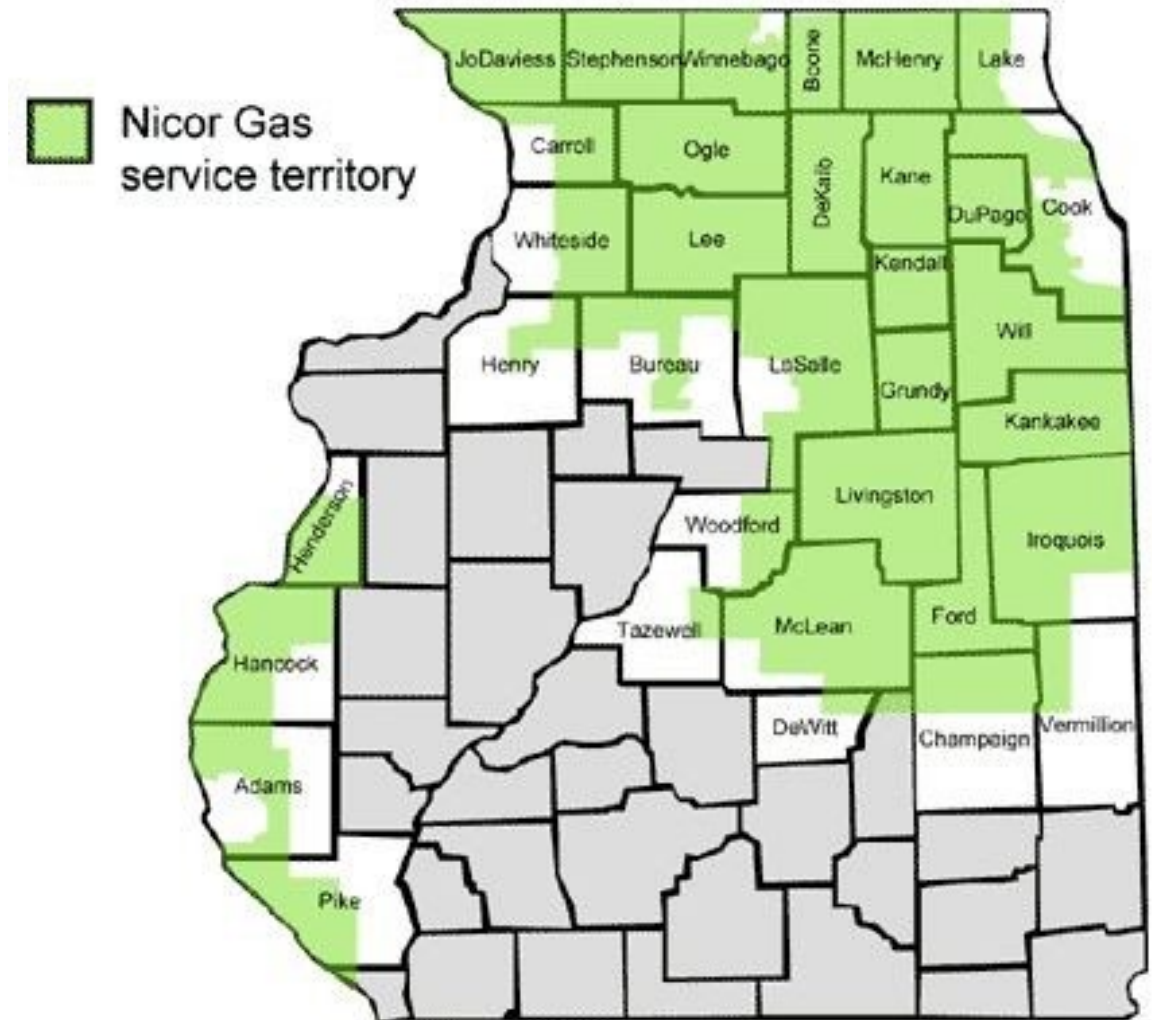
Evaluation Engagement Leads to Greater Certainty and Savings

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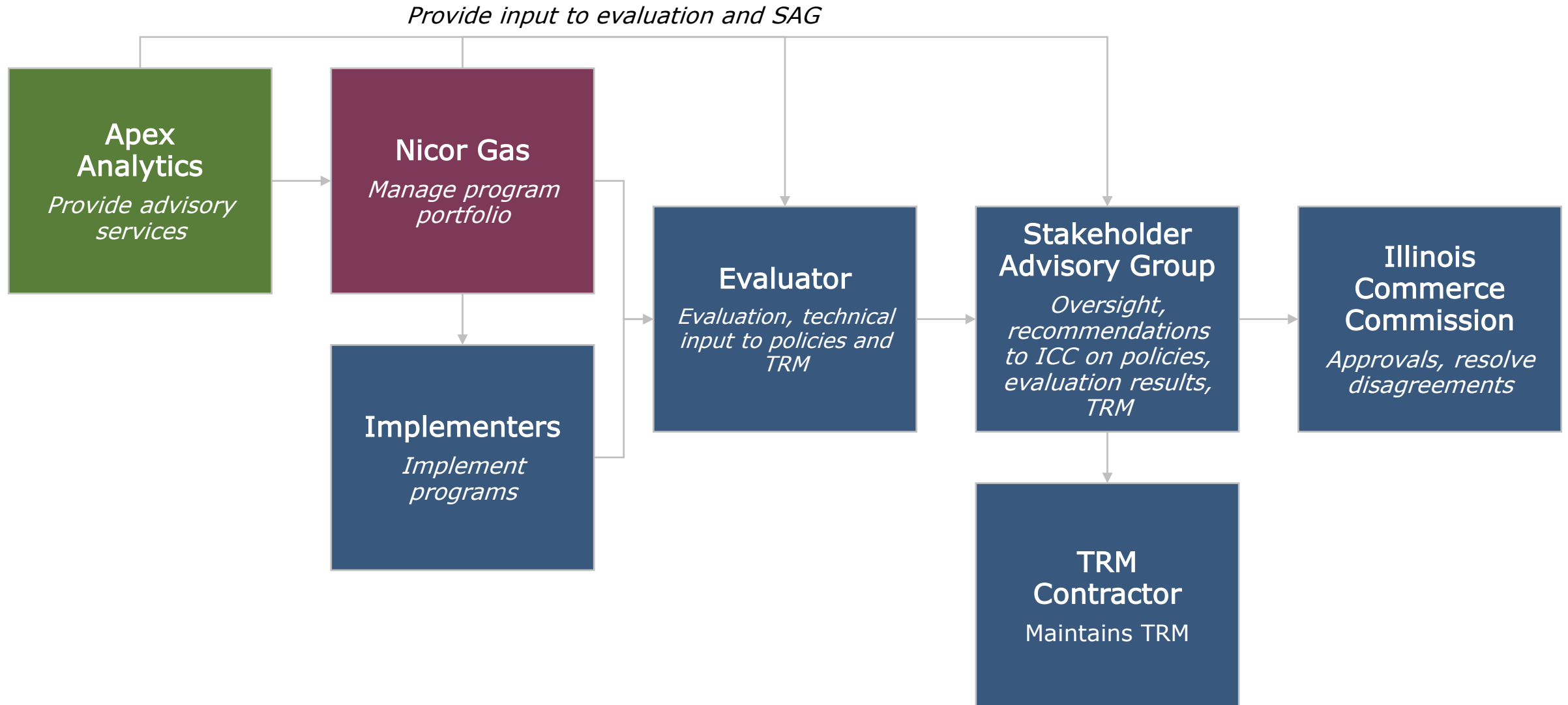
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Background: Nicor Gas

- A gas distribution company with **2.2 million** customers in Illinois
- Illinois requirement – all gas utilities required to implement energy efficiency up to 2% of revenue and meet legislated goals for incremental and lifetime savings
- 2022 Budget \$45,705,000
- 2022 Net Therms Goal 14,127,406



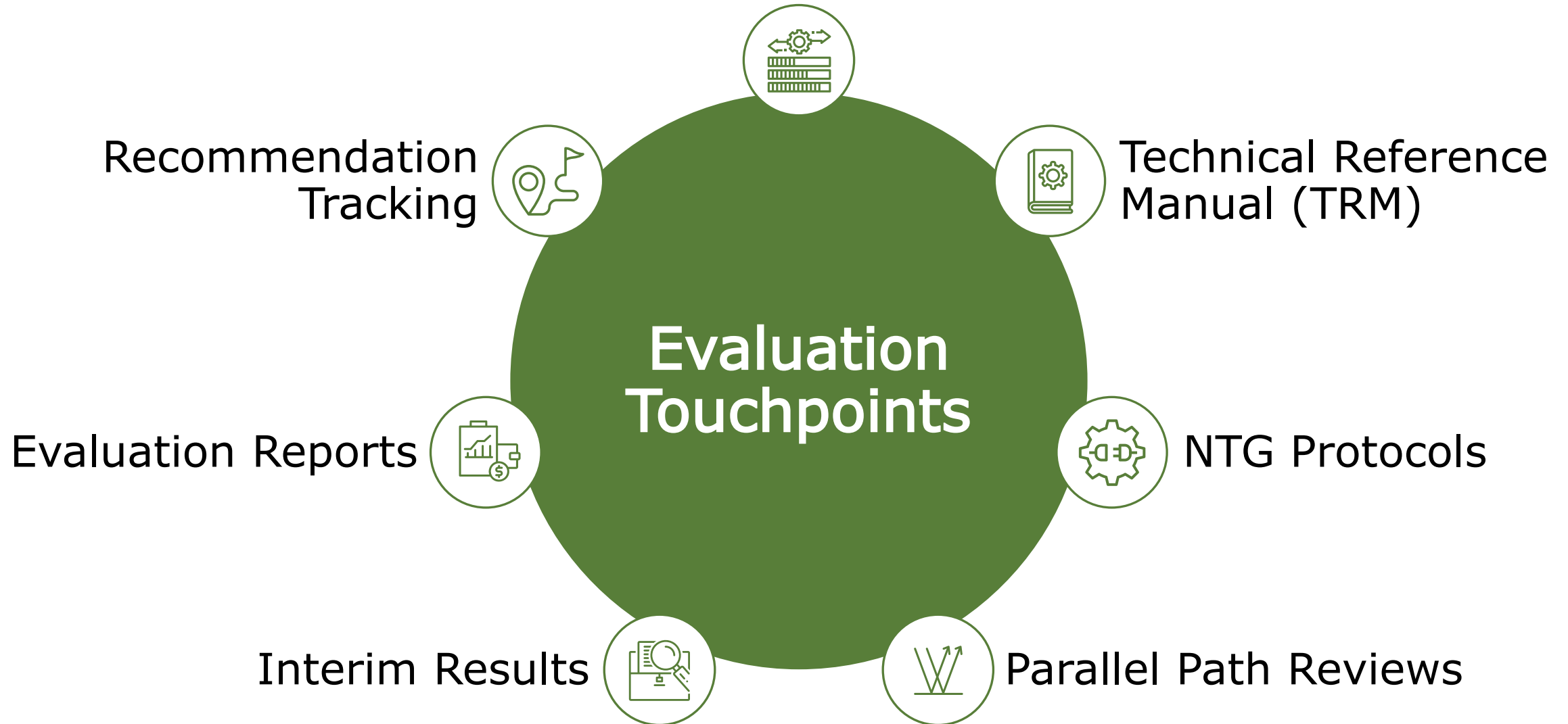
Background: Relationships



Where Does Evaluation Engagement Occur?



Evaluation Planning



Engagement Impacts



3% Evaluation Budget

- Net and gross savings for each program each year
- Prospective NTG research
- TRM updates
- NTG protocols
- SAG meetings
- Minimal budget for process and market potential or other “special studies”

Example Impacts

Measure Type	Annual Therms Savings Increase	Lifetime Therms Savings Increase
Steam Trap Market Potential	Significant	Significant
Steam Trap Spillover	0.037 million	0.22 million
Steam Trap Algorithm Update	2.3 million	13.6 million

Nicor Gas/Apex very engaged in prioritizing process, market potential, special studies

Annual TRM Updates

- Any interested party can propose an update
- SAG meetings used to prioritize updates for coming year
- Subcommittees discuss detailed changes pursuing consensus
- Apex provides technical review and analysis for Nicor Gas

Example Impacts

Measure Type	Annual Therms Savings Increase	Lifetime Therms Savings Increase
Advanced Thermostat ISR adjustment	0.110 million	1.2 million
Behavior Program Persistence	N/A	0.95 million

Originally developed in 2016



Annual update process for continuous improvement



Monitor questionnaire responses for evidence of confusion



Compare to other industry approaches



Apex provides technical review and active role in update discussions

NTG Protocols – Significant 2021 Revisions

Before (simplified)

Q1. How influential are the different program elements in your decision to install the measure?
(0 to 10 for multiple program measures)

Q2. How likely would you be to install the same measure without the program?
(0 to 10 scale)

Often inconsistent answers:
Q1 looks like "satisfaction"
Q2 counterfactual is difficult to answer

Freeridership = average (1-highest Q1 and Q2)

After (simplified)

Q1. [Remind customer of program elements]
How influential was the program in your decision to install the measure?
(0 to 10 scale)

Q2. What is most likely scenario of what would have happened without the program?
A) Exact same measure installed
B) Delayed or changed measure
C) Done nothing

Early Results:
Better consistency

Freeridership = average (Q1 and Q2 where A=1, B=.5, C=0)

Parallel Path Reviews

- For complex measures (custom, SEM, RCx)
- Implementers provide ex ante estimates and assumptions
- Evaluators provide early feedback
- Group discussion on differences

Example Impacts – Measure life improvement

Measure Type	Annual Therms Savings Increase	Lifetime Therms Savings Increase
Multiple component process equipment	N/A	94 million

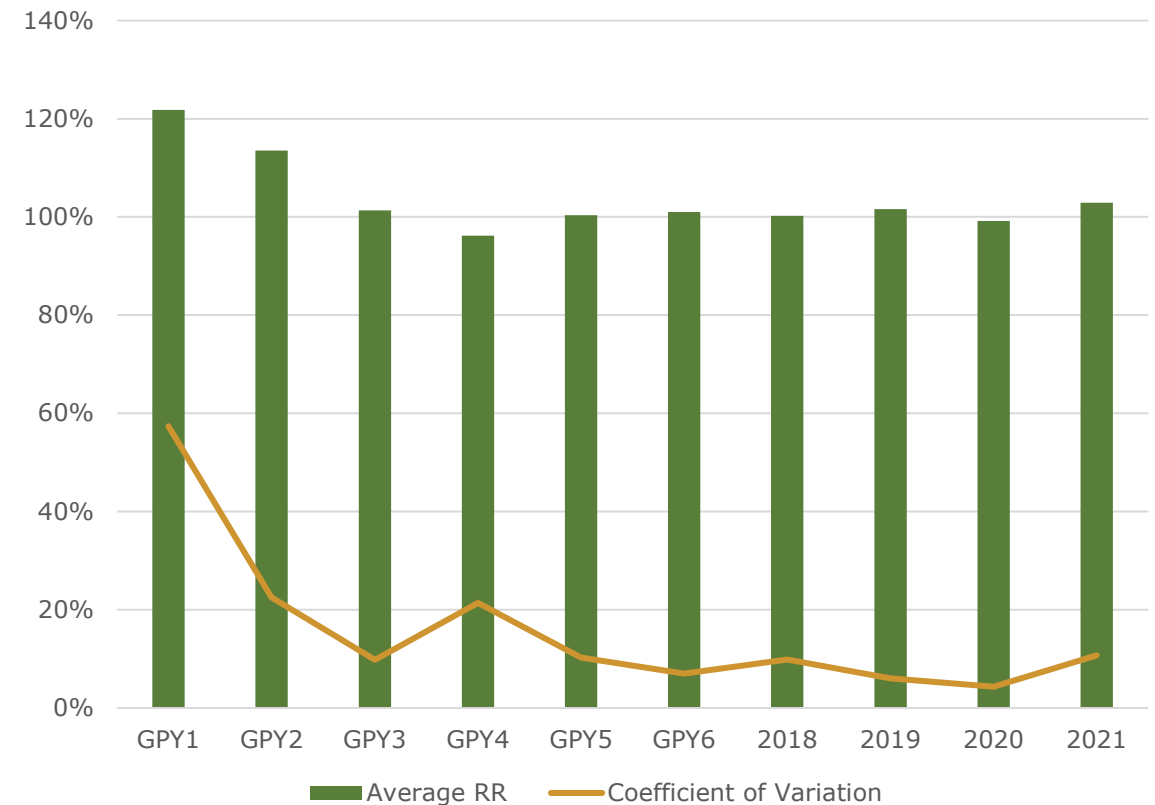
Evaluators review implementer ex ante assumptions and provide feedback

- 2020 had 11 programs with 100 measures

Discrepancies include:

- Using wrong TRM version
- Typographical errors in tracking database
- Incorrect climate zones
- Lack of reference to data sources
- Applying incorrect NTG values
- Savings impacts of multiple quantities of certain equipment
- Missing data
- Incorrect product specifications

Improved Realization Rates Over Time



RR improvement 20%, CV improvement 82%

Nicor Gas, Implementers, and Apex all review final report

- Compare *ex ante* to *ex post* savings, resolve through commenting and discussions
- Ensure recommendations are actionable (must be addressed and reported to ICC), resolve through commenting and discussions



Nicor Gas assigns accountability to implement evaluation recommendations

- 70% of 2020 recommendations reported in July 2021 were implemented by September 2021
- Recommendations have decreased from average of 7 per program in 2016 to average of 5 per program in 2020

*"That which is
measured improves.
That which is
measured and reported
**improves
exponentially.**"*

- Karl Pearson

Conclusions



Key aspects of Nicor Gas success

- **Extended expertise** through experienced consultant as staff extension
- **Structured process** to check progress and reduce uncertainties
- **Proactive stance** in ensuring accurate savings algorithms, accurate application of algorithms and assumptions, and continuous improvement
- **Commitment to continuous improvement** by tracking and assigning accountability



Evaluation is a science and an art, requiring active discussion and debate to apply correctly



“

Art and science have
their meeting point
in method.

Edward G. Bulwer-Lytton



For More Information

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