



Business Program Evaluation Report

C&I Gas Optimization

FINAL

**Energy Efficiency Plan:
Gas Plan Year 5
(6/1/2015-5/31/2016)**

**Presented to
Peoples Gas and North Shore Gas**

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E. EXECUTIVE SUMMARY

This report presents a summary of the findings and results from the impact and process evaluation of the Peoples Gas (PGL) and North Shore Gas (NSG) C&I Gas Optimization Program for GPY5, which is part of the comprehensive Business Program.¹ This report covers evaluation activities for measures installed and natural gas savings realized through the C&I Gas Optimization Program. Franklin Energy Services LLC., (Franklin Energy) is the implementation contractor for the PGL and NSG Business Program, with trade ally engagement and technical support for program delivery and marketing.

The C&I Gas Optimization Program provides a service where energy advisors and engineers review a commercial or industrial facility for operation and maintenance issues that, if corrected, often provide short payback projects that are very attractive to owners. Gas optimization assessments include recommendations such as correcting condensing boiler operating temperatures to ensure condensing operation and savings, and aligning actual facility operating hours and ventilation scheduling.²

The Gas Optimization Program delivery did not change from the previous year (GPY4). The GPY5 evaluation involved retrospective adjustments to ex ante gross savings on custom measure variables of all projects installed in GPY5. Franklin Energy provided documentation of project applications and savings, and Navigant verified project eligibility and savings based on engineering review, billing data review, and on-site measurement and verification (M&V) of all program measures. Navigant calculated GPY5 verified net impact savings using the net-to-gross ratio (NTGR) deemed through Illinois Energy Efficiency Stakeholder Advisory Group (SAG) consensus.³ Navigant's GPY5 process evaluation was limited to interviews with the program implementer to learn of any program changes, and to collect project data to conduct the M&V research.

E.1 Program Savings

Table E-1 summarizes the natural gas savings from the GPY5 Peoples Gas C&I Gas Optimization Program. The verified net savings are 289,482 therms. The verified gross realization rate for energy savings is 91 percent, reflecting evaluation adjustments from billing analysis and engineering reviews of projects completed in GPY5.

¹ The comprehensive Business Program bundles existing programs into paths, and allows all eligible customers to access any of the five paths as a one-stop-shop based on the customer's needs – the paths are Direct Install, Engineering Assistance, Standard Incentives, Custom Incentives, and Gas Optimization (source: PGL & NSG Energy Efficiency Plan for the Second Triennial Plan period of June 1, 2014 – May 31, 2017 —Plan 2).

² Second Triennial EEP Compliance Filing.pdf

³ The Net-to-Gross Ratio (NTGR) used for calculating verified net savings is deemed prospectively through a consensus process managed by the Illinois Energy Efficiency Stakeholder Advisory Group (SAG). Deemed NTGRs (as well historical verified gross Realization Rates) are available at:

http://ilsagfiles.org/SAG_files/NTG/2015_NTG_Meetings/Final_2015_Documents/Peoples_Gas_and_North_Shore_Gas_NTG_Summary_GPY1-5_2015-03-01_Final.pdf

Table E-1. GPY5 Peoples Gas C&I Gas Optimization Program Natural Gas Savings

Program/Path	Ex Ante Gross Savings ⁴ (Therms)	Ex Ante Net Savings (Therms)	Verified Gross RR ⁵	Verified Gross Savings (Therms)	NTGR ⁶	Verified Net Savings ⁷ (Therms)
GPY5 Total	310,542	316,753	0.91	283,806	1.02	289,482

Source: Evaluation analysis of GPY5 program tracking data (July 19, 2016 data extract) and results from M&V research.

The North Shore Gas C&I Gas Optimization Program did not complete any gas optimization projects in GPY5 and had zero savings as shown in the table below.

Table E-2. GPY5 North Shore Gas C&I Gas Optimization Program Natural Gas Savings

Program/Path	Ex Ante Gross Savings (Therms)	Ex Ante Net Savings (Therms)	Verified Gross RR	Verified Gross Savings (Therms)	NTGR	Verified Net Savings (Therms)
GPY5 Total	0.00	0.00	n/a	0.00	1.02	0.00

Source: Evaluation analysis of GPY5 program tracking data (July 19, 2016 data extract)

E.2 Impact Estimate Parameters for Future Use

The evaluation team did not conduct any additional research on NTGR components or impact savings parameters for deeming in future versions of the Illinois TRM as part of the GPY5 evaluation.

E.3 Program Volumetric Detail

Table E-3 presents GPY5 program participation reported by the Program Administrator Franklin Energy for the Peoples Gas program. The PGL program completed seven projects from five participants. The NSG program did not complete a gas optimization project in GPY5.

Table E-3. GPY5 Peoples Gas C&I Gas Optimization Program Primary Participation

Participation	Program Total
Participants	5
Completed Projects	7

Source: Navigant analysis of GPY5 program tracking data (July 19, 2016 data extract).

⁴ The term "Ex Ante" refers to the forecasted savings reported by the Program Administrator that have not been independently verified through evaluation. Savings that have been independently verified by the Evaluation Contractor are referred to as "Verified".

⁵ Verified Gross Realization Rate (RR) = Verified Gross Savings/Ex Ante Gross Savings.
Verified Gross Savings = RR * Ex Ante Gross Savings

⁶ The Net-to-Gross Ratio (NTGR) used for calculating verified net savings is deemed prospectively through a consensus process managed by the Illinois Energy Efficiency Stakeholder Advisory Group (SAG). Deemed NTGRs (as well historical verified gross Realization Rates) are available at:

http://ilsagfiles.org/SAG_files/NTG/2015_NTG_Meetings/Final_2015_Documents/Peoples_Gas_and_North_Shore_Gas_NTG_Summary_GPY1-5_2015-03-01_Final.pdf

⁷ Verified Net Savings = NTGR * Verified Gross Savings

E.4 Findings and Recommendations

The following provides insight into key program findings and recommendations.⁸

Verified Gross Savings and Realization Rate

Finding 1. Navigant estimated verified gross savings of 283,806 therms, which represent 91 percent of the gross realization rate for the Peoples Gas program. The North Shore Gas program did not implement any projects in GPY5 and did not realize any savings.

Finding 2. Of the seven Peoples Gas projects, Navigant verified four through on-site measurement and verification (M&V) and three through engineering desk review. Five projects had 100 percent realization rates, and the other two projects had a realization rate below 100 percent due to findings from billing analysis and review of the scope of work for one project.

Recommendation 1. Navigant recommends updating project documentation and the custom savings calculation workbooks to reflect the most up-to-date information received from customers before closing out projects for incentive payment. This may help to avoid evaluation adjustment in a situation where project scope changes or savings inputs are changed but not documented in the project file.

Verified Net Impact

Finding 3. The evaluation team applied the deemed 1.02 NTG ratio approved by the SAG to estimate the C&I Gas Optimization Program verified net savings. We estimated 289,482 therms verified net energy savings for the Peoples Gas Program. This represents 33 percent of the GPY5 triennial planning savings target of 877,200 net therms.⁹ The North Shore Gas Program did not complete any projects in GPY5. The PGL and NSG Business Programs have flexibility to shift savings and therms between program paths, as necessary, throughout the program year to meet the comprehensive Business Program goals. Overall, the PGL and NSG Programs reported fewer projects in GPY5 compared with the triennial plan, partly due to Franklin Energy's mid-year adjustment of net savings goal and participation.

Volumetric Findings

Finding 4. The GPY5 C&I Gas Optimization Program participation is lower than triennial planning targets, with the Peoples Gas Program realizing five participants with seven projects, below the triennial planning target of 51 participants in GPY5. The North Shore Gas Program had no participation in GPY5 although the triennial plan had targeted eight in GPY5.¹⁰ Overall, the PGL and NSG Programs reported fewer projects in GPY5, partly due to Franklin Energy's mid-year adjustment of net savings goal and participation. Verified net savings per project for PGL in GPY5 (41,355 therms per project) were more than twice as large as planning assumptions (17,200 therms per project).

⁸ The Executive Summary presents the most important of the Section 6 Findings and Recommendations. Findings and Recommendations in the Executive Summary are numbered to match Section 6 for consistent reference to individual findings and recommendations. Therefore, gaps in numbering may occur in the Executive Summary.

⁹ Realized savings and goals report generated from the Franklin Energy Efficiency Manager program information management system, September 9, 2016.

¹⁰ Second Triennial EEP Compliance Filing.pdf (Gas Optimization participation goals GPY4-GPY7)

1. INTRODUCTION

1.1 Program Description

The Second Triennial Plan¹¹ of the Peoples Gas (PGL) and North Shore Gas (NSG) comprehensive Business Program bundles existing programs into five paths and allows all eligible customers to access any of the paths as a one-stop-shop based on the customer's needs. The paths are Direct Install, Engineering Assistance, Standard Incentives, Custom Incentives, and Gas Optimization. Franklin Energy Services LLC (Franklin Energy) implements the comprehensive Business Program with trade ally engagement and technical support for program delivery and marketing. This report covers our evaluation of measures installed and gas savings realized through the Gas Optimization Program path.

The Gas Optimization Program provides a service where energy advisors/engineers review a business facility for operation and maintenance issues that, if corrected, often provide short payback projects that are very attractive to owners. Gas optimization assessment includes recommendations such as correcting condensing boiler operating temperatures to ensure condensing operation and therefore savings, and aligning actual facility operating hours and ventilation scheduling.¹²

1.2 Evaluation Objectives

The evaluation team identified the following key researchable questions for GPY5

1.2.1 Impact Questions

1. What are the program's verified gross savings, using field measurement and verification (M&V) and engineering research to estimate savings? What caused the realization rate (RR) adjustments?
2. What are the program's verified net savings?
3. What are the results and findings from field data collection?

1.2.2 Process Questions

The GPY5 process evaluation activities were limited to interviews with program staff to verify information about the tracking database and data requirements for the evaluation.

¹¹ Peoples Gas/North Shore Gas Energy Efficiency Plan for the Second Triennial Plan period of June 1, 2014 – May 31, 2017 (known as —Plan 2). The comprehensive business program paths include – Direct Install, Engineering Assistance, Standard Incentives, Custom Incentives, and Gas Optimization.

¹² Second Triennial EEP Compliance Filing.pdf

2. EVALUATION APPROACH

This section provides an overview of the data collection methods, gross and net impact evaluation approaches, and process evaluation approaches that occurred for the GPY5 evaluation.

2.1 Overview of Data Collection Activities

The core data collection activities included review of the program’s tracking data, site visits of projects for measurement and verification, and engineering file reviews. The primary data collection activities are shown in the following table.

Table 2-1. Primary Data Collection Activities

What	Who	Target Completes	Completes Achieved	When
Review program materials, invoices, monthly scorecard	Program Documents, Participants' Completed Projects	All	All	June- September 2016
Tracking System & Desk Review	Participants' Completed Projects	All (7 projects)	All (7 projects)	August- October 2016
On-site M&V	Participants' Completed Projects	4 of 7 projects	4 of 7 projects	August- October 2016
In Depth Interviews	Program Management	2	2	April-August 2016

Source: Navigant

2.2 Verified Savings Parameters

This section presents the approach Navigant employed in conducting verified gross and net program savings.

2.2.1 Verified Gross Program Savings Analysis Approach

Navigant conducted on-site M&V and engineering file reviews on all program measures to verify C&I Gas Optimization Program gross savings and gross realization rates. For each project, Navigant performed an in-depth review of the application documentation to assess the engineering methods, parameters and assumptions used to generate all ex ante impact estimates. To support this review, Franklin Energy provided project documentation in electronic format for each project. Documentation included some or all of scanned files of hardcopy application forms and supporting documentation from the applicant (invoices, measure specification sheets, and vendor proposals), pre-inspection reports, post inspection reports, photos (when available), and calculation spreadsheets. Navigant collaborated with Franklin Energy through emails and telephone conversations where clarifications were needed to verify the savings input assumptions of the sampled projects, including collection of trend and billing data. Table 2-2 shows the M&V approach and measure types. Navigant coordinated the on-site visits with a similar exercise conducted for the C&I Custom Program.

Table 2-2. GPY5 Verified Gross Savings Parameter Data Sources

Project ID	Utility	Ex Ante Gross	M&V Approach	Measure
649474	PGL	25,147	File Review	Demand Control Ventilation
862822	PGL	8,417	File Review	Burner Upgrade (Building Heating Optimization)
23439	PGL	25,499	Onsite	Steam Plant Optimization
1216379	PGL	53,792	Onsite	Pipe & Valve Insulation
846963	PGL	149,160	Onsite	Steam Pipe Insulation
1301338	PGL	16,477	File Review	Heating Controls and Insulation Upgrades
956757	PGL	32,051	Onsite	Process Heating

Source: Evaluation analysis of program tracking data.

2.2.2 Verified Net Program Savings Analysis Approach

Verified net energy savings were calculated by multiplying the verified gross savings estimates by a deemed net-to-gross ratio (NTGR). In GPY5, the NTGR estimates used to calculate the verified net savings were based on past evaluation research and approved through a consensus process managed by the Illinois Energy Efficiency Stakeholder Advisory Group (SAG)¹³. Table 2-3 presents the deemed NTGR by program path.

Table 2-3. Net-to-Gross Ratios for Evaluation of the GPY5 C&I Gas Optimization Program

Program Path	Utility	GPY5 Deemed NTG Value
C&I Gas Optimization	PGL & NSG	1.02

Source: Documents available on the Illinois Stakeholder Advisory Group web site – www.ilsag.info

2.3 Process Evaluation

The GPY5 process evaluation activities were limited to interviews with program staff to verify information about the tracking database and data requirements for the evaluation. We also reviewed program materials to determine if the process recommendations from the GPY4 evaluation were implemented or impacted customer participation.

¹³ Source: Deemed NTGR values are available on the Illinois Energy Efficiency Stakeholder Advisory Group web site – www.ilsag.info. http://ilsagfiles.org/SAG_files/NTG/2015_NTG_Meetings/Final_2015_Documents/Peoples_Gas_and_North_Shore_Gas_NTG_Summary_GPY1-5_2015-03-01_Final.pdf

3. GROSS IMPACT EVALUATION

This section provides detailed analysis and findings from the on-site M&V and file reviews and tracking system review. Overall, the Peoples Gas GPY5 Program achieved 283,806 therms of verified gross savings, a 91 percent gross realization rate compared to the ex ante savings of 310,542 gross therms. The North Shore Gas Program did not realize any savings in GPY5. The sections below provide details of the findings.

3.1 Program Tracking Data Review

Navigant downloaded the final data for the C&I Gas Optimization Program impact evaluation from Franklin Energy's Efficiency Manager (previously named Bensight) Data Management platform. Navigant reviewed the tracking data to verify the completeness and accuracy of the tracking system data to identify any issues that would affect the impact evaluation of the program. The Peoples Gas Program completed seven projects, but the NSG Program did not complete any projects in GPY5. Gas optimization measures installed in GPY5 included pipe and valve insulation, building heating and process heating optimization, demand control ventilation and other heating control measures.

Navigant completed on-site M&V on four projects and performed engineering file reviews for the remaining three projects. Navigant's on-site verification audits included interviews with key customer contacts, visual inspection of the systems and equipment, and spot measurements. Navigant developed an analysis plan for each project selected for on-site data collection. Each plan explains the general gross impact approach used (including measurement plans), provides an analysis of the current inputs (based on the application and other available sources at that time), and identifies sources that were used to verify data or obtain newly identified inputs for the ex post gross impact approach. The on-site audit collected data identified in the analysis plan, including monitoring records such as measured temperatures, data from equipment logs, equipment nameplate data, system operation sequences and operating schedules, and description of site conditions that might contribute to baseline selection.

3.2 Program Volumetric Findings

As shown in Table 3-1, the Peoples Gas C&I Gas Optimization Program implemented seven gas optimization projects with five participants. The completion of seven projects in GPY5 was below the triennial compliance planning target of 51 participants for PGL.¹⁴ The North Shore Gas Program did not implement any gas optimization projects with realized savings in GPY5, although the program had a triennial planning target of eight projects, similar to the GPY4 target. The PGL and NSG Business Programs have flexibility to shift savings and therms between program paths, as necessary, throughout the program year to meet the comprehensive Business Program goals. Overall, the PGL and NSG Programs reported fewer projects in GPY5 compared with the triennial plan, partly due to Franklin Energy's mid-year adjustment of net savings goal and participation.

¹⁴ Second Triennial EEP Compliance Filing.pdf (Gas Optimization participation goals GPY4-GPY7).

Table 3-1. GPY5 Peoples Gas C&I Gas Optimization Program Primary Participation

Participation	Program Total
Participants	5
Completed Projects	7

Source: Navigant analysis of GPY5 program tracking data (July 19, 2016 data extract).

3.3 Gross Program Impact Parameter Estimates

Navigant calculated the measure-level gross savings from the research findings obtained from the on-site M&V and engineering project file reviews. The verified gross realization rates for the individual projects were determined as the ratio of the verified gross energy savings to ex ante gross energy savings from project-level savings reported in the project documentation. The verified gross realization rates for each project are summarized in Table 3-2 for the Peoples Gas projects. Navigant determined that five projects had 100 percent gross realization rates and two projects were adjusted based on evaluation research. Navigant verified project 649474 using a billing analysis, determining that verified savings were 13 percent of annual usage, which is 36 percent gross realization rate of claimed savings. Navigant found only one of three components of project 956757 was implemented in GPY5 and the savings were adjusted accordingly.

Table 3-2. GPY5 C&I Gas Optimization Program Ex Ante and Verified Gross Savings Parameters

Project ID	Measure Description	Research Finding Gross Realization Rate	Summary of Evaluation Adjustment
649474	Demand Control Ventilation	0.36	Verified with Billing Analysis.
862822	Burner Upgrade (Building Heating Optimization)	1.00	OK
23439	Steam Plant Optimization	1.00	OK
1216379	Pipe & Valve Insulation	1.00	OK
846963	Steam Pipe Insulation	1.00	OK
1301338	Heating Controls and Insulation Upgrades	1.00	OK
* 956757	Process Heating	0.67	Component 6.1 was implemented. Customer did not implement project component 6.2, and 6.3 was already implemented and was removed from the project scope.

Source: Navigant analysis of program tracking data and M&V results.

* Component 6.2 involved use of Timers on unloading boiler station steam. Component 6.3 involved operating boiler 1 as lead. Only component 6.1, repair steam and condensate leak on condensate tank, was implemented for program savings credit.

3.4 Verified Gross Program Impact Results

Navigant summed the verified gross savings for each measure and project to calculate the program level verified gross savings. As shown in Table 3-3, the evaluation research adjustments resulted in verified gross energy savings of 283,806 therms for the GPY5 Peoples Gas C&I Gas Optimization Program. This resulted in a verified gross realization rate of 91 percent.

Table 3-3. GPY5 Peoples Gas C&I Gas Optimization Program Impact Results

Project ID	Gross Ex Ante Savings (therms)	Research Finding Gross Realization Rate	Verified Gross Savings (therms)
649474	25,147	0.36	9,094
862822	8,417	1.00	8,417
23439	25,499	1.00	25,499
1216379	53,792	1.00	53,792
846963	149,160	1.00	149,160
1301338	16,477	1.00	16,477
956757	32,051	0.67	21,367
GPY5 Total	310,542	0.91	283,806

Source: Navigant analysis of program tracking data and M&V results.

4. NET IMPACT EVALUATION

Verified net energy savings were calculated by multiplying the verified gross savings estimates by a net-to-gross ratio. As noted in Section 2, the NTGR used to calculate the net verified savings for the GPY5 C&I Gas Optimization Program was deemed through a consensus process managed by the Illinois SAG.

When converting ex ante gross to ex ante net savings for tracking and reporting, Franklin Energy Services combines an additional adjustment factor with the net-to-gross ratio. The additional factor accounts for potential gross realization rate adjustments, and is based on a previous year realization rate. This factor must be accounted for when converting ex ante net savings reported in the tracking system to ex ante gross savings. The equations for GPY5 are:

$$\text{GPY5 Ex Ante Net} = \text{Values reported in the GPY5 program tracking data}$$

$$\text{GPY5 Ex Ante Net} = (\text{GPY5 Ex Ante Gross} * \text{GPY4 Verified Gross RR}) * \text{GPY5 Deemed NTGR}$$

$$\text{GPY5 Ex Ante Gross} = \text{GPY5 Ex Ante Net} / (\text{GPY4 Verified Gross RR} * \text{GPY5 Deemed NTGR})$$

Table 4-1 below presents the Realization Rate and NTGRs used to calculate the program-level net savings.

Table 4-1. Peoples Gas and North Shore Gas GPY5 Program RR and NTGR Values

Program/Path	Embedded GPY4 RR Adjustment Factors	GPY4 RR Source	GPY5 Deemed NTGR	NTGR Source
C&I Gas Optimization	1.00	n/a	1.02	SAG‡

Source: †Navigant evaluation report for the GPY4 C&I Gas Optimization Program is available at <http://www.ilsag.info/evaluation-documents.html>.

‡ Deemed Net-to-Gross Ratios are available from:

http://ilsagfiles.org/SAG_files/NTG/2015_NTG_Meetings/Final_2015_Documents/Peoples_Gas_and_North_Shore_Gas_NTG_Summary_GPY_1-5_2015-03-01_Final.pdf

Overall, the PGL and NSG Programs reported fewer projects compared with triennial planning targets, partly due to Franklin Energy’s mid-year adjustment of net savings goal and participation. The PGL and NSG Business Programs have flexibility to shift savings and therms between program paths, as necessary, throughout the program year to meet the comprehensive Business Program goals. Table 4-2 summarizes the natural gas savings from the GPY5 Peoples Gas C&I Gas Optimization Program by end-use categories. The Peoples Gas GPY5 program achieved 289,482 therms net savings, which is 33 percent of the triennial plan net savings goal of 877,200 therms.¹⁵ The average net savings for the evaluated projects was 41,355 therms per project, compared with 17,200 net therms per project in the planning assumption.

¹⁵ Realized savings and goals report generated from the Franklin Energy Efficiency Manager program information management system, September 9, 2016.

Table 4-2. GPY5 Peoples Gas Optimization Program Natural Gas Savings

Program/Path	Ex Ante Gross Savings ¹⁶ (Therms)	Ex Ante Net Savings (Therms)	Verified Gross RR ¹⁷	Verified Gross Savings (Therms)	NTGR ¹⁸	Verified Net Savings ¹⁹ (Therms)
GPY5 Total	310,542	316,753	0.91	283,806	1.02	289,482

Source: Evaluation analysis of GPY5 program tracking data (July 19, 2016 data extract) and results from M&V research.

The North Shore Gas C&I Gas Optimization Program did not complete any gas optimization projects in GPY5 and realized zero savings.

Table 4-3. GPY5 North Shore Gas C&I Gas Optimization Program Natural Gas Savings

Program/Path	Ex Ante Gross Savings (Therms)	Ex Ante Net Savings (Therms)	Verified Gross RR	Verified Gross Savings (Therms)	NTGR	Verified Net Savings (Therms)
GPY5 Total	0.00	0.00	n/a	0.00	1.02	0.00

Source: Evaluation analysis of GPY5 program tracking data (July 19, 2016 data extract)

¹⁶ The term "Ex Ante" refers to the forecasted savings reported by the Program Administrator that have not been independently verified through evaluation. Savings that have been independently verified by the Evaluation Contractor are referred to as "Verified".

¹⁷ Verified Gross Realization Rate (RR) = Verified Gross Savings/Ex Ante Gross Savings.

Verified Gross Savings = RR * Ex Ante Gross Savings

¹⁸ The Net-to-Gross Ratio (NTGR) used for calculating verified net savings is deemed prospectively through a consensus process managed by the Illinois Energy Efficiency Stakeholder Advisory Group (SAG). Deemed NTGRs (as well historical verified gross Realization Rates) are available at:

http://ilsagfiles.org/SAG_files/NTG/2015_NTG_Meetings/Final_2015_Documents/Peoples_Gas_and_North_Shore_Gas_NTG_Summary_GPY1-5_2015-03-01_Final.pdf

¹⁹ Verified Net Savings = NTGR * Verified Gross Savings

5. PROCESS EVALUATION

Process research in GPY5 was limited to interviews with program staff and a review of program materials to verify information about program measures and the program tracking system. Navigant conducted interviews with the program staff in May 2016. We also had periodic conversations with program staff over the program year to discuss program forecasts and strategies for future program cycles. There are no process findings to report for GPY5.

6. FINDINGS AND RECOMMENDATIONS

The following provides insight into key program findings and recommendations.

Verified Gross Savings and Realization Rate

Finding 1. Navigant estimated verified gross savings of 283,806 therms, which represent 91 percent of the gross realization rate for the Peoples Gas program. The North Shore Gas program did not implement any projects in GPY5 and did not realize any savings.

Finding 2. Of the seven Peoples Gas projects, Navigant verified four through on-site measurement and verification (M&V) and three through engineering desk review. Five projects had 100 percent realization rates, and the other two projects had a realization rate below 100 percent due to findings from billing analysis and review of the scope of work for one project.

Recommendation 1. Navigant recommends updating project documentation and the custom savings calculation workbooks to reflect the most up-to-date information received from customers before closing out projects for incentive payment. This may help to avoid evaluation adjustment in a situation where project scope changes or savings inputs are changed but not documented in the project file.

Verified Net Impact

Finding 3. The evaluation team applied the deemed 1.02 NTG ratio approved by the SAG to estimate the C&I Gas Optimization Program verified net savings. We estimated 289,482 therms verified net energy savings for the Peoples Gas Program. This represents 33 percent of the GPY5 triennial planning savings target of 877,200 net therms.²⁰ The North Shore Gas Program did not complete any projects in GPY5. The PGL and NSG Business Programs have flexibility to shift savings and therms between program paths, as necessary, throughout the program year to meet the comprehensive Business Program goals. Overall, the PGL and NSG Programs reported fewer projects in GPY5 compared with the triennial plan, partly due to Franklin Energy's mid-year adjustment of net savings goal and participation.

Volumetric Findings

Finding 4. The GPY5 C&I Gas Optimization Program participation is lower than triennial planning targets, with the Peoples Gas Program realizing five participants with seven projects, below the triennial planning target of 51 participants in GPY5. The North Shore Gas Program had no participation in GPY5 although the triennial plan had targeted eight in GPY5.²¹ Overall, the PGL and NSG Programs reported fewer projects in GPY5 compared with the triennial plan, partly due to Franklin Energy's mid-year adjustment of net savings goal and participation. Verified net savings per project for PGL in GPY5 (41,355 therms per project) were more than twice as large as planning assumptions (17,200 therms per project).

²⁰ Realized savings and goals report generated from the Franklin Energy Efficiency Manager program information management system, September 9, 2016.

²¹ Second Triennial EEP Compliance Filing.pdf (Gas Optimization participation goals GPY4-GPY7)