



Plan Year 1 through 3 Impact Summary Evaluation Report

FINAL

**First Triennial
Natural Gas Energy Efficiency Plan:
(6/1/2011-5/31/2014)**

**Presented to
Nicor Gas**

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1 Portfolio Level Impact Results

This report summarizes numerical results of Navigant’s impact evaluation of the energy efficiency programs offered by Nicor Gas in Gas Plan Years 1 through 3 (GPY1 through GPY3), which ran from June 1, 2011 to May 31, 2014. This report also includes various corrections to ex ante estimates from GPY1-GPY3. The differences between the original ex ante estimates shown in individual reports and the final corrected ex ante estimates are detailed in Appendix A.

The Nicor Gas Portfolio included six programs targeted to residential customers and eight programs targeted to business customers. Verified savings and Illinois TRC cost effectiveness results are used to determine compliance with statutory goals and are provided in this section.

This report does not cover program process evaluation results or recommendations. All recommendations and process evaluation results are in each program’s full evaluation report. Full program evaluation reports can be found on the Illinois Energy Efficiency Stakeholder Advisory Group website¹.

The table below shows each Nicor Gas program’s regulatory name and its corresponding marketing name, as well as each program’s utility coordination throughout GPY1-GPY3. Programs offered jointly with Commonwealth Edison (“ComEd”) have joint program management and shared budgets. Programs offered cooperatively are managed solely by Nicor Gas, but coordinated, when appropriate, with ComEd’s program management staff for similar programs. For consistency, this report uses the program regulatory names.

¹ <http://www.ilsag.info/evaluation-documents.html>
Nicor Gas GPY1 through GPY3 Impact Summary Evaluation Report – Final

Table 1-1. Nicor Gas Programs GPY1-GPY3

Program	Regulatory Name	Marketing Name	Utility Coordination PY1	Utility Coordination PY2	Utility Coordination PY3
<i>Residential Programs</i>					
1	Heating & Appliance Incentive	Home Energy Efficiency Rebates	Cooperative	Cooperative	Cooperative
2	Single Family Retrofit	Home Energy Savings	Joint	Joint	Joint
3	Multi-Family Retrofit	Multi-Family Home Energy Savings	Joint	Joint	Joint
4	New Construction	Residential New Construction	Joint	Joint	Joint
5	Elementary Energy Education	Think! Energy	Joint	Joint	Joint
6	Behavioral Energy Savings	Energy Buzz (PY2) Home Energy Reports (PY3)	N/A	Gas Only	Gas Only
<i>Business Programs</i>					
7	Business Incentive	Business Energy Efficiency Rebates	Cooperative	Cooperative	Cooperative
8	Custom Business	Business Custom Incentives	Cooperative	Cooperative	Cooperative
9	Economic Redevelopment	Economic Redevelopment	Cooperative	Cooperative	Cooperative
10	Retro-Commissioning	Retro-Commissioning	Joint	Joint	Joint
11	Small Business Direct Install	Small Business Energy Services	Joint	Joint	Cooperative
12	Business New Construction	Business New Construction	Joint	Joint	Joint
13	Building Performance with ENERGY STAR	Building Performance with ENERGY STAR	Cooperative	Cooperative	Not offered in PY3
<i>Emerging Technology Program</i>					
14	Emerging Technology	N/A	Cooperative	Cooperative	Cooperative

1.1 Cost Effectiveness

As calculated, the Nicor Gas energy efficiency portfolios were cost-effective during the period from GPY1 to GPY3, with a portfolio TRC ratio for all three years of 2.11. Within the portfolio, the Commercial and Industrial (C&I) sector was more cost effective with a TRC ration of 3.65 as compared to the Residential sector with a TRC ratio of 1.92. All individual programs were cost effective with calculated TRC ratios greater than 1.0 for the combined three-year period. However, there were some programs that were not cost-effective in individual years, such as Single Family Retrofit and Economic Redevelopment in GPY1 and Behavioral Energy Savings in GPY2. The net present value (NPV) benefits and costs, and the Illinois TRC ratio for each program are summarized in Table 1-2.

Table 1-2. Summary of Nicor Gas GPY1-GPY3 IL TRC Results by Program – Nicor Gas Specific w/o Electric Data from Joint Programs

Program	GPY1			GPY2			GPY3			Combined GPY1 - GPY3		
	NPV Benefits	NPV Costs	IL TRC	NPV Benefits	NPV Costs	IL TRC	NPV Benefits	NPV Costs	IL TRC	NPV Benefits	NPV Costs	IL TRC
Multi-Family Retrofit	\$ 9,778,597	\$ 863,639	11.32	\$ 6,048,752	\$ 1,313,668	4.61	\$ 41,711,936	\$ 13,119,172	3.15	\$ 57,539,284	\$ 15,296,479	3.76
Heating & Appliance Incentive	\$ 11,571,411	\$ 11,534,393	1.00	\$ 19,982,383	\$ 19,087,249	1.05	\$ 70,425,513	\$ 35,215,863	2.00	\$ 101,979,306	\$ 65,837,505	1.55
Single Family Retrofit	\$ 993,897	\$ 1,296,595	0.77	\$ 2,500,644	\$ 2,011,845	1.25	\$ 3,856,950	\$ 3,203,958	1.20	\$ 7,351,490	\$ 6,512,398	1.13
Elementary Energy Education	\$ 1,181,558	\$ 395,407	2.99	\$ 2,713,340	\$ 465,314	5.83	\$ 4,481,812	\$ 880,673	5.09	\$ 8,376,709	\$ 1,741,394	4.81
Behavioral Energy Savings				\$ 17,579	\$ 1,178,149	0.01	\$ 3,791,294	\$ 2,100,790	1.81	\$ 3,808,873	\$ 3,278,938	1.16
Residential New Construction				\$ 2,080,566	\$ 1,387,901	1.19	\$ 2,227,674	\$ 1,491,589	1.91	\$ 4,308,240	\$ 2,879,490	1.50
All Residential	\$ 23,525,462	\$ 14,090,034	1.67	\$ 33,343,263	\$ 25,444,125	1.31	\$ 126,495,179	\$ 56,012,045	2.26	\$ 183,363,904	\$ 95,546,204	1.92
Economic Redevelopment	\$ 6,481	\$ 46,984	0.14	\$ 732,006	\$ 646,185	1.13	\$ 561,616	\$ 273,853	2.05	\$ 1,300,103	\$ 967,023	1.34
Retro-Commissioning	\$ 603,330	\$ 389,987	1.55	\$ 1,739,999	\$ 671,955	2.64	\$ 4,272,974	\$ 1,338,010	3.19	\$ 6,616,304	\$ 2,399,953	2.76
Custom Business	\$ 8,949,160	\$ 2,772,075	3.32	\$ 34,378,193	\$ 12,278,975	2.80	\$ 45,401,609	\$ 16,441,004	2.76	\$ 88,728,962	\$ 31,492,054	2.82
Business New Construction	\$ 245,929	\$ 66,777	3.68	\$ 1,852,167	\$ 487,011	3.73	\$ 1,536,983	\$ 695,794	2.21	\$ 3,635,080	\$ 1,249,583	2.91
Small Business Direct Install	\$ 657,457	\$ 447,770	1.47	\$ 11,241,275	\$ 1,393,037	8.07	\$ 16,871,315	\$ 3,010,285	5.62	\$ 28,770,048	\$ 4,851,093	5.93
Business Incentive	\$ 6,617,254	\$ 1,194,778	5.54	\$ 13,013,660	\$ 2,862,532	4.55	\$ 47,745,090	\$ 8,797,644	5.42	\$ 67,376,003	\$ 12,854,953	5.24
All C&I	\$ 17,079,611	\$ 4,918,372	3.47	\$ 62,957,300	\$ 18,339,696	3.43	\$ 116,389,588	\$ 30,556,591	3.81	\$ 196,426,500	\$ 53,814,658	3.65
Portfolio-level Costs		\$ 8,978,045			\$ 10,945,192			\$ 10,416,963			\$ 30,340,200	
Total	\$ 40,605,074	\$ 27,986,451	1.45	\$ 96,300,563	\$ 54,729,013	1.76	\$ 242,884,766	\$ 96,985,598	2.50	\$ 379,790,403	\$ 179,701,062	2.11

Note: Two additional programs, Building Performance with ENERGY STAR and Emerging Technology, also operated during GPY1 to GPY3. However, BPwES did not have any savings and ETP was used to pilot new technologies and had minimal savings. Costs from these programs, are included in the TRC evaluation of the portfolio.

Source: Navigant analysis

1.2 Portfolio Level Impact Results

Verified energy savings are documented in Table 1-3 through Table 1-7².

Table 1-3. Nicor Gas Portfolio Results by Year

Program Year	Ex Ante Gross (Therms)	Realization Rate	Verified		
			Gross (Therms)	NTGR	Net (Therms)
Year 1	6,449,137	0.99	6,384,227	0.72	4,591,713
Year 2	13,319,548	1.12	14,855,061	0.78	11,538,129
Year 3	37,993,266	1.02	38,596,665	0.86	33,088,417
Portfolio Total	57,761,951	1.04	59,835,953	0.82	49,218,260

Table 1-4. Nicor Gas Portfolio Year 1 Results by Program

Program/Path	Ex Ante Gross (Therms)	Realization Rate	Verified		
			Gross (Therms)	NTGR	Net (Therms)
Heating and Appliance Incentive	1,591,644	1.00	1,592,503	0.69	1,098,827
Single Family Retrofit	104,505	1.05	109,380	0.86	94,067
Multi-Family Retrofit	986,438	1.01	997,875	0.96	957,960
New Construction	N/A	N/A	N/A	N/A	N/A
Elementary Energy Education	34,298	3.18	109,222	0.79	86,285
Behavioral Energy Savings	N/A	N/A	N/A	N/A	N/A
Business Incentive	1,742,478	1.00	1,742,478	0.73	1,272,009
Custom Business	1,622,380	0.93	1,510,285	0.53	800,451
Economic Redevelopment	893	1.00	893	0.80	714
Emerging Technology	N/A	N/A	N/A	N/A	N/A
Retro-Commissioning	180,345	0.82	147,838	1.02	150,795
Small Business Direct Install	109,353	1.00	109,353	1.00	109,353
Business New Construction	76,803	0.84	64,400	0.33	21,252
Portfolio Total	6,449,137	0.99	6,384,227	0.72	4,591,713

² Some totals may not add up exactly due to rounding.

Table 1-5. Nicor Gas Portfolio Year 2 Results by Program

Program/Path	Ex Ante Gross (Therms)	Realization Rate	Verified		
			Gross (Therms)	NTGR	Net (Therms)
Heating and Appliance Incentive	2,847,533	1.00	2,858,644	0.69	1,972,464
Single Family Retrofit	274,505	1.00	273,900	0.86	235,554
Multi-Family Retrofit	628,088	1.00	628,071	0.96	602,948
New Construction	242,112	0.91	220,300	0.80	176,240
Elementary Energy Education	217,254	1.51	327,689	0.79	258,874
Behavioral Energy Savings	11,955	1.73	20,722	N/A	20,722
Business Incentive	3,296,519	1.00	3,296,623	0.73	2,406,535
Custom Business	3,317,145	1.29	4,263,751	0.72	3,069,901
Economic Redevelopment	132,207	0.85	112,363	0.70	78,654
Emerging Technology	5,142	1.00	5,142	1.00	5,142
Retro-Commissioning	397,353	1.01	403,126	1.02	411,189
Small Business Direct Install	1,719,681	1.25	2,143,013	1.00	2,143,013
Business New Construction	230,054	1.31	301,717	0.52	156,893
Portfolio Total	13,319,548	1.12	14,855,061	0.78	11,538,129

*Net therms are reported in lieu of gross therms in this case.

Table 1-6. Nicor Gas Portfolio Year 3 Results by Program

Program/Path	Ex Ante Gross (Therms)	Realization Rate	Verified		
			Gross (Therms)	NTGR	Net (Therms)
Heating and Appliance Incentive	4,935,560	1.00	4,948,725	0.79	3,909,493
Energy Saving Kits	1,828,371	1.32	2,421,471	0.84	2,034,036
Single Family Retrofit	396,430	1.00	395,276	0.86	339,937
Multi-Family Retrofit	5,013,722	1.00	5,037,829	0.94	4,735,559
New Construction	256,445	0.91	232,557	0.80	186,046
Elementary Energy Education	432,746	1.00	432,549	0.79	341,714
Behavioral Energy Savings	4,156,761	0.99	4,111,100	N/A	4,111,100
Business Incentive	11,185,216	0.99	11,115,153	0.83	9,225,577
Custom Business	5,449,949	1.07	5,823,776	0.73	4,251,356
Economic Redevelopment	118,910	0.71	84,889	0.70	59,422
Emerging Technology	N/A	N/A	N/A	N/A	N/A
Retro-Commissioning	1,059,684	0.91	966,274	1.02	985,599
Small Business Direct Install	2,855,341	0.97	2,780,216	1.00	2,780,216
Business New Construction	304,131	0.81	246,850	0.52	128,362
Portfolio Total	37,993,266	1.02	38,596,665	0.86	33,088,417

*Net therms are reported in lieu of gross therms in this case.

Table 1-7. Nicor Gas Portfolio Years 1 through 3 Results by Program

Program/Path	Verified	
	Gross (Therms)	Net (Therms)
Heating and Appliance Incentive	9,399,872	6,980,784
Energy Saving Kits	2,421,471	2,034,036
Single Family Retrofit	778,556	669,558
Multi-Family Retrofit	6,663,775	6,296,467
New Construction	452,857	362,286
Elementary Energy Education	869,460	686,873
Behavioral Energy Savings	4,131,822	4,131,822
Business Incentive	16,154,254	12,904,121
Custom Business	11,597,812	8,121,708
Economic Redevelopment	198,145	138,791
Emerging Technology	5,142	5,142
Retro-Commissioning	1,517,238	1,547,583
Small Business Direct Install	5,032,582	5,032,582
Business New Construction	612,967	306,507
Portfolio Total	59,835,953	49,218,260

*Net therms are reported in lieu of gross therms in this case.

2 Program Level Results

2.1 Heating and Appliance Rebate

2.1.1 Program Summary

Under the Rider 30 the Heating and Appliance Rebate program, cash incentives and education were offered to encourage upgrading of water- and space-heating equipment among residential customers of Nicor Gas and central air conditioning systems for Commonwealth Edison (ComEd) customers through the complete system replacement (CSR) portion of the program. The Heating and Appliance Rebate program was designed to conserve natural gas and electricity and to lower participants' monthly energy bills. Both rental and owner-occupied dwellings are eligible for rebates for furnaces, boilers, storage water heaters, central air conditioning systems, and programmable thermostats. Program participants must be residential customers of Nicor Gas and ComEd in order to receive rebates for gas saving measures or electricity savings, respectively, for high efficiency furnaces and air conditioning systems under the CSR portion of the program, and the premises must be used for residential purposes in existing buildings. The GPY3³ Rider 30 Heating and Appliance Rebate program was implemented by Resource Solutions Group, which has since changed its name to CLEARresult.

2.1.2 Impact Results

Table 2-1 shows the key results of the gross and net impact evaluation using deemed savings estimates.

Table 2-1. Heating and Appliance Rebate GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	1,591,644	2,847,533	4,935,560	9,374,737
Verified Gross Realization Rate	1.00	1.00	1.00	1.00
Verified Gross	1,592,503	2,858,644	4,948,725	9,399,872
Verified Net	1,098,827	1,972,464	3,909,493	6,980,784
NTG Ratio	0.69	0.69	0.79	

³ EPY6/GPY3 began June 1, 2013, and ended May 31, 2014.

2.2 Energy Saving Kits

2.2.1 Program Summary

The Nicor Gas Energy Saving Kit Program mails kits that consist of one or two high efficiency showerheads, two high efficiency bathroom faucet aerators, and a high efficiency kitchen faucet aerator to customers of Nicor Gas who requested the kits. Both rental and owner-occupied dwellings are eligible for kits. Customers must be active residential customers of Nicor Gas, and only one kit is available for each account number. When they apply to receive a kit from Nicor Gas, the customers are asked if they want one or two shower heads included in their kit. The Nicor Gas Energy Saving Kit Program is implemented directly through Nicor Gas, and began in GPY3 on June 1, 2013.

2.2.2 Impact Results

Table 2-2. Nicor Gas Energy Saving Kits GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	N/A	N/A	1,828,371	1,828,371
Verified Gross Realization Rate	N/A	N/A	1.32	1.32
Verified Gross	N/A	N/A	2,421,471	2,421,471
Verified Net	N/A	N/A	2,034,036	2,034,036
NTG Ratio	N/A	N/A	0.84	

2.3 Single Family Retrofit

2.3.1 Program Summary

The Single Family Retrofit program is a joint program of Nicor Gas and ComEd, with Nicor Gas leading the program implementation. The Single Family Retrofit program sought to achieve therm savings through the implementation of home energy assessments to promote discounted weatherization services and the direct installation of energy efficiency measures in residential Nicor Gas and/or ComEd in Nicor Gas territory single-family home residences or two to four unit buildings. Program activities were implemented through CSG staff and contracted weatherization providers. During the assessment, CFLs, showerheads, aerators, hot water temperature setback, programmable thermostat setting, and pipe insulation were directly installed at no additional charge for instant energy savings. A programmable thermostat was also offered at a reduced price for interested participants. Assessment staff generated a recommendation report for customers based on the customer’s home characteristic information. The customer report outlined recommended measures (e.g. attic insulation, air sealing), potential savings, payback periods, and the amount of incentives available for recommended work. Customers chose the projects they wanted to pursue. A program-eligible contractor was then assigned to perform the work and discounts were offered instantaneously.

2.3.2 Impact Results

Table 2-3. Single Family Retrofit GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	104,505	274,505	396,430	775,440
Verified Gross Realization Rate	1.05	1.00	1.00	1.01
Verified Gross	109,380	273,900	395,276	778,556
Verified Net	94,067	235,554	339,937	669,558
NTG Ratio	0.86	0.86	0.86	

2.4 Multi-Family Retrofit

2.4.1 Program Summary

The Multi-Family Retrofit program achieves natural gas energy savings for customers of Nicor Gas and electric energy and demand savings for ComEd customers. Franklin Energy Services, LLC was the primary implementation contractor for the Multi-Family Retrofit program.

During the three program years, Multi-Family Retrofit continued to implement its direct install components (programmable thermostats, hot water pipe wrap insulation, and water efficiency measures in residential dwelling units and common areas). Concurrently, Multi-Family Retrofit offered technical services and financial incentives to commercial contractors and multi-family decision-makers to install program measures designed to achieve energy savings in whole buildings and grounds. These measures include upgrades or improvements to central plant and heating, ventilating, and air-conditioning (HVAC) systems and controls, interior and exterior lighting systems, building shell improvements, among others. The Multi-Family Retrofit program was delivered through three channels: direct install, trade ally installation, and prescriptive incentives.

2.4.2 Impact Results

Table 2-4. Multi-Family Retrofit Program GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	986,438	628,088	5,013,722	6,628,248
Verified Gross Realization Rate	1.01	1.00	1.00	1.01
Verified Gross	997,875	628,071	5,037,829	6,663,775
Verified Net	957,960	602,948	4,735,559	6,296,467
NTG Ratio	0.96	0.96	0.94	

2.5 New Construction

2.5.1 Program Summary

The New Construction program is jointly offered by Nicor Gas and ComEd. Nicor Gas is the lead utility as the majority of the avoided costs are from natural gas savings. Residential Science Resources implements the program for both utilities. The program launched in early 2012 and did not claim savings in the first program year, but ex ante gross savings estimates exceeded both gas and electric savings targets for GPY2/EPY5 and again in GPY3/EPY6. RSR uses completed REM/Rate files for each home to calculate whole-house savings. In addition, ComEd incentivizes several ENERGY STAR electric appliances and claims savings from these installations as well as whole-home electricity savings.

The New Construction Program pays incentives to raters and to builders; builders receive additional incentives from ComEd for installing program-qualified ENERGY STAR electric appliances. To qualify for the program, homes must achieve savings of at least 10 percent over an equivalent code-compliant new home based on REM/Rate modeling. The residential energy code in effect in Illinois was IECC 2009 through December 2012. The residential energy code IECC 2012 was in effect beginning in January 2013.

2.5.2 Impact Results

Table 2-5. New Construction GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	N/A	242,112	256,445	498,557
Verified Gross Realization Rate	N/A	0.91	0.91	0.91
Verified Gross	N/A	220,300	232,557	452,857
Verified Net	N/A	176,240	186,046	362,286
NTG Ratio	N/A	0.80	0.80	

2.6 Elementary Energy Education

2.6.1 Program Summary

The Elementary Energy Education (EEE) program is implemented by National Energy Foundation (NEF) and is branded “THINK! ENERGY.” The program targeted students in public and private schools that are customers of Nicor Gas or jointly Nicor Gas and ComEd. Schools received an invitation to participate and register to schedule the interactive presentations; alternatively, schools could register on the program website to join a waiting list if the program was fully-enrolled when they registered. After the presentation, students took home a kit that included several components: water conservation measures; instruments to measure water temperature, ambient temperature, and water flow rates; and a home energy worksheet (“HEW”) where participants reported details of their family’s participation in Scantron form. Students and teachers were incentivized to return the home energy worksheets with a \$100 mini-grant for each class that completes and returns 80 percent of their HEWs. Students were also incentivized to receive a program wristband if they complete and return a HEW. In addition, teachers who returned 80 percent of the HEWs were entered into a raffle to win an iPad. NEF based the program’s savings on the installation rate of implemented measures reported in the HEW against the number of kits that were reported taken home.

2.6.2 Impact Results

Table 2-6. Elementary Energy Education GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	34,298	217,254	432,746	684,298
Verified Gross Realization Rate	3.18	1.51	1.00	1.27
Verified Gross	109,222	327,689	432,549	869,460
Verified Net	86,285	258,874	341,714	686,873
NTG Ratio	0.79	0.79	0.79	

2.7 Behavioral Energy Savings Program

2.7.1 Program Summary

The Home Energy Report (HER) program is designed to generate gas savings by providing residential customers with information about their specific gas use and related conservation suggestions and tips. The information is provided in the form of reports that give customers various types of information, including: a) how their recent gas use compares to their use in the past; b) tips on how to reduce consumption, some of which are tailored to the customer’s circumstances; and c) information on how their gas use compares to that of neighbors with similar homes. This set of information has been shown in other studies to stimulate customers to reduce their gas use, creating average savings around 1%, depending on local gas use patterns.

An important feature of the program is that it is a randomized controlled trial. Customers in the program are randomly assigned to a treatment (participant) group and a control (non-participant) group, for the purpose of estimating changes in gas use due to the program. The GPY3 program ran from October 2013 through September 2014 with reports sent throughout the heating season (October 2013 through April 2014).

The HER program included a pilot program, ENERGYBUZZ, which gave participants access to a variety of tools and ongoing communications via an online platform at NicorGasEnergyBuzz.com. Overall, the ENERGYBUZZ web portal intended to encourage Nicor Gas customers to save energy through behavior change and participation in other Nicor Gas energy efficiency programs. The program was soft launched in August 2012 (during GPY2). The pilot phase was set to last for three years, but due to low participation and complexities in linking gas accounts to the online portal this program was discontinued on November 30th, 2013.

2.7.2 Impact Results

Table 2-7. BEBP GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	N/A	11,955	4,156,761	4,168,716
Verified Gross Realization Rate	N/A	1.73	0.99	0.99
Verified Gross	N/A	20,772	4,111,100	4,131,822
Verified Net	N/A	20,722	4,111,100	4,131,822
NTG Ratio	N/A	N/A	N/A	

2.8 Business Incentive

2.8.1 Program Summary

The Business Incentive program provides incentives to increase the market share of new, highly efficient space heating, water heating, and commercial kitchen equipment as well as rebates for equipment and services to improve the energy efficiency of existing equipment. Participants must purchase and install equipment covered by the program. Trade ally support and engagement is considered to be a key element to the success of this program. The Business Incentive program is implemented by CLEAResult. The Business Incentive program works closely with the Nicor Gas Custom Business program and the other business programs within the portfolio to target both end-use customers and trade allies.

2.8.2 Impact Results

Table 2-8. Business Incentive GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	1,742,478	3,296,519	11,185,216	16,224,213
Verified Gross Realization Rate	1.00	1.00	0.99	1.00
Verified Gross	1,742,478	3,296,623	11,115,153	16,154,254
Verified Net	1,272,009	2,406,535	9,225,577	12,904,121
NTG Ratio	0.73	0.73	0.83	

2.9 Custom Business

2.9.1 Program Summary

The Custom Business program provides business customers with financial incentives for the installation of natural gas-related energy improvements that are not specified for a prescriptive rebate under the Nicor Gas Business Incentive program or other Nicor Gas programs. Participants span a range of market segments and can receive incentives for a wide variety of natural gas saving technologies. Typical market segments for this program may include light and heavy industry, steel and metal working, plastics compounding and processing, hospitals, food processing, hotels, commercial laundry and other process heating intensive businesses. Large centrally-heated multifamily buildings and office buildings are also target segments for this program. The Custom Business program was implemented by CLEARResult for the Nicor Gas Rider 30 Energy Efficient Portfolio period.

2.9.2 Impact Results

Table 2-9. Business Custom GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	1,622,380	3,317,145	5,449,949	10,389,474
Verified Gross Realization Rate	0.93	1.29	1.07	1.12
Verified Gross	1,510,285	4,263,751	5,823,776	11,597,812
Verified Net	800,451	3,069,901	4,251,356	8,121,708
NTG Ratio	0.53	0.72	0.73	

2.10 Economic Redevelopment

2.10.1 Program Summary

The Economic Redevelopment Program (ERP) targeted existing commercial, industrial, and commercial-sized multifamily facilities and properties undergoing major renovation in established “redevelopment areas” and encouraged that they incorporate energy efficiency measures into the renovation process. The program provided technical assistance and enhanced incentives to render energy efficiency projects more affordable within these economically challenged communities. Seventhwave, formerly the Energy Center of Wisconsin, is the implementation contractor for this program. CNT Energy, now Elevate Energy (a non-profit organization founded by the Center for Neighborhood Technology), located in Chicago, conducted marketing and outreach for the program, including recruiting qualified potential participants. The target audiences for outreach included chambers of commerce, economic development departments, building owners, architecture firms and contractors.

The ERP experienced slow participation uptake rates in GPY1 but, after a successful marketing and outreach campaign, significantly increased program participation from one project in GPY1 to 15 projects in GPY2 and 13 projects in GPY3. However, the ERP was discontinued as a separate program after GPY3, and only the remaining projects in the pipeline were completed; additional projects were directed to other Nicor Gas programs.

2.10.2 Impact Results

Table 2-10. Economic Redevelopment GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	893	132,207	118,910	252,010
Verified Gross Realization Rate	1.00	0.85	0.71	0.79
Verified Gross	893	112,363	84,889	198,145
Verified Net	714	78,654	59,422	138,791
NTG Ratio	0.80	0.70	0.70	

2.11 Emerging Technology

2.11.1 Program Summary

The Nicor Gas’s Emerging Technology Program (ETP) is designed to identify energy efficient emerging technologies or practices (i.e., measures) that Nicor Gas can incorporate into their energy efficiency programs to achieve greater program savings and provide better value to their customers.

The ETP measures therm savings through pilot assessment projects. Each pilot assessment project enables the ETP to conduct verification of manufacturer-claimed savings for each technology. In order to avoid double counting of savings among different programs, the savings from pilot assessments are attributable to the ETP only if they are not claimed by another program. The Gas Technology Institute manages the ETP as the implementation contractor.

2.11.2 Impact Results

Table 2-11. Emerging Technology GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	N/A	5,142	N/A	5,142
Verified Gross Realization Rate	N/A	1.00	N/A	1.00
Verified Gross	N/A	5,142	N/A	5,142
Verified Net	N/A	5,142	N/A	5,142
NTG Ratio	N/A	1.00	N/A	

2.12 Retro-Commissioning

2.12.1 Program Summary

The Retro-Commissioning Program has been offered each of the three gas program years. The program was offered as a joint utility program with the gas utilities where service areas overlap ComEd's. The overlapping territories include Nicor Gas, Peoples Gas and North Shore Gas. The Retro-Commissioning Program offering is a natural fit for joint delivery due to the intensive investigation and analysis of HVAC systems. Individual measures frequently save both electricity and natural gas and analyzing one power source, while neglecting the other, would be a lost energy savings opportunity.

The program helps commercial and industrial customers improve the performance and reduce energy consumption of their facilities through the systematic evaluation of existing building systems. Generally, the program pays for 100% of a detailed retro-commissioning study. This payment is contingent upon a participant's commitment to spend a defined amount of their own money implementing recommendations in the study that have a payback of 18 months or less. Retro-commissioning recommendations typically include low-cost or no-cost HVAC measures like (1) scheduling equipment with occupancy, (2) optimizing temperature set points and controls to operate equipment efficiently and (3) repairing worn-out or failed components that manifest themselves as energy waste rather than affecting the ability of the whole system to maintain comfort. The measures can usually be implemented in the course of normal maintenance or through enhancements to sensors or control sequences with existing building automation systems.

2.12.2 Impact Results

Table 2-12. Retro-Commissioning GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	180,345	397,353	1,059,684	1,637,382
Verified Gross Realization Rate	0.82	1.01	0.91	0.93
Verified Gross	147,838	403,126	966,274	1,517,238
Verified Net	150,795	411,189	985,599	1,547,583
NTG Ratio	1.02	1.02	1.02	

2.13 Small Business Direct Install

2.13.1 Program Summary

The Small Business Direct Install program is designed to assist qualified Nicor Gas non-residential customers⁴ to achieve gas energy savings by educating them about energy efficiency opportunities through on-site assessments conducted by trade allies and installation of no-cost direct-install natural gas energy efficiency measures. Further savings are available to participating customers through incentives of 30 to 75 percent offered for select contractor-installed natural gas efficient measures.

2.13.2 Impact Results

Table 2-13. Small Business Direct Install Program GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	109,353	1,719,681	2,855,341	4,684,375
Verified Gross Realization Rate	1.00	1.25	0.97	1.07
Verified Gross	109,353	2,143,013	2,780,216	5,032,582
Verified Net	109,353	2,143,013	2,780,216	5,032,582
NTG Ratio	1.00	1.00	1.00	

⁴ To qualify for SBEEP, customers must be active Commercial and Industrial (C&I) customers of Nicor Gas who use up to 60,000 therms per year.

2.14 Business New Construction

2.14.1 Program Summary

The Business New Construction program aims to capture immediate and long-term energy efficiency opportunities that are available during the design and construction of new buildings, additions, and renovations in the non-residential market. The program is jointly offered by ComEd and Nicor Gas. The ComEd program has been operating since June 1, 2009 (EPY2). Nicor Gas joined the program to offer natural gas rebates in June 2011 (GPY1).

Seventhwave, formerly the Energy Center of Wisconsin, implements the program for both ComEd and Nicor Gas. Seventhwave reaches out to design professionals and customers at the beginning of the design process to engage them in the program as early as possible. In EPY5/GPY2 (June 1, 2012 to May 31, 2013), the program transitioned from three tracks—the Systems, Comprehensive, and Small Buildings tracks—to a single performance-based Comprehensive track model. The single track offers incentives and technical assistance to non-residential buildings greater than 20,000 square feet and residential buildings greater than 100,000 square feet for whole-building electric and gas savings. The program provides incentives for a variety of measures, including lighting and HVAC equipment and controls and building envelope measures.

2.14.2 Impact Results

Table 2-14. Business New Construction GPY1-GPY3 Impact Results

	GPY1 Therm Savings	GPY2 Therm Savings	GPY3 Therm Savings	GPY1-GPY3 Therm Savings
Ex-Ante Gross	76,803	230,054	304,131	610,988
Verified Gross Realization Rate	0.84	1.31	0.81	0.95
Verified Gross	64,400	301,717	246,850	612,967
Verified Net	21,252	156,893	128,362	306,507
NTG Ratio	0.33	0.52	0.52	

3 Appendix

3.1 Ex Ante Comparison

During the compilation of the GPY1-GPY3 Impact Summary Report, Nicor Gas and Navigant discovered discrepancies between Navigant’s ex ante gross savings estimates and Nicor Gas’. Nicor Gas and Navigant discussed the differences in details, and accepted the final corrected ex ante gross savings values listed in the tables below. Nicor Gas and Navigant investigated the Retro-Commissioning discrepancy and discovered that a small number of projects were not included in the original GPY3 Navigant evaluation. Navigant has since reviewed these projects and included them retro-actively. A summary of the ex ante gross savings estimates by year and by program is detailed in the tables below. Navigant recorded values for ex ante estimates are used in each program’s evaluation report; the final corrected values for ex ante estimates are used in this document and for Navigant’s cost effectiveness analysis.

Table 3-1. Portfolio Ex Ante Gross Savings Estimates by Year

Program Year	Navigant Recorded Ex Ante Gross (Therms)	Final Corrected Ex Ante Gross (Therms)	Difference
Year 1	6,426,760	6,449,137	-0.35%
Year 2	13,345,226	13,319,548	0.19%
Year 3	37,664,113	37,993,266	-0.87%
Portfolio Total	57,436,099	57,761,951	-0.56%

Table 3-2. Portfolio Year 1 Ex Ante Gross Savings Estimates by Program

Program/Path	Navigant Recorded Ex Ante Gross (Therms)	Final Corrected Ex Ante Gross (Therms)	Difference
Heating and Appliance Incentive	1,591,644	1,591,644	0.00%
Single Family Retrofit	104,505	104,505	0.00%
Multi-Family Retrofit	986,438	986,438	0.00%
New Construction	N/A	N/A	
Elementary Energy Education	34,298	34,298	0.00%
Behavioral Energy Savings	N/A	N/A	
Business Incentive	1,742,478	1,742,478	0.00%
Custom Business	1,622,380	1,622,380	0.00%
Economic Redevelopment	893	893	0.00%
Emerging Technology	N/A	N/A	
Retro-Commissioning	180,345	180,345	0.00%
Small Business Direct Install	109,353	109,353	0.00%
Business New Construction	54,426	76,803	-29.14%
Portfolio Total	6,426,760	6,449,137	-0.35%

Table 3-3. Portfolio Year 2 Ex Ante Gross Savings Estimates by Program

Program/Path	Navigant Recorded Ex Ante Gross (Therms)	Final Corrected Ex Ante Gross (Therms)	Difference
Heating and Appliance Incentive	2,847,533	2,847,533	0.00%
Single Family Retrofit	253,445	274,505	-7.67%
Multi-Family Retrofit	628,088	628,088	0.00%
New Construction	242,112	242,112	0.00%
Elementary Energy Education	217,254	217,254	0.00%
Behavioral Energy Savings	11,955	11,955	0.00%
Business Incentive	3,314,210	3,296,519	0.54%
Custom Business	3,317,145	3,317,145	0.00%
Economic Redevelopment	132,207	132,207	0.00%
Emerging Technology	8,734	5,142	69.86%
Retro-Commissioning	397,353	397,353	0.00%
Small Business Direct Install	1,719,681	1,719,681	0.00%
Business New Construction	255,509	230,054	11.06%
Portfolio Total	13,345,226	13,319,548	0.19%

Table 3-4. Portfolio Year 3 Ex Ante Gross Savings Estimates by Program

Program/Path	Navigant Recorded Ex Ante Gross (Therms)	Final Corrected Ex Ante Gross (Therms)	Difference
Heating and Appliance Incentive	4,935,560	4,935,560	0.00%
Energy Saving Kits	1,828,371	1,828,371	0.00%
Single Family Retrofit	397,430	396,430	0.25%
Multi-Family Retrofit	5,013,722	5,013,722	0.00%
New Construction	256,445	256,445	0.00%
Elementary Energy Education	432,746	432,746	0.00%
Behavioral Energy Savings	4,156,761	4,156,761	-0.40%
Business Incentive	11,185,216	11,185,216	0.00%
Custom Business	5,430,141	5,449,949	-0.36%
Economic Redevelopment	118,910	118,910	0.00%
Emerging Technology	10,027	0	100%
Retro-Commissioning	739,312	1,059,684	-30.23%
Small Business Direct Install	2,855,341	2,855,341	0.00%
Business New Construction	304,131	304,131	0.00%
Portfolio Total	37,664,113	37,993,266	-0.87%

Table 3-5. Portfolio Years 1 through 3 Ex Ante Gross Savings Estimates by Program

Program/Path	Navigant Recorded Ex Ante Gross (Therms)	Final Corrected Ex Ante Gross (Therms)	Difference
Heating and Appliance Incentive	9,374,737	9,374,737	0.00%
Energy Saving Kits	1,828,371	1,828,371	0.00%
Single Family Retrofit	755,380	775,440	-2.59%
Multi-Family Retrofit	6,628,248	6,628,248	0.00%
New Construction	498,557	498,557	0.00%
Elementary Energy Education	684,298	684,298	0.00%
Behavioral Energy Savings	4,168,716	4,168,716	0.00%
Business Incentive	16,241,904	16,224,213	0.11%
Custom Business	10,369,666	10,389,474	-0.19%
Economic Redevelopment	252,010	252,010	0.00%
Emerging Technology	18,761	5,142	264.86%
Retro-Commissioning	1,317,010	1,637,382	-19.57%
Small Business Direct Install	4,684,375	4,684,375	0.00%
Business New Construction	614,066	610,988	0.50%
Portfolio Total	57,436,099	57,761,951	-0.56%

3.2 Detailed Ex Post Savings Results

The following tables provide detailed ex post savings results by program by program year. Following the table, an Excel version is provided.

Table 3-6. GPY1 Ex Post Results Summary – Nicor Gas Specific w/o Electric Data from Joint Programs

	Realization Rate	Verified Ex Post Gross		Deemed/Used	Verified Ex Post Net				Actual	Participation		Weighted Average Measure Life
	Energy Savings (Ex Ante Gross/Ex Post Gross)	First Year Annual Energy Savings	Lifetime Savings	Net-to-Gross Ratio	First Year Annual Savings	Lifetime Savings	First Year Cost per First Year Annual Savings	First Year Cost per Lifetime Savings	Program Costs	# Units	Units Definition	Years
	%	Therms	Therms	%	Therms	Therms	\$/Therms	\$/Therms	\$			
Residential Programs												
Heating and Appliance Rebate	100%	1,592,503	31,845,423	69%	1,098,827	21,973,340	\$ 4.16	\$ 0.21	\$ 4,570,397	10,328		20.0
Single Family Retrofit	105%	109,380	2,126,081	86%	94,067	1,828,433	\$ 13.02	\$ 0.67	\$ 1,224,302	5,488		19.4
Multi-Family Retrofit	101%	997,875	8,711,953	96%	957,960	8,363,475	\$ 1.01	\$ 0.12	\$ 965,113	105,158		8.7
Elementary Energy Education	318%	109,222	982,998	79%	86,285	776,565	\$ 5.51	\$ 0.61	\$ 475,193	9,972	Kits	9.0
Total Residential	103%	2,808,980	41,362,157	80%	2,237,139	32,941,813	\$ 3.23	\$ 0.22	\$ 7,235,005			14.7
Business Programs												
Business Incentive	100%	1,742,478	12,342,961	73%	1,272,009	9,010,362	\$ 0.68	\$ 0.10	\$ 870,237	5,801		7.1
Custom Business	93%	1,510,285	34,736,555	53%	800,451	18,410,373	\$ 2.65	\$ 0.12	\$ 2,117,673	29	Projects	23.0
Economic Redevelopment	100%	893	13,395	80%	714	10,710	\$ 65.38	\$ 4.36	\$ 46,684	1	Projects	15.0
Retro-Commissioning	82%	147,838	739,190	102%	150,795	753,975	\$ 1.77	\$ 0.35	\$ 267,006	7	Projects	5.0
Small Business Direct Install	100%	109,353	888,966	100%	109,353	888,966	\$ 3.95	\$ 0.49	\$ 431,646	1,121		8.1
Business New Construction	84%	64,400	1,610,000	33%	21,252	531,300	\$ 4.11	\$ 0.16	\$ 87,360	7	Projects	25.0
Total Business	96%	3,575,247	44,954,050	66%	2,354,574	29,605,686	\$ 1.62	\$ 0.13	\$ 3,820,606			12.6
Portfolio Total	99%	6,384,227	86,316,208	72%	4,591,713	62,547,499	\$ 4.36	\$ 0.32	\$ 20,033,656			13.6

Table 3-7. GPY2 Ex Post Results Summary – Nicor Gas Specific w/o Electric Data from Joint Programs

	Realization Rate	Verified Ex Post Gross		Deemed/Used	Verified Ex Post Net				Actual	Participation		Weighted Average Measure Life
	Energy Savings (Ex Ante Gross/Ex Post Gross)	First Year Annual Energy Savings	Lifetime Savings	Net-to-Gross Ratio	First Year Annual Savings	Lifetime Savings	First Year Cost per First Year Annual Savings	First Year Cost per Lifetime Savings	Program Costs	# Units	Units Definition	Years
	%	Therms	Therms	%	Therms	Therms	\$/Therms	\$/Therms	\$			
Residential Programs												
Heating and Appliance Rebate	100%	2,858,644	53,874,048	69%	1,972,464	37,173,087	\$ 4.31	\$ 0.23	\$ 8,505,333	22,237		18.8
Single Family Retrofit	100%	273,900	5,242,013	86%	235,554	4,508,132	\$ 8.44	\$ 0.44	\$ 1,988,119	11,831		19.1
Multi-Family Retrofit	100%	628,071	5,691,923	96%	602,948	5,464,245	\$ 2.17	\$ 0.24	\$ 1,310,513	72,846		9.1
New Construction	91%	220,300	5,507,500	80%	176,240	4,406,000	\$ 4.42	\$ 0.18	\$ 778,570	424	Projects	25.0
Elementary Energy Education	151%	327,689	2,949,201	79%	258,874	2,329,866	\$ 2.15	\$ 0.24	\$ 557,430	15,005	Kits	9.0
Behavioral Energy Savings	173%	20,722	20,722	100%	20,722	20,722	\$ 43.80	\$ 43.80	\$ 907,521	863	Participants	1.0
Total Residential	103%	4,329,326	71,433,638	75%	3,266,802	53,902,051	\$ 4.30	\$ 0.26	\$ 14,047,486			16.5
Business Programs												
Business Incentive	100%	3,296,623	23,433,851	73%	2,406,535	17,106,712	\$ 1.05	\$ 0.15	\$ 2,519,888	3,099		7.1
Custom Business	129%	4,263,751	93,237,590	72%	3,069,901	67,131,071	\$ 1.29	\$ 0.06	\$ 3,967,888	74	Projects	21.9
Economic Redevelopment	85%	112,363	1,685,445	70%	78,654	1,179,810	\$ 10.23	\$ 0.68	\$ 804,649	15	Projects	15.0
Retro-Commissioning	101%	403,126	2,015,630	102%	411,189	2,055,945	\$ 1.64	\$ 0.33	\$ 675,470	26	Projects	5.0
Small Business Direct Install	125%	2,143,013	14,216,242	100%	2,143,013	14,216,242	\$ 1.00	\$ 0.15	\$ 2,143,744	9,897		6.6
Business New Construction	131%	301,717	7,542,925	52%	156,893	3,922,325	\$ 1.74	\$ 0.07	\$ 272,358	43	Projects	25.0
Total Business	116%	10,520,593	134,415,329	79%	8,266,185	105,612,105	\$ 1.26	\$ 0.10	\$ 10,383,997			12.8
Portfolio Total	112%	14,849,919	205,848,967	78%	11,532,987	159,514,157	\$ 3.07	\$ 0.22	\$ 35,376,675			13.8

Table 3-8. GPY3 Ex Post Results Summary – Nicor Gas Specific w/o Electric Data from Joint Programs

	Realization Rate	Verified Ex Post Gross		Deemed/Used	Verified Ex Post Net				Actual	Participation		Weighted Average Measure Life
	Energy Savings (Ex Ante Gross/Ex Post Gross)	First Year Annual Energy Savings	Lifetime Savings	Net-to-Gross Ratio	First Year Annual Savings	Lifetime Savings	First Year Cost per First Year Annual Savings	First Year Cost per Lifetime Savings	Program Costs	# Units	Units Definition	Years
	%	Therms	Therms	%	Therms	Therms	\$/Therms	\$/Therms	\$			
Residential Programs												
Heating and Appliance Rebate	100%	4,948,725	86,632,202	79%	3,909,493	68,439,444	\$ 2.65	\$ 0.18	\$ 15,754,905	43,606	Measures/Units	17.5
Energy Saving Kits	132%	2,421,471	24,214,710	84%	2,034,036	20,340,360				110,458	Kits	10.0
Single Family Retrofit	100%	395,276	8,882,380	86%	339,937	7,638,839	\$ 8.87	\$ 0.39	\$ 3,015,649	9,442	Measures/Units	22.5
Multi-Family Retrofit	100%	5,037,829	66,999,201	94%	4,735,559	62,979,246	\$ 2.86	\$ 0.22	\$ 13,556,312	100,220	Measures/Units	13.3
New Construction	91%	232,557	5,813,925	80%	186,046	4,651,150	\$ 7.34	\$ 0.29	\$ 1,365,668	931	Projects	25.0
Elementary Energy Education	100%	432,549	3,892,941	79%	341,714	3,075,426	\$ 3.17	\$ 0.35	\$ 1,084,391	31,168	Kits	9.0
Behavioral Energy Savings	99%	4,111,100	4,111,100	100%	4,111,100	4,111,100	\$ 0.57	\$ 0.57	\$ 2,344,191	353,008	Participants	1.0
Total Residential	103%	17,579,507	200,546,460	89%	15,657,885	171,235,565	\$ 2.37	\$ 0.22	\$ 37,121,115			10.9
Business Programs												
Business Incentive	99%	11,115,153	71,139,894	83%	9,225,577	59,046,112	\$ 0.54	\$ 0.09	\$ 5,027,023	9,345	Measures/Units	6.4
Custom Business	107%	5,823,776	110,577,245	73%	4,251,356	80,721,380	\$ 2.62	\$ 0.14	\$ 11,129,852	168	Projects	19.0
Economic Redevelopment	71%	84,889	1,273,335	70%	59,422	891,330	\$ 2.90	\$ 0.19	\$ 172,444	13	Projects	15.0
Retro-Commissioning	91%	966,274	4,831,370	102%	985,599	4,927,995	\$ 1.29	\$ 0.26	\$ 1,270,419	35	Projects	5.0
Small Business Direct Install	97%	2,780,216	19,786,751	100%	2,780,216	19,786,751	\$ 1.35	\$ 0.19	\$ 3,742,656	30,790	Measures/Units	7.1
Business New Construction	81%	246,850	6,171,250	52%	128,362	3,209,050	\$ 4.37	\$ 0.17	\$ 560,981	35	Projects	25.0
Total Business	100%	21,017,158	213,779,844	83%	17,430,532	168,582,617	\$ 1.26	\$ 0.13	\$ 21,903,375			9.7
Portfolio Total	102%	38,596,665	414,326,304	86%	33,088,417	339,818,182	\$ 2.10	\$ 0.20	\$ 69,441,453			10.3



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3.3 TRC Benefit Cost Results for Jointly Implemented Programs

Several of the energy efficiency programs implemented by Commonwealth Edison (ComEd), Nicor Gas, Peoples Gas, and North Shore Gas are “joint” programs such that they are designed and operated jointly by ComEd and one or more of the gas utilities for customers who are served both by ComEd (electric service) and Nicor Gas, Peoples Gas, or North Shore Gas (gas service). The intent of the joint programs is to gain efficiencies in the marketing and operations of the programs for the joint customer participants from what would occur if each utility marketed and operated its own program. For each joint program, the utilities involve a common implementation contractor. In total, there are seven jointly implemented programs. **While ComEd’s numbers are not yet final, Navigant’s analysis to date shows that when the jointly implemented programs are viewed in the aggregate, each program was cost-effective over the three-year period based on both the IL TRC test and the UCT.** Table 3-9 lists the seven programs jointly implemented by ComEd and the gas utilities, and indicates which gas utilities jointly implemented the programs in which program years.

Table 3-9. Summary of Jointly Implemented Programs and Timing

Program	Peoples Gas / North Shore Gas			Nicor Gas		
	EPY4 / GPY1	EPY5 / GPY2	EPY6 / GPY3	EPY4 / GPY1	EPY5 / GPY2	EPY6 / GPY3
	Home Energy Savings / Single Family Retrofit			X	X	X
Multi-Family Retrofit	X	X	X	X	X	X
Elementary Energy Education				X	X	X
Residential New Construction				X	X	X
C&I Retrocommissioning	X	X	X	X	X	X
C&I New Construction				X	X	X
Small Business Direct Install / Efficiency	X	X	X	X	X	

Source: Navigant researched data

A summary of the components of the joint cost effectiveness calculations for each joint program are shown in Table 3-10 for the Illinois TRC calculations and Table 3-11 for the Utility Cost Test calculations. The tables include the value of each benefit and cost component for each program, when aggregated across all utilities that were involved in its joint implementation. For the IL TRC, the TRC ratio for the individual programs ranged from 1.68 for C&I Retro-Commissioning to 4.24 for C&I New Construction. For the UCT, the results ranged from 1.38 for Home Energy Savings / Single Family Retrofit to 3.08 for C&I New Construction. As numbers for ComEd are not final, these results are preliminary.

Table 3-10. Summary of Program Level Benefits, Costs (\$ in 000's) and IL TRC Test – Jointly Implemented Programs⁵

Program	Benefits								Costs						IL Total Resource Cost (TRC) Test			
	Avoided Electric Production	Avoided Electric Capacity	Avoided Electric T&D	Avoided Ancillary	Avoided Gas Production	Avoided Gas Capacity	Other Benefits	Other Benefits	Non-Incentive Costs (Electric)	Non-Incentive Costs (Gas)	Incentive Costs (Electric)	Incentive Costs (Gas)	Net Incremental Costs (Electric)	Net Incremental Costs (Gas)	IL TRC Benefits	IL TRC Costs	IL TRC Test Net Benefits	IL TRC Test
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	Description	(i)	(j)	(k)	(l)	(m)	(n)	(o) = (b+c+d+e+f+g+h)	(p) = (i+j+k+l+m+n)	(q) = (o-p)	(r) = (o/p)
Home Energy Savings / Single Family Retrofit	\$ 1,175,853	\$ 1,450,043	\$ 952,332	\$ 270,032	\$ 7,333,180	\$ 803,928	\$ 1,092,420	GHG / Environmental Benefits	\$ 1,565,878	\$ 2,495,877	\$ 996,856	\$ 3,642,295	\$ 1,815,297	\$ 1,129,156	\$ 13,077,788	\$ 7,006,208	\$ 6,071,579	1.87
Multifamily	\$ 6,760,248	\$ 1,035,848	\$ 567,978	\$ 926,694	\$ 83,416,090	\$ 8,983,137	\$ 9,621,908	GHG / Environmental Benefits	\$ 3,375,618	\$ 8,299,950	\$ 5,094,767	\$ 19,759,360	\$ 1,623,699	\$ 20,881,315	\$ 111,311,904	\$ 34,180,582	\$ 77,131,322	3.26
Elementary Energy Education	\$ 1,209,000	\$ 209,537	\$ 124,784	\$ 223,658	\$ 3,488,639	\$ 387,627	\$ 1,041,960	GHG / Environmental Benefits	\$ 1,050,991	\$ 303,896	\$ 211,617	\$ 1,787,683	\$ 171,775	\$ 1,412,064	\$ 6,685,205	\$ 2,938,726	\$ 3,746,478	2.27
Res New Construction	\$ 269,808	\$ 135,477	\$ 91,225	\$ 60,913	\$ 3,780,487	\$ 420,054	\$ 826,160	GHG / Environmental Benefits	\$ 93,840	\$ 793,329	\$ 46,699	\$ 1,240,200	\$ 84,810	\$ 1,975,452	\$ 5,584,123	\$ 2,947,432	\$ 2,636,691	1.89
C&I Retrocommissioning	\$ 14,350,917	\$ 414,186	\$ 735,731	\$ 794,319	\$ 9,263,602	\$ 1,002,355	\$ 4,923,461	GHG / Environmental Benefits	\$ 4,412,640	\$ 1,090,705	\$ 7,053,106	\$ 3,188,949	\$ 9,748,489	\$ 3,507,586	\$ 31,484,571	\$ 18,759,421	\$ 12,725,150	1.68
C&I New Construction	\$ 24,357,863	\$ 3,756,282	\$ 6,558,377	\$ 1,145,666	\$ 2,625,391	\$ 291,710	\$ 6,658,654	GHG / Environmental Benefits	\$ 4,728,092	\$ 278,864	\$ 6,950,253	\$ 607,593	\$ 4,771,801	\$ 936,477	\$ 45,393,943	\$ 10,715,234	\$ 34,678,709	4.24
Small Business Direct Install / Efficiency	\$ 31,193,942	\$ 8,665,482	\$ 5,213,139	\$ 7,346,248	\$ 9,984,955	\$ 1,965,045	\$ 9,760,926	GHG / Environmental Benefits	\$ 6,901,054	\$ 2,243,052	\$ 14,590,730	\$ 3,312,580	\$ 16,717,772	\$ 2,852,589	\$ 74,129,737	\$ 28,714,466	\$ 45,415,271	2.58

Note: In some instances, incremental costs for gas utilities have been altered from those utilized in the utility-specific cost-benefit calculations to prevent double counting of incremental costs when performing the joint calculations. Examples of this included thermostat measures and Elementary Energy Education kits. Additionally, for some programs including Single Family Retrofit, Multi-Family Retrofit, and Small Business Direct Install, Navigant did not have sufficient information from all utilities and all program years to ensure that costs associated with energy assessments, direct install labor and materials were treated consistently. In these cases, there is some uncertainty as to how these costs are distributed among cost categories within the joint TRC analysis.

Source: Navigant analysis

⁵ As numbers from ComEd are not final, these results are preliminary.

Table 3-11. Summary of Program Level Benefits, Costs (\$ in 000's) and Utility Cost Test – Jointly Implemented Programs⁶

Program	Benefits								Costs						Utility Cost Test (UCT), All Utilities Combined			
	Avoided Electric Production	Avoided Electric Capacity	Avoided Electric T&D	Avoided Ancillary	Avoided Gas Production	Avoided Gas Capacity	Other Benefits	Other Benefits	Non-Incentive Costs (Electric)	Non-Incentive Costs (Gas)	Incentive Costs (Electric)	Incentive Costs (Gas)	Net Incremental Costs (Electric)	Net Incremental Costs (Gas)	UCT Benefits	UCT Costs	UCT Test Net Benefits	UCT Test
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	Description	(i)	(j)	(k)	(l)	(m)	(n)	(o) = (b+c+d+e+f+g)	(p) = (i+j+k+l)	(q) = (o-p)	(r) = (o/p)
Home Energy Savings / Single Family Retrofit	\$ 1,175,853	\$ 1,450,043	\$ 952,332	\$ 270,032	\$ 7,333,180	\$ 803,928	\$ 1,092,420	GHG / Environmental Benefits	\$ 1,565,878	\$ 2,495,877	\$ 996,856	\$ 3,642,295	\$ 1,815,297	\$ 1,129,156	\$ 11,985,368	\$ 8,700,905	\$ 3,284,463	1.38
Multifamily	\$ 6,760,248	\$ 1,035,848	\$ 567,978	\$ 926,694	\$ 83,416,090	\$ 8,983,137	\$ 9,621,908	GHG / Environmental Benefits	\$ 3,375,618	\$ 8,299,950	\$ 5,094,767	\$ 19,759,360	\$ 1,623,699	\$ 20,881,315	\$ 101,689,995	\$ 36,529,694	\$ 65,160,301	2.78
Elementary Energy Education	\$ 1,209,000	\$ 209,537	\$ 124,784	\$ 223,658	\$ 3,488,639	\$ 387,627	\$ 1,041,960	GHG / Environmental Benefits	\$ 1,050,991	\$ 303,896	\$ 211,617	\$ 1,787,683	\$ 171,775	\$ 1,412,064	\$ 5,643,244	\$ 3,354,187	\$ 2,289,057	1.68
Res New Construction	\$ 269,808	\$ 135,477	\$ 91,225	\$ 60,913	\$ 3,780,487	\$ 420,054	\$ 826,160	GHG / Environmental Benefits	\$ 93,840	\$ 793,329	\$ 46,699	\$ 1,240,200	\$ 84,810	\$ 1,975,452	\$ 4,757,963	\$ 2,174,068	\$ 2,583,895	2.19
C&I Retrocommissioning	\$ 14,350,917	\$ 414,186	\$ 735,731	\$ 794,319	\$ 9,263,602	\$ 1,002,355	\$ 4,923,461	GHG / Environmental Benefits	\$ 4,412,640	\$ 1,090,705	\$ 7,053,106	\$ 3,188,949	\$ 9,748,489	\$ 3,507,586	\$ 26,561,110	\$ 15,745,400	\$ 10,815,710	1.69
C&I New Construction	\$ 24,357,863	\$ 3,756,282	\$ 6,558,377	\$ 1,145,666	\$ 2,625,391	\$ 291,710	\$ 6,658,654	GHG / Environmental Benefits	\$ 4,728,092	\$ 278,864	\$ 6,950,253	\$ 607,593	\$ 4,771,801	\$ 936,477	\$ 38,735,289	\$ 12,564,802	\$ 26,170,487	3.08
Small Business Direct Install / Efficiency	\$ 31,193,942	\$ 8,665,482	\$ 5,213,139	\$ 7,346,248	\$ 9,984,955	\$ 1,965,045	\$ 9,760,926	GHG / Environmental Benefits	\$ 6,901,054	\$ 2,243,052	\$ 14,590,730	\$ 3,312,580	\$ 16,717,772	\$ 2,852,589	\$ 64,368,810	\$ 27,047,415	\$ 37,321,395	2.38

Note: In some instances, incremental costs for gas utilities have been altered from those utilized in the utility-specific cost-benefit calculations to prevent double counting of incremental costs when performing the joint calculations. Examples of this included thermostat measures and Elementary Energy Education kits. Additionally, for some programs including Single Family Retrofit, Multi-Family Retrofit, and Small Business Direct Install, Navigant did not have sufficient information from all utilities and all program years to ensure that costs associated with energy assessments, direct install labor and materials were treated consistently. In these cases, there is some uncertainty as to how these costs are distributed among cost categories within the joint TRC analysis.

Source: Navigant analysis

⁶ As numbers from ComEd are not final, these results are preliminary.

With respect to the program specific data used in TRC calculation, several were based on each utility's internal tracking and accounting systems. These include implementation, utility administration and utility incentive costs. Implementation and incentives costs are tracked by program, where each utility admin costs were provided by the respective utility energy efficiency staff. Utility costs for implementing the programs were split between the utilities based on an agreed percentage. For this joint benefit cost analysis, the costs, while split between ComEd, Nicor Gas, Peoples Gas, and North Shore Gas, represent the total costs for implementing the program. As numbers from ComEd are not final, these results are preliminary.

The remaining data points that were reviewed in compiling the joint cost effectiveness calculations are incremental costs and the value of avoided greenhouse gas (GHG) emissions. Incremental costs are the costs associated with participating in the program, before accounting for any incentives. For most of the measures included in the joint programs, the claimed savings are all gas or all electric. In these instances, there is no risk of incremental costs being double counted. However, for a handful of measures that frequently generate both electric and gas savings (e.g. programmable thermostats, envelope measures, whole building projects), Navigant reviewed the input data to ensure that any incremental are included only once in the joint cost-effectiveness calculations. For some programs, including Single Family Retrofit, Multi-Family Retrofit, and Small Business Direct Install, Navigant did not have sufficient information from all utilities and all program years to ensure that the costs associated with energy assessments, direct install labor and materials were treated consistently. In these cases, there is some uncertainty as to how these costs are distributed among cost categories within the joint TRC analysis. Navigant also made an effort to harmonize the value of avoided GHG emissions included in the joint program benefits at a value of approximate \$27.50 per ton of avoided CO₂.