

Program Name	Business Energy Efficiency Rebate Program
<p>communities that support and increase their engagement in these programs. These business programs rely heavily on the market actors to promote and deliver the program to Nicor Gas' end-use customers. The program builds upon the strong relationships that have developed since the pilot year (Rider 29) and there is continued focus on monitoring of the market and market responses to outreach efforts. Enhancements to the strategy are made as needed. Not only is this monitoring process critical to the success of the program but it also augments quality assurance and ensures a clear, concise message to the market.</p> <p><b><u>Mid-Stream and Up-Stream Delivery Approaches –</u></b></p> <p>The program will evaluate midstream and upstream delivery channels for natural gas usage equipment in coordination with other regional stakeholders and utilities.</p>	
Marketing Strategy	
<p>The program will be marketed directly to business customers, business and facility owners, and property managers who use natural gas for space and water heating in their buildings. Nicor Gas proactively engages customers who use commercial kitchen equipment in their business (e.g. restaurants and institutional kitchens) and corresponding trade allies and professional organizations. Trade ally promotion will be conducted with equipment vendors, plumbing and heating installation contractors, and the manufacturers, distributors, and wholesalers who bring this equipment to market.</p>	
EM&V Requirements	
<p>Please See Section 4.4 for EM&amp;V details.</p>	

Program Name	Business Energy Efficiency Rebate Program			
Program Participation, Energy Savings, Budgets, Costs and Cost Effectiveness Results				
	PY4	PY5	PY6	Total
<b>PARTICIPATION</b>				
Total Units (Rebates)	2,005	1,885	1,596	5,486
<b>THERMS (in 1,000's)</b>				
Annual Gross Therms	1,884	1,678	1,421	4,983
Annual Net Therms	1,407	1,253	1,062	3,722
Lifecycle Gross Therms	15,077	13,632	11,709	40,417
Lifecycle Net Therms	11,262	10,183	8,746	30,192
<b>BUDGET (in \$1,000's)</b>				
Program Administration	\$1,118	\$1,102	\$1,075	\$3,296
Marketing	577	544	500	1,621
Incentives	607	572	511	1,689
Total	\$2,302	\$2,219	\$2,085	\$6,606
<b>\$ / Therm</b>				
\$ / Gross Therm	\$1.22	\$1.32	\$1.47	\$1.33
\$ / Net Therm	\$1.64	\$1.77	\$1.96	\$1.77
\$ / Lifecycle Gross Therm	\$0.15	\$0.16	\$0.18	\$0.16
\$ / Lifecycle Net Therm	\$0.20	\$0.22	\$0.24	\$0.22
<b>COST EFFECTIVENESS</b>				
TRC				2.37
PAC				2.99

Program Name	Business Custom Program
Program Objective	
<p>The purpose of the Business Custom (“Custom) Program is to assist medium to large commercial and industrial customers in identifying and implementing cost-effective gas energy efficiency measures that are not otherwise addressed in Nicor Gas’ BEER Program. Additionally, the Custom program will offer a Retro-Commissioning track, offering participants to low-cost tune-ups and adjustments to the operating systems, building controls, energy management systems and HVAC of existing buildings. The aim of the retro-commissioning track will be to optimize operation and improve their building efficiency by returning them to their intended operation or design specifications.</p>	
Program Description	
<p>The Custom component of the program provides incentives and technical assistance to assist with identification and implementation of energy efficiency retrofit opportunities not covered by other business energy efficiency programs. These projects involve unique or process-related equipment or multiple measures with interactive effects that are not well-suited for the prescriptive program. In this program, performance-based incentives are provided to customers working on larger-scale projects. Incentives are typically higher than prescriptive incentives and are based on an energy savings or engineering analysis. Technical assistance is provided to customers or their contractors to help quantify the energy savings opportunity and customize incentives for specific projects. The program also provides custom audits and engineering studies to assist customers in understanding their efficiency opportunities by quantifying the estimated project costs, energy savings, and forecasted incentives.</p> <p>The Retro-commissioning component of the program helps commercial and industrial customers identify and implement low and no-cost measures to improve efficiency of existing buildings. Services are delivered through a network of retro-commissioning service providers that have been trained in program protocols and processes. For smaller facilities, retro-commissioning providers conduct a targeted assessment of areas with substantial energy savings opportunities such as packaged HVAC units. Larger facilities are eligible to receive a more comprehensive assessment of building systems and controls. This program includes a strong customer education component to promote the value of retro-commissioning, targeting senior management decision makers as well as facility operations and maintenance staff. Such education is provided through program outreach and assessment activities, and is also supported through market conditioning efforts, such as Building Operator Certification (BOC) training.</p>	

Program Name	Business Custom Program
<b>Utility Coordination</b>	
<p>It is the intent of Nicor Gas to offer this program jointly or in collaboration with other regional electric and municipal utilities. There is a high potential for this program to benefit both gas and electric utility customers. The utilities will determine a framework for cost allocation based on savings/benefits to each utility's customers. The framework will be fair and equitable and will increase the cost effectiveness of the overall program for participating utilities and their customers.</p>	
<b>Target Market</b>	
<p>The program targets large commercial and industrial customers with more complex facilities that will benefit most from a custom and retro-commissioning offering during new equipment purchases, facility modernization and industrial process improvements. Specialized approaches will be developed for certain target industries.</p>	
<b>Program Duration</b>	
<p>June 2014 through May 2017</p>	
<b>Implementation and Delivery Strategy</b>	
<p>An implementation contractor selected through an RFP process will be responsible for implementing the program. The implementation strategy will expand on the efforts placed in programs under Rider 29 and Rider 30. Nicor Gas' implementation contractor(s) will provide assistance with the applications and conduct pre- and post-inspection visits on all larger projects to verify equipment installation and operation.</p>	
<b><u>Business Custom Component -</u></b>	
<p>The applicant will follow a multi-step application process using forms supplied specifically for the Custom Business Program. The customer must provide specific information, including site and measure data and estimated energy savings. The forms will be submitted to the implementation contractor for review and approval prior to equipment installation. The implementation contractor will review the application and may schedule an inspection of the existing equipment. Once approved, Nicor Gas will extend an Offer Agreement to the customer.</p>	
<p>The customer or customer's agent will submit an installation report after all project measures are installed, fully commissioned, and are fully operational. All invoices and cost documentation must be attached. The implementation contractor may schedule an inspection of the installation equipment prior to approval of incentive payment. The implementation contractor will review the project and may choose to inspect the equipment prior to granting approval of the incentive. The implementation contractor will calculate the final incentive payment based on the reported savings.</p>	

Program Name	Business Custom Program
<p>Nicor Gas' internal staff, as well as the implementation contractor, will drive participation to this program through outreach activities to prescreened customers. The implementation contractor will conduct outreach to key market influencers, such as trade associations; energy service companies (ESCOs), engineering firms, and architects. Outreach may be in the form of training seminars or educational strategies. Nicor Gas expects that some participation will come from cross referrals from other programs.</p> <p>Energy efficiency assessments or engineering studies may be performed by the implementation contractor or third-party engineering consultants. These studies will be subject to Nicor Gas pre-approval and quality review to ensure the accuracy of the savings and incentives calculations. Where appropriate, Nicor Gas and the partner electric utilities will coordinate their efforts to provide a more comprehensive (both gas and electric) assessment of the building opportunities for the customer and reduce the overall cost of the study.</p> <p><b><u>Retro-commissioning Component -</u></b></p> <p>The implementation contractor will oversee activities conducted by participating commissioning providers, review studies and provide independent evaluation of savings estimates, and provide post-installation verification. Key elements of program implementation include:</p> <ul style="list-style-type: none"><li>• Customer recruitment and application pre-screening to determine if the project qualifies under the program criteria;</li><li>• Initial project assessment: The implementation contractor and selected retro-commissioning service provider meets with the customer to determine if sufficient potential savings exist to merit participation;</li><li>• Formal agreement: In this agreement, the customer commits to spend a certain amount to implement a bundle of measures such that the complete project has a pre-specified payback and the project must be completed in a pre-specified time limit.</li><li>• Retro-commissioning study: The commissioning provider will conduct an in-depth analysis of the measures selected by the customer to generate the Diagnostic and Calculation Report.</li><li>• Implementation: The customer implements the measures according to the report. Nicor Gas does not provide an incentive to assist with implementation costs.</li></ul> <p>Measurement and Verification (M&amp;V): The retro-commissioning implementation contractor or an evaluation contractor will return to the project site to verify savings. If measures are not implemented in accordance with the agreement, the customer will be responsible for repayment of all study costs and incentives received.</p> <p><b><u>New Offerings in Next Program Cycle -</u></b> Pursuant to Public Act 98-0090 modifications to Section 8-104(b) which expanded the definition of energy efficiency to include projects that reduce the total BTU's of electricity and natural gas needed to meet the end use or uses, Nicor Gas will consider offering incentives for related projects installing equipment such as Combined Heat and Power (CHP) systems.</p>	

Program Name	Business Custom Program
<b>Marketing Strategy</b>	
<p>The custom component of program marketing strategy will include direct outreach to large customers and key trade allies as the primary marketing approach for this program. This will be accomplished through Nicor Gas and implementation contractor staff, direct mail, trainings, presentations, participation in events such as industry trade shows, chamber meetings, technology seminars, and trade conferences. Communications and outreach will also occur through channel partners such as manufacturers, distributors, engineers and architects.</p> <p>For the market sector targeting effort, Nicor Gas will build relationships with those targeted industries' key market actors to broaden program outreach and education. Strategic alliances with industry associations and other market influencers will provide Nicor Gas with the opportunity to leverage these relationships to reach a large subset of the market with lower marketing cost. Marketing materials, webinars and web coverage will bring together all relevant Nicor Gas programs and tailor the message to the specific industry audience. Nicor Gas will develop case studies to showcase a variety of projects.</p> <p>The retro-commissioning outreach strategy will include:</p> <ul style="list-style-type: none"><li>• Customer marketing: In direct marketing efforts, Nicor Gas will target large customers and owners/operators of multiple buildings through direct mail and personal contact. Nicor Gas will also conduct outreach to the Building Owners and Managers Association (BOMA), large real estate management companies and other business associations and pursue opportunities to provide training and educational materials at trade shows and other association events.</li><li>• Trade ally marketing: Outreach and training will be provided for retro-commissioning providers, industry professionals and energy services companies that have business motivations for promoting retro-commissioning services to their customers.</li><li>• Cooperative marketing: Nicor Gas will seek to leverage trade ally advertising by pursuing cooperative marketing opportunities.</li></ul>	

Program Name	Business Custom Program			
<b>EM&amp;V Requirements</b>				
Please See Section 4.4 for EM&V details.				
<b>Program Participation, Energy Savings, Budgets, Costs and Cost Effectiveness Results</b>				
	PY4	PY5	PY6	Total
<b>PARTICIPATION</b>				
Total Projects	105	91	78	274
<b>THERMS (in 1,000's)</b>				
Annual Gross Therms	3,677	3,176	2,710	9,562
Annual Net Therms	1,844	1,605	1,383	4,832
Lifecycle Gross Therms	53,099	45,583	38,604	137,286
Lifecycle Net Therms	25,780	22,195	18,866	66,841
<b>BUDGET (in \$1,000's)</b>				
Program Administration	\$1,215	\$1,201	\$1,189	\$3,606
Marketing	542	493	447	1,483
Incentives	<u>3,930</u>	<u>3,388</u>	<u>2,897</u>	<u>10,214</u>
Total	\$5,687	\$5,082	\$4,533	\$15,302
<b>\$ / Therm</b>				
\$ / Gross Therm	\$1.55	\$1.60	\$1.67	\$1.60
\$ / Net Therm	\$3.08	\$3.17	\$3.28	\$3.17
\$ / Lifecycle Gross Therm	\$0.11	\$0.11	\$0.12	\$0.11
\$ / Lifecycle Net Therm	\$0.22	\$0.23	\$0.24	\$0.23
<b>COST EFFECTIVENESS</b>				
TRC				1.72
PAC				3.47

<b>Program Name</b>	<b>Small Business Energy Efficiency Program</b>
<b>Program Objective</b>	
<p>The Small Business Energy Efficiency Program (“SBEEP”) objective is to obtain long term natural gas energy savings from small business gas customers with cost-effective energy efficiency retrofit services and financial incentives to influence the installation of gas energy efficiency equipment.</p>	
<b>Program Description</b>	
<p>This program will provide small commercial gas customers with turn-key installation services and incentives to replace older, inefficient equipment and increase the overall efficiency of buildings. Unlike large commercial businesses that have access to greater technical and financial resources, the small business sector has limited access to specialized resources to undertake energy efficiency projects. Small businesses generally benefit from a turn-key and direct install approach where a single contractor conducts an audit to identify appropriate gas measures and also installs those measures. Where appropriate, Nicor Gas will make financing options available.</p>	
<b>Utility Coordination</b>	
<p>It is the intent of Nicor Gas to offer this program jointly or in collaboration with other regional electric and municipal utilities. There is a high potential for this program to benefit both gas and electric utility customers. The utilities will determine a framework for cost allocation based on savings/benefits to each utility’s customers. The framework will be fair and equitable and will increase the cost effectiveness of the overall program for participating utilities and their customers.</p>	
<b>Target Market</b>	
<p>The target market for this program is those Nicor Gas business commercial/industrial customers using up to 60,000 therms of gas annually.</p>	
<b>Program Duration</b>	
<p>June 2014 through May 2017</p>	
<b>Implementation and Delivery Strategy</b>	
<p>An implementation contractor selected through an RFP process will be responsible for implementing the program. The selected vendor will contract with individual installation vendors and trade allies located regionally to conduct outreach to customers and provide turn-key installations. The overall delivery strategy is:</p> <ul style="list-style-type: none"><li>• Marketing plan and implementation tactics focused on reaching and educating the small business customer.</li><li>• A simple-to-follow and streamlined process to performing energy assessments and equipment upgrades, retrofits and tune-ups designed to target known small business market barriers.</li></ul>	

Program Name	Small Business Energy Efficiency Program
<ul style="list-style-type: none"><li>• Project facilitation supported by an experienced, well-educated, and motivated team of trade allies and engineers to ensure recommended energy efficiency projects are completed and installed correctly.</li><li>• Knowledgeable and accessible customer support and marketing staff capable of directly addressing customer and trade ally inquiries, and escalating and directing other inquiries as necessary.</li></ul> <p>Cost effective quality assurance and verification activities to ensure installed savings are realized.</p>	
Marketing Strategy	
<p>Several communication strategies will be employed to enroll customers. Implementation contractors will be responsible for the primary communications. Efforts will include: targeted marketing by mail and phone, outreach to key influencers such as Chambers of Commerce and neighborhood and regional trade associations, outreach to targeted economic development organizations, and follow-up on referrals by Nicor Gas' internal staff. Trade allies, manufactures and suppliers of equipment, and other industry stakeholders who can play a role in communicating the program benefits to customers will be educated about the program purpose, requirements, and incentives.</p>	

Program Name		Small Business Energy Efficiency Program		
EM&V Requirements				
Please See Section 4.4 for EM&V details.				
Program Participation, Energy Savings, Budgets, Costs and Cost Effectiveness Results				
	PY4	PY5	PY6	Total
PARTICIPATION				
Total Businesses	468	405	341	1,214
Total Units (Rebates)	3,103	2,683	2,265	8,051
THERMS (in 1,000's)				
Annual Gross Therms	661	572	484	1,718
Annual Net Therms	595	515	436	1,546
Lifecycle Gross Therms	4,661	4,042	3,434	12,136
Lifecycle Net Therms	4,195	3,637	3,090	10,923
BUDGET (in \$1,000's)				
Program Administration	\$671	\$674	\$676	\$2,021
Marketing	197	193	188	578
Incentives	1,055	914	775	2,744
Total	\$1,923	\$1,780	\$1,639	\$5,342
\$ / Therm				
\$ / Gross Therm	\$2.91	\$3.11	\$3.38	\$3.11
\$ / Net Therm	\$3.23	\$3.46	\$3.76	\$3.46
\$ / Lifecycle Gross Therm	\$0.41	\$0.44	\$0.48	\$0.44
\$ / Lifecycle Net Therm	\$0.46	\$0.49	\$0.53	\$0.49
COST EFFECTIVENESS				
TRC				1.53
PAC				1.38

<b>Program Name</b>	<b>Business New Construction Program</b>
<b>Program Objective</b>	
<p>The objective of the Business New Construction (“BNC”) Program is to obtain energy savings during the design and construction of new buildings, major renovations of existing buildings, and tenant build-outs in the commercial and industrial market. Through collaboration with other Illinois utilities, a comprehensive regional new construction program is being provided that captures both gas and electric savings. In addition, a code compliance support component of program will educate and train building code officials to obtain energy savings through existing building code compliance.</p>	
<b>Program Description</b>	
<p>There are two components of the program, the BNC and Code Compliance Support.</p> <p>The BNC component of the program promotes energy efficiency through a comprehensive effort to influence building design practices. To secure efficiency opportunities in new construction projects, it is necessary to overcome barriers such as design community resistance to adopting new ideas, increased first cost for efficient options, and the common practice of designing for worst-case conditions rather than efficiency over the range of expected operating conditions. The program works to overcome these barriers through education and outreach to building owners, design professionals, building contractors and other trade allies, as well as design assistance, and technical assistance. Participants in this program will also receive support for their efforts to obtain Leadership in Energy and Environmental Design (LEED), Green Globes, or other green building certification, and financial incentives for efficient designs and measure implementation.</p> <p>A key element for program success is securing the involvement of the professional design community. To encourage participation of the design community and to offset the costs of considering multiple design options, a multi-tier incentive will be offered to the project design teams. The partnering utilities will develop a methodology to equitably split the cost of outreach to the design community.</p> <p>The focus of the Code Compliance Support program is to support the existing code compliance infrastructure with additional resources in promoting and ensuring energy code compliance. The program will establish statewide energy code compliance collaborative, provide support for administrative practice improvement, offer advanced energy code training and education, and implement a third-party energy code compliance system. To help cover the costs of participating in the third-party system, rebates will be available for builders or municipalities that utilize the services of energy code plan reviewers and inspectors trained through the program. The program will also establish an equipment leasing program for builders, develop compliance tools and materials for use by all stakeholder groups and expand on a currently ongoing jurisdictional assistance program. The initial phase of the program, PY4, will prove out the efficacy of the core concepts to be followed by a full program launch in PY5. The program will provide commercial contractors, builders, designers, code officials and related trade allies with the education and training, tools and materials, and code enforcement support needed to improve energy code compliance.</p>	

<b>Program Name</b>	<b>Business New Construction Program</b>
<b>Utility Coordination</b>	
<p>It is the intent of Nicor Gas to offer this program jointly or in collaboration with other regional electric and gas utilities, DCEO and other regional stakeholders. There is a high potential for this program to benefit both gas and electric utility customers. The utilities and other partner administrators will determine a framework for cost allocation based on savings/benefits to each utility's customers. The framework will be fair and equitable and will increase the cost effectiveness of the overall program for participating utilities and their customers.</p>	
<b>Target Market</b>	
<p>The target market for business new construction component includes nonresidential customers with new construction, major renovation, or tenant build-out projects in the planning or design process. Architectural and engineering design firms will also be targeted.</p> <p>Whereas, for the code compliance support component will serve occupants of newly constructed commercial buildings by 1) targeting commercial builders, design professionals, and code officials to promote increased compliance with the energy code and 2) providing support to the existing code enforcement infrastructure.</p>	
<b>Program Duration</b>	
June 2014 through May 2017.	
<b>Implementation and Delivery Strategy</b>	
<p>An implementation contractor (or contractors) selected through an RFP process will implement the program components.</p> <p><b><u>Business New Construction Component Delivery Strategy</u></b></p> <p>The selected contractor(s) will be responsible for overall implementation of the key elements of the New Construction program that includes -</p> <ul style="list-style-type: none"><li>- Design/ construction trade ally outreach</li><li>- Customer recruitment</li><li>- Technical assistance and incentive commitment</li><li>- Solutions offerings and application submittal</li><li>- Project verification</li></ul> <p>Nicor Gas' account executives and EEP marketing group will help market the program and identify potential candidate customers for participation.</p> <p><b><u>Code Compliance Support Delivery Strategy</u></b></p> <p>This program component will address the primary market needs of inadequate resources and burdensome business processes for builder compliance and municipal inspection and approval. Certain concepts will be market-tested in Phase I (PY4). In Phase II (PY5-6), a full code compliance program will be launched that incorporates the results and findings of Phase I. Key elements of the implementation strategy include:</p>	

Program Name	Business New Construction Program
<p data-bbox="180 243 1443 348"><b>Phase I Program</b> (This phase will also include a separate study to independently determine market barriers and strategies for effectively increasing code compliance. This market study will cover all relevant stakeholders and inform Phase II program design.):</p> <ul data-bbox="240 348 1443 1766" style="list-style-type: none"><li data-bbox="240 348 1443 527">• <b>Compliance Collaborative</b> The collaborative brings together targeted stakeholders both to discuss the issues that hamper higher levels of code compliance and to find ways to overcome the identified obstacles. Providing a venue for stakeholders to collectively address energy code compliance issues will help promote a consistent statewide understanding and enforcement of energy code requirements.</li><li data-bbox="240 527 1443 831">• <b>Administrative Practice Improvement.</b> Existing processes for determining code compliance in the field and obtaining code official review and approval can be improved to increase compliance rates. Assistance can take many different forms such as helping to streamline the existing permit / inspection system, assisting in the adoption of software that processes permits and plan reviews more quickly, or establishing methods to allow quicker permits for specific items such as HVAC replacement. Under this program approximately 10-12 municipalities would receive administrative practice assistance each year. The above noted market study will be included as part of this program element.</li><li data-bbox="240 831 1443 978">• <b>Energy Code Training.</b> The energy code trainings provided by DCEO will continue to be offered as part of this program. DCEO currently provides energy code training to approximately 1,000 people per year. DCEO and the Utilities will also identify problem areas of code compliance and will offer specialized training to address these areas.</li><li data-bbox="240 978 1443 1325">• <b>Third-Party Program.</b> A widespread market limitation is the availability of time to perform municipal code inspections and approvals. A third party plan review and inspection program aims to train a robust, geographically diverse supply of individuals capable of providing energy code plan review and inspections services as a supplement to the existing code enforcement infrastructure. Third parties can reduce the burden on code officials with respect to enforcing the energy code. DCEO currently has a <u>residential</u> pilot program training and implementing this concept across Illinois' Utilities territories which will allow DCEO and the utilities to partner in the delivery and integration of these learning's into non-residential delivery of the 3<sup>rd</sup> party system in the next and upcoming program years.</li><li data-bbox="240 1325 1443 1766">• <b>Jurisdictional Assistance.</b> Jurisdiction Assistance consists of a group of highly-qualified individuals who will complement the work of Code Ambassadors by pro-actively reaching out to all building industry stakeholder groups on a regular basis. DCEO is currently delivering this concept by way of their Technical Assistance / Interpretation service which ensures one point of contact and consistent interpretations across the state. This program is simply an expansion of current work done by DCEO. People engaged in jurisdictional assistance will customize their resources to address specific issues or technical questions relevant to a given stakeholder group or project. Each individual involved in jurisdictional assistance will cover a specific territory and visit individual municipalities and /or design architect/project engineer offices on a roughly semi-annual basis. Two individuals will be trained and assigned territories as part of Phase I. One person will be assigned an urban/suburban area and one a more rural territory.</li></ul>	

Program Name	Business New Construction Program
<p><b>Phase II Program (in addition to the continuation of the above):</b></p> <ul style="list-style-type: none"><li>• <b>Advanced Training.</b> These are a series of tightly-focused advanced training sessions for participants in the construction process, from architects and engineers to plan reviewers to builders and inspectors. These trainings will include Role Based Training, Sector Based Training and Topic Based Training. These trainings will be conducted throughout the state and will be provided at a minimal cost to participants. Both DCEO &amp; IOU's can provide this training.</li><li>• <b>Tools and Materials.</b> The development of tools and materials such as fact sheets, checklists and guides will complement and support all the other code enhancement work being done as part of this program. Although these materials are initially being developed by the third Party Pilot Program for residential markets, it will be expanded to code compliance support in the non-residential market.</li><li>• <b>Third-Party Program.</b> The Third-Party program described in Phase I will be expanded to cover the entire state, incorporating lessons learned from the Phase I pilot.</li><li>• <b>Jurisdictional Assistance.</b> The Jurisdictional Assistance program described in Phase I will be expanded to cover the entire state. Eight additional individuals will be trained and assigned territories. Lessons learned in Phase I will be incorporated into the expanded program.</li></ul> <p><b><u>New Offerings in Next Program Cycle</u></b> - Pursuant to Public Act 98-0090 modifications to Section 8-104(b) which expanded the definition of energy efficiency to include projects that reduce the total BTU's of electricity and natural gas needed to meet the end use or uses, Nicor Gas will consider offering incentives for related projects installing equipment such as Combined Heat and Power (CHP) systems.</p>	
<b>Marketing Strategy</b>	
<p><b><u>BNC Marketing Strategy -</u></b></p> <p>The program will be marketed to building owners and managers and to design professionals, trade allies and contractors. Outreach to building owners and managers will be accomplished through media events for successful projects including grand openings and open houses, case studies, direct marketing, trade shows, and Nicor Gas account executive contact or EEP marketing contact.</p> <p>Marketing to the design professionals, trade allies and contractors will focus on securing involvement in projects early in the design phase. It will stress the value that bringing their customers a better building can have for their business. Targeted direct marketing, case studies, trade publications, trade shows, formal and informal presentations, lunch and learns and direct contact will all be employed. The program will be promoted through the website and Nicor Gas account executives or EEP marketing team will be trained and provided with program collateral.</p> <p><b><u>Code Compliance Support Marketing Strategy -</u></b></p> <p>The Commercial Building Codes Compliance marketing strategy will focus on improving the market's ability to cost-effectively comply with the 2012 Illinois Energy Conservation Code (or the most current version). This strategy will primarily focus on key decision-makers such as:</p>	

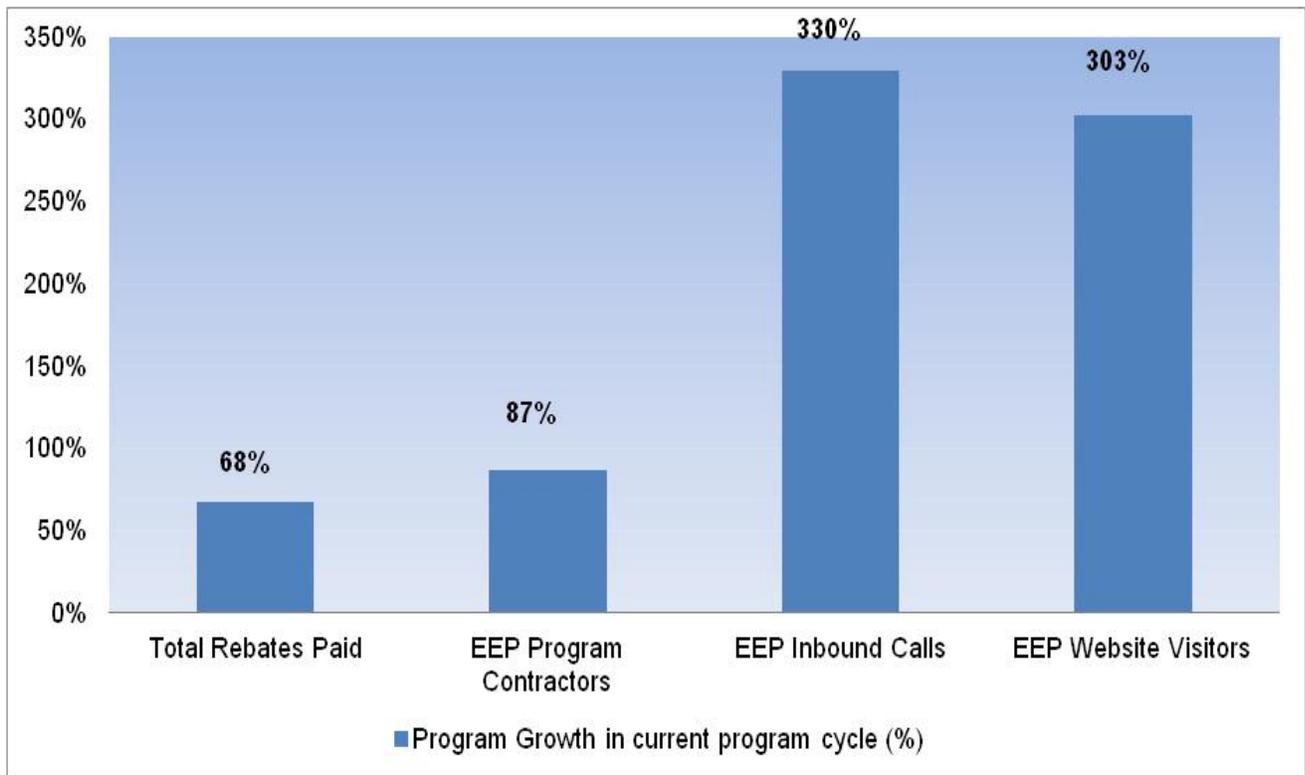
Program Name	Business New Construction Program			
municipal code officials, builders, designers, architects/engineers, contractors, and suppliers and will work through builder associations, lenders, realtors and appraisers.				
<u>Key messages</u>				
<ul style="list-style-type: none"> <li>• Complying with the energy efficiency building code is good business.</li> <li>• Improve the value of your building by ensuring compliance with the 2012 Illinois Energy Conservation Code (or most current version).</li> <li>• (Municipal Code Officials) Take advantage of these newly available resources to ensure code-compliant construction.</li> </ul>				
EM&V Requirements				
Please See Section 4.4 for EM&V details.				
Program Participation, Energy Savings, Budgets, Costs and Cost Effectiveness Results				
	PY4	PY5	PY6	Total
PARTICIPATION				
Total Square Feet	28,738,330	33,773,161	35,057,431	97,568,922
THERMS (in 1,000's)				
Annual Gross Therms	339	418	496	1,253
Annual Net Therms	199	276	352	827
Lifecycle Gross Therms	8,471	10,444	12,405	31,320
Lifecycle Net Therms	4,965	6,890	8,809	20,664
BUDGET (in \$1,000's)				
Program Administration	\$416	\$435	\$468	\$1,318
Marketing	8	7	7	22
<u>Incentives</u>	<u>372</u>	<u>451</u>	<u>510</u>	<u>1,333</u>
Total	\$795	\$893	\$985	\$2,673
\$ / Therm				
\$ / Gross Therm	\$2.35	\$2.14	\$1.99	\$2.13
\$ / Net Therm	\$4.00	\$3.24	\$2.80	\$3.23
\$ / Lifecycle Gross Therm	\$0.09	\$0.09	\$0.08	\$0.09
\$ / Lifecycle Net Therm	\$0.16	\$0.13	\$0.11	\$0.13
COST EFFECTIVENESS				
TRC				2.89
PAC				4.65

## 4 Portfolio Functions

### 4.1 Portfolio Administration

Consistent with the strategy developed during the initial three year plan, Nicor Gas has continued to evolve and grow internal core competencies to accommodate the ramp-up of the EEP over time. As program early adopters participate, and as the programs become more widespread geographically across the territory, more market actors are engaged. During the first three year plan, as of the filing of this plan, the EEP reached customers in 544 out of 646<sup>2</sup> communities in the Nicor Gas service territory. Total rebates paid increased by 68% in the current program cycle compared to Rider 29 programs. The number of participating contractors and trade allies engaged in the program increased by 87% from 2,456 to over 5,000. Customer contacts measured by inbound calls increased by over 330% and website traffic increased over 300% in current program cycle when compared to Rider 29 programs. Effectively, the EEP is maturing (Figure 7).

**Figure 7. Nicor Gas EEP Program Growth in First Program Cycle.**



With this expected and planned maturation, there is a need to reassign program management and administrative activities to the internal EEP team instead of outsourcing those activities to contractors which was necessary during the initial three year startup phase. There are certain activities that are core competencies that the EEP team plans to internalize in order to minimize costs and maximize customer, trade ally, and other market actor engagement for the next three

<sup>2</sup> [http://www.aglresources.com/about/distribution\\_nic.aspx](http://www.aglresources.com/about/distribution_nic.aspx)

year plan and beyond. The main activities include building core competency in trade ally management, planning and quality assurance, marketing, and customer care.

Initially, these activities were coordinated and performed by the Wisconsin Energy Conservation Corporation (“WECC”) and several implementation contractors. This strategy was effective during the time programs launched and ramped-up; however, as budgets decrease in the next three year portfolio and the program continues to mature, the program administration and strategy will need to adjust as well. The changes in the program management and administrative efforts outlined in this plan will meet the functional needs and objectives of the filed plan. Furthermore, the changes will allow Nicor Gas to develop these core competencies to carry the program well beyond the next three year horizon with less dependence on outside contractor expertise.

The first three year plan period revealed significant regulatory, policy and legal burdens yet to be resolved in Illinois, all of which exceeded initial expectations. Certainly, with gas programs in their infancy, and regulatory matters not fully developed in the state, the SAG process helped bring all stakeholders to the table in order to solve and build statewide consensus. While that process was needed, and resulted in some consensus, the effort proved to be slow and costly. The effort associated with regulatory filings and extensive negotiations of NTG ratios, the TRM, and program evaluations dominated the SAG discussion since the program launch in June 2011. As the programs continue to mature, reset at a fairly flat budget level, and settle into more of a steady-state policy and regulatory environment, the efforts associated with regulatory and policy issues should decrease over time. However, until that steady-state is achieved, additional burdens by all parties associated with energy efficiency in Illinois will continue to be incurred over the next three year plan period.

Conversely, collaboration and coordination among the utilities and DCEO, and many of the market actors through trade ally focus groups, emerging technology entrepreneurs and other partnerships has been a model of success. Through such collaborations, the EEP has leveraged savings associated with joint marketing, customer acquisition and program delivery. Joint and collaborative programs have allowed the EEP to engage with customers with a holistic offering that tries to address both gas and electric needs. Customers often do not look at just gas or electric use in isolation, but rather their entire energy consumption. Through these partnerships, Nicor Gas and ComEd have been leaders across the US in these efforts. Both utilities have been asked to present at conferences and share on this topic. In other jurisdictions, some regulatory bodies have required similar collaboration. However, since the launch of the very first programs during Rider 29, Nicor Gas has voluntarily reached out to our partners, including ComEd, Ameren, electric municipalities, non-government entities, and even our neighboring gas utilities and continues to coordinate offerings across northern Illinois to minimize administrative burdens and costs, while striving to create a streamlined and simple offering to our joint customers. While not perfect, these efforts continue to develop and will be an important evolution throughout the next three year plan to continue to deliver maximum benefits to our customers in an efficient way.

In order to continue to grow and mature along with the program, our customers, trade allies and other market actors, the entire “administration” of the portfolio will accomplish over the next three year portfolio:

- Delivery of 22,000,000 in therm savings and \$ 9,000,000<sup>3</sup> in reduced gas bills

<sup>3</sup> Assuming commodity price of Natural Gas at \$0.45 per therm.

- Engagement and participation with over 200,000 customers over three years
- Contract with approximately 8 implementation contractors offering 10 EE programs
- Provide jobs for over 300 IC full and part-time workers, the majority within the state of Illinois, helping plan, execute, engage and deploy the programs
- Assist more than 5,000 trade allies to understand, engage, and “sell” high efficient equipment and services incentivized through the program
- Oversee and direct the \$93,000,000 portfolio with 38 full time Illinois jobs that otherwise would not exist without the EEP

## Organizational Structure

The program management and administration of the EEP is comprised of internal Nicor Gas staff and staffing from implementation contractors. The internal Nicor Gas team consists of 38 positions. The organizational structure and tasks are summarized below.

The EEP organization reports to the Vice President Energy Efficiency whose role is a shared services position in the AGL Resources (“AGLR”) organization. This position has executive oversight responsibilities for the EEP as well as other AGLR affiliate EEPs.

The EEP is managed by a Managing Director. The organization is structured around four major functions:

1. Operations and Planning;
2. Quality Assurance and Evaluation (Accounting, Information Technologies and Regulatory);
3. Marketing and Communications; and,
4. Customer Outreach and Partner Services.

Although Nicor Gas will hire implementation contractors to perform the majority of transactional tasks and day-to-day program tasks, it is important for the EEP to have an internal workforce with overall oversight and management of energy efficiency efforts. Over the course of time, Nicor Gas will internalize these core competencies and marketing synergies critical to manage a successful customer-focused and needs-driven EEP.

The primary tasks for each function are listed below. Detailed explanation of various functions is provided in following sections of this chapter.

## Operations and Planning

- Provide overall management and oversight on energy efficiency programs delivery and implementation to meet the statutory goals.
- Manage vendors performing implementation activities including vendor relationships and performance.
- Coordinate and collaborate on jointly implemented programs with other utilities and municipalities.
- Propose changes to program parameters to improve performance.
- Perform research and analysis including benefits-cost analysis on energy efficiency measures, programs and over-all portfolio to drive a cost effective EEP.

- Collaborate with IC's to develop thorough and accurate technical assumptions for energy savings measures.
- Lead efforts to update and include new measures in the Illinois technical reference manual.
- Assist IC's with cost effectiveness analysis on proposed measures and programs, available market and joint offerings with other utilities.
- Conduct inter-year and intra-year programs planning adjustments to assure the EEP meets goals.
- Develop, design and plan the EEP three-year programs.
- Provide EEP market research and intelligence to develop new offerings suitable to customer needs in the Nicor Gas service territory through the emerging technologies program.

### **Quality Assurance and Evaluation (Accounting, Information Technologies and Regulatory)**

- Produce forecasts for each program.
- Process and verify invoices to ensure pricing, activities and services conform to contractual terms.
- Develop, update and administer information technologies that support EEP.
- Make necessary filings with the Illinois Commerce Commission (testimony related to docketed cases, data requests, quarterly updates and other interrogatories).
- Develop and provide program quality assurance oversight.
- Coordinate and collaborate with DCEO.
- Coordinate efforts with third party EM&V contractors, IC's, SAG, and others to assure evaluation activities are completed, evaluation recommendations are vetted and implemented, and lessons learned applied.

### **Marketing and Communications**

- Achieve a consistent brand messaging across EEP programs and cross-promote programs with a centralized EEP marketing and communications team.
- Centralize marketing activities across various IC's through the centralized approach.
- Plan, implement and direct overall program marketing, communications, public relations, public affairs and internal/external outreach efforts.
- Build internal capabilities to perform customer segmentation analysis and drive EEP program participation centrally.
- Centrally create mail and email communication, content development, technical and trade ally collateral development, website design and maintenance, and technical or trade ally event coordination and staffing.
- Develop educational and community outreach materials and programs.

### **Customer Outreach and Partner Services**

- Manage, support and provide oversight of the EEP's rebate processing and call center vendor operations.

- Expand customer care to include inbound and outbound call capabilities to direct customers to the correct program offerings, solve customer problems, and encourage customers to take additional energy saving actions.
- Staff customer outreach community events.
- Follow up and engage with program participants through surveys, focus groups, and other strategies to develop insights into participant behavior on installed energy savings measures.
- Manage and coordinate the procurement process within the department.
- Administer the recordkeeping protocols for the department.
- Coordinate meeting and conference functions.
- Collaborate with on-bill financing efforts to ensure feature of the program are available to customers.
- Provide outreach and account management for large customers.

### Portfolio Program Management and Administration Budget

Please see Table 6 for the EEP three year portfolio budgets.

**Table 6. Program Management and Administration Budget (Thousands)**

	PY4	PY5	PY6	EEP Total
<b>EEP Total</b>	\$ 3,030	\$ 3,091	\$ 3,152	\$ 9,273

## 4.2 Marketing and Outreach Plan

### Introduction

The marketing and outreach plan for PY 4-6 emphasize a customer-centered approach that will guide program participants on their energy efficiency journey from awareness to sustained participation. While the savings goals outlined in Sections 2 (Household Programs) and 3 (Business Programs) are lower than the previous plan year as a result of a budget reduction of nearly 60%, the marketing and outreach strategy must overcome the challenges of a maturing marketplace crowded with “green” messages and advertising. A targeted and focused tactical plan paired with a simple, easy to understand message is essential to penetrate the market and bring a customer along the continuum of awareness, education, and participation.

The program will market offerings to residential, small and large commercial and industrial customers, capturing customers at any point along their energy efficiency journey and guiding them to their next step in natural gas efficiency. From interactions on the phone or website to community interactions, all aspects of the marketing and outreach plan are intended to ensure that customers understand how they can take full advantage of the products and services available to them through the program.

### Branding and Message Consistency

In a marketplace where customers are inundated with “green” marketing and calls to action, branding and message consistency are critical to reach and engage customers. Integration of the *energySMART* brand, targeted messaging using market data, and an emphasis on cross-promotion will ensure that the program delivers a consistent look, feel, and message to EEP customers.

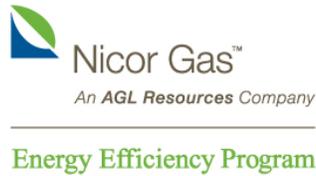
EEP branding and message consistency ensures that each customer interaction delivers a recognized and relevant call-to-action at any point on their energy efficiency journey. From awareness/education (i.e., advertising, collateral, call center scripts), to participation (i.e., leave-behind materials, application resolution) to surveying/feedback (i.e., customer surveys, focus groups), the customer should experience:

- A trusted brand (*energySMART*, a Nicor Gas Program);
- Delivering a targeted, relevant message (supported by market data);
- Allowing several points of entry to the energy efficiency path (cross-promotion).

### *energySMART* Brand Integration

For simplification, the program will transition to the *energySMART* brand for PY4 implementation. Integrating the *energySMART* brand allows the EEP to stand out in the marketplace as follows:

- Fewer lines of text than the EEP logo allow for easier reading and brand recognition.
- A single program name including a range of products and services (for example, energy-saving kits, rebates, and home assessments) emphasize cross-promotion between offerings.
- Seamless integration with the Nicor Gas brand identity will build on existing and trusted channels such as bill inserts, bill notifications and customer email communications.



Nicor Gas Energy Efficiency Program Logo



energySMART Logo

By eliminating separate program names on customer-facing communications, marketing messages will expose target audiences to all products or services available to them in a concise and consistent manner. For example, a direct mail communication to large business customers in PY3 may have communicated three program names and brief descriptions of each to the recipient: the Business Energy Efficiency Rebate Program, Retro commissioning, and the Business Custom Program. With an emphasis on cross-promotion, customers would simply be informed that *energySMART* offers rebates for equipment retrofits, optimization of existing systems, and incentives for unique energy-saving projects.

Key messages will combine the simplicity of the *energySMART* brand with a customer-centric tone to raise program awareness, educate customers about offers and benefits, and make participation easy through customer support along every step of their energy efficiency journey.

## Market Data and Customer Segmentation

The program will use participation data from PY 1-3 market data, and customer segmentation data to target residential and business segments for advertising, events and communications. Analysis of market research data sets will allow the program to reach households based on therm usage, demographic characteristics, and home profiles. Data analysis and segmentation will allow the EEP to focus marketing dollars on customers with the highest potential for participation.

## Cross-Promotion and the Customer Journey

During PY 1-3, the program transitioned from targeting customers by program or offering to reaching customers by market segment. As the program matures, a customer-centered approach will ensure that marketing and communications cross-promote *energySMART* products and services (kits, rebates, assessments, etc.) at all points of customer interaction or impression. Through a Marketing and Outreach Center (described below), a brief discussion between the customer and an *energySMART program concierge* will reveal what program components best fit the customer's needs and opportunities. Similarly, the program website or communications will deliver a consistent message.

For example, a customer may contact the Marketing and Outreach Center to check the status of a rebate. During this interaction, the program representative can view the information about that customer account, look up if they have received an energy-saving kit or signed up for the behavioral program, and increase participation and savings across the portfolio.

## Customer Engagement

The brand consistency described above will be incorporated into all customer engagement channels, including the program's new Marketing and Outreach Center, a refreshed website, and outreach strategies for customers and trade allies.

## Marketing and Outreach Center

The EEP will implement the *energySMART* Marketing and Outreach Center to provide comprehensive customer support to residential and business customers at any point on their energy efficiency continuum: from awareness of offerings, to education of the benefits of participation, to customer support during participation. The *energySMART* Marketing and Outreach Center will help achieve the brand and message consistency described above, as the same representatives accepting inbound calls from customers responding to marketing will also promote the program to customers at community events. The professionals in the Marketing and Outreach Center will be trained in all program offers, as well as on-bill financing, to deliver comprehensive *energySMART* program information to the customer. Each representative will function as a *program concierge*, understanding the lifestyle and energy-saving opportunities of the EEP customer and guiding them on their path to energy efficiency.

The *energySMART* Marketing and Outreach Center will be immersed within the Nicor Gas territory, creating jobs in Northern Illinois that may lead to careers in energy efficiency. Nicor Gas will transfer functions that were previously outsourced or located out-of-state, such as rebate information assistance and customer care for incomplete/denied applications, to the Marketing and Outreach Center. The sourcing of these functions will not only benefit the program through improved and comprehensive customer support, but also will also benefit the community with investment in the Marketing and Outreach Center and its employees.

## Program Website

The program website, NicorGasRebates.com, will be refreshed with the *energySMART* brand identity, and reorganized to incorporate user experience feedback and messages consistent with the Marketing and Outreach Center's customer engagement process. The program website may also expand to include content for a variety of age groups, bringing students on the energy efficiency journey as they educate their parents, choose careers, and eventually become energy literate Nicor Gas customers as adults.

## Outreach Strategies

Outreach strategies are an integral part of marketing and engagement to increase program participation. A coordinated approach in alignment with the branding and messaging strategies described above will ensure that outreach opportunities are leveraged to their fullest. The EEP plans to engage homeowners, renters, small and large business owners and industrial customers through a variety of outreach strategies. Trade allies will also be engaged from the manufacturer level to contractor level.

## Nicor Gas EEP Customers

The EEP may employ the following customer outreach strategies:

- Community-based outreach coordinated with Nicor Gas Community Relations and Economic Development Directors;

- Large customer and key account outreach with the Nicor Gas account managers;
- Chamber of Commerce-based outreach;
- Partnerships and Sponsorships, such as the Brookfield Zoo;
- Employer-based outreach to market residential programs to employees;
- Nicor Gas employee outreach through internal communication channels;
- Integration with Nicor Gas operations such as materials or offers to new customers, or leave-behinds for existing customers from meter readers.

## Trade Allies

Trade allies, including equipment vendors, manufacturers, contractors, architects, and engineers, are instrumental in influencing customer decisions related to energy efficiency. Therefore, educating trade allies about Nicor Gas efficiency programs, communicating the business benefits, and preparing them with marketing materials to promote high efficiency equipment and programs is critical to the success of EEP.

Trade allies will be engaged through a centralized Trade Ally Network leveraging the Contractor Circle Network established during PY1-3. The Contractor Circle will be expanded to include participation tiers and opportunities for upstream participation, as well as participation by builders, architects, and engineers. The Nicor Gas EEP plans to employ trade communications, trainings, events, and recognition to maintain strong relationships with key trade allies serving as the program's sales force and repeatedly delivering savings.

The Nicor Gas EEP may employ the following trade ally outreach strategies:

- Implementation and management of the Contractor Circle network;
- Account management and one-on-one support;
- Email and direct mail communications;
- Presentations and counter days;
- Program-sponsored trainings and seminars;
- Awards and recognition;
- Promotions or spiffs for off-season periods or slow-moving measures;
- Investigation and engagement with upstream distributors or manufacturers;
- Retail outlets and offerings in-store.

In addition to these marketing and outreach tactics for trade allies, Nicor Gas will monitor trade ally activity using dashboards and surveys to identify areas for improvement or attention and maximize participation among the most active trade allies.

## Marketing and Communication Tactics

Marketing and communications tactics will be deployed to increase brand awareness, cross-promote programs, and support the outreach efforts outlined above. Marketing and communications tactics will include the following:

## Collateral

Program materials and giveaways will be produced to support customer and trade ally outreach. Display materials including table covers, banners, and booths will be refreshed with the *energySMART* brand for use at community events and trade shows.

## Events and Sponsorships

The EEP may continue to support events, sponsorships, and community partnerships such as Will County Celebrating Sustainability Festival, Cantigny Green Fair, Evanston Green Living Festival, Naperville Ribfest, the Energy Efficiency Expo, Better Buildings Better Business Illinois Conference and the Brookfield Zoo's Party for the Planet to maintain community presence and increase program awareness. Events and sponsorships are also a cost-effective way to increase program exposure among customers.

## Customer Marketing and Communication

The EEP will build on the trusted utility brand and introduce *energySMART* through marketing such as radio, television, and/or print media. This type of customer outreach and communication will be necessary as the market matures and there is an increased need for deeper customer impressions for customer acquisition.

## Public Relations

Building on the success of public relations efforts thus far, the program will continue to host press events such as check presentations or ribbon cuttings, conduct media outreach, and respond to earned media requests to maximize opportunities to increase brand recognition and program awareness.

## Communications

The EEP will implement centralized communications to customers and trade allies, including emails, direct mail, bill inserts, web tiles, and social media as available. Communications will emphasize cross-promotion and brand consistency.

## Metrics

Throughout the course of this plan, the EEP will assess the success of its communications efforts. The EEP marketing team will analyze customer and trade ally response to its communications tactics in a number of ways, including: advertising response rates, website hit rates, call volumes inquiring about efficiency programs, participation in the programs, and surveys of how customers learned of the programs, satisfaction and effectiveness of communications. As these metrics are collected and analyzed, adjustments to the communications efforts will be made to most effectively promote the programs, engage and support trade allies better, and leverage communication budgets.

## Budget

As described above, a maturing market, low gas prices, and crowded marketplace pose marketing challenges for the energy efficiency program. In order to support customers on their energy efficiency journeys, the EEP has set aside a portion of its energy efficiency budget

(Table 7) to fund a variety of approaches to communication, outreach and education. Actual spending may vary by program depending on customer response rates and participation.

**Table 7. Nicor Gas Marketing and Communications Budget (Thousands)**

	<b>PY4</b>	<b>PY5</b>	<b>PY6</b>	<b>EEP Total</b>
<b>EEP Total</b>	\$ 1,030	\$ 1,050	\$ 1,071,	\$ 3,151

### 4.3 Emerging Technology Program

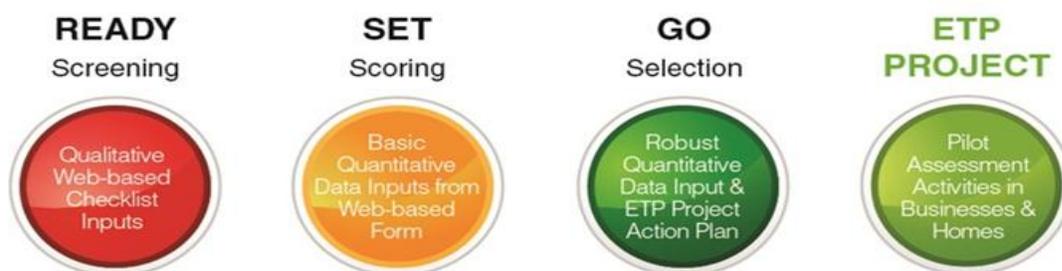
The Emerging Technology Program (“ETP”) brings energy-efficient natural gas technologies into the Nicor Gas territory marketplace after conducting technical demonstrations, verifying potential therm savings and providing incentives for market adoption. This function is intended to support technologies that are commercially viable and readily available, yet untested or unable to overcome market barriers in the Nicor Gas territory. There are no savings goals for this program. However, the program is expected to generate energy savings and installations will be evaluated and tracked.

The EEP selected the Gas Technology Institute (“GTI”) through a competitive RFP process to administer this function under Rider 30. The ETP program is managed by an EEP Program Manager. The function will continue to exist in next program cycle and the incumbent vendor may (after negotiation of current terms and conditions) continue to administer the ETP function in next program cycle since several of the pilot projects underway have longer maturity cycles and due to a late launch of the program in the first three year program; continuity in next program cycle is essential.

The ETP consists of two tracks to develop and test product offerings: an internal track and an external track. The internal track includes offerings that test improved program designs, new delivery strategies, and new methods to market. These offerings primarily use established technologies, but may refine or fine tune the information about those technologies (e.g. boiler control training), or combine multiple requirements into one offer (e.g. combining space and domestic hot water heating offerings) or improve delivery over traditional program designs (e.g. focusing on direct outside air roof-top units) . The external track focuses on identifying new or under-utilized technologies and increasing their adoption rate by providing financial incentives to technical demonstration projects resulting in energy savings. The Emerging Technology program allows the EEP to identify new prescriptive and custom technologies to promote through existing energy efficiency programs, and also identify new programs required to deliver promising technologies and delivery approaches. Data generated from technical demonstration pilots lead to new measures that can be offered as a prescriptive measure, and will feed into the state wide Technical Reference Manual update process to be used by programs across Illinois and other jurisdictions through our collaborations with GTI who is engaged with emerging technology programs across the US and Canada.

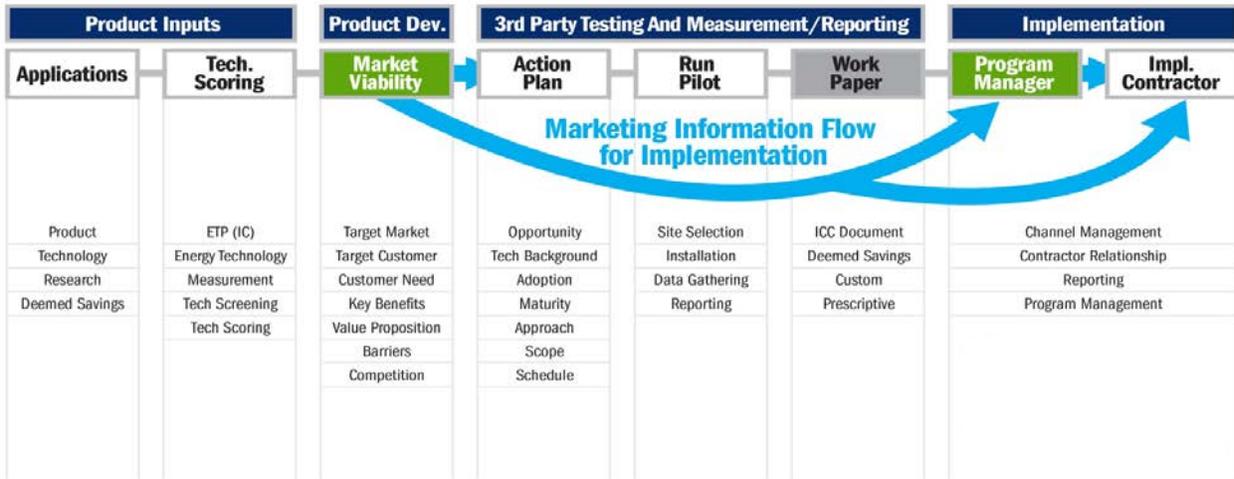
An on-line application process was developed under the Rider 30 program that serves as a simple and wide gateway to the ETP for interested parties to submit ideas and receive immediate feedback on the concept through the system. The “Ready”, “Set”, “Go” three step (4S) process (Please see Figure 8 and Figure 9) provides an immediate screening and feedback at the “Ready” stage. If the idea meets the base standards, it proceeds to the “Set” stage where a deeper evaluation is performed by the ETP administrator. Finally, the product is sent to the Nicor Gas for a market viability review. The market viability review helps to determine if there is a sufficiently large market potential and does the product make sense. The last stage, “Go”, will result in a fully developed concept with implementation plan for consideration by the EEP to deploy as a pilot.

**Figure 8. Nicor Gas ETP 4S A Ready, Set, Go Stage and Gate Process**



Criteria	Score	Weighting	Final Score
Cost-Effectiveness	1-5	4	0-20
Gas Savings Potential	1-5	5	0-25
Value to Nicor Gas Portfolio	1-5	2	0-10
Non-Energy Benefits	1-5	2	0-10
Support and Distribution in Chicagoland Area	1-5	2	0-10
Technological Maturity	1-5	3	0-15
Ease of Implementation/ Market Adoption	1-5	2	0-10
TOTAL	-	-	0 to 100

**Figure 9. Nicor Gas ETP Process Map**



In addition to providing incentives, key components of the program are to develop case studies based on actual results, highlight demonstration sites, provide trade allies and customer opportunities to tour pilot locations, and pursue related promotion to gain wider acceptance for customers, trade allies, and EEP customers. These efforts are essential to help establish new energy efficient natural gas technologies identified by the program in Illinois.

### Successful Technologies Evaluated

During the first program cycle, the ETP successfully evaluated over fifty individual submissions representing several technologies including High Efficiency Heating Commercial Rooftop Units expected to yield 5,000 Net therms per unit, Commercial Ozone Laundry expected to save 5,800 Net therms and Demand Controls for Central Hot Water in Multi-family Buildings expected to save 2,000 Net therms per unit. The ETP has been very successful as evidenced by the activity in such a short period of time. There are a total of 59 project applications as the program moves through PY3.

### Lessons Learned and Future Considerations

A number of lessons learned and insights gained from the first program cycle are listed below that will play key role in strategy for emerging technologies function for the next program cycle.

**1. Product technology mix** – A consideration will be given to the seasonal impacts on the products being tested. It was realized that products that have a seasonal impact on energy savings may result in longer testing time frames. For example if a product favors heating season technologies and requires testing during the heating season, an unavoidable lead-time to the process may be added if the pilot is unable to be implemented for the current heating season. There will be insufficient data for another year thus delaying the products implementation. The ETP therefore, will look for a balanced product mix of heating and non-heating season products so there are always multiple pilots to run.

**2. Market Viability**– The market viability section was added to the screening section of products to determine if there exists an actionable market for the product in question before starting a test phase or a pilot.

**3. Product development process** – The ETP will incorporate best practices from a traditional product development process similar to consumer product companies. The techniques used in consumer product marketing are similar to those required for the EEP. This will include determining how the consumer perceives Nicor Gas energy efficiency offerings and what level of incentives is sufficient to drive an energy efficiency action.

**4. Pilot site selection** – A considerable challenge exists with finding candidate sites and facilities to install and test pilot offerings. The challenges range from interrupting regular business operations from installation of new products and altering production processes. During the first program cycle, the Nicor Gas ETP identified 10 large customers that agreed to be first contacts on future pilot testing sites. The goal will be to increase this enrollment over the next cycle to at least 25 customers.

**5. Trends** – The advances in cloud computing and wireless technologies is being addressed in the Nicor Gas ETP. A greater number of wireless technologies connected to cloud computing are in pilot test phases. In most cases, wireless technologies translate to lower installation costs and enables adoption in markets that were previously cost prohibitive.

**6. Emerging Technology** – Although there are new emerging technologies that will be evaluated, a greater emphasis is placed on existing technologies that never attained significant market adoption but due to changing market conditions may now be viable. The Ozone Commercial Laundry product is an example of such products.

**7. Applicant Participation** – A commitment from interested parties is vital to the success of the ETP and active participation is required from interested parties wishing for a product to be tested and evaluated by the ETP. This may happen either by;

- Supplying the ETP with a no cost or deeply discounted equipment that is intended for future offering, or
- Actively help the ETP team with identification of pilot test sites.

## Budget

In accordance with section 8-104(g) of the Act, “No more than 3% of expenditures on energy efficiency measures may be allocated for demonstration of breakthrough equipment and devices”. The ETP budget for EEP is presented below in Table 8.

**Table 8. Nicor Gas EEP ETP Budget (Thousands)**

	PY4	PY5	PY6	EEP Total
<b>EEP Total</b>	\$ 931	\$ 931	\$ 931	\$ 2,793

#### 4.4 Evaluation, Measurement & Verification

Evaluation, measurement, and verification (“EM&V”) represents the processes used to confirm that energy efficiency installations, as well as calculated energy savings, are at the levels reported. EM&V processes are typically employed to determine the effectiveness of energy efficiency and other demand-side management (“DSM”) programs. Processes may include:

- Site visits to confirm proper installation and operation of efficient equipment;
- Pre- and/or post-monitoring (before or after installation) to measure energy savings;
- Program, process, and impact evaluations;
- Participant Surveys to estimate free-ridership, spillover and NTG ratios.

These processes are designed to improve the operations of energy efficiency programs, measure their impacts, and correctly attribute energy savings to utility efforts. In Illinois under Section 8-104, gas utilities are required to provide quarterly status reports on program performance, annual independent evaluations of programs, and an independent evaluation of the overall portfolio at the end of each three-year EEP cycle. Section 8-104 also designates that a 3% maximum of the budget may be expended on EM&V. The table 9 provides the EEP proposed expenditures for EM&V in each program year. These EM&V budgets include the costs of the EM&V independent evaluators. They do not include other costs related to evaluations, such as EEP staff, consultants, legal or program implementers’ costs to collect materials used for evaluations.

There are two types of formal program evaluations (process and impact evaluation) that will be applied within this three-year EEP in addition to ongoing less formal monitoring processes. Process evaluations will help to determine if individual programs are performing as designed and effectively reaching the target customer groups. Methods employed for process evaluation include surveys of participants and non-participants, direct interviews with those involved with the program at all levels (including participants and non-participants), and assessments of program processes. The purpose of process evaluations is to determine if an on-going program requires refinement, needs a change in the rebate or incentive levels to attract participants or should be removed from the portfolio.

Impact evaluations are intended to determine the actual impact of the program that can be attributed to EEP efforts. Impact evaluation involves the measurement of metrics that define the energy savings achieved by the program participants. The impact of a program or the amount of energy saved by a program will be measured against program goals and include amounts of saved energy, reduced or shifted demand, program cost-benefit ratio, number of participants, number of free-riders and free-drivers, spillover impacts and other measureable quantities. These metrics are usually defined by program goals (i.e., total reduced energy). A variety of direct and indirect methods are utilized in the impact evaluation process including statistical, survey and analytical methods. These strategies are used to assess the impact of programs.

The EEP will select an independent evaluation contractor through an RFP process to perform impact and process evaluations for the programs, while supporting portfolio level goals of providing high confidence and precision in total portfolio savings, without exceeding budgetary limitations. These portfolio goals will likely require allocating EM&V resources and budget dollars between individual programs. Statutory EM&V spending limits will be enforced at the portfolio level over the total three year portfolio period.

To facilitate the impact and process evaluations, the evaluator will develop program evaluation plans identifying specific elements for evaluation, anticipated participants to be contacted and schedule for activities. The EEP will review and comment on plans to ensure that it is consistent with actual program implementation. Due to the nature of EM&V work (some evaluation work can be conducted “in parallel” with the program’s delivery, while other aspects of EM&V must be conducted after a program or project is completed), spending in any given plan year may be associated with work performed in preceding years.

Further, the degree of EM&V conducted by evaluators will depend on its collaborations with other utilities. Where possible, the EEP will share the expense of EM&V and minimize EM&V duplication with its partners in order to maximize program cost-effectiveness.

### Budget

In accordance with Section 8-104(f)(8), “The resources dedicated to evaluation shall not exceed 3% of portfolio resources in any given 3-year period”, the Nicor Gas EM&V budget for EEP is presented below:

**Table 9. Nicor Gas EM&V Budget (Thousands)**

	PY4	PY5	PY6	EEP Total
<b>EEP Total</b>	\$ 931	\$ 931	\$ 931	\$ 2,793

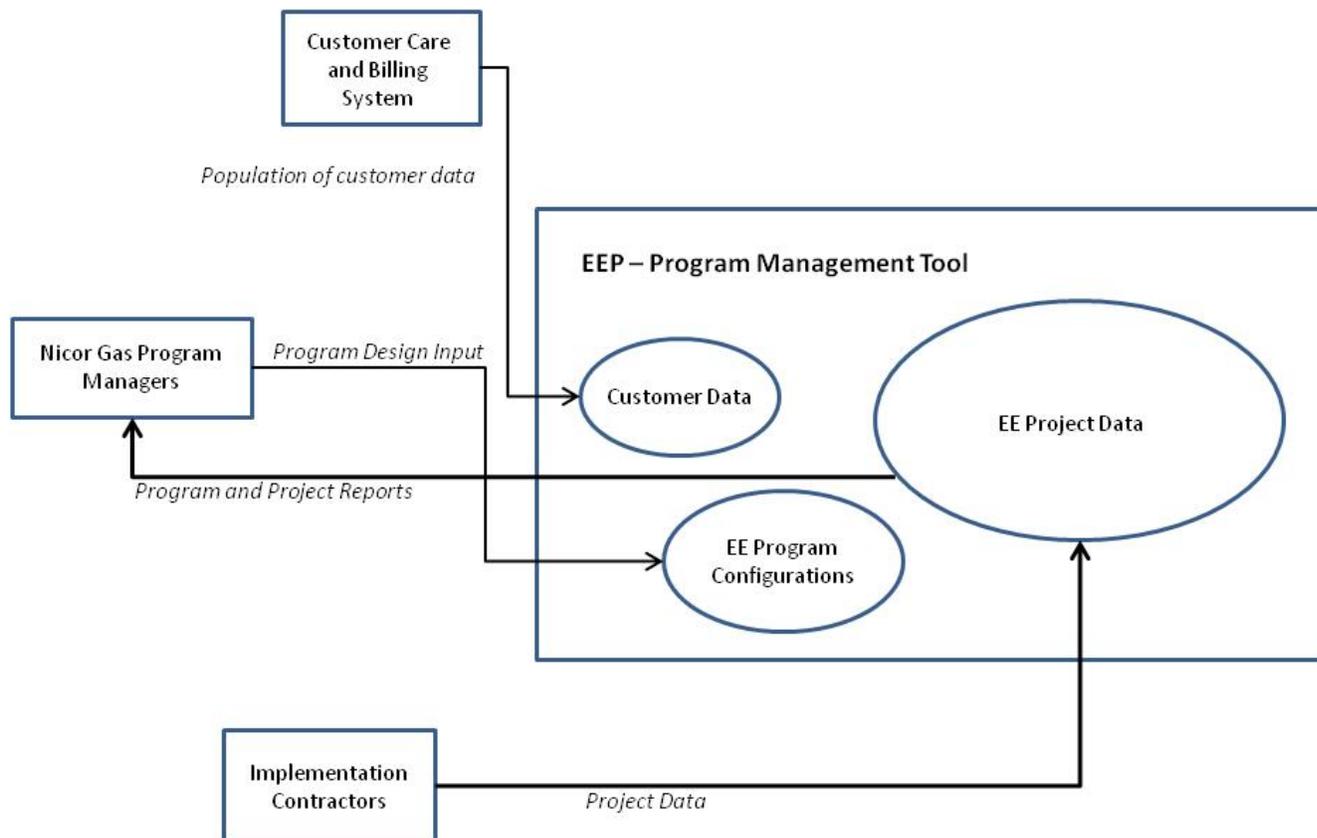
## 4.5 Portfolio Technology

The EEP has invested and built a strong platform of software infrastructure for efficiency program management, tracking and reporting during first program cycle. As a result the Nicor Gas EEP generates a significant amount of customer data that must be gathered, stored and reported on. In 2010 the EEP purchase a software program to meet the requirements of the regulatory and tracking requirements and provide accurate recordkeeping. The EEP contracted with a third-party vendor (Nexant) to configure, host and support the application called the PMT. The software will track (Figure 10) all EEP related customer activity, dollars spent and therm savings associated with the program. Following an open RFP process, the Nicor Gas EEP chose Nexant as its vendor of choice because of the firm's experience, industry presence, cost, reporting functionality and ease of incorporating future program changes. The EEP chose to purchase Nexant's fourth generation of the software as opposed to purchasing its third generation to avoid the large effort of upgrading to the new version at a later date. This fourth generation was new to the market and the EEP agreed to collaborate with Nexant on developing the natural gas application. In November 2012, the software was placed into production. PY1 data was reconciled from the implementation contractors and loaded in March 2013 and PY2 data is currently being loaded and scheduled to be completed by the end of 2013.

The PMT is designed to track program results such as participating customers, incentives paid, program implementation costs, etc. Specifically, the PMT will provide the following:

- Program Design – The PMT will maintain a database (or library) of energy efficiency measures. This database will assist the EEP in the development of future energy efficiency programs.
- Program Management – The PMT will provide the capability to manage the performance and cost of the energy efficiency programs. This can include providing access to the status of specific projects, as well as, reporting of results at the measure and program level.
- Workflow Management – Certain energy efficiency programs involve many steps in the application and management of installation activities, typically organized as a project. The PMT can provide the capability to manage the workflow of these projects. A historical record of the project will be maintained for future analysis and reporting.
- Incentive Processing – A key element of program management is the efficient processing of incentive payments to customers and trade allies who have participated in an energy efficiency program. The PMT will track incentives paid on energy efficiency measures per customer account.
- Management Reporting – The PMT will provide reporting capabilities, including:
  - Executive/Management– High-level reporting of key statistics on the performance of EEP and each individual program.
  - Program Management – Detailed reports to provide program managers with information to determine if programs are on track.
  - Regulatory – These reports will provide reliable/auditable data to support EEP performance against approved plans.

**Figure 10. EEP Project Management Tool Functionalities and Interdependencies**



**Budget**

Please see Table 10 for EEP three year portfolio budgets.

**Table 10. Nicor Gas EEP Portfolio Technology Budget (Thousands)**

	<b>PY4</b>	<b>PY5</b>	<b>PY6</b>	<b>EEP Total</b>
<b>EEP Total</b>	\$ 485	\$ 494	\$ 504	\$ 1,483

## 5 Cost Effectiveness Methodology, Source Data, and Assumptions

### 5.1 Cost Effectiveness Modeling

#### Model Overview

The EEP utilizes the E3 Calculator to measure the cost-effectiveness of the energy efficiency programs and portfolios. The E3 Calculator was designed by Energy and Environmental Economics (“E3”). Founded in 1989, E3 advises utilities, regulators, government agencies, power producers, energy technology companies, and investors on a wide range of critical issues in the electricity and natural gas industries. E3 developed the tools and framework for cost-effectiveness assessment of energy efficiency used by several investor-owned and publicly-owned utilities in California, New York, Illinois, Pennsylvania, Maryland, and in Ontario, Canada.

The E3 Calculator is designed to estimate the total savings and cost-effectiveness of energy efficiency programs. Relying on default values and assumptions contained in the E3 Calculator, a user may enter a few key pieces of data to report meaningful results. Alternatively utilities may modify or enter their own assumptions and create customized measures that better reflect their programs or service territory. The EEP worked with E3 to modify the E3 Calculator for use in Illinois.

To generate cost effectiveness estimates the E3 Calculator takes information about energy efficiency measures and arranges them into programs. Within the calculator the energy efficiency measures, estimates for participation and administrative budgets are assigned to programs. At the energy efficiency portfolio level portfolio administration budgets are added to the sum of all active energy efficiency program data and budgets. Cost effectiveness calculations are generated for individual energy efficiency measures and programs, as well as at the total portfolio level.

There are several reasons why the EEP selected this particular model for its energy efficiency evaluation:

- E3 is an industry leader in energy efficiency cost effectiveness calculations;
- The E3 Calculator is a recognized industry standard, widely used and understood;
- The model is appropriate in scale for a stand-alone natural gas utility, since it includes relatively simple characterizations of electric utility avoided costs;
- The model is built on an open-source spreadsheet platform and can be customized to add inputs specific to Nicor Gas;
- The E3 Calculator offers the best value to the EEP; and,
- The EEP planning team is experienced with the use of E3 calculator.

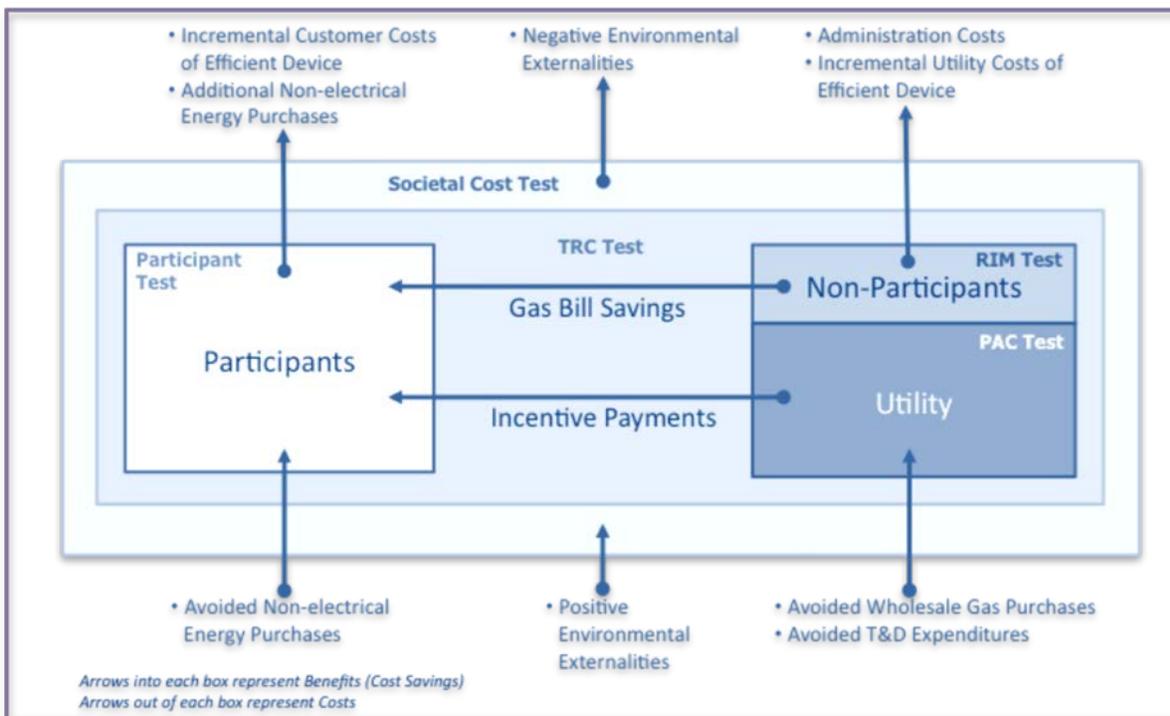
#### Model Outputs

Cost-effectiveness is generally measured in terms of the benefit-cost ratio, where the benefits of energy efficiency (namely avoided costs) are compared against the costs (mostly program and measure costs) of an energy efficiency measure, product, program, customer segment, or portfolio. The E3 Calculator analyzes the cost-effectiveness of energy efficiency from several

different perspectives (the participant, the utility, the ratepayer, and total resource cost)<sup>4</sup>. From each perspective a benefit-cost ratio greater than one implies that the benefits outweigh the costs. A ratio less than one indicate that costs outweigh benefits and the higher the number the greater the cost-effectiveness of measure and program in question.

The specific tests and perspectives within the E3 Calculator are outlined in Figure 11 and described further below.

**Figure 11. Cost-Effectiveness Tests in E3 Calculator**



- Program Administrator Cost Test – Measures the effect of the efficiency measure on the administering utility’s revenue requirement. The utility’s costs of implementing energy efficiency measures include direct installation costs incurred by the utility (as opposed to the participant), incentives, program administration, and marketing expenses. Benefits include the utility’s avoided cost of purchasing or generating energy.
- Total Resource Cost Test – Measures the benefits and costs of the efficiency measure as a resource option based on the total cost of the measure to the utility’s service territory, including both participant and utility costs. Costs include those incurred by the participant to purchase, install and maintain the more efficient equipment and by the utility to market and administer the efficiency program. Any direct installation costs incurred by the utility are also included. Incentives are not included as they are not a resource cost; instead, they are transfers from the utility to the customer. That is, an

<sup>4</sup> These methods are based on the industry-standard *California Standard Practice Manual*. The cost effectiveness methodology has been adjusted to be consistent with Section 8-104 of the Public Utilities Act

incentive increases the utility’s cost and decreases the participant’s cost by the same amount, with a net effect of zero.

- Participant Cost Test – Measures the quantifiable costs and benefits to the customer from participating in an energy efficiency program. Participant costs include the purchase and installation of the efficient equipment, less any incentive or incentive received from the utility. Benefits include the participant’s bill savings due to reduced energy consumption.
- Ratepayer Impact Measure Test – Measures the net impact of efficiency programs on natural gas rates. This test compares the cost savings of the efficiency measure to the revenue losses (i.e. lost margins) resulting from each measure. The cost savings are the same as those for the Program Administrator Cost Test, while revenue losses are the program implementation costs (utility incentive, direct install costs and marketing, and administration) plus lost revenue from reduced energy sales. If the marginal cost of gas to the utility is higher than the rates charged to the utility, the avoided costs will more than offset the revenue losses, leading to a RIM Test ratio greater than one.

## Model Inputs

The following table describes the key inputs necessary for the computation of the benefit-cost ratios in the E3 Calculator.

**Table 11. Nicor Gas EEP Key Inputs in E3 Calculator**

Input	Purpose
<i>Financial Inputs</i>	
Discount Rate	Since the mechanism for computing and comparing costs and benefits involves using Net Present Value (NPV) methods, the model requires a discount rate by which future values may be converted into today’s dollars.
Retail Energy Rates	These are the natural gas and electricity rates paid by consumers, which are used to determine participant savings.
Utility Gas Supply Costs	This is the cost of gas paid by the utility to purchase the next incremental (marginal) therm.
Green House Gas (“GHG”) Costs	As required by Section 8-104(b) of the Illinois Public Utilities Act, natural gas avoided costs shall include reasonable estimates of the financial costs likely to be imposed by future regulation of emissions of greenhouse gases.
Water Costs	Water costs are estimated to account for direct benefits that accrue to participants for installing water conserving measures.
Other Quantifiable Societal Benefits	As required by Section 8-104(b) of the Illinois Public Utilities Act, TRC benefits include other quantifiable societal benefits such as: risk management, building occupant comfort, economic development, job creation, reduced maintenance cost, increased safety, public health, and national security.
<i>Measure- and Program-Related Inputs</i>	
Measure Life	This gives the length of time that the purchased or installed efficiency measure yields its benefits (that is, avoided energy consumption).

Input	Purpose
Measure Annual Savings	For any given measure, this quantifies the reduction in energy consumption that will occur each year within the measure's useful life.
Measure Participation	The number of efficient units expected to be installed by program participants.
Measure Incremental Costs	This value represents the cost (both the purchase price and installation cost) difference between an efficient measure and a standard (baseline) measure.
Gas Savings Profile	This factor adjusts for seasonality of measure savings. Certain measures save gas predominantly in the winter while others apply annually. Gas avoided costs are also adjusted to reflect seasonal variation.
Net-to-Gross Ratio	A factor representing the percent of gross energy savings that are attributable to the utility's energy efficiency program efforts. This factor accounts for both free-ridership and spillover.
Incentive Costs	The amount that the Program Administrator pays the program participant for each installed unit of this particular measure.
<i>Administration Costs</i>	
Program & Portfolio Administration	Administration costs include internal energy efficiency program staff salaries, general program administration, vendor implementation costs, emerging technology, information systems, marketing and evaluation, costs associated with EE activities.

## 5.2 Assumptions and Data Sources for E3 Model Inputs

### Discount Rate

The E3 model requires a discount rate by which future dollar costs and savings may be converted into today's dollars. Nicor Gas uses 8.090%, the corporate Weighted Average Cost of Capital.

### Avoided Costs

Nicor Gas included in its avoided cost calculations the costs for purchasing natural gas commodity, the costs to transport and deliver commodity purchases to customers, as well as the greenhouse gas and other societal benefits required by Section 8-104(b). Nicor Gas calculated natural gas commodity prices at Henry Hub, using the *Wood Mackenzie Natural Gas Forecast, Long Term View* from May 2013. Nicor Gas calculated avoided supply costs by adding the pipeline delivery and gas basis charges required to transport gas from Henry Hub to the Chicago city gate, the variable distribution charges required to distribute gas from the city gate to customers, and the state taxes incurred by customers. Nicor Gas then added estimates of greenhouse gas costs developed from the Department of Energy's May 2013 *Annual Energy Outlook*. Finally, Nicor Gas calculated Other Quantifiable Benefits as 7.5% of the avoided supply and greenhouse gas costs, consistent with the approach used by MidAmerican Energy in EEPs approved by the Commission in Docket Nos. 08-0108 and 12-0132. Total avoided costs

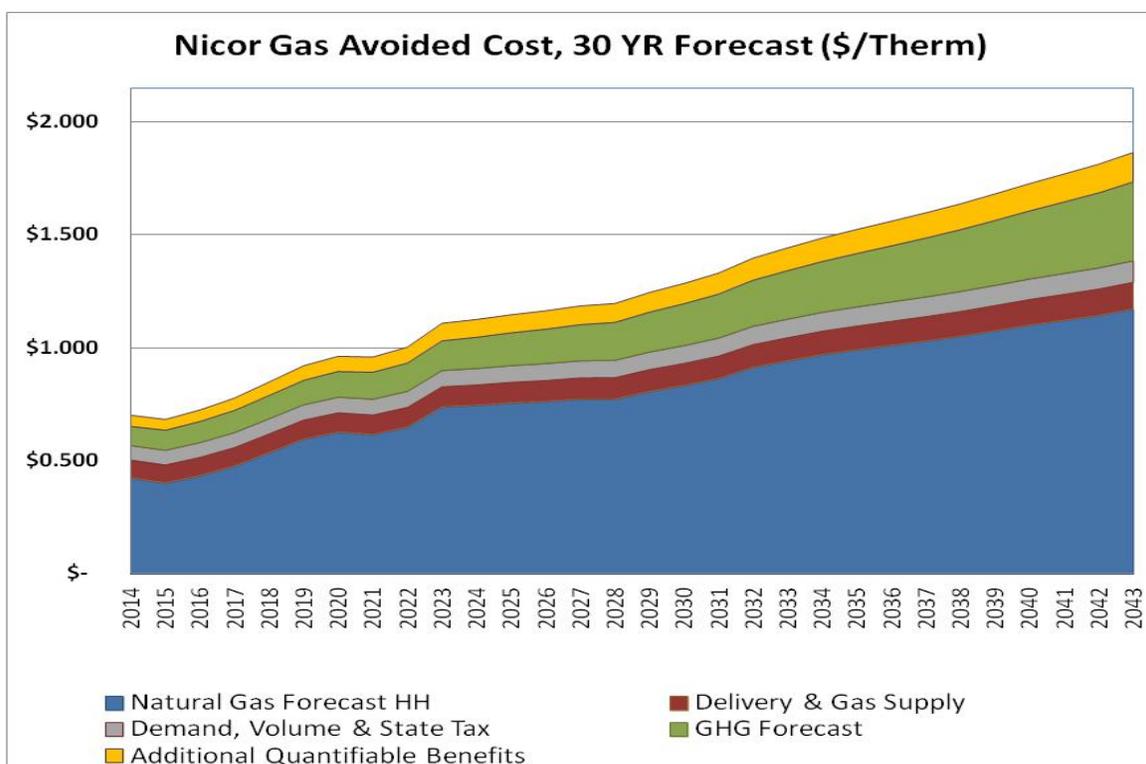
range from \$0.704 per therm in 2013 to \$1.333 per therm in 2031. Calculation of the 2014 avoided costs is shown in Table 12.

**Table 12. Nicor Gas Utility 2014 Avoided Cost Calculation for EEP**

Cost Component	Cost (\$/Therm)
Commodity	0.4258
Transportation and Basis	0.0810
Distribution and State Tax	0.0638
Greenhouse Gas	0.0844
Other Quantifiable Societal Benefits	0.0491
	<b>\$0.7041</b>

The gas commodity price forecast extends to the year 2031. However, because the EEP includes measures with lifetimes longer than 18 years (such as the Residential New Construction Program), these forecasts are extended an additional 12 years (to 2043) using a trend analysis. The final results for the avoided cost forecast are shown in Figure 13.

**Figure 12. Forecast and Trended Avoided Cost**



## Water Benefits

Certain measures such as aerators and low flow fixtures help conserve on participant water usage. Accordingly, on account of the water conservation these measures generate, there are additional economic benefits. To account for these economic benefits Nicor Gas constructed an index of municipal water rates for the 22 largest municipalities in the service territory (Table 13). In the Nicor Gas service territory water costs participants \$4.40 per 1,000 gallons in 2013, using an average weighted by population. Throughout the period of the forecast the water rate index is inflated at 4.78% per year based on historic inflation for water utilities tracked by the U.S. Department of Labor.

**Table 13. Water Rates (Top 22 Municipalities by Population)**

City	Avg Residential Rate (Assumes <20,000 gal per month)	Population (US Census Bureau)
Aurora	\$5.27	199672
Rockford	\$2.07	152222
Naperville	\$3.55	142773
Elgin	\$4.51	108188
Cicero	\$4.53	84261
Champaign	\$4.53	81291
Bloomington	\$5.36	77071
Arlington Heights	\$4.42	75428
Evanston	\$1.66	74785
Schaumburg	\$6.36	74550
Palatine	\$3.15	68858
Skokie	\$4.34	65066
Des Plaines	\$5.44	58617
Orland Park	\$4.06	57016
Tinley Park	\$4.19	56965
Wheaton	\$4.61	53238
Normal	\$5.73	52772
Hoffman Estates	\$5.80	52124
Oak Park	\$4.53	52104
Downers Grove	\$5.52	48163
Glenview	\$5.94	44888
Lombard	\$5.16	43462
Weighted Average	\$4.40	

## Gas Savings Profiles

Gas usage varies with the time of year and type of equipment. The EEP defined two Gas Savings Profiles to represent these different usage patterns. A “Winter Only” profile applied to measures affecting space heating equipment. An “Annual” profile applied to all other measures.

## Seasonal Commodity Prices

Seasonal commodity prices were developed to ensure that avoided cost savings matched the gas savings profiles developed for heating and non-heating measures. Winter price premiums were calculated using monthly commodity price forecasts from the *Wood Mackenzie Natural Gas Forecast, Long Term View* from May 2013, and weighting winter prices by heating degree days for the Chicago region. Winter price premiums used in the analysis ranged between \$0.002 per therm and \$0.024 per therm.

## Technical Assumptions

Technical assumptions include the inputs specified at the measure, program, and portfolio level required to calculate the costs and benefits of the EEP.

Measure inputs include the incremental costs participants incur to install efficient equipment relative to baseline alternatives, rebates and other financial incentives provided by Nicor Gas, incremental savings relative to baseline alternatives, water savings for certain measures, and equipment lifetimes. In addition, participation and NTG ratios, which are calculated at the program level, are applied to each individual measure. Nicor Gas used a variety of sources to calculate measure inputs. The algorithms and assumptions included in the June 1, 2013 version of the Illinois TRM were used to calculate energy and water savings for measures covered by the TRM. For other measures, results of the Nicor Gas PY1 evaluations were applied when available, and, if needed, data from other utilities and implementation contractors were also used. In general, incremental costs and equipment lifetimes were also calculated using TRM assumptions and algorithms. However, consistent with approaches used in Nicor Gas’ PY1 evaluations, where better data was available from Nicor Gas implementation contractors or from other sources, these were used. Appendix A lists all the measure inputs used in the analysis.

Program inputs include participation inputs that drive measure costs and savings, program costs for marketing and administration, and NTG ratios. Participation inputs were developed from Nicor Gas program experience to date, but were also adjusted as necessary to meet the budget limits set by Section 8-104(d) of the Act and the planning objectives outlined in Section 1.7. Program costs were also developed based on Nicor Gas’ experience to date, with downward adjustments that reflect the lower volume of participation expected in the second plan period.

Portfolio inputs include additional costs for portfolio functions, including portfolio management, marketing, emerging technology, evaluation, and portfolio technology. Portfolio costs are provided in Section 4.

## Measure Incentive Costs

Measure-level incentives are based on the incremental cost of the measure, the availability of budget, Rider 30 programs incentive levels, other local and national utilities' incentive levels, and recommendations coming out of the market potential study conducted for Nicor Gas before its first EEP. These incentive levels are property designed to stimulate the market to reach its proposed EEP goals. However, should participation lag or dramatically exceed expectations, incentive levels may be modified during the three-year period to achieve the desired outcome, all while managing the constraints for cost-effective programs.

## Retail Rates

Retail rates included in the model are the blended forecast of Nicor Gas rates for each customer class, including residential, small business and large business.

## Nicor Gas EEP Net-to-Gross Ratios

Please see Table 14 for EEP NTG ratios.

**Table 14. Nicor Gas EEP Net-to-Gross Ratios**

Program	NTG Ratio
HEER	0.71
HES	0.77
MCEEP-DI	0.86
MCEEP-Comp	0.84
RNC	0.72
EEE	0.71
BES	0.86
BEER	0.75
Custom	0.48
SBEEP	0.90
BNC	0.47
Kits (HEER)	0.76

## Nicor Gas EEP Cost-Effectiveness Results

The total portfolio cost effectiveness ratio is 1.34, a value greater than 1.0 achieving the requirements of Section 8-104 which requires that Nicor Gas demonstrate “that its overall portfolio of energy efficiency measures, not including programs covered by item (4) of this subsection (f), are cost-effective using the total resource cost test and represent a diverse cross section of opportunities for customers of all rate classes to participate in the program”.

Nicor Gas went beyond this statutory requirement to also analyze the cost-effectiveness of individual programs and measures. Nicor Gas used this information to adjust the portfolio, eliminating investment in some cost-ineffective measures and adjusting delivery approaches to improve program cost effectiveness.

However, Nicor Gas did not use the TRC test as a strict screening criterion at the program or measure level. Two programs with TRC benefit cost ratios below 1.0—the Home Energy Savings program and Behavioral Energy Savings program—were maintained in the portfolio because they are important for meeting other program objectives. Namely, they provide substantial sources of therm savings and they increase opportunities for all customers to participate. In addition, it is important to maintain stability for these program implementation contractors and trade allies, since the programs may prove cost effective in the future if new delivery approaches can lower program costs and if volatile natural gas markets result in higher avoided costs.

Several measures with TRC benefit-cost ratios below 1.0 were also maintained in the plan if they contributed to overall program success. Some measures provide opportunities to interest customers in participation; others eliminate market confusion by simplifying overall program offerings; and others provide bundling opportunities that enhance participation in more cost-effective measures.

Table 15 provides the cost-effectiveness results for each program in the portfolio. Appendix A provides cost-effectiveness results for each measure in the portfolio.

**Table 15. Cost Effectiveness Results**

	Cost Effectiveness	
	TRC	PAC
<b>Household Programs</b>		
Home Energy Efficiency Rebates	1.26	3.17
Home Energy Savings	0.93	1.34
Multi-family Comprehensive Energy Efficiency	2.29	2.88
Residential New Construction	2.03	3.20
Elementary Energy Education	3.79	3.79
Behavioral Energy Savings	0.86	0.86
<b>Business Programs</b>		
Business Energy Efficiency Rebates	2.37	2.99
Custom Business	1.72	3.47
Small Business Energy Efficiency	1.53	1.38
Business New Construction	2.89	4.65
<b>Portfolio</b>	1.34	2.16

## APPENDIX A

The attached Table shows Nicor Gas measure information.

Appendix A: Nicor Gas Benefit-Cost Model Input Assumptions

Program/Measure	Cost Units	Key Assumptions (PY4 - 6)									Participation				TRC			TRC
		Incremental Cost	Therm Savings	kWh Savings	Water Savings (Gallons / YR)	Measure Life	Net to Gross Ratio	Incentive	Direct Install Materials	Direct Install Labor	PY4	PY5	PY6	Total	PY4	PY5	PY6	PY4-PY6
<b>Residential</b>																		
<b>Residential New Construction</b>																		
CANDI CODES PY4	units	\$20	10	0	0	20	90%	\$8	\$0	\$0	13,454	0	0	13,454	5.10	0.00	0.00	5.10
CANDI CODES PY5	units	\$25	18	0	0	20	90%	\$14	\$0	\$0	0	15,472	0	15,472	0.00	7.56	0.00	7.56
CANDI CODES PY6	units	\$31	27	0	0	20	90%	\$19	\$0	\$0	0	0	15,472	0.00	0.00	9.26	9.26	
RNC House	units	\$2,435	243	0	0	30	72%	\$300	\$0	\$500	374	431	363	1,168	1.24	1.29	1.35	1.29
<b>Multi-Family Comprehensive Energy Efficiency</b>																		
0.67 EF Gas Storage WH	Each	\$400	148	0	0	13	84%	\$100	\$0	\$0	75	64	50	189	2.75	2.88	3.00	2.85
Attic Insulation	Square Foot	\$0.48	0.038	0	0	25	84%	\$0.30	\$0	\$0	55,325	47,002	36,475	138,802	0.92	0.95	0.99	0.95
Bath Aerator - CA DI	Installation	\$5	1	0	335	9	86%	\$0	\$0.63	\$4	429	304	188	921	1.69	1.79	1.88	1.76
Bath Aerator - IU DI	Installation	\$5	1	0	335	9	86%	\$0	\$0.63	\$4	6,952	4,919	3,046	14,917	1.69	1.79	1.88	1.76
Boiler Cutout/Reset Control	MBH	\$4	2	0	0	20	84%	\$75	\$0	\$0	61	52	41	154	5.08	5.31	5.53	5.27
Boiler Tune-up =>750 MBH	MBH	\$0.83	0.233	0	0	3	84%	\$0.22	\$0	\$0	19,978	16,973	13,172	50,123	0.56	0.60	0.65	0.59
Boiler Tune-up 100-299 MBH	Boiler	\$166	62	0	0	3	84%	\$99	\$0	\$0	66	56	44	166	0.73	0.79	0.86	0.78
Boiler Tune-up 300-499 MBH	Boiler	\$332	164	0	0	3	84%	\$108	\$0	\$0	34	29	22	85	0.98	1.06	1.14	1.04
Boiler Tune-up 500-749 MBH	Boiler	\$519	256	0	0	3	84%	\$133	\$0	\$0	20	17	13	50	0.98	1.06	1.14	1.04
Boiler Tune-up 750-999 MBH	Boiler	\$62	31	0	0	3	84%	\$84	\$0	\$0	98	84	65	247	0.98	1.06	1.14	1.04
Combination Oven	Cavity	\$4,300	644	0	0	12	84%	\$600	\$0	\$0	1	1	1	3	1.03	1.08	1.13	1.08
Condensing UH, +90% AFUE, < 100 MBTUH	Unit Heater	\$676	266	0	0	12	84%	\$200	\$0	\$0	6	5	4	15	2.80	2.95	3.07	2.91
Condensing UH, +90% AFUE, >100 - 200 MBTUH	Unit Heater	\$676	266	0	0	12	84%	\$200	\$0	\$0	3	3	2	8	2.76	2.89	3.03	2.87
Custom	Installation	\$5,450	2180	0	0	20	84%	\$2,725	\$0	\$0	31	26	20	77	3.97	4.14	4.32	4.11
Duct Sealing	CFM	\$6	0.778	0	0	20	84%	\$2	\$0	\$0	15,368	13,056	10,132	38,556	1.31	1.37	1.43	1.36
DWH Boiler- Tune-up	MBH	\$0.83	0.236	0	0	3	84%	\$0.20	\$0	\$0	6	5	4	15	0.56	0.61	0.66	0.60
Energy Assessment	per bldg	\$204	0	0	0	0	0%	\$0	\$0	\$204	361	222	109	692	0.00	0.00	0.00	0.00
ENERGY STAR Convection Oven	Cavity	\$426	306	0	0	12	84%	\$500	\$0	\$0	1	1	0	2	4.94	5.18	0.00	5.06
ENERGY STAR Fryer	Fry Vat	\$1,200	505	0	0	15	84%	\$500	\$0	\$0	1	1	0	2	3.41	3.56	0.00	3.48
ENERGY STAR Steamer	Steamer (5-6 pans)	\$998	1683	0	0	12	84%	\$1,000	\$0	\$0	1	1	0	2	11.61	12.16	0.00	11.87
Furnace <=225 MBH >=92% AFUE CA	Furnace	\$477	334	0	0	20	84%	\$200	\$0	\$0	24	21	16	61	7.09	7.40	7.71	7.34
Furnace <=225 MBH >=92% AFUE IU	Furnace	\$477	88	0	0	20	84%	\$200	\$0	\$0	246	209	162	617	1.86	1.95	2.03	1.93
Furnace <=225 MBH >=95% AFUE CA	Furnace	\$754	405	0	0	20	84%	\$350	\$0	\$0	12	10	8	30	5.43	5.66	5.90	5.62
Furnace <=225 MBH >=95% AFUE IU	Furnace	\$754	106	0	0	20	84%	\$350	\$0	\$0	123	104	81	308	1.43	1.49	1.55	1.48
Furnace <=225 MBH >=97% AFUE CA	Furnace	\$754	449	0	0	20	84%	\$350	\$0	\$0	6	5	4	15	6.01	6.30	6.55	6.24
Furnace <=225 MBH >=97% AFUE IU	Furnace	\$754	116	0	0	20	84%	\$350	\$0	\$0	31	26	20	77	1.56	1.63	1.70	1.62
Furnace Tune-up 100-250 MBH CA	Furnace	\$100	21	0	0	2	84%	\$100	\$0	\$0	6	5	4	15	0.28	0.30	0.32	0.30
Furnace Tune-up 100-250 MBH IU	Furnace	\$100	28	0	0	2	84%	\$100	\$0	\$0	681	579	449	1,709	0.37	0.40	0.43	0.39
Furnace Tune-Up 40-99 MBH CA	Furnace	\$149	10	0	0	3	84%	\$80	\$0	\$0	12	10	8	30	0.14	0.15	0.16	0.15
Furnace Tune-Up 40-99 MBH IU	Furnace	\$149	16	0	0	3	84%	\$80	\$0	\$0	1,235	1,049	814	3,098	0.22	0.23	0.25	0.23
HVAC Steam Traps >15 psi	Trap	\$150	330	0	0	6	84%	\$150	\$0	\$0	6	5	4	15	8.58	9.16	9.66	9.03
HW Boilers <300 MBH >=85% AFUE	MBH	\$8	1	0	0	20	84%	\$2	\$0	\$0	9,429	8,010	6,216	23,655	1.29	1.35	1.41	1.34
HW Boilers <300 MBH >=90% AFUE	MBH	\$16	3	0	0	20	84%	\$2	\$0	\$0	3,733	3,172	2,461	9,366	1.73	1.81	1.88	1.80
HW Boilers = 300 - 599 MBH >=85% TE O	MBH	\$8	1	0	0	20	84%	\$2	\$0	\$0	3,688	3,133	2,432	9,253	1.76	1.83	1.91	1.82
HW Boilers =>600 MBH >=85% TE	MBH	\$8	1	0	0	20	84%	\$2	\$0	\$0	6,147	5,222	4,053	15,422	1.76	1.83	1.91	1.82
HW Boilers =>600 MBH >=90% TE	MBH	\$20	3	0	0	20	84%	\$4	\$0	\$0	4,610	3,917	3,040	11,567	1.53	1.60	1.66	1.59
HW Boilers =300-599 MBH >=90% TE	MBH	\$20	3	0	0	20	84%	\$4	\$0	\$0	1,537	1,306	1,013	3,856	1.39	1.45	1.51	1.44
HW Setback - IU DI	Installation	\$4	6	0	0	2	86%	\$0	\$0.01	\$4	137	97	60	294	1.96	2.09	2.26	2.06
Indirect Storage Water Heaters	Each	\$685	188	0	0	13	84%	\$275	\$0	\$0	2	1	1	4	2.01	2.10	2.20	2.07
Infrared Heaters	MBH	\$11	3	0	0	12	84%	\$4	\$0	\$0	922	783	608	2,313	1.84	1.93	2.01	1.91
Kitchen Aerator - CA DI	Installation	\$6	4	0	939	9	86%	\$0	\$2	\$4	54	38	24	116	3.56	3.76	3.96	3.70
Kitchen Aerator - IU DI	Installation	\$6	4	0	939	9	86%	\$0	\$2	\$4	6,952	4,919	3,046	14,917	3.56	3.77	3.96	3.70
Large DHW Pipe Wrap - CA	Linear Foot	\$3	5	0	0	15	84%	\$1	\$0	\$0	154	131	101	386	13.20	13.80	14.40	13.69
Large gas water heater	MBH	\$3	2	0	0	15	84%	\$2	\$0	\$0	30,736	26,112	20,264	77,112	4.94	5.16	5.39	5.12
Large HW Boiler Pipe Wrap - CA	Linear Foot	\$3	13	0	0	15	84%	\$1	\$0	\$0	154	131	101	386	36.05	37.67	39.33	37.37
Linkageless Controls	MBH	\$1	0.833	0	0	20	84%	\$0.36	\$0	\$0	30,736	26,112	20,264	77,112	8.43	8.80	9.17	8.73
MF Single-Pipe Steam Boiler Controls	Apartment Unit	\$286	56	0	0	15	84%	\$200	\$0	\$0	61	52	41	154	1.64	1.71	1.79	1.70
MF Single-Pipe Steam System	Apartment Unit	\$86	23	0	0	15	84%	\$50	\$0	\$0	61	52	41	154	2.29	2.40	2.50	2.38
O2 Trim - Savings	MBH	\$0.50	0.231	0	0	20	84%	\$0.15	\$0	\$0	30,736	26,112	20,264	77,112	4.68	4.88	5.08	4.84
Pasta Cooker MF	Vat	\$2,400	1380	0	0	12	84%	\$200	\$0	\$0	1	1	0	2	3.96	4.15	0.00	4.05
PM - Small Bldg Retrofit	per bldg	\$401	0	0	0	0	90%	\$0	\$0	\$401	72	72	72	216	0.00	0.00	0.00	0.00
PM Fee	per bldg	\$247	0	2	0	0	0%	\$0	\$0	\$247	123	104	81	308	0.00	0.00	0.00	0.00
Pre-Rinse Sprayer - DI	Installation	\$54	119	0	10109	5	86%	\$0	\$35	\$19	21	15	9	45	7.14	7.60	8.07	7.46
Programmable T-Stat CA	Each	\$30	178	0	0	5	84%	\$50	\$0	\$0	9	8	6	23	19.61	20.87	21.97	20.61
Programmable T-Stat IU	Each	\$30	19	0	0	5	84%	\$50	\$0	\$0	6	5	4	15	2.09	2.25	2.37	2.21
Re-Program Thermostat - DI	Installation	\$4	34	0	0	5	86%	\$0	\$0	\$4	9	6	4	19	26.07	27.55	29.35	27.15
Showerhead - CA DI	Installation	\$9	25	0	3948	7	86%	\$0	\$5	\$4	215	152	94	461	12.33	13.04	13.83	12.84
Showerhead - IU DI	Installation	\$9	25	0	3948	7	86%	\$0	\$5	\$4	8,153	5,769	3,572	17,494	12.33	13.04	13.83	12.84
Small Bldg Retrofit	per bldg	\$3,901	955	0	0	20	84%	\$3,901	\$0	\$0	72	72	72	216	2.48	2.59	2.69	2.58
Steam Boilers > 299 MBH >=82% TE O	MBH	\$8	1	0	0	20	84%	\$2	\$0	\$0	3,074	2,611	2,026	7,711	1.58	1.65	1.72	1.64
Steam Pipe Insulation - Fitting, EL	Linear Foot	\$60	65	0	0	15	84%	\$30	\$0	\$0	9	8	6	23	9.04	9.45	9.84	9.38
Steam Pipe Insulation - Fitting, L	Linear Foot	\$34	42	0	0	15	84%	\$17	\$0	\$0	92	78	61	231	10.30	10.77	11.24	10.68
Steam Pipe Insulation - Fitting, M	Linear Foot	\$24	21	0	0	15	84%	\$12	\$0	\$0	138	118	91	347	7.33	7.66	8.00	7.60
Steam Pipe Insulation - Fitting, Sml	Linear Foot	\$20	8	0	0	15	84%	\$9	\$0	\$0	123							

Appendix A: Nicor Gas Benefit-Cost Model Input Assumptions

Key Assumptions (PY4 - 6)												Participation				TRC			TRC
Program/Measure	Cost Units	Incremental Cost	Therm Savings	kWh Savings	Water Savings (Gallons / YR)	Measure Life	Net to Gross Ratio	Incentive	Direct Install Materials	Direct Install Labor	PY4	PY5	PY6	Total	PY4	PY5	PY6	PY4-PY6	
Steam Pipe Insulation - Valve, Sml	Linear Foot	\$25	21	0	0	15	84%	\$15	\$0	\$0	3	3	2	8	6.99	7.32	7.64	7.26	
Steam Pipe Insulation - XL	Linear Foot	\$8	54	0	0	15	84%	\$30	\$0	\$0	922	783	608	2,313	56.34	58.92	61.50	58.43	
Steam Trap Audit	Trap	\$5	0	0	0	6	84%	\$5	\$0	\$0	92	78	61	231	0.00	0.00	0.00	0.00	
Steam Trap Repair/Replacement	Trap	\$77	330	0	0	6	84%	\$60	\$0	\$0	461	392	304	1,157	16.81	17.79	18.83	17.62	
Tankless WH & Space heater	Each	\$1,027	143	0	0	13	84%	\$950	\$0	\$0	1	1	0	2	1.02	1.07	0.00	1.04	
Tankless WH CA	Each	\$605	243	0	0	13	84%	\$450	\$0	\$0	3	3	2	8	2.94	3.07	3.21	3.05	
Tankless WH IU	Each	\$605	43	0	0	13	84%	\$450	\$0	\$0	8	7	5	20	0.53	0.55	0.58	0.55	
Technical Assistance	per bldg	\$311	0	2	0	0	0%	\$0	\$0	\$311	123	104	81	308	0.00	0.00	0.00	0.00	
Thermostat - DI	Installation	\$54	34	0	0	5	86%	\$0	\$24	\$30	2,575	1,822	1,128	5,525	2.06	2.19	2.32	2.15	
Unit Visit Fee	units	\$5	0	1	0	0	0%	\$0	\$0	\$5	7,121	5,039	3,120	15,280	0.00	0.00	0.00	0.00	
Water Heater ≥88%TE	Water Heater	\$209	251	0	0	15	84%	\$50	\$0	\$0	3	3	2	8	9.72	10.16	10.61	10.09	
WH Pipe Insulation - CA DI	per foot	\$2	5	0	0	15	86%	\$0	\$1	\$0.83	5,793	4,099	2,538	12,430	21.66	22.64	23.63	22.34	
WH Pipe Insulation - IU DI	per foot	\$1	0.850	0	0	15	86%	\$0	\$0.36	\$0.65	2,146	1,518	940	4,604	6.92	7.23	7.55	7.13	
<b>Home Energy Savings</b>																			
Bath Aerator (HES)	Installation	\$2	0.865	0	217	9	77%	\$0	\$2	\$0	2,095	2,138	1,534	5,767	2.28	2.41	2.54	2.39	
Energy Assessment (HES)	Installation	\$174	0	0	0	20	77%	\$0	\$0	\$107	1,167	1,192	857	3,216	0.00	0.00	0.00	0.00	
Kitchen Aerator (HES)	Installation	\$5	5	0	1195	9	77%	\$0	\$5	\$0	197	201	145	543	5.58	5.90	6.20	5.85	
Pipe Insulation (HES)	3ft pipe segment	\$6	6	0	0	15	77%	\$0	\$6	\$0	748	763	548	2,059	8.28	8.65	9.03	8.60	
Project Management	Installation	\$59	0	0	0	20	77%	\$0	\$0	\$60	1,170	1,191	960	3,321	0.00	0.00	0.00	0.00	
Retrofit	Installation	\$2,101	268	0	0	25	77%	\$968	\$0	\$0	1,170	1,191	960	3,321	1.46	1.52	1.58	1.51	
Shower Wand	Installation	\$14	20	0	3684	10	77%	\$0	\$14	\$0	30	30	22	82	8.70	9.16	9.61	9.09	
Showerhead (HES)	Installation	\$9	20	0	3684	10	77%	\$0	\$9	\$0	1,247	1,273	913	3,433	13.50	14.21	14.92	14.11	
Thermostat (HES)	Installation	\$55	53	0	0	5	77%	\$32	\$0	\$0	64	65	47	176	3.15	3.36	3.55	3.32	
Thermostat Education	Installation	\$0.01	53	0	0	2	77%	\$0	\$0.01	\$0	199	203	146	548	6986.01	7492.39	8116.16	7,447.05	
WH Turndown	Installation	\$0.01	6	0	0	2	77%	\$0	\$0.01	\$0	170	174	125	469	835.74	890.62	964.16	887.18	
<b>Home Energy Efficiency Rebates</b>																			
Boiler, 90% AFUE	Installation	\$1,481	169	0	0	25	71%	\$350	\$0	\$0	39	53	53	145	1.30	1.36	1.41	1.36	
Boiler, 95% AFUE	Installation	\$1,994	203	0	0	25	71%	\$450	\$0	\$0	88	118	120	326	1.17	1.22	1.26	1.22	
Furnace (Joint), ≥92%	Installation	\$1,000	140	0	0	20	71%	\$300	\$0	\$0	115	115	117	347	1.42	1.48	1.54	1.48	
Furnace (Joint), ≥95% AFUE	Installation	\$1,427	162	721	0	20	71%	\$400	\$0	\$0	4,005	4,033	4,082	12,120	1.15	1.20	1.25	1.20	
Furnace (Joint), ≥97% AFUE	Installation	\$1,698	177	721	0	20	71%	\$500	\$0	\$0	366	369	373	1,108	1.05	1.10	1.15	1.10	
Furnace, ≥92% AFUE	Installation	\$1,000	140	0	0	20	71%	\$200	\$0	\$0	881	887	898	2,666	1.42	1.48	1.54	1.48	
Furnace, ≥95% AFUE	Installation	\$1,427	162	721	0	20	71%	\$300	\$0	\$0	6,935	6,983	7,067	20,985	1.15	1.20	1.25	1.20	
Furnace, ≥97% AFUE	Installation	\$1,698	177	721	0	20	71%	\$400	\$0	\$0	693	698	707	2,098	1.05	1.10	1.15	1.10	
Furnace, A/C, WH & Tstat	project	\$1,857	231	3	0	15	71%	\$700	\$0	\$0	92	92	93	277	1.04	1.09	1.14	1.09	
Furnace, WH & Tstat	project	\$1,857	231	2	0	15	71%	\$600	\$0	\$0	119	120	121	360	1.04	1.09	1.14	1.09	
Kit 1	per kit	\$11	17	0	3556	10	76%	\$0	\$11	\$0	10,000	10,000	10,000	30,000	9.59	10.10	10.60	10.07	
Kit 2	per kit	\$14	29	0	5740	10	76%	\$0	\$14	\$0	10,000	10,000	10,000	30,000	12.74	13.42	14.08	13.38	
<b>Elementary Energy Education</b>																			
EEE Kit	Installation	\$25	15	0	2688	9	71%	\$0	\$25	\$0	6,930	5,985	5,040	17,955	3.39	3.58	3.77	3.55	
<b>Behavioral Energy Savings</b>																			
Opower	Installation	\$6	12	0	0	1	90%	\$0	\$0	\$6	20,001	20,001	20,001	60,003	1.26	1.34	1.44	1.34	
<b>Business</b>																			
<b>Small Business Energy Efficiency</b>																			
Bath Aerator (SBES)	units	\$16	3	0	657	9	90%	\$0	\$18	\$0	360	311	262	933	1.03	1.09	1.15	1.08	
Boiler Reset (SBES)	units	\$612	617	0	0	20	90%	\$840	\$0	\$0	30	26	22	78	10.20	10.65	11.09	10.58	
Boiler Tune-Up	units	\$627	116	0	0	3	90%	\$220	\$0	\$0	60	52	44	156	0.37	0.40	0.43	0.39	
Condensing Unit Heater, 100-200 MBH	units	\$676	266	0	0	12	90%	\$500	\$0	\$0	1	1	1	3	2.76	2.89	3.03	2.88	
Condensing Unit Heater, 200-300 MBH	units	\$676	266	0	0	12	90%	\$500	\$0	\$0	1	1	1	3	2.76	2.89	3.03	2.88	
Economizer w/ DCV 1 - 5 ton	units	\$1,250	679	0	0	5	90%	\$500	\$0	\$0	1	1	1	3	1.71	1.83	1.94	1.82	
Economizer w/ DCV 6 - 10 ton	units	\$1,750	679	0	0	5	90%	\$1,500	\$0	\$0	1	1	1	3	1.22	1.31	1.39	1.30	
Energy Assessment (SBES)	units	\$391	0	0	0	1	90%	\$0	\$0	\$391	468	405	341	1,214	0.00	0.00	0.00	0.00	
Furnace <100 MBH	units	\$802	130	0	0	17	90%	\$350	\$0	\$0	3	2	2	7	1.43	1.49	1.56	1.48	
Furnace <100 MBH (Early Replace)	units	\$1,157	213	0	0	17	90%	\$1,000	\$0	\$0	2	2	2	6	1.62	1.69	1.77	1.69	
Furnace >200 MBH	units	\$2,123	442	0	0	17	90%	\$350	\$0	\$0	1	1	1	3	1.83	1.91	2.00	1.91	
Furnace >200 MBH (Early Replace)	units	\$3,063	725	0	0	17	90%	\$1,500	\$0	\$0	1	1	1	3	2.08	2.18	2.27	2.17	
Furnace 100-200 MBH	units	\$1,415	303	0	0	17	90%	\$2,275	\$0	\$0	45	39	33	117	1.91	2.00	2.09	1.99	
Furnace 100-200 MBH (Early Replace)	units	\$2,042	496	0	0	17	90%	\$2,275	\$0	\$0	87	75	64	226	2.17	2.27	2.37	2.26	
Furnace Tune-Up	units	\$140	63	0	0	3	90%	\$135	\$0	\$0	214	185	155	554	0.89	0.96	1.04	0.95	
Guest Room EM	units	\$260	62	0	0	15	90%	\$98	\$0	\$0	1	1	1	3	1.93	2.02	2.11	2.01	
HW Heater Insulation	units	\$50	16	0	0	5	90%	\$30	\$0	\$0	3	2	2	7	1.01	1.08	1.14	1.06	
Hydronic Boiler: <100 MBH +90% TE	units	\$2,885	807	0	0	20	90%	\$1,200	\$0	\$0	1	1	1	3	2.79	2.91	3.03	2.90	
Hydronic Boiler: 100-200 MBH +90% TE	units	\$2,885	807	0	0	20	90%	\$1,200	\$0	\$0	1	1	1	3	2.79	2.91	3.03	2.90	
Hydronic Boiler: 200-300 MBH +90% TE	units	\$2,885	807	0	0	20	90%	\$1,200	\$0	\$0	1	1	1	3	2.79	2.91	3.03	2.90	
Infrared Heaters, 100-150 MBH	units	\$1,716	451	0	0	12	90%	\$800	\$0	\$0	1	1	1	3	1.84	1.93	2.02	1.93	
Infrared Heaters, 150-200MBH	units	\$1,716	451	0	0	12	90%	\$800	\$0	\$0	1	1	1	3	1.84	1.93	2.02	1.93	
Pipe Insulation, Hydronic	unit/lf	\$6	1	0	0	15	90%	\$6	\$0	\$0	53	46	39	138	1.65	1.72	1.79	1.71	
Pipe Insulation, Steam	unit/lf	\$6	2	0	0	15	90%	\$6	\$0	\$0	53	46	39	138	3.15	3.29	3.44	3.27	
Pre Rinse Sprayers	units	\$100	164	0	21060	5	90%	\$0	\$75	\$0	62	54	45	161	5.28	5.64	5.97	5.58	
Programmable Thermostat (SBES)	units	\$200	178	0	0	5	90%	\$150	\$0	\$0	899	777	654	2,330	2.93	3.13	3.31	3.09	
Programmable Thermostat, Multi Pt	units	\$200	178	0	0	5	90%	\$150	\$0	\$0	28	24	21	73	2.93	3.13	3.31	3.10	
Salon Sprayers	units	\$100	128	0	16474	5	90%	\$0	\$95	\$0	1	1	1	3	4.04	4.31	4.58	4.30	
Showerhead (SBES)	units	\$33	22	0	883	10	90%	\$0	\$35	\$0	66	57	48	171	4.02	4.24	4.45	4.20	
Steam Trap, 0-15 psig	units	\$77	245	0	0	6	90%	\$340	\$0	\$0	360	311	262	933	12.46	13.19	13.96	13.08	

Appendix A: Nicor Gas Benefit-Cost Model Input Assumptions

Key Assumptions (PY4 - 6)											Participation				TRC			TRC			
Program/Measure	Cost Units	Incremental Cost	Therm Savings	kWh Savings	Water Savings (Gallons / YR)	Measure Life	Net to Gross Ratio	Incentive	Direct Install Materials	Direct Install Labor	PY4	PY5	PY6	Total	PY4	PY5	PY6	PY4-PY6			
Tankless WH >= 75 MBTUH	units	\$3,255	115	0	0	20	90%	\$500	\$0	\$0	1	1	1	3	0.35	0.36	0.38	0.36			
<b>Business New Construction</b>																					
Business New Construction	Per SF	\$0.15	0.049	0	0	25	47%	\$0.03	\$0	\$0	5,037,573	4,755,511	4,464,487	14,257,571	3.78	3.94	4.10	3.92			
CANDI Codes PY4 - C	Per SF	\$0.01	0.005	0	0	25	90%	\$0.01	\$0	\$0	18,663,184	0	0	18,663,184	4.03	0.00	0.00	4.03			
CANDI Codes PY5 - C	Per SF	\$0.02	0.008	0	0	25	90%	\$0.01	\$0	\$0	0	24,262,139	0	24,262,139	0.00	5.97	0.00	5.97			
CANDI Codes PY6 - C	Per SF	\$0.02	0.011	0	0	25	90%	\$0.01	\$0	\$0	0	0	26,128,457	26,128,457	0.00	0.00	7.29	7.29			
Technical Assistance (BNC)	Per SF	\$0.03	0	0	0	0	0%	\$0	\$0	\$0.03	5,037,573	4,755,511	4,464,487	14,257,571	0.00	0.00	0.00	0.00			
<b>Business Energy Efficiency Rebate</b>																					
Boiler Reset (BEER)	500 MBH/units	\$840	595	0	0	20	75%	\$250	\$0	\$0	14	12	10	36	7.16	7.48	7.78	7.42			
Boiler Tune Up, Process Heat	800 MBH/units	\$664	470	0	0	3	75%	\$400	\$0	\$0	32	31	29	92	1.38	1.48	1.60	1.48			
Boiler Tune-Up, Heat	400 MBH / units	\$332	93	0	0	3	75%	\$160	\$0	\$0	175	169	158	502	0.56	0.60	0.65	0.60			
Combined Oven	units	\$4,300	644	0	0	12	75%	\$900	\$0	\$0	2	3	2	7	1.03	1.08	1.13	1.08			
Condensing Boiler: <300 MBH	units	\$3,365	395	0	0	20	75%	\$500	\$0	\$0	10	9	9	28	1.19	1.24	1.29	1.23			
Condensing Boiler: 1000-1700 MBH	units	\$9,415	2189	0	0	20	75%	\$5,000	\$0	\$0	13	12	11	36	2.35	2.46	2.56	2.44			
Condensing Boiler: 1701-2000 MBH	units	\$12,165	2798	0	0	20	75%	\$7,500	\$0	\$0	6	6	6	18	2.32	2.42	2.53	2.42			
Condensing Boiler: 301-499 MBH	units	\$4,190	642	0	0	20	75%	\$1,500	\$0	\$0	19	18	17	54	1.55	1.62	1.69	1.61			
Condensing Boiler: 500-999 MBH	units	\$6,115	1284	0	0	20	75%	\$2,500	\$0	\$0	38	37	34	109	2.12	2.22	2.31	2.21			
Condensing Unit Heater	200 MBH/units	\$1,000	1174	0	0	12	75%	\$500	\$0	\$0	4	3	3	10	8.37	8.63	9.03	8.63			
Convection Oven	units	\$426	306	0	0	12	75%	\$400	\$0	\$0	2	3	2	7	4.94	5.18	5.42	5.17			
Conveyor Oven	units	\$857	733	0	0	12	75%	\$500	\$0	\$0	1	1	1	3	5.89	6.17	6.45	6.15			
Conveyor Oven, Large	units	\$1,800	733	0	0	17	75%	\$1,000	\$0	\$0	2	3	2	7	3.59	3.75	3.91	3.74			
Demand Control Ventilation (DCV)	Unit	\$1,500	600	0	0	10	75%	\$500	\$0	\$0	9	7	6	22	2.42	2.54	2.66	2.52			
Double Oven	units	\$8,646	2064	0	0	12	75%	\$1,400	\$0	\$0	1	1	1	3	1.64	1.72	1.80	1.72			
Finned-Bottom Stock Pot	units	\$25	51	0	0	3	75%	\$25	\$0	\$0	5	7	5	17	3.92	4.17	4.55	4.20			
Fryer	units	\$1,200	505	0	0	15	75%	\$500	\$0	\$0	10	13	9	32	3.45	3.62	3.78	3.60			
Fryer, Large Vat	units	\$611	578	0	0	12	75%	\$550	\$0	\$0	2	3	2	7	6.51	6.82	7.14	6.81			
Furnace: 92% AFUE	units	\$802	321	0	0	17	75%	\$300	\$0	\$0	35	38	38	111	3.65	3.81	3.98	3.81			
Furnace: 95% AFUE	units	\$1,511	370	0	0	17	75%	\$400	\$0	\$0	80	86	87	253	2.24	2.34	2.44	2.33			
Griddle	units	\$857	149	0	0	12	75%	\$250	\$0	\$0	1	1	1	3	1.20	1.25	1.31	1.25			
Hydronic Boiler: <300 MBH	units	\$1,470	157	0	0	20	75%	\$400	\$0	\$0	1	1	1	3	1.06	1.11	1.16	1.11			
Hydronic Boiler: 1000-1700 MBH	units	\$2,570	871	0	0	20	75%	\$1,750	\$0	\$0	2	2	2	6	3.38	3.53	3.68	3.52			
Hydronic Boiler: 1701-2000 MBH	units	\$3,070	1481	0	0	20	75%	\$2,500	\$0	\$0	1	1	1	3	4.80	5.02	5.23	5.01			
Hydronic Boiler: 301-499 MBH	units	\$1,620	261	0	0	20	75%	\$1,000	\$0	\$0	2	2	2	6	1.61	1.68	1.75	1.67			
Hydronic Boiler: 500-999 MBH	units	\$1,970	523	0	0	20	75%	\$1,250	\$0	\$0	4	3	3	10	2.69	2.76	2.88	2.76			
Indoor Pool Cover	1000 SF	\$2,000	2610	0	0	5	75%	\$1,250	\$0	\$0	3	3	2	8	4.12	4.40	4.66	4.35			
Infrared Charbroiler	units	\$2,200	661	0	0	12	75%	\$500	\$0	\$0	1	1	1	3	2.07	2.17	2.27	2.16			
Infrared Heater	units	\$1,716	451	0	0	12	75%	\$500	\$0	\$0	29	25	21	75	1.87	1.97	2.05	1.95			
Infrared Salamander Broiler	units	\$1,000	239	0	0	12	75%	\$500	\$0	\$0	4	5	3	12	1.67	1.76	1.80	1.74			
Infrared Upright Broiler	units	\$5,900	1089	0	0	10	75%	\$500	\$0	\$0	1	1	1	3	1.10	1.15	1.21	1.15			
Outdoor Pool Cover	1000 SF	\$2,040	1010	0	0	5	75%	\$750	\$0	\$0	1	1	1	3	1.56	1.67	1.77	1.66			
Ozone Laundry	150 lb laundry	\$11,976	5775	0	0	10	75%	\$3,750	\$0	\$0	6	5	4	15	2.90	3.08	3.22	3.04			
Pasta Cooker	units	\$2,400	1380	0	0	12	75%	\$200	\$0	\$0	5	7	5	17	4.04	4.21	4.42	4.21			
Pipe Insulation - Indoor	500 Linear Feet	\$7,000	3905	0	0	15	75%	\$2,000	\$0	\$0	18	16	13	47	4.58	4.79	5.01	4.76			
Pipe Insulation - Outdoor	500 Linear Feet	\$10,500	11295	0	0	15	75%	\$4,000	\$0	\$0	7	6	5	18	8.83	9.20	9.68	9.16			
Pre-Rinse Spray Valve	units	\$100	161	0	15163	5	75%	\$25	\$0	\$0	174	232	163	569	5.20	5.55	5.87	5.52			
Programmable Thermostat	units	\$75	178	0	0	5	75%	\$50	\$0	\$0	546	472	397	1,415	7.82	8.35	8.82	8.25			
Steam Trap: >250 psi	units	\$418	7966	0	0	6	75%	\$250	\$0	\$0	16	14	12	42	74.63	78.83	83.59	78.36			
Steam Trap: 125-175 psi	units	\$322	4449	0	0	6	75%	\$250	\$0	\$0	80	69	58	207	54.11	57.28	60.58	56.81			
Steam Trap: 15-30 psi	units	\$180	582	0	0	6	75%	\$180	\$0	\$0	3	3	3	9	12.38	13.12	13.86	13.08			
Steam Trap: 175-250 psi	units	\$370	5890	0	0	6	75%	\$250	\$0	\$0	38	33	28	99	62.29	66.01	69.83	65.46			
Steam Trap: 30-75 psi	units	\$223	854	0	0	6	75%	\$223	\$0	\$0	7	6	5	18	14.97	15.81	16.86	15.72			
Steam Trap: 75-125 psi	units	\$276	2941	0	0	6	75%	\$250	\$0	\$0	193	167	140	500	41.73	44.16	46.74	43.82			
Steam Trap: Commercial	units	\$77	89	0	0	6	75%	\$50	\$0	\$0	385	332	280	997	4.55	4.82	5.10	4.78			
Steamer	units	\$998	1536	0	0	12	75%	\$950	\$0	\$0	2	3	2	7	10.59	11.10	11.61	11.08			
Water Heater: Free Standing	units	\$400	161	0	0	15	75%	\$200	\$0	\$0	6	5	4	15	3.29	3.47	3.61	3.43			
Water Heater: Large	units	\$209	251	0	0	15	75%	\$150	\$0	\$0	9	7	6	22	9.90	10.30	10.72	10.23			
<b>Business Custom Incentive</b>																					
Custom: therms > 2,500	units	\$125,498	35789	0	0	15	48%	\$32,764	\$0	\$0	97	83	70	250	2.35	2.45	2.56	2.43			
Facility Audits	units	\$20,000	0	0	0	1	90%	\$0	\$0	\$20,000	3	2	2	7	0.00	0.00	0.00	0.00			
MBCx	per project	\$30,000	30000	0	0	5	92%	\$0	\$0	\$30,000	1	1	1	3	3.16	3.37	3.57	3.36			
Opportunity Assessments	units	\$4,000	0	1	0	1	90%	\$0	\$0	\$4,000	61	53	44	158	0.00	0.00	0.00	0.00			
RCx	per project	\$11,893	25000	0	0	5	92%	\$0	\$0	\$0	7	7	7	21	6.76	7.22	7.64	7.19			
Technical Assistance (Cust)	units	\$2,242	0	1	0	0	90%	\$0	\$0	\$2,242	97	83	70	250	0.00	0.00	0.00	0.00			
Technical Assistance (MB)	per project	\$10,575	0	0	0	1	92%	\$0	\$0	\$10,575	1	1	1	3	0.00	0.00	0.00	0.00			
Technical Assistance (RC)	per project	\$27,072	0	0	0	1	92%	\$0	\$0	\$27,072	7	7	7	21	0.00	0.00	0.00	0.00			