



SPIRE MISSISSIPPI 2021-2023 ENERGY EFFICIENCY PORTFOLIO PLAN

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Report prepared for:
SPIRE MISSISSIPPI

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EXHIBIT
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EXECUTIVE SUMMARY

Spire Mississippi (Spire) retained Applied Energy Group (AEG) to design an Energy Efficiency Portfolio Plan (EE Plan) for 2021 through 2023. The purpose of this report is to describe the EE Plan, including the target markets, measures, implementation strategies, and evaluation procedures.

Overall, Spire Mississippi serves approximately 18,500 natural gas customers across eight (8) Mississippi counties. Most customers are residential sector (84%); however, the service territory also includes nearly 3,000 businesses. The business sector is made up of various industries, including retail, restaurants, commercial and industrial customers.

Table ES 1 2019 Spire Customer Segments and Sales

Segment	Customer Count (Accounts)	Gas Sales (therms)	Customer Count (% of total)	Gas Sales (% of total)
Residential	15,556	6,840,964	84%	25%
Small Commercial	2,898	6,194,225	16%	23%
Large Commercial and Industrial	55	14,145,500	0.3%	52%
Total	18,509	27,180,689	100%	100%

The portfolio is composed of a Residential Program and a Business Program that target Spire's residential, commercial, and industrial customers. Each program is designed to offer a comprehensive set of measures and opportunities to achieve energy savings across a variety of end uses and tailored to meet the unique needs of each customer segment.

The Residential Program provides rebates to residential owners and customers for the installation of high-efficiency heating systems, water heating systems, and thermostats. The program also offers energy and water conservation kits to income-eligible customers, free of charge.

The Business Program provides prescriptive rebates for the purchase and installation of qualifying energy-efficient gas equipment/systems among eligible commercial and industrial customers. In addition to encouraging commercial and industrial customers to purchase and install energy-efficient gas equipment, the program is intended to develop partnerships with contractors and distributors to bring energy-efficient products and systems to the market.

The tables below show the annual budget and savings for the EE Plan.

Table ES 2 Annual Portfolio Budgets, 2021-2023

Program	2021	2022	2023	Total
Residential	\$109,399	\$137,318	\$137,318	\$384,034
Business	\$94,461	\$92,907	\$91,542	\$278,911
Cross-Program ¹	\$83,000	\$58,000	\$58,000	\$199,000
Total Portfolio	\$286,860	\$288,225	\$286,860	\$861,945

¹ The cross-program budget includes only non-incentive budgets to accommodate administrative costs that are shared across both the residential and commercial programs. Budgeted cross program expenditures are expected to be greater in the first year to account for program start up.

Table ES 3 Annual Portfolio Savings (therms), 2021-2023

Program	2021	2022	2023	Total
Residential	26,130	34,415	34,415	94,960
Business	77,763	78,108	78,108	233,978
Total Portfolio	103,893	112,523	112,523	328,939

The portfolio includes a total 3-year plan budget of \$861,945 with anticipated savings of 328,939 therms. As planned, the portfolio achieves an overall 3-year Total Resource Cost (TRC) benefit-cost ratio of 1.07.²

² The Total Resource Cost (TRC) test is described in more detail in body of the report.

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INTRODUCTION

Spire Mississippi (Spire) retained Applied Energy Group (AEG) to design an Energy Efficiency Portfolio Plan (EE Plan) for 2021 through 2023. The purpose of this report is to describe the EE Plan, including the target markets, measures, implementation strategies, and evaluation procedures. In addition, the EE Plan includes detailed budgets and savings estimates for each program year along with cost-effectiveness results.

Overall, Spire Mississippi serves approximately 18,500 natural gas customers across eight (8) Mississippi counties. Most customers are residential sector (84%); however, the service territory also includes nearly 3,000 businesses. The business sector is made up of various industries, including retail, restaurants, commercial and industrial customers.

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Total	18,509	27,180,689	100%	100%

The portfolio is composed of two programs targeting Spire's residential, commercial, and industrial customers. Each program is designed to offer a comprehensive set of measures and opportunities to achieve energy savings across a variety of end uses and tailored to meet the unique needs of each customer segment. For example, in addition to traditional space and water heating measures, the residential program offers incentives for advanced thermostats and water savings kits that may be targeted toward income-eligible customers. The business program also provides incentives for food service and process measures that provide additional opportunities to businesses in the Spire service territory.

The following section describes the methodology and approach to the planning process in more detail.

Overview of Spire Planning Process

The Spire EE Plan is the result of a comprehensive planning process conducted in close collaboration between AEG and Spire. In particular, the planning process consisted of the following steps:

1. Collected Spire data and information for the development of the EE Plan. Data elements include Spire's customer billing data, which was used to gauge market size and identify key segments, avoided costs, O&M costs, discount rates, and other utility-specific data for the purpose of evaluating cost-effectiveness.
2. Develop a comprehensive list of natural gas measures to consider for inclusion in the EE Plan. Each measure was fully characterized to include annual gas savings, incremental costs, and measure lives, and other characteristics needed for the cost-effectiveness analysis. AEG

relied on regional sources and Technical Reference Manuals to develop measure characterizations representing market conditions in Spire's service territory.

3. Performed cost-effectiveness screening of measures using the Total Resource Cost (TRC) test, Utility Cost Test (UCT), Societal Cost Test (SCT), Participant Cost Test (PCT), and the Ratepayer Impact Measure (RIM) using utility-specific data and an industry-standard approach.
4. Estimation of participation rates and incentives for each measure based on customer market size, experience in other jurisdictions, and recent field experience of Spire staff.
5. Compile program and portfolio budgets, energy savings, and cost-effectiveness analysis to develop the EE Plan.

AEG performed the industry-standard cost-effectiveness tests in order to gauge the economic merits of the measures and programs. Each test compares the benefits of a measure or program to its costs using its own unique perspectives and definitions. The Total Resource Cost Test (TRC) is used as the primary indicator of cost-effectiveness. Summary explanations of the tests can be found below.

- **Total Resource Cost Test (TRC).** The benefits include the lifetime avoided energy costs, while the costs include the participant and utility administrative costs associated with the program. The TRC test represents the combination of the effects of a program on both participating and non-participating customers.
- **Societal Cost Test (SCT).** The benefits include the lifetime avoided energy costs as well as environmental externalities associated with societal impacts. The SCT represents the societal impacts of the program on both participating and non-participating customers.
- **Utility Cost Test (UCT).** The benefits include the lifetime avoided energy costs and avoided capacity costs, while the costs include the utility's incentive and administrative costs.
- **Participant Cost Test (PCT).** The benefits include lost utility revenues (i.e., the lifetime value of retail rate savings). The costs include the participant incremental measure costs minus the value of incentives.
- **Rate Impact Measure Test (RIM).** The test measures what happens to customer's rates due to changes in utility revenues and operating costs. Therefore, if the benefits are greater than the costs, rates will decrease on average, and subsidies will be minimized or avoided. The benefits are the same as the TRC benefits, and the costs include all utility costs associated with the program, including lost utility revenue as well as incentive and administrative costs.

AEG used BenCost, a proprietary, Microsoft Excel® -based cost-effectiveness model, to perform a benefit-cost analysis consistent with industry best-practices. The input data gathered for the model includes:

Table 1-2 Natural Gas Cost-Effectiveness Model Inputs

General Inputs	Specific-Project Inputs
Retail Rate (\$/therm)	Utility Project Costs (Administrative & Incentives)
Avoided Energy Cost (\$/therm)	Direct Participant Project Costs (\$/Participant)
Avoided Demand Cost (\$/therm)	Project Life (Years)
Avoided O&M Costs (\$/therm)	Therms/Participant Saved (Net and Gross)
Environmental Damage Cost (\$/therm)	Number of Participants
Discount Rate (%)	
Growth Rate (%)	
Gas Losses (%)	

Measure savings and costs were developed based on a variety of sources, including Technical Resource Manuals. Mississippi-specific data was utilized where available, with regional and national data filling information gaps. Impacts were calculated using generally accepted engineering algorithms based on a set of reasonable assumptions. Because of the diversity in equipment and energy consumption patterns across multiple building types and end-uses, there exists variability in these savings estimates as they relate to program design and target markets, particularly at the planning stage of these programs.

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PORTFOLIO SUMMARY

The Spire EE Plan includes two programs for 2021 through 2023: a residential program and a business program for commercial and industrial customers. The portfolio budget includes the total estimated incentives and non-incentives for each program. The cross-program budget includes only non-incentive budgets to accommodate administrative costs that are shared across both the residential and business programs. Budgeted cross-program expenditures are greater in the first year of the EE Plan to account for startup costs, including tracking system set up and program administration.

Overall, the portfolio includes a total 3-year plan budget of \$861,945 with anticipated savings of 328,939 therms. The portfolio is not expected to be cost-effective in the first year due to startup costs. However, the portfolio is cost-effective in each subsequent year achieving an overall 3-year TRC of 1.07. Table 2-1 provides an overview of the portfolio budgets, savings, and cost-effectiveness results for each program over the 2021-2023 planning cycle.³

Table 2-1 Three Year Program Summary, by Sector

Sector	Incentive Budget	Non-incentive Budget	Total Budget	Total Gas Savings (therms)	TRC
2021 Program Year					
Residential	\$63,650	\$45,749	\$109,399	26,130	1.02
Business	\$44,550	\$49,911	\$94,461	77,763	1.49
Cross Program	-	\$83,000	\$83,000	-	n/a
2021 Total	\$108,200	\$178,660	\$286,860	103,893	0.97
2022 Program Year					
Residential	\$85,900	\$51,418	\$137,318	34,415	1.12
Business	\$45,500	\$47,407	\$92,907	78,108	1.54
Cross Program	-	\$58,000	\$58,000	-	n/a
2022 Total	\$131,400	\$156,825	\$288,225	112,523	1.11
2023 Program Year					
Residential	\$85,900	\$51,418	\$137,318	34,415	1.15
Business	\$45,500	\$46,042	\$91,542	78,108	1.58
Cross Program	-	\$58,000	\$58,000	-	n/a
2023 Total	\$131,400	\$155,460	\$286,860	112,523	1.13
2021-2023 Total					
Residential	\$235,450	\$148,584	\$384,034	94,960	1.10
Business	\$135,550	\$143,361	\$278,911	233,978	1.54
Cross Program	-	\$199,000	\$199,000	-	n/a
2021-2023 Total	\$371,000	\$490,945	\$861,945	328,939	1.07

³ Incentives include program expenditures to offset the cost of energy efficiency measures and reduce the economic barriers to adoption. Non-incentives include administration, marketing, delivery, and evaluation expenditures.

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RESIDENTIAL PROGRAM SUMMARY

This section provides details on the residential program, including program description, goals and objectives, implementation strategy, measures and incentives, estimated participation and savings, budgets, and cost-effectiveness results.

Program Description	The Residential Program provides rebates to residential homeowners and customers for the installation of high-efficiency heating systems, water heating systems, and thermostats. This program also offers free energy and water conservation kits to income-eligible customers.
Goals and Objectives	• Help reduce the Spire customers' home energy consumption by incentivizing the purchase of high-efficiency equipment and appliances. • Educate customers about the benefits of energy efficient-equipment and appliances. • Develop partnerships with contractors and distributors to bring energy-efficient products and systems to the market. • Demonstrate persistent energy savings and provide other benefits to end-users such as improved health, safety, and comfort.
Target Market	The Residential Program targets Spire customers on the Residential Service tariff. Owners of, or customers living in an individually metered dwelling unit, are eligible to participate in this program.
Program Implementation Strategy	Spire will use a two-pronged approach to market the Residential Program. • Educating and collaborating with builders and trade allies. Spire will cultivate relationships with residential building owners, retailers, and trade allies⁴ to educate them on available incentives and promote participation. Incentives are offered to trade allies to recruit them into the program. • Direct marketing to Spire residential customers. A program webpage and marketing collateral will be used to disseminate program information to Spire customers. Marketing activities may include, but not be limited to bill inserts, direct mail, emails, and newspaper, radio, or billboard advertising. The program will be managed through a central program platform and database. Spire customers can submit a rebate application for eligible equipment via mail or electronic submission. Trade allies' incentives will be managed on the same program platform. Each customer application will be reviewed for eligibility and completeness of required documentation. Eligible customers and trade allies that complete an application will receive a rebate payment in the form of a check delivered via mail. All program and project information, including participant information, contractor information, equipment-specific attributes (i.e., size, model, and efficiency), backup documentation, and rebate values, will be stored in the central program database.

⁴ Trade allies include contractors, builders, energy professionals, and other external firms that help to facilitate participation in energy efficiency programs.

Eligible Measures and Incentives

Measure	Customer Incentive/Unit	Trade Ally Incentive/Unit
Gas Furnace (AFUE ≥90%, ≤95.9%)	\$400	\$50
Gas Furnace (AFUE ≥96%)	\$500	\$50
Programmable Thermostat	\$50	n/a
Smart Thermostat	\$100	n/a
Storage Water Heater (UEF =>0.67)	\$50	\$50
Tankless Water Heater (UEF =>0.82)	\$300	\$50
Efficient Clothes Dryer (CEF=>3.48)	\$100	n/a
Energy Efficiency Kits*	Free	n/a

* Each Energy Efficiency Kit includes a low flow showerhead and two faucet aerators.

Estimated Program Participation

Measure	2021 Units	2022 Units	2023 Units
Gas Furnace (AFUE ≥90%, ≤95.9%)	50	75	75
Gas Furnace (AFUE ≥96%)	10	10	10
Programmable Thermostat	12	17	17
Smart Thermostat	68	88	88
Storage Water Heater (UEF =>0.67)	10	10	10
Tankless Water Heater (UEF =>0.82)	75	100	100
Efficient Clothes Dryer (CEF=>3.48)	10	10	10
Energy Efficiency Kits	100	100	100

Estimated Program Savings

Measure	Unit Savings (Therms)	Total 2021 Savings (Therms)	Total 2022 Savings (Therms)	Total 2023 Savings (Therms)
Gas Furnace (AFUE ≥90%, ≤95.9%)	152	7,605	11,408	11,408
Gas Furnace (AFUE ≥96%)	228	2,282	2,282	2,282
Programmable Thermostat	20	240	340	340
Smart Thermostat	48	3,264	4,224	4,224
Storage Water Heater (UEF =>0.67)	18	185	185	185
Tankless Water Heater (UEF =>0.82)	137	10,270	13,693	13,693
Efficient Clothes Dryer (CEF=>3.48)	45	453	453	453
Energy Efficiency Kits	18	1,831	1,831	1,831
Total		26,130	34,415	34,415

Estimated Program Budget

Program Year	Incentive Budget	Non-incentive Budget	Total Budget
2021	\$63,650	\$45,749	\$109,399
2022	\$85,900	\$51,418	\$137,318
2023	\$85,900	\$51,418	\$137,318
Total	\$235,450	\$148,584	\$384,034

Cost-Effectiveness Results		
	Cost-Effectiveness Test	Benefit Cost Ratio
	TRC	1.10
	UCT	1.01
	SCT	1.51
	PCT	7.91
	RIM	0.21
Evaluation and Reporting Procedures	All program information, including application and measure level data, will be recorded and tracked in a central program portal and database. Savings algorithms for eligible measures based on utility-specific and other regional TRMs are incorporated in the centralized program portal. Actual savings will be calculated based on the rating and efficiency of actual equipment installed at customers' homes. Custom reports from the central program database will be used to track budgets, incentives, participation, and energy savings progress. Spire reserves the right to site verify the installation of equipment before committing rebates.	

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BUSINESS PROGRAM SUMMARY

This section provides details on the business program, including program description, goals and objectives, implementation strategy, measures and incentives, estimated participation and savings, budgets, and cost-effectiveness results.

Program Description	The Business Program provides prescriptive rebates for the purchase and installation of qualifying energy-efficient gas equipment/systems among eligible commercial and industrial customers.
Goals and Objectives	• Encourage commercial and industrial customers to purchase and install energy-efficient gas equipment. • Educate customers about the benefits of energy-efficient equipment/systems. • Develop partnerships with contractors and distributors to bring energy-efficient products and systems to the market. • Demonstrate persistent energy savings and provide other benefits to end-users such as improved health, safety, and comfort.
Target Market	The Business Program is available to commercial and industrial customers. This program target is Spire customers served under the General Service and Market Based Sales tariffs.
Program Implementation Strategy	A program website and marketing collateral will be used to provide information and promote program guidelines and participation process. The program will offer targeted messaging for specific market segments. Information, workshops, seminars, trade shows, and engagement with trade and business organizations may also be utilized to continue to recruit trade allies. The program will be managed through a central program platform and database. Spire customers can submit a rebate application for eligible equipment via mail or electronic submission. Trade allies' incentives will be managed on the same program platform. Each customer application will be reviewed for eligibility and completeness of required documentation. Eligible customers and trade allies that complete an application will receive a rebate payment in the form of a check delivered via mail. All program and project information, including participant information, contractor information, equipment-specific attributes (i.e., size, model, and efficiency), backup documentation, and rebate values, will be stored in the central program database.

Measures and Incentives

Measure	Customer Incentive/Unit	Trade Ally Incentive/Unit
Boiler Cut Out Controls	\$250	\$50
Boiler Burner Replacement	\$3,600	\$50
C&I Boiler Tune-Ups	\$350	\$50
Non-Profit Boiler Tune-Ups	\$550	\$50
C&I Programmable Thermostat	\$50	n/a
C&I Vent Dampers	\$450	\$50
Primary Air Dampers	\$450	\$50
Forced-Air Furnace (92% Eff.)	\$250	\$50
Forced-Air Furnace (94% Eff.)	\$350	\$50
Radiant Infrared Heaters	\$150	\$50
Hot Water Boiler Outdoor Temperature Reset	\$350	\$50
Tankless Water Heater (EF ≥ 0.82)	\$300	\$50
Hot Water Boiler (<300 MBH input, ≥ 85% AFUE)	\$200	\$50
Low Flow Pre-Rinse Sprayer (≤1.6 GPM)	\$50	n/a
Convection Oven (ENERGY STAR)	\$50	n/a
Fryer (ENERGY STAR)	\$350	n/a
Griddle (ENERGY STAR)	\$400	n/a
Steamer (ENERGY STAR)	\$450	n/a
Combination Ovens (ENERGY STAR)	\$200	n/a
Conveyor Oven	\$300	n/a
Rack Oven (single rack)	\$500	n/a
Rack Oven (double rack)	\$1,000	n/a
Infrared Char Broiler	\$500	n/a
Infrared Salamander Broiler	\$500	n/a
Infrared Rotisserie Oven	\$1,300	n/a
Kitchen Demand Control Ventilation	\$950	n/a

Estimated Program Participation

Measure	2021 Units	2022 Units	2023 Units
Boiler Cut Out Controls	1	2	2
Boiler Burner Replacement	5	5	5
C&I Boiler Tune-Ups	1	2	2
Non-Profit Boiler Tune-Ups	1	1	1
C&I Programmable Thermostat	25	25	25
C&I Vent Dampers	0	0	0
Primary Air Dampers	0	0	0
Forced-Air Furnace (92% Eff.)	15	15	15
Forced-Air Furnace (94% Eff.)	10	10	10
Radiant Infrared Heaters	0	0	0
Hot Water Boiler Outdoor Temperature Reset	1	1	1
Tankless Water Heater (EF ≥ 0.82)	10	10	10
Hot Water Boiler (<300 MBH input, ≥ 85% AFUE)	1	2	2

Estimated
Program
Participation
(cont'd)

Measure	2021 Units	2022 Units	2023 Units
Low Flow Pre-Rinse Sprayer (≤ 1.6 GPM)	5	5	5
Convection Oven (ENERGY STAR)	1	1	1
Fryer (ENERGY STAR)	10	10	10
Griddle (ENERGY STAR)	1	1	1
Steamer (ENERGY STAR)	1	1	1
Combination Ovens (ENERGY STAR)	1	1	1
Conveyor Oven	1	1	1
Rack Oven (single rack)	1	1	1
Rack Oven (double rack)	1	1	1
Infrared Char Broiler	1	1	1
Infrared Salamander Broiler	1	1	1
Infrared Rotisserie Oven	1	1	1
Kitchen Demand Control Ventilation	1	1	1

Estimated
Savings

Measure	Unit Savings (Therms)	Total 2021 Savings (Therms)	Total 2022 Savings (Therms)	Total 2023 Savings (Therms)
Boiler Cut Out Controls	117	117	233	233
Boiler Burner Replacement	10,200	51,000	51,000	51,000
C&I Boiler Tune-Ups	166	166	332	332
Non-Profit Boiler Tune-Ups	194	194	194	194
C&I Programmable Thermostat	89	2,231	2,231	2,231
C&I Vent Dampers	68	0	0	0
Primary Air Dampers	68	0	0	0
Forced-Air Furnace (92% Eff.)	153	2,295	2,295	2,295
Forced-Air Furnace (94% Eff.)	179	1,785	1,785	1,785
Radiant Infrared Heaters	180	0	0	0
Hot Water Boiler Outdoor Temp Reset	544	544	544	544
Tankless Water Heater (EF ≥ 0.82)	151	1,513	1,513	1,513
Hot Water Boiler (<300 MBH input, $\geq 85\%$ AFUE)	62	62	124	124
Low Flow Pre-Rinse Sprayer (≤ 1.6 GPM)	122	609	609	609
Convection Oven (ENERGY STAR)	353	353	353	353
Fryer (ENERGY STAR)	508	5,079	5,079	5,079
Griddle (ENERGY STAR)	149	149	149	149
Steamer (ENERGY STAR)	752	752	752	752
Combination Ovens (ENERGY STAR)	258	258	258	258
Conveyor Oven	839	839	839	839
Rack Oven (single rack)	1,776	1,776	1,776	1,776
Rack Oven (double rack)	1,931	1,931	1,931	1,931
Infrared Char Broiler	707	707	707	707
Infrared Salamander Broiler	240	240	240	240
Infrared Rotisserie Oven	599	599	599	599
Kitchen Demand Control Ventilation	4,249	4,249	4,249	4,249
Total		77,447	77,792	77,792

Estimated Budgets				
	Program Year	Incentive Budget	Non-incentive Budget	Total Budget
	2021	\$44,550	\$49,911	\$94,461
	2022	\$45,500	\$47,407	\$92,907
	2023	\$45,500	\$46,042	\$91,542
	Total	\$135,550	\$143,361	\$278,911
Cost-Effectiveness				
	Cost-Effectiveness Test		Benefit-Cost Ratio	
	TRC		1.54	
	UCT		2.36	
	SCT		1.98	
	PCT		9.45	
	RIM		0.23	
Evaluation and Reporting Procedures	All program information, including application and measure level data, will be recorded and tracked in a central program portal and database. Savings algorithms for eligible measures based on utility-specific and other regional TRMs are incorporated in the centralized program portal. Actual savings will be calculated based on the rating and efficiency of actual equipment installed at customers’ homes. Custom reports from the central program database will be used to track budgets, incentives, participation, and energy savings progress. Spire reserves the right to site verify the installation of equipment before committing rebates.			

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EVALUATION OF DEMAND-SIDE MANAGEMENT OFFERINGS

The table below lists the measures included in the portfolio along with the measure-level cost-effectiveness inputs and results.

Sector	Measure	Unit Savings (therms)	Measure Life	Incremental Cost	TRC	SCT	UCT	PCT	RIM
Residential	Gas Furnace (AFUE ≥90%, ≤95.9%)	152	20	\$179	3.26	4.76	1.30	14.08	0.24
Residential	Gas Furnace (AFUE ≥96%)	228	20	\$314	2.79	4.07	1.59	11.64	0.25
Residential	Programmable Thermostat	20	11	\$70	2.37	2.85	3.32	9.43	0.24
Residential	Smart Thermostat	48	11	\$150	1.82	2.22	2.73	7.23	0.23
Residential	Storage Water Heater (≥20 gal and ≤55 gal) (EF ≥ 0.67)	18	11	\$159	0.29	0.37	0.46	1.60	0.12
Residential	Tankless Water Heater (EF ≥0.82)	137	20	\$407	1.29	1.88	1.50	5.44	0.22
Residential	Efficient Clothes Dryer (CEF=>3.48)	45	14	\$75	1.82	2.44	1.37	7.53	0.23
Residential	EE Kits	18	10	\$20	1.85	2.42	1.85	7.50	0.24
Business	Boiler Cut Out Controls	117	20	\$612	0.73	1.07	1.49	3.47	0.18
Business	Boiler Burner Replacement	10,200	12	\$7,300	3.75	4.88	7.50	14.96	0.25
Business	C&I Boiler Tune-Ups	166	2	\$830	0.11	0.12	0.23	0.87	0.06
Business	Non Profit Boiler Tune-Ups	194	3	\$830	0.19	0.21	0.26	1.40	0.08
Business	C&I Programmable Thermostat	89	11	\$181	1.24	1.59	4.48	5.01	0.22
Business	C&I Vent Dampers	68	12	\$1,500	0.12	0.16	0.36	0.80	0.07
Business	Primary Air Dampers	68	15	\$1,500	0.14	0.19	0.43	0.90	0.08
Business	Forced-Air Furnace (92% Eff.)	153	16.5	\$429	1.23	1.72	1.76	5.61	0.20
Business	Forced-Air Furnace (94% Eff.)	179	16.5	\$537	1.15	1.60	1.54	5.32	0.20
Business	Radiant Infrared Heaters	180	15	\$422	1.35	1.83	2.84	5.78	0.22
Business	Hot Water Boiler Outdoor Temperature Reset	544	20	\$802	2.61	3.80	5.23	11.10	0.24

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Sector	Measure	Unit Savings (therms)	Measure Life	Incremental Cost	TRC	SCT	UCT	PCT	RIM
Business	Tankless Water Heater (EF ≥ 0.82)	151	20	\$510	1.14	1.66	1.66	5.32	0.20
Business	Hot Water Boiler (<300 MBH input, ≥ 85% AFUE)	62	20	\$187	1.28	1.86	0.96	6.54	0.19
Business	Low Flow Pre-Rinse Sprayer (≤1.6 GPM)	122	5	\$54	2.90	3.39	3.14	11.56	0.24
Business	Convection Oven (ENERGY STAR)	353	12	\$50	18.97	24.67	18.97	74.14	0.27
Business	Fryer (ENERGY STAR)	508	12	\$1,200	1.14	1.48	3.89	4.67	0.21
Business	Griddle (ENERGY STAR)	149	12	\$60	6.65	8.65	1.00	32.30	0.21
Business	Steamer (ENERGY STAR)	752	12	\$998	2.02	2.63	4.48	8.25	0.23
Business	Combination Ovens (ENERGY STAR)	258	12	\$100	6.91	8.99	3.46	28.65	0.25
Business	Conveyor Oven	839	12	\$1,800	1.25	1.63	7.51	4.99	0.22
Business	Rack Oven (single rack)	1,776	12	\$3,000	1.59	2.07	9.53	6.29	0.23
Business	Rack Oven (double rack)	1,931	12	\$3,000	1.73	2.25	5.18	6.99	0.23
Business	Infrared Char Broiler	707	12	\$2,173	0.87	1.13	3.79	3.59	0.20
Business	Infrared Salamander Broiler	240	12	\$1,000	0.64	0.84	1.29	2.99	0.17
Business	Infrared Rotisserie Oven	599	12	\$2,665	0.60	0.78	1.24	2.81	0.17
Business	Kitchen Demand Control Ventilation	4,249	15	\$1,988	6.76	9.19	14.16	27.11	0.27

This work was performed by

Applied Energy Group, Inc. (AEG)
200 Monmouth Street, Suite 280
Red Bank, NJ 07701

Project Manager: J. Reilly

Project Team: J. Rocco
B. Van Boekhold

Applied Energy Group, Inc.
200 Monmouth Street, Suite 280
Red Bank, NJ 07701

P: 732.945.9947