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October 15, 2018

VIA E-PORTAL FILING

Ms. Carlotta S. Stauffer
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: NEW FILING - Petition of Peoples Gas System for Approval of DSM Goals and Residential Customer Assisted and Commercial Walk-Through Energy Audit DSM Programs

Dear Ms. Stauffer:

Attached for electronic filing with the Commission on behalf of Peoples Gas System, please find Peoples' Petition for Approval of Demand Side Management Goals and Residential Customer Assisted and Commercial Walk-Through Energy Audit Programs.

We appreciate your usual assistance.

Sincerely,

Andrew M. Brown

AB/plb
Attachment
cc: Mr. Mark Roche
Ansley Watson, Jr., Esq.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Peoples Gas System for approval of DSM Goals and Residential Customer Assisted and Commercial Walk-Through Energy Audit DSM Programs)	DOCKET NO. _____ FILED: October 15, 2018

PETITION OF PEOPLES GAS SYSTEM FOR APPROVAL OF DEMAND SIDE MANAGEMENT GOALS AND RESIDENTIAL CUSTOMER ASSISTED AND COMMERCIAL WALK-THROUGH ENERGY AUDIT PROGRAMS

Peoples Gas System ("Peoples" or "the company"), pursuant to Sections 366.82, 366.05 and 366.06, Florida Statutes, and Rule 25-17.001, Florida Administrative Code, petitions the Florida Public Service Commission ("Commission") for approval of the company's proposed Demand Side Management ("DSM") goals attached hereto as Exhibit "A", Residential Customer Assisted (Online) and Commercial Walk-Through Energy Audit DSM programs, approval of the company's tariff sheets for these programs attached hereto as Exhibits "B" and "C" and to allow Peoples to recover reasonable and prudent expenditures associated with the referenced audit programs through the company's Energy Conservation Cost Recovery ("ECCR") Clause. As grounds therefor, the company says:

1. Peoples is an investor-owned public utility regulated by the Commission pursuant to Chapter 366, Florida Statutes. Peoples is subject to the Florida Energy Efficiency and Conservation Act ("FEECA"), Sections 366.80–85, 403.519, Florida Statutes.

2. Peoples' address is 702 North Franklin Street, Tampa, Florida 33601. Correspondence, notices, orders and other documents concerning this petition should be sent to:

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Manager, Regulatory Coordination
Peoples Gas System
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(813) 228-1444
(813) 228-1770 (fax)

3. The Commission Staff has requested Peoples to develop and submit for approval, proposed natural gas Demand Side Management ("DSM") goals and any necessary DSM programs to fully meet the requirements of FEECA, recognizing FEECA requirements are directed at electric utilities.

4. The Commission has approved DSM programs for Peoples pursuant to Sections 366.82, 366.05 and 366.06, Florida Statutes.

5. Attached hereto as Exhibit "A" is the company's proposed natural gas Ten-Year DSM Goals covering the period 2019-2028.

6. Attached hereto as Exhibit "B" is the program description and supporting DSM program standards for Peoples' proposed Residential Customer Assisted (Online) Energy Audit.

7. Attached hereto as Exhibit "C" is the program description and supporting DSM program standards for Peoples' proposed Commercial Walk-Through Energy Audit.

8. Attached hereto as Exhibit "D" are Peoples' projected levels of customer participation for the Residential Customer Assisted (Online) and Commercial Walk-Through Energy Audit DSM programs through the end of the proposed DSM goals period.

9. The approval of the company's proposed Residential Customer Assisted (Online) and Commercial Walk-Through Energy Audit DSM programs will help Peoples achieve the goals of FEECA and Commission Rule 25-17.001, Florida Administrative Code.

10. The proposed programs are directly monitorable.

11. Peoples is not aware of any disputed issues of material fact regarding the matters asserted herein. There has not been any prior agency action in this proceeding; therefore, Peoples cannot allege "when and how the petitioner received notice of the agency decision." Since there is no agency action for which Peoples is seeking reversal or modification, there are no statutes or rules Peoples contends require reversal or modification of Commission action.

WHEREFORE, Peoples respectfully petitions the Commission to approve the company's proposed DSM Goals for the 2019-2028 period contained in Exhibit "A", the Residential Customer Assisted (Online) and Commercial Walk-Through Energy Audit DSM programs, approve the program descriptions and program standards contained in Exhibits "B" and "C" and allow Peoples to recover its reasonable and prudent Residential Customer Assisted (Online) and Commercial Walk-Through Energy Audit DSM programs expenditures through Peoples Gas System's ECCR clause.

DATED this 15th day of October, 2018.

Respectfully submitted,

Andrew M. Brown
Ansley Watson, Jr.
Macfarlane Ferguson & McMullen
Post Office Box 1531
Tampa, Florida 33601-1531
(813) 273-4321

ATTORNEYS FOR PEOPLES GAS SYSTEM

Exhibit “A”

Peoples Gas System

Proposed Ten-Year

2019-2028

Natural Gas DSM Goals

October 15, 2018

Table of Contents

Peoples Gas System
Proposed Ten-Year
2019-2028
Natural Gas DSM Goals

Executive Summary:

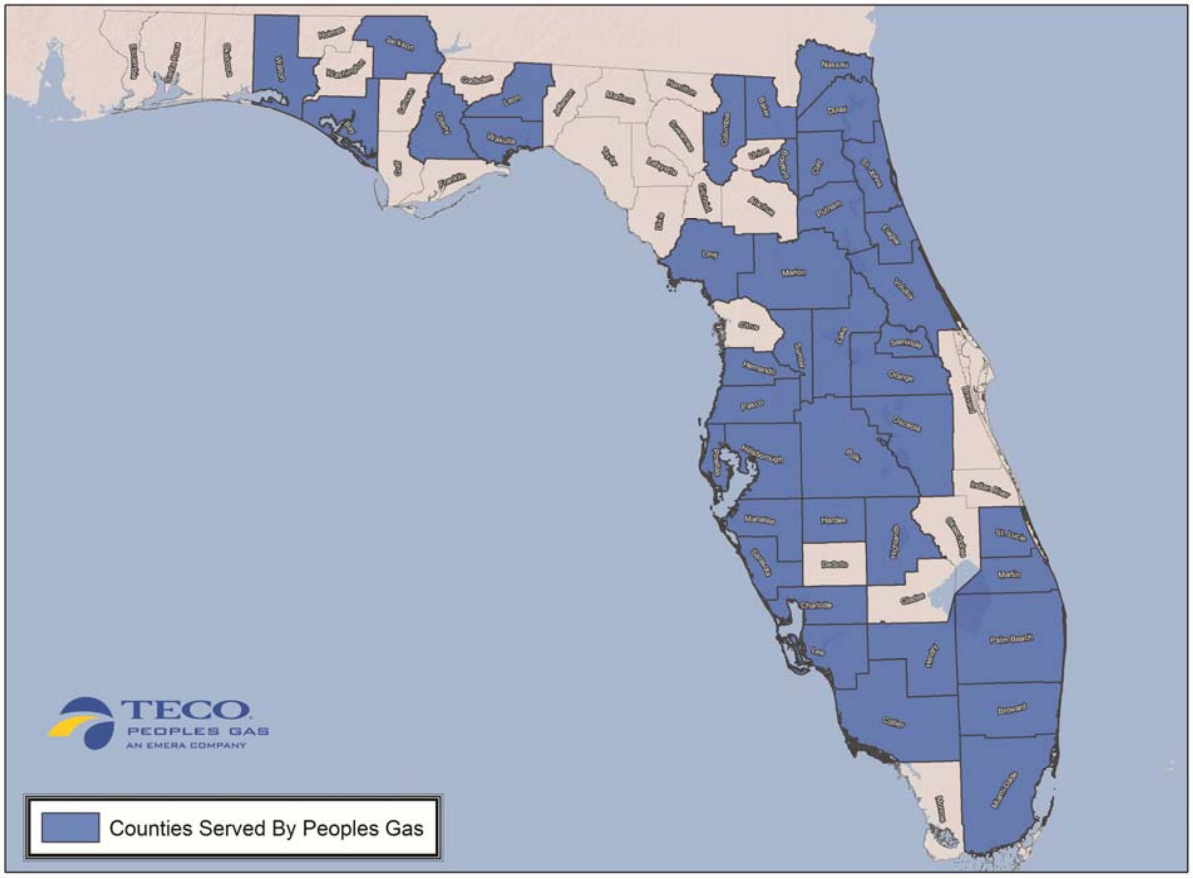
Peoples Gas System ("PGS") proposes for Commission approval numeric natural gas demand side management ("DSM") goals, to be applicable to PGS during the period 2019-2028. The proposed goals are in response to a request by the Commission Staff that the company develop and recommend natural gas DSM goals applicable to it along with any additional features that may be needed in order to fully comply with the Florida Energy Efficiency and Conservation Act ("FEECA"), set forth in Sections 366.80 - 366.83 and 403.519, Florida Statutes. Section 366.82(2), Florida Statutes, requires the Commission to set appropriate DSM goals for the seven electric utilities subject to FEECA at least every five years. Commission conservation rules are set forth in Chapter 25-17, Florida Administrative Code. Rule 25-17.0021, Florida Administrative Code, calls for the establishment of goals with respect to annual electric peak demand and energy savings over a ten-year period, with a review every five years. PGS fits the definition of a FEECA utility under Section 366.82(1)(a), Florida Statutes, because it has annual natural gas sales of greater than 100 million Therms. Thus, it meets the threshold requirements for having DSM goals, plans, programs, annual reports and providing energy audits to customers as set forth in Section 366.82, Florida Statutes. In addition to the proposed DSM goals for PGS, the company is concurrently filing for the approval of two new DSM programs (Residential Customer Assisted Energy Audit and Commercial Walk-Through Energy Audit) to ensure full compliance with the FEECA requirements.

These two programs in conjunction with the proposed natural gas DSM goals the company is submitting for approval will ensure that it meets all of the applicable FEECA requirements. On the table below, for the period 2019-2028, PGS proposes the following numeric annual natural gas DSM goals:

Peoples Gas System (2019-2028) Proposed DSM Goals at the Meter			
Year	Residential Annual Energy (Therms)	Commercial Annual Energy (Therms)	Combined Annual Energy (Therms)
2019	223,817	196,500	420,318
2020	229,551	201,870	431,421
2021	235,145	207,240	442,385
2022	240,542	212,571	453,113
2023	245,722	217,869	463,591
2024	250,671	223,139	473,809
2025	255,721	228,484	484,205
2026	260,875	233,908	494,783
2027	266,135	239,411	505,546
2028	271,503	244,995	516,499

Peoples Gas System – Service Area and Customers:

Peoples Gas System's natural gas delivery system consists of approximately 13,000 miles of gas mains, 6,700 miles of service lines and 220 miles of transmission pipeline. PGS serves 33 of Florida's 67 counties. The map of Florida below shows the counties served in PGS's service area:



PGS serves over 375,000 residential customers, over 38,000 commercial customers and 62 large industrial customers. On an annual basis, PGS sells approximately 1.8 billion Therms to the company's customers. To support these operations, PGS operates 14 divisions distributed across the State of Florida.

Peoples Gas System – Background with Conservation Programs:

Since 1981, PGS has been participating in the Energy Conservation Cost Recovery ("ECCR") clause. Since that time, PGS has continuously offered cost-effective Commission approved DSM programs. In 1990, the company received approval for a variety of cost-effective residential and commercial DSM programs. In 2006 and 2010, the company proposed several changes to the existing residential DSM programs which were ultimately approved by the Commission. In 2014, PGS received Commission approval for several new commercial DSM programs that were petitioned for in 2013. In the past, PGS has reported the results of these Commission-approved DSM program's through the company's annual DSM True-up and Projection filings documenting each program's participation level and associated costs.

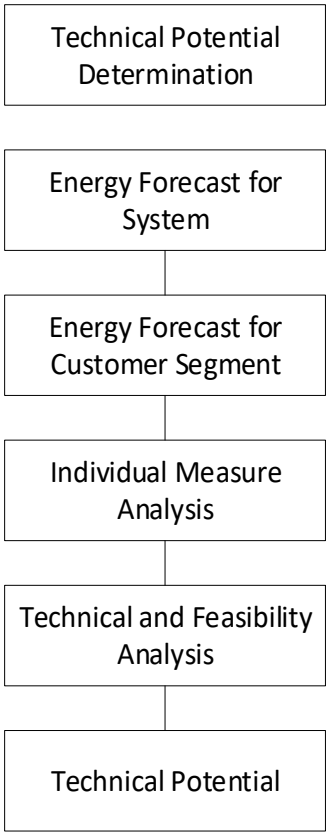
PGS has taken the requirements of Rule 25-17.0021 "Goals for Electric Utilities" and has applied it to the company's current gas DSM programs to develop and propose to the Commission the establishment of DSM goals for PGS. In this proposal for DSM goals, the achievements of each DSM program offered by PGS will be based upon the incremental natural gas usage reduction (energy saved in Therms) at the end-use site per installation and by market segment. The incremental savings will be counted toward meeting the proposed goal for any program measure installed within one of the company's DSM programs, where the measure installed exceeds either the minimum appliance energy efficiency in the Florida Building Code or the associated Federal Appliance Efficiency Standard, whichever is greater. Once the DSM goals are approved, within 90 calendar days of the final order establishing the goals, PGS will submit a proposed DSM Plan with Program Standards that will support the annual achievement of the goals. The company will provide an annual DSM report on the achievements of incremental natural gas savings in Therms, similar to the electric FEECA utilities annual DSM report in annual kWh saved, on March 1st of each year as required by Rule 25-17.0021 (5) Florida Administrative Code.

PGS intends to restructure the existing Commission approved DSM programs, as part of the proposed DSM Plan that will be submitted for Commission approval, to streamline the ability to report the incremental energy saved and provide greater transparency in reporting. PGS is not proposing to change any of the existing conservation allowances that are currently in place that encourage customers to participate in the company's DSM program(s).

PGS is recommending adding two additional programs to the company's existing Commission approved DSM portfolio in conjunction with the new proposed DSM goals, a Residential Customer Assisted Energy Audit (online) and a Commercial Walk-Through Energy Audit. These additions are necessary to meet the full requirements of FEECA.

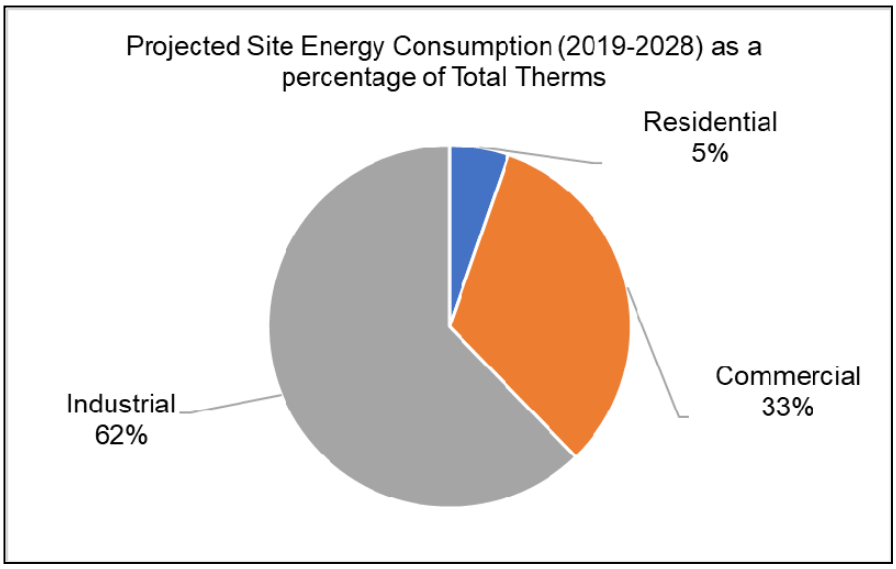
Technical Potential Development:

PGS developed the Technical Potential ("TP") using the following model:



PGS started the development of the TP with the establishment of baseline conditions over the ten-year period (2019-2028) using the latest energy consumption and customer projection data. Over the 2019-2028 period, PGS is projecting the following customer site energy consumption in Therms:

Projected Site Energy Consumption (2019 - 2028) in Therms	
Residential	967,305,916
Commercial	5,912,677,707
Industrial	11,352,357,162
Total	18,232,340,785



PGS then developed and analyzed individual measure lists for each market segment (residential, commercial and industrial). PGS evaluated the measures as they applied to the Residential, Commercial and Industrial market segments and the major end-use categories as defined by Florida Administrative Code ("F.A.C.") Rule 25-17.0021. The measure lists included 31 residential, 29 commercial and 22 industrial measures. The complete measure lists are provided in Appendix A. Each of the individual measures supporting natural gas savings, where applicable, were based upon current building code and appliance standards, impacts of future building code or appliance standards changes, energy savings on a per premise basis for new, replaced or retrofitted measures, how measures interact with each other and overlap effects, potential rebound effects, historical customer participation and the company's recent residential equipment market survey.

For the TP development, PGS utilized the approach that all energy savings from new, replaced or retrofitted measures come only from the incremental savings achieved for surpassing current building code or appliance standards. The projected applicable market segments and individual measure data are provided in Appendix B. For the 2019-2028 period, PGS developed the following TP:

Peoples Gas System 2019 Base Year Technical Potential in Therms	
Residential	58,560,018
Commercial	143,743,305
Industrial	245,809,921
Total	448,113,243

The following tables show the breakdown of TP contribution by energy usage category and customer segment toward the total 2019 Base Year TP development:

Peoples Gas System Technical Potential (Residential)	
Cooking	1,207,594
HVAC	16,868,459
Laundry	606,440
Pool Heating	7,456,278
Water Heating	32,421,247
Total	58,560,018

Peoples Gas System Technical Potential (Commercial)	
Cooking	12,024,691
HVAC	8,920,538
Laundry	485,552
Water Heating	122,312,524
Total	143,743,305

Peoples Gas System Technical Potential (Industrial)	
HVAC	1,641
Process	241,517,573
Water Heating	4,290,707
Total	245,809,921

Achievable Potential Development:

PGS developed the Achievable Potential ("AP") using the following model:

PGS started the development of the AP with examining the baseline conditions over the ten-year period (2019-2028) using the latest energy consumption, customer projection data, and current and projected DSM program activity. PGS then removed natural gas fired cogeneration and interruptible customers from the applicable population toward the AP in which Commission Order No. 23576, within Docket 1990002-EG excludes these two rate classes from ECCR clause recovery.

PGS then examined the energy savings per individual measure for each of the current Commission approved DSM Programs. To develop the energy savings at a program level, PGS analyzed historical and projected program participation over the ten-year period. To evaluate the anticipated future participation levels, the company evaluated historical actual participation of each current DSM

Program. This actual participation rate was then projected over the next ten years while holding incentive levels constant to establish a future participation rate. The projected participation and individual measure data are provided in Appendix C. Keeping the same methodology utilized in the development of the TP, PGS utilized the approach that all energy savings from new, replaced or retrofitted measures come only from the incremental savings achieved for surpassing current building code or appliance standards. These values were then utilized to develop the initial AP. These initial projections were then evaluated for comparison and analyzed to verify the annual amounts would be achievable to become the proposed goals. Because the proposed goals are based upon current Commission approved DSM programs, beyond the incremental cost increase to support a Residential Customer Assisted Energy Audit (online energy audit) and a Commercial Walk-Through Energy Audit, the net effect of adding these proposed DSM goals to PGS is zero additional costs to customers. For the 2019-2028 period, PGS developed the following AP:

Peoples Gas System 2019-2028 Achievable Potential	
	Energy (Therms)
Residential	2,479,682
Commercial/Industrial	2,205,988
Combined	4,685,670

Peoples Gas System - Proposed 2019-2028 DSM Goals:

The PGS proposed goals are focused on achieving the benefit of overall Therm usage reduction at end-usage energy (Site Energy) on an annual basis over time. The DSM goals proposed will continue to provide the recognized benefits to all PGS rate payers of the addition of incremental revenue effect on existing rate payers from added customers charge revenues, the contribution to gross margin from increased commodity sales, the spreading of fixed demand charges over a larger number of Therms sold and where applicable, the potential savings associated with not cutting and capping existing dormant service lines.

The numerical DSM goals proposed for the ten-year period (2019-2028) are based upon PGS's most recent load and customer forecast planning process and the company's current projected customer participation in the company's existing DSM programs. In the process of determining the numerical goals, PGS developed a TP to understand what the theoretical maximum amount of energy (Therms) that could be displaced by efficiency, regardless of cost and other barriers that may prevent the installation or adoption of an energy-efficiency measure. The development of the TP was explained in detail above under the section titled, "Technical Potential Development". The development of the proposed numerical goals (energy savings that can be feasibly achieved) is aligned with the development of the AP. The development of the AP is explained in detail above under the section titled, "Achievable Potential Development". For the 2019-2028 period, PGS proposes the following numerical annual and cumulative DSM Goals:

Peoples Gas System 2019-2028 Proposed DSM Goals At the Meter						
Year	Residential Annual Energy (Therms)	Residential Cumulative Energy (Therms)	Commercial Annual Energy (Therms)	Commercial Cumulative Energy (Therms)	Combined Annual Energy (Therms)	Combined Cumulative Energy (Therms)
2019	223,817	223,817	196,500	196,500	420,318	420,318
2020	229,551	453,368	201,870	398,371	431,421	851,739
2021	235,145	688,513	207,240	605,610	442,385	1,294,124
2022	240,542	929,055	212,571	818,181	453,113	1,747,236
2023	245,722	1,174,777	217,869	1,036,051	463,591	2,210,827
2024	250,671	1,425,447	223,139	1,259,189	473,809	2,684,637
2025	255,721	1,681,168	228,484	1,487,674	484,205	3,168,842
2026	260,875	1,942,044	233,908	1,721,581	494,783	3,663,625
2027	266,135	2,208,179	239,411	1,960,993	505,546	4,169,171
2028	271,503	2,479,682	244,995	2,205,988	516,499	4,685,670

Adherence to F.A.C. Rule and Statutory DSM Goals Setting Requirements:

Consideration of free riders: PGS took into consideration free riders by developing the proposed natural gas DSM goals based upon current Commission approved DSM programs. In the current DSM portfolio, incentive rates were originally designed to minimize to as much as practical the potential for free riders and the current Commission approved incentive rates assist with defraying the costs associated with the installation of natural gas supply lines, internal piping, venting and equipment.

PGS is proposing to initiate DSM goals for the company starting in 2019 for the ten-year 2019-2028 period and to follow F.A.C. Rule 25-17.0021 by setting DSM goals at least every five years or when the Commission deems appropriate. In addition, PGS will provide the required reporting requirements as specified in Section 366.82(10), Florida Statutes, for the reporting of progress toward meeting the annual natural gas energy reduction goals.

Appendix - A
Measure Lists

Residential Measure List

Water Heating

- Low flow showerhead
- Low flow faucet aerator
- Water heater temperature check card
- Hot water pipe insulation
- Condensing water heater
- Tankless water heater
- Energy Star water heater
- Solar water heater
- Energy Star dishwasher
- Energy Star washer
- Front-loading washer

Pool heating

- Gas pool heater
- Solar water pool heater
- Insulating pool cover

Cooking

- Range/cooktop
- Oven

HVAC

- Furnace
- Hydronic heating
- Gas heat pump
- Programmable thermostat
- Duct repair
- Attic insulation
- Ceiling insulation
- Wall insulation
- HVAC Tune up
- Weather stripping
- Energy Star windows
- Fireplace ignition control
- Fireplace pilotless ignition

Laundry

- Dryer
- Energy Star dryer

Commercial Measure List

Water Heating

- Low flow showerhead
- Low flow faucet aerator
- Water heater temperature check card
- Hot water pipe insulation
- Condensing water heater
- Tankless water heater
- Energy Star water heater
- Energy Star dishwasher
- Drain water recovery
- Energy Star front loading washer
- Combined heat and power (thermal)

Cooking

- Range/cooktop
- Convection oven
- Energy Star convection oven
- Fryer
- Energy Star fryer
- Griddle
- Energy Star griddle
- Steam cooker
- Energy Star steam cooker

HVAC

- Furnace
- Gas heat pump
- Programmable thermostat
- Duct repair
- Ceiling insulation
- Wall insulation
- BAS controller
- Demand control ventilation

Laundry

- Dryer

Industrial Measure List

Water Heating

- Condensing boiler/water heater
- Tankless water heater
- Energy Star water heater
- Boiler advanced controls
- Boiler blowdown recovery
- Boiler combustion air preheat
- Boiler feedwater economizer
- Boiler high efficiency burner
- Boiler tune-up
- Condensate return

HVAC

- Furnace
- Gas heat pump
- Programmable thermostat
- Duct repair
- Ceiling insulation
- Wall insulation
- BAS controller

Process

- Infrared heating process
- Industrial dryers
- Direct heating process
- Combined heat and power (thermal)
- Exhaust gas heat recovery

Appendix – B
Measure Data for Technical Potential

Peoples Gas System – Customer and Usage Projections

Residential			
	Customers	Therms/Customer	Annual Total
2019	362,478	239	86,691,430
2020	371,763	240	89,223,189
2021	380,824	240	91,472,233
2022	389,564	241	93,752,537
2023	397,953	241	95,946,191
2024	405,968	242	98,046,872
2025	414,147	242	100,073,293
2026	422,494	242	102,068,750
2027	431,013	241	104,040,235
2028	439,707	241	105,991,185

Commercial			
	Customers	Therms/Customer	Annual Total
2019	38,226	13,924	532,250,868
2020	39,271	13,890	545,470,612
2021	40,315	13,859	558,721,104
2022	41,352	13,832	571,995,077
2023	42,383	13,804	585,051,337
2024	43,408	13,778	598,057,292
2025	44,448	13,747	611,002,809
2026	45,503	13,711	623,888,569
2027	46,573	13,671	636,722,054
2028	47,660	13,628	649,517,986

Commercial Segments: Assembly, Church, Educational, Grocery, Healthcare, Lodging, Office, Other, Restaurant, Retail, Safety, Service, Warehouse.

Industrial			
	Customers	Therms/Customer	Annual Total
2019	62	16,310,032	1,011,221,984
2020	62	16,755,746	1,038,856,280
2021	62	17,201,398	1,066,486,668
2022	62	17,643,927	1,093,923,467
2023	62	18,083,698	1,121,189,248
2024	62	18,521,057	1,148,305,563
2025	62	18,964,765	1,175,815,450
2026	62	19,414,946	1,203,726,656
2027	62	19,871,727	1,232,047,077
2028	62	20,335,238	1,260,784,767

Residential Low Flow Showerhead

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	328,686

Baseline Efficiency (GPM)	2.2
New Efficiency (GPM)	1.5
Average Shower Time (Mins)	7.8
Average Number of People	2.58
Average Showers per Person per Day	1.3
Delta T (Degrees)	32
Savings per Premise (Therms)	21.211

Residential Low Flow Faucet Aerator

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	328,686

Baseline Efficiency (GPM)	2.2
New Efficiency (GPM)	1.0
Wash Time (Mins)	0.5
Average Number of People	2.58
Average Handwashes per Person per Day	8
Delta T (Degrees)	32
Savings per Premise (Therms)	9.563

Residential Water Heater Temperature Check Card

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	5
Applicable Population	311,387

Base Gallons per Day (Gallons)	34.15
Average Number of People	2.58
Temperature Downturn (Degrees)	10
Savings per Premise (Therms)	42.521

Residential Hot Water Pipe Insulation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	13
Applicable Population	34,599

Water Heater Base Efficiency	0.63
Base R-Value	1.0
New R -Value	3.0
Length of Pipe (Feet)	6
Diameter of Pipe (Inches)	0.75
Water Heater Temperature (Degrees)	130
Average Temperature in Garage (Degrees)	90
Savings per Premise (Therms)	2.655

Residential Condensing Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	13
Applicable Population	120,801

Baseline Efficiency of Tank	0.63
New Efficiency of Tank	0.95
Baseline Efficiency of Tankless	0.81
New Efficiency of Tankless	0.95
Base Gallons per Day (Gallons)	34.15
Average Number of People	2.58
Delta T (Degrees)	32
Savings per Premise from Tank (Therms)	28.875
Savings per Premise from Tankless (Therms)	4.512

Residential Tankless Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20
Applicable Population	44,290

Baseline Efficiency of Tank	0.63
New Efficiency of Tank	0.90
Baseline Efficiency of Tankless	0.81
New Efficiency of Tankless	0.90
Base Gallons per Day (Gallons)	34.15
Average Number of People	2.58
Delta T (Degrees)	32
Savings per Premise from Tank (Therms)	25.717
Savings per Premise from Tankless (Therms)	8.572

Residential Energy Star Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	13
Applicable Population	132,616

Baseline Efficiency	0.63
New Efficiency	0.66
Base Gallons per Day (Gallons)	34.15
Average Number of People	2.58
Delta T (Degrees)	32
Savings per Premise (Therms)	3.897

Residential Solar Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	15
Applicable Population	31,642

Baseline Efficiency from Tank	0.63
Baseline Efficiency from Tankless	0.81
Base Gallons per Day (Gallons)	34.15
Average Number of People	2.58
Delta T (Degrees)	32
Savings per Premise from Tank (Therms)	136.069
Savings per Premise from Tankless (Therms)	105.831

Residential Energy Star Dishwasher

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	13
Applicable Population	176,504

Baseline Gallons per Cycle (GPC)	5.0
New Gallons per Cycle (GPC)	3.5
Average Loads per Day	0.28
Average Number of People	2.58
Delta T (Degrees)	58
Savings per Premise (Therms)	0.741

Residential Energy Star Washer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Population	336,298

Baseline IWF (GPC/CF)	6.5
New IWF (GPC/CF)	4.3
Average Loads per Year	300
Washer Size (Cubic Feet)	4.5
Delta T (Degrees)	58
Savings per Premise (Therms)	22.777

Residential Front-Loading Washer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Population	336,298

Baseline IWF (GPC/CF)	6.5
New IWF (GPC/CF)	3.2
Average Loads per Year	300
Washer Size (Cubic Feet)	4.5
Delta T (Degrees)	58
Savings per Premise (Therms)	34.165

Residential Gas Pool Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Population	6,641

Baseline Efficiency	0.55
New Efficiency	0.95
Hours per Year (Hours)	700
Heater Rating (Btu/hr.)	250,000
Savings per Premise (Therms)	737

Residential Solar Water Pool Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20
Applicable Population	2,530

Baseline Efficiency	0.55
Hours per Year (Hours)	700
Displaced Heater Rating (Btu/hr.)	250,000
Savings per Premise (Therms)	1,750

Residential Insulating Pool Cover

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	15,811

Baseline Efficiency	0.55
Hours per Year (Hours)	700
Heater Rating (Btu/hr.)	250,000
Savings per Premise (Therms)	107

Residential Range/Cooktop

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	15
Applicable Population	273,805

Baseline Efficiency	0.385
New Efficiency	0.42
Cook Time per Day (Mins)	30
Cooktop Rating (Btu/hr.)	9,000
Savings per Premise (Therms)	1.369

Residential Oven

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Population	273,805

Baseline Efficiency	0.385
New Efficiency	0.42
Cook Time per Day (Mins)	30
Cooktop Rating (Btu/hr.)	20,000
Savings per Premise (Therms)	3.042

Residential Furnace

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	21
Applicable Population	135,361

Baseline Efficiency	0.80
New Efficiency	0.95
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Savings per Premise (Therms)	49.737

Residential Hydronic Heating

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	6,750

Baseline Efficiency	0.80
New Efficiency	0.95
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Savings per Premise (Therms)	49.737

Residential Gas Heat Pump

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	28,778

Baseline Efficiency	0.80
New Efficiency	1.0
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Savings per Premise (Therms)	63.000

Residential Programmable Thermostat

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Population	108,743

Baseline Efficiency	0.80
Average Premise Size (Square Feet)	1,938
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Delta T Adjust (Degrees)	5
Savings per Premise (Therms)	0.010

Residential Duct Repair

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	18
Applicable Population	93,432

Baseline Efficiency	0.78
New Efficiency	0.80
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Savings per Premise (Therms)	7.875

Residential Attic Insulation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	52,398

Baseline Efficiency (R-Value)	10 & 19
New Efficiency (R-Value)	30
Average Premise Size (Square Feet)	1,938
Heating Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Delta T (Degrees)	7.4
Savings per Premise (Flat to Low Pitch) (Therms)	4.755
Savings per Premise (Regular Pitch) (Therms)	6.693

Residential Ceiling Insulation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	52,398

Baseline Efficiency (R-Value)	10 & 19
New Efficiency (R- Value)	30
Average Premise Size (Square Feet)	1,938
Hours per Year (Hours)	700
Delta T (Degrees)	1.8
Savings per Premise with 19 R-Value (Therms)	1.157
Savings per Premise with 30 R-Value (Therms)	1.628

Residential Wall Insulation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	52,398

Baseline Efficiency (R-Value)	5
New Efficiency (R-Value)	16
Average Premise Size (Square Feet)	1,938
Average Wall Size (Square Feet)	352
Hours per Year (Hours)	700
Delta T (Degrees)	7.4
Savings per Premise (Therms)	2.507

Residential HVAC Tune Up

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	82,999

Baseline Efficiency	0.78
New Efficiency	0.80
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Savings per Premise (Therms)	7.875

Residential Weather Stripping

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	5
Applicable Population	27,305

Baseline Efficiency	0.80
Energy Savings (Percent)	2.0
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Savings per Premise (Therms)	6.300

Residential Energy Star Windows

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	123,569

Baseline Efficiency	0.80
Energy Savings (Percent)	0.20
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Savings per Premise (Therms)	63.000

Residential Fireplace Ignition Control

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	15,252

Operating Hours (Hours)	8,760
New Operating Hours (Hours)	700
Unit Size (Btu/hr.)	83.3
Savings per Premise (Therms)	6.714

Residential Fireplace Pilotless Ignition

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	15,252

Operating Hours (Hours)	8,760
New Operating Hours (Hours)	700
Unit Size (Btu/hr.)	83.3
Savings per Premise (Therms)	6.714

Residential Dryer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Population	73,009

Baseline Efficiency (Lbs./kWh)	3.30
New Efficiency (Lbs./kWh)	5.70
Loads per Year	300
Pounds per Load (Lbs.)	6.36
Savings per Premise (Therms)	8.306

Residential Energy Star Dryer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11 Years
Applicable Population	73,009

Baseline Efficiency (Lbs./kWh)	3.30
New Efficiency (Lbs./kWh)	3.48
Loads per Year	300
Pounds per Load (Lbs.)	6.36
Savings per Premise (Therms)	1.020

Commercial Low Flow Showerhead

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Segments	Church, Educational, Healthcare, Safety
Applicable Population	2,934

Baseline Efficiency (GPM)	2.2
New Efficiency (GPM)	1.5
Shower Time (Mins)	11
Average Number of People	354
Average Showers per Person per Day per Premise (Therms)	1
Days in Year	305
Delta T (Degrees)	58
Savings per Premise (Therms)	5,020.845

Commercial Low Flow Faucet Aerator

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Segments	All Commercial Segments
Applicable Population	38,226

Baseline Efficiency (GPM)	2.2
New Efficiency (GPM)	1.0
Wash Time (Mins)	1
How Water Faucets	524
Hand Washes per Person per Day per Faucet	1
Water Heater Temperature (Degrees)	130
Incoming Water Temperature (Degrees)	72
Days in Year	305
Delta T (Degrees)	58
Savings per Premise (Therms)	1,158.232

Commercial Water Heater Temperature Check Card

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	5
Applicable Segments	Church, Educational, Lodging, Office, Other, Service
Applicable Population	12,855

Baseline Gallons per Day (Gallons)	524
Water Heater Temperature (Degrees)	130
Incoming Water Temperature (Degrees)	72
Temperature Turndown (Degrees)	10
Days in Year	305
Savings per Premise (Therms)	166.413

Commercial Hot Water Pipe Insulation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	13
Applicable Segments	All Commercial Segments
Applicable Population	3,823

Baseline Efficiency (R-Value)	1.0
New Efficiency (R-Value)	3.0
Length of Pipe (Feet)	15
Diameter (Inches)	0.75
Times in Year	660
Delta T (Degrees)	40
Savings per Premise (Therms)	15.543

Commercial Condensing Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	15
Applicable Segments	All Commercial Segments
Applicable Population	37,330

Baseline Efficiency (Tank)	0.80
New Efficiency (Tank)	0.95
Baseline Efficiency (Tankless)	0.90
New Efficiency (Tankless)	0.90
Baseline Gallons per Day (Gallons)	2,500
Days in Year	305
Delta T (Degrees)	68
Savings per Premise (Tank) (Therms)	681.964
Savings per Premise (Tankless) (Therms)	227.321

Commercial Tankless Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20
Applicable Segments	All Commercial Segments
Applicable Population (Tankless)	37,330

Baseline Efficiency (Tank)	0.80
New Efficiency (Tank)	0.95
Baseline Efficiency (Tankless)	0.81
New Efficiency (Tankless)	0.90
Baseline Gallons per Day (Gallons)	2,500
Days in Year	305
Delta T (Degrees)	68
Savings per Premise (Tank) (Therms)	479.901
Savings per Premise (Tankless) (Therms)	431.911

Commercial Energy Star Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	15
Applicable Segments	All Commercial Segments
Applicable Population	37,031

Baseline Efficiency	0.80
New Efficiency	0.93
Baseline Gallons per Day (Gallons)	2,500
Days in Year	305
Delta T (Degrees)	68
Savings per Premise (Therms)	603.746

Commercial Energy Star Dishwasher

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Segments	Church, Educational, Restaurants, Grocery, Healthcare, Lodging, Office, Safety
Applicable Population	9,240

Baseline Gallons per Rack (Gallons)	1.32
New Gallons per Rack (Gallons)	0.65
Average Racks per Day	280
Days in Year	305
Savings per Premise (Therms)	405.132

Commercial Drain Water Recovery

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Segments	Church, Educational, Restaurants, Grocery, Healthcare, Lodging, Office, Safety
Applicable Population	9,240

Savings Factor (Percent)	11.5
Gallons per Year (Gallons)	112,728
Delta T (Degrees)	68
Savings per Premise (Therms)	91.790

Commercial Energy Star Front Loading Washer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Segments	Church, Educational Restaurants, Healthcare, Lodging, Safety
Applicable Population	7,163

Baseline IWF (GPC/CF)	4.7
New IWF (GPC/CF)	4.0
Loads per Year	1,646
Size of Washer (Cubic Feet)	3.0
Delta T (Degrees)	68
Savings per Premise (Therms)	24.474

Commercial Combined Heat and Power (Thermal)

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Segments	Educational, Grocery, Healthcare, Lodging, Restaurants, Safety
Applicable Population	7,473

Operating Hours per Year (Hours)	4,270
Available Thermal Rating (Btu/hr.)	126,400
Useable Heat (Percent)	75.0
Savings per Premise (Therms)	5,059.950

Commercial Range/Cooktop

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Segments	Church, Educational, Restaurants, Grocery, Healthcare, Lodging, Safety
Applicable Population	5,521

Baseline Efficiency	0.30
New Efficiency	0.40
Cook Time per Day (Hours)	8.55
Cooktop Rating (Btu/hr.)	88,000
Savings per Premise (Therms)	686.565

Commercial Convection Oven

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Segments	Educational, Restaurants, Grocery, Healthcare, Lodging
Applicable Population	4,838

Baseline Efficiency	0.35
New Efficiency	0.50
Cook Time per Day (Hours)	8.55
Oven Rating (Btu/hr.)	45,000
Savings per Premise (Therms)	421.301

Commercial Energy Star Convection Oven

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Segments	Educational, Restaurants, Grocery, Healthcare, Lodging
Applicable Population	4,838

Baseline Efficiency	0.35
New Efficiency	0.46
Cook Time per Day (Hours)	8.55
Oven Rating (Btu/hr.)	12,000
Savings per Premise (Therms)	89.552

Commercial Fryer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Segments	Church, Educational, Restaurants, Grocery, Healthcare, Lodging
Applicable Population	5,148

Baseline Efficiency	0.35
New Efficiency	0.68
Cook Time per Day (Hours)	8.55
Fryer Rating (Btu/hr.)	120,000
Savings per Premise (Therms)	636.082

Commercial Energy Star Fryer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Segments	Church, Educational, Restaurants, Grocery, Healthcare, Lodging
Applicable Population	5,148

Baseline Efficiency	0.35
New Efficiency	0.58
Cook Time per Day (Hours)	8.55
Fryer Rating (Btu/hr.)	120,000
Savings per Premise (Therms)	519.766

Commercial Griddle

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Segments	Church, Educational, Restaurant, Grocery, Healthcare, Lodging, Safety
Applicable Population	5,521

Baseline Efficiency	0.35
New Efficiency	0.52
Cook Time per Day (Hours)	8.55
Oven Rating (Btu/hr.)	25,000
Savings per Premise (Therms)	330.079

Commercial Energy Star Griddle

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Segments	Church, Educational, Restaurant, Grocery, Healthcare, Lodging, Safety
Applicable Population	5,521

Baseline Efficiency	0.30
New Efficiency	0.49
Cook Time per Day (Hours)	8.55
Oven Rating (Btu/hr.)	25,000
Savings per Premise (Therms)	164.250

Commercial Steam Cooker

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Segments	Church, Educational, Restaurant, Grocery, Healthcare, Lodging, Safety
Applicable Population	5,521

Baseline Efficiency	0.16
New Efficiency	0.49
Cook Time per Day (Hours)	8.55
Cooker Rating (Btu/hr.)	5,740
Savings per Premise (Therms)	120.639

Commercial Energy Star Steam Cooker

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12
Applicable Segments	Church, Educational, Restaurant, Grocery, Healthcare, Lodging, Safety
Applicable Population	5,521

Baseline Efficiency	0.16
New Efficiency	0.38
Cook Time per Day (Hours)	8.55
Cooker Rating (Btu/hr.)	5,740
Savings per Premise (Therms)	103.707

Commercial Furnace

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	23
Applicable Segments	Assembly, Church, Educational, Healthcare, Lodging, Office, Service
Applicable Population	6,558

Baseline Efficiency	0.80
New Efficiency	0.95
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	205
Savings per Premise (Therms)	283.224

Commercial Gas Heat Pump

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Segments	Assembly, Church, Educational, Healthcare, Lodging, Office, Service
Applicable Population	6,558

Baseline Efficiency	0.80
New Efficiency	1.65
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	205
Savings per Premise (Therms)	924.053

Commercial Programmable Thermostat

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Segments	Assembly, Church, Educational, Healthcare, Lodging, Office, Service
Applicable Population	6,558

Baseline Efficiency	0.80
Average Premise Size (Square Feet)	12,000
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	205
Delta T (Degrees)	5
Savings per Premise (Therms)	0.060

Commercial Duct Repair

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	18
Applicable Segments	Assembly, Church, Educational, Healthcare, Lodging, Office, Service
Applicable Population	1,640

Baseline Efficiency	0.75
Efficiency Restored	0.80
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	205
Savings per Premise (Therms)	119.583

Commercial Ceiling Insulation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20
Applicable Segments	Assembly, Church, Educational, Healthcare, Lodging, Office, Service
Applicable Population	1,640

Baseline Efficiency (R-Value)	10
New Efficiency (R-Value)	19 & 30
Average Building Size (Square Feet)	12,000
Heating Hours (Hours)	700
Delta T (Degrees)	1.8
Savings per Premise for 19 R-Value (Therms)	7.162
Savings per Premise for 30 R-Value (Therms)	10.080

Commercial Wall Insulation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20
Applicable Segments	Assembly, Church, Educational, Healthcare, Lodging, Office, Service
Applicable Population	1,640

Baseline Efficiency (R-Value)	5
New Efficiency (R-Value)	16
Average Building Size (Square Feet)	12,000
Average Wall Size (Square Feet)	1,159
Heating Hours (Hours)	700
Delta T (Degrees)	7.4
Savings per Premise (Therms)	8.255

Commercial BAS Controller

Measure Data:

Date Performed	August, September 2018
Equipment Life (Year)	11
Applicable Segments	Assembly, Church, Educational, Healthcare, Lodging, Office, Service
Applicable Population	6,558

Baseline Efficiency	0.80
Energy Savings (Percent)	5
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	205
Savings per Premise (Therms)	89.688

Commercial Demand Control Ventilation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Segments	Assembly, Church, Educational, Healthcare, Lodging, Office, Service
Applicable Population	5,247

Baseline Efficiency	0.80
Energy Savings (Percent)	2
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	205
Savings per Premise (Therms)	35.875

Commercial Dryer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Segments	Church, Educational, Healthcare, Lodging, Other, Service
Applicable Population	4,087

Baseline Efficiency (Lbs./kWh)	2.30
New Efficiency (Lbs./kWh)	3.49
Load per Year	1,646
Pounds per Load (Lbs.)	14.27
Savings per Premise (Therms)	118.811 Therms

Industrial Condensing Boiler/Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	29

Baseline Efficiency (Tank)	0.80
New Efficiency (Tank)	0.90
Baseline Efficiency (Tankless)	0.90
New Efficiency (Tankless)	0.95
Baseline Gallons per Day (Gallons)	74,000
Delta T (Degrees)	140
Savings per Premise with Tank (Therms)	49,735
Savings per Premise with Tankless (Therms)	16,578

Industrial Tankless Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20
Applicable Population	28

Baseline Efficiency	0.80
New Efficiency	0.95
Baseline Gallons per Day (Gallons)	74,000
Delta T (Degrees)	68
Savings per Premise (Therms)	16,999

Industrial Energy Star Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	15
Applicable Population	28

Baseline Efficiency	0.80
New Efficiency	0.95
Baseline Gallons per Day (Gallons)	74,000
Delta T (Degrees)	68
Savings per Premise (Therms)	24,157

Industrial Boiler Advanced Controls

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Population	28

Baseline Combined Efficiency	0.78
New Combined Efficiency	0.81
Baseline Gallons per Day (Gallons)	74,000
Baseline Stack Temperature Rise (Degrees)	500
Savings per Premise (Therms)	14,777

Industrial Boiler Blowdown Recovery

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	28

Heat Recovery Efficiency (Percent)	11.5
Flash Steam Recovery Efficiency (Percent)	6.0
Baseline Gallons per Day (Gallons)	74,000
Savings per Premise Heat Recovery (Therms)	22,769
Savings per Premise Flash Steam (Therms)	11,880

Industrial Boiler Combustion Air Preheat

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	28

Baseline Combustion Efficiency	0.77
New Combined Efficiency	0.84
Baseline Gallons per Day (Gallons)	74,000
Baseline Stack Temperature Rise (Degrees)	500
Savings per Premise (Therms)	12,385

Industrial Boiler Feedwater Economizer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	28

Heat Recovery Efficiency (Percent)	11.5
Baseline Gallons per Day (Gallons)	74,000
Savings per Premise (Therms)	22,769

Industrial High Efficiency Burner

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	28

Energy Improvement Reduction (Percent)	4.0
Baseline Gallons per Day (Gallons)	74,000
Savings per Premise (Therms)	9,450

Industrial Boiler Tune-Up

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	28

Energy Improvement Reduction (Percent)	4.0
Baseline Gallons per Day (Gallons)	74,000
Savings per Premise (Therms)	12,600

Industrial Condensate Return

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	28

Heat Recovery Efficiency (Percent)	11.5
Baseline Gallons Per Day (Gallons)	74,000
Savings per Premise (Therms)	22,769

Industrial Furnace

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	23
Applicable Population	2

Baseline Efficiency	0.80
New Efficiency	0.95
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	300
Savings per Premise (Therms)	414.474

Industrial Gas Heat Pump

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10
Applicable Population	0

Baseline Efficiency	0.80
New Efficiency	1.65
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	300
Savings per Premise (Therms)	1,352.273

Industrial Programmable Thermostat

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Population	2

Baseline Efficiency	0.80
Average Premise Size (Square Feet)	17,500
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	300
Delta T (Degrees)	5
Savings per Premise (Therms)	0.087

Industrial Duct Repair

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	18
Applicable Population	1

Baseline Efficiency	0.75
Efficiency Restored	0.80
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	300
Savings per Premise (Therms)	175.000

Industrial Ceiling Insulation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	1

Baseline Efficiency (R-Value)	10
New Efficiency (R-Value)	19 & 30
Average Office Size (Square Feet)	17,500
Hours per Year (Hours)	700
Delta T (Degrees)	1.8
Savings per Premise for 19 R-Value (Therms)	10.445
Savings per Premise for 30 R-Value (Therms)	14.700

Industrial Wall Insulation

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	1

Baseline Efficiency (R-Value)	5
New Efficiency (R-Value)	16
Average Office Size (Square Feet)	17,500
Average Wall Size (Square Feet)	1,058
Hours per Year (Hours)	700
Delta T (Degrees)	7.4
Savings per Premise (Therms)	7.536

Industrial BAS Controller

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11
Applicable Population	2

Baseline Efficiency	0.80
Energy Savings (Percent)	5.0
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	300
Savings per Premise (Therms)	393.750

Industrial Infrared Heating Process

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	5

Energy Improvement Reduction (Percent)	7.5
Heat Rating (MMBtu/hr.)	0.2
Operating Hours per Year (Hours)	8,000
Savings per Premise (Therms)	1,200

Industrial Dryers

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	21

Energy Improvement Reduction (Percent)	12.0
Heat Rating (MMBtu/hr.)	282
Operating Hours per Year (Hours)	8,000
Savings per Premise (Therms)	2,707,200

Industrial Direct Heating Process

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	21

Energy Improvement Reduction (Percent)	10.0
Heat Rating (MMBtu/hr.)	282
Operating Hours per Year (Hours)	8,000
Savings per Premise (Therms)	2,256,000

Industrial Combined Heat and Power (Thermal)

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	34

Operating Hours per Year (Hours)	8,000
Available Thermal Rating (MMBtu/hr.)	410
Useable Heat (Percent)	25.0
Savings per Premise (Therms)	4,592,000

Industrial Exhaust Gas Heat Recovery

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25
Applicable Population	21

Heat Recovery Efficiency (Percent)	11.5
Heat Rating (MMBtu/hr.)	282
Operating Hours per Year (Hours)	8,000
Savings per Premise (Therms)	2,594,400

Appendix – C

Measure Data for Achievable Potential

Peoples Gas System – Achievable Potential Participation Projections

	Residential Participation							
	Water Heater	Furnace	Dryer	Hydronic Heat	Range/ Cooktop	Oven	Tankless Water Heater	High Efficiency Tank Water Heater
2019	8,544	4,460	8,497	265	9,707	0	7,802	457
2020	8,763	4,575	8,715	272	9,955	0	8,002	469
2021	8,977	4,686	8,927	279	10,198	0	8,197	480
2022	9,182	4,794	9,132	285	10,432	0	8,385	491
2023	9,380	4,897	9,328	291	10,656	0	8,565	502
2024	9,568	4,995	9,516	297	10,870	0	8,737	512
2025	9,760	5,095	9,707	303	11,089	0	8,913	522
2026	9,958	5,198	9,903	309	11,313	0	9,093	533
2027	10,159	5,303	10,103	315	11,541	0	9,276	544
2028	10,364	5,411	10,307	322	11,775	0	9,464	555

	Commercial Participation									
	Water Heater	Range	Dryer	Small Non-Food Tankless Water Heater	Large Non-Food Tankless Water Heater	Food Tankless Water Heater	Hospitality Tankless Water Heater	Cleaning Tankless Water Heater	Fryer	Boiler
2019	27	16	23	5	7	244	59	30	41	1
2020	28	16	24	5	8	250	60	31	42	1
2021	29	17	24	6	8	257	62	32	43	1
2022	30	17	25	6	8	264	64	33	44	1
2023	30	17	26	6	8	270	65	34	45	1
2024	31	18	26	6	8	277	67	35	47	1
2025	32	18	27	6	9	283	68	35	48	1
2026	33	19	28	6	9	290	70	36	49	1
2027	33	19	28	6	9	297	72	37	50	1
2028	34	20	29	7	9	304	73	38	51	1

Residential Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10

Baseline Efficiency	0.59
New Efficiency	0.62
Base Gallons per Day (Gallons)	34.15
Average Number of People	2.58
Delta T (Degrees)	32
Savings per Premise (Therms)	4.148

Residential Furnace

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	21

Baseline Efficiency	0.80
New Efficiency	0.80
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Savings per Premise (Therms)	0.000

Residential Hydronic Heating

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	25

Baseline Efficiency	0.80
New Efficiency	0.95
Hours per Year (Hours)	700
Unit Size (MBtu/hr.)	45
Savings per Premise (Therms)	49.737

Residential Range/Cooktop

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	15

Baseline Efficiency	0.385
New Efficiency	0.42
Cook Time per Day (Mins)	30
Cooktop Rating (Btu/hr.)	9,000
Savings per Premise (Therms)	1.369

Residential Oven

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12

Baseline Efficiency	0.385
New Efficiency	0.42
Cook Time per Day (Mins)	30
Cooktop Rating (Btu/hr.)	20,000
Savings per Premise (Therms)	3.042

Residential Dryer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11

Baseline Efficiency (Lbs./kWh)	3.30
New Efficiency (Lbs./kWh)	3.48
Loads per Year	300
Pounds per Load (Lbs.)	6.36
Savings per Premise (Therms)	1.020

Residential Tankless Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20

Baseline Efficiency	0.63
New Efficiency	0.81
Base Gallons per Day (Gallons)	34.15
Average Number of People	2.58
Delta T (Degrees)	32
Savings per Premise (Therms)	19.412

Residential High Energy Efficiency Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	13

Baseline Efficiency	0.63
New Efficiency	0.66
Base Gallons per Day (Gallons)	34.15
Average Number of People	2.58
Delta T (Degrees)	32
Savings per Premise (Therms)	3.897

Commercial Water Heater

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	15

Baseline Efficiency	0.80
New Efficiency	0.82
Base Gallons per Day (Gallons)	2,500
Days in Year	305
Delta T (Degrees)	68
Savings per Premise (Therms)	107.978

Commercial Range/Cooktop

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12

Baseline Efficiency	0.30
New Efficiency	0.31
Cook Time per Day (Hours)	8.55
Cooktop Rating (Btu/hr.)	88,000
Savings per Premise (Therms)	88.589

Commercial Dryer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	11

Baseline Efficiency (Lbs./kWh)	3.0
New Efficiency (Lbs./kWh)	3.2
Load per Year	1,646
Pounds per Load (Lbs.)	14.27
Savings per Premise (Therms)	16.696

Commercial Tankless Water Heater – Small Non-Food

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20

Baseline Efficiency	0.80
New Efficiency	0.90
Base Gallons per Day (Gallons)	95
Days in Year	305
Delta T (Degrees)	68
Savings per Premise (Therms)	20.500

Commercial Tankless Water Heater – Large Non-Food

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20

Baseline Efficiency	0.80
New Efficiency	0.90
Base Gallons per Day (Gallons)	501
Days in Year	305
Delta T (Degrees)	68
Savings per Premise (Therms)	108.240

Commercial Tankless Water Heater – Food

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20

Baseline Efficiency	0.80
New Efficiency	0.90
Base Gallons per Day (Gallons)	2,216
Days in Year	305
Delta T (Degrees)	68
Savings per Premise (Therms)	478.470

Commercial Tankless Water Heater – Hospitality

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20

Baseline Efficiency	0.80
New Efficiency	0.90
Base Gallons per Day (Gallons)	3,319
Days in Year	305
Delta T (Degrees)	68
Savings per Premise (Therms)	716.680

Commercial Tankless Water Heater – Cleaning

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	20

Baseline Efficiency	0.80
New Efficiency	0.90
Base Gallons per Day (Gallons)	1,609
Days in Year	305
Delta T (Degrees)	68
Savings per Premise (Therms)	347.475

Commercial Fryer

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	12

Baseline Efficiency	0.35
New Efficiency	0.58
Cook Time per Day (Hours)	8.55
Fryer Rating (Btu/hr.)	120,000
Savings per Premise (Therms)	519.766

Commercial Boiler

Measure Data:

Date Performed	August, September 2018
Equipment Life (Years)	10

Baseline Efficiency	0.80
New Efficiency	0.85
Base Gallons per Day (Gallons)	2,500
Delta T (Degrees)	68
Savings per Premise (Therms)	254.065

Exhibit “B”

Program: Residential Customer Assisted Energy Audit

Program Start Date: TBD

Program Description

A conservation program designed to save energy by increasing residential customer awareness of natural gas energy use in personal residences. This program allows for residential customers to engage in an online energy audit. Savings are dependent on the customer implementing energy conservation measure and practice recommendations. Recommendations provided to the customer includes an estimated range of energy savings including insightful advice on how to manage their overall energy usage.

To access this free audit, customers can participate by either logging in to Peoples Gas customer portal and completing the survey utilizing their actual historical natural gas usage or can complete the energy audit without logging in and using values the customer enters. Personalized audit results are immediately displayed on the customer's computer for review and implementation. The audit recommendations are based on the customers' answers to the questions and their actual energy consumption.

Program Participation Standards

Program Standards to be submitted within 30 days after Commission order approving DSM Program and/or DSM Plan.

Program Savings

Program savings from the Residential Customer Assisted Energy Audit primarily come from behavioral savings. Because the savings primarily come through behavioral type changes and action taken by a customer to install a natural gas measure would likely be captured in another of the company's DSM programs. The savings per participant are as follows:

Annual Energy: 0.000 Therms

Program Costs

Based on projected costs, the administrative cost per audit is estimated to be $10. There are no rebates or incentives for this program.

Program Monitoring and Evaluation
Peoples Gas System will monitor, evaluate and report the results of this program through the company's annual Demand Side Management filings to the Commission.

Program: Residential Customer Assisted Energy Audit

Program Participation Standards

1. Participation is available to any existing PGS residential customer located within PGS service area.

2. This audit will be advertised to residential customers demonstrating the benefits of participating.

3. There is no payment processing with this program.

4. There are no technical specifications on equipment eligibility with this program.

5. PGS will report the expenses and participation of this program through the company's annual Demand Side Management filings to the Commission.

Exhibit “C”

Program: Commercial Walk-Through Energy Audit

Program Start Date: TBD

Program Description

A conservation program designed to reduce demand and energy consumption of commercial/industrial facilities by increasing customer awareness of the energy use in their facilities. The savings are dependent upon the customer's implementation of conservation measures and practices recommended.

The audit is conducted by a trained commercial energy auditor who will perform at a minimum the following:

1. Identify, note and recommend only those conservation measures and practices that apply to the specific commercial or industrial facility.
2. Encourage customer and organization participation in available conservation programs in which the specific commercial facility will benefit.
3. Energy usage profiling and benchmarking showing the historical energy usage and forecasted usage with no changes.
4. Identify and communicate to the customer identified no-cost, low-cost and capital cost conservation measures and practices including those that have less than a two-year payback.

Recommendations are tailored to the specific commercial facility based upon the replacement of less efficient equipment and systems or modifications to operations to enhance the customer's overall efficiency. Recommendations are primarily standardized and encourage the customer to implement measures that, if cost-effective, move the customer beyond the efficiency level typically installed in the marketplace.

Program Participation Standards

Program Standards to be submitted within 30 days after Commission order approving DSM Plan.

Program Savings

Program savings from the Commercial Walk-Through Energy Audit primarily come from behavioral savings. Because the savings primarily come through behavioral type changes and action taken by a customer to install a natural gas measure would likely be captured in another of the company's DSM programs. The savings per participant are as follows:

Annual Energy: 0.0 Therms

Program Costs

Based on projected costs, the administrative cost per audit is estimated to be $180. There are no rebates or incentives for this program.

Program Monitoring and Evaluation

Peoples Gas System will monitor, evaluate and report the results of this program through the company's annual Demand Side Management filings to the Commission.

Program: Commercial Walk-Through Energy Audit

Program Participation Standards

1. Participation is available to any existing PGS commercial customer located within PGS service area with the exception of natural gas fired cogeneration and interruptible customers which are excluded from ECCR clause recovery.

2. This audit will be offered to PGS customers in response to a request for the service.

3. When applicable, customers are qualified for participation in other PGS conservation programs.

4. There is no payment processing with this program.

5. There are no technical specifications on equipment eligibility with this program.

6. PGS will report the expenses and participation of this program through the company's annual Demand Side Management filings to the Commission.

Exhibit “D”

Program: Residential Customer Assisted Audit

Projected Participation:

PROGRAM NAME: RESIDENTIAL CUSTOMER ASSISTED AUDIT

Year	(a) Total Number of Customers	(b) Total Number of Eligible Customers	(c) Annual Number of Program Participants	(d) Cumulative Penetration Level %	(e) Cumulative Number of Program Participants*
2019	362,478	362,478	2,500	0.7%	2,500
2020	371,763	371,763	3,500	1.6%	6,000
2021	380,824	380,824	4,500	2.8%	10,500
2022	389,564	389,564	4,500	3.9%	15,000
2023	397,953	397,953	4,500	4.9%	19,500
2024	405,968	405,968	4,500	5.9%	24,000
2025	414,147	414,147	4,500	6.9%	28,500
2026	422,494	422,494	4,500	7.8%	33,000
2027	431,013	431,013	4,500	8.7%	37,500
2028	439,707	439,707	4,500	9.6%	42,000

PROGRAM NAME: RESIDENTIAL CUSTOMER ASSISTED AUDIT

AT THE METER		
Year	Per Customer Therm Reduction	Total Annual Therm Reduction
2019	Note 1	Note 1
2020	Note 1	Note 1
2021	Note 1	Note 1
2022	Note 1	Note 1
2023	Note 1	Note 1
2024	Note 1	Note 1
2025	Note 1	Note 1
2026	Note 1	Note 1
2027	Note 1	Note 1
2028	Note 1	Note 1

*Primary savings comes from behavioral changes and are not quantified per FPSC.

Program: Commercial Walk-Through Energy Audit

Projected Participation:

PROGRAM NAME: COMMERCIAL WALK-THROUGH ENERGY AUDIT

Year	(a) Total Number of Customers	(b) Total Number of Eligible Customers	(c) Annual Number of Program Participants	(d) Cumulative Penetration Level %	(e) Cumulative Number of Program Participants*
2019	38,226	38,226	300	0.8%	300
2020	39,271	39,271	400	1.8%	700
2021	40,315	40,315	500	3.0%	1,200
2022	41,352	41,352	500	4.1%	1,700
2023	42,383	42,383	500	5.2%	2,200
2024	43,408	43,408	500	6.2%	2,700
2025	44,448	44,448	500	7.2%	3,200
2026	45,503	45,503	500	8.1%	3,700
2027	46,573	46,573	500	9.0%	4,200
2028	47,660	47,660	500	9.9%	4,700

PROGRAM NAME: COMMERCIAL WALK-THROUGH ENERGY AUDIT

AT THE METER		
Year	Per Customer Therm Reduction	Total Annual Therm Reduction
2019	Note 1	Note 1
2020	Note 1	Note 1
2021	Note 1	Note 1
2022	Note 1	Note 1
2023	Note 1	Note 1
2024	Note 1	Note 1
2025	Note 1	Note 1
2026	Note 1	Note 1
2027	Note 1	Note 1
2028	Note 1	Note 1

*Primary savings comes from behavioral changes and are not quantified per FPSC.