


MACFARLANE FERGUSON & MCMULLEN

ATTORNEYS & COUNSELORS AT LAW EST. 1884

One Tampa City Center, Suite 2000
201 N. Franklin Street
P.O. Box 1531 (33601)
Tampa, FL 33602
813.273.4200 Fax: 813.273.4396

WWW.MFMLEGAL.COM
EMAIL: INFO@MFMLEGAL.COM

625 Court Street, Suite 200
P.O. Box 1669 (33757)
Clearwater, FL 33756
727.441.8966 Fax: 727.442.8470

In Reply Refer to:
Tampa
ab@macfar.com

January 17, 2020

VIA E-PORTAL FILING

Mr. Adam J. Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

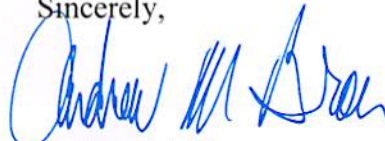
Re: Docket No. 20190210-GU – Approval of Demand Side Management Plan, by Peoples Gas System

Dear Mr. Teitzman:

Attached for electronic filing in the above docket on behalf of Peoples Gas System, please find its Response to Staff's First Data Request (Nos. 1-14). By separate transmittal letter we are also delivering a CD containing the referenced spreadsheets and documents.

Your assistance in this matter is greatly appreciated.

Sincerely,


Andrew M. Brown

AB/plb
Attachment

cc: Office of Public Counsel (via email: fall-fry.mireille@leg.state.fl.us)
Ms. Paula K. Brown
Ms. Kandi M. Floyd
Ms. Karen Bramley
Mr. Luke Buzard

**PEOPLES GAS SYSTEM
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1. Please identify the total projected annual bill impact on customers' monthly bills for all of the proposed residential and commercial demand-side management (DSM) programs.
 - A. The table below provides the total projected annual bill impact on residential customers' monthly bills for each year of the ten-year 2019-2028 period for all of the proposed residential and commercial demand-side management ("DSM") programs:

Residential Annual Bill Impact based on usage of 20 Therms per Month	
Year	Annual Bill Impact
2019	\$33.98
2020	\$34.35
2021	\$35.28
2022	\$36.06
2023	\$36.47
2024	\$36.90
2025	\$37.34
2026	\$37.76
2027	\$38.18
2028	\$38.62

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2. Please provide the program description and program standards for each of the current Commission-approved residential and commercial DSM programs.

A. The program description and program standards for each of the current Commission-approved residential and commercial DSM programs are provided below:

- **Residential New Construction Program:**

- Program Description

- This program promotes the use of natural gas in new single and multi-family residential construction projects to developers, builders, and homebuyers. The program is designed to increase the overall energy efficiency of the new home construction market through the installation of efficient gas appliances. Incentives in the form of cash allowances are provided to support the installation of natural gas, including interior gas piping, venting, appliance purchase and other costs associated with residential gas service. The program's cash allowances are paid for water heating, space heating, clothes drying, and cooking equipment installations.

- Program Participation Standards

- The Company filed and received approval of the associated DSM Standards in Order No. PSC-2010-0551-PAA-EG on September 2, 2010 in Docket No. 20100186-EG.

- **Residential Appliance Replacement Program:**

- Program Description

- This program encourages the replacement of inefficient non-natural gas residential appliances with energy-efficient natural gas appliances. Cash incentives are provided to reduce the installation costs of residential gas water heating space heating, cooking, and clothes drying. Installing interior piping and venting in existing homes is more challenging than in new construction installations where walls, ceilings and floors are open and accessible.

- Program Participation Standards

- The Company filed and received approval of the associated DSM Standards in Order No. PSC-2010-0551-PAA-EG on September 2, 2010 in Docket No. 20100186-EG.

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- **Residential Appliance Retention Program:**

Program Description

This program was initially designed to encourage homeowners with existing natural gas appliances to retain natural gas when their existing appliances fail. A cash incentive is paid to reduce the cost of purchasing and installing a replacement natural gas water heating, cooking or clothes drying appliance.

Program Participation Standards

The Company filed and received approval of the associated DSM Standards in Order No. PSC-2010-0551-PAA-EG on September 2, 2010 in Docket No. 20100186-EG

- **Commercial Electric Resistance Appliance Replacement Program:**

Program Description

The promotion of gas to high priority customers. This program is designed to convert on-main non-residential customers from electric resistance appliances to energy efficient gas appliances, effectively reducing KWH and KWD within our service area to reduce the growth rates of electric consumption.

Program Participation Standards

The Company filed and received approval of the associated DSM Standards in Order No. PSC-2014-0039A-PAA-EG on January 17, 2014 in Docket No. 20130167-EG.

- **Gas Space Conditioning Allowance Program:**

Program Description

This program is designed to convert on-main customers from electric space conditioning equipment to energy efficient gas space conditioning equipment. The program offers an allowance to reduce generally higher first costs of gas space conditioning equipment over equivalent electric equipment. This program would also reduce summer as well as winter peak demand and contribute to the conservation of KWH consumption. The Gas Space Conditioning Program is intended to include participation by residential and commercial firm gas customers and is intended to apply to total space conditioning which includes not only heating and cooling but humidity control as well.

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Program Participation Standards

The Company filed and received approval of the associated DSM Standards in Order No. PSC-2014-0039A-PAA-EG on January 17, 2014 in Docket No. 20130167-EG.

- **Oil Heating Replacement Program:**

Program Description

This program is designed to reduce oil consumption by replacing oil consuming heating systems with gas heating systems and to add additional high priority customers. The program is available to existing and potential gas customers. The replacement of oil heating with gas has the effect of reducing the direct use of oil, which in turn has a positive effect on the achievement of statewide energy conservation.

Program Participation Standards

The Company filed and received approval of the associated DSM Standards in Order No. PSC-2014-0039A-PAA-EG on January 17, 2014 in Docket No. 20130167-EG.

- **Small Package Cogeneration and Feasibility Study Program:**

Program Description

This program will promote the direct use of natural gas to generate on-site power with options to utilize the waste heat for heating, cooling and water heating.

This program would also help off-set the cost of feasibility studies for customers interested in obtaining information necessary to make a decision to proceed with cogeneration installations.

This program is designed to support the goals of the overall Conservation program effort and addresses specifically reducing kilowatt hour (KWH) consumption increasing the conservation of petroleum fuels and promoting the increase of the efficient use of natural gas. Electrical power production generated from a cogeneration facility defers KWH on a one to one basis. The use of the rejected heat raises the thermal efficiency of the facility and further reduces KWH consumption.

Program Participation Standards

The Company filed and received approval of the associated DSM Standards in Order No. PSC-2014-0039A-PAA-EG on January 17, 2014 in Docket No. 20130167-EG.

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- **Program Monitoring, Evaluation and Research Demonstration:**

The projected costs and benefits of Peoples Gas System energy conservation programs will be affected not only by the numbers of participating customers and the extent of their participation, but also by the assumptions used in estimating costs and savings to be derived from the programs. For example, the assumed reductions in electric KW demand resulting from replacement of electric resistance appliances with energy efficient gas appliances were established in the early 1980's after discussions between representatives of Peoples Gas System and Florida investor-owned electric utilities.

Peoples Gas System will monitor its energy conservation programs as follows:

1. Program costs recoverable through the Commission-approved energy conservation cost recovery clause will be monitored and evaluated as required by the Commission's rules and orders entered in the conservation cost recovery docket.
2. Accurate records will be maintained by Peoples Gas System to document the numbers and types of energy efficient gas appliances installed by participating customers under various programs.
3. Assumptions with respect to KW demand and kWh consumption attributable to various electric appliances which are replaced by energy efficient gas appliances will be evaluated throughout the course of the programs through consultation with representatives of electric utilities and appliance manufacturers, in order that such assumptions might be modified or refined to reflect changes in appliance efficiency and take into consideration the effect of KW demand diversity on the overall cost effectiveness of the conservation programs. While KW diversity was not considered in the electric benefit/cost calculations submitted originally as part of People's proposed new conservation programs, subsequent internal evaluation of the proposed programs using a diversity factor of 68% had no material effect on the overall program benefit. All programs continued to be cost effective.

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4. Peoples Gas System will monitor on a statistical sampling basis (where authorization can be obtained from participating customers) the actual electric consumption of selected customers for the 18 months preceding and the 18 months following a customer's installation of energy efficient gas appliances. This will permit consumption comparisons between the two periods and may suggest the need to modify kWh consumption estimates impacting the benefits to be derived from certain of Peoples Gas System's conservation programs.
5. Peoples Gas System will also monitor, in the manner described in paragraphs 3 and 4 above, the gas consumption of the various gas appliances involved in its energy conservation programs.
6. Peoples Gas System's conservation programs will, in some instances, cause the Company to incur expenses (such as installation of service lines and/or meters/regulators) in order to provide service to new customers. Some of these costs (such as the examples give above) are recoverable by Peoples Gas System through base rates, rather than through the conservation cost recovery clause. Peoples Gas System will monitor these costs on an ongoing basis in order to be able to demonstrate the cost effectiveness of its conservation programs to its own ratepayers.
7. Peoples Gas System will also conduct monitoring tests (in each of the three climate zones defined in the Florida Energy Efficiency Code for Building Construction) to determine the most accurate "actual" consumption of residential customers using natural gas for (a) water heating only, (b) house heating only, (c) house heating and water heating, and (d) house heating, water heating and cooking. These homes will, with the cooperation of the electric utilities which service the areas in providing appropriate data, be compared to "all electric" homes in each of the three climate zones, some with heat pumps and some with electric resistance heating. Similar monitoring will be conducted with respect to commercial sector customers using gas for water heating, air conditioning

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and desiccant cooling. These empirical data are expected to provide useful information with respect to accurate average gas consumptions and kWh reductions associated with major gas appliances in the different areas in which Peoples Gas System provides service

The information collected by Peoples Gas System in monitoring its programs, described above, will enable the Company and the Commission to more accurately assess the costs incurred and benefits derived from Peoples Gas System energy conservation programs by both electric and gas ratepayers.

In addition to monitoring and evaluating the programs outlined in the Peoples Gas System's Energy Conservation Promotional Programs, Peoples Gas System will work in cooperation with the Gas Research Institute and interested electric utilities to demonstrate prototype technologies emerging in the marketplace. This effort anticipates development of specific test sites for the evaluation and demonstration of technologies such as desiccant cooling, self-generation, gas heat pumps, fuel cells, flexible piping, or other technologies which may hold promise for reducing electrical demand and improving energy conservation for the state of Florida.

While the scientific validity of the various above referenced technologies has been demonstrated in laboratory analysis, few if any of these have undergone field testing in the Florida environment. Therefore, it is deemed appropriate for Peoples Gas System, as Florida's largest natural gas utility, to lead the effort to encourage testing and research of new technologies for application to Florida's energy conservation needs. Criteria for selection of projects for field demonstration are of necessity open-ended and dependent upon the developmental availability of such technologies for field testing. In this regard, Peoples Gas System will work with the Research Institute to assess which of various new technologies are at a stage of development where field testing would be advantageous to the advancement of the technology into the marketplace. Close working relationships with Gas

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Research Institute and the electric industry will be essential to the cooperative evaluations anticipated under this program.

Accurate records will be maintained by Peoples Gas System to document gas consumption as well as the associated KW demand and kWh consumption saved as a result of installation of various technologies under evaluation. Under the direction of the Energy Conservation Technical Coordinator, the program monitoring and evaluation and research demonstration effort will be carried out at an annual estimated cost of \$80,000.

- **Commercial New Construction:**

Peoples Gas System in conjunction with AGDF proposed five programs for its commercial customers. The purpose of the proposed programs is to educate, inform, and encourage its commercial customers either to build with natural gas (New Construction), to continue using natural gas (Retention), or to convert to natural gas (Retrofit) for their energy needs. The programs offer cash incentives to assist with defraying the costs associated with the installation of natural gas supply lines, internal piping, venting and equipment. The five proposed commercial programs are:

- Small Commercial Food Service Rebate Program
- Large Commercial Non-Food Service Program
- Large Commercial Food Service Program
- Large Commercial Hospitality Program
- Large Commercial Cleaning Service Program

The proposed programs will allow the companies to provide natural gas appliance incentives to new construction, retrofit, or retention customer types. The incentives then could be used towards the purchase and installation of appliances for specific building types and market sizes. Such appliances include tank water heaters, tankless water heaters, ranges/ovens, fryers, and dryers.

Program Participation Standards

The Company filed and received approval of the associated DSM Standards in Order No. PSC-2014-0039A-PAA-EG on January 17, 2014 in Docket No. 20130167-EG.

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- **Commercial Appliance Replacement:**

Peoples Gas System in conjunction with AGDF proposed five programs for its commercial customers. The purpose of the proposed programs is to educate, inform, and encourage its commercial customers either to build with natural gas (New Construction), to continue using natural gas (Retention), or to convert to natural gas (Retrofit) for their energy needs. The programs offer cash incentives to assist with defraying the costs associated with the installation of natural gas supply lines, internal piping, venting and equipment. The five proposed commercial programs are:

- Small Commercial Food Service Rebate Program
- Large Commercial Non-Food Service Program
- Large Commercial Food Service Program
- Large Commercial Hospitality Program
- Large Commercial Cleaning Service Program

The proposed programs will allow the companies to provide natural gas appliance incentives to new construction, retrofit, or retention customer types. The incentives then could be used towards the purchase and installation of appliances for specific building types and market sizes. Such appliances include tank water heaters, tankless water heaters, ranges/ovens, fryers, and dryers.

Program Participation Standards

The Company filed and received approval of the associated DSM Standards in Order No. PSC-2014-0039A-PAA-EG on January 17, 2014 in Docket No. 20130167-EG.

- **Commercial Appliance Retention:**

Peoples Gas System in conjunction with AGDF proposed five programs for its commercial customers. The purpose of the proposed programs is to educate, inform, and encourage its commercial customers either to build with natural gas (New Construction), to continue using natural gas (Retention), or to convert to natural gas (Retrofit) for their energy needs. The programs offer cash incentives to assist with defraying the costs associated with the installation of natural gas supply lines, internal piping, venting and equipment. The five proposed commercial programs are:

- Small Commercial Food Service Rebate Program
- Large Commercial Non-Food Service Program

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- Large Commercial Food Service Program
- Large Commercial Hospitality Program
- Large Commercial Cleaning Service Program

The proposed programs will allow the companies to provide natural gas appliance incentives to new construction, retrofit, or retention customer types. The incentives then could be used towards the purchase and installation of appliances for specific building types and market sizes. Such appliances include tank water heaters, tankless water heaters, ranges/ovens, fryers, and dryers.

Program Participation Standards

The Company filed and received approval of the associated DSM Standards in Order No. PSC-2014-0039A-PAA-EG on January 17, 2014 in Docket No. 20130167-EG.

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3. For each of the proposed residential and commercial DSM programs that are being renamed, please complete the table below by indicating the current Commission approved DSM program name, and by describing why each program was renamed.

(Residential/Commercial)		
Commission Approved DSM Program Name	Proposed DSM Program Name	Explanation

- A. In the company's proposed 2019-2028 DSM Plan, Peoples Gas System proposed restructuring to its existing residential and commercial/industrial DSM programs that will be offered. The purpose of restructuring the programs is to streamline the effective and transparent reporting of energy reduction results and in some cases renaming of the program was chosen to ease the understanding of what measures are eligible for incentives to customers. For reporting, most programs will have two components: "Replacement" which is the replacement of an existing natural gas system/equipment with an energy efficient natural gas system/equipment and "Retrofit" which is the replacement of an electric system/equipment with an energy efficient natural gas system/equipment. Each of Peoples Gas System's proposed residential and commercial DSM programs are provided in the table below which provides the current Commission approved DSM program name, and describes why the company is renaming the program:

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Residential		
Commission Approved DSM Program Name	Proposed DSM Program Name	Explanation
Residential Appliance Retention	Residential Central Heating	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Not Applicable	Residential Customer Assisted Energy Audit	The Residential Customer Assisted Energy Audit is a new DSM program
Residential Appliance Retention	Residential Dryer	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Residential Appliance Retention	Residential ENERGY STAR Tank Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Gas Space Conditioning Allowance	Residential Gas Space Conditioning	The program has been renamed into separate residential and commercial portions to remove any questions on applicability of market segment.
Residential New Construction	Residential New Construction	No name change was necessary for this DSM program.
Residential Appliance Retention	Residential Range/Cooktop	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Residential Appliance Retention	Residential Tank Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Residential Appliance Retention	Residential Tankless Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Residential Appliance Replacement	Residential Central Heating	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.

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Residential		
Commission Approved DSM Program Name	Proposed DSM Program Name	Explanation
Residential Appliance Replacement	Residential Dryer	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Residential Appliance Replacement	Residential ENERGY STAR Tank Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Residential Appliance Replacement	Residential Range/Cooktop	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Oil Heating Replacement	Residential Space Heating	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results and to provide more clarity of eligible technology.
Residential Appliance Replacement	Residential Tank Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Residential Appliance Replacement	Residential Tankless Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Monitoring and Research	Conservation Research and Development	This programs is combining the existing Monitoring and Research program with the Conservation Demonstration and Development program to become a single Conservation R&D program that provides the same intent.
Conservation Demonstration Development	Conservation Research and Development	This programs is combining the existing Monitoring and Research program with the Conservation Demonstration and Development program to become a single Conservation R&D program that provides the same intent.

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Commercial		
Commission Approved DSM Program Name	Proposed DSM Program Name	Explanation
Not Applicable	Commercial Walk-Through Energy Audit	The Commercial Walk-Through Energy Audit is a new DSM program
Small Package Cogen and Feasibility Study	Commercial Combined Heat and Power	This program was renamed to provide more clarity to participating customers for what measures are eligible for a rebate. PGS also removed the feasibility portion of this program due to the progression of combined heat and power technology and associated studies since this programs original inception in 1990.
Commercial Appliance Retention	Commercial Dryer	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Commercial Appliance Retention	Commercial ENERGY STAR Tank Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Commercial Appliance Retention	Commercial Fryer	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Gas Space Conditioning	Commercial Gas Space Conditioning	The program has been renamed into separate residential and commercial portions to remove any questions on applicability of market segment.
Commercial New Construction	Commercial New Construction	No name change was necessary for this DSM program.
Commercial Appliance Retention	Commercial Range/Cooktop	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Commercial Appliance Retention	Commercial Tankless Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Commercial Appliance Replacement	Commercial Dryer	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.

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Commercial		
Commission Approved DSM Program Name	Proposed DSM Program Name	Explanation
Commercial Appliance Replacement	Commercial ENERGY STAR Tank Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Commercial Appliance Replacement	Commercial Fryer	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Commercial Appliance Replacement	Commercial Range/Cooktop	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Commercial Electric Resistance Appliance Replacement	Commercial Retrofit	This program was renamed to be consistent with the term Retrofit as being the replacement of an electric technology.
Commercial Appliance Replacement	Commercial Tankless Water Heater	This program is extracted to be a stand-alone program to streamline the effective and transparent reporting of energy reduction results. In addition, the program is renamed to provide more clarity to participating customers for what measures are eligible for a rebate.
Monitoring and Research	Conservation Research and Development	This programs is combining the existing Monitoring and Research program with the Conservation Demonstration and Development program to become a single Conservation R&D program that provides the same intent.
Conservation Demonstration Development	Conservation Research and Development	This programs is combining the existing Monitoring and Research program with the Conservation Demonstration and Development program to become a single Conservation R&D program that provides the same intent.

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4. a. Please complete the table below by identifying each of the proposed residential and commercial DSM programs that fail the Participants Test (PCT) and/or the Gas Rate Impact Measure (G-RIM) Test, and by providing a possible solution to achieve passing results, if any.

(Residential/Commercial)			
Failing Proposed DSM Program	PCT Result	G-RIM Test Result	Possible Solution

- b. For each proposed failing program, please explain why the program should be approved as part of the Utility's DSM plan.
- A. a. Peoples Gas System designed the proposed 2019-2028 DSM Plan and its associated DSM Programs in a prudent and reasonable manner. In the design of each DSM program the historical participation was examined and where prudent, the incentive was adjusted to achieve the desired participation rate to achieve the overall DSM Savings to ensure the recent Commission approved annual ten-year DSM Goals. As such, it is important to recognize that because the DSM Program passes or fails GRIM and/or passes or fails PCT it does not inherently or automatically mean that the incentive should be adjusted one way or another to drive the results of the particular cost-effectiveness test. It is also important to recognize that natural gas DSM programs are also designed to assist in defraying gas installation costs associated with meters, regulators, service lines, and main lines in addition to assisting in the incremental cost of the equipment. The tables below identify each of the company's proposed residential and commercial DSM programs that fail the Participants Cost Test ("PCT") and/or the Gas Rate Impact Measure ("G-RIM") Test. The possible solution for each of these DSM Programs identified in the table is explained further below.

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Residential		
Failing Proposed DSM Program	PCT Result	G-RIM Test Result
Residential-New Construction		
New Construction	0.840	
Residential-Retrofit		
ENERGY STAR Water Heater	0.828	
Gas Space Conditioning	0.382	
Range/Cooktop	0.792	
Space Heating	0.210	
Tank Water Heater	0.915	
Tankless Water Heater	0.986	
Residential-Replacement		
ENERGY STAR Water Heater		0.929
Gas Space Conditioning	0.938	0.758
Range/Cooktop	-19.192	
Tankless Water Heater		0.873

Commercial		
Failing Proposed DSM Program	PCT Result	G-RIM Test Result
Commercial-New Construction		
New Construction	0.375	
Commercial-Retrofit		
Combined Heat and Power	0.761	
Dryer	0.577	
ENERGY STAR Water Heater	0.562	
Fryer	0.289	
Gas Space Conditioning	0.170	
Range/Cooktop	0.334	
Commercial Retrofit		
Tankless Water Heater	0.541	
Commercial-Replacement		
Gas Space Conditioning		0.987
Range/Cooktop	-5.603	

- Residential New Construction:** Adjust the incentive from the proposed \$1,186 to \$2,459 to obtain a GRIM score of 1.00 and PCT score of 0.957. Adjust the incentive from the proposed \$1,186 to \$2,945 to obtain a GRIM score of 0.927 and PCT score of 1.00. Adjust the gas installation costs so

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that the cost-effectiveness test does not bear the full brunt of these costs. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (15 years). Because the test is standardized at 20-years, with the equipment being replaced at year 15, the full cost of the changed-out equipment is realized with only five remaining years of benefits being quantified.

- **Residential ENERGY STAR Tank Water Heater – Retrofit:** Adjust the incentive from the proposed \$650 to \$1,890 to obtain a GRIM score of 0.764 and PCT score of 1.00. Adjust the incentive from the proposed \$650 to \$934 to obtain a GRIM score of 1.00 and PCT score of 0.868. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (12 years). Because the test is standardized at 20-years, with the equipment being replaced at year 12, the full cost of the changed-out equipment is realized with only eight remaining years of benefits being quantified.
- **Residential Gas Space Conditioning – Retrofit:** Adjust the incentive from the proposed \$500 per ton to \$6,855 per ton to obtain a GRIM score of 0.538 and PCT score of 1.00. Adjust the incentive from the proposed \$500 per ton to \$3,057 per ton to obtain a GRIM score of 1.00 and PCT score of 0.515. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (10 years). Because the test is standardized at 20-years, with the equipment being replaced at year 20, the full cost of the changed-out equipment is realized with no benefits beyond year 20 being quantified.
- **Residential Range/Cooktop – Retrofit:** Adjust the incentive from the proposed \$300 to \$759 to obtain a GRIM score of 0.841 and PCT score of 1.00. Adjust the incentive from the proposed \$300 to \$497 to obtain a GRIM score of 1.00 and PCT score of 0.881. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (15 years). Because the test is standardized at 20-years, with the equipment being replaced at year 15, the full cost of the changed-out equipment is realized with only five remaining years of benefits being quantified.
- **Residential Space Heating – Retrofit:** Adjust the incentive from the proposed \$65 to \$3,214 to obtain a GRIM score of 0.614 and PCT score of 1.00. Adjust the incentive from the proposed \$65 to \$1,190 to obtain a GRIM score of 1.00 and PCT score of 0.492. Adjust the timing of the cost-

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effectiveness test from the standard 20-year period to the life of the equipment (10 years). Because the test is standardized at 20-years, with the equipment being replaced at year 20, the full cost of the changed-out equipment is realized with no benefits beyond year 20 being quantified.

- **Residential Tank Water Heater - Retrofit:** Adjust the incentive from the proposed \$550 to \$1,067 to obtain a GRIM score of 0.979 and PCT score of 1.00. Adjust the incentive from the proposed \$550 to \$994 to obtain a GRIM score of 1.00 and PCT score of 0.989. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (13 years). Because the test is standardized at 20-years, with the equipment being replaced at year 13, the full cost of the changed-out equipment is realized with only seven remaining years of benefits being quantified.
- **Residential Tankless Water Heater – Retrofit:** Adjust the incentive from the proposed \$700 to \$1,593 to obtain a GRIM score of 0.743 and PCT score of 1.00. Adjust the incentive from the proposed \$700 to \$741 to obtain a GRIM score of 1.00 and PCT score of 0.877. Adjust the timing of the cost-effectiveness test to not replace the equipment in year 20. Because the test is standardized at 20-years, with the equipment being replaced at year 20, the full cost of the changed-out equipment is realized with no benefits beyond year 20 being quantified.
- **Residential ENERGY STAR Tank Water Heater – Replacement:** Adjust the incentive from the proposed \$400 to \$349 to obtain a GRIM score of 1.00 and PCT score of 2.828. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (13 years). Because the test is standardized at 20-years, with the equipment being replaced at year 13, the full cost of the changed-out equipment is realized with only seven remaining years of benefits being quantified.
- **Residential Gas Space Conditioning – Replacement:** Adjust the incentive from the proposed \$150 per ton to \$0 per ton to obtain a GRIM score of 0.910 and PCT score of 0.905. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (10 years). Because the test is standardized at 20-years, with the equipment being replaced at year 20, the full cost of the changed-out equipment is realized with no benefits beyond year 20 being quantified.

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- **Residential Range/Cooktop – Replacement:** The negative PCT score is a result of a negative net customer cost when comparing the cost of a installing a gas range/cooktop versus the avoidance of installing an electric range/cooktop. The program has a very strong GRIM score offering an incentive of \$100.
- **Residential Tankless Water Heater – Replacement:** Adjust the incentive from the proposed \$550 to \$367 to obtain a GRIM score of 1.00 and PCT score of 7.065. Adjust the timing of the cost-effectiveness test to not replace the equipment in year 20. Because the test is standardized at 20-years, with the equipment being replaced at year 20, the full cost of the changed-out equipment is realized with no benefits beyond year 20 being quantified.
- **Commercial New Construction:** Adjust the incentive from the proposed \$2,266 to \$77,797 to obtain a GRIM score of 1.137 and PCT score of 1.00. Adjust the incentive from the proposed \$2,266 to \$92,088 to obtain a GRIM score of 1.00 and PCT score of 1.118. Adjust the gas installation costs so that the cost-effectiveness test does not bear the full brunt of these costs. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (17 years). Because the test is standardized at 20-years, with the equipment being replaced at year 17, the full cost of the changed-out equipment is realized with only three remaining years of benefits being quantified.
- **Commercial Combined Heat and Power - Retrofit:** Adjust the incentive from the proposed \$300 per kW to \$1,318 per kW to obtain a GRIM score of 1.048 and PCT score of 1.00. Adjust the incentive from the proposed \$300 per kW to \$1,394 per kW to obtain a GRIM score of 1.00 and PCT score of 1.018.
- **Commercial Dryer – Retrofit:** Adjust the incentive from the proposed \$2,500 to \$7,051 to obtain a GRIM score of 0.878 and PCT score of 1.00. Adjust the incentive from the proposed \$2,500 to \$5,696 to obtain a GRIM score of 1.00 and PCT score of 0.874. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (11 years). Because the test is standardized at 20-years, with the equipment being replaced at year 11, the full cost of the changed-out equipment is realized with only nine remaining years of benefits being quantified.

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- **Commercial ENERGY STAR Tank Water Heater – Retrofit:** Adjust the incentive from the proposed \$2,500 to \$46,119 to obtain a GRIM score of 1.479 and PCT score of 1.00. Adjust the incentive from the proposed \$2,500 to \$76,452 to obtain a GRIM score of 1.00 and PCT score of 1.305. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (15 years). Because the test is standardized at 20-years, with the equipment being replaced at year 15, the full cost of the changed-out equipment is realized with only five remaining years of benefits being quantified.
- **Commercial Fryer:** Adjust the incentive from the proposed \$3,500 to \$81,323 to obtain a GRIM score of 1.079 and PCT score of 1.00. Adjust the incentive from the proposed \$3,500 to \$89,346 to obtain a GRIM score of 1.00 and PCT score of 1.073. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (12 years). Because the test is standardized at 20-years, with the equipment being replaced at year 12, the full cost of the changed-out equipment is realized with only eight remaining years of benefits being quantified.
- **Commercial Gas Space Conditioning – Retrofit:** Adjust the incentive from the proposed \$500 per ton to \$10,729 per ton to obtain a GRIM score of 0.576 and PCT score of 1.00. Adjust the incentive from the proposed \$500 per ton to \$5,614 per ton to obtain a GRIM score of 1.00 and PCT score of 0.585. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (10 years). Because the test is standardized at 20-years, with the equipment being replaced at year 20, the full cost of the changed-out equipment is realized with no benefits beyond year 20 being quantified.
- **Commercial Range/Cooktop – Retrofit:** Adjust the incentive from the proposed \$2,000 to \$87,998 to obtain a GRIM score of 1.212 and PCT score of 1.00. Adjust the incentive from the proposed \$2,000 to \$111,811 to obtain a GRIM score of 1.00 and PCT score of 1.185. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (12 years). Because the test is standardized at 20-years, with the equipment being replaced at year 12, the full cost of the changed-out equipment is realized with only eight remaining years of benefits being quantified.

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- **Commercial Retrofit:** Adjust the incentive from the proposed \$40 per kW to \$8,056 per kW to obtain a GRIM score of 1.301 and PCT score of 1.00. Adjust the incentive from the proposed \$40 per kW to \$11,146 per kW to obtain a GRIM score of 1.00 and PCT score of 1.226.
 - **Commercial Tankless Water Heater - Retrofit:** Adjust the incentive from the proposed \$3,500 to \$49,066 to obtain a GRIM score of 1.319 and PCT score of 1.00. Adjust the incentive from the proposed \$3,500 to \$69,760 to obtain a GRIM score of 1.00 and PCT score of 1.208. Adjust the timing of the cost-effectiveness test to not replace the equipment in year 20. Because the test is standardized at 20-years, with the equipment being replaced at year 20, the full cost of the changed-out equipment is realized with no benefits beyond year 20 being quantified.
 - **Commercial Gas Space Conditioning – Replacement:** Adjust the incentive from the proposed \$150 per ton to \$342 per ton to obtain a GRIM score of 1.00 and PCT score of 1.325. Adjust the timing of the cost-effectiveness test from the standard 20-year period to the life of the equipment (10 years). Because the test is standardized at 20-years, with the equipment being replaced at year 20, the full cost of the changed-out equipment is realized with no benefits beyond year 20 being quantified.
 - **Commercial Range/Cooktop – Replacement:** The negative PCT score is a result of a negative net customer cost when comparing the cost of a installing a gas range/cooktop versus the avoidance of installing an electric range/cooktop. The program has a very strong GRIM score offering an incentive of \$2,000.
- b. Peoples Gas System was asked to develop DSM Goals that were based upon the current Commission approved portfolio of DSM Programs and to add DSM Programs needed to meet the requirements of FEECA.

Peoples Gas System designed the proposed 2019-2028 DSM Plan and its associated DSM Programs in a prudent and reasonable manner. In the design of each DSM program the historical participation was examined and where prudent, the incentive was adjusted to achieve the desired participation rate to achieve the overall DSM Savings to ensure the recent Commission approved annual ten-year DSM Goals. As such,, it is important to recognize that because the DSM Program passes or fails GRIM and/or passes or fails PCT, it does not inherently or automatically mean that the incentive should be adjusted one way or another to drive the results of the

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particular cost-effectiveness test. Peoples Gas System has good participation in its current DSM Programs, so while increasing the incentive level would help achieve a passing PCT and/or G-RIM cost test of 1.00, this unnecessary increase would imprudently raise costs to be paid by customers.

It is also important to recognize that natural gas DSM programs are also designed to assist in defraying gas installation costs associated with meters, regulators, service lines, and main lines in addition to assisting in the incremental cost of the equipment.

Because of these reasons, the company encourages the Commission to approve all of the DSM Programs within Peoples Gas System's 2019-2028 DSM Plan.

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5. a. Please complete the table below by identifying each of the proposed residential and commercial DSM programs that are projected to result in zero savings, and by describing the reason(s) for this result.

(Residential/Commercial)	
Proposed DSM Program	Reason(s) for Zero Savings

- b. For each proposed program, please explain why the program should be approved as part of the Utility's DSM plan.

- A. a. The table below identifies each of the company's proposed residential and commercial DSM programs that are projected to result in zero savings and describing the reason(s) for this result:

Residential	
Proposed DSM Program	Reason(s) for Zero Savings
Central Heating	Historically, participating customers install energy efficient central heating systems that are equivalent to the minimum building code and federal appliance requirements.
Customer Assisted Energy Audit	Primary savings comes from behavioral changes and associated energy savings are not allowed to contribute to DSM Goal achievements.
Space Heating	Historically, participating customers install the base minimum efficiency space heating equipment.

Commercial	
Proposed DSM Program	Reason(s) for Zero Savings
Walk-Through Energy Audit	Primary savings comes from behavioral changes and associated energy savings are not allowed to contribute to DSM Goal achievements.
Commercial Retrofit	Historically, participating customers install energy efficient natural gas systems that are equivalent to the minimum building code and federal appliance requirements.

- b. Peoples Gas System was asked to develop DSM Goals that were based upon the current Commission approved portfolio of DSM Programs and to add DSM Programs needed to meet the requirements of FEECA. For each of the programs identified in the table above, (see response to Data Request No. 5a), the additional reasons each program should be approved as part of the Peoples Gas System 2019-2028 DSM Plan are identified below:

- **Residential Central Heating:** This DSM Program is a valuable program to participating customers. While historically participating customers typically install the base minimum energy efficiency as required by state building code and federal energy efficiency appliance requirements, there

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are many other benefits that come from this program. By having this DSM program in the residential portfolio, it assists other natural gas DSM programs and technologies in helping to defray the additional natural gas piping and associated venting costs for a home. In addition, when examining this DSM Program versus other fuel technology, the amount of emissions emitted from this technology for the process of heating is much lower.

- **Residential Customer Assisted Energy Audit (Online):** The DSM Program is required to meet the requirements of FEECA.
- **Residential Space Heating:** This DSM Program is a valuable program to Peoples Gas System by having a variety of DSM Programs that customers can participate in.
- **Commercial Walk-Through Energy Audit:** While not required to meet the requirements of FEECA, the company believes having this DSM program allows for a significant amount of energy education to occur to commercial customers on the benefits of using energy efficient natural gas technologies.
- **Commercial Retrofit:** This DSM Program is a valuable program to participating customers. Historically, participating customers typically install the base minimum energy efficiency as required by state building code and federal energy efficiency appliance requirements. This program is considered a custom DSM Program, so it is available to incent customers to install energy efficient technologies that are not covered by another existing DSM Program.

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6. a. Please complete the table below by identifying each of the proposed residential and commercial DSM programs with no projected participation, and by describing the reason(s) for this result.

(Residential/Commercial)	
Proposed DSM Program	Reason(s) for Zero Projected Participation

- b. For each proposed program, please explain why the program should be approved as part of the Utility's DSM plan.

- A. a. The tables below identify each of the proposed residential and commercial DSM programs with no projected participation, and describes the reason(s) for this projected participation:

Residential	
Proposed DSM Program	Reason(s) for Zero Projected Participation
Gas Space Conditioning	Peoples Gas System forecasted zero participation for this DSM program into the future based upon the program's historical participation rate.
Space Heating	Peoples Gas System forecasted zero participation for this DSM program into the future based upon the program's historical participation rate.

Commercial	
Proposed DSM Program	Reason(s) for Zero Projected Participation
Combined Heat and Power	Peoples Gas System forecasted zero participation for this DSM program into the future based upon the program's historical participation rate.
Gas Space Conditioning	Peoples Gas System forecasted zero participation for this DSM program into the future based upon the program's historical participation rate.

- b. Peoples Gas System was asked to develop DSM Goals that were based upon the current Commission approved portfolio of DSM Programs and to add DSM Programs needed to meet the requirements of FEECA. For each of the programs identified in the table above (Request No. 6a), the additional reasons each program that has zero projected participation should be approved as part of the Peoples Gas System's 2019-2028 DSM Plan are below:

- **Residential Gas Space Conditioning:** Peoples Gas System forecasted zero participation for this DSM program into the future based upon the program's historical participation rate. The zero projected participation rate

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for this DSM program was also needed to ensure that the projected Therm savings from all DSM programs would meet the recently approved DSM Goals from the Commission. The company does believe that this technology is emerging as a credible and reliable technology as compared to the gas space conditioning equipment in the past. The company is proposing to increase the incentive to customers for this technology and petitioned for and received Commission approval for a gas space conditioning rate that will also hopefully attract participation to this valuable DSM program.

- **Residential Space Heating:** Peoples Gas System forecasted zero participation for this DSM program into the future based upon the program's historical participation rate. The zero projected participation rate for this DSM program was also needed to ensure that the projected Therm savings from all DSM programs would meet the recently approved DSM Goals from the Commission. Peoples Gas System believes there may be some remaining residential customers that could take advantage of this valuable DSM program.
- **Commercial Combined Heat and Power:** Peoples Gas System forecasted zero participation for this DSM program into the future based upon the program's historical participation rate. The zero projected participation rate for this DSM program was also needed to ensure that the projected Therm savings from all DSM programs would meet the recently approved DSM Goals from the Commission. The company does believe that this technology is readily available to benefit many customers throughout the company's service area that need electrical power, heating and/or cooling. The company modified the existing program to provide more clarity of what qualifies for the incentive, proposed an increase to the incentive and added the requirement to offset some amount of gas usages. The company is hopeful that these DSM program modifications will attract participation to this valuable DSM program.
- **Commercial Gas Space Conditioning:** Peoples Gas System forecasted zero participation for this DSM program into the future based upon the program's historical participation rate. The zero projected participation rate for this DSM program was also needed to ensure that the projected Therm savings from all DSM programs would meet the recently approved DSM Goals from the Commission. The company does believe that this technology is emerging as a credible and reliable technology as compared to the gas space conditioning equipment in the past. The company is

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proposing to increase the incentive to customers for this technology and petitioned for and received Commission approval for a gas space conditioning rate that will also hopefully attract participation to this valuable DSM program.

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7. Please explain in detail the -19.192 and -5.603 PCT results for the Residential-Replacement and Commercial-Replacement Range/Cooktop Programs, respectively.
 - A. The Participant Cost Test ("PCT") scores of -19.192 and -5.603 for the Residential-Replacement and Commercial-Replacement Range/Cooktop Programs respectively are the result of a negative net customer cost when comparing the cost of a installing a gas range/cooktop versus the avoidance of installing an electric range/cooktop.

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8. For each of the proposed residential and commercial DSM programs, please complete the table below by identifying which programs are load building programs, and which programs are load reduction programs.

(Residential/Commercial)	
Proposed DSM Program	Load Building or Load Reduction?

- A. The tables below provide each of the company's proposed residential and commercial DSM programs and identifies which programs are load building and which programs are load reduction:

Residential	
Proposed DSM Program	Load Building or Load Reduction?
Residential Central Heating	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Residential Customer Assisted Energy Audit	Note 2
Residential Dryer	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Residential ENERGY STAR Tank Water Heater	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Residential Gas Space Conditioning	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Residential New Construction	Load Building, Note 1
Residential Range/Cooktop	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Residential Space Heating	Retrofit portion-Load Building, Note 1
Residential Tank Water Heater	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Residential Tankless Water Heater	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Conservation Research and Development	

Note 1: Program is based upon reduction in therm usage.

Note 2: Program energy savings primarily come from behavioral changes.

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Commercial	
Commercial Walk-Through Energy Audit	Note 2
Commercial Combined Heat and Power	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Commercial Dryer	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Commercial ENERGY STAR Tank Water Heater	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Commercial Fryer	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Commercial Gas Space Conditioning	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Commercial New Construction	Load Building, Note 1
Commercial Range/Cooktop	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Commercial Tankless Water Heater	Retrofit portion-Load Building, Replacement portion-Load Reduction, Note 1
Commercial Retrofit	Retrofit portion-Load Building, Note 1
Conservation Research and Development	

Note 1: Program is based upon reduction in therm usage.

Note 2: Program energy savings primarily come from behavioral changes.

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9. Please refer to the Executive Summary of the Utility's 2019-2028 Demand Side Management Plan, Bates-Stamped page 4, which identifies the sources that were used to develop the data, costs, and assumptions for this plan.
- a. Please explain why PGS used the 2015 Residential Energy Consumption Survey, as published by the United States Energy Information Administration. As part of your response, please explain how this information was used, and whether the information that the Utility used in this survey is the most current available.
 - b. Please explain why PGS used the 2012 Commercial Building Energy Consumption Survey, as published by the United States Energy Information Administration. As part of your response, please explain how this information was used, and whether the information that the Utility used in this survey is the most current available.
 - c. Please explain why PGS used the 2014 Building America House Simulation protocols, as published by the National Renewable Energy Laboratory. As part of your response, please explain how this information was used, and whether the information that the Utility used in this survey is the most current available.
- A.
- a. Peoples Gas System utilized the 2015 Residential Energy Consumption Survey ("RECS"), as published by the United States Energy Information Administration ("EIA") in the development of the associated DSM Goals. This survey is the most recent RECS survey performed by the EIA. The survey was utilized to assist in identifying the breakdown of residential home and appliance usage for the formulation of avoided energy savings for the use of gas equipment as compared to electric appliance or base gas appliance energy usage.
 - b. Peoples Gas System utilized the 2012 Residential Energy Consumption Survey ("CBECS"), as published by the United States EIA in the development of the associated DSM Goals. This survey is the most recent CBECS survey performed by the EIA. The survey was utilized to assist in identifying the breakdown of commercial facility and appliance usage for the formulation of avoided energy savings for the use of gas equipment as compared to electric appliance or base gas appliance energy usage.

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- c. Peoples Gas System utilized the 2014 Building America House Simulation protocols, as published by the National Renewable Energy Laboratory ("NREL") in the development of the associated DSM Goals. The protocols were used to assist in ensuring the processes used by Peoples Gas System in identifying the avoided energy savings for the use of new or retrofit gas equipment as compared to electric appliance or base gas appliance energy usage was effective and accurate. Peoples Gas System believes these are the most recent of house simulation protocols published by NREL.

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- 10.** Please refer to the DSM Program Cost Effectiveness Summary on Bates-Stamped page 11 to answer the following questions:
- a. Please explain in detail how the Utility ensured that all programs identified were cost effective as a whole.
 - b. Please identify all measures for residential programs that were bundled for the purpose of evaluating cost effectiveness.
 - c. Please identify all measures for commercial programs that were bundled for the purpose of evaluating cost effectiveness.
- A.**
- a. Peoples Gas System examined the overall portfolio of the proposed DSM programs to be cost-effectiveness due to two main reasons. The first main reason is the majority of proposed DSM programs have a passing G-RIM score. The second main reason is the majority of proposed DSM programs have a G-RIM Score that is well above 1.00. In addition, Peoples Gas System's proposed DSM programs are based upon the current DSM programs, with the exception of the two new DSM programs (Residential Online energy audit and Commercial Walk-Through energy audit), to ensure the company is meeting the requirements of FEECA and achieving the Commission's approved annual energy goals.
 - b. Peoples Gas System bundled one residential program for the purpose of evaluating cost-effectiveness. This program was the Residential New Construction Program.
 - c. Peoples Gas System bundled one commercial program for the purpose of evaluating cost-effectiveness. This program was the Commercial New Construction Program.

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- 11.** Please provide the electronic file(s) with the formulas intact and the cells unlocked that were used to calculate the G-RIM and PCT values shown on Bates-Stamped page 11.
- A.** Electronic copies of the cost-effectiveness evaluations with the formulas intact and the cells unlocked that were used to calculate the Gas Rate Impact Measure (“G-RIM”) and the Participant Cost test (“PCT”) for the values shown on Bates-Stamped page 11 are included on the included CD labeled, “PGS–DSM 2019-2028 DSM PLAN CE-Runs”. Note 1: On the cost-effectiveness tests that were performed for the submission of the company’s 2019-2028 DSM Plan a small formula error was found in the following three Residential Load Building DSM Programs which changed the cost effectiveness results slightly. The formulas have been corrected on the electronic files contained on the CD.

Residential Dryer – Load Building
Residential New Construction
Residential Tank Water Heater – Load Building

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- 12.** Please refer to Bates-Stamped page 12 addressing the cost and impact of the proposed DSM Plan; pages 3 and 6 from Order No. PSC-2019-0499-FOF-GU, Final Order Approving Natural Gas Conservation Cost Recovery Amounts and Establishing Natural Gas Cost recovery Factors for January through December 2020 (2019 Final Order); and to page 6 from the testimony of Mark R. Roche, filed in Docket No. 20190004-EG, on August 9, 2019, to answer the following questions:
- a. On page 3 of the 2019 Final Order, the Commission approved a total cost recovery amount for PGS of \$19,577,952 for 2020, which according to the testimony of witness Mark. R. Roche did not include the cost of the Utility's two new audit programs. Please explain in detail why the projected estimated cost of \$18,217,208 for 2020 shown on Bates-Stamped page 12, which includes the costs of the two new programs, is lower than the Commission-approved clause recovery amount from the 2019 Final Order (without the cost of two new programs).
 - b. On page 6 of the 2019 Final Order, the Commission approved a cost recovery factor for the RS, RS-SG, and RS-GHP rate classes of \$0.10948 per therm for 2020, which would result in a monthly charge of \$2.19 for 20 therms of use. As reflected on Bates-Stamped page 12, the Utility is estimating a monthly charge of \$2.86 for 20 therms of use. Please explain in detail the reason for the estimated change (from \$2.19 to \$2.86), in light of lower projected costs for the period.
 - c. Please provide a breakdown (by cost type and by program) of the "DSM Plan Cost" for each year reflected on Bates-Stamped page 12.
- A.**
- a. Peoples Gas System developed the projected total costs of the proposed 2019-2028 DSM Plan, which includes the two new energy auditing programs, based solely on the projected participation and associated program administration costs and incentives.

On page 3 of the Order No. PSC-2019-0499-FOF-GU, Final Order Approving Natural Gas Conservation Cost Recovery Amounts and Establishing Natural Gas Cost recovery Factors for January through December 2020, the Commission approved a total cost recovery amount

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for the company of \$19,577,952 for 2020, which includes the additional recovery of an under-recovery true-up amount of \$2,758,747. The total incremental costs projected for 2020 is in the amount of \$16,819,205 which is detailed on Schedule C-1, Page 1 of 1, on Bates Stamped Page 9 of the company's Natural Gas Conservation Cost Recovery Projection Petition filed on August 9, 2019.

- b. Peoples Gas System developed the projected total costs of the proposed 2019-2028 DSM Plan, which includes the two new energy auditing programs, based solely on the projected participation and associated program administration costs and incentives. This amount does include any true-up amounts from prior periods as explained in Request No. 12a above.
- c. A breakdown of the costs by cost type and by program for the company's 2019-2028 DSM Plan cost for each year reflected on Bates-Stamped page 12 is provided in the tables below:

DSM Cost Estimates Peoples Gas System Residential											
Year	Central Heating	Customer Assisted Energy Audit	Dryer	ENERGY STAR Tank Water Heater	Gas Space Conditioning	New Construction	Range/Cooktop	Space Heating	Tank Water Heater	Tankless Water Heater	Residential DSM Cost
2019	2,059,225	240,000	313,500	170,092	0	9,843,800	450,000	0	2,340,800	1,292,500	16,709,917
2020	2,109,450	175,000	321,750	174,446	0	10,081,000	450,000	0	2,393,600	1,351,250	17,056,496
2021	2,159,675	175,000	330,000	178,703	0	10,318,200	468,000	0	2,464,000	1,468,750	17,562,328
2022	2,210,072	175,000	330,000	182,794	0	10,555,400	486,000	0	2,534,400	1,586,250	18,059,915
2023	2,260,125	175,000	338,250	187,000	0	10,674,000	486,000	0	2,604,800	1,645,000	18,370,175
2024	2,310,350	175,000	346,500	191,250	0	10,792,600	504,000	0	2,640,000	1,703,750	18,663,450
2025	2,360,575	175,000	363,000	195,500	0	10,911,200	504,000	0	2,675,200	1,762,500	18,946,975
2026	2,410,800	175,000	363,000	197,625	0	11,029,800	522,000	0	2,728,000	1,821,250	19,247,475
2027	2,461,025	175,000	379,500	201,875	0	11,148,400	522,000	0	2,763,200	1,880,000	19,531,000
2028	2,511,250	175,000	387,750	206,320	0	11,267,000	540,000	0	2,851,200	1,938,750	19,877,270

DSM Cost Estimates Peoples Gas System Commercial												
Year	Walk-through Energy Audit	Combined Heat Power	Dryer	ENERGY STAR Tank Water Heater	Fryer	Gas Space Heating	New Construction	Range/Cooktop	Retrofit	Tankless Water Heater	Commercial DSM Cost	Total DSM Cost
2019	54,000	0	32,475	40,489	73,073	0	201,674	17,474	10,000	685,237	1,114,422	17,824,339
2020	72,000	0	29,531	41,682	73,433	0	213,004	18,173	10,000	702,889	1,160,713	18,217,208
2021	90,000	0	30,889	42,876	76,847	0	217,536	18,872	10,000	720,564	1,207,583	18,769,911
2022	90,000	0	32,235	44,060	80,233	0	226,600	19,566	10,000	733,305	1,235,999	19,295,915
2023	90,000	0	33,573	45,236	80,548	0	233,398	20,256	10,000	750,659	1,263,670	19,633,845
2024	90,000	0	34,906	46,409	83,900	0	237,930	20,943	10,000	767,925	1,292,012	19,955,462
2025	90,000	0	36,260	47,599	87,304	0	246,994	21,640	10,000	780,789	1,320,586	20,267,561
2026	90,000	0	37,629	48,803	87,696	0	253,792	22,346	10,000	798,652	1,348,918	20,596,393
2027	90,000	0	39,018	50,025	91,191	0	258,324	23,062	10,000	816,857	1,378,476	20,909,476
2028	90,000	0	40,428	51,265	94,737	0	262,856	23,788	10,000	835,400	1,408,475	21,285,745

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- 13.** Please refer to Bates-Stamped pages 22-24 addressing the Residential Customer Assisted Energy Audit Program to answer the following questions:
- a. Referencing column (a) on page 24, under the column heading “Total Number of Customers,” please identify each and every forecast and assumption relied upon to reflect a steady growth of customers through 2028.
 - b. Referencing column (c) on page 24, under the column heading “Annual Number of Program Participants,” please identify each and every methodology and assumption used to develop projections through 2028.
 - c. Referencing column (c) on page 24, under the column heading “Annual Number of Program Participants,” please explain in detail how PGS developed its projections through 2028. Please also explain in your response why the projection for all periods beyond 2021 remains at 4,500 participants per year.
 - d. Referencing column (d) on page 24, under the column heading “Cumulative Penetration Level,” please identify and describe what limiting factors or constraints impact penetration levels, considering that all customers are eligible to participate in the program.
- A.**
- a. Peoples Gas System utilized the same customer forecast that was used in the development and preparation of the proposed 2019–2028 DSM Goals that were approved by the Commission in Docket No. 20180186-GU and approved on August 26, 2019 by Order No. PSC-2019-0361-PAA-GU. Peoples Gas System explained these in the following Discovery Requests within Docket No. 20180186-GU:
 - Staff’s First Data Request, Request Nos. 4,6, and 7 filed on January 14, 2019.
 - Staff’s Second Data Request, Request No. 3 filed on February 15, 2019.
 - b. Peoples Gas System evaluated the projected participation in the Residential Customer Assisted Energy Audit Program by examining the current number of residential customers that participate in one of the company’s affiliate’s online energy audit program that is the same program offered for electric customers. This evaluation included looking at how

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customers responded to the initial program availability and how the number of customers participating changes over time the longer the program is in place. The company also examined the participation rate versus what the average total cost of energy is to a residential customer. Based upon this evaluation, the company believes that once the program is offered, the participation will grow until it reaches some steady state participation rate.

- c. The development of the projected DSM Program participation rate for the Residential Customer Assisted Energy Audit Program and projected leveling off of participation was explained in Response No. 13b above.
- d. Peoples Gas System believes there are two main factors that will limit the participation of residential customers in the Residential Customer Assisted Energy Audit Program. The first limiting factor to participation is the low typical energy bills customer receive for their natural gas usage. The second limiting factor to participation is the weather, if the State of Florida experiences relatively mild winters, this will cause residential gas customers that have natural gas heating to have typically low energy bills which will limit the number of participants.

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14. Please refer to Bates-Stamped pages 83-85 addressing the Commercial Walk-Through Energy Audit Program to answer the following questions:
- a. Please explain how the Utility developed its projected administrative cost per audit of \$180, as shown on page 84. As part of your response, please explain why the program for residential customers is projected to have an administrative cost per audit of \$10, as shown on page 22.
 - b. Referencing column (a) on page 85, under the column heading "Total Number of Customers," please identify each and every forecast or assumption relied upon to reflect a steady growth of customers through 2028.
 - c. Referencing column (c) on page 85, under the column heading "Annual Number of Program Participants," please explain in detail how the Utility developed its projections through 2028. As part of your response, please explain why the projection for all periods beyond 2021 remains at 500 participants per year.
 - d. Referencing column (d) on page 85, under the column heading "Cumulative Penetration Level," please explain in detail why the Utility projects a relatively modest 9.9 percent level in 2028, considering that all customers are eligible to participate in the program.
- A.
- a. Peoples Gas System projected the \$180 per audit administrative costs for the Commercial Walk-Through Energy Audit by projecting that the energy audit would typically take four to six hours to perform depending on the size of the facility. This cost includes mileage and travel time to and from the facility, time discussing with the owner/manager of the facility, time to walk the facility and inspect for energy savings opportunities and time and materials to complete a written report. The company used an hourly cost of \$30 per hour for this projection.
 - b. Peoples Gas System utilized the same customer forecast that was used in the development and preparation of the proposed 2019–2028 DSM Goals that were approved by the Commission in Docket No. 20180186-GU and approved on August 26, 2019 by Order No. PSC-2019-0361-PAA-GU. Peoples Gas System explained these in the following Discovery Requests within Docket No. 20180186-GU:

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- Staff's First Data Request, Request Nos. 4,6, and 7 filed on January 14, 2019.
 - Staff's Second Data Request, Request No. 3 filed on February 15, 2019.
- c. Peoples Gas System evaluated the projected participation in the Commercial Walk-Through Energy Audit Program by examining the current number of commercial customers that participate in one of the company's affiliate's walk-through audit program that is the same program offered for electric customers. Based upon this evaluation, the company believes that once the program is offered and advertised, the participation will grow until it reaches some steady state participation rate.
- d. The development of the projected DSM Program participation rate for the Commercial Walk-Through Energy Audit Program and projected leveling off of participation was explained in Response No. 14c above.