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December 2, 2014

E-PORTAL

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

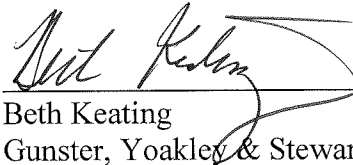
Re: Docket No. 140196-EG - Petition for approval of extension of conservation demonstration and development program.

Dear Ms. Stauffer:

Attached for electronic filing, please find the Responses of the Associated Gas Distributors of Florida ("AGDF") to the Commission staff's First Data Requests in the referenced docket.

As always, please do not hesitate to contact me if you have any questions whatsoever regarding this filing.

Sincerely,



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Cc: Suzanne Brownless, Senior Attorney

1. **Please report all energy conservation programs that have been developed or promoted by the Associated Gas Distributors of Florida (AGDF) and funded by the conservation demonstration and development (CDD) program.**

AGDF Response:

The AGDF currently has two active research projects in the testing phase identified as the Gas Heat Pump (“GHP”) research project and Oil Conserving Fryer (“OCF”) research project where project costs have been funded by the CDD program. The GHP project involves a field test that is currently ongoing through April 2015 and upon completion of the testing, the Clean Energy Research Center (“CERC”) (research partner) will provide a report to AGDF summarizing the major findings of the 2 year research project and provide AGDF with an Energy Performance Model that will reference the capabilities of GHPs in Florida. The OCF Research Project is a multi-year research effort involving a combination laboratory and field test performed by the Florida Solar Energy Center (“FSEC”) (research partner) and will conclude in March 2015. Upon conclusion of the project in March 2015, FSEC will publish the findings of the OCF research project. To date, the research and development activities of the CDD Program have not resulted in the implementation of an approved energy conservation program.

2. **In the petition, AGDF states that an extension of the CDD program will enable the LDCs to pursue opportunities for individual and joint research and development of new natural gas conservation programs.**

- a. **Please describe the new projected programs or emerging new “end-use” applications the LDCs wish to develop with the extension of the CDD program.**

AGDF Response:

The following table illustrates potential projects that have been identified as potential CDD initiatives should the 2 year extension be granted:

<u>Technology For CDD Project Consideration</u>	<u>Project Scope</u>	<u>Projected Research Budget</u>
<u>Aquarii Solar, Tankless & Desiccant System:</u> A new hybrid technology that utilizes hot water to drive a desiccant dehumidifier. The hot	Install an Aquarii Solar, Tankless & Desiccant System in a restaurant and conduct a field test to determine that efficacy of the system for lowering the latent HVAC load and satisfying the hot	\$150,000

<u>Technology For CDD Project Consideration</u>	<u>Project Scope</u>	<u>Projected Research Budget</u>
water is primarily provided from a rooftop solar collector and utilizes a tankless water heater as a backup	water demands of a food service facility.	
<i>*Denotes research projects proposed by Gas Technology Institute ("GTI") on a per/appliance fixed cost basis.</i>		
<u>*Stellar Steamer:</u> EnergyStar listed natural gas Steamer	Partner with Research institution Gas Technology Institute (GTI) to conduct a field test in 1 food service location, and then verify field test results with laboratory testing at GTI's lab.	Field Testing: \$30,000 Laboratory Testing: \$15,000
<u>*Aventec Pizza Oven:</u> EnergyStar listed natural gas Pizza oven	Partner with Research institution Gas Technology Institute (GTI) to conduct a field test in 1 food service location, and then verify field test results with laboratory testing at GTI's lab.	Field Testing: \$30,000 Laboratory Testing: \$15,000
<u>*Vulcan Clad Griddle:</u> EnergyStar listed natural gas	Partner with Research institution Gas Technology Institute (GTI) to conduct a field test in 1 food service location, and then verify field test results with laboratory testing at GTI's lab.	Field Testing: \$30,000 Laboratory Testing: \$15,000
<u>*Market Forge Echo Tech Steamer:</u> EnergyStar listed natural gas steamer	Partner with Research institution Gas Technology Institute (GTI) to conduct a field test in 1 food service location, and then verify field test results with laboratory testing at GTI's lab.	Field Testing: \$30,000 Laboratory Testing: \$15,000
<u>*Garland Convection Oven:</u> EnergyStar listed natural gas convection oven	Partner with Research institution Gas Technology Institute (GTI) to conduct a field test in 1 food service location, and then verify field test results with laboratory testing at GTI's lab.	Field Testing: \$30,000 Laboratory Testing: \$15,000
<u>Residential Sub Meter Field Test:</u> Evaluating Residential natural gas	Partner with the Florida Solar Energy Center to install sub-metering equipment in	\$540,000

<u>Technology For CDD Project Consideration</u>	<u>Project Scope</u>	<u>Projected Research Budget</u>
consumption trends	120 homes in Florida to identify consumption trends, behavioral factors that impact natural gas appliance consumption, and possibility modify utility forecasting	
<u>Residential Sub Meter AMR Data Analysis:</u> Evaluating Residential natural gas consumption trends	Partner with the Florida Solar Energy Center to conduct a Residential natural gas consumption study by evaluating AMR Data from AGDF utilities. This project was proposed as a lower cost alternative to the Residential Sub Meter Field Test but was still designed to ascertain residential appliance consumption trends and behavioral factors that impact natural gas consumption.	\$280,000
<u>Combined Heat Power system:</u> Explore the potential for commercial natural gas fueled mid-sized Combined Heat Power systems paired with Absorption Chillers.	Partner with a Florida based research institution to conduct an analysis on how effective mid-size CHP Systems paired with an absorption chiller, perform against traditional commercial electric HVAC systems.	\$70,000
<u>Fuel Cell:</u> Exploring demand for Fuel Cells in warm climates	Conduct a technical potential analysis to identify end use commercial applications for fuels cells; customers that have a significant waste heat/hot water load and also require redundant electrical generation.	\$90,000
<u>Distributed Generation (Application Analysis):</u> Analysis to identify new distributed generation end-use applications, as well as any Florida-specific barriers to deployment.	Partner with a research institution to identify end use applications for natural gas fueled distributed generation systems, spark spread cost analysis, waste heat applications, and legislative policy conducive to the growth of distributed generation in a warm weather climates	\$40,000
<u>Feasibility Model Development:</u> Create a customized tool to identify distributed generation applications.	Partner with an Engineering firm to produce a customized, user-friendly Generic Feasibility Model allowing each member utility to assess feasibility for residential, commercial and industrial gas-fired, waste heat applications with input options respective of rate schedules and equipment operating specifications	\$20,000

<u>Technology For CDD Project Consideration</u>	<u>Project Scope</u>	<u>Projected Research Budget</u>
<u>Training Guide Development:</u> Create a training guide to better equip utility representatives in understanding and assessing the new, distributed generation applications and whether they meet a customer’s needs.	Create a DG Training Guide for AGDF member utilities, which may also identify resources and partners capable of financing, constructing, owning or operating, and maintaining various new distributed generation applications.	\$67,500

- b. On page 4 of the petition, AGDF states that the extension of the CDD program will allow further exploration of new gas technologies, including gas heat pumps, fuel cells, micro-turbines, and large scale Combined Heat Power systems. Please provide a more detailed description of these technologies and an explanation of potential programs that AGDF anticipates developing that would promote these technologies.**

AGDF Response:

The technologies that AGDF anticipates reviewing through the CDD program are newer technologies, which currently have little or no market penetration in Florida. Therefore, positioning these technologies for long term success in Florida requires a substantial amount of market cultivation, utility research and consumer education to ensure that these technologies are cost effective energy options for consumers.

Gas Heat Pumps are a new commercial HVAC technology that operates in a manner similar to that of electric heat pumps, with the major difference being that the compressors are powered by a natural gas engine as opposed to electricity supplied by the grid. Gas Heat Pumps are compatible with most commercial buildings. They can be installed to replace existing gas or electric HVAC equipment or can be designed and built as the primary HVAC system for commercial new construction.

Fuel Cells, Micro-Turbines, and large scale Combined Heat Power systems can all be categorized into the same general category - natural gas Distributed Generation technologies. The common theme among each of these technologies is that all generate on-site electricity derived from natural gas and also produce waste heat. These natural gas Distributed Generation technologies present great opportunities for consumers as the amount of energy extracted from each Btu of natural gas is maximized due to the dual functionality of the technology, generating electricity and then using the waste heat for another application within a building.

The challenges associated with these technologies include: (1) determining which Distributed Generation technology would be the best fit for different types of commercial buildings; (2) designating the most appropriate use of waste heat in a state with little heating load; and (3) defining how local energy prices impact the feasibility potential for natural gas Distributed Generation technologies.

Due, in part, to scope and expense, Distributed Generation technologies require more intensive analysis and thoughtful strategic market cultivation and technology positioning prior to proceeding forward with a Distributed Generation DSM program. Identifying and prioritizing the additional technical, regulatory and market based information that is required to position natural gas Distribution Generation Technologies for success in Florida would be the initial objective of pursuing Distributed Generation CDD projects and initiatives.

- 3. Order No. PSC-10-0113-PAA-EG, issued February 25, 2010, approved ADGF's request for \$2 million to fund the CDD program over a five year period. To date, AGDF members have spent approximately 17 percent of the authorized program funding. Please give a detailed explanation of why the schedule and expenditures by the LDC companies for research under the CDD program have not been as anticipated in the original request.**

AGDF Response:

Two factors have contributed to lower than anticipated spending, to date, under the CDD program. First, from the inception of the program, AGDF's focus was on identifying new technology applications for review using CDD funding, which would then, to the extent possible, be reviewed collaboratively to avoid duplicative research efforts and reduce administrative costs, among other things. The original plan did not, however, include a specific timeline or list of projects that would be completed within a defined time frame. Once the CDD program was approved, however, there was little initial activity due in part to the depressed residential housing market and slow commercial growth at the time. The stagnant economic environment prompted AGDF members to shift their priority to developing commercial conservation programs based on technologies that were already tested and in the market place. Commercial programs reflecting that shift in focus were approved in Docket 130167-EG. As the economy has made favorable gains in the past year, the AGDF members believe now is the appropriate time to refocus efforts on projects appropriate for review and testing through the CDD program.

The second factor impacting CDD spending has been the rigorous process for selecting projects for the CDD Program. Specifically, AGDF engages in a selection process, which is designed to ensure that the testing of new technologies is thorough, produces the most accurate results and can be time-consuming. The selection process is nonetheless prudent, because it ensures that testing and development activities conducted under each CDD project will produce verifiable results that enable the members to determine whether the application merits further consideration for possible inclusion in a program. The selection procedure includes identification of a viable natural gas technology, selection of an accredited research institution, identification of testing partners (i.e. equipment manufacturer, installers, analysts, etc.), and location selection. Thereafter, the actual testing phase is implemented, which can generally be expected to last at least a year.

Thus, in sum, the economic environment at the time the CDD program was first implemented, as well as the careful technology selection process associated with the CDD program, have both contributed to somewhat lower expenditures under the CDD program than originally projected.

4. If AGDF’s requested extension is approved, please provide the expected expenditures for each LDC for 2015, 2016, and 2017. Please include the estimated monthly bill impact for a typical residential customer using 20 therms of natural gas per month.

AGDF Response: See AGDF responses, by LDC, below. Please note that amounts in expenditure columns, as well as estimated monthly bill impact, are projected amounts only, which could ultimately differ from actual expenditures.

LDC	5-Year Program Cap	September 2014 Expenditure	2015 Projected	2016 Projected	2017 Projected	Estimated Monthly Bill Impact
Florida City Gas	\$500,000	\$146,536	\$117,821	\$117,821	\$117,821	\$ 0.000301762
Florida Division of Chesapeake Utilities	\$300,000	\$51,588	\$82,804	\$82,804	\$82,804	\$ 0.0009328625

LDC	5-Year Program Cap	September 2014 Expenditure	2015 Projected	2016 Projected	2017 Projected	Estimated Monthly Bill Impact
Florida Public Utilities	\$300,000	\$85,285	\$71,571	\$71,571	\$71,571	\$ 0.0001783515
FPU – Indiantown Division	\$50,000	\$2,743	\$15,752	\$15,752	\$15,752	\$ 0.0019657529
Peoples Gas Co.	\$750,000	\$88,050	\$220,650	\$220,650	\$220,650	\$ 0.0001166256
Sebring Gas System	\$50,000	\$5,776	\$14,741	\$14,741	\$14,741	\$ 0.0034726738
St. Joe Natural Gas Co.	\$50,000	\$0	\$0.00	\$0.00	\$0.00	\$0.00