

State of Florida



Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: January 22, 2015

TO: Office of Commission Clerk (Stauffer)

FROM: Division of Economic Analysis (Gilbert, S. Brown, Harlow) *Lee SOB*
Office of the General Counsel (Brownless) *1-22-15* *92A* *BB/SWD*
MSC JSC

RE: Docket No. 140196-EG – Petition for Approval of Extension of Conservation Demonstration and Development program, by Associated Gas Distributors of Florida

AGENDA: 2/03/2015 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Brown

CRITICAL DATES: March 25, 2015 – termination of program pursuant to Order No. PSC-10-0113-PAA-EG

SPECIAL INSTRUCTIONS: None

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COMMISSION
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Case Background

The Associated Gas Distributors of Florida (AGDF) is a trade association that represents the seven investor-owned natural gas utilities: Florida City Gas (FCG), Chesapeake Utilities Corporation (Chesapeake), Florida Public Utilities Company (FPUC), Indiantown Gas Company (Indiantown), Peoples Gas System (PGS), Sebring Gas System (Sebring), and St. Joe Natural Gas Company (St. Joe). These companies are local distribution companies (LDCs) and are all subject to the jurisdiction of the Florida Public Service Commission (Commission).

On October 3, 2014, AGDF filed a petition on behalf of the above-mentioned LDCs seeking an extension of the Conservation Demonstration and Development (CDD) program. The CDD program was approved by the Commission for a period of 5 years with a termination date

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of March 25, 2015.¹ The Conservation Demonstration and Development program was approved to allow the member LDCs of AGDF to pursue opportunities for individual and joint research and development of new natural gas conservation programs. This recommendation addresses AGDF's petition to extend the CDD program from March 25, 2015, until December 31, 2017. AGDF has not requested additional funding for the program. Total and per project expenditures for this conservation development program were capped pursuant to the order approving the program.

The Commission has jurisdiction over this matter pursuant to Sections 366.81 and 366.82, Florida Statutes (F.S.).

¹ Order No. PSC-10-0113-PAA-EG, issued February 25, 2010, in Docket No. 090122-EG, In re: Petition for approval of modifications to approved conservation programs, by Associated Gas Distributors of Florida.

Discussion of Issues

Issue 1: Should the Commission approve the Associated Gas Distributors of Florida's (AGDF) petition to extend the Conservation Demonstration and Development (CDD) program for the member Local Distribution Companies (LDCs)?

Recommendation: Yes. AGDF's request to extend the CDD program from March 25, 2015 to December 31, 2017 should be approved. The original approval Order No. PSC-10-0113-PAA-EG capped each member LDC's total and per program expenditures. However, in this case to mitigate rate impacts, annual cost caps should be set at one fifth of the originally approved total cost caps. AGDF should focus its research efforts on those projects with the most potential to benefit the LDCs' customers. Finally, AGDF should file final reports for its two ongoing research projects, along with a final report on the CDD program's results, in the annual natural gas cost recovery clause docket within six months after the requested December 31, 2017 project close. (Gilbert, S. Brown, Harlow)

Staff Analysis: The petition by AGDF requests an extension of the CDD program to December 31, 2017. The CDD program was originally approved by the Commission for a five-year period through March 25, 2015.² According to AGDF, the purpose of the CDD program is to support research and development, demonstration, and monitoring projects designed to promote energy efficiency, conservation, and reductions in climate change emissions. The order set total and per program expenditure caps for each member LDC, with each individual LDC's cap not to be exceeded without Commission approval, as shown in Table 1 below. Table 1 also provides the CDD program expenditures and remaining balances by LDC as of September 30, 2014. While St. Joe was originally approved for a total expenditure of \$50,000, St. Joe has not had any expenditures to date. Likewise, AGDF does not expect St. Joe to have expenditures in the CDD program over the requested extension time period.

Table 1
Conservation Demonstration and Development Program Parameters

LDC	5-Year Program Cost Cap	Individual Project Cost Cap	Expenditures (as of 9/30/2014)	Remaining Balances
Florida City Gas	\$500,000	\$100,000	\$146,536	\$353,464
Chesapeake Utilities	\$300,000	\$60,000	\$51,587	\$248,413
Florida Public Utilities	\$300,000	\$60,000	\$55,285	\$244,715
FPU - Indiantown Div.	\$50,000	\$10,000	\$2,743	\$47,257
Peoples Gas	\$750,000	\$150,000	\$88,050	\$661,950
Sebring Gas System	\$50,000	\$10,000	\$5,776	\$44,224
St. Joe Natural Gas	\$50,000	\$10,000	\$0	\$50,000
Total	\$2,000,000	\$400,000	\$349,977	\$1,650,023

² Order No. PSC-10-0113-PAA-EG, issued February 25, 2010, in Docket No. 09122-EG, In re: Petition for approval of modification to approved energy conservation programs, by Associated Gas Distributors of Florida.

If the requested CDD program extension is approved, AGDF's member LDCs will complete two active research projects currently in the testing phase, identified as the Gas Heat Pump research project and the Oil Conserving Fryer research project. AGDF expects to complete the testing phase of the Gas Heat Pump project, which explores gas heat pumps for commercial heating, ventilation, and air conditioning (HVAC) applications, in April 2015, with approximately \$97,250 in additional costs. These heat pumps operate in a manner similar to electric heat pumps, with the compressors powered by a natural gas engine, rather than electricity. Gas heat pumps 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. AGDF expects to complete the testing phase of the Oil Conserving Fryer project in March 2015, and does not anticipate additional costs to complete the project. The vendors that are performing these studies will provide final reports to AGDF following the testing phase.

In addition to these current projects, in response to staff discovery, AGDF listed 13 CDD research projects that have been identified as potential CDD initiatives if the extension is approved. AGDF's list of potential projects is provided in Attachment A. The majority of these potential research projects involve natural gas appliances and natural gas fueled distributed generation technologies. Two potential projects would submeter a sample group of residential customers to determine consumption trends and behavioral factors that affect natural gas consumption. AGDF anticipates that the requested extension would allow its member LDCs to review newer gas end-use conservation technologies that currently have little or no market penetration in Florida. ADGF states that developing these technologies for long term success in Florida "will require a substantial amount of market cultivation, research, and consumer education to ensure that these technologies are cost effective energy options for customers."

AGDF also intends to research other new gas technologies, such as natural gas fuel cells, micro-turbines, and large scale combined heat and power systems. These technologies can all be categorized as new natural gas distributed generation technologies. The AGDF member LDCs intend to engage with vendors and research institutions in a selection process designed to ensure that the testing of new technologies is thorough and produces the most accurate results.

As shown in Table 1, as of September 30, 2014, AGDF had spent approximately 17 percent of the approved CDD funding. According to AGDF, there were two primary reasons for the delays in the expected program expenditures. First, AGDF states that there was "little initial activity due in part to the depressed residential housing market and slow commercial growth at the time." AGDF believed that given these economic conditions, it was more appropriate to focus its efforts on developing the commercial programs that were approved by Order No. PSC-14-0039-PAA-EG.³ AGDF states that the second factor impacting CDD spending was the time required for the rigorous process AGDF used when selecting projects, accredited research institutions, testing partners and locations.

AGDF has not requested additional funding for the program if the extension is approved. Staff requested revised projected annual expenditures by LDC assuming the extension is granted,

³ Order No. PSC-14-0039-PAA-EG, issued January 17, 2014, in Docket No. 130167-EG, In re: Petition for approval of natural gas energy conservation programs for commercial customers, by Associated Gas Distributors of Florida.

as well as the associated rate impact for a typical residential customer using 20 therms per month. AGDF derived the projected annual expenditures per LDC shown in Table 2 by dividing the remaining funds below the total cost cap by 3 years (i.e. 2015, 2016, 2017). AGDF calculated the projected rate impact of extending the CDD program based on these projected annual expenditures for each LDC. For reference, Table 2 also includes the total monthly bill for a typical residential natural gas customer using 20 therms. AGDF stated that if the extension is approved, the LDCs' actual expenditures and the associated rate impacts could be lower than currently projected.

Table 2
Projected Expenditures by LDC and Bill Impacts

LDC	2015 Projected	2016 Projected	2017 Projected	Estimated Monthly Bill Impact	Monthly Residential Bill (20 therms)
Florida City Gas	\$117,821	\$117,821	\$117,821	\$0.07	\$41.51
Chesapeake Utilities	\$82,804	\$82,804	\$82,804	\$0.22	\$33.41
Florida Public Utilities	\$71,572	\$71,572	\$71,572	\$0.04	\$45.04
FPU-Indiantown Div.	\$15,752	\$15,752	\$15,752	\$0.47	\$18.62
Peoples Gas	\$220,650	\$220,650	\$220,650	\$0.03	\$42.24
Sebring Gas System	\$14,741	\$14,741	\$14,741	\$0.83	\$23.06
St. Joe Natural Gas	\$0.00	\$0.00	\$0.00	\$0.00	\$45.20

In Order No. PSC-10-0113-PAA-EG approving the CDD program, the Commission referred to its historical support of reasonable research and development activities for the investor-owned electric utilities. The order cites Rule 25-17.001(5)(f), Florida Administrative Code, which encourages the development of various methods to increase energy efficiency, stating that electric utilities should engage in programs that "aggressively pursue research, development and demonstration projects jointly with others as well as individual projects in individual service areas." The order further states that the Commission believes "it is appropriate for the same general principles to apply to the natural gas utilities, which can also benefit from joint research and development programs."

Staff believes AGDF's request for an extension of the CDD program is consistent with the Commission's order approving the program. Staff further acknowledges that coordinated research efforts of the AGDF member LDCs can lead to economic efficiencies, compared to research conducted separately. The extension will also allow AGDF's members to complete two research projects that are in the final testing phase.

While staff is recommending approval of the CDD program concept, it does so with modifications to the program to address two concerns with AGDF's request. First, while AGDF has not requested additional funding, the rate impact could be higher than originally estimated because AGDF intends to spend the remaining \$1.65 million over a three-year period, rather than the initially approved five years. The potential rate impact is especially troubling for customers of the smaller gas utilities. For example, extending the program results in a potential estimated rate impact for a typical residential customer of Sebring Gas System of \$0.83 cents per month. This is a substantial potential rate increase compared to the original estimate of \$0.33 per month if the costs had been spread over 5 years. Staff believes this potential rate increase concern can be alleviated by imposing an annual cap on program expenditures for each LDC equal to one fifth of the original five-year total cost cap. Such an annual cost cap would ensure that the rate impact is no higher than envisioned at the time the original program was approved. Depending on AGDF's expenditures through the originally approved CDD program end date, the effect of the annual cost cap for the extension period may be to reduce the amount of originally approved total expenditures. Staff believes this is appropriate in order to maintain the original rate impact and given the delay in program implementation. Annual cost caps should apply to the extension period (March 25, 2015 through December 31, 2017).

Second, AGDF's list of 13 potential additional research initiatives raises some concerns. As discussed above, AGDF lacked timely completion of the intended research within the previously approved five-year window. Given this past history, completing the list of 13 additional projects appears ambitious during the requested extension. Further, AGDF's research plan appears to lack a strategic objective and instead largely consists of evaluations of different end-use appliances—most of which are already DOE Energy Star certified—and includes speculative advanced technologies like fuel cells and “Distributed Generation Application Analysis.” The research and development objectives appear to have a somewhat limited nexus to conservation efforts and perhaps are more closely related to developing greater market opportunities for natural gas.

Staff certainly appreciates the need for all industries to engage in product promotion, but since these costs are being recovered from all customers under the conservation cost recovery clause, staff believes there should be some conservation element to the projects. As required by the previous order, these funds should not be used for any expenditures more appropriately included in other programs, such as advertising or monitoring of other programs, nor for load-building or transportation-related measures. Staff believes AGDF should prioritize its intended research efforts on those projects with the most potential benefit to the LDCs' customers with respect to conservation actions. The annual cost cap described above will encourage AGDF to focus its research efforts on the most beneficial projects.

Finally, staff recommends that if the Commission approves the extension, AGDF should provide the final reports from its two ongoing research projects describing the technical findings. AGDF should include a discussion of how these results will be applicable to developing conservation programs. AGDF should also be required to provide a final status report to the Commission within six months after the requested December 31, 2017 project close, again describing the applicability of these results to developing new conservation programs. These reports should be filed in the annual natural gas cost recovery clause docket. Providing the reports in the cost recovery clause docket will facilitate staff's annual audit of the LDCs'

conservation-related expenses. With these additional requirements, staff recommends that the CDD program should be extended until December 31, 2017.

Conclusion

In conclusion, staff recommends that AGDF’s request to extend the CDD program from March 25, 2015 to December 31, 2017 be approved. Each member LDC’s total and per program expenditures should continue to be capped according to the previous order. In order to mitigate rate impacts, annual cost caps should be set at one fifth of the originally approved total cost caps, as set forth in Table 3, below. AGDF should focus its research efforts on those projects with the most potential to benefit the LDCs’ customers with respect to conservation actions. Finally, AGDF should file final reports for its two ongoing research projects, along with a final report on the CDD program’s results, in the annual natural gas cost recovery clause docket within six months after the requested December 31, 2017 project completion date.

Table 3
Recommended Annual Expenditure Caps

LDC	Annual Cap
Florida City Gas	\$100,000
Chesapeake Utilities	\$60,000
Florida Public Utilities	\$60,000
FPU - Indiantown Div.	\$10,000
Peoples Gas	\$150,000
Sebring Gas System	\$10,000
St. Joe Natural Gas	\$10,000
Total	\$400,000

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Issue 2: Should this docket be closed?

Recommendation: Yes, if Issue 1 is approved, the modifications to the existing conservation, demonstration and development program should be effective on February 3, 2015. If a protest is filed within 21 days of the issuance of the Proposed Agency Action order, the current conservation, demonstration and development program shall expire on March 25, 2015 per the terms of Order No. PSC-10-0113-PAA-EG and modifications to the current conservation, demonstration and development program approved by the Commission after a final hearing will become effective as set forth in the final order. (Brownless)

Staff Analysis: If Issue 1 is approved, the modifications to the existing conservation, demonstration and development program should be effective on February 3, 2015. If a protest is filed within 21 days of the issuance of the Proposed Agency Action order, the current conservation, demonstration and development program shall expire on March 25, 2015 per the terms of Order No. PSC-10-0113-PAA-EG and modifications to the current conservation, demonstration and development program approved by the Commission after a final hearing will become effective as set forth in the final order.

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>
<p><u>Aquarii Solar, Tankless & Desiccant System:</u> A new hybrid technology that utilizes hot water to drive a desiccant dehumidifier. The hot water is primarily provided from a rooftop solar collector and utilizes a tankless water heater as a backup</p>	<p>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 water demands of a food service facility.</p>	<p>\$150,000</p>
<p><i>*Denotes research projects proposed by Gas Technology Institute ("GTI") on a per/appliance fixed cost basis.</i></p>		
<p><u>*Stellar Steamer:</u> EnergyStar listed natural gas Steamer</p>	<p>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.</p>	<p>Field Testing: \$30,000 Laboratory Testing: \$15,000</p>
<p><u>*Aventec Pizza Oven:</u> EnergyStar listed natural gas Pizza oven</p>	<p>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.</p>	<p>Field Testing: \$30,000 Laboratory Testing: \$15,000</p>
<p><u>*Vulcan Clad Griddle:</u> EnergyStar listed natural gas</p>	<p>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.</p>	<p>Field Testing: \$30,000 Laboratory Testing: \$15,000</p>
<p><u>*Market Forge Echo Tech Steamer:</u> EnergyStar listed natural gas steamer</p>	<p>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</p>	<p>Field Testing: \$30,000 Laboratory Testing:</p>

<u>Technology For CDD Project Consideration</u>	<u>Project Scope</u>	<u>Projected Research Budget</u>
	testing at GTI's lab.	\$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 consumption trends	Partner with the Florida Solar Energy Center to install sub-metering equipment in 120 homes in Florida to identify consumption trends, behavioral factors that impact natural gas appliance consumption, and possibility modify utility forecasting	\$540,000
<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>Technology For CDD Project Consideration</u>	<u>Project Scope</u>	<u>Projected Research Budget</u>
<p><u>Feasibility Model Development:</u> Create a customized tool to identify distributed generation applications.</p>	<p>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</p>	<p>\$20,000</p>
<p><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.</p>	<p>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.</p>	<p>\$67,500</p>