



Caesar Rodney Institute  
Center for Energy Competitiveness  
PO Box 795  
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**Before The Public Service Commission  
Of the State of Delaware**

IN THE MATTER OF THE APPLICATION OF DELMARVA POWER & LIGHT FOR APPROVAL OF  
NATURAL GAS BASE RATE CASE DOCKET 12-546

**Pre-filed Direct Testimony of David T Stevenson on Behalf of the Caesar Rodney Institute  
6/3/13**

**Q. Please state your name, address, and employment.**

A. My name is David T. Stevenson and my business address is Suite 301, 9 E. Loockerman St., Dover, DE, 19963. I am employed by the Caesar Rodney Institute as the Director of the Center for Energy Competitiveness.

**Q. What does the Caesar Rodney Institute do?**

A. CRI is a non-profit organization dedicated to improving Delaware's economy and protecting individual liberty.

**Q. What is your educational and professional background?**

A. I hold a B. S. degree (1970) in Agricultural Economics for Rutgers University. I was employed by Dupont Company in various sales, marketing, technical, and business management positions from 1970 to 1993. I started and managed four companies from 1993 to 2010. I have conducted analytical work for CRI for three years, mostly on energy issues.

**Q. Please relate your experience before the Public Service Commission.**

A. I have been an intervener in numerous rate cases including two dockets on the SREC Pilot Procurement Program, the 2010 and 2012 IRP, the Fuel Cell Tariff application, the Chesapeake Utility gas expansion docket, and the current Delmarva Power electric base rate case. In addition I have testified for the Attorney General as replacement for the Public Advocate in the Washington Gas Electric request for an SREC contract with Delmarva Power.

**Q. What is the purpose of your testimony in this proceeding?**

A. Our comments will focus on the changes requested to encourage expansion of natural gas service to more residential and small business customers. We encourage expanded direct use of natural gas which offers both environmental and economic benefits. Compared to fuel oil and electric fired residential heating and hot water, natural gas cuts CO<sub>2</sub> emission dramatically and greatly reduces SO<sub>2</sub> and NOX. Each new customer might spend \$10,000 to \$15,000 in capital conversion cost plus pipeline installation cost. In addition each customer may have up to \$2000 a year in new discretionary income from fuel savings. Each 1000 new customers would add \$20 million in direct capital expenditure putting about 140 people to work and would add \$2 million a year elsewhere in the economy creating another 14 permanent jobs. Fuel switching is encouraged by Delaware Code and is a specific goal of DNREC.



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44 **Q. What do you specifically recommend?**

45 A. We specifically recommend:

- 46 • Approval of Tariff Section XVII- Extensions to allow 100 feet of extension per customer, aggregated  
47 for a development, without charge should be granted. CIAC Charges for mains above 100 feet per  
48 customer prorated for the number of applicants at the average of the last three years installed cost of  
49 mains for existing residential developments should also be granted.
- 50 • Delmarva Power should have a detailed forecast of growth in its customer base if the requested 100  
51 foot/customer tariff change is approved. Delmarva responded in question CRI-2 they have about  
52 115,000 residential customers and are adding 688/year or 0.6% a year now. From US Census data  
53 we can estimate there are about 208,000 households in Delmarva's service area for a 55% market  
54 penetration. Potential customers are about evenly split between fuel oil and electric space heating  
55 according to census data. From the discussion below most can justify the cost of conversion though  
56 we have no information how many of the 93,000 potential customers are in developments. The  
57 forecast should detail growth potential and timing development by development.
- 58 • With the forecast in place Delmarva should determine the potential added revenue and increase in  
59 cost/customer to arrive at an estimated impact on the current rate increase request. We note, adding  
60 an additional 20,000 new customers, or 17%, at \$430/year in current Customer and Commodity  
61 Charges (See answer to question PSC-ME-3) would raise the same \$8.3 million revenue as the  
62 proposed tariff.
- 63

64 **Q. Are existing customers subsidizing new customers for the 100 feet of no charge main?**

65 A. We think the answer is no. No single customer has ever been able to pay the full charge of obtaining  
66 piped natural gas service. The whole point of a regulated utility is to allow protection for investment  
67 in infrastructure to enable service expansion to meet the greater public good of reliable, affordable  
68 energy, telephone, cable, and water delivery. Existing residential infrastructure averages about 90  
69 feet/customer according to the answer to PSC –ME-8 so new customers will see about the same  
70 benefit as existing customers. If more pipeline is needed the new customers will pay for it. With the  
71 current tariff structure a new customer pays the whole cost to get to their home and the next  
72 customers along the way get their service for free. That is the real unfair subsidy. New customers  
73 will benefit existing customers by spreading overhead cost over a wider base.

74

75 **Q. Shouldn't Delmarva consider an Expansion Area Charge similar to that requested by  
76 Chesapeake Utility in PSC Docket 12-292?**

77 A. We have opposed the EAC. We did a survey of what has happened in other states (see attached  
78 "Comparative Natural Gas Expansion Strategies"). Utah used an Expansion Area Charge similar to  
79 the Chesapeake Utility proposal but they had limited impact with few customer subscriptions which  
80 led to customer dissatisfaction with long pay-off extensions and acrimonious PSC rate cases that tried  
81 to fix the problem. Florida has an EAC formula but no development has ever signed up for service.  
82 The charge itself lowers the driving force needed to get people to sign up and creates an unfair  
83 permanent two tiered rate structure. It appears Chesapeake Utilities will see approval of their tariff  
84 request. Granting Delmarva their request sets up a perfect one to one comparison of strategies so we  
85 can compare future results.

86



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**Q. Can potential customers afford the cost of conversion to natural gas?**

A. The answer is probably yes for homeowners living in developments that can aggregate demand to benefit from the “no charge” 100 feet of new gas main. We prepared the following table based on the equivalent alternative fuel usage for 700 CCF/year of natural gas using the proposed tariff rates.

Table 1 Payback Time for Fuel Switching, Compared to 700 CCF NG @\$1.39 = \$973/Year

Fuel	Fuel Cost	Fuel Use	Fuel Cost/Yr	Savings/Yr.	Conversion Cost	Payback Years
Fuel Oil	\$3.80/Gal.	489 Gals.	\$1858	\$885	\$10,000 to \$15,000	11 to 17
Electric	\$0.102/KWh	19,893 KWh	\$2029	\$1056	\$10,000 to \$15,000	9.5 to 14
Propane	\$2.80/Gal.	738 Gals.	\$2066	\$1093	\$1,500 to \$4,000	1.5 to 4

The fuel oil and electric savings are based on a direct comparison to the 700 CCF a new natural gas furnace or hot water heater would use. In our experience most of the oil burners and electric heat pumps in Delaware are near the end of their useful life, had low efficiency to begin with, and are probably using more than twice the fuel of a new system so payback times are probably in the five to eight year range. For comparison, new solar electric systems seem to be able to sell when payback times average six to seven years.

**Q. Does this conclude your testimony?**

A. Yes it does.

**Appendix “Comparative Natural Gas Expansion Strategies” 10/22/12**

Several states have developed policies to expand natural gas service to underserved areas. A few general comments:

- Programs focused on either expanding transmission and large diameter distribution mains or on local distribution but did not have a balanced approach
- Most programs avoided direct rate increases to fund the programs but instead used bonds, withheld customer refunds, or created new non-residential fees
- Most programs avoided having existing customers subsidize expansion area customers
- Utah used and Expansion Area Charge similar to the Delaware proposal but they had limited impact with few customer subscriptions which led to customer dissatisfaction with long pay-off extensions
- None of the programs were particularly successful but the North Carolina program seemed to have the most success and the Vermont and Maine programs are too new to tell

**Transmission and Large Diameter Distribution Programs**



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119 **North Carolina** – created state infrastructure legislation in 1998 which provided up to \$200 million in state  
120 bonds for natural gas expansion. This was designed to pay the heavy cost to bring service to the one third of  
121 NC counties with no gas service, not for local gas expansion. In addition, the utility can apply interstate  
122 pipeline company refunds for overcharges run up during rate cases. Pipeline companies can begin charging  
123 anticipated new rates 5 months after submitting tariff requests to FERC but final approval, often at a lower  
124 rate, may not be approved for years. NC applied \$114 million from this source and \$188 million from the  
125 bond fund to lay pipelines to the un-served counties. The goal of the legislation was met and the fund is  
126 closed. Other strategies were legislated but never used. Natural gas availability increased from 19% in 1990  
127 of potential customers to 25% in 2010.

128 Contact: Bill Gilmore, PUC Staff, 919-733-9563, gilmore@ncuc.net  
129

130 **Georgia** – Created a Universal Service Fund in 1998 whereby distributors send funds from about a dozen  
131 different sources to the PUC (\$25 MM max) to be held in account. The fund generated \$12 MM in 2010  
132 with \$8 MM used for pipeline extension and \$32 MM since inception. The fund was primarily used for  
133 extension to under-served areas and to install pipelines in growth corridors in anticipation of future revenue.  
134 Money, up to 5% of a utilities capital budget, could be used for mains or for approach mains if costs  
135 exceeded the normal formulas used to calculate maximum charges for new service. The fund also paid for  
136 low income fuel cost assistance, building new compressed natural gas vehicle filling stations and other uses.  
137 Most of the revenue came from unique charges. When gas was de-regulated Georgia required large users  
138 with interruptible service to pay a fixed fee for pipeline usage and 95% of that fee went to the fund. Atlantic  
139 Gas Light Company, by far the largest gas supplier in Georgia, began selling storage and pipeline services  
140 through an asset management affiliate company to third party suppliers and part of that fee went to the fund.  
141 The % of homes with natural gas service dropped from 53% in 1990 to 44% in 2010.

142 Contact: Tony Wackerly, PUC Staff manager of Universal Service Fund, 404-656-4516  
143

144 **Maine** – Passed legislation in 2012 authorizing \$330 million in state bonds for pipeline infrastructure to  
145 expand natural gas service. \$275 million will go for loans when utilities put up at least 25% of the cost. \$55  
146 million can be used for capital reserve funds. Only 4% of homes in Maine have natural gas service.  
147

#### 148 **Local Expansion for Underserved Areas**

149 **Vermont** – Vermont Gas Systems with 45,000 residential customers, got PUC approval in 2011 to create an  
150 expansion fee by foregoing implementing a 5% fuel reduction (\$.0373/CCF) for twenty years to instead put  
151 the money in the “System Expansion and Reliability Fund”. The fund will grow by \$4.4 million a year.  
152 New customers will pay the same total rate as existing customers. The cost would be about \$26 a year for  
153 each residential customer using 700 CCF/year. 15% of Vermont homes have natural gas service.  
154

155 **Utah** – In the early 1990’s the PSC approved defined tariffs for specific expansion areas ranging from  
156 \$16.50/month to \$30/month to be paid by Expansion Area Customers. The fee was calculated based on an  
157 expected cost of the expansion and an expected number of customers signing up for the service. Using these  
158 estimates, a pay-off date was estimated (15 to 20 years) but the actual pay-off date depended on how many  
159 people signed up for service. Areas with high sign up rates saw early pay-off dates and were generally  
160 pleased with the program. However, more expansion areas were under-subscribed and saw extended pay-off  
161 dates and petitioned for changes to the rate. See the links below for the discussions held in dockets to



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162 address this issue. In the end, the PSC decided to change the original rate of return assumption for these  
163 expansion areas (13.64% to 6%) and to recalculate the pay-off date which then averaged 10 to 11 years for  
164 1400 customers. The EAC process still exists but is now based on a 6% IRR. The percent of homes with  
165 natural gas service grew from 82% in 1990 to 86% in 2010.

166  
167 <http://www.psc.utah.gov/utilities/gas/07orders/Apr/06057T04oos.pdf>

168 <http://www.psc.utah.gov/utilities/gas/08orders/dec/0705713ROocosard.pdf> pages 12-15,

169  
170 Contact: Becky Wilson, Executive Staff Director, 801-530-6716, [rlwilson@Utah.gov](mailto:rlwilson@Utah.gov)

171  
172 **Florida** – Florida Power & Light can use an Expansion Area Charge for under-served customers using a 4x  
173 revenue formula with cost spread out over a maximum of ten years.