Via electronic submission

April 15, 2016

David J. Collins
Executive Secretary
Maryland Public Service Commission
6 St. Paul Street, 16th Floor (William Donald Schaefer Tower)
Baltimore, Maryland 21202

Re: Spring 2016 Semi-Annual Hearings and Related Comment Solicitations

Mr. Collins,

On behalf of Northeast Energy Efficiency Partnerships (NEEP),[1] please accept our insights responding to the Commission's request for comment during its spring 2016 semi-annual hearings. NEEP is a regional non-profit that works to accelerate energy efficiency in homes, buildings and industry across the Northeast and Mid-Atlantic states. Our Policy Outreach and Analysis group serves as an information resource for policymakers, program administrators, Commissions, and others to support the adoption and implementation of public policies and programs that advance energy efficiency. We offer input on four topics solicited by the Commission:

1. So-called 'Value LEDs' in 2016 Program Portfolios;
2. The Limited Income Working Group Recommendations; and
3. The Natural Gas-Electric Efficiency Coordination Working Group Recommendations

1. "VALUE LEDS" IN 2016 PROGRAM PORTFOLIOS

On March 18, the Commission issued a letter order requesting additional information on inclusion of "value LEDs" in efficiency program plans.[2] In support of our mission to accelerate energy efficiency in the region, NEEP actively manages a regional residential lighting working group, convening industry stakeholders, utility program administrators, manufacturers, and others to help inform best practices in program administration and accelerate market transformation. As part of this initiative, we publish an annual residential lighting strategy report, which provides an overview of the current and future market for residential lighting. Drawing upon the collective knowledge of our working group and most recent strategy report, we respond to the Commission's solicitation for comment, detailing:

1. The historical value of ENERGY STAR;
2. The evolution of ENERGY STAR to Version 2.0;

[1] These comments are offered by NEEP staff and do not necessarily represent the view of the NEEP Board of Directors, sponsors or partners.

[2] Maryland Public Service Commission. Letter Order Requesting Additional Information on Value LEDs. (March 2016) Available at: http://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?ServerFilePath=C:\Casenum\9100-9199\9154\\697.pdf

3. Concerns regarding 'value LEDs'; and
4. Alternatives to promoting 'value LEDs.'

1.1. The Historical Value of ENERGY STAR

While residential lighting is now a mainstay of energy efficiency programs throughout the region, early residential lighting programs faced difficulties with compact fluorescent lamps (CFLs) that did not have the quality attributes to meet consumer expectations, resulting in consumer backlash against the technology.[3] To overcome those difficult beginnings, residential lighting programs in our region and beyond have relied on EPA's ENERGY STAR program to promote ENERGY STAR Certified lighting products whenever possible. These products meet stringent quality and efficiency requirements and receive third-party testing both to earn the ENERGY STAR Mark, *and* after they have been in market through verification testing.

1.2. The Evolution of ENERGY STAR to Version 2.0

In the early days of commercially available LEDs, the technology was much more expensive that less efficient alternatives. Efficiency programs were necessary to help buy-down the first cost to introduce products to consumers, and ENERGY STAR's stringent certification was necessary to ensure high quality. A lifetime of 25,000 hours (about 22 years at three hours per day) was set as the minimum threshold for ENERGY STAR LED; this very long rated life seemed necessary to encourage early consumers to purchase a lightbulb in the $20-40 range.

More recently, LED manufacturers have gained the economies of scale necessary to bring down product costs much closer to a commodity level—especially with a utility incentive—and a lifetime of 20+ years is no longer necessary for consumers to justify the purchase. As a result of this, several manufacturers are beginning to release LED a-line bulbs that do not achieve ENERGY STAR certification. These new products meet low price points, but do not meet ENERGY STAR's criteria concerning lifetime, power factor, and beam angle. These lamps, referred to as "junk LEDs," "value LEDs," or "-ish bulbs," have no industry accepted common attributes beyond low price. What might be considered "junk" to one stakeholder could be "value" to another.

As a result of the growing "value-LED" market segment, it became clear that ENERGY STAR would need to react to these new products to ensure the integrity and quality of LEDs in the market was maintained. Through 2015, ENERGY STAR worked with dozens of stakeholders to revise their Lamp specification. The group reached a consensus that an ENERGY STAR certified product with a lifetime of 15,000 hours would meet consumer expectations, be available at a very reasonable price point, and save consumers energy. This consensus was embodied within a new specification, ENERGY STAR Lamps

[3] See Generally, McCulough, Jeff (et al.) LED Lighting: Applying Lessons Learned from the CFL Experience. (2008) Available at: http://aceee.org/files/proceedings/2008/data/papers/6_95.pdf

Version 2.0, with the purpose of maintaining quality, but still allowing manufacturers flexibility to reach a low price point.

The ENERGY STAR Lamps 2.0 specification was finalized in January, 2016.[4] Since January, manufacturers have been retooling their product to meet the new specification and testing it through third-party certified testing bodies (CBs). The testing takes several months, but ***according to staff with the Environmental Protection Agency (EPA) products certifying to the new specification will be available in the market starting in July, 2016***.[5]

1.3. Concerns Regarding 'Value LEDs'

Since 'value LEDs' have not been tested and verified to meet the ENERGY STAR criteria, their promotion through regulated energy efficiency programs raises concerns around quality assurance, transparency, efficacy, and free-ridership.

Quality Assurance. ENERGY STAR criteria are designed to provide a quality consumer experience, ensuring that energy efficiency comes with no sacrifice of performance or features—avoiding the pitfalls associated with the early consumer experiences with CFLs. All ENERGY STAR certified products are independently certified based on testing in EPA recognized laboratories and a sample of products is verified "off-the-shelf" annually. From a utility program perspective, this reduces key uncertainties regarding whether products are delivering on energy performance. As such, these measures result in high levels of consumer appreciation; ENERGY STAR-labeled light bulbs receive statistically higher satisfaction ratings compared to non-qualified bulbs.[6] Furthermore, given the fact that the specifications are developed through a public stakeholder process, ENERGY STAR criteria are also designed with other market realities in mind including product availability, product cost, consumer payback, and utility program needs such as product lifetime requirements. ***These assurance measures are not available for so-called 'value LEDs'.***

Transparency: ENERGY STAR specifications are negotiated in a public process creating a level playing field for all manufacturers to design products to meet the specification and market accordingly. In so doing, ENERGY STAR does not arbitrarily pick winners and losers based on perceived reputation, but rather relies on data from the third party certification and verification process to determine eligibility. The Maryland program administrators have put forward thresholds and recommendations for consideration of lamps outside of ENERGY STAR Certification, however ***those thresholds have not been vetted in an open stakeholder process, nor do they have third[d] party testing of randomly assigned product samples.*** In addition to the concern that manufacturers could cherry pick specific lightbulbs

[4] United States Environmental Protection Agency. ENERGY STAR Program Requirements Product Specification for Lamps (Light Bulbs), Eligibility Criteria, Version 2.0. Available at: https://www.energystar.gov/sites/default/files/ENERGY%20STAR%20Lamps%20V2%20Revised%20Spec.pdf

[5] Presentation from EPA Staff Daniel Cronin, MEEA Energy Solutions Conference, Feb 25, 2016 (*Emphasis Added*.) http://www.mwalliance.org/conference/sites/default/files/Cronin%20slides.pdf

[6] https://www.energystar.gov/awareness

that meet Maryland's thresholds and only submit the testing reports from products that pass, the lack of transparently in the product selection process could leave Maryland program administrators subject to disputes or potential legal ramifications from manufacturers who were not included in the program. ENERGY STAR's open process eliminates the concern from this.

Efficiency. The new ENERGY STAR Lamps 2.0 specification has many quality attributes, including a significant increase in efficacy. It is for this reason that no current CFLs will meet the new higher specification. Through analysis performed by EPA, they found an 8.5 percent efficacy increase for the version 2.0 products. In that case, efficiency programs will be able to claim more savings and a greater delta Watt for LEDs that meet version 2.0. ***This underscores the value of waiting for those products to hit the market in July, rather than embracing 'value LEDs'.***

Free-ridership and Attribution: Lastly, logic dictates that Maryland program administrators are trying to support non-ENERGY STAR LEDs because of their considerable sales volume and low price points. However, such characteristics would also seem to indicate that the market that is working well without utility incentives. ***This scenario could likely result in high levels of free-ridership, as people are already buying these products, regardless of whether program administrators promote them through incentive offerings***. Conversely, since the ENERGY STAR version 2.0 lamps are expected to be slightly more expensive than the non-ENERGY STAR lamps currently on the shelves, the impact of a program incentive to bring the cost of ENERGY STAR products down to the level of the non-ENERGY STAR LED or halogen, would be even greater. The new ENERGY STAR 2.0 Specification would not exist if not for concerned efficiency stakeholders, including utilities, and thus a strong argument exists for high levels of attribution for products that meet ENERGY STAR 2.0.

1.4. Alternatives to Promoting 'Value LEDs'

Should the Commission decide against inclusion of 'value LEDs' in energy efficiency programs, alternative strategies are available that both continue support for currently promoted products, and prepare for the impact of ENERGY STAR 2.0 LED bulbs. ENERGY STAR certified CFLs continue to offer reliable, efficient lighting to consumers and still meet ENERGY STAR certification through 2016. By adjusting the product mix to include more ENERGY STAR CFLs in the first half of the year and switching to mostly or all ENERGY STAR Version 2.0 LEDs in the second half of the year, programs would maintain the ability to hit goals throughout the year while promoting only quality, certified lightbulbs. Alternatively, if program administrators are not interested in continuing support for ENERGY STAR certified CFLs, then program support of current ENERGY STAR LEDs could slow down or maintain a lower incentive to ensure that once the new 2.0 ENERGY STAR LEDs enter the market this summer, there is still available budget to promote them aggressively.

2. LIMITED INCOME WORKING GROUP RECOMMENDATIONS

In their Notice of Comment Period and Hearing Date, issued February 9, 2016,[7] the Commission solicits comment on the Limited Income Working Group Summary report filed with the Commission on February 1, 2016.[8] As mission-based nonprofit that tracks and monitors efficiency program planning throughout the Northeast and Mid-Atlantic, NEEP can offer guidance to the Commission on facets of the working group's recommendations including:

1. EmPOWER's Limited Income Program Historical Production Rate and Future Goals; and
2. Magnitude of Limited Income Goals.

2.1. EmPOWER's Limited Income Program Historical Production Rate as a Guide for Future Goals

Within the limited Income Working Group Summary Report, Staff suggests that the "[H]istorical production rate of EmPOWER-funded limited income programs will be used to assist with the development of the goal."[9] In this context, we below offer a comparative analysis of limited income programs in the Northeast and Mid-Atlantic, derived from NEEP's Regional Energy Efficiency Database (REED). The data within NEEP's REED Database is freely accessible and available at REED.NEEP.org.[10]

Figure 1 demonstrates that the historical production rate of EmPOWER-Funded Limited Income Programs lags slightly behind programs throughout the region achieving a similar rate of overall savings, and would not provide an ideal indication of what could be achieved in the context of new goals. To provide a slightly more informative comparison than would be available through use of per capita savings by population, the below analysis utilizes each state's poverty population as a proxy for those with limited incomes, which the EmPOWER program defines as those living below 200 percent of the poverty level.

While most states with comparable overall portfolio goals are saving 35-60kWh per capita of the state's poverty population, Maryland's programs have not yet reached 25kWh per capita. For example, Connecticut's savings as a percent of retail sales figure was less than Maryland's, but Connecticut was able to achieve 38kWh annual savings per capita of the poverty population, while Maryland's programs only targeted 24kWh. While EmPOWER's Limited Income Program Historical Production Rate may help inform future program goals, we suggest the Commission view the rate in the context of similarly performing programs throughout the region.

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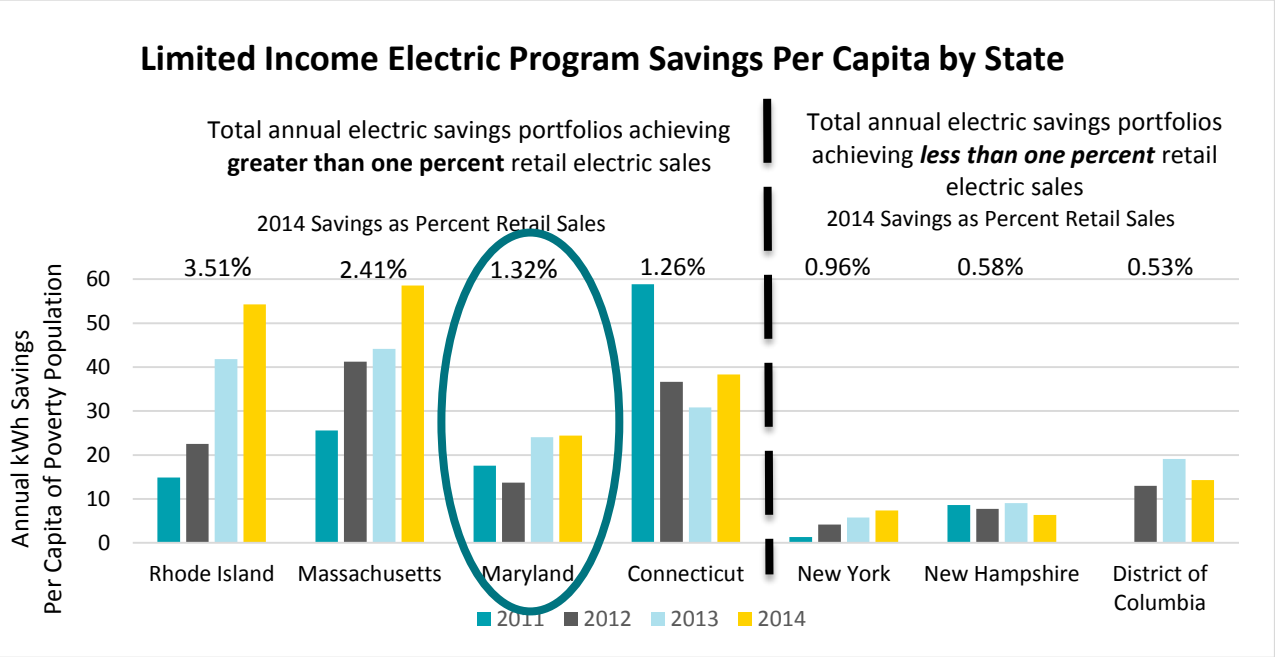
[7] Maryland Public Service Commission. Notice of Comment Period and Hearing Date. (February 2016). Available at: http://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?ServerFilePath=C:\Casenum\9100-9199\9154\\691.pdf

[8] Office of Staff Counsel- Limited Income Work Group Summary Report. (February 2016) Available at: http://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?filepath=C:\Casenum\9100-9199\9154\Item_688\\9153-57-LIWGSummaryReport-wg-020116.pdf

[9] *id*. at page 15.

[10] NEEP's REED Database includes verified data from efficiency program administrators in Connecticut, the District of Columbia, Delaware, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont.

Figure 1. Limited Income Electric Program Savings per Capita by State



Source: NEEP Regional Energy Efficiency Database (REED)[11]

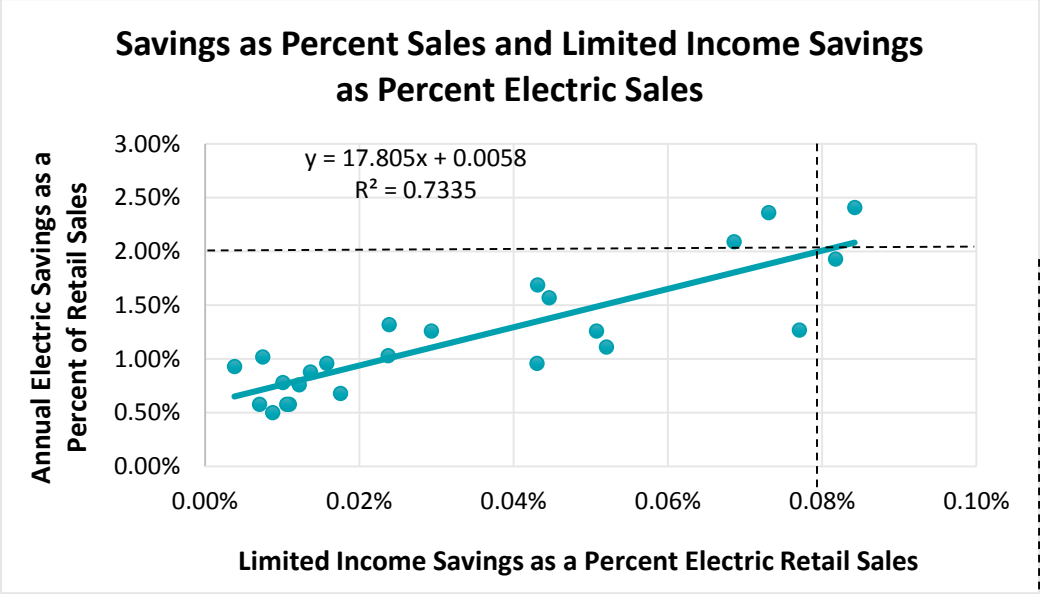
2.2. Magnitude of the Limited Income Goals

The report recommends a methodology based on the actual number of limited income participants in a program administrator's service territory, and uses said methodology to arrive at a suggested limited income savings value of 26,328MWh annually in BGE's service territory. This equates to approximately .08 percent of BGE's retail sales.

Figure 2 compares total electric savings as a percent of retail sales and limited income savings as a percent of electric sales for the states within NEEP's Regional Energy Efficiency Database. It's analysis provides a regional context under which the validity of the working group's suggested methodologies can be examined. It includes 23 separate data points which derive their data from programs at varying maturity levels, drawing a line of best fit between these programs using a linear regression analysis. This analysis indicates that programs saving approximately 2 percent of retail sales claim on average 0.08 percent of their total savings from limited income programs. This figure provides an approximate match to the savings levels recommended by Staff and NRDC (et al.).

[11] NEEP Regional Energy Efficiency Database (REED). Available at: https://reed.neep.org/

Figure 2. Savings as a percent of Sales Compared to Limited Income Savings



Source: NEEP REED Database[12]

3. NATURAL GAS-ELECTRIC EFFICIENCY COORDINATION WORK GROUP RECOMMENDATIONS

In their Notice of Comment Period and Hearing Date, issued February 9, 2016,[13] the Commission solicits comment on Gas Efficiency Goals proposed by the Natural Gas-Electric Efficiency Coordination Work Group in their January 28, 2016 filing with the Commission.[14] As mission-based nonprofit that tracks and monitors efficiency program planning throughout the Northeast and Mid-Atlantic, NEEP can offer guidance to the Commission on several facets of the working group's recommendations including:

1. Application of Savings Goals; and
2. Magnitude of the Savings Goals;
3. Suggested Joint Program Administration

3.1. Application of the Savings Goals

Columbia Gas recommends that gas savings goals should not apply to natural gas utilities with fewer than 100,000 customers because those customers would bear the unreasonable burden of program

[12] *id*.

[13] Maryland Public Service Commission. Notice of Comment Period and Hearing Date. (February 2016). Available at: http://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?ServerFilePath=C:\Casenum\9100-9199\9154\\691.pdf

[14] Office of Staff Counsel. Natural Gas Efficiency Goals of the Natural Gas-Electric Efficiency Coordination Work Group. (February 2016) Available at: http://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?filepath=C:\Casenum\9100-9199\9154\Item_687\\9153-57-NaturalGasGoalRecommendations-wg-020116.pdf

costs in excess of program benefits.[15] While it is important to recognize that small gas utilities might face unique challenges, within the region there are several gas utilities that offer comprehensive energy efficiency programs, in spite of having a limited customer base. They include:

- Vermont Gas serves 45,000 customers;[16] their 2014 annual report shows an extensive suite of cost effective programs.[17]
- Central Hudson in New York serves 78,000 gas customers;[18] their 2016-18 efficiency program plan shows an extensive suite of cost-effective programs.[19]
- Massachusetts has three small gas utilities which offer comprehensive energy efficiency programs as described in the 2016-18 Three-Year Plan.[20]
    - Berkshire Gas in Massachusetts serves 37,00 customers;[21]
    - Unitil (Fitchburg Gas and Electric) in Massachusetts serves 15,700 customers;[22]
    - Blackstone Gas in Massachusetts serves only 1,744 meters;[23] and recently entered into an agreement with an adjacent efficiency program administrator, National Grid, for delivery of energy efficiency programs in its territory; Columbia gas could consider a similar agreement.

3.2. Magnitude of the Savings Goals

Members of the working group hold varying opinions regarding the magnitude of natural gas savings goals. Both Staff and NRDC (at al.) suggest a gradual ramp up to savings at approximately 1 percent of retail sales, while Columbia Gas suggests 0.5 percent, and BGE suggests 0.2 percent.[24] Washington Gas and Light reserved comment on a specific goal, but did conduct a preliminary potential study. They acknowledge that leading gas efficiency program administrators are saving beyond 1 percent of retail sales annually, but note each of those programs are located in Climate Zones Five and Six. They suggest that Maryland, which is located primarily in Climate Zone Four, will have less potential for savings since residential gas "usage rates" are roughly 25 percent higher in Climate Zone Five and Six than in Climate Zone Four.

While no statewide comprehensive potential study for natural gas efficiency opportunities is available to inform savings goals, Maryland can look to their neighbors in Climate Zone Four for insights. In a

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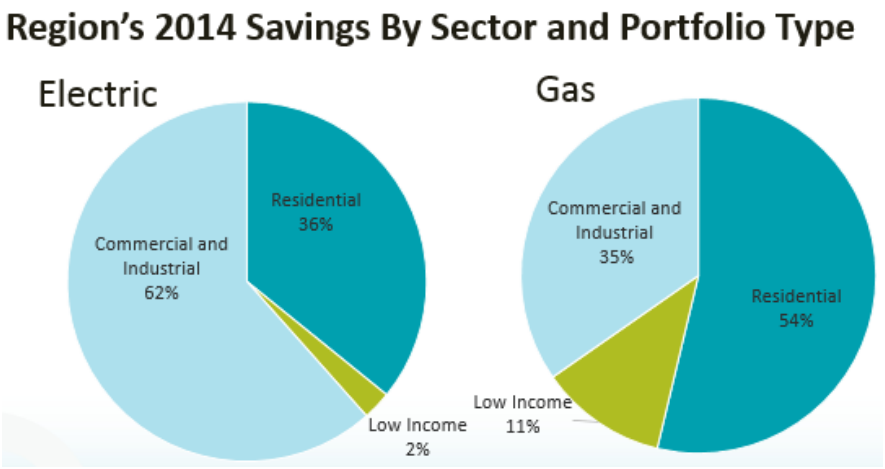
[15] *id.* at page 2.
[16] Why Vermont Gas? Available at: http://jobs.vermontgas.com/why-vt-gas/
[17] Vermont Gas. Demand Side Management Programs 2014 Annual Report. Available at: https://vermontgas.com/wp-content/uploads/2015/04/2014-Annual-Report.pdf
[18] Central Hudson. About us. http://www.centralhudson.com/about_us/facts.aspx
[19] http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b1C914945-7BF5-49FD-A987-18CFA170B747%7d
[20] Massachusetts Joint Statewide Three-Year Electric and Gas Energy Efficiency Plan. (October 2015) Available at: http://ma-eeac.org/wordpress/wp-content/uploads/Exhibit-1-Gas-and-Electric-PAs-Plan-2016-2018-with-App-except-App-U.pdf
[21] Berkshire Gas. About Us. Available at: https://www.berkshiregas.com/wps/portal/bgc/ourcompany/about%20us/!ut/p/a1/lZFBc4IwEIX_ihePTgKJgEfKUBoLdWrHEXLpBAIYpySowWn76xvsTNuLRXLbzb433-4DFKSASnYWNdNCSfbW19R5jVckSgKX-P4GI0gewjtIomX0fI_AFlBAC6lbvQNZXheT2UR1x0I1LZMfU2g6U_i3wXLV6Ul36mUtq0tenkQtL1UhOMjsHOOSQ4i9ueMhaC_sqqgcjji3cmy5zBBlhgheeT4cAv7WXxtYOzctPOBwGfgHMTMM7q8DSQIMySL04_AJx6uNBV5GHGTADI0yW95wPrE_HKhvUldSl-8apGNiN3r7mARJ3cevdzMhKwXSn--2abx99Rg7aw-ieXv-jMvtFzZ1WGA!/dl5/d5/L2dBISEvZ0FBIS9nQSEh/
[22] Reuters. Company Profile: Unitil Corp. Available at: http://www.reuters.com/finance/stocks/companyProfile?symbol=UTL
[23] Blackstone Gas 2014 Annual Report. Page 9. Available at: http://www.mass.gov/eea/docs/dpu/gas/blackgas2014.pdf
[24] *Supra.* at note 12.

2014 Study of Potential for Energy Savings in Delaware, published by the Delaware Department of Natural Resources and Environmental Control, a ramp of savings at .1-.3 percent of retail sales per year until reaching 1.3 percent savings as a percent of retail sales per year was projected as cost-effective.[25]

Alternatively, in a section of the Western Oregon which also lies within Climate Zone Four, Northwest Natural—a natural gas efficiency program administrator—claimed net savings at 0.86 percent of retail sales in 2013,[26] and 0.89 percent of retail sales in 2014.[27] Using the same conversion factor that ACEEE utilizes in their scorecard to convert gross savings to net savings, Northwest Natural likely achieved gross savings at approximately 0.97 percent of retail sales in Climate Zone Four in 2014.[28] This supports Staff and NRDC (et al.)'s assertion that savings at one percent of retail sales is an achievable goal to set for a natural gas utility in Climate Zone Four.

Strong natural gas savings goals will also help programs promote equity by reaching limited income ratepayers. Figure 3 draws upon data within NEEP's Regional Energy Efficiency Database to examine savings by sector and program type. On a regional basis, limited income is a much larger segment of gas efficiency programs than electric efficiency programs.

Figure 3. Region's Savings by Sector and Portfolio Type



Source: NEEP Regional Energy Efficiency Database[29]

[25] http://www.dnrec.delaware.gov/energy/information/Documents/Potential.Study/EEPotentialStudy.pdf

[26] ACEEE State and Local Policy Database. Efforts of Energy Utilities (Portland). Available at: http://database.aceee.org/city/electric-gas-energy-efficiency

[27] Page 126 of Northwest Natural's 2014 Integrated Resource Plan suggests 2013 retail sales of 585,545,303 therms. Following ACEEE's methodology for determining retail sales of natural gas, this number does not include industrial gas customers since the majority of industrial gas customers contract for supply on the wholesale, rather than retail market. Page 29 of Northwest Natural's 2014 Annual report verifies 5,238,485 therms of net savings in 2014. 5,238,485 /585,545,303= 0.89 percent. Due to low avoided costs under the utility cost test, a portion of claimed savings in Northwest Natural's Portfolio were exempted from cost-effectiveness constraints. The impact of these low avoided costs will be less of a consideration in Maryland, where the societal cost test includes a greater degree of non-energy benefits.

[28] ACEEE converts gross savings figures to net savings figures in their scorecard by multiplying gross savings figures by 0.9.

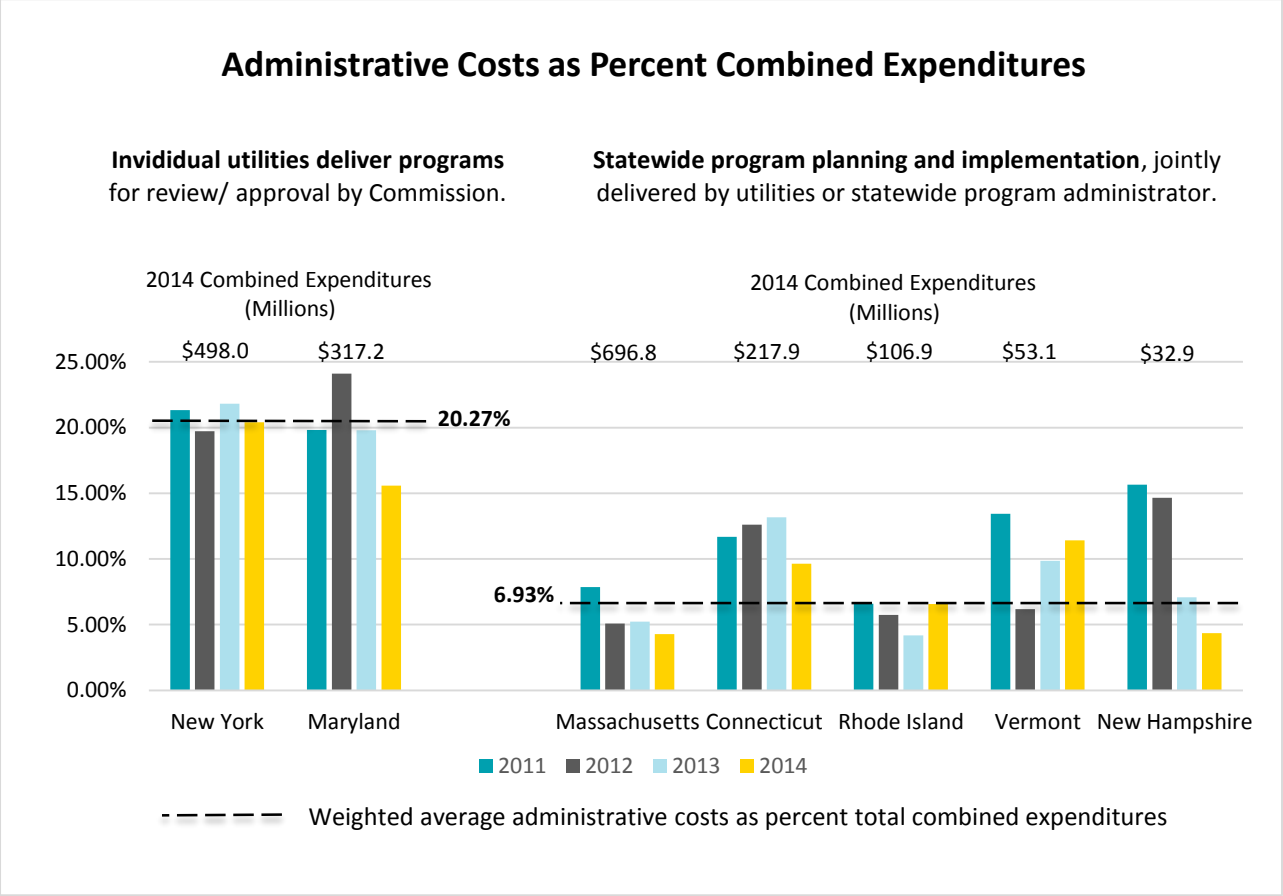
[29] *Supra*, at note 10.

3.3. Suggested Joint Program Administration

In part responding to concerns about the cost associated with efficiency program administration, the responding parties "[R]ecommend serious consideration is given to joint management of efficiency programs."[30] They suggest that offering combined gas and electric efficiency programs reduces overall program costs.

Using the states within NEEP's Regional Energy Efficiency Database,[31] Figure 4 provides a comparison of administrative costs as a percent of total expenditures in states that practice joint combined program administrations and states where individual utilities deliver their own uniquely planned and administered programs. The analysis shows that administrative costs are substantially higher in those states which do not practice statewide joint program planning and implementation.

Figure 4. Administrative Costs as a percent of combined expenditures



Source: NEEP Regional Energy Efficiency Database[32]

[30] *Supra* at note 12.
[31] Delaware and the District of Columbia were excluded from this analysis due to their limited scale's impact on administrative costs.
[32] *Supra* at note 12.

4. Conclusion

NEEP commends the Commission for its recognition of energy efficiency as a resource capable of bringing great value to ratepayers. We are pleased that the Commission recognizes energy efficiency's pivotal role in helping Maryland achieve its ambitious greenhouse gas reduction goals, as well as helping to fuel Maryland's economic development.[33] Please accept these comments in the spirit they are intended: to aid the Commission, and ultimately Maryland ratepayers, in securing a more affordable, reliable, cleaner and sustainable energy future.

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[33] The 2016 Greenhouse Gas Emissions Reduction Act requires the State to develop plans, adopt regulations, and implement programs to reduce GHG emissions by 40% from 2006 levels by 2030. An analysis provided by the Maryland Department of the Environment shows that EmPOWER's programs are the single largest contributor to emission reductions in the state.