Maillog # 163616 ; Date filed: Jan. 30, 2015

EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL

January 30, 2015

By Electronic Mail and Federal Express

David J. Collins
Executive Secretary
Maryland Public Service Commission
6 Saint Paul Street, 16th Floor
Baltimore Maryland 21202-6806

Re: Case Nos. 9153, 9154, 9155, 9156, and 9157 — In the Matter of Potomac Edison Company d/b/a Allegheny Power, Baltimore Gas and Electric Company; Potomac Electric Power Company, Delmarva Power & Light Company, and Southern Maryland Electric Cooperative, Inc.'s Energy Efficiency, Conservation and Demand Response Programs Pursuant to the EmPOWER Maryland Energy Efficiency Act of 2008

Comments of the Maryland Energy Efficiency Advocates

Dear Mr. Collins:

Enclosed please find an original and seventeen (17) copies of the Comments of the Maryland Energy Efficiency Advocates for filing in the above-captioned proceeding.

Please contact me if you have any questions. Thank you for your attention to this matter.

Sincerely,

Susan Stevens Miller

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Enclosure
cc: All parties of record
Case Nos. 9153, 9154, 9155, 9156 and 9157

Maillog # 163616; Date filed: Jan. 30, 2015

BEFORE THE
PUBLIC SERVICE COMMISSION OF MARYLAND

In The Matter Of The Potomac Edison Company D/B/A Allegheny Power's Energy Efficiency, Conservation And Demand Response Programs Pursuant To The EmPOWER Maryland Energy Efficiency Act Of 2008	Case No. 9153
In The Matter Of Baltimore Gas And Electric Company's Energy Efficiency, Conservation And Demand Response Programs Pursuant To The EmPOWER Maryland Energy Efficiency Act Of 2008	Case No. 9154
In The Matter Of Potomac Electric Power Company's Energy Efficiency, Conservation And Demand Response Programs Pursuant To The EmPOWER Maryland Energy Efficiency Act Of 2008	Case No. 9155
In The Matter Of Delmarva Power & Light Company's Energy Efficiency, Conservation And Demand Response Programs Pursuant To The EmPOWER Maryland Energy Efficiency Act Of 2008	Case No. 9156
In The Matter Of Southern Maryland Electric Cooperative's Energy Efficiency, Conservation And Demand Response Programs Pursuant To The EmPOWER Maryland Energy Efficiency Act Of 2008	Case No. 9157

COMMENTS OF
THE MARYLAND ENERGY EFFICIENCY ADVOCATES

On December 23, 2014, the Maryland Public Service Commission (Commission) issued order No. 86785 in the above-captioned proceedings which, among other things, directed parties to file with the Commission proposed goal allocation methodologies for electric efficiency, natural gas efficiency, or both electric and natural gas efficiency no later than January 30, 2015. On January 12, 2015 the Commission issued a Notice of Hearing and Request for Comment in the above-captioned proceedings which stated that "Written comments on both the post-2015 goal allocation and future cost-effectiveness screening methodologies shall be filed by Friday, January 30, 2015." Pursuant to the Order and Notice, the Maryland Energy Efficiency Advocates (Advocates)[1] respectfully submit the following comments.

Introduction

The Coalition of Maryland Energy Efficiency Advocates[2] previously filed comments in reference to the utilities 2015-17 EmPOWER program plans, in which it presented twelve proposed EmPOWER Program Principles for the Commission's consideration, and also made eleven specific recommendations related to the Utilities' filed plans.[3] As it stated in its introduction to those comments, "Chief among the principles driving the Coalition's comments is the belief that Maryland should support all cost-effective energy efficiency as the first and most cost-effective resource for achieving energy and environmental policy objectives." In lieu of proposing a lengthy and contentious process for determining how much energy savings "all cost-effective" is, in these comments the Advocates propose both a goals framework and specific metrics for the Commission to adopt that will achieve this outcome.

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[1] The Maryland Energy Efficiency Advocates include the Northeast Energy Efficiency Partnerships (NEEP), Sierra Club, National Consumer Law Center (NCLC), Chesapeake Climate Action Network (CCAN), National Housing Trust (NHT), Natural Resources Defense Council (NRDC), and The American Council for an Energy Efficient Economy (ACEEE).

[2] The Coalition of Maryland Energy Efficiency Advocates includes the Northeast Energy Efficiency Partnerships (NEEP), Sierra Club, National Consumer Law Center (NCLC), Chesapeake Climate Action Network (CCAN), National Housing Trust (NHT), Natural Resources Defense Council (NRDC) The American Council for an Energy Efficient Economy (ACEEE), Chesapeake Physicians for Social Responsibility, Chesapeake Sustainable Business Council, Efficiency First Maryland, Enterprise Homes, Green and Healthy Homes Initiative, Homes for America, Interfaith Power and Light (DC MD NoVa), Maryland Affordable Housing Maryland Energy Efficiency Advocates, Maryland Clean Energy Center, Maryland League of Conservation Voters, Environment Maryland, and the Maryland Public Interest Research Group.

[3] See, e.g., Case No. 9153, Docket No. 535, Comments of the Coalition of Maryland Energy Efficiency Advocates (October 8, 2014).

Additional comments were also filed by the Sierra Club that addressed principles for cost-effectiveness testing[4], and by the National Housing Trust (NHT), Natural Resources Defense Council (NRDC), and the National Consumer Law Center (NCLC)[5] that addressed low-income multifamily energy efficiency considerations. Consistent with the Coalition principles and recommendations, the cost-effectiveness recommendations filed by the Sierra Club, and the low-income multifamily considerations filed by NHT, NRDC, and NCLC, the Advocates herein provide recommendations regarding goal allocation methodologies and future cost-effectiveness screening methodologies for EmPOWER programs as they move beyond the 2015 statutory targets. These recommendations address the topics in question in a sequence that builds from a foundation of cost-effectiveness testing approaches, to a framework for establishing goals, to a proposed magnitude for goal achievement by the utilities. In addition, the Advocates will address cost-effectiveness testing and goal setting for the low-income programs that comprise an essential piece of the EmPOWER portfolio but that are not directly managed by the utilities.

Key Recommendations

The Maryland Energy Efficiency Advocates respectfully urge the Commission to:

1. Adopt a cost-effectiveness testing framework that employs a robust Total Resource Cost (TRC) test at the sub-portfolio level, and that includes the "aggressive" values for non-energy benefits developed by Itron, and that uses a risk-adjusted discount rate of 3%;
2. Adopt a goals framework as described below that will support aggressive ongoing investment in verified cost-effective energy efficiency and demand response to the benefit of Maryland's residential, commercial/industrial, and low-income ratepayers;
3. Order the utilities to develop revised energy efficiency plans that will ramp up savings to a level equivalent to 2% of weather-normalized 2013 electric sales at the gross level, and to 1.0% of weather-normalized 2013 natural gas sales at the gross level by 2017;
4. Order a ramping up of low-income energy efficiency programs such that an annual participation rate of 2% of low-income households and an investment target of $75 million per year is achieved by 2017.

Cost-Effectiveness Approach

In addition to the October, 2014 filings referenced above, members of the Advocates, including NRDC, Efficiency First Maryland, Northeast Energy Efficiency Partnerships (NEEP), and Sierra Club have previously provided the Commission with their perspectives regarding cost effectiveness testing for the EmPOWER programs as appendices to the EmPOWER 2015-2017

[4] See, e.g., Case No. 9153, Docket No.529, Comments of the Sierra Club (October 3, 2014).
[5] See, e.g., Case No. 9153, Docket No.520, Comments of the National Housing Trust, the Natural Resources Defense Council, and the National Consumer Law Center (October 3, 2014).

Cost Effectiveness Framework filed by the Maryland Energy Administration (MEA).[6] These comments are consistent in addressing three primary issues related to the identification of a cost-effectiveness protocol that will most closely reflect Maryland's policy values. These three issues are: 1) the choice of primary cost-effectiveness test; 2) the inclusion of non-energy benefits (NEBs), and; 3) the appropriate discount rate to use in the test.

The following recommendations, which apply equally to electric and gas energy efficiency programs, are in line with the "Cost-Effectiveness Screening Principles and Guidelines" as published in November by NEEP's Evaluation, Measurement and Verification (EM&V) Forum. This guidance, supported by state stakeholders from across the Northeast and Mid-Atlantic region, suggests through its set of underlying principles that in addressing cost-effectiveness states should:

1. Align with state energy policy goals, and thus support the public interest;
2. Support symmetry of relevant costs and benefits;
3. Address hard to quantify relevant benefits; and
4. Provide transparency in cost-effectiveness screening by using a sample template for documenting costs and benefits.[7]

With these principles in mind, the Maryland Energy Efficiency Advocates respectfully offer these recommendations:

A Robust TRC test Should be the Primary Cost-Effectiveness Test

The Advocates support the Commission's clearly stated position that cost-effectiveness should be required at the sub-portfolio level and not at the program level, and, as stated in the filings described above, the Advocates recommend that the primary test used to determine whether or not the EmPOWER programs meet required cost-effectiveness thresholds should be a robust TRC[8] test that includes non-energy benefits (NEBs) and a risk-adjusted discount rate of 3.0%. The TRC is by far the most widely-used primary test of energy efficiency cost-effectiveness, with 71% of responding states indicating that it is the primary test in a survey administered by

[6] See, e.g., Case No. 9153, Docket No. 502, EmPOWER 2015-2017 Cost Effectiveness Framework, Appendix B: Stakeholder Comments (August 18, 2014).

[7] Cost-Effectiveness Screening Principles and Guidelines, Northeast Energy Efficiency Partnerships, November 2014. http://www.neep.org/sites/default/files/resources/Forum_C-E_Screening_Guidelines_Final_No_2014.pdf

[8] Note that a robust TRC test that incorporates the key attributes that the Maryland Energy Efficiency Advocates recommends might by some be called a societal test. The Maryland Energy Efficiency Advocates' perspective is that the name of the test is less important than the attributes that are incorporated in it.

ACEEE in 2012.[9] As explained in Sierra Club's October comments, "The TRC seeks to evaluate the costs and benefits to both participants and program administrators of energy efficiency programs. By requiring the use of a robust TRC test that fully and fairly incorporates both benefits and costs, the Commission ensures that EmPOWER's mandated cost-effectiveness testing produces consistent and accurate results."[10] Note that implicit in the term robust TRC is an understanding that cost-effectiveness testing must be "symmetrical" in how it considers both costs and benefits. If some benefits are excluded from the equation, as is common in the use of the TRC, then the corresponding costs must also be excluded. Alternatively, if all costs are included in the calculation then all benefits must also be included. Logically it makes sense that meaningful cost-effectiveness testing results are possible either by including all costs and benefits, or by excluding symmetrical costs and benefits— *but not by including all costs and only some of the benefits*.

Include Non-Energy Benefits in Cost-Effectiveness Testing

The Advocates reaffirm their oft-stated position that it is logical, reasonable, and essential to the fair estimation of the cost-effectiveness of energy efficiency to include non-energy benefits in cost-effectiveness screening. The Resource Value Framework (RVF) produced by the National Efficiency Screening Project and representing the input of dozens of the nation's leading energy efficiency policy experts explains that "…a state that chooses to include participant costs in its screening test should also include participant benefits, including low-income and other participant non-energy benefits, otherwise the test will be skewed against energy efficiency resources."[11] This also holds true for benefits that accrue to participants and non-participants alike, such as reduced air pollution and the corresponding reductions in adverse health effects.

The experts who developed the RVF go on to say that "Efficiency screening practices should not exclude relevant benefits on the grounds that they are difficult to quantify and monetize."[12] Indeed, omitting the value of these hard-to quantify benefits "may be the most significant problem with energy efficiency program screening methods in the United States today".[13] Excluding some of the participant benefits from testing without excluding the corresponding costs will result in inaccurate results and will mischaracterize the true cost-effectiveness of

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[9] A National Survey of State Policies and Practices for the Evaluation of Ratepayer-Funded Energy Efficiency Programs, Martin Kushler, Seth Nowak, and Patti White, ACEEE, February 2012. Report Number U122 http://aceee.org/research-report/u122

[10] See, e.g., Case No. 9153, Docket No.529, Comments of the Sierra Club (October 3, 2014).

[11] The Resource Value Framework, Reforming Energy Efficiency Cost-Effectiveness Screening. The National Efficiency Screening Project, Updated August 16, 2014. http://www.nhpci.org/publications/NHPC_NESP-Recommendations_20140816.pdf.

[12] Ibid.

[13] Woolf, T., Steinhurst, W., Malone, E., & Takahashi, K., Energy Efficiency Cost-Effectiveness Screening, Synapse Energy Economics, Inc., for the Regulatory Assistance Project (RAP), Inc., (Nov. 2012) at 5-6, available at http://www.raponline.org/document/download/id/6149

improvements, which could lead to program and policy decisions that could rob Marylanders of many millions of dollars of benefits. Generally, most jurisdictions who have addressed non-energy benefits have determined that there is a better empirical basis for estimating the value of non-energy benefits than for disaggregating costs into their component parts. For example, there is a stronger basis for estimating the value of emissions reductions per MWh saved and including that value in the cost-effectiveness calculation than for estimating how much of a total portfolio's costs should be attributed to those emissions reductions and subtracting that portion of the costs from the cost-effectiveness calculation.

Skumatz Economic Research Associates, Inc. (SERA) prepared a report for NRDC which assessed and recommended appropriate values for non-energy benefits for Maryland's cost-effectiveness screening tests. The research found that "…about a dozen states have already come to include some NEBs-related treatment in their regulatory benefit-cost testing procedures. Iowa, Colorado, Oregon, Washington, Vermont, New York, DC, and others include at least simple adders (between 7.5% and 25%) reflecting subsets of NEB contributions. Massachusetts, Vermont, Colorado, New Hampshire, BCHydro, Oregon, Connecticut, Rhode Island, Maine, DC, and others allow inclusion of subsets of "readily measured" or specific NEBs in benefit-cost tests, and the list is growing."[14] SERA proposed that there are numerous categories of NEBs for which values have been sufficiently documented to use with confidence in cost-effectiveness screening, and others for which "adders" can be used to represent their value.

In light of the work of SERA and others, Itron conducted additional research and made recommendations for values to use in Maryland's cost-effectiveness screening for four NEB categories, including air emissions reductions, increased comfort, reduced Commercial & Industrial (C&I) operating and maintenance costs, and reduced arrearages for low-income programs. Itron proposed a range of possible values for three different scenarios, illustrated in Figure 1: Itron Quantified NEBs[15] below.

Itron Quantified NEBs				
NEB Category	BAU	Enhanced	Aggressive	Notes
Air Emissions	$2.00	$10.60	$28.60	$/MWh saved
Comfort				$/year for each air sealing/insulation install
HPwES	$34.00	$136.00	$204.00	
Low Income	$27.00	$110.00	$165.00	
C&I O&M	Varies by Program			See Itron documentation for details
Reduced Arrerages	2% increase in benefits			Low Income programs only

Figure 1: Itron Quantified NEBs

[14] Skumatz, Lisa A., Ph.D., "Non-Energy Benefits / Non-Energy Impacts (NEBs/NEIs) and their Role & Values in Cost-Effectiveness Tests: State of Maryland,", Skumatz Economic Research Associates, Superior, CO, prepared for NRDC, Washigton DC, March 2014

[15] Slide 11 from MEA presentation for EmPOWER Planning Scenario Development Meeting, October 31, 2014

The Advocates find that the "aggressive"[16] NEBs values proposed by ITRON are within the range supported by SERA's research, and recommend that the Commission direct the utilities and their evaluators to include these values in cost-effectiveness testing at the sub-portfolio level.

Apply a Risk-adjusted Discount Rate of 3% in Cost-Effectiveness Testing that Reflects the Reduced Risk of Energy Efficiency Relative to Other Utility Investments

In its October comments the Coalition stated that "TRC testing should not be based on the utility WACC[17], but rather on a rate that more reasonably reflects the risk associated with utility investments in energy efficiency—which is generally agreed to be lower than the risk associated with other utility investments. Other states in the region screen portfolio cost-effectiveness using societal real discount rates of around 3%."[18] In its October filings the Sierra Club expanded on this position, noting that:

> "Energy efficiency initiatives, like EmPOWER, are investments—extremely low risk investments.[19] They incur most costs in the present and near future, but most benefits are not realized until the more distant future…. A real societal or social discount rate is most simply defined as the expected return on an investment in society.[20] The social discount rate takes into account both the low-risk of energy efficiency investments and society's acceptance of the significant duration sometimes needed for the realization of benefits including future savings and general return on investment…. The WACC is intended for use with risky business investments, not safe and low-risk energy efficiency investments.[21] The utilities' EmPOWER expenses are recovered in utility rates and bills,

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[16] The label "aggressive" is a relative term, as these values have a strong basis in the research conducted by SERA.

[17] WACC stands for Weighted Average Cost of Capital. The WACC for the EmPOWER utilities ranges from 6.85% for SMECO to 8.3% for PE, as reported in MEA's EmPOWER 2015-2017 Cost Effectiveness Framework dated August 18, 2014.

[18] Energy Efficiency Cost-Effectiveness Screening in the Northeast and Mid-Atlantic States, Prepared for the NEEP Regional EM&V Forum, Tim Woolf, Erin Malone, Jenn Kallay, Kenji Takahashi, October 2, 2013, at p 9. http://www.neep.org/sites/default/files/resources/EMV_Forum_C-E-Testing_Report_Synapse_2013%2010%2002%20Final.pdf.

[19] Id. at 29 (explaining the extremely low-risk nature of energy efficiency investments).

[20] U.S. EPA, NAPEE COST-EFFECTIVENESS (2008) AT 4-8; WOOLF ET AL., COST-EFFECTIVENESS SCREENING, SYNAPSE FOR RAP (2012) AT 63.

[21] *See e.g.* WOOLF ET AL., COST-EFFECTIVENESS IN THE NORTHEAST AND MID-ATLANTIC (2013) at 16 (citing MA DPU 2009a, 21-23) (finding a low-risk discount rate most appropriate to calculate present value of costs and benefits because it reflects the low-risk efficiency investments; and noting that Mass. policies are driven by the Green Communities Act, and require program administrators to implement all cost-effective energy efficiency).

> and are not capital expenditures….[22] Accordingly, efficiency programs financed with system benefits charges, or similarly reconciled charges, warrant low discount rates that reflect the utilities' insignificant financial risk.[23]" [24]

In a proceeding that addressed non-energy benefits and discount rates for Vermont's non-electric energy efficiency programs, the Vermont Department of Public Service (DPS) recommended, and the Board ordered, the adoption of a 3.0% discount rate for energy efficiency screening:

> "For society as a whole, the discount rate is often lower because an individual or company's investment decisions have impacts on others. For example, increasing a business's efficiency results in less money spent on energy and more on other things (or savings or profit). This shift in spending or savings in turn changes the economic fortunes of customers (e.g. through lower prices), other local businesses (competing or synergistic), banks, energy sellers, etc. However, a company cannot capture and benefit from these spillovers, while society can. As a result, society has less of a time preference for the return on an investment than a company might. This reduced time preference manifests itself as a lower discount rate."[25]

With this understanding, the Advocates reaffirm their position that the appropriate discount rate to be used for assessing the cost-effectiveness of energy efficiency programs is a risk-adjusted discount rate in the range of 3% or less.

Low-Income Programs Must Have Unique Treatment in Cost-Effectiveness Testing

The Commission has previously provided clear direction that EmPOWER initiatives must be cost-effective at the sub-portfolio, rather than the program or measure level, and the Advocates supports this decision. However this raises questions regarding cost-effectiveness requirements

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[22] MEA, EMPOWER COST-EFFECTIVENESS WORKGROUP COMMENTS BY KEVIN LUCAS & LAUREN URBANEK (Dec. 2013) (explaining that the low-risk investments required by EmPOWER are recoverable with surcharges).

[23] *See* WOOLF ET AL., COST-EFFECTIVENESS SCREENING, SYNAPSE FOR RAP (2012) (explaining whether efficiency investments are funded by system benefit charges or balancing account in utility rates, there is little risk to the utility because the risks are passed to customers independent of utility operations, utility performance or other risk factors).

[24] See, e.g., Case No. 9153, Docket No.529, Comments of the Sierra Club (October 3, 2014).

[25] Department of Public Service Comments in the Cost-Effectiveness Screening of Efficiency Measures Workshop Process Related to Non-Energy Benefits, Discount Rate, Risk Adjustment, and Low-Income Adders, December 9, 2011, http://psb.vermont.gov/sites/psb/files/projects/EEU/screening/DPSCostEffectivenessScreeningComments12-9-11.pdf

for the low-income programs, since they are not part of the utility portfolios. Instituting an expectation that the low income programs comprise their own sub-portfolio for screening would seem to contradict the rationale for screening cost-effectiveness at the sub-portfolio rather than the program level, which is to allow the utilities to offer programs within each market sector that achieve important policy goals even if they are not cost-effective on their own. This could be addressed by having the utilities include the costs and savings from the low income programs in their cost-effectiveness analyses, screening both utility and Department of Housing and Community Development (DHCD) programs together. This makes logical sense, but offers pragmatic challenges. If the residential sub-portfolio fails the cost-effectiveness test, who is responsible for making changes to improve the result— DHCD or the utilities?

To obviate the need to answer these questions, the Advocates suggest that the Commission select one of two options:

1. Require screening of the low-income programs on their own, but modify the cost-effectiveness criteria used to screen the low-income programs by applying a significant NEB adder to account for the important public policy value provided by them, or
2. Simply waive the requirement that the low-income programs pass the cost-effectiveness test. In the latter case, the Commission could provide sufficient oversight of the prudence of low-income program investments by carefully monitoring program plans and performance as it has done in the past, without requiring that they pass the TRC test.

The above mentioned approaches would allow the Commission to acknowledge that there are additional benefits from the implementation of low income energy efficiency programs even if the exact value of those benefits is not known with certainty. In Vermont, for example, the Public Service Board (PSB) has determined that a 15 percent low-income adder applied to the energy benefits is appropriate. This 15% low-income benefits adder is in addition to a 15% NEB adder for all programs and a 10% risk adjustment that recognizes utility energy efficiency investments as having less risk than investments in infrastructure would have. In its Order approving the adder, the PSB acknowledged that "while the additional benefits to low-income customers and society can be difficult to quantify, it is clear that the current value of zero is incorrect; 15 percent appears to be an appropriate conservative estimate of their value."[26]

The approach of modifying cost-effectiveness requirements for low-income programs is also used in Ontario. For both electric and natural gas efficiency programs the Ontario Energy Board has ordered a 15% NEBs benefit adder for all programs, but it also waived the requirement that gas low-income programs meet even the previously required 0.7 "TRC-Plus" cost-effectiveness result:

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[26] State of Vermont Public Service Board Order RE Cost-Effectiveness Screening of Heating and Process-Fuel Efficiency Measures and Modifications to State Cost-Effectiveness Screening Tool, entered 2/7/2012, pg. 30. http://psb.vermont.gov/sites/psb/files/orders/2012/2012-4/OrderReCostEffectivenessScreeningofHeating.pdf

> "The Board will adopt an enhanced TRC test, or the "TRC-Plus" test, which the gas utilities should use to screen all potential DSM programs when developing their multi-year DSM plans. The gas utilities should directly apply a 15% non-energy benefit adder to the benefit side of the TRC test calculation. The gas utilities are able to apply for approval of low-income programs with cost-effectiveness results lower than the current 0.7 threshold using the TRC-Plus test. These programs will be approved on their merits."[27]

Illinois has also exempted low-income programs from the cost-effectiveness requirements that apply to other programs. This exemption is specified in Public Act 095-0481:

> "In submitting proposed energy efficiency and demand-response plans and funding levels to meet the savings goals adopted by this Act the utility shall…present a portfolio of energy efficiency measures targeted to households at or below 150% of the poverty level….[and] Demonstrate that its overall portfolio of energy efficiency and demand-response measures, not including [these low-income programs] are cost-effective using the total resource cost test and represent a diverse cross-section of opportunities for customers of all rate classes to participate in the programs."[28]

Given the importance of demonstrating the cost-effectiveness of EmPOWER investments, the Advocates recommend that comprehensive non-energy benefits be applied to the low-income programs for the purposes of cost-effectiveness screening, but that the results of this screening are used not as a pass/fail test at the program level, but rather as a yardstick for determining whether program improvements may be appropriate.

In determining the appropriate NEB values to apply to these low income programs, the Advocates recommend adopting guidance provided by SERA in its research on NEB values for Maryland's low income programs. In that work, SERA suggests the following:

> "We recommend a net short term value of 67%, and certainly no lower a multiplier than 47% , and that this percentage adder be applied specifically to the TRC test. Costs are already incorporated into the test; to provide a test that reduces bias and better supports program decision-making, the program's benefits – at least those that have been well- or repeatedly/ consistently measured – should also be included. The adder should be multiplied times the retail cost of the net savings (that is, bill savings, after net-to-gross is applied), and incorporated as additional benefits. If emission benefits are already

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[27] Ontario Energy Board, Report of the Board, Demand Side Management Framework for Natural Gas Distributors (2015-2020), December 22, 2014, http://www.ontarioenergyboard.ca/oeb/_Documents/EB-2014-0134/Report_Demand_Side_Management_Framework_20141222.pdf

[28] Illinois Public Act 095-0481, http://www.ilga.gov/legislation/publicacts/95/PDF/095-0481.pdf

incorporated into the avoided cost, these figures translate to minimums of 55% and 35%. These recommendations omit additional categories that have been estimated and take a very conservative approach until additional Maryland-based research is conducted. Our recommendations address weatherization and low-income weatherization programs. The "emissions adder" would apply across all programs."[29]

However, the alternate approach of simply exempting low income programs from cost-effectiveness requirements, as has been done in Illinois, could also be a viable option for meeting Maryland's policy objectives.

Framework for Goals

The framework under which goals are defined is critically important to ensure that goals support the policy values that underpin EmPOWER. Therefore, before proposing values for savings that the utilities should achieve going forward, the Advocates provide recommendations for a goals framework. The key elements of the framework proposal are:

- The Commission should establish utility-wide, rather than specific sector savings targets, provided there are protections in place to assure that sector investments are within a narrow band of sector EmPOWER collections;
- A goal performance period of three years, rather than single year performance, should be established;
- Planning should be done every three years, for two sequential three year periods. The first three years of the plan, when approved, become the utility obligation, and the second three years of the plan establish longer-term direction for the programs;
- Goals should be based on first-year energy savings with an adjustment up or down based on the weighted average measure life of the portfolio as a whole;
- Goals should be set at the verified gross level unless the Commission implements shareholder performance incentives, in which case it may be more appropriate to establish net savings goals;
- Conservation Voltage Reduction (CVR) and Advanced Metering Infrastructure (AMI) savings should count toward the EmPOWER goals, regardless of the cost-recovery mechanisms in place, provided EM&V is conducted to verify the savings;
- Savings from other non-traditional programs, such as dynamic pricing, should be vetted through a stakeholder process and approved by the Commission before they are counted towards the EmPOWER goals;

[29] Source for estimate: Skumatz, Lisa A., Ph.D., "Non-Energy Benefits / Non-Energy Impacts (NEBs/NEIs) and their Role & Values in Cost-Effectiveness Tests: State of Maryland,", Skumatz Economic Research Associates, Superior, CO, prepared for NRDC, Washigton DC, March 2014

- EmPOWER cost recovery should be examined by the Commission to provide transparency on how utility earnings from EmPOWER compare with traditional rate-based investments before a decision is made on whether to maintain or modify the current five-year amortization mechanisms;
- The Commission should establish demand savings in addition to energy savings targets;
- Energy use should be weather-normalized both in setting and assessing progress towards goals;
- Investment and savings targets should be established for low-income programs discreetly from the utility programs in recognition of the split accountability between the utilities and low-income program implementation.

Explanation of each of these elements follows, primarily in a Q&A format based on questions proposed by MEA in preparation for discussing this topic.

Should goals be set separately for residential and commercial/industrial sectors, or just for each utility at the portfolio level?

The Advocates support the principle that all residential and commercial/industrial customers should have the opportunity to participate in EmPOWER programs, and this argues for a planning process that assures balanced portfolios that reflect program investments and benefits that are roughly proportional to surcharge collections from each sector. However, the Advocates do not believe that sector equity should necessarily completely trump the ability of the programs to adapt to a certain degree to take advantage of the savings opportunities that are available, since in the end cost-effective investments will benefit all ratepayers through reduced system infrastructure costs and reduced power purchases.

The utilities should have a measure of flexibility in administering the programs that allows them to adjust to changing market conditions so that they can take advantage of areas of market growth and development. Specific sector savings requirements might inhibit the flexibility needed to maximize system-level benefits by requiring the utilities to neglect certain market opportunities that could provide greater system-level benefits than sector specific opportunities. Multifamily housing is one sector that necessitates such flexibility. Since multifamily housing often consists of both residential and commercial meters, it can be a challenge to accurately attribute savings to the appropriate sector. In such cases it would be more advantageous to allow the utility to attribute all of the savings to one sector. Not allowing such flexibility creates a disincentive to invest in whole-building multifamily efficiency improvements.

With this in mind, the Advocates recommend that savings requirements are set at the utility, rather than the sector level, but that safeguards are put in place to assure that there are sufficient opportunities for all customers to participate and receive the benefits of EmPOWER investments. This could take the form of a minimum performance threshold, such as requiring that utility sector investments must be plus or minus 5%-10% of sector surcharge collections.

Should goals be for single years, or for three year aggregate periods?

As a strong signal of Maryland's continued commitment to cost-effective energy efficiency investments, and as a pragmatic program management strategy, the Advocates recommend that goals be established for three-year aggregate periods rather than for single years. Single-year goals demand that program administrators ignore long term market growth in favor of quick savings that may not be in the best long-term interest of ratepayers. In contrast, three-year commitments provide a level of assurance to market actors that they will have a reasonable opportunity to recover investments in the tools and training that will allow them to sell the services that efficiency programs endeavor to promote. Further, three-year commitments allow sufficient time for markets to grow. Even in Maryland's relatively mature energy efficiency markets there are segments that have not yet taken full advantage of efficiency opportunities, and that will benefit from sustained utility efforts. In order to pursue these opportunities, the utilities need to have assurance that their efforts will be afforded sufficient time to generate results.

In the Advocates' view, three-year goals provide an appropriate balance of resource acquisition focus driven by time-bound savings requirements with sufficient time to allow the investments in infrastructure and awareness building that will sustain energy efficiency over the long haul. There are multiple jurisdictions in which a multi-year goals framework is employed in utility energy efficiency regulation, including but not limited to Pennsylvania, New York, Massachusetts, Vermont, Maine, Illinois, California, Wisconsin, and Michigan.

Should there be a long term (i.e. 5-10 years out) goal in addition to short term (1-3 year) goals?

Research conducted by ACEEE on the role of Energy Efficiency Resource Standards (EERS) suggests a strong correlation between the presence of these long term legislative signals that favor energy efficiency, and the performance of state and utility energy efficiency programs. Indeed, the authors report that "Nearly every state in the country implements some level of energy efficiency programming, but the deepest savings are achieved in states with EERS policies."[30] The EmPOWER legislation in Maryland served as an effective EERS, but with statutory savings targets only defined through 2015, and in the absence of new statutory targets, it becomes incumbent on the Commission to devise a regulatory strategy to serve the purpose of providing a strong signal to the utilities, markets, and ratepayers that Maryland is committed to energy efficiency for the long term.

The Advocates see strong value in the market signals that the State's long-term commitment to energy efficiency investment can show. The Advocates recommend that a rolling six-year goal setting framework be established that is updated every three years. Within this framework there would both be specific savings goals established for the initial three-year period, as well as

[30] Energy Efficiency Resource Standards: A New Progress Report on State Experience, Annie Downs and Celia Cui, American Council for an Energy Efficient Economy, April 2014. Report Number U1403. http://aceee.org/sites/default/files/publications/researchreports/u1403.pdf

directional savings goals for the second three-year period. The directional goals would be based on market assessment data, past program performance, and emerging opportunities and would provide long term signals to the markets of expected future direction, allowing businesses to invest as warranted and plan for market shifts as required. The directional goals would also allow program administrators time to plan for developing market opportunities, so that they are best-positioned to take advantage of emerging technologies and new opportunities. This longer-term approach would also benefit Maryland in meeting Clean Power Plan requirements by ensuring that compliance planning was done far enough in advance to allow thoughtful, rather than reactive and costlier solutions.

Should goals be based on annual savings of measures installed or lifecycle savings of measures installed, or a hybrid of both?

The Advocates recommend that targets be established that appropriately recognize the importance of both annual and lifecycle energy savings. An annual savings target is a useful measure of performance because it is by far the most common comparison used to determine how well energy efficiency programs succeed relative to each other. Annual savings also are useful in assessing the year-by-year impact that efficiency programs have in mitigating load growth. However lifecycle savings are much more relevant in measuring the economic benefits that accrue to ratepayers based on utility efficiency investments, and maximizing the net benefits to ratepayers is a foundational premise behind the development of utility energy efficiency programs. Ignoring lifecycle savings in favor of annual savings goals can drive program administrators to favor measures and programs that do not deliver long term benefits, with the result that they are not in the best long term interests of ratepayers.

Lifecycle savings also become important in driving a mix of measures and programs that will meet the U.S. Environmental Protection Agency's (EPA's) Clean Power Plan requirements at the lowest cost. In assessing the cumulative results of efficiency needed to meet the requirements, the EPA will factor in the expiration of savings as efficiency measures reach the end of their useful lives. In other words, measures with savings that persist for a longer duration will have greater cumulative value in meeting the Clean Power Plan requirements. It is therefore reasonable to assume that longer-lived measures will likely also provide greater economic value in terms of environmental compliance with the Clean Power Plan.

The issue of how best to frame savings goals in order to achieve this balance was studied in a 2013 report to the Michigan Public Service Commission that was prepared by Optimal Energy Inc. and Energy Futures Group. The report was created to "…assess alternatives to traditional first year savings goals…." and "…describe a set of policy options…to consider in order to reduce the bias to pursue savings that may be the most inexpensive from a first-year perspective,

but not necessarily optimal in the longer term."[31] The report suggests that policy makers can "…redefine savings goals in a way that encourages greater consideration of the lifetime benefits of efficiency measures…." Or "…establish shareholder incentive metrics that do the same thing."[32] The report then describes a variety of metrics that were considered by the authors, including:

- Lifetime savings
- Discounted lifetime savings
- Net present value of net benefits
- Cumulative annual savings over multi-year period
- 1st year savings goals with limits on savings from short-lived measures
- 1st year savings goals with bonuses/penalties for long/short-lived measures
- 1st year savings goal with average measure life adjustment factor

There are several examples of jurisdictions where these or similar alternatives to annual savings metrics are in place. Efficiency Vermont has both annual savings metrics and a "total resource benefits" (TRB) metric[33], both of which are roughly equivalent in terms of their potential earning value in performance incentives. And, following the review of this report by the Michigan Commission, Consumers Energy Company now has metrics in place based on 1st year savings goals with a bonus for long-lived measures, but no penalties for short-lived measures.[34]

The Advocates recommend that the Commission establish a framework that measures the utilities' performance in terms of a 1st year savings goal with average measure life adjustment factor. This would require that the Commission establish an "expected" measure life for the portfolio, and that, for the purpose of assessing the utilities' achievements, the total 1st year savings would be multiplied by the actual weighted lifetime of the portfolio. For illustration, if the "expected" measure lifetime was ten years, and the actual weighted lifetime of a utility's portfolio was 10.5 years, the utility would be credited with 105% of its reported annual savings. Conversely, if the average weighted lifetime of the portfolio was less than the expected ten years— say 9.5 years, then the utility would be credited with 95% of its reported annual savings.

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[31] Optimal Energy, Inc., Alternative Michigan Energy Savings Goals to Promote Longer Term Savings and Address Small Utility Challenges, Final Report. (Sept. 13, 2013). http://www.dleg.state.mi.us/mpsc/electric/workgroups/progdesign/final_phase1_report.pdf

[32] Ibid.

[33] Order Determining Quantifiable Performance Indicator Targets For Efficiency Vermont and BED, State of Vermont Public Service Board Order in EEU-2013-01, 10/10/2014. http://psb.vermont.gov/sites/psb/files/projects/EEU/drp2013/EEU-2013-01%20Order%20re%20QPIs%20EVT%20%26%20BED.pdf

[34] This is outlined in the Order Approving Partial Settlement in Michigan Public Service Commission (MPSC) Case No. U-17138 (January 31, 2013), Table on p. 3, available at: http://efile.mpsc.state.mi.us/efile/docs/17138/0060.pdf.

The expected measure lifetime should be established collaboratively by Staff, MEA, Office of People's Counsel (OPC), the utilities, and other stakeholders, and approved by the Commission.

Should goals be set at the net level or gross level?

The Advocates believes that a case can be made for either net or gross savings. Progress towards the EmPOWER goals in Maryland has historically been measured at the gross savings level, though EM&V has also been conducted to determine verified net savings for all of the Energy Efficiency and Conservation (EE&C) programs. The issue of whether to use net or gross savings to report program accomplishments is discussed in several reports that have been developed by the American Council for an Energy Efficient Economy (ACEEE), which it describes as "Perhaps the issue with the most vigorous debate in the industry today…."[35]. As observed in those reports, there are advantages to using gross savings as a measure of portfolio progress. In the context of environmental goals "…"Mother Nature" does not particularly care to whom carbon dioxide reductions are attributed".[36] This also holds true for resource planning, where "…what is important is the total gross contribution that energy efficiency improvements make to the region's need for additional resources"[37] rather than the attribution of those savings. Lastly, attribution of savings can be a notoriously complex issue. There are few examples where customer participation is wholly attributable to program activity, so that in almost all cases estimations of freeriders and spillover needs to be done— often a difficult task in increasingly complex energy efficiency markets. These points all argue in favor of using gross savings as the measure of EmPOWER program success.

However, there are circumstances that could suggest that net savings are a more appropriate measure of success. Importantly, net savings— the portion of overall savings that the utilities can claim responsibility for achieving— must be a critical element of any future discussion of allowable lost revenue recovery and/or shareholder incentives. In these contexts attribution does matter. It would be unreasonable for the utility to benefit financially from changes in energy use that did not result from its actions. Should the Commission determine to move forward with a proposal for creating shareholder performance incentives it may be more appropriate to frame those metrics in the context of net rather than gross savings. Should this be the case, the Advocates recommend that net, rather than gross savings should be used for all utility and DHCD targets in order to avoid confusion about which numbers are reported as net and which as gross savings.

However, should the Commission determine that it is unlikely to move forward with shareholder performance incentives the Advocates recommends that verified gross savings is the most

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[35] A National Survey of State Policies and Practices for the Evaluation of Ratepayer-Funded Energy Efficiency Programs, Martin Kushler, Seth Nowak, and Patti White, ACEEE, February 2012. Report Number U122 http://aceee.org/research-report/u122

[36] Ibid.

[37] Ibid.

appropriate single metric. There are important qualifications to this recommendation. First, note the "verified" qualifier in our recommendation. Even at the gross level, savings need to be independently verified to assure that they are reported accurately. Further, a gross savings goal, without appropriate safeguards, could create a perverse incentive for utilities to favor program designs that have very high freerider rates in order to assure compliance with goals, even though that would not be in the best economic interest of ratepayers. For this reason net savings and associated estimates of freeridership and spillover should be carefully considered by the utilities as they design proposed programs and by the Commission in determining whether to approve those program plans. This is not to say that the Commission should reject out of hand any programs that have high freeridership. There may be cases where highly cost-effective savings can be captured despite high freeridership, but development and approval of such programs should be carefully considered to assure that they are in the ratepayers' best interest.

How should savings from other measures - such as Conservation Voltage Reduction (CVR), Advanced Metering Infrastructure (AMI), street lighting, etc. - not recovered through the EmPOWER surcharge be handled?

The Advocates support allowing CVR and Behavior program savings to count towards energy goal attainment even when costs are not recovered through the EmPOWER surcharge, provided that robust Evaluation, Measurement & Verification (EM&V) protocols are instituted. The utilities should be able to receive credit for legitimate savings that it causes to occur, regardless of whether the Commission determines that associated costs are more reasonably recovered from some mechanism other than the EmPOWER surcharge. However, the need for all savings that contribute to savings goals to be independently verified, whether goals are framed in terms of net or gross savings, applies regardless of cost treatment. Further, determinations on whether other programs should be allowed to contribute to EmPOWER savings, such as dynamic pricing, should be thoroughly vetted by the Commission through a workshop process that provides ample opportunity for stakeholder review and input.

Should cost recovery through the surcharge continue to be amortized on a five year basis, or something else?

Regardless of whether or not the Commission pursues the creation of a shareholder incentive mechanism the Advocates recommends an investigation into the current cost recovery mechanisms to determine how the utilities' return on energy efficiency investments compares with rate-based cost recovery of other investments, such as CVR programs. Absent a transparent understanding of the utility earnings it is not possible to resolve this question. As it stated in its October 3rd comments,[38] the Advocates believe that the Commission should ensure that EmPOWER investments are viewed as equivalent to, or slightly favorable in comparison with other utility investments in terms of the returns they provide. If the utilities receive more

[38] See, e.g., Case No. 9153, Docket No. 535, Comments of the Coalition of Maryland Energy Efficiency Advocates (October 8, 2014).

favorable returns through rate-based investments than through the five-year amortization of EmPOWER investments this could provide a disincentive for them to maximize their investments in cost-effective energy efficiency— especially where efficiency could be used to defer or avoid infrastructure investments.

Should there be a demand savings goal in addition to the energy savings goals described above?

Under the current EmPOWER framework the presence of a MW demand savings target has contributed to significant investments in demand-response programs that presumably have fortified the ability of distribution networks to perform during temperature extremes. These investments are also presumed to have resulted in the ability to avoid expensive peak power purchases, and potentially to reduce the operation of "dirty" peaking plants. To the extent that these benefits continue to be available the Advocates recommends that the Commission codify demand savings requirements for the utilities in addition to the afore-mentioned energy savings.

Should energy savings goals and results be weather-normalized?

The Advocates support weather-normalizing of goals and savings to ensure that accomplishments are neither under- or over-stated due to year to year variations in weather. The Advocates recommend that Itron, in its role as independent evaluator, is best-positioned to develop a fair process for conducting this weather-normalizing.

How should low income programs be addressed in the goals framework?

The Advocates recommend that the Commission establish a minimum investment target for Maryland's low-income programs to codify services to this critical sector and assure that they remain vibrant in the face of continuous pressure to moderate public investments. Low-income populations disproportionally feel the burdens of energy costs, while they pay into EmPOWER at the same rate as other residential customers. EmPOWER has long acknowledged that low-income ratepayers face special barriers to participation, primarily in terms of their inability to afford to pay for improvements that could save them money on their energy bills in the long run.

As the programs are not operated by the utilities, the Advocates recommend that a goals framework for low-income programs that is independent of the utility goals framework should be established.

The EmPOWER low-income programs are solely focused on providing energy and utility bill savings, and associated health and safety improvements as needed, to low-income Marylanders. Therefore, the Advocates finds it reasonable for the Commission to establish energy savings goals for the low-income programs under the framework of a minimum investment threshold. The Advocates recommend that DHCD, rather than the utilities, would be responsible for meeting any targets established under this framework.

The Advocates suggest that several of the key elements of the framework it recommends for the utility programs can be mirrored for the low-income programs. These include:

1. Energy savings goals, and associated budgets, should be established for three years at a time, as an aggregate target rather than as single-year targets within the three-year framework;
2. These three-year goals should be viewed in the context of a six-year goals framework that is updated every three years;
3. Goals should be framed in terms that value both annual and lifecycle targets;
4. Goals should be set and results assessed at either the net or gross energy savings level as determined for the utility programs for consistency. If targets are set at the gross savings level, then net savings should be assessed during the development and approval of program plans to assure that DHCD does not implement programs that unreasonably receive credit for high freeridership.

Magnitude of Goals

Magnitude of Electric Goals

The first recommendation of the Coalition of Maryland Energy Efficiency Advocates in its October filing was for the Commission to "…require the utilities to develop enhanced Plans and budgets that establish a trajectory to achieving 2% gross annual savings[39] by 2017 to meet the enhanced EmPOWER contribution towards Maryland's climate goals described in its Greenhouse Gas Reduction Plan (GGRP)."[40] In support of this position, the Coalition stated:

> "While the potential study authorized by the Commission has not yet been completed, there is significant evidence that the EmPOWER programs have not come close to saturating markets with energy efficiency. The Maryland Energy Administration points out that only one-third of Maryland's commercial and industrial (C&I) accounts have participated in the EmPOWER programs, while only 15% of the state's households have received a quick home energy checkup (QHEC)[41]. At the highest level, Maryland is not even close to meeting the savings achievements of the Nation's leading states. In 2013, Maryland achieved gross savings[42] equal to 1.3% of retail sales[43] and net savings equal to

[39] Note that the Coalition stated its recommendations in terms of gross savings in its October filing as that was consistent with the current EmPOWER target measurement. For consistency, 2% gross is used as a metric here as well, though the Maryland Energy Efficiency Advocates would support a Commission order for the utilities to achieve equivalent net savings.
[40] See, e.g., Case No. 9153, Docket No. 535, Comments of the Maryland Energy Efficiency Advocates of Maryland Energy Efficiency Advocates (October 8, 2014).
[41] *See, e.g.,* Case No. 9153, Docket No. 506, Maryland Energy Administration, 2015-2017 EmPOWER Maryland Filing, September 2, 2014 at p 1.
[42] Gross savings are used to estimate progress towards EmPOWER goals.
[43] *See, e.g.* Case No. 9153, Docket No. 501, Itron Verification Report filed August 13, 2014 (810,000 MWh gross savings) and 61,916 GWh retail sales per EIA-826 form

> 0.90% of retail sales through its EmPOWER programs. By comparison, Massachusetts has been offering programs for significantly longer than Maryland, and logically should have depleted far more of the easily obtainable savings, yet according to the ACEEE has reported net savings of 1.96% of sales in the same period. Similarly, Vermont and Rhode Island are reporting net savings of 1.78%, and 2.08%, respectively. This is not to diminish the accomplishments of the EmPOWER programs, but rather to suggest that there is significant remaining potential for energy savings in the state. Indeed, it is only in 2014 that in aggregate the utilities may attain gross saving levels of 1.5% of sales or greater, still below the levels suggested by the EmPOWER Act, further supporting the suggestion that significant cost-effective electric savings remain available in Maryland."[44]

The Maryland Energy Efficiency Advocates asserts that 2% gross savings is achievable and cost-effective, and indeed will be both an economic benefit to ratepayers in terms of the direct savings and system-wide benefits it provides, but also the least-cost path towards compliance with environmental goals. The Coalition states further in its October filing that

> "In 2008, Maryland's Climate Action Plan[45] reported that demand side management[46] was the third most cost-effective option for reducing greenhouse gas emissions, as shown in Figure 2 below— and in fact that it would return significant net economic benefits to the state. Demand side management and energy efficiency— Policy RCI-2— was also categorized as a policy with higher emissions reduction potential and easier implementation relative to many of the other options.

(http://www.eia.gov/electricity/data/eia826/). This represents the total EmPOWER savings, though the Coalition comments focus only on the EE&C portion of the portfolios.

[44] See, e.g., Case No. 9153, Docket No. 535, Comments of the Coalition of Maryland Energy Efficiency Advocates (October 8, 2014).

[45] Commission on Climate Change, Climate Action Plan, Executive Summary, Table at p 23. http://www.mde.state.md.us/assets/document/air/climatechange/executive_summary.pdf

[46] Demand-Side Management (DSM) is a commonly used term for utility energy efficiency programs.

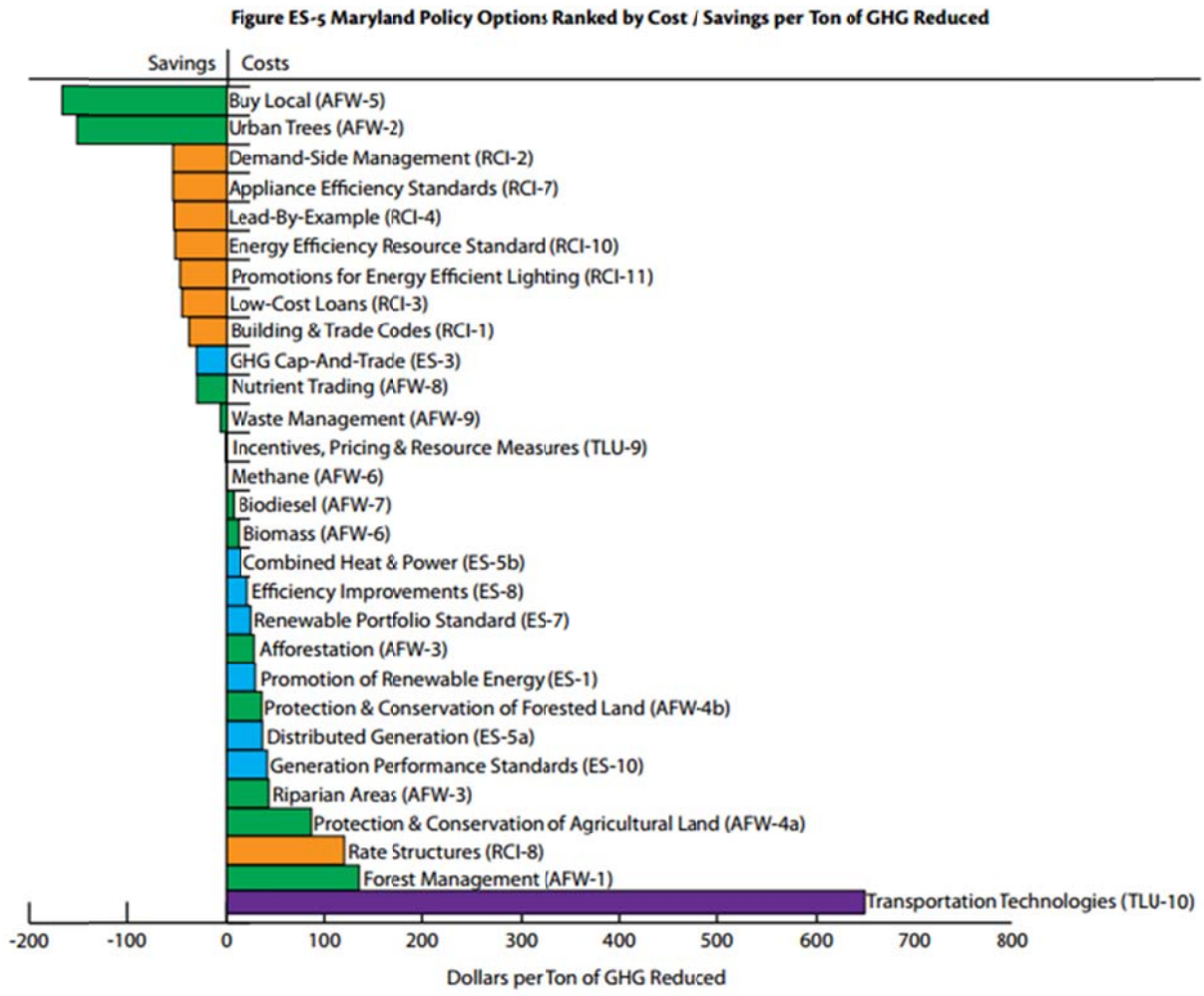

Figure 2

This analysis was considered in the development of Maryland's Greenhouse Gas Reduction Plan (GGRP), and energy efficiency from EmPOWER is expected to play a prominent role in meeting the state's climate goals. Despite this, the proposed 2015-17 state-wide savings levels fall far short of meeting the enhanced EmPOWER contribution described in the (GGRP) of 10.52 million metric tons of carbon-dioxide equivalent annually.

In the GGRP, the energy sector contributes almost half (45.6%) of the greenhouse gas (GHG) reductions needed to achieve Greenhouse Gas Reduction Act (GGRA)'s GHG reduction goal. An enhanced EmPOWER contribution for the 2013-2020 time frame, equal to 20% per capita consumption reduction below 2007 levels, is expected to make up 42% of the energy sector reductions. Indeed, this suggests that *EmPOWER savings achieved at the enhanced level could contribute 19% of the total GHG reductions that the state needs to achieve the economy-wide GHG reduction goal.*

Analysis provided by the Chesapeake Climate Action Network suggests that achieving this level of reduction would require EmPOWER gross savings of 1.8% of load annually between 2013 and 2020—39% greater than the 2013 level of 1.3% of load. Given that EmPOWER is not currently on a trajectory to achieve savings at this level it is critical that the Commission order the utilities to establish Plans that will put them on this path as soon as possible. Meeting the enhanced EmPOWER contribution to the GGRP will now require a trajectory leading to gross savings that are even greater than 1.8% in the later years of this decade, and the longer this trajectory is delayed the greater the challenge to achieving savings at these rates will be. The Coalition of Maryland Energy Efficiency Advocates respectfully recommends that the Commission order the utilities to develop plans to put EmPOWER on a path to meeting 2.0% gross savings by 2017, and to maintain that level of savings through the remainder of the decade.

The efficacy of employing EmPOWER to meet Maryland's climate goals also applies to new and existing federal air quality regulations. In addition to being the least-cost option for meeting Maryland's own climate goals, energy efficiency will also be a least-cost option for meeting the new EPA requirements for carbon emissions compliance under Section 111(d) of the Clean Air Act— and in fact may be far less onerous than alternatives that could be imposed by the EPA. In regards to 111(d) compliance, Christopher James of the Regulatory Assistance Project notes that

> States have the most flexibility and control of their destiny if they develop their 111(d) plan prior to June 2016, the expected final date for state plan submission. States that do not submit plans, or submit inadequate plans, will have inflexible federal plans imposed upon them….[47]

It is clearly in the state's best interest to make the most of the current EmPOWER planning cycle to maximize carbon emissions reductions in anticipation of 111(d) requirements that will affect the state in the near term."[48]

On the last point, note that the EPA's target of 1.5% net annual savings is likely comparable to gross annual savings on the order of 2.0% as recommended by the Advocates. Therefore, the Advocates reaffirm their position that 2% gross savings is achievable and cost-effective and respectfully urges the Commission to order the utilities to immediately commence ramping up EmPOWER programs to achieve 2% gross savings per year (or equivalent net savings) by 2017,

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[47] Reducing Greenhouse Gases and Improving Air Quality Through Energy Efficiency Power Plants: Cutting Through the Fog to Help Air Regulators "Build" EPPs, Chris James and Ken Colburn, Regulatory Assistance Project, Chris Neme and Jim Grevatt, Energy Futures Group. ACEEE Summer Study on Buildings, 2014.
http://www.aceee.org/files/proceedings/2014/data/index.htm

[48] See, e.g., Case No. 9153, Docket No. 535, Comments of the Coalition of Maryland Energy Efficiency Advocates (October 8, 2014).

using 2013 weather-normalized energy sales as a baseline. However, to avoid the challenges caused by the current EmPOWER targets that reference a moving baseline, the Advocates recommend that firm targets should be calculated based on weather-normalized annual sales for the most recent calendar year for which data are available. In other words, the Commission should determine the value of 2% gross annual savings for 2015-17 based on 2013 actual, weather-normalized sales. In the next six year plan that would start in 2018, the Commission would determine the 2% targets based on 2016 actual, weather-normalized sales.

Magnitude of Gas Goals

In the absence of widespread natural gas efficiency programs in Maryland there are not sufficient historical data to demonstrate the level of savings that could be achieved on an annual basis. The Advocates strongly support the establishment of EmPOWER natural gas efficiency program requirements, and suggests that in establishing initial savings requirements the Commission look to leading natural gas savings programs in other jurisdictions. As reported by ACEEE in *The 2014 State Energy Efficiency Scorecard,* the ten leading states in gas energy efficiency achieved between 0.73% and 1.47% of savings as a percentage of commercial and residential retail sales, with the five top states achieving over 1.0% savings. Based on these findings, the Advocates contend that there is a strong basis for the Commission to issue orders for a three-year initial ramp up of gas programs such that they achieve 1.0% savings as a percentage of commercial/industrial and residential retail sales in the third year of program operations. This would position Maryland as a leader in natural gas energy efficiency, in line with its proposed acheivements in electric energy efficiency. Estimates of achievable natural gas savings should be updated based on program experience and market data in the process of developing the subsequent six year plan. It is worth noting as well that comprehensive approaches that deliver integrated electric and natural gas solutions will better serve the markets, and may increase the achievable savings for both electricity and natural gas.

Potential study findings

Unfortunately, despite what appear to be significant efforts by MEA and the AEG team, stakeholders have not been provided with any information regarding the as-yet incomplete potential study other than a mid-January webinar that presented incomplete and preliminary information. Indeed, even where data were presented they were labeled as "Example data for illustration only." However, the fact that the study is not complete should not be a barrier to establishing targets for EmPOWER. The Advocates believe that even in the absence of the potential study there is sufficient evidence to support the Commission moving forward with setting appropriately aggressive goals— 2% gross annual savings— for the EmPOWER utilities, and correspondingly aggressive investment and savings goals for DHCD.

A potential study is only one of several tools that regulators can use to determine appropriate targets for energy efficiency, and it is a tool that can yield enormously varying results depending on the assumptions that are used. The authors of a report released by the Regulatory Assistance

Project (RAP) titled *Ten Pitfalls of Potential Studies* observe that "…potential study results are derived from forecasts that involve both complexity and uncertainty. As such, findings from these studies need to be viewed carefully, particularly when used to inform and direct long-term policy objectives."[49] The Commission should not base policy decisions on the potential study results unless and until the study has been fully vetted by interested stakeholders. In the Advocates' view, this would require an opportunity for stakeholders to file comments on the study such that they are entered "on the record" and provide the Commission with the opportunity to be fully informed on diverging views regarding the validity of the potential study process and findings. Note that stakeholders may or may not object to the process and findings of the study. It is simply impossible to say whether the findings are useful or not with the lack of transparency that has been provided to date.

The Advocates recommend that the Commission put stronger weighting on other key data points when considering savings targets for Maryland. Most importantly, the Commission should consider the following:

1. Current performance of the EmPOWER programs;
2. Current performance of other leading jurisdictions;
3. The EPA's analysis in its draft Clean Power Plan rules that requires 1.5% net annual savings for compliance;

Demand savings

The Advocates recommend that the Commission establish a goal of reducing peak summer and, as appropriate, winter peak demand. As of the date of this filing the Advocates did not have sufficient time to develop a proposal for the magnitude of demand savings that the Commission should require the utilities to achieve.

Magnitude of low-income investments and savings

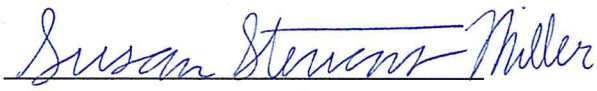
The Advocates place special importance on the availability of effective energy efficiency programs for Maryland's lower-income residents living in both single- and multifamily housing. Given that these ratepayers contribute to the EmPOWER budgets, but face severe difficulties both in paying utility bills and investing in energy efficiency improvements, it is critical that the EmPOWER programs provide services to this constituency on a scale that is at least on par with the balance of the EmPOWER portfolio. As a proxy for reaching 2% gross annual energy savings per year in the low-income markets, the Advocates respectfully recommend that the Commission establish low-income budgets and savings targets based on a goal of reaching 2% of low-income households per year. The goal of reaching 2% of households assumes that programs follow the LIEEP and MEEHA models for comprehensiveness, and that significant and

[49] Ten Pitfalls of Potential Studies, Chris Kramer and Glenn Reed of Energy Futures Group on behalf of the Regulatory Assistance Project, November, 2012, http://www.raponline.org/event/webinar-ten-pitfalls-of-potential-studies

proportional efforts are made to provide services in both the low income single family and multifamily markets. As with the previous recommendations for the magnitude of electric and natural gas program goals, the Advocates presume that they and other stakeholders would be afforded the opportunity to provide comments on any revised program plans that the Commission orders DHCD to develop.

There are 645,736 Maryland households that are eligible for the Low Income Home Energy Assistance Program (LIHEAP) according to maximum federal eligibility criteria.[50] While federal criteria for LIHEAP do not exactly correspond to LIEEP and MEEHA eligibility, this number is a strong indication of the scale of need among Maryland households. At the participation rate proposed in DHCD's 2015-2017 Plan, services will be provided to an average of 4,745 households per year, equivalent to just 0.73% of the low-income market. Increasing the participation rate to 2.0% per year— still a very small fraction of the low-income population— would increase the number of households served per year to 12,915. Applying DHCD's proposed total per unit cost per job of $5,861 to this number of participants would suggest a low-income energy efficiency budget of $75.7 million per year. Note that despite being a significant increase in the scale of Maryland's low income energy efficiency programs, the market potential, and indeed the need of these households, is much, much greater than even these increased goals will be able to meet.

Respectfully submitted,



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[50] LIHEAP Home Energy Notebook For Fiscal Year 2011, June, 2014, https://www.acf.hhs.gov/sites/default/files/ocs/fy2011_hen_final.pdf

CERTIFICATE OF SERVICE

I hereby certify that on the 30th day of January 2015, I electronically filed a copy of the Comments of the Maryland Energy Efficiency Advocates in PSC Case Nos. 9153-9157 with the Maryland Public Service Commission. In addition, the signed original, as well as 17 copies, were sent by Federal Express on this date to David J. Collins, Executive Secretary, Maryland Public Service Commission, William Donald Schaefer Tower, 16th Floor, 6 St. Paul St., Baltimore, Maryland, 21202. Copies were also mailed on this date by first class mail, postage prepaid to:

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