



*Via electronic submission*

August 21, 2015

Hon. Kathleen Burgess  
Secretary to the Commission  
New York State Public Service Commission  
Agency Building 3  
Albany, New York 12223-1350

Re: Case 14-M-0101, Proceeding on the Motion of the Commission in Regard to Reforming the Energy Vision

Dear Secretary Burgess,

On behalf of Northeast Energy Efficiency Partnerships (NEEP)<sup>1</sup>, please accept our comments regarding the Staff Whitepaper on Benefit-Cost Analysis (BCA Whitepaper) in the Reforming Energy Vision Proceeding, submitted to the Commission on July 1, 2015. 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, and others to support the adoption and implementation of public policies and programs that advance energy efficiency.

## **1. Introductory Comments**

We congratulate Staff for their efforts to improve upon efficiency program processes and practices which are already some of the best in the nation. We are encouraged by many aspects of the BCA White Paper, and thank the Commission and Staff for the opportunity to comment. The subject of Benefit-Cost Analysis holds potential to heavily influence New York State's pending proliferation of distributed energy resources (DERs). As a regional energy efficiency organization, we offer our insights regarding (et.al.) approaches that have been taken in other jurisdictions which may inform the Commission's decisions moving forward.

While our comments focus specifically on cost-effectiveness determinations for investments in energy efficiency, many of the insights below are applicable to the broader range of DERs. Our greatest hope is that any Order related to the BCA White Paper, as well as New York State's broader Reforming the Energy Vision proceeding, will accurately embody the full range of DER costs and benefits, delivering on the goals of the Cuomo Administration and fulfilling the objectives of the recently published State Energy Plan.

## **2. The BCA Framework**

We offer comment on several aspects of the BCA Framework, including:

- (1) Principles of the BCA Framework;
- (2) Utility Implementation of the BCA Framework; and
- (3) Choice of Threshold Test.

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<sup>1</sup> These comments are offered by NEEP staff and do not necessarily represent the view of the NEEP Board of Directors, sponsors or partners.

## 2.2 Principles of the BCA Framework

The BCA White Paper outlines several guiding principles upon which to base the benefit-cost analysis. We suggest the addition of several principles to the BCA White Paper which are drawn from a recent publication of NEEP's Regional Evaluation, Measurement, and Verification Forum, which enjoys active participation from a number of New York stakeholders.<sup>2</sup> These principles also align with the National Efficiency Screening Project's Resource Value Framework.<sup>3</sup> Suggested additions to the principles section are included below:

- Account for New York State's energy policy goals, as articulated in legislation, commission orders, regulations, guidelines and other policy directives;
- Ensure that tests are applied symmetrically, where both relevant costs and relevant benefits are included in the screening analysis;
- Not exclude relevant benefits on the grounds that they are difficult to quantify and monetize; and
- Use a standard template to explicitly identify New York's energy policy goals and to document their assumptions and methodologies.<sup>4</sup>

## 2.1 Areas Where the Proposed BCA Framework Should be Employed

The BCA White Paper suggests that benefit-cost analyses performed for REV projects should "Report results of the Societal Cost Test (SCT), Utility Cost Test (UCT), and Rate Impact Measure (RIM),"<sup>5</sup> noting shortly thereafter that "the BCA Framework will provide the proposed components of value of DERs, and, where relevant, a consistent set of quantification methods to be used in [the Clean Energy Fund and Utility Energy Efficiency proceedings]."<sup>6</sup>

This language seems to indicate that the BCA structure outlined in any final order would apply to energy efficiency portfolios, but could be clearer about the timeline and application. For example, will the BCA framework only apply to energy efficiency strategies implemented as a component of DSIP plans? Or will the portfolios proposed by NYSEDA's Clean Energy Fund Information Supplement and the Utility Energy Efficiency Transition Implementation plans also be screened according to Staff's final whitepaper. We suggest further guidance on exactly how and when the BCA would apply to existing energy efficiency portfolios, and when.

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<sup>2</sup> NEEP. Regional Evaluation, Measurement, and Verification Forum. Cost Effectiveness Screening Principles and Guidelines for Alignment with Policy Goals, Non-Energy Impacts, Discount Rates, and Environmental Compliance Costs. November 2014. Page 9. Available at: [http://www.neep.org/sites/default/files/resources/Forum\\_C-E\\_Screening\\_Guidelines\\_Final\\_No\\_2014.pdf](http://www.neep.org/sites/default/files/resources/Forum_C-E_Screening_Guidelines_Final_No_2014.pdf)

<sup>3</sup> The National Efficiency Screening Project. The Resource Value Framework: Reforming Energy Efficiency Cost-Effectiveness Screening. (August 2014) Available at: <http://www.synapse-energy.com/sites/default/files/The%20Resource%20Value%20Framework%20Reforming%20EE%20Cost-Effectiveness%2014-027.pdf>

<sup>4</sup> A standardized efficiency screening reporting form is now being embraced by a number of states throughout the Northeast and Mid-Atlantic, and is available here: <http://www.neep.org/sites/default/files/resources/Cost%20Effectiveness%20Screening%20Template.pdf>

<sup>5</sup> New York State Department of Public Service. 14-M-0101. Staff White Paper on Benefit-Cost Analysis in the Reforming Energy Vision Proceeding. (July 2015) Page 3. Available at: [http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/\\$FILE/Staff\\_BCA\\_Whitepaper\\_Final.pdf](http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/$FILE/Staff_BCA_Whitepaper_Final.pdf)

<sup>6</sup> *id.* at 8.

### 2.3 Choice of Threshold Test

As mentioned above, the BCA White Paper outlines three tests against which to measure a portfolio's cost-effectiveness: the SCT; the UCT; and the RIM. If embracing the principles suggested above — which are derived from guidance developed by NEEP's EM&V Forum with input from New York stakeholders — the characteristics of the test most accurately assessing the costs and benefits of a given investment portfolio should become clear.

The societal cost test is an example of a screening mechanism that would accurately embody the full suite of costs and benefits desired by New York State's energy policy goals. For example, New York State law declares "It shall be the energy policy of the state to... obtain and maintain an adequate and continuous supply of safe, dependable and economical energy for the people of the state and to accelerate development and use within the state of renewable energy sources, all in order to promote the state's economic growth, to create employment within the state, to protect its environmental values and agricultural heritage, to husband its resources for future generations, and to promote the health and welfare of its people."<sup>7</sup>

The above language — which emphasizes the promotion of economic growth, creation of employment, protection of environmental values, and promoting public health and welfare — is indicative of the SCT, which includes the full costs and benefits of an investment as they are experienced by all members of society.<sup>8</sup> Conversely, the UTC, which considers only the costs and benefits that are experienced by a program administrator, could serve as a secondary indicator of where resources might be allocated to maximize returns on DERs and drive greater investment. An example of such a practice from a neighboring jurisdiction could be found in a recent Maryland Public Service Commission Order on cost-effectiveness screening, which adopted the SCT as the threshold screening test for whether a program qualified as cost-effective, but also chose to employ the Total Resource Cost (TRC) test as a secondary indicator of program effectiveness.<sup>9</sup>

We caution that the Commission carefully review the recommendation to screen energy efficiency portfolios using the RIM test because it includes the recovery of lost revenues as a cost, and focuses on rate impacts rather than bill impacts.<sup>10</sup> Accounting for sunken costs associated with lost revenues would provide an inaccurate investment screening because such costs would be incurred regardless of whether the future project is undertaken; they are not *new* costs resulting from the investment being considered.<sup>11</sup> Rather than examine investments through the lens of the RIM test, stakeholders could develop a bill impact analysis method to provide a more accurate accounting of how an initiative under the REV proceeding will impact customer bills, especially since investments in energy efficiency may increase *rates*, but *decrease customer bills*.<sup>12</sup>

### 3. Discount Rates and Utility Implementation of the BCA Framework

The BCA White Paper proposes "[T]hat the proper discount rate should be based on the utility weighted average cost of capital (WACC)," inviting comment on whether some other alternative method should be used.<sup>13</sup> We

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<sup>7</sup> N.Y. ENG. LAW § 3-101

<sup>8</sup> *Supra*, at note 2. Page 54.

<sup>9</sup> Maryland Public Service Commission. Order NO. 87082. (July 2015) Page 7. Available at:

[http://webapp.psc.state.md.us/Intranet/Casenum/NewIndex3\\_VOpenFile.cfm?ServerFilePath=C:\Casenum\9100-9199\9153\625.pdf](http://webapp.psc.state.md.us/Intranet/Casenum/NewIndex3_VOpenFile.cfm?ServerFilePath=C:\Casenum\9100-9199\9153\625.pdf);

<sup>10</sup> Advanced Energy Economy Institute. Benefit-Cost Analysis for Distributed Energy Resources: A Framework for Accounting for All Relevant Costs and Benefits. (September 2014) Page 16. Available at: <http://synapse-energy.com/sites/default/files/Final%20Report.pdf>

<sup>11</sup> *id.*

<sup>12</sup> See Generally, Synapse Energy Economics. Energy Efficiency: Rate, Bill, and Participation Impacts. (September 2013) Available at: <http://aceee.org/files/pdf/conferences/eeer/2013/5C-Woolf.pdf>

<sup>13</sup> New York State Department of Public Service. 14-M-0101. Staff White Paper on Benefit-Cost Analysis in the Reforming Energy Vision Proceeding. (July 2015) Page 10. Available at:

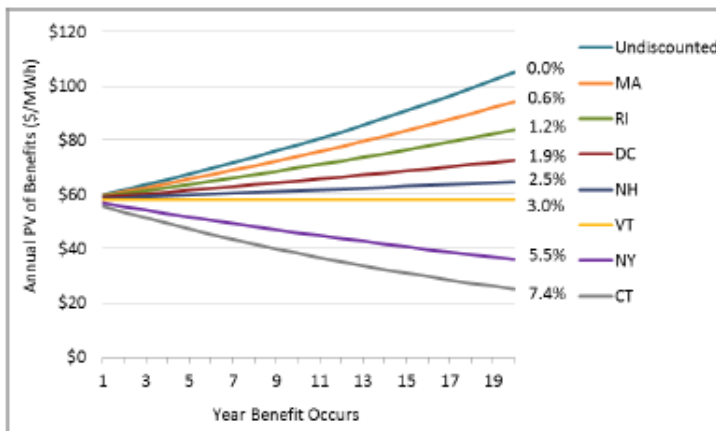
suggest that — in the case of energy efficiency investments — the WACC accounts for neither the source of funding nor the low risk nature of such investments and is not the appropriate discount rate for screening investment portfolios. To share best practices from states through our region and help guide regulators in their decision around choice of discount rate for energy efficiency portfolios, a sampling of energy efficiency portfolio discount rates from throughout the region is presented in the table below.

**Table 5.1: State Discount Rates Used in Energy Efficiency Benefit-Cost Analysis**

	Primary Test							
	UCT	Total Resource Cost Test					Societal Cost Test	
	CT	NY	NH	RI	MA	DE	VT	DC
Basis for Discount Rate	Utility WACC	Utility WACC	Prime Rate	Low-Risk 10 yr Treasury	Low-Risk 10 yr Treasury	Societal Treasury Rate	Societal	Societal 10 yr Treasury
Current Discount Rate (Real)	7.43%	5.50%	2.46%	1.15%	0.55%	TBD	3.00%	1.87%

Energy Efficiency programs in New York states are funded through a systems benefit charge, RGGI revenues, and a future energy efficiency cost tracker. These low-risk funding sources should result in a lower, risk-adjusted discount rate.<sup>14</sup> Investments in energy efficiency also carry less risk than investments in a similarly situated power plants because they protect against fuel volatility. While a utility’s weighted average cost of capital might provide for an appropriate discount rate when considering a power plant investment, it is debatable whether such a rate would accurately account for the risk profile of investment in energy efficiency.

As demonstrated by the chart below, the appropriate discount rate should also account for the time preference of those experiencing the costs and benefits associated with an investment.<sup>15</sup> A higher discount rate represents an emphasis on short term benefits over long term benefits and vice versa. In the case of energy efficiency portfolios regulated by a public utility commission, such portfolios are meant to distribute costs and benefits throughout society, and should be judged within this context.



[http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/\\$FILE/Staff\\_BCA\\_Whitepaper\\_Final.pdf](http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/$FILE/Staff_BCA_Whitepaper_Final.pdf)

<sup>14</sup> *Supra*, at note 2. Page 44.

<sup>15</sup> *Id.*

As exemplified by social constructs such as environmental regulations and social security, society as a whole often yields to a time preference which prioritizes long term benefits when it represents the greater good. We suggest that investments associated with energy efficiency represent this long-term greater good, and that this should be reflected in a discount rate based upon Long-Term Treasury Bonds, which are currently between 2.55 and 2.44 percent.<sup>16</sup>

Indeed, a choice of discount rate based on Long-Term Treasury Bonds would align with regional reporting methods. Stakeholders of the Regional Energy Efficiency Database — in which New York participates — have agreed to calculate regional levelized cost of saved energy using a Treasury bond-based discount rate of 2.46 percent for the purposes of reporting within the REED database.<sup>17</sup>

#### **4. Proposed Methodology for Valuing Benefits and Costs**

We offer comment on two of the suggested methodologies for Valuing Benefits and Costs below:

- (1) Avoided Energy Benefits (LBMP); and
- (2) Valuing Net Non-Energy Benefits

##### **4.1. Valuing Avoided Energy Benefits (LBMP)**

The BCA White Paper proposes that “use of energy price forecasts for the wholesale energy market—Location Based Marginal Prices (LBMP),” serve as a tool to forecast avoided bulk system energy costs. We applaud Staff’s embrace of location-based marginal pricing (LBMP) because such pricing holds potential to send market signals that will encourage DER siting in an economically efficient manner, targeting load reduction in the vicinity of constrained grid components. Regulators throughout the Northeast and Mid-Atlantic have already begun embracing policies to relieve grid constraints through the use of geo-targeting;<sup>18</sup> LBMP would provide clear advantages in this context.

We suggest Staff clarify details around the application of LBMP. For example, will all DERs — including customer-side energy efficiency measures — see wholesale pricing variations across the zonal, substation, feeder, transformer, or customer levels? In such a scenario, how would a program administrator’s service territory-wide upstream lighting incentive program function in relation to such variable cost-effectiveness inputs? Would an average LBMP from throughout a utility’s service territory be applied? Or alternatively, in order to reduce market confusion, would LBMP apply only to energy efficiency portfolios in the case of targeted DSIP projects specifically intended to relieve transmission and distribution grid constraints?

We suggest Staff provide further details around the above-mentioned wholesale price impact scenarios and the relation of energy efficiency portfolios to LBMP. It may be prudent to address the specific subject matter of

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<sup>16</sup> United States Department of the treasury. Daily Treasury Long Tern Rate Data. Available at: <http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=longtermrate>

<sup>17</sup> NEEP. Regional Energy Efficiency Database: Program Year 2012 Annual Report. (August 2014) Page 5. Available at: <http://www.neep.org/sites/default/files/resources/2012%20REED%20Annual%20Report.pdf>

<sup>18</sup> See Generally, NEEP. Energy Efficiency as a Transmission and Distribution Resource: Lessons from Recent U.S. Efforts to Use Geographically Targeted Efficiency Programs to Defer T&D Investments. (January 2015). Available at: [http://www.neep.org/sites/default/files/products/EMV-Forum-Geo-Targeting\\_Final\\_2015-01-20.pdf](http://www.neep.org/sites/default/files/products/EMV-Forum-Geo-Targeting_Final_2015-01-20.pdf)

LBMP and wholesale price impacts through a collaborative process that solicits input from many classes of stakeholders.

#### 4.2 Valuing Benefits: Net Non-Energy Benefits

The BCA White Paper addressed non-energy benefits such as employee productivity, health impacts, property values, and avoided arrearsages by suggesting that “such difficult-to-quantify costs and benefits not be monetized at this time.”<sup>19</sup> However, leading economists recognize that efficiency screening practices should not exclude relevant benefits on the grounds that they are difficult to quantify or monetize. As the Commission’s Order Adopting a Policy Framework and Implementation Plan states, “[L]ack of data associated with inputs, or the inability to quantify particular outcomes, does not mean that these do not represent real costs or real benefits.”<sup>20</sup>

Experience from throughout the region suggests that non-energy benefits can and should be monetized with the REV CBA Framework. As noted by Maryland regulators in last month’s decision on efficiency program cost-effectiveness, 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.”<sup>21</sup> Indeed, non-energy impacts such as reduced arrearsages, buffers against energy price increase, economic development, O&M cost, employee productivity, occupant comfort, and health and safety are real impacts that are experienced as a result of energy efficiency portfolios.

The above-mentioned non-energy impacts can be quantified in a number of ways, including: assignment of monetary values; use of proxies; use of alternative screening benchmarks; through regulatory judgment; or through a multi-attribute decision analysis (MADA). For further explanation of these quantification methods, we suggest review of the Regional Evaluation, Measurement, and Verification Forum’s Cost Effectiveness Screening Principles and Guidelines.<sup>22</sup> The chart below represents an overview how states within the region assign value to non-energy impacts, with direct quantification, cost adders, and alternative screening benchmarks being amongst the most popular tools. The chart below that represents the \$/household values assigned to non-energy impacts in three states which recently considered such metrics.

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<sup>19</sup> New York State Department of Public Service. 14-M-0101. Staff White Paper on Benefit-Cost Analysis in the Reforming Energy Vision Proceeding. (July 2015) Page 41. Available at: [http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/\\$FILE/Staff\\_BCA\\_Whitepaper\\_Final.pdf](http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/$FILE/Staff_BCA_Whitepaper_Final.pdf)

<sup>20</sup> New York State Public Service Commission. Case 14-M-0101. Order Adopting Regulatory Policy Framework and Implementation Plan. (February 2015) Page 123. Available at: <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b0b599d87-445b-4197-9815-24c27623a6a0%7d>

<sup>21</sup> Maryland Public Service Commission. Order NO. 87082. (July 2015) Page 13. Available at: [http://webapp.psc.state.md.us/Intranet/Casenum/NewIndex3\\_VOpenFile.cfm?ServerFilePath=C:\Casenum\9100-9199\9153\625.pdf](http://webapp.psc.state.md.us/Intranet/Casenum/NewIndex3_VOpenFile.cfm?ServerFilePath=C:\Casenum\9100-9199\9153\625.pdf); Citing, 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>

<sup>22</sup> *Supra*, at note 2, page 40.

**Table 3.3: Whether and How States Account for NEIs**

Primary Test State	UCT CT	Total Resource Cost Test					Societal Cost Test	
		MA	RI	NY	NH	DE	VT	DC
Utility-Perspective NEIs		Quantified	Quantified				15% Adder	
Low-Income / Economic Development	Alt. Benchmark	Quantified	Quantified	Alt. Benchmark	Alt. Benchmark		30% Adder	10% Adder
Improved Operations		Quantified	Quantified	Alt. Benchmark			O&M Quantified	O&M Quantified
Comfort		Quantified	Quantified				15% Adder	10% Adder
Health & Safety		Quantified	Quantified				15% Adder	10% Adder
Home Improvements		Quantified	Quantified				15% Adder	10% Adder
Participant's Utility Savings		Quantified	Quantified				15% Adder	10% Adder
Education and Contributions							15% Adder	10% Adder
Other Participant-Perspective							15% Adder	10% Adder
Societal-Perspective NEIs			Quantified				15% Adder	10% Adder

A blank cell indicates that the state does not account for this type of NEI. Source Synapse 2013.

**Table B.3: NEI Values in Massachusetts & Rhode Island, and Maryland (proposed) (\$ per household)**

Perspective / NEI Category	Maryland (SERA 2014)		Massachusetts Dollar Range	Rhode Island Dollar Range		Average Across All NEIs
	Dollar Range	Typical Value		Dollar Range	Dollar Range	
<b>Utility-Perspective</b>						
Financial and Accounting	\$2.55 - \$25.00	\$9.70	\$2.61 - \$39.90	\$2.61 - \$3.74		\$13
Customer Service	\$0.10 - \$8.50	\$3.25	\$0.34 - \$8.43	\$0.34 - \$8.43		\$4
Other Utility Impacts	\$0.13 - \$2.60	\$1.40	na - na	na - na		\$1
<b>Participant-Perspective</b>						
Participant's Utility Savings	\$0.27 - \$36.70	\$3.60	na - na	na - na		\$18
Low-Income / Economic Development	\$0 - \$115	\$75	na - na	na - na		\$58
Improved Operations	\$26 - \$127	\$82	\$0.96 - \$124	\$0.96 - \$102.40		\$64
Comfort	\$26 - \$105	\$69	\$31 - \$125	\$1.42 - \$125		\$69
Health & Safety	\$3.02 - \$100.50	\$16.50	\$4 - \$45	\$0.13 - \$45		\$33
Education and Contributions	\$26.25 - \$177.00	\$89.75	na - na	na - na		\$102
Home Improvements	\$10.50 - \$77	\$36	\$17* - \$1,998*	\$0.32* - \$678.52*		\$464
Other Participant-Perspective	\$0 - \$4	\$0	na - na	-\$0.015 per kWh saved		\$2
<b>Societal-Perspective</b>						
Economic Development	\$8 - \$340	\$115	na - na	\$0.39 per kWh saved*		\$116
Environmental / Emissions	\$3 - \$180	\$60	na - na	na - na		\$92
Health Care / Health & Safety	\$0 - \$0.30	\$0	na - na	\$0 - \$172.53*		\$58
Tax Impacts	na - na	na	na - na	na - na		n/a
National Security	na - na	na	na - na	\$1.83 per MMBtu oil saved		n/a
Other Societal-Perspective NEIs	na - na	na	na - na	na - na		n/a

\*Indicates a one-time benefit, not an annual benefit that accrues for the duration of a measure's lifetime.

Dollar values are per house hold per year.

The Massachusetts values are based on the 2013 Technical Reference Manuals. The Rhode Island values are based on the 2014 Technical Reference Manual.

## Conclusion

NEEP commends Staff and the Commission for their continuing support of energy efficiency in the Empire State. It is our belief that continued coordination between Staff, NYSERDA, utilities, and other relevant stakeholders on the issue of benefit cost analysis can help grow the economic engine that is energy efficiency and deliver savings to ratepayers for decades to come.

Please accept these comments in the spirit they are intended: to aid the Commission, and ultimately the people of New York, in securing a more affordable, reliable, cleaner and sustainable energy future.

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