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

Natural Resources Defense Council

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Natural Resources Defense Council

Comments to New York State Department of Public Service

Benefit Cost Analysis White Paper

Case 14-M-0101

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I. Introduction and Summary

On August 14, 2015, the Natural Resources Defense Council ("NRDC") provided comments ("August 14 comments") on the New York State Department of Public Services' ("DPS" or "Staff") 2015 Reforming the Energy Vision ("REV") Benefit Cost Analysis White Paper ("BCA"), filed on July 1, 2015, in Case 14-M-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision ("REV Proceeding"). NRDC appreciates the opportunity to provide reply comments on other parties' submissions regarding the BCA in this proceeding.

NRDC notes that the diversity of distributed energy resources ("DERs"), and the rapidly evolving nature of related DER and distribution system platform markets and technologies, indicate that implementation of the BCA will be complex and challenging. Therefore, NRDC provides reply comments in keeping with the following principles: (a) the Public Service Commission ("PSC" or "Commission") should emphasize simplicity where possible and appropriate; (b) consistent BCA handbooks will be helpful and can promote consistency and transparency; and (c) stakeholder engagement will be critical.

A large number of issues were raised in other parties' comments on the BCA framework. NRDC has identified those that will likely have the most significant impact on the results of the BCA, and is focusing on those issues in these comments. Specifically, these comments focus on the following:

- The utilities should never use the Ratepayer Impact Measure ("RIM") test to evaluate the cost-effectiveness of DER, because it is misleading and does not provide the Commission with the necessary information to address equity issues.

- Instead, to the extent that rate impacts are a concern, utilities should conduct high-level bill impact analyses to identify the long-term bill impacts of DER scenarios. Importantly, utilities should also collect and provide information regarding the extent to which customers implement, and do not implement, DER resources in order to determine what percentage of customers are benefitting from DER. This information should then be used to increase participation rates in order to address equity issues.
- The Total Resource Cost ("TRC") test should not be used to screen DER, because it is unnecessary if the Societal Cost test and the Utility Cost test are used.
- The BCA should use the societal discount rate for the BCA framework, for both the Societal Cost test and the Utility Cost test, because only this discount rate will give appropriate weight to the future costs and benefits of DER.
- Externalities will have a significant impact on the Societal Cost test, and they represent an important policy goal for New York State. Most importantly, the utilities should use the social cost of carbon developed by the US Environmental Protection Agency ("EPA") to represent the value of avoiding CO_2 emissions when applying the Societal Cost test.
- Employment impacts will have a large impact on the Societal Cost test, and they represent an important policy goal for New York State. While estimates of net employment impacts can be complicated and challenging, it is possible to simplify the analysis by using employment multipliers to different types of DER.
- In order to make the modeling of NEBs feasible, the PSC, in conjunction with the utilities and the New York State Research and Development Authority

("NYSERDA"), should estimate monetary values or proxies for high-priority NEBs, employment, public health and safety and environmental benefits.

- Screening by measure is impractical and unnecessary, and this should not be incorporated into the BCA framework; instead, screening should be done at the portfolio level.
- Wholesale market price effects represent real benefits that can reduce revenue requirements, and therefore should be included in the Utility Cost test.
- The details of the BCA framework and the inputs and the assumptions used should be developed through coordination among the Commission, Staff, the utilities, NYSERDA, and other stakeholders.
- The initial implementation of the BCA in the utilities' distributed system implementation plans ("DSIPs") will be challenging, but very important. We recommend that the PSC require only one utility to go first in order to ensure that critical elements of the BCA are implemented correctly and to keep the process manageable. This first implementation will set an important precedent for other utilities to learn from and follow.
- Further, we recommend that while developing DSIP plan guidance, Staff and the Commission also develop a framework, with specific criteria, that enables regulators and stakeholders to evaluate the quality of utility DSIP plans. This will help ensure that DSIPs lead to intended outcomes.

II. The Ratepayer Impact Measure Test

NRDC's August 14 comments argued that the RIM test should not be used. The RIM test suffers from several fundamental flaws: (a) it effectively attributes lost revenues to the

alternative policy case, even though these costs are incurred in the business-as-usual case as well as in the alternative policy case; (b) it provides no information about the impact on bills (or rates) or on the distribution of those bill impacts; and (c) it can lead to the rejection of DERs that could significantly reduce utility system costs in order to avoid what may be insignificant impacts on customers' rates. For these reasons, the RIM test should never be used for the purpose of deciding whether to spend ratepayer money on any particular DER.

NRDC notes that many of the other parties in this proceeding also expressed opposition to or concern with using the RIM test (e.g., Advanced Energy Economy Institute ("AEEI") p. 2, Alliance for Solar Choice p. 6, Environmental Defense Fund p. 4 - 5, Nature Conservancy p. 5, Northeast Energy Efficiency Partnerships ("NEEP") p. 3, and NYU Institute for Policy Integrity p. 4). PSEG Long Island notes that application of the RIM test would result in little to no investment in energy efficiency.[1] (p. 2) NRDC agrees. Because of the flawed design of the RIM test, using this test as a screen would result in very little new investment in DER in New York State – an outcome contrary to the very goals of the NY REV initiative.

Only two sets of comments indicated support for using the RIM test. AARP and PULP maintain that the RIM test should be used as a way to put "a check on open-ended investments with a narrow scope of benefits" and that "this is particularly important where only a certain set of customers is likely to benefit, the societal benefits could be achieved without the utility program, and the investment would render bills for the average consumer that are less affordable." (AARP and PULP, p. 4) Multiple Intervenors argue that the most important BCA test is the RIM test, and that barring extraordinary circumstances, investments that fail the RIM test should be rejected. (Multiple Intervenors, p. 6) It appears that the proponents of the RIM test

[1] PSEG Long Island does indicate support for using the RIM test, despite this observation.

are concerned about potential bill impacts. These are legitimate concerns that NRDC shares and agrees should be investigated. However, the RIM test will not provide the information necessary to identify such problems, and it is likely to mislead policymakers rather than inform the process. A much better alternative is for utilities to conduct high-level bill impact analyses and analyze customer participation levels, as discussed below.

III. Bill Impacts and Customer Equity

NRDC's August 14 comments recommended that, instead of using the RIM test, utilities should be required to conduct a long-term bill impact analysis. In addition, utilities should also collect and provide information regarding customer participation rates. Participation rates will identify the extent to which customers implement DER resources, and will help to determine what percentage of customers are, and are not, benefitting from DER. This information should then be used to assess equity issues and to increase participation rates.

Several parties, including AARP and PULP (p. 2), the City of New York (p. 6 – 7, 15), and PosiGen (p. 4 – 5), also expressed concern with the distribution of benefits in their comments. PosiGen notes that low-to moderate income ("LMI") communities are likely paying a disproportionately high amount of money for energy bills, and that mitigating those costs is a quantifiable benefit with wide-reaching economic impacts. (PosiGen, p. 4 - 5).

NRDC agrees that emphasis should be placed on maximizing overall participation in DER, including utility initiatives aimed at serving hard-to-reach customers with DER, which should maximize DER's benefits for all customers. Finally, NRDC notes that the best approach to begin evaluating distributional equity is a review of participation rates. A very detailed review can be complex and data-intensive, particularly when applied to numerous possible DER investment scenarios. Instead, high-level review of participation rates can provide useful

information and be readily implemented alongside the BCA framework. For this reason, NRDC recommends that such customer participation analyses be kept simple, to begin, and that outcomes be reviewed over time to ensure that policy and equity goals are met.

IV. Total Resource Cost Test

NRDC supports use of the Societal Cost test as the primary test. Many other parties also expressed support for using the Societal Cost test in their comments, including AEEI (p. 2), Environmental Defense Fund (p. 5), Nature Conservancy (p. 5), NYU Institute for Policy Integrity (p. 4), and Vote Solar (p. 2).

In their comments, the Alliance for Solar Choice and PSEG Long Island indicated that the TRC test should be used. (Alliance for Solar Choice p. 5 - 6, PSEG Long Island p. 2). PSEG Long Island indicated that the TRC "has transparent and readily-quantifiable values for benefits and costs of both the utility and the customer." (p. 2) NRDC disagrees with using the TRC test for screening DER. The TRC test is identical to the Utility Cost test (representing the perspective of all ratepayers), except that the TRC test incorporates participant costs. However, the TRC test alone rarely adequately accounts for NEBs that accrue to DER participants. The TRC test is not necessary to screen DER when the Societal Cost and Utility Cost tests are used.

It is also important to note that customers generally only participate in programs if it makes sense for them to do so, and customers have a choice whether to participate in DER programs. In contrast, customers and society generally have much less input into resource decisions, and thus the Societal Cost and Utility Cost tests provide important information regarding societal and customer impacts that is simply not needed for individual participants.

Finally, NRDC submits that the Utility Test and the Societal Cost test present a broad range of perspectives, rendering the results of the TRC test unnecessary and redundant.

V. Discount Rate

In its August 14 comments, NRDC agreed with the Staff's recommendation that a single discount rate be used for all the BCA metrics (both the Utility Cost test and the Societal Cost test) but put forth a recommendation that a societal discount rate be used instead of the weighted average cost of capital ("WACC"). A societal discount rate is more appropriate because (a) resource planning decisions are being made on behalf of all customers; and (b) the resource planning decisions should meet the key regulatory goals of REV. If the discount rate is not aligned with these two points, then the resource decisions will not be in customers' best interests and will not meet the key regulatory goals.

Further, NRDC argued that the BCA discount rate should be based on the time preference that reflects the interests of all utility customers as a whole and that is consistent with New York's key regulatory goals. The societal discount rate is best able to reflect the value of short- versus long-term costs and benefits to all utility customers, as well as the time preference associated with the state's energy policy goals and is consistent with the discount rate used by the EPA in the social cost of carbon.

In their comments, a vast majority of parties (including Acadia p. 2, AEEI p. 2, Citizens' Environmental Coalition p. 8, Citizens for Local Power p. 2, Department of Environmental Conservation p. 4, Environmental Defense Fund p. 14 - 15, Nature Conservancy p. 6, NEEP p. 4 - 5, NYU Institute for Policy Integrity p. 7, Peak Power p. 3, and Vote Solar p. 2) agreed that the societal discount rate or a long term U.S. Treasury bond interest rate (i.e., 3% or less) should be used. Generally, these parties recommended using this discount rate at least for the Societal Cost test. The Alliance for Solar Choice recommends using the TRC but also recommends using the societal discount rate (Alliance for Solar Choice p. 5 - 8).

A minority of parties (Exelon, p. 19, and PSEG Long Island, p. 3) supported the use of the WACC for evaluating projects.[2] Multiple Intervenors indicated that evaluations of costs and benefits should be weighted in favor of near term costs/benefits, in recognition of the unreliability of long-term projections. (Multiple Intervenors, p. 4 - 5) However, this approach is misguided. While it is true that long-term projections are uncertain, the use of a societal discount rate does recognize this by discounting future costs, and at a rate that is a better reflection of the time preference of customers.

VI. Externalities

NRDC's August 14 comments recommended that the value of environmental externalities be quantified using the Staff White Paper's Approach #2, which is based upon the EPA's social cost of carbon.

Many parties—including AEEI (p. 3), Alliance for Solar Choice (p. 15), Clean Coalition (p. 2), Dept. of Environmental Conservation (p. 6), Nature Conservancy (p. 7), NY Battery and Energy Storage Technology Consortium (p. 12), NY Geothermal Energy Organization (p. 4), NYU Institute for Policy Integrity (with modifications, p. 10 – 27), and Vote Solar (p. 2)[3]—expressed support for Approach #2 to valuing emissions externalities. Peak Power indicated that the Regional Greenhouse Gas Initiative undervalues the cost of carbon. (Peak Power p. 8) In contrast, Exelon, the joint utilities, and PSEG Long Island support Approach #1 to addressing externalities. (Exelon, p. 17, Joint Utilities, pg. 22, PSEG Long Island, p. 4) Multiple Intervenors took the position that environmental externalities should not be incorporated into the BCA, because such externalities are difficult to quantify, are already incorporated through New York's

[2] Although maintaining that the societal discount rate makes more sense for the Societal Cost test, Peak Power indicated that the WACC makes sense for the Utility Cost and Ratepayer Impact Measure test. (Peak Power p. 3)
[3] Environmental Defense Fund supports approaches 1 and 2 for valuing externalities, and notes that these approaches need not be mutually exclusive. (Environmental Defense Fund, p. 6)

stringent environmental regulations, would be expensive to incorporate into the BCA, and could have negative impacts on customers. (Multiple Intervenors, p. 10 - 12)

NRDC argues that Approach #1, which reflects the market price of purchasing emission allowances, should not be used to estimate environmental externalities associated with CO_2 because it does not reflect external costs. Rather, it reflects environmental compliance costs that are already internalized by the utility. NRDC reiterates its support for Approach #2, because this approach is better aligned with New York State's policy goals. Moreover, it will have a significant impact on the Societal Cost test. To simplify the process, while still capturing the most significant externality, the BCA should use the EPA's social cost of carbon.

In addition to accounting for CO_2, NO_x and SO_2, NRDC encourages the Commission to consider the full range of criteria pollutants and other toxic pollutants, as recommended by a number of other parties. Additional pollutants to account for include: particulate matter, volatile organic compounds, methane, and formaldehyde (Citizens' Environmental Coalition, Dept. of Environmental Conservation, Peak Power p. 8, Sustainable Otsego). NRDC also agrees with Peak Power and other parties that CO_2 should not be the only greenhouse gas considered. (Peak Power, p. 8) However, in order to make the modeling feasible, the PSC may have to identify up front the externalities that are most important, especially CO_2 impacts, and add the value of other avoided emissions to the modeling over time as additional information comes to light.

VII. Employment impacts

The Alliance for Solar Choice and Clean Coalition support recognizing the employment benefits associated with a heavy reliance on renewable distributed generation. (Alliance for Solar Choice p. 18, Clean Coalition, p. 6)

NRDC agrees that employment impacts of DER are a significant impact that should be accounted for in the Societal Cost test. In addition, increased employment represents an important policy goal for New York State. Including employment impacts does not have to be complicated; using employment multipliers by types of DER can simplify the analysis.

VIII. Non-Energy Benefits

NRDC's August 14 comments held that NEBs should be accounted for in the BCA framework. These benefits can be very large for some DERs (particularly those NEBs that accrue to program participants) and can have a significant impact on the results of the Societal Cost test. Further, NRDC agreed with Staff that it is better to account for some NEBs qualitatively when quantitative data are not available than to ignore these benefits altogether, but expressed concern that accounting for NEBs qualitatively will not be practical when evaluating multiple different types of DER, in numerous different combinations and in multiple scenarios. Instead, NRDC recommended that the Commission require the utilities to work together and with NYSERDA to (a) identify those NEBs that are most important for planning purposes; (b) to estimate monetary values for those NEBs where it is possible to do so; and (c) develop proxies for those priority NEBs where monetary values are not available.

Many parties—including AEEI (p. 3), AGREE (p. 2), Citizens' Environmental Coalition (p. 4), Environmental Defense Fund (p. 12), Nature Conservancy (p. 7), Northeast Clean Heat and Power Initiative (p. 2 - 5), NEEP (p. 6), NYU Institute for Policy Integrity (p. 10), and Vote Solar (p. 3)—expressed support for putting more effort into quantifying and including societal/social, health and public safety, and environmental costs and benefits into the BCA (e.g., health benefits, avoided sick days for workers, reduced fuel price risk, reduced electric price risk,

distribution system voltage management and power factor improvement and avoided T&D investments for resiliency enhancement).

NRDC generally agrees that NEBs can be significant and should be quantified and included in the BCA wherever possible. This should, in the first instance, include the employment, public health and safety and environmental benefits described above. Further, NRDC wishes to emphasize that the BCA process should not be static—over time, more benefits can and should be quantified and included as additional information becomes available.

IX. Portfolio Level Screening is Appropriate

In their joint comments, AARP and PULP argued that portfolio-based assessment (rather than individual measure assessments) may result in uneconomic investments. AARP argues that this is acceptable if investments that would be uneconomic alone become cost-effective in tandem with other projects, but should not be used to hide uneconomic investments. (AARP and PULP, p. 3) Likewise, Multiple Intervenors also support applying the BCA on an individual measure and project basis, except when a portfolio basis is necessary to recognize synergies between projects. (Multiple Intervenors, p. 3 - 4)

NRDC disagrees. Measure level screening is impractical and burdensome, and with portfolio level BCA, it is unnecessary. Cost effectiveness testing at the portfolio level will ensure that, on average, projects are providing net benefits to society and ratepayers, and that projects can equitably address hard to reach markets, like the LMI market. In addition, it is important to note that much of the program cost is associated with marketing, program implementation, and other up-front activities. These costs are sunk by the time the individual project would be screened, and therefore it is better to screen at the program or portfolio level.

X. Wholesale Market Price Impacts

Exelon maintained that alleged price suppression effects should not be classified as a benefit under the Societal Cost test, the RIM test or the Utility Cost test. (Exelon, p. 16) The City of New York argued that calculation of wholesale market price benefits is speculative at best. (City of New York, p. 11) In contrast, AEEI argued that, properly assessed, the wholesale market price impacts of DER will be significant and should be included as benefits (AEEI p. 2) Environmental Defense Fund expressed support for option two for estimation of wholesale market price effects, but asked that Staff study the decay of price suppression effects over a longer period than 3 years, and select a phase-out period based on this study. (Environmental Defense Fund, p. 13) Vote Solar indicated that the BCA should consider price suppression effects for wholesale capacity markets, as well as wholesale energy markets. (Vote Solar, p. 4)

NRDC maintains that both wholesale energy and capacity market price impacts are real benefits that can reduce revenue requirements, and therefore should be included in the Utility Cost test. These impacts have been carefully studied in other jurisdictions, such as in New England through the Avoided Energy Supply Costs (AESC) working group. The AESC working group has released several reports over the years, generally finding significant demand reduction induced price effects that persist for several years.[4]

XI. The BCA Process

In its August 14 comments, NRDC argued that the BCA framework (including costs and benefits, analytical methodologies, assumptions and inputs) should be transparent and consistent

[4] AESC 2011 estimated an energy DRIPE effect where a MWh reduction in load (about 0.007% of ISO average load) results in about 0.007% reduction in prices in other zones (a ratio of 1.0), and about 0.010% to 0.022% in the zone with the reduction (ratios of 1.4 to 3.1). The AESC 2011 assumes capacity DRIPE dissipates over 11 years, and energy DRIPE dissipates over 12 years. (http://www.mass.gov/eea/docs/dpu/energy-efficiency/avoided-energy-supply-costs-in-new-england/2011-avoided-cost-study-report.pdf) Other AESC studies are available here: http://www.mass.gov/eea/energy-utilities-clean-tech/energy-efficiency/utility-regs/energy-efficiency-activities/avoided-energy-supply-cost/avoided-energy-supply-cost-studies/.

across all utilities that will be using it in all applications. NRDC recommended that the utilities coordinate with Staff, the Commission, NYSERDA, and other stakeholders in developing the details of the framework and the inputs and the assumptions used in the BCA framework. A BCA Handbook can be used to clarify many important elements of the BCA – before the utilities conduct their analyses and present them to the Commission for review. This will make for a much more efficient planning process, a more efficient regulatory review, and a much quicker path to implementing DER.

In their comments, many parties expressed support for transparency of the process of developing the BCA, assumptions, and manual, including allowing opportunity for stakeholder input. A number of parties supported a consistent approach to implementing the BCA (AEEI p. 2, Alliance for Solar Choice p. 5, Citizens' Environmental Coalition p. 2, Nature Conservancy p. 3, Northeast Clean Heat and Power Initiative p. 3, and New York City p. 6). Utility handbooks should be as consistent as possible across utilities, to make commenting as simple and efficient as possible. Developing a utility handbook template would ease this process. (Alliance for Solar Choice p. 5)

NRDC agrees that the first time through will be challenging, but also very important in terms of laying a foundation for the other utilities. Thus NRDC proposes that one utility go through the DSIP process first.

NRDC acknowledges that no two utility DSIPs will be exactly alike, and they will each have relative strengths and weaknesses on a range of factors, including but not limited to technology and platform design, transparency, goal and milestone setting, cost benefit, business planning, and analytical quality. Thus it is critical that, while developing DSIP plan guidance, Staff and the Commission also develop a framework, with specific criteria, that enables

regulators and stakeholders to evaluate the quality of utility DSIP plans. This will help ensure that DSIPs lead to intended outcomes. In an instructive example, Great Britain's Office of Gas and Electricity Markets has done significant work on distribution system plan assessment as a key part of well-justified business plan development under the revenue = incentives + innovation + outputs regulatory framework.

XII. Conclusion

NRDC thanks the Commission and Commission Staff once again for this opportunity to provide reply comments on the BCA White Paper. We note that there is considerable party consensus that: (1) the RIM test should never be used to evaluate the long-term bill impacts of DER; (2) the TRC is not appropriate for screening DER; (3) the societal discount rate is appropriate for the BCA; (4) the EPA social cost of carbon should be used; (5) handbooks must be consistent; (6) NEBs, including employment impacts, should be included (directly where possible or by proxy); and (7) wholesale market prices should be included in the Utility Cost test.

Further, we ask that the PSC emphasize simplicity where appropriate and continuously provide opportunities for stakeholder engagement. To this end, we ask that one utility enter the DSIP process first, and that the commission develop an evaluation framework for DSIP plans. Plans should be made for the immediate implementation of a bill impact analysis and the evaluation of DER customer participation rates. This will assist the Commission, Staff, and stakeholders in effectively engaging in the continued development of the BCA and the DSIP process.

Respectfully submitted,

[Signatures to Follow]

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