



Battery and Energy Storage Technology Consortium, Inc.

VIA ELECTRONIC FILING

August 29, 2016

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

Re: CASE 16-M-0412 – In the Matter of Benefit Cost Analysis Handbooks

Dear Secretary Burgess:

The New York Battery and Energy Storage Technology Consortium (NY-BEST) appreciates the opportunity to provide initial comments the Benefit-Cost Analysis (BCA) Handbooks submitted by the utilities as required by Commission Order in the Reforming the Energy Vision (REV) Proceeding.¹

NY-BEST is a not-for-profit industry trade association that serves as the voice of the energy storage industry for more than 150 member organizations on matters related to advanced batteries and energy storage technologies. Our membership covers the full span of activities related to research, development, production and deployment of energy storage devices, and currently includes organizations ranging in size from small start-up companies to global corporations, leading research institutions and universities, national labs and numerous companies involved in the electricity and transportation sectors.

Our mission is to catalyze and grow the energy storage industry and establish New York State as a global leader in energy storage.

General Comments on BCA Handbooks

NY-BEST believes that the BCA Handbooks are a critical link to fulfilling the State's energy goals and the vision set forth by the Commission in the REV Order. NY-BEST has reviewed the BCA Handbooks and while we appreciate the effort the utilities have put into these documents, we believe that they must be strengthened in a number of ways to better ensure that the Handbooks support the goals of REV and allow for greater integration of

¹ Case 14-M-0101, Reforming the Energy Vision, Order Establishing the Benefit-Cost Analysis Framework (issued January 21, 2016)



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DERs, including a host of energy storage technologies. Our comments below summarize our concerns with all of the BCA Handbooks submitted to date.

1. Handbooks Lack Sufficient Transparency and Detail

NY-BEST's believes that the BCA Handbooks as proposed are too broad and do not provide sufficient detailed methodologies specifying how the framework will be applied. As an organization focused on providing energy storage solutions for the grid, NY-BEST believes that the BCA Handbooks, as presented, do not afford the industry a clear understanding of how DERs, such as storage, will be evaluated by utilities. More transparency and clarity into the BCA evaluation process is clearly essential to create a vibrant and sustainable market.

Specific examples of the need for more clarity include those areas where the BCA Handbooks state that utilities will rely primarily on qualitative assessments. While we recognize that there will likely be a number of areas where some level of qualitative assessments must be employed due to insufficient data or lack of accepted quantitative methodologies, NY-BEST urges a more robust description of the specific factors that will be considered in these qualitative assessments.

2. Handbooks must be amended to explicitly include Energy Storage

NY-BEST is extremely concerned that the BCA Handbooks do not include an energy storage example and we urge the DPS staff and the Commission to require the Handbooks be amended to include an energy storage example or examples that reflect the different use cases for energy storage technologies. We further suggest that an additional example of solar combined with energy storage would be ideal for illustrating resource combinations that provide synergies (i.e., provide greater total net benefits when combined in a portfolio than the sum of their net benefits when considered separately.)

To support this request, we refer to the BCA Framework which clearly requires the utilities to include a portfolio of "illustrative examples"² and "explicitly value

² Ibid, p. 31



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different resources types”³. The BCA Framework states “effectively assessing the benefits of DER requires accurately assessing the amount of energy, capacity, and other benefits those resources provide, and how often, when, and where they will be provided. The BCA Handbooks shall detail a methodology that : 1) characterizes the DER resource profiles, 2) determine to what degree those resources reduce energy or capacity or ancillary service needs.”

To comply with the BCA Framework and create a more useful guide for the energy storage industry, NY-BEST strongly urges the explicit inclusion of energy storage in the Handbooks.

3. Benefits are not sufficiently captured

In a number of areas, the full benefits of DERs and particularly storage are not accounted for in the BCA Handbooks and NY-BEST urges changes in the Handbooks to more explicitly and clearly account for these benefits. The most notable instances include the following:

a. Accounting for Benefits at Wholesale Level

DERs such as storage are able to provide additional values to wholesale markets, including the capacity and ancillary service markets. The BCA Handbooks do not advance a precise calculation of such values and do not reflect accurate valuation and compensation of DERs.

b. Ancillary Services

The Handbooks suggest the value of ancillary services at the bulk level from DERs should be zero for nearly all cases and would be determined primarily qualitatively at the distribution system level. NY-BEST disagrees with this assessment. As stated in the BCA Framework:

Required ancillary services, including spinning reserve, frequency regulation, voltage support and VAR support would be reduced if generators could more closely follow load. Certain projects will enable the grid operator to require a lower level of ancillary services or to purchase ancillary

³ Ibd, p.31



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services from sources other than conventional generators at a reduced cost without sacrificing reliability.... The Avoided Ancillary Services benefits are likely to be highly project-specific, and methods for their valuation shall be included in utility DSIPs and BCA Handbooks.⁴

Energy storage is able to provide a host of ancillary services and the benefits provided should be fully captured in the BCA Handbooks. These services include frequency regulation, spinning reserves and additional firming to the bulk energy system. When used as a dispatchable DER, energy storage can provide tremendous benefits over traditional generation. Distributed storage can be used to provide substation and bulk system level benefits with potentially as much or more value than the feeder level benefits.

Importantly, DERs such as storage also provide distribution level ancillary services. Storage can provide frequency-regulation services, dispatching or absorbing power as needed. Storage can also provide power quality, voltage support, and reliability and resiliency functions, back-up power and fast-response regulation services. NY-BEST believes these benefits are quantifiable and should be incorporated in the Handbooks.

c. Transmission and Distribution Losses

The BCA Handbooks state that losses are already accounted in LBMP and AGCC and that the benefit will be zero unless an engineering study determines otherwise. NY-BEST disagrees with this assessment and notes that energy storage offers many additional unaccounted benefits at both the transmission and distribution system levels. For example, large scale energy storage when used to shift load from peak to off peak periods can reduce T&D losses and this reduction can be calculated.⁵

NY-BEST also believes that evaluating losses solely at the system level is insufficient. A more granular temporal and localized approach should also be adopted. Further, the average loss percent and peak loss percent should not be assumed to be equal. The value of avoided losses is, in fact, largest during the peak hours when the electrical system is utilized most and power flows across the lines are at their highest. As a result, losses should vary based on peak loading on the system and

⁴ BCA Framework, Appendix C, p. 7

⁵ See "Load Leveling Reduces T&D Lines Losses", Ali Nourai, V.I. Kogan and Chris Schafer, IEEE Journal 2008
NY-BEST -1450 Western Avenue, Suite 101-Albany, New York 12203 | www.ny-best.org |
info@ny-best.org | 518-694-8474



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avoided losses from DERs should correspond to the time during which those services are provided.

Further, it should be noted that the values proposed in the BCA Handbooks are taken from out of date material (i.e. Con Edison uses a 2007 Electric System Losses Study, NYSEG and RG&E from a 2008 study for Case 08-E-0751, Niagara Mohawk d/b/a National Grid from a 2008 Study Case 08-E-0751), and may undervalue the losses in different parts of the systems.

d. Other Distribution Benefits

NY-BEST has additional concerns with the methodologies or lack of methodologies proposed for:

- distribution capacity;
- avoided O&M;
- voltage/VAR;

DERs, such as storage, can reduce demand on the distribution system, manage load and help extend equipment life. This in turn avoids or defers expensive system upgrades. This attribute is not recognized in the BCA Handbook and should be incorporated.

Importantly, when storage is sited on the consumer side of the meter, it can provide all or some of the immediate consumer power needs and can also be used by the system to **reduce demand** or **increase supply** OR to **increase demand** (in response to over-generation conditions) or **decrease supply** (reducing the amount of distributed generation exported to the grid). These services can be quantified and should be valued and incorporated in the Handbooks.

DERs, such as storage also are capable of providing voltage and reactive power support, help maintain the stability of the grid and avoid other costly infrastructure investments. These benefits are not currently well represented in the BCA Handbooks.

e. Reliability and Resiliency



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NY-BEST has concerns with the methodologies or lack of methodologies proposed in the BCA Handbooks in relation to reliability and resiliency. We suggest that more analysis is needed to better capture and incorporate values associated with the following:

- Net Avoided Outage Costs
- Net Avoided Restoration Costs
- Avoided Operations and Maintenance (O&M)

DERs such as storage are able to provide back-up power, and improve reliability and resiliency during major potential outages. We would suggest that the value of reliability should be based upon the value of lost load, and not based on the retail price of electricity at the connection point. We note that utilities use value of lost load and net avoided outage costs in evaluating reliability investments in rate cases, and we suggest that similar approaches should be used for customer investments.

The BCA Handbooks state that avoided restoration costs would not be quantified. NY-BEST believes additional analysis is needed to support this. Similarly, NY-BEST does not agree that the value of avoided O&M should be zero and we also suggest that further analysis is required to understand how DERs can impact O&M.

f. External Benefits

The BCA Handbooks state that the NO_x and SO₂ benefits are captured by the Locational Based Marginal Price (LBMP) as internalized costs imposed through cap and trade programs. NY-BEST agrees with several other parties that this is not a sufficient measure of the true value of the externality because it does not take into account the actual health and environmental impacts. Air pollutants like NO_x, SO₂ and other fine particulates, which contribute to ozone levels, asthma and other respiratory illnesses, have environmental and public health impacts that are highly localized. This makes them different from greenhouse gases (GHGs) like carbon dioxide, whose effects are widely dispersed. As a result, the BCA Handbooks should more fully consider and quantify local air pollution and human health impacts.

NY-BEST also believes that water and land impacts can and should be quantified in the BCA Handbooks.



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Conclusion

NY-BEST appreciates the efforts of the utilities in preparing the BCA Handbooks. We view the BCA Handbooks as a critical component of REV and to achieving the State's energy goals. We similarly view energy storage as a key enabling technology to supporting those goals. NY-BEST urges the DPS staff and the Commission to ensure that the BCA Handbooks are closely aligned with the State's REV and Clean Energy Standard goals especially as they relate to the greater integration of Distributed Energy Resources (DERs).

NY-BEST appreciates the opportunity to provide these comments and we are thankful for the opportunity to provide input. Should you have questions or need additional information or assistance, please feel free to contact us at 518-694-8474.

Respectfully Submitted,

Dr. William Acker

Executive Director
NY-BEST