Department of Energy
Washington, DC 20585

June 17, 2019

MEMORANDUM TO THE DEPARTMENT OF ENERGY
ELECTRICITY ADVISORY COMMITTTEE

FROM: Bruce J. Walker, Assistant Secretary
Office of Electricity (OE)

SUBJECT: DOE Response to Electricity Advisory Committee Recommendations regarding DOE's Role in Assisting State-Level Implementation, Valuation, and Policy Treatment of Energy Storage

I want to thank all members of the Department of Energy's Electricity Advisory Committee (EAC) for their thoughtful recommendations on the efforts within the Office of Electricity to advance the acceptance of energy storage technologies. DOE OE has played a significant role in helping states understand the technical capabilities and benefits energy storage can provide to the electrical system. DOE OE appreciates EAC's recognition of our current support for states looking at implementing energy storage. These engagements are valuable and a priority for furthering energy storage deployments. DOE will continue to assist states seeking technical guidance to implement new storage policies and is pleased to provide the following response to EAC's recommendations.

Recommendation 1. DOE should support research and pilot projects that address market and regulatory design.

DOE appreciates EAC's recommendation to support research and pilot projects that address market and regulatory design. To date, DOE has supported 45MW – 135 MWh of energy storage deployments at 22 sites in the country with additional deployments planned in the upcoming years. Almost all of these efforts have included valuation studies leveraged to better inform regulatory decisions. DOE will continue to support pilot projects across the entire country facilitating a more holistic understanding of regional differences in storage valuation. Engaging state regulators earlier in the process and having them as active participants in the pilot programs can better inform their efforts to design regulatory markets that support energy storage deployment. While not explicitly mentioned in EAC's recommendation, supporting and disseminating information from projects that also quantify the resiliency benefits of energy storage in addition to the market/valuation opportunities will also better inform regulators as more states and utilities recognize energy storage as a critical resiliency asset.

Recommendation 2: DOE should facilitate sharing of lessons learned and storage-deployment experiences

DOE understands facilitated sharing of lessons learned from its storage deployments is critical to advancing energy storage acceptance and appreciates EAC's continued support for these efforts. EAC's detailed recommendations highlight several areas where DOE OE has active R&D efforts and the Energy Storage Program (Program) appreciates the Committee's validation of these efforts. Response to the specific detailed recommendations are provided below:

- Open-Source Valuation Tools: For the past several years, the DOE OE Energy Storage Program has supported development and validation of valuation tools that can accurately capture the performance and value of deployed energy storage under a diverse set of market and use-case applications. These efforts have enabled the development of analytical tools aimed at optimal sizing, location, market optimization, and multiple benefit capture with much greater fidelity and functionality. With significant validation efforts completed on these individual tools, DOE OE firmly agrees integrating them into a free, open-source, industry standard valuation tool is an important next step for continued industry acceptance of the technology. In FY 19, researchers supported by DOE OE are actively pursuing a multi-laboratory effort to integrate the best elements of these individual tools into a single, definitive, valuation tool. This tool will allow for co-optimization of the potential benefit streams storage can provide within the technical bounds of the energy storage system capabilities.

- Develop platform for disseminating relevant information: DOE OE fully agrees with EAC's recommendation that wider scale distribution of the lessons learned from demonstration projects must be conveyed to the larger stakeholder audience. DOE OE has proactively developed 1- and 2-day workshops that provide a holistic overview of the energy storage technologies. The subject matter of these workshops includes sections on: cost, safety, and reliability of storage technologies; procurement and commissioning recommendations; analysis of state regulatory efforts; and valuation of deployed systems. These workshops have been developed and delivered - via in-person and webinars - to: state PUC commissioners and staff, Western Electricity Coordinating Council, National Rural Electric Cooperative Association, and at utilities across the country since 2015. More recently the DOE OE program has worked with Institute of Electrical and Electronics Engineers (IEEE) to expand this workshop to other stakeholder groups (such as Federal Energy Regulatory Commission in February 2018 and several IEEE meetings) and has received a positive reception from stakeholders. DOE OE fully agrees more can be done in the area of disseminating this information through the DOE OE website and will do so in FY19.

- Support for Database of State Incentives for Renewables & Efficiency® (DSIRE): DOE OE appreciates EAC's insight into providing a centralized resource for both energy storage and renewable energy policy developments. DOE OE recently released an energy storage regulatory policy database (https://energystorage.pnnl.gov/regulatoryactivities.asp) specifically to track the energy storage regulatory landscape. The database captures past and

current policy efforts under development that have the potential to enhance adoption of energy storage for all grid related applications: from increased renewables integration to improving resilience and efficiency of the grid. While DOE does see the value of including storage in the DSIRE database, having an independent database that can capture the full range of storage applications - beyond renewables - may best highlight the growing State interest in the technology.

- Organize regional workshops to educate stakeholders: As previously mentioned, DOE OE has actively engaged regional stakeholders looking for more information on the potential of energy storage technologies. To date, the DOE program has had active regional engagements or conducted workshops with representatives from 22 states and are in the planning stages for additional workshops in states currently exploring energy storage. DOE agrees with EAC that expanding these efforts to include National Association of Regulatory Utility Commissioners, National Conference of State Legislatures, National Association of State Energy Officials, and other national stakeholder organizations will be important in continuing to advance storage deployments and the Program will more actively explore these opportunities in the future.

I look forward to continued discussions on the path of DOE OE programs and am committed to ensuring a strong and fruitful working relationship between the Committee and this office. If you wish to discuss this matter further, my staff is available to meet with the Committee, as needed.

Thank you.