Energy Storage Association

September 27, 2019

Arizona Corporation Commission
1200 W Washington Street
Phoenix, AZ 85007

RE: In the Matter of the Proposed Rulemaking to Modify the Resource Planning and Procurement Rules (Docket no. RE-00000A-18-0137)

Dear Chairman Burns and Commissioners:

The signatories of this letter respectfully submit this response to Commissioner Sandra Kennedy's letter of August 20, 2019, in the above referenced docket. We agree with Commissioner Kennedy that energy storage technologies will be needed to support Arizona's clean energy and environmental policies to ensure a safe, reliable, and affordable grid. Arizonans should continue to benefit from the cost-savings, emissions reductions, and reliability benefits that energy storage can provide. The continued deployment of storage can allow Arizonans to more fully benefit from the renewable resources throughout their state and the region. Several of the signatories to this letter have been working diligently with the Commission's staff and other stakeholders over the past several years to advance these objectives in Arizona.

We believe Commissioner Kennedy is rightly focused on Arizona's resource planning process, which is an important tool for ensuring that the deployment of energy storage is aligned with the broader system needs. We have seen in integrated resource plans (IRPs) across the country, including in Arizona, that utilities are increasingly selecting energy storage and renewable resources as a cost-effective alternative to investment in traditional resources to meet resource adequacy requirements. For this reason, several of the signatories to this letter have been working through numerous dockets and in individual utility IRPs to ensure a level playing field for new technologies.

We look forward to addressing questions that may arise in the coming months as the Commission explores policies to drive the deployment of energy storage technologies. We believe that a variety of energy storage technologies, sizes and applications will be needed to facilitate Arizona's transition to a decarbonized electric grid. Below we provide an initial response to the questions raised in Commissioner Kennedy's letter.

A variety of energy storage technologies will be needed to support the transition to a decarbonized grid

Energy storage technologies of all types and sizes will be critical to achieving a clean and reliable grid for Arizona. Energy storage technologies are highly flexible and controllable resources, capable of fast response to system needs and near instantaneous ramp to full capacity in either charge or discharge mode. Projects can be scaled in size to match any site—be that co-located with a power plant, installed at a substation, directly connected to a transmission or distribution line, or sited at customers' premises—and can provide services interchangeably to wholesale markets, distribution grids, and end users. In order to achieve the types of clean energy goals under consideration at the Arizona Corporation Commission, a wide variety of technologies, ownership models, sizes, and applications should be considered to ensure an affordable and decarbonized electric system.

Energy storage's small environmental footprint makes it an ideal candidate as an alternative to traditional infrastructure

Advanced energy storage has a small physical footprint and will save water and improve air quality by facilitating more clean energy. It can be deployed rapidly at a multiple-megawatt scale—in some cases, in as little as six months—which can help manage grid risks efficiently. The signatories to this letter are also committed to promoting the safe decommissioning and recycling of energy storage systems. There is a significant R&D effort underway aimed at the creation of new, improved recycling technologies and processes for lithium-ion batteries.[1] These efforts are driven primarily by the global ramp up in deployment of electric vehicles (EV). The experience and urgency driven by the need for better EV battery handling will benefit stationary storage.

Energy storage is a cost-effective solution to Arizona's electricity needs today

Much can be gleaned from the states that have conducted cost-benefit analyses of energy storage.[2] Across the board, cost-benefit studies in New York, Massachusetts, Nevada, North Carolina, and Virginia have found that the quantifiable values of energy storage systems far outweigh the costs of those systems. Some of the most notable values such projects offer are savings from the reduced need for excess capacity to meet peak demand from the deferral or complete avoidance of transmission and distribution investments. These cost-benefit studies systematically quantify a variety of potential savings and values that are delivered by energy storage.

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[1] The Department of Energy recently initiated new projects to push forward recycling technology and develop a domestic recycling industry for Li-ion batteries from consumer, EV, and stationary storage. The ReCell Lithium Battery Recycling R&D Center, led by Argonne National Laboratory along with other national labs and universities, is pursuing several areas of recycling innovation. Available at: https://www.anl.gov/article/doe-launches-its-first-lithiumion-battery-recycling-rd-center-recell

[2] The Massachusetts *State of Charge* report found that 1,766 MW of storage provides net benefits to ratepayers with a benefit-cost ratio ranging from 1.7 to 2.4 (available at https://www.mass.gov/files/2017-07/state-of-charge-report.pdf); New York *Energy Storage Roadmap*, modeled nearly $1.2 billion in net benefits from the deployment of 3,000 MW by 2030 (available at: http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b2A1BFBC9-85B4-4DAE-BCAE-164B21B0DC3D%7d); both Nevada and Virginia's cost-benefit studies identified that the deployment of 1,000 MW by 2030 would provide a net benefit to the state (Nevada study available at http://energy.nv.gov/uploadedFiles/energynvgov/content/Home/Features/EconomicPotentialForStorageInNV.pdf).

We look forward to serving as a resource for the Commission and other stakeholders as we continue to evaluate the potential for energy storage to support Arizona's decarbonized future.

Respectfully,

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