

**BEFORE THE ARIZONA CORPORATION COMMISSION**

**IN THE MATTER OF RESOURCE  
PLANNING AND PROCUREMENT IN 2015  
AND 2016**

**Docket No. E-00000V-15-0094**

**COMMENTS OF THE ENERGY STORAGE ASSOCIATION**

**I. OVERVIEW**

The Energy Storage Association (“ESA”) respectfully submits these comments in the Matter of Resource Planning and Procurement in 2015 and 2016 (Docket No. E-00000V-15-0094).

Since its inception 27 years ago, ESA has promoted the development and commercialization of safe, competitive, and reliable energy storage delivery systems for use by electricity suppliers and their customers. ESA’s over 150 members comprise a diverse group of electric sector stakeholders, including electric utilities, energy service companies, independent power producers, technology developers—of advanced batteries, flywheels, thermal energy storage, compressed air energy storage, supercapacitors, and other technologies—component suppliers, and system integrators.

In these comments, ESA would like to lend its support of comments filed by the Western Resource Advocates and the Southwest Energy Efficiency Project (“Joint Parties”). Specifically, ESA echoes the Joint Parties’ recommendations that additional and more thorough evaluation of energy storage is warranted in this Integrated Resource Planning (“IRP”) cycle and that utility assumptions about current costs and cost curves moving forward in the 2017 IRPs are in need of updating. Lastly, ESA provides recommendations on modifications to the resource planning process moving forward to ensure more effective consideration of energy storage.

*i. Joint Parties' call for additional evaluation in current IRP cycle is justified*

ESA supports the Joint Parties' recommendation that load serving entities ("LSEs") evaluate energy storage as an alternative resource to proposed natural gas plants in meeting peak demand needs, as well as a suite of other services such as ramping, ancillary services, and integration of renewable energy resources.<sup>1</sup> The Joint Parties accurately point out the need to incorporate Staff's IRP recommendations and alternative scenario modeling under the current IRP cycle. Considering the significant investment under consideration in the current IRPs, coupled with the fact that energy storage can serve as a cost-effective alternative today to the resources proposed, it would serve the best interest of ratepayers to ensure a robust analysis of energy storage as an alternative resource in the current IRP cycle.

*ii. Advanced energy storage pricing assumptions in current IRPs are out of date*

ESA underscores the critical need for using up-to-date pricing information in resource planning processes. Considering the immense reductions in costs in the advanced energy storage market over the past few years, it is imperative that utilities incorporate accurate pricing information and forecast appropriate price reduction curves in their resource planning. ESA echoes the concern of the Joint Parties that Tucson Electric Power ("TEP") and Arizona Public Service Electric Company ("APS") overestimated the costs of energy storage in their current IRPs, including their future expected costs. We note that one of the cited sources in the IRPs, Lazard, has released a recent update to storage costs estimates that indicate the overestimates.<sup>2</sup>

*iii. Unique characteristics of energy storage require modifications to IRP planning process*

Advanced energy storage technologies have unique characteristics that can serve many of the needs of the grid, if considered appropriately in planning processes. Unlikely standard generation

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<sup>1</sup> Comments submitted by Western Resource Advocates and Southwest Energy Efficiency Project ("Joint Parties") on resource planning and procurement, Docket No. E-0000V-15-0094, Arizona Corporation Commission, December 6, 2017. 2

<sup>2</sup> See Lazard, *Levelized Cost of Storage – Version 3.0*, Nov 2017, available at <https://www.enovationpartners.com/s/lazard-levelized-cost-of-storage-version-30.pdf>

resources, energy storage may both inject and withdraw electricity from the grid; it can respond nearly instantaneously to a control signal and can ramp nearly instantaneously up or down to a precise level of service; and it is “always on” and available for service, even when neither charging nor discharging. Such unique characteristics of storage require a different approach to resource modeling if a utility will realize the full value of storage to its system. Such unique characteristics of storage require a different approach to resource modeling if a utility will realize the full value of storage to its system. As outlined in ESA’s 2016 primer on including energy storage in utility IRPs,<sup>3</sup> three basic guidelines will ensure inclusion of storage in IRPs enhances prudent planning:

- 1) Use sub-hourly intervals in modeling to quantify the value of both capacity and flexibility benefits provided by energy storage;
- 2) Use a “net cost” analysis of capacity investment options to more accurately compare energy storage with traditional capacity resources; and
- 3) Use up-to-date storage cost estimates and cost forecasts to better identify near- and long-term prudence of storage.

ESA notes that these recommendations were recently incorporated into planning guidelines in the State of Washington.<sup>4</sup> In October 2017, the Washington Utilities and Transportation Commission (“UTC”) issued a Report and Policy Statement on Treatment of Energy Storage Technologies in Integrated Resource Planning and Resource Acquisition in Docket No. U-161024. In the policy statement, the UTC revised its resource planning rules to ensure that utility planning and procurement activities adapt to changing utility needs and availability of new technologies by calling on utilities to incorporate sub-hourly modeling, up-to-date cost data, and a net cost analysis. ESA also notes that sub-hourly modeling and net cost approaches have been employed in other utilities’ IRPs recently.<sup>5</sup>

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<sup>3</sup> Energy Storage Association, *Including Advanced Energy Storage in Integrated Resource Planning: Cost Inputs and Modeling Approaches*, November 2016, available at: [http://energystorage.org/system/files/attachments/irp\\_primer\\_002\\_0.pdf](http://energystorage.org/system/files/attachments/irp_primer_002_0.pdf)

<sup>4</sup> Washington Utilities and Transportation Commission, *Report and Policy Statement on Treatment of Energy Storage Technologies in Integrated Resource Planning*, October 2017, available at: [https://www.utc.wa.gov/\\_layouts/15/CasesPublicWebsite/CaseItem.aspx?item=document&id=236&year=2016&documentNumber=161024&resultSource=&page=&query=&refiners=&isModal=&omItem=false&doItem=false](https://www.utc.wa.gov/_layouts/15/CasesPublicWebsite/CaseItem.aspx?item=document&id=236&year=2016&documentNumber=161024&resultSource=&page=&query=&refiners=&isModal=&omItem=false&doItem=false)

<sup>5</sup> See, e.g., Chapter 8 in *Portland General Electric 2016 Integrated Resources Plan*, issued 15 Nov 2016, available at <https://www.portlandgeneral.com/our-company/energy-strategy/resource-planning/integrated-resource-planning>

## **II. CONCLUSION**

ESA commends the Commission and Staff for working to enhance existing resource planning processes to better include consideration of alternative resources, including energy storage technology. Moreover, ESA is pleased to see several energy storage projects proposed by utilities in their filings. While significant progress has been made, ESA's comments focus on areas where additional reforms are needed, and underscores the need to additional evaluation of energy storage in the current IRP cycle in order to ensure that ratepayers are provided the most cost competitive and efficient resources, and a more flexible and resilient electric grid.

ESA thanks the Commission for consideration of these comments and looks forward to supporting the Commission's efforts to examine the inputs, modeling, and analysis in IRPs that best ensure prudent use of ratepayer funds.

Respectfully submitted this 14<sup>th</sup> day of December, 2017.

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