Hunter Holman Utah Bar No. (15165)
Utah Clean Energy
1014 2nd Ave.
Salt Lake City, UT 84103
(801) 363-4046
hunter@utahcleanenergy.org
Attorney for Utah Clean Energy

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of PacifiCorp's 2019 Integrated Resource Plan	**Docket No. 19-035-02** **Reply Comments from Utah Clean Energy**

On February 4, 2020, the Division of Public Utilities, Office of Consumer Services, Utah Association of Energy Users ("UAE"), Western Resource Advocates, Interwest Energy Alliance, Sierra Club, Southwest Energy Efficiency Project, and Utah Clean Energy filed comments on PacifiCorp's 2019 Integrated Resources Plan ("IRP"). These brief reply comments respond to UAE's comments related to the energy storage resources selected in the 2019 IRP action plan.

I. RESPONSE TO UTAH ASSOCIATION OF ENERGY USERS' COMMENTS ON BATTERY ENERGY STORAGE SYSTEMS

In its initial comments UAE expressed concern with the selection of 600 MW of battery storage resources in PacifiCorp's 2019 IRP action plan.[1] Specifically, UAE said "it is unclear exactly how the batteries will interact with the rest of the system or how much they will cost to operate."[2] Notwithstanding these concerns UAE did not recommend that the Public Service

[1] 19-035-02, Utah Association of Energy Users' Initial Comments filed on February 4, 2020, page 6, *found at* https://pscdocs.utah.gov/electric/19docs/1903502/312001IntlCmntsUAE2-5-2020.pdf.
[2] Id at 7.

Commission ("Commission") decline to acknowledge the 2019 IRP because of these concerns, noting that battery storage is "at least for now, the most likely technology to integrate intermittent renewable generation resources onto the PacifiCorp system…."[3] Instead, UAE recommends that the Commission require PacifiCorp to provide "regular updates about the integration and operating costs of the battery storage systems as they become more well defined."[4]

Utah Clean Energy agrees with UAE that parties would benefit from regular updates related to the integration and costs of battery storage. However, to fully understand the effect battery storage has on PacifiCorp's system and customers, Utah Clean Energy recommends PacifiCorp also use these updates to provide detailed information about the demonstrated benefits of battery storage.

While integration of this resource is relatively young in the United States, the growth projections are substantial. Battery storage is a highly flexible resource that can integrate high penetrations of renewable energy resources and defer investments in peak generation, as well as provide frequency regulation, flexible ramping, regulation reserves, and black start services.[5] In combination with the dramatic decline in costs, these benefits helped quadruple battery storage capacity in the U.S. between 2014 and 2019. As of July 2019, capacity is projected to reach 2,500 MW by 2023.[6]

---

[3] Id at 6.
[4] Id at 8.
[5] International Renewable Energy Agency, Utility-Scale Batteries Innovation Landscape Brief, page 3, *found at* https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Sep/IRENA_Utility-scale-batteries_2019.pdf?la=en&hash=8187F00E87173BC653DEDA566C7A4A88EAD9514A.
[6] Energy Information Administration, Today in Energy-U.S. utility-scale battery storage power capacity to grow substantially by 2023, *found at* https://www.eia.gov/todayinenergy/detail.php?id=40072; PacifiCorp's 2019 IRP, Volume I, page 155, *found at*

Several established and planned utility-scale battery storage projects indicate that utilities and customers alike will benefit from greater amounts of battery storage. For example, revenues from five existing battery storage projects lifted revenues to record levels in Australia in the fourth quarter of 2019, largely due to frequency and ancillary service benefits provided by battery storage.[7] The demonstrated success of utility scale battery storage and the low cost of the resource is also driving utilities across the country to make substantial investments in the resource. Northern Indiana Public Service Company is soliciting 2.6 GW of renewables paired with battery storage[8], Arizona Public Service has plans for a 850 MW expansion of utility-scale storage[9], and NV Energy has an approved 590 MW storage project which is scheduled to come online the same time as the proposed storage in PacifiCorp's 2019 action plan.[10] While this technology is still relatively nascent in the U.S., the current and planned adoption of the technology strongly suggests that battery storage provides substantial benefits to utilities and customers.

The models that PacifiCorp uses in its IRP process were developed before battery storage became one of the lowest cost, lowest risk resources, so these models are not designed to capture the full range of benefits provided by these assets. Once it became clear that the modeling was

---

https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2019_IRP_Volume_I.pdf.

[7] Teslarati, Joey Klender, Tesla's Big Battery in South Australia just had its most impressive quarter yet, *found at* https://www.teslarati.com/tesla-big-battery-south-australia-record-quarter/; Renew Economy, Giles Parkinson, Big batteries enjoy record revenues, but pumped hydro struggles, *found at* https://reneweconomy.com.au/big-batteries-enjoy-record-revenues-but-pumped-hydro-struggles-61123/.

[8] American Public Power Association, Paul Ciampoli, Indiana utility seeks proposals for wind, solar and storage, *found at* https://www.publicpower.org/periodical/article/indiana-utility-seeks-proposals-wind-solar-and-storage.

[9] Arizona Public Service, *found at* https://www.aps.com/en/About/Our-Company/Newsroom/Articles/APS-sets-course-for-100-percent-clean-energy-future.

[10] American Public Power Association, Paul Ciampoli, Nevada regulators OK utility's plan to add 590 MW of storage, *found at* https://www.publicpower.org/periodical/article/nevada-regulators-ok-utilitys-plan-add-590-mw-storage.

ineffectively capturing the benefits of battery storage, PacifiCorp made reasonable changes to its modeling to better account for battery storage dispatch characteristics. However, as additional battery resources are integrated into PacifiCorp's system it is reasonable for PacifiCorp to continue updating its modeling to ensure future IRPs fully capture the flexibility, reliability, and cost/benefit characteristics of battery storage.

II. CONCLUSION

As PacifiCorp incorporates battery storage into its resource portfolio, PacifiCorp should provide regular updates about the realized costs and benefits of these resources, including information about how these resources affect system dispatch and the integration of renewable energy resources.

Filed March 2, 2020.

Respectfully submitted,

/s/ Hunter Holman

Hunter Holman
Attorney for Utah Clean Energy

CERTIFICATE OF SERVICE
Docket No. 19-035-02

I hereby certify that a true and correct copy of the foregoing was served by email this 2nd day of March 2020, on the following:

ROCKY MOUNTAIN POWER	
Jana Saba	jana.saba@pacificorp.com
Utah dockets	utahdockets@pacificorp.com
Data Request Response Center	datarequest@pacificorp.com
DIVISION OF PUBLIC UTILITIES	
Patricia Schmid	pschmid@agutah.gov
Justin Jetter	jjetter@agutah.gov
Chris Parker	chrisparker@utah.gov
William Powell	wpowell@utah.gov
DPU Data Request	dpudatarequest@utah.gov
OFFICE OF CONSUMER SERVICES	
Robert Moore	rmoore@agutah.gov
Michele Beck	mbeck@utah.gov
Cheryl Murray	cmurray@utah.gov
Bela Vastag	bvastag@utah.gov
SIERRA CLUB	
Gloria Smith	gloria.smith@sierraclub.org
Ana Boyd	ana.boyd@sierraclub.org
Julian Aris	julian.aris@sierraclub.org
WESTERN RESOURCE ADVOCATES	
Sophie Hayes	sophie.hayes@westernresources.org
Nancy Kelley	nkelly@westernresources.org
Steven Michel	smichel@westernresources.org
INTERWEST ENERGY ALLIANCE	
Lisa Tormoen Hickey	lisahickey@newlawgroup.com
STADION, LLC	
R. Bryce Dalley	rbd@fb.com
John Lucas	johnlucas@fb.com

Richard Lorenz rlorenz@cablehuston.com

UTAH ASSOCIATION OF ENERGY USERS
Gary A. Dodge gdodge@hjdlaw.com
Phillip J. Russell prussell@hjdlaw.com

/s/ Hunter Holman