BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of Avista Corporation, d/b/a Avista Utilities For an Order Authorizing Deferral of Costs Associated with the Company's Investment in the Turner Energy Storage Project.	)	Docket No. UE-21_____ PETITION OF AVISTA CORPORATION

I. INTRODUCTION

1 In accordance with WAC 480-100-203(3) and WAC 480-90-203(3), Avista Corporation, doing business as Avista Utilities ("Avista" or "Company"), at 1411 East Mission Avenue, Spokane, Washington, hereby petitions the Commission for an order authorizing it to utilize deferred accounting for the Company's remaining investment in the Turner Energy Storage (TES) project. The TES was installed and commissioned in the spring of 2015 in Pullman, Washington, and subsequently failed in June 2018. As described more fully below, Avista has approximately $3.7 million in investment that is no longer providing service to customers that the Company invested for customers' benefit that the Company seeks to defer for later rate-making treatment.

2 Avista is a utility that provides service to approximately 401,000 electric customers and 263,000 natural gas customers in a 26,000 square-mile area in eastern Washington and northern Idaho. Avista Utilities also serves approximately 105,000 natural gas customers in Oregon. The largest community served by Avista is Spokane, Washington, which is the location of its corporate headquarters. Please direct all correspondence related to this Petition as follows:

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3 Rules and statutes that may be brought at issue in this Petition include RCW 80.01.040, RCW 80.28.020, and WAC 480-07-370(3)(b).

II. BACKGROUND

Timeline of Events

4 In the spring of 2015, Avista installed and commissioned the TES project in Pullman, Washington at the Schweitzer Engineering Laboratories (SEL) site. In addition to Avista, a Washington-based project consortium was engaged in this project, including the Pacific Northwest National Laboratory (PNNL), Washington State University (WSU), and UniEnergy Technologies (UET). The project was funded in part through a Clean Energy Fund grant from the Washington State Department of Commerce (Commerce) in the amount of $3.2 million.

5 For this project, Avista selected a vanadium flow battery supplied by UET and associated inverter with 1MW of power and energy capability of 3.2MWh. The construction of the battery, inverter set (#1) and transformer set (#1) was completed and moved into production in April 2015. In February 2018, an additional invertor (#2) and transformer (#2) was added, and in April 2018, the testing had been completed and the system was functioning. Although these additional assets were useful, they were not yet being used and remained in Construction Work in Progress (CWIP).

6 In June 2018, the battery failed. After determining the extent of the failure, as described in

detail below, UET and Avista agreed that all units would be taken out of service and that the units and electrolyte would be returned to UET. Between the time of the failure and June 2021, Avista and UET worked to obtain a warranty replacement of the system. However, in May 2021, Avista learned that UET was experiencing financial difficulties. In July 2021, Avista sent a letter to UET demanding that it either (a) provide a date that a replacement battery would be delivered and post a performance bond; or (b) refund to Avista all amounts paid to UET.

7 Counsel for UET responded to Avista and stated that UET was in desperate financial conditions. UET was not capable of refunding Avista nor could it come up with a replacement because it had lost its office and lab spaces, it had furloughed all employees, and its executives had all resigned. Between July 2021 and November 2021, Avista remained in contact with UET's counsel seeking regular updates on UET's financial status and ability to fulfill the contract.

8 In September 2021, Avista learned that UET's senior secured creditor had taken possession of UET's assets and sold those assets to a third party. In November 2021, UET's counsel informed Avista that involuntary bankruptcy proceedings had been instituted against UET. Avista has retained outside counsel to monitor the status of those bankruptcy proceedings; depending upon the outcome of those proceedings Avista may either (a) file a creditor claim in that bankruptcy; or (b) request a stipulated judgment from UET. In either case, recovery by Avista is unlikely given Avista's status as an unsecured creditor and UET's lack of assets.

Project Description and Benefits

9 The Company provided a description of the project in its Smart Grid Technology report filed with the Washington Utilities and Transportation Commission in 2016. (See Docket No. UE-161045). The TES project was designed to demonstrate the dual use of energy storage to perform reliability operations as well as perform grid services. The former – reliability operations – directly

supported customers that are interconnected to the grid. The desired outcome in the reliability use case was to provide seamless ride-through power to customers in the event of a power outage (that required the installation of inverter #2 and transformer set #2) and minimizing or eliminating any form of electrical disturbance to power delivery to their equipment. This had direct, tangible benefits to the customer, and potentially could have been a service offering of the utility to critical-care customers or equivalent.

10 The other use cases, all associated with grid services, would accrue positively to Avista as well as customers in that TES would have contributed to reducing the number of violations that occur on the network. Specifically, the ability to control circuit voltage as well as optimize power flow on distribution circuits stabilizing delivery, reducing the variance of voltage that is delivered to customers. This would have resulted in greater delivery efficiency for Avista (e.g. reduction of technical losses) as well as a reduction in adverse operation of a customer's equipment.

11 Service to key customers and energy efficiency are top business objectives for both Avista and Schweitzer Engineering Laboratories. TES was to provide combinational power factor correction and voltage regulation while lowering the distribution voltage to reduce both losses and loads. Additionally, a four-quadrant inverter was thought to maintain unity power factor that allows for maximum voltage reduction while in discharge mode.

12 This battery could be leveraged for not only localized load problems on the feeder, but also could be dispatched for power supply use. The battery was controlled through Avista's Distribution Management System (DMS) and Energy Management System (EMS) as dispatched events. Day-ahead schedules, renewable energy availability, anticipated power costs, local constraints, local loads, battery management and system needs were evaluated in a multi-variant set of equations to determine battery operation. This approach was unique in that transmission and distribution operations could both command the distributed resource installed on the distribution system with

prioritization based on optimal value achieved.

13 A key business case that was going to be explored with the new energy storage system was the ability to service a microgrid or individual loads with the battery during a system outage. The Pullman installation was configured so that critical loads served from the feeder on which the battery has been connected could be supplied for a period of time with the energy stored within the battery.

14 In addition to Avista, a Washington-based project consortium was engaged in this project, including PNNL, WSU, and UET. The consortium intended for this battery to integrate with renewable energy projects, both solar and wind, so that unanticipated changes in supply or prediction of such changes could be mitigated with this battery. The intention was to demonstrate the dispatch of the energy storage resource from Avista's distribution and bulk power operation centers with sophisticated valuation and control methodologies. Finally, the project, as designed, would have helped to establish engineering practices or standards that allow for deployment at other substation or line locations throughout the Avista service territory.

15 In the end, the project and investment was prudent, but as with any new technology, failures can happen. As noted in an article in the Spokesman Review regarding the ribbon cutting attended by many leaders including Governor Inslee, "years of research have gone into the Vanadium Redox Flow batteries, which are being used in the $7 million Pullman test project. The 1-megawatt batteries have the largest storage capacity to date in North America. If they aren't running Schweitzer Engineering's factory, they could provide enough energy to meet the electrical needs of about 100 Pullman households".[1] In the end, this was a prudent "test project" that simply did not pan out as intended for the Company, our customers, and the State of Washington.

[1] https://www.spokesman.com/stories/2015/apr/03/schweitzer-labs-puts-game-changing-battery-power/

Description of Battery Failure

16 At the time of installation, a string of utility sized UET batteries consisted of four (4) 8' by 20' shipping containers (each containing the battery electrolyte) and one (1) 8' by 14' control unit (PCS) that housed the inverter. Avista's installation consisted of two (2) strings resulting in eight (8) shipping containers onsite that contained electrolyte. During a charging cycle in June 2018, one of the units containing electrolyte began to leak inside and outside of the containment fence. The battery cells were designed such that any leaks inside the container would have been contained and identified by UET, however the June 2018 discharge occurred through a vent tube that terminated outside the containment. Accordingly, a spill resulted outside the units and outside the fence and was noted by SEL personnel and not UET's monitoring system.

17 UET returned the failed unit to their manufacturing facility to do a root cause analysis on the spill. The resulting details, limited in their provision to Avista, indicated that a vent system on the battery cells malfunctioned due to a poor design and resulted in the spill. Upon further inspection, UET noted that a number of the remaining seven (7) units on the SEL site showed similar issues and that lessor amounts of spillage had also occurred. Upon this observation, UET and Avista agreed that all existing units would be taken out of service and that the units and electrolyte would be returned to UET.

18 Several meetings and discussions between Avista and UET occurred over the years following the removal of the units. UET's second iteration of its vanadium flow battery was much smaller in size and was intended to be installed directly at a customer's location rather than in a utility's substation. However, UET proposed to Avista, as a warranty replacement, an installation using up to ninety-six (96) of these individual units in a rack configuration which would replace one of the Avista strings. UET had also made similar suggestions to Snohomish County PUD which had four (4) strings of UET batteries installed in a substation. Avista and UET had not formalized any

agreement on what a final warranty replacement would include.

III. SUMMARY OF COSTS

19 The remaining investment at June 30, 2021 was approximately $3.7 million. This was made up of two components, which is summarized as follows:

Investment in Turner Energy Storage System at June 30, 2021 ($millions)			
	Plant-in-Service	**CWIP**	**Total**
Costs	$ 5.14	$ 3.20	$ 8.34
Less: Grant	(2.54)	(0.66)	(3.20)
Avista's Original Cost	2.60	2.54	5.14
Accumulated Depreciation	(0.90)	-	(0.90)
Write-off of AFUDC/Overhead Cost	-	(0.54)	(0.54)
Net Investment Costs	$ 1.70	$ 2.00	$ 3.70

20 The first component was the remaining net book value of the battery and other capitalized costs that was transferred to plant-in-service in 2015 of approximately $1.7 million. As shown in the table above, the capitalized costs totaled $5.14 million before the State of Washington Department of Commerce Clean Energy Fund grant of $2.54 million. The Company had depreciated the investment $0.90 million, which left a net book value of $1.7 million to be deferred and recovered later.

21 The second component was the capital cost the Company has recorded in Construction Work in Progress (CWIP) of approximately $2.0 million. This represented total original costs of $3.2 million before applying the grant of $0.66 million. In addition, the Company has written-off approximately $0.54 million in AFUDC and capitalized overhead costs that had been recorded on the project. The equipment and capitalized costs that were in CWIP were associated with the advanced operation of the battery (also identified as Phase 2). As part of Use Case #6 (as defined by PNNL, Commerce and Avista), Avista chose to implement a seamless transfer of the load to

the battery for a feeder when the primary source is lost. To accomplish this, Avista needed to install new inverters, transformers, and control equipment (identified by UET and Avista), a new software control system, and testing of all components of the system. Prior to the failure of the battery, these components were all successfully tested and could have been deemed to be "useful" but were never moved in to production before the battery failed. None of this equipment can be used for other projects.

22 The Company removed and returned the battery to UET in 2018. Planning and preparation have begun for site restoration. These costs are estimated to be no greater than $250,000. The Company proposes deferral of these costs, in addition to the investment described above. When the Company files for recovery of the deferral, these costs can be reviewed for prudency at that time.

IV. REQUEST FOR DEFERRED ACCOUNTING OF INVESTMENT

23 As described above, between the time of the failure and June 2021, Avista and UET worked to obtain a warranty replacement of the system. In June 2021 Avista confirmed that the supplier of the battery would not be providing a replacement battery to Avista. Therefore, Avista determined the plant in service and the investment in CWIP was no longer providing service to customers and decided to write-down the remaining investment. Accounting guidance (ASC 980-360) states that when it becomes probable that an operating asset or an asset under construction will be abandoned, the associated cost should be "removed from construction work-in-process or plant-in-service." ASC 980-360 further indicates that if the regulator is likely to provide a full return on the recoverable costs, a separate asset should be established with a value equal to the original carrying value of the abandoned asset less any disallowed costs. If the regulator is likely to provide a partial return or no return, the new asset value should equal the present value of the

future revenues expected to be provided to recover the allowable costs of the abandoned asset and any return on investment. The utility's incremental borrowing rate should be used to measure the present value of the new asset. Any disallowance of all or a part of the cost of the abandoned asset should be recognized as a loss when it is both probable and estimable. During the recovery period, the new asset should be amortized to produce zero net income on the basis of the theoretical debt and interest assumed to finance the abandoned asset.

24 A summary of the accounting entries recorded in June 2021 to record the write-off of the investment and the deferral of the costs follows:

Accounting Entries Recorded in June 2021 ($millions)			
FERC	**Account Description**	**Dr.**	**Cr.**
108.0	Accumulated Depreciation	$ 2.60	
101.0	Plant		$ 2.60
	To record retirement of plant-in-service		
186.0	Miscellaneous Deferred Debits	$ 1.70	
108.0	Accumulated Depreciation		$ 1.70
	To record deferral of investment in TES		
186.0	Miscellaneous Deferred Debits	$ 2.00	
	To record write-off and deferral of CWIP		
107.0	CWIP		$ 2.00
108.0	Accumulated Depreciation	$ 0.25	
232.1	Accounts Payable		$ 0.25
186.0	Miscellaneous Deferred Debits	$ 0.25	
108.0	Accumulated Depreciation		$ 0.25
	To record retirement work-in-progress (RWIP) estimates to restore TES site and deferral of these costs		

25 Avista initially recorded the deferral as a deferred miscellaneous asset in FERC Account 186.0 (Miscellaneous Deferred Debits). The total amount deferred was $3.95 million, which includes $1.70 million net book value of the plant-in-service retired, $2.0 million CWIP retired and $0.25 million of retirement costs.

26 The Company has been recovering monthly $14,721 of depreciation expense on the capitalized investment and will continue to do so until new customer rates are effect with the next filed general rate case. In June 2021, the Company began deferring the recovery of that expense from customers by recording the following monthly entry:

Accounting Entries - Monthly			
FERC	**Account Description**	**Dr.**	**Cr.**
456.0	Other Electric Rev – Misc.	$ 14,721	
186.0	Miscellaneous Deferred Debits		$ 14,721
	To record deferral of depreciation expense being collected from customers		

27 This entry will offset the deferral of costs, to lower the amount the Company will propose to collect from customers in a future rate proceeding.

V. PROPOSED ACCOUNTING TREATMENT

28 Avista proposes to defer the net costs for later recovery from customers, including proceeds, albeit unlikely, that result from the legal action discussed earlier. In a future rate proceeding, Avista will propose a method for recovery of the deferred costs from customers, and once that has been approved by the Commission, the Company will transfer the asset from a deferred miscellaneous asset in FERC Account 186.0 (Miscellaneous Deferred Debits) to a regulatory asset in FERC Account 182.3 (Regulatory Asset). The journal entries and the subsequent transfer once recovery has been approved by the Commission follows:

Proposed Accounting Entries ($millions)			
FERC	**Account Description**	**Dr.**	**Cr.**
182.3	Other Regulatory Asset	$ 3.95	
186.0	Miscellaneous Deferred Debits		$ 3.95
	To record appoval by the Commssion for recovery from customers in a future proceeding		

29 The Company proposes that the net regulatory asset balance will accrue a carrying charge, on a monthly basis, equal to the current Federal Energy Regulatory Commission (FERC) rate, presently at 3.25 percent, annually. The carrying charge will cease when recovery begins in a future rate proceeding.

VI. REQUEST FOR RELIEF

30 WHEREFORE, Avista respectfully requests that the Commission issue an Order approving the requested deferred accounting and ratemaking treatment, as described above. Avista requests authorization to defer for later ratemaking treatment its prudently incurred investment in the battery storage project, the battery removal and site restoration costs, offset by the deferral of the depreciation expense that is currently being recovered from customers between June 1, 2021 until new rates are in effect with the next filed general rate case, to a regulatory asset until it can request amortization/recovery of the deferred costs in a future Commission proceeding. Finally, proceeds, if any, from legal proceedings, albeit unlikely, would also be deferred and returned to customers.

DATED this 10th day of December 2021

By: _____
Patrick D. Ehrbar
Director of Regulatory Affairs