

**AVISTA CORP.
RESPONSE TO REQUEST FOR INFORMATION**

JURISDICTION:	WASHINGTON	DATE PREPARED:	3/22/2021
CASE NO.:	UE-200900 & UG-200901	WITNESS:	Clint Kalich
REQUESTER:	Public Counsel	RESPONDER:	James Gall
TYPE:	Data Request	DEPT:	Energy Resources
REQUEST NO.:	PC - 279	TELEPHONE:	(509) 495-2189
		EMAIL:	james.gall@avistacorp.com

SUBJECT: Cost of Service**REQUEST:**

With regard to Avista's Electric Class Cost of Service Study model, in the Tab entitled "Renewable Future Peak Credit," please provide all source documents and support for each of the following:

- a) Lithium Ion Battery Fixed Cost per KW of \$384.55;
- b) Cost per MWh Charge of \$30.22;
- c) basis for assumed 200 hours of operation;
- d) Storage Efficiency of 88 percent;
- e) Wind Turbine Fixed Cost per KW of \$38.15;
- f) explanation of what the 329,980 represents in the calculation of the Wind Turbine Fixed Cost per KW and the basis for this amount;
- g) basis for 60.3 percent Wind Turbine load factor;
- h) basis for 37.4 percent Wind Turbine capacity factor; and,
- i) basis for and all support relating to the assumed 5 percent Capacity Contribution for Wind Turbine.

Provide in executable electronic (Excel) format.

RESPONSE:

Avista used its 2020 IRP resource cost data for this analysis. PC-DR-279 Attachment A - AVA_Supply Side Resource Options_122618.xlsx is the source document for this analysis

- a) See tab "Storage" cell reference "BT70" for the levelized fixed costs of an 8-hour duration lithium-ion battery built in 2022.
- b) \$30.22 is the levelized cost per MWh to charge the battery in off peak hours taking into account charging losses and miscellaneous revenue charges. This price is calculated in the cell "BT32" of the "Storage" tab.
- c) From PacifiCorp's Scenario 3 from rulemaking docket NO. UE-170002 Staff requested scenarios submitted 6/14/2019.
- d) Assumed round trip efficiency of a lithium-ion battery from cell reference tab "Resource Options" Cell "W34"
- e) The price of \$38.15 is in reference to the PPA price per MWh of a wind contract for wind within Avista service territory built for 2022. See tab "Wind PPA Analysis" cell "D95".
- f) The 329,980 is in reference to the number of MWh of annual production to multiply the PPA price to result in the annual cost of a wind payment for a 100 MW wind resource.
- g) See part c, this factor is used to gross of the wind costs due to lower production amounts compared to annual energy required to serve load.
- h) 37.4% is the assumed capacity factor for a wind facility built in Avista service territory- see tab "Wind PPA analysis" cell D94 for the MWh calculation of 329,980 MWh.
- i) The 5% peak credit for northwest wind is from the 2020 IRP page 9.27; Table 9.11. The 5% is in relationship to the amount of MW of natural gas CTs are displaced with wind from the Northwest

to equal the same Loss of Load Probably target of 5%. Avista did not retain the files to derive the quantities, but analysis uses Palouse Wind's historical generation profile finding if 350 MW of wind is required to reduce 15 MW of natural gas CTs equating to a peak credit of 4.29%; Avista round up to 5%.