

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND)	Dockets UE-200900/UG-200901/UE-
TRANSPORTATION COMMISSION)	200894 (<i>Consolidated</i>)
)	
Complainant,)	
)	
v.)	
)	
AVISTA CORPORATION d/b/a)	
AVISTA UTILITIES)	
)	
Respondent.)	
_____)	
)	
In the Matter of the Petition of)	
)	
AVISTA CORPORATION d/b/a)	
AVISTA UTILITIES,)	
)	
For an Accounting Order Authorizing)	
Accounting and Ratemaking Treatment of)	
Costs Associated with the Company's)	
Wildfire Resiliency Plan.)	
_____)	

RESPONSE TESTIMONY OF LANCE D. KAUFMAN

ON BEHALF OF

INLAND EMPIRE PAPER COMPANY

(REDACTED VERSION)

April 21, 2021

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EXHIBIT LIST

Exhibit No. LDK-2 – Curriculum Vitae
Confidential Exhibit No. LDK-3C – Cogen Study
Confidential Exhibit No. LDK-4C – Generation Model
Confidential Exhibit No. LDK-5C – Marginal Cost Study

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I. INTRODUCTION AND SUMMARY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Lance Kaufman, and my business address is 4801 W. Yale Ave, Denver, CO 80219.

Q. PLEASE STATE YOUR OCCUPATION AND ON WHOSE BEHALF YOU ARE TESTIFYING.

A. I am the Principal Economist of Aegis Insight and am testifying on behalf of the Inland Empire Paper Company (“IEP”).

Q. PLEASE PROVIDE A BRIEF SUMMARY OF YOUR BACKGROUND.

A. I am an economist with eight years of experience in the utility industry. I have previously worked for the Public Utility Commission of Oregon Staff and for Alaska’s utility public advocate organization under the Alaska Department of Law. I have provided testimony and analysis on a wide variety of utility proceedings and filings in front of Commissions in Alaska, Oregon, Idaho, Wyoming, and Washington. I have a Ph.D. in Economics from the University of Oregon. My CV is attached as Exhibit LDK-2.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. In UE-190334, Washington Utilities and Transportation Commission (“Commission”) Staff proposed that IEP transition from a Schedule 25 customer to a special contract as a way to address the unique characteristics of Schedule 25. IEP is in the process of negotiating a special contract with Avista. My testimony supports certain terms of the Special Contract included in the term sheet attached as Exhibit KR-2 to IEP witness Mr.

1 Kevin Rasler's testimony; supports the economic analysis of a cogeneration system IEP
2 could install at its paper mill to avoid purchasing nearly all of its electricity requirements
3 from Avista; and sponsors the marginal cost study IEP performed that supports an
4 economic bypass rate for IEP which ensures IEP continues to contribute to Avista's fixed
5 costs.

6 **Q. PLEASE SUMMARIZE YOUR TESTIMONY AND RECOMMENDATIONS.**

7 A. I show that under Schedule 25 rates it is economic for IEP to self-generate electricity and
8 bypass Avista's energy service. I calculate the long run marginal cost to Avista to serve
9 IEP's bypassable load. I illustrate how the special contract affects cost of service rates.
10 These studies show that the special contract, on the terms IEP proposes, contributes to
11 Avista's fixed costs and is in interests of Avista's other ratepayers. I describe the demand
12 response component of the special contract and provide an avoided cost basis for the
13 demand response rate. I recommend that the Commission approve a special contract for
14 IEP with the terms identified in Confidential Exhibit KR-2.

15 **Q. WHY IS THE SPECIAL CONTRACT IN THE PUBLIC INTEREST?**

16 A. The special contract results in lower rates for Avista's remaining customers over the term
17 of the contract. If IEP bypasses Avista's system, the share of fixed costs paid by the
18 special contract would be paid by Avista's remaining customers. The special contract
19 also gives Avista access to a valuable demand response resource. Demand response
20 resources will play a key role in Avista meeting its carbon free energy goals. Finally, the
21 special contract ensures that IEP will not develop a new natural gas fired generation
22 resource in Washington at least during the term of the special contract.

1 **II. IEP COGENERATION FACILITY IS FEASIBLE**

2 **Q. HOW IS COGENERATION RELEVANT TO THE SPECIAL CONTRACT?**

3 A. IEP is Avista’s largest customer and accounts for ██████████ of Avista’s revenue. IEP’s
4 revenue contributes to Avista’s fixed costs and reduces rates for other Avista customers.
5 If IEP begins to self-generate, Avista’s rates will increase by 2 percent.^{1/} Avista can
6 avoid most of this rate increase by establishing a special contract rate with IEP that
7 continues to contribute to fixed costs.

8 **Q. IS IT IN IEP’S ECONOMIC INTEREST TO SELF-GENERATE?**

9 A. Yes, IEP can substantially reduce long term energy costs by constructing a cogeneration
10 facility. I assisted in a feasibility analysis of IEP self-generation (“Cogen Study”).^{2/} The
11 Cogen Study shows that self-generation is highly economic and has a positive internal
12 rate of return across all sensitivities studied. If IEP is unable to secure a special contract,
13 it would be prudent for IEP to continue developing a cogeneration plant. The Cogen
14 Study is attached to my testimony as Confidential Exhibit LDK-3C.

15 **Q. PLEASE SUMMARIZE THE COGEN STUDY.**

16 A. Cogeneration is the simultaneous generation of heat and electricity. Cogeneration
17 facilities improve on the efficiency of generation facilities by capturing waste heat for use
18 in space heating or other industrial processes. The Cogen Study evaluated the technical
19 and economic feasibility of a ██████████ reciprocating engine cogeneration plant similar to
20 Avista’s Boulder Park facility. This plant meets 97 percent of IEP’s energy needs. The

^{1/} Calculated as current contribution to fixed cost of ██████████ divided by remaining current retail revenue
 of ██████████
^{2/} Exh. Confidential LDK-3C

1 study finds that the plant has an internal rate of return of [REDACTED] and a net present
2 value of [REDACTED] under the expected scenario.^{3/} The study included conservatively
3 high costs and explored a range of scenarios that captures reasonable expected outcomes.
4 The study was designed to meet the Environmental Protection Agency’s (“EPA”)
5 Combined Heat and Power guidelines for supporting a procurement decision.^{4/}

6 **Q. WHAT ARE THE EPA GUIDELINES FOR SUPPORTING A PROCUREMENT**
7 **DECISION?**

8 A. The EPA recommends that a procurement decision follow a feasibility study that meets
9 the following guidelines:

- 10 1) Be based on measured data including load curves for consumption of electrical and
11 thermal energy.
- 12 2) Use refined estimates of system capital, operation, and maintenance costs, including
13 grants and incentives.
- 14 3) Calculate net present value, internal rate of return, and payback period.
- 15 4) Confirm system design meets facility’s functional requirements.
- 16 5) Include plans for meeting interconnection and permitting requirements.
- 17 6) Be conducted by an experienced engineer or project manager.

^{3/} Exh. Confidential LDK-3C at 15.

^{4/} Combined heat and power is an alternative term for cogeneration. The EPA sponsors an industry partnership between combined heat and power stakeholders. This partnership serves as a knowledge base for enhancing the understanding of combined heat and power, including cogeneration. The partnership has identified industry best practices for combined heat and power project development. The Cogen Report was designed to meet the level 2 feasibility study, which “facility managers can use as a basis for deciding whether or not to proceed with procurement of a CHP system.” (US Environmental Protection Agency, Combined Heat and Power (CHP) Partnership, L2 Feasibility Analysis) available at: <https://www.epa.gov/chp/chp-project-development-steps> (last accessed April 21, 2021).

1 **Q. HOW DOES THE COGEN STUDY MEET THE EPA GUIDELINES?**

2 A. The Cogen Study meets these guidelines in the following manner:

- 3 1) Financial performance is measured against three years of IEP's actual hourly
4 electricity and thermal load.
- 5 2) Costs were refined through direct communication with Wartsila, the manufacturer of
6 the proposed generation facility.
- 7 3) The study reports annual cashflows and project life financial performance including
8 net present value, internal rate of return, and payback period.
- 9 4) The system meets all of IEP's functional requirements. The study ensures this by
10 selecting a highly flexible generation technology and by meeting net requirements
11 through existing steam facilities and standby generation from Avista.
- 12 5) The study includes preliminary findings from third party planning firms with
13 permitting expertise. Please see the Response Testimony of IEP witness Mr. Greg
14 Summers for more detail on the permitting requirements for the cogeneration facility.
- 15 6) The study was conducted by Ph.D. level engineers and economists with experience in
16 cogeneration systems and feasibility analysis.

17 **Q. HOW DOES THE STUDY INCLUDE CONSERVATIVELY HIGH COSTS?**

18 A. The study modeled several non-cash costs as expenses. For example, IEP currently owns
19 the land for the proposed generation site; however, the capital investment includes land
20 purchase costs. IEP has resources that qualify for carbon offsets. In the Cogen Study,
21 carbon offsets are included at a market cost. The study includes a stand-by generation
22 charge and assumes that Avista provides standby generation service. However, the

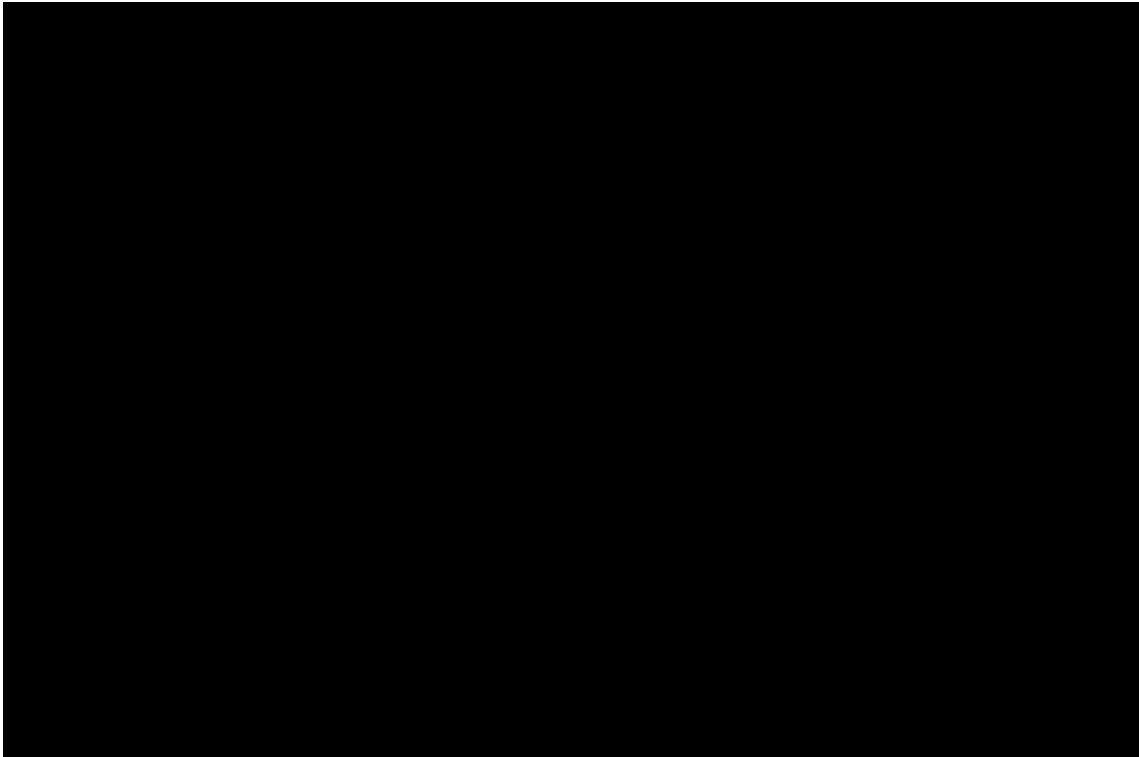
1 generation facility is oversized and designed to allow for individual unit outages
2 constraining IEP's energy supply. Standby generation would only be needed if the plant
3 experienced multiple unit outages, which would occur rarely. It would likely be more
4 economic for IEP to respond to outages by curtailing manufacturing production.

5 **Q. HOW DOES THE STUDY EXPLORE A RANGE OF REASONABLE**
6 **SCENARIOS?**

7 A. The study contains nine scenarios. Scenarios include permutations of medium and high
8 capital costs, low, medium, and high electricity price growth rates, with and without tax
9 credits, and with and without stand by generation charges or carbon offset costs.

10 Confidential Table 1 summarizes the internal rate of return for each scenario.

11 **Confidential Table 1**



1 **Q. HOW DO YOU DETERMINE THE RANGE OF ELECTRICITY PRICE**
2 **GROWTH RATES?**

3 A. Electricity price growth rates are assumed to be 5% annually in the base scenario, with
4 4% and 6% as low and high growth scenarios, respectively. Under the Commission’s
5 recently passed rules governing Clean Energy Implementation Plans, the Commission
6 adopted a cost cap for compliance with the Clean Energy Transformation Act (“CETA”)
7 that equates to 5% annual rate growth.^{5/} Because this cost cap only applies to CETA-
8 related investments and not more traditional utility investments such as distribution
9 system replacements and technology upgrades, a 5% growth rate is a reasonable, if not
10 conservative, assumed rate going forward.

11 **Q. WHAT COSTS WERE INCLUDED IN THE COGEN STUDY?**

12 A. The Cogen Study evaluates the following costs and benefits:

- 13 • Initial capital
- 14 • Permitting costs
- 15 • Federal tax incentives
- 16 • State and local sales tax
- 17 • Generation fuel
- 18 • Displaced boiler gas
- 19 • Generation O&M
- 20 • Displaced purchased electricity
- 21 • Standby generation charges
- 22 • Carbon cap and trade allowances
- 23 • Carbon offsets
- 24 • Property tax
- 25 • Federal income tax
- 26 • Financing

^{5/} WAC § 480-100-660(2).

1 **Q. PLEASE DESCRIBE HOW YOU DETERMINED THE COSTS OF EACH OF**
2 **THESE ITEMS.**

3 A. Initial capital costs are the engineering, procurement, and construction costs of the
4 project, including the installation of pollution controls, acquisition of land, and generation
5 step-up. These costs were based on data provided by Wartsila. Permitting costs are
6 described in the Response Testimony of Mr. Greg Summers. A 10 percent Federal Tax
7 credit is offered on the first 15 MW of cogeneration.^{6/} State and local taxes are included
8 when necessary.^{7/} Generation fuel is available to IEP for a five-year fixed price contract
9 at [REDACTED]. Gas price is assumed to grow at 4% per year, consistent with
10 Avista's IRP assumptions. Cogeneration scenarios reduce IEP's gas used by existing
11 steam boilers. This gas reduction reduces the cost of cogeneration. Generation operation
12 and maintenance costs include labor to operate and manage the plant, a manufacturer
13 service agreement, and reagent costs for emissions control equipment. These costs are
14 provided by the manufacturer and IEP's internal procurement options. IEP's Avista
15 energy bill savings are calculated at IEP's marginal energy rate. Avista does not
16 currently have a standby generation charge; however, it is possible that Avista would
17 develop a standby generation tariff if IEP began to self-generate. Standby generation
18 charges are modeled based on other utility standby tariffs – including PacifiCorp's
19 Schedule 47 in Oregon and Puget Sound Energy's Schedule 46 – and equal 50 percent of
20 Avista's current demand charge. Property tax impacts were investigated and found to be

^{6/} 26 U.S.C. § 48(a)(1), (a)(2)(A)(ii),(c)(3)(B)(i)-(ii).

^{7/} Cogeneration equipment is not subject to state sales tax. However, some scenarios analyzed did not include heat recovery equipment and required the inclusion of sales tax on the initial capital expenditure.

1 zero due to IEP's current tax treatment. Federal income tax impacts are calculated
2 assuming that IEP's parent company claims 100% bonus depreciation. Fifty percent of
3 the project is assumed to be financed using an existing IEP credit facility.

4 **Q. HOW DO YOU MODEL COSTS AND BENEFITS OVER THE LIFE OF THE**
5 **PROJECT?**

6 A. I model annual cash flows over the life of the project and calculate both net present value
7 and internal rate of return. I use IEP's hourly energy loads from 2017 to 2019 to dispatch
8 the cogeneration plant. The hourly dispatch model includes planned maintenance and
9 random forced outages. Gas use is based on the manufacturer's heat rate curves. The
10 hourly dispatch model results in annual averages for self-generation, fuel consumption,
11 steam production, emissions, and retail energy. Annual average dispatch results are
12 applied to nominal prices over the 30-year life of the project. Confidential Exhibit LDK-
13 4C includes the annual cash flows for all scenarios.

14 **Q. HOW WOULD SELF-GENERATION AFFECT IEP'S CARBON FOOTPRINT?**

15 A. The Cogen Study includes 100% carbon offsets for incremental carbon produced by the
16 generation facility. This was assumed to ensure that the generation facility would meet
17 any potential mitigation requirements from the permitting authority. Mr. Summers
18 provides additional testimony on this issue. The study also includes the purchase of
19 carbon allowances under a future cap and trade framework, if one is passed in
20 Washington. This effectively double counts the cost of carbon but may be necessary to
21 comply with future legal requirements.

1 **Q. WHAT PRICES DID YOU ASSUME FOR THE COST OF EMISSIONS OFFSETS**
2 **AND ALLOWANCES UNDER A POTENTIAL CAP AND TRADE PROGRAM?**

3 A. I assumed \$8 per offset. This price is consistent with prevailing trading prices for offsets
4 in markets for these products, such as those purchased by British Columbia.^{8/} I assumed
5 an allowance price of \$15, which is consistent with the prevailing price for allowances in
6 California's cap and trade market. It is important to note, however, that higher assumed
7 prices for offsets and allowances would not impact the economic feasibility of the
8 generation facility to IEP. It is also, of course, important to note that IEP currently would
9 have no obligation to purchase allowances associated with the generation facility, as no
10 cap and trade program has been developed in Washington.

11 **Q. WAS THE STUDY INFORMED BY INPUT FROM OTHER PARTIES?**

12 A. Yes, draft versions of the study were provided to Avista, Staff, and the Public Counsel
13 Unit of the Washington Attorney General's Office. Comments from these parties were
14 incorporated into the modeling and final draft.

15 **Q. IS SELF-GENERATION ECONOMICALLY FEASIBLE FOR IEP?**

16 A. Yes, self-generation is economically feasible for IEP. Table 1, above, summarizes the
17 results of the analysis for all scenarios. The internal rate of return for the project exceeds
18 Avista's requested cost of equity in every scenario. Avista's cost of equity provides a
19 reasonable basis to judge the feasibility of self-generation because it reflects market-
20 based cost of equity for a large industrial firm. However, it is important to acknowledge

⁸ Exh. Confidential LDK-3C, at 9, n.9.

1 that non-financial considerations, such as a reduced carbon footprint from cogeneration,
2 could make the project attractive to IEP even with returns below Avista's cost of equity.

3 **Q. IS SELF-GENERATION TECHNICALLY FEASIBLE FOR IEP?**

4 A. Yes. The facility meets IEP's operational needs. IEP has sufficient existing gas supply
5 to meet incremental gas needs of the facility.^{9/} IEP has space to locate the facility at its
6 existing manufacturing site.^{10/} The project can be permitted, as Mr. Summers testifies.
7 The Cogen Study did not encounter any technical restrictions that would prevent the
8 construction and operation of the facility. The Response Testimony of Mr. Kevin Rasler
9 provides more information on IEP's technical ability to install and run the generation
10 facility.

11 **Q. WHAT IS YOUR RECOMMENDATION RELATED TO THE COGEN STUDY?**

12 A. I recommend the Commission find that IEP can feasibly bypass the majority of the
13 energy currently served by Avista. I also recommend that IEP continue the procurement
14 process for the cogeneration facility unless a special contract between IEP and Avista is
15 approved.

16 **III. THE COST TO SERVE IEP IS BELOW SCHEDULE 25 RATES**

17 **Q. WHAT IS AVISTA'S COST TO SERVE IEP?**

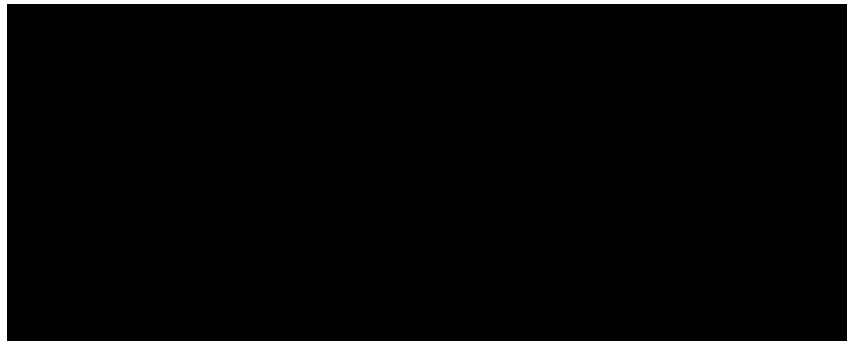
18 A. IEP's costs and revenues are summarized in Confidential Table 2 below. Variable cost
19 includes only energy costs and is calculated using annual average prices at the Mid-
20 Columbia hub. IEP's contribution to fixed costs at current rates is [REDACTED]. The

^{9/} Exh. Confidential LDK-3C, at 17.

^{10/} Id. at 16.

1 proposed special contract rate in the term sheet attached as Exhibit KR-2 to Mr. Rasler's
2 testimony under Avista's filed case is [REDACTED] (I provide additional discussion of
3 the special contract rate below). This results in a contribution to fixed cost of [REDACTED]
4 [REDACTED]. I performed a long-term marginal cost study and found IEP's long-term
5 marginal cost to be [REDACTED]. This means the special contract rate in Exhibit KR-2
6 would contribute [REDACTED] above IEP's long-term costs, and thus would contribute
7 substantially to Avista's fixed costs.

8 **Confidential Table 2**



9 **Q. HOW IS COST TO SERVE IEP RELEVANT TO THE SPECIAL CONTRACT?**

10 A. To account for the fact that IEP has the option to self-generate, which it would give up
11 during the term of the special contract, it is appropriate that the special contract use a
12 bypass rate. A bypass rate is a rate that recovers all of the variable costs to serve Avista
13 and contributes to a portion of its fixed costs. This is consistent with the Commission's
14 rules governing special contracts, which require, "at a minimum, that the contract charges
15 recover all costs resulting from providing the service during its term, and, in addition,
16 provide a contribution to the ... electric ... company's fixed costs."^{11/}

^{11/} WAC § 480-80-143(5)(c).

1 IEP's contribution to fixed cost equals revenue minus variable cost. The marginal
2 cost of serving IEP provides a baseline for establishing the appropriate size of IEP's
3 contribution to fixed costs under the special contract.

4 **Q. WHAT ARE VARIABLE COSTS?**

5 A. In this context, variable cost is the amount that Avista's cost would decrease if IEP
6 stopped service or substantially reduced service. If IEP completely bypassed Avista's
7 system, Avista may be able to eliminate some distribution and billing costs. However,
8 these costs are *de minimis* and IEP is contemplating remaining on Avista's system for a
9 reduced demand. This means Avista would continue to experience distribution and
10 billing costs, and a small amount of variable energy costs.

11 **Q. WHAT ARE FIXED COSTS?**

12 A. Fixed costs are costs that do not decrease if IEP stopped service. For example, executive
13 salaries would probably not decrease if IEP stopped service, nor would Avista likely
14 reduce its total number of employees by a significant amount.

15 **Q. ARE THERE ANY FIXED COSTS THAT COULD BE AVOIDED AFTER A**
16 **SUFFICIENTLY LONG WAITING PERIOD?**

17 A. Yes, the cost of replacing certain long-lived assets could be avoided given sufficient time.
18 For example, if IEP stopped service, Avista would still have to recover the net plant
19 invested for the facilities connecting IEP to Avista's transmission facilities, so these costs
20 should be considered fixed costs. However, once the facilities are fully depreciated,
21 Avista would not have ongoing costs.

1 **Q. HOW DO YOU STUDY IEP'S COSTS?**

2 A. I developed a long-run marginal cost study of the cost to serve a flat [REDACTED] block of
3 IEP's load. I designed the marginal cost study to be consistent with IEP's bypass option.
4 That is, the study focuses on the marginal cost of only the portion of IEP's load that
5 would bypass Avista's system. The portion of energy that would not bypass Avista's
6 system is modeled at Avista's embedded costs. The study does not identify the cost to
7 IEP of serving its load; rather, it identifies the cost to Avista of serving a new load that is
8 equivalent to IEP's load. This study reflects both variable costs and fixed costs that can
9 be avoided in the long run. The complete study is provided in Confidential Exhibit LDK-
10 5C.

11 **Q. WHY DO YOU STUDY LONG-RUN MARGINAL COSTS?**

12 A. IEP's contribution to fixed costs should be large enough to cover the future replacement
13 costs of fixed assets serving IEP. If the special contract rate exceeds IEP's variable
14 energy costs, Avista customers would receive a benefit from IEP remaining on the system
15 in the short term. However, over time, Avista may invest additional capital to serve IEP.
16 If the special contract rate exceeds long-run marginal costs, Avista's customers receive a
17 benefit from IEP remaining on Avista's system as a retail customer in both the short and
18 long term.

19 **Q. WHAT RANGE OF SPECIAL CONTRACT RATES DOES YOUR COST STUDY**
20 **SUPPORT?**

21 A. The cost study indicates that the Special Contract rate should be at least [REDACTED]. If
22 IEP's rate revenue is set to [REDACTED], IEP would contribute [REDACTED] to Avista's
23 existing fixed costs. If the special contract rate were set below [REDACTED], IEP would

1 continue to contribute to fixed costs, but there is some risk that over time this would not
2 be enough to cover future capital costs of serving IEP.

3 ***Long Run Marginal Cost Model***

4 **Q. PLEASE SUMMARIZE YOUR COST-OF-SERVICE STUDY.**

5 A. I performed a cost-of-service study for IEP that separately estimates the cost of serving
6 IEP's base load and variable load. IEP's base load is represented by a flat [REDACTED] block
7 of energy. The study calculates the long-run annual cost to serve base load. IEP's
8 remaining load is treated as cost of service load that is not under threat of bypass. The
9 cost of serving IEP's remaining load is calculated using Avista's embedded cost of
10 service model. Thus, the model is a hybrid of marginal and embedded costs.

11 **Q. WHY DO YOU ESTIMATE COSTS USING A HYBRID MODEL?**

12 A. The purpose of the study is to identify an appropriate floor for IEP's special contract rate.
13 The special contract rate should be high enough that Avista's cost of service customers
14 benefit more from the special contract than from IEP bypassing Avista's system. My
15 hybrid approach mirrors IEP's bypass option, which would serve IEP's base load through
16 self-generation but would continue to rely on Avista for variable energy needs. Matching
17 the cost-of-service study with the bypass option ensures that the special contract rate is
18 set high enough that it benefits Avista's remaining customers relative to the scenario in
19 which IEP pursues self-generation.

1 **Q. HOW DO YOU ESTIMATE LONG-RUN MARGINAL COST?**

2 A. I estimated production, transmission, and distribution costs. I use a combination of
3 market rates and levelized costs. All costs were provided by Avista. I use the midpoint
4 cost for inputs where Avista provided a cost range.

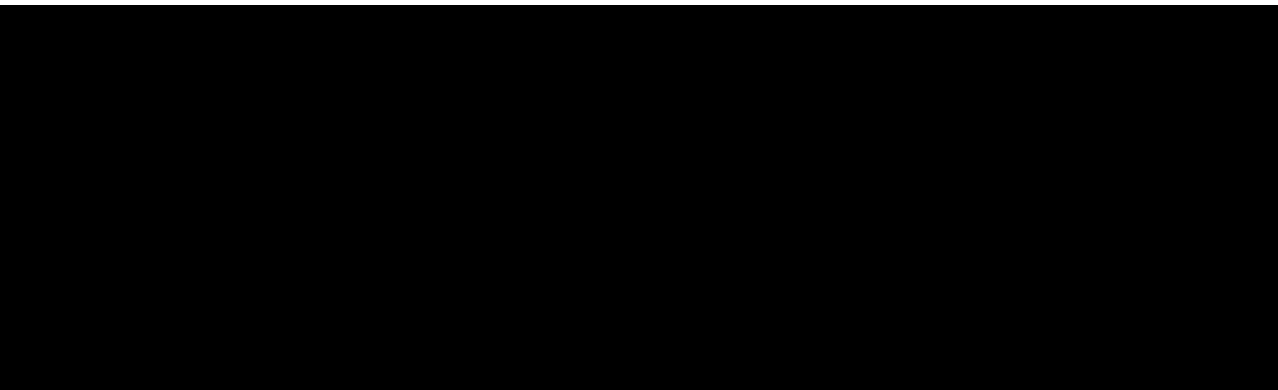
5 **Q. HOW DO YOU MODEL PRODUCTION COSTS?**

6 A. I modeled production costs using market rates. The market rate reflects a five-year
7 physical contract with 70 percent of the contract energy purchased from a specific carbon
8 free source. I also include transaction costs and collateral costs necessary for a long-term
9 contract. This results in production cost of [REDACTED] per MWh, or [REDACTED].

10 **Q. WHAT OTHER OPTIONS DID YOU EXPLORE FOR PRODUCTION COSTS?**

11 A. I calculated a total of eight production scenarios. The eight scenarios are presented in
12 Confidential Table 3 below. I selected the five-year physical contract with 70% specified
13 carbon free sources because it reflects Avista's current carbon mix, provides long-term
14 certainty, and simplifies modeling transmission costs. This scenario has the second
15 highest production costs and ensures that marginal production costs are conservatively
16 high. The contract price reflects Mid-Columbia energy hub pricing for 2021 and 2022.

17 **Confidential Table 3**

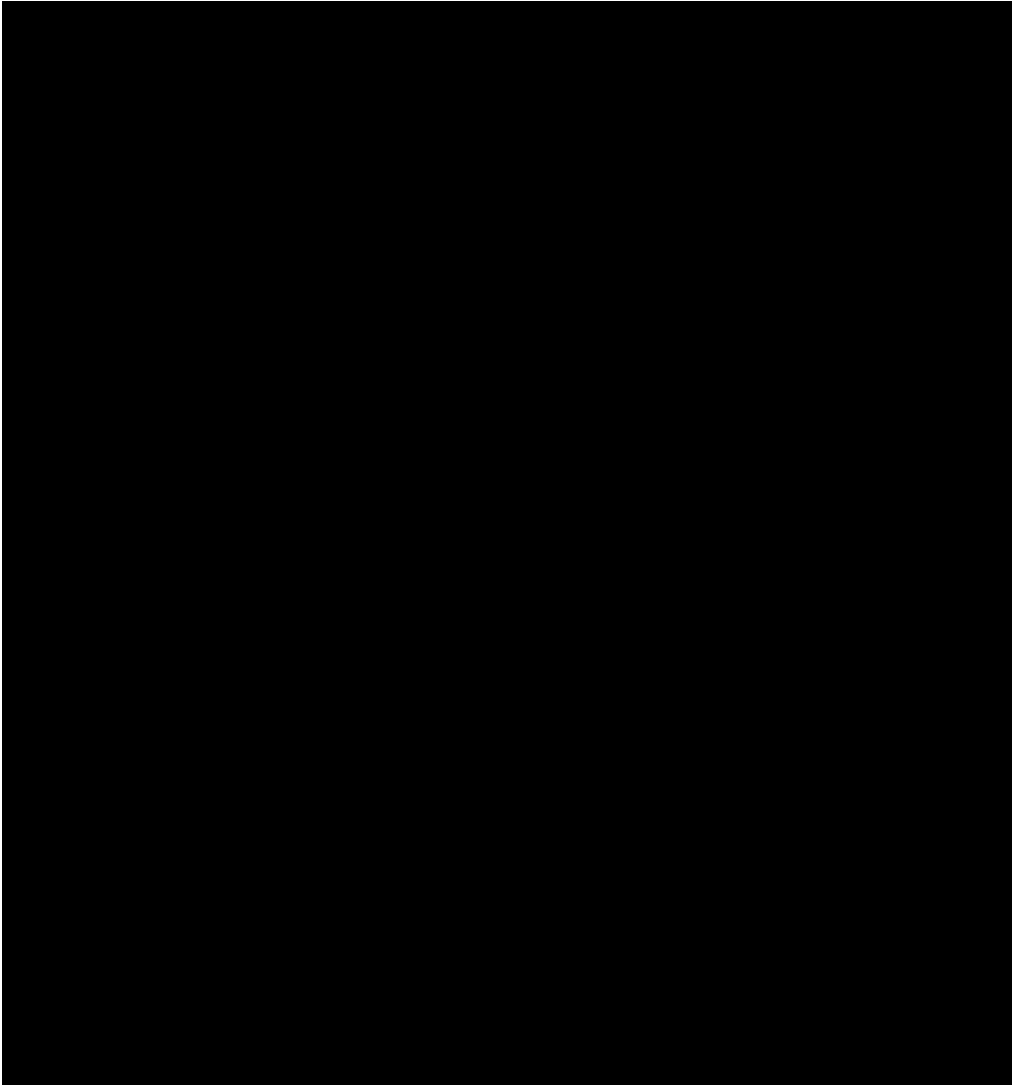


1 **Q. HOW DO YOU MODEL TRANSMISSION COSTS?**

2 A. I modeled transmission costs by calculating the cost of a direct transmission path from
3 IEP to the Mid-Columbia energy hub. This is consistent with the energy source modeled
4 for production costs. Costs include BPA rates, interconnection costs, and scheduling
5 costs. The transmission path follows an existing Bonneville Power Administration
6 transmission line from Mid-Columbia to the Trentwood substation, three miles east of
7 IEP. The BPA transmission cost uses BPA proposed point-to-point rates in the ongoing
8 BP-22 rate case, and current rates for ancillary services. Confidential Table 4 presents
9 the components of the BPA transmission expense.

1

Confidential Table 4



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3

From the substation I modeled a hypothetical direct transmission connection to IEP's site.

4

The direct transmission connection uses Avista's internal cost estimates for new

5

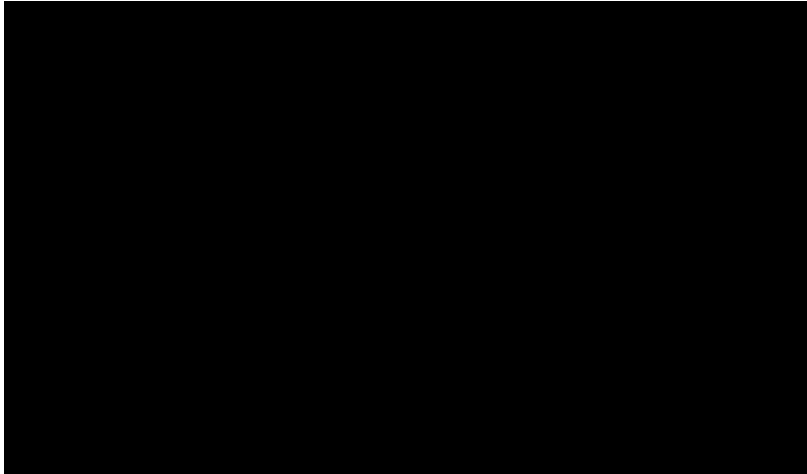
transmission and interconnections. Confidential Table 5 below presents the estimated

6

interconnection cost.

1

Confidential Table 5



2

Purchasing and transmitting energy to IEP relies on Avista's scheduling staff and facilities. I calculated costs using both an allocated cost model and market costs. The allocated cost model assumes a full-time staff of 14 FTE and [REDACTED] in capital costs. IEP is allocated three percent of the annual scheduling costs based on the [REDACTED] share of peak demand. This results in a cost of [REDACTED]. The market rate of [REDACTED] is used as a conservative measure of marginal scheduling costs.

3

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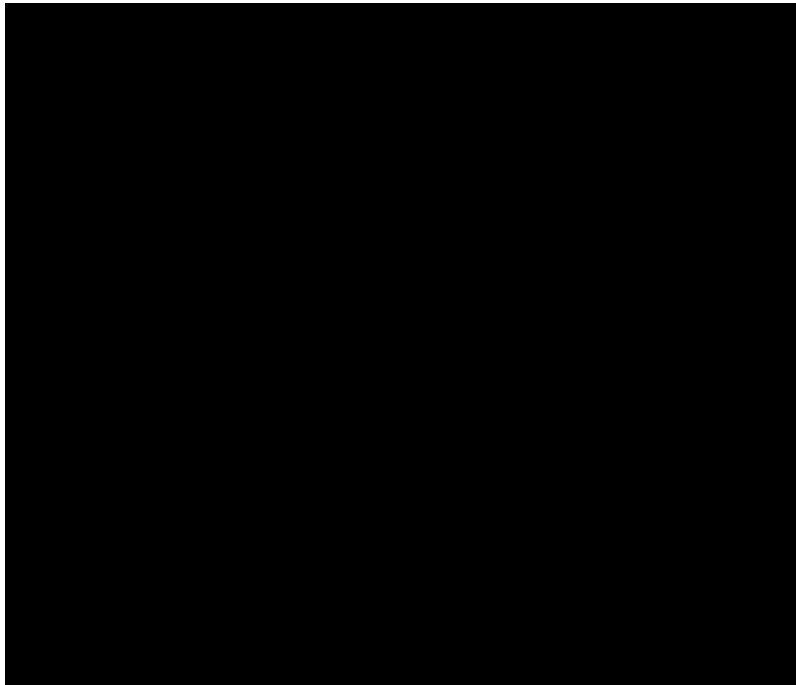
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Confidential Table 6



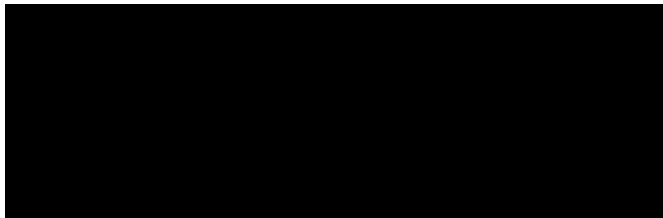
2

3 **Q. WHAT ARE TOTAL TRANSMISSION COSTS?**

4 A. Total transmission costs are [REDACTED], as summarized in Confidential Table 7.

5

Confidential Table 7



6

7 **Q. HOW DO YOU MODEL DISTRIBUTION COSTS?**

8 A. IEP's baseload energy is received at the transmission level. The only distribution costs
9 that I include are metering and networking costs. Confidential Table 8 presents
10 distribution costs.

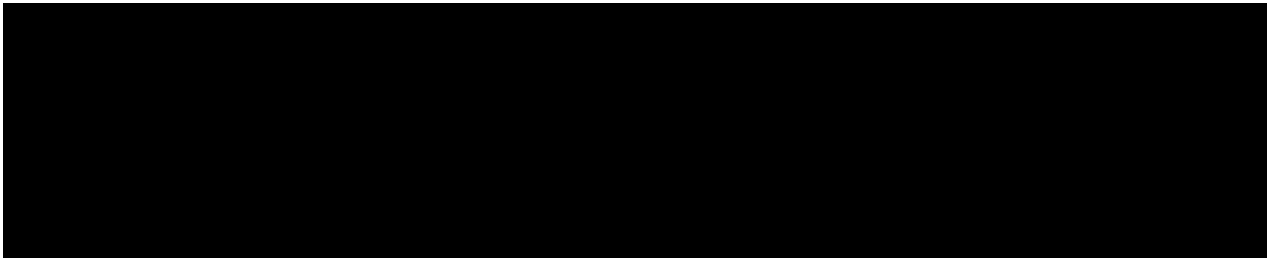
1 **Confidential Table 8**



2
3 **Q. HOW DO YOU MODEL EMBEDDED COSTS FOR IEP'S REMAINING**
4 **VARIABLE ENERGY REQUIREMENTS?**

5 A. I used Avista's embedded cost of service model to calculate the embedded cost of a [REDACTED]
6 [REDACTED] block of energy served by Schedule 25, and IEP's full load. I used the difference
7 between these values as the embedded cost of IEP's net energy requirements. The results
8 of both the embedded cost of service model and my hybrid long-run marginal cost model
9 are summarized in Confidential Table 9 below.

10 **Confidential Table 9**



11
12 **Q. HOW DOES IEP'S LONG-RUN MARGINAL COST COMPARE TO IEP'S**
13 **EMBEDDED COST?**

14 A. IEP's long-run marginal cost is [REDACTED] less than IEP's fully embedded costs.

1 *Special Contract Pricing*

2 **Q. WHAT IS THE IMPACT TO REMAINING CUSTOMERS IF IEP BYPASSES**
3 **AVISTA'S SYSTEM?**

4 A. If IEP bypassed Avista, IEP would reduce energy purchases by approximately [REDACTED].
5 In the short run, Avista's power costs would reduce approximately [REDACTED] and
6 Avista's revenue would decrease by [REDACTED].^{12/} If the bypass coincided with a rate
7 case, rates for remaining customers would increase by [REDACTED]. Over time, Avista
8 may have additional avoided costs, as demonstrated by the long-run marginal cost study.

9 **Q. WHAT RATE WOULD ENSURE THAT AVISTA CUSTOMERS BENEFIT**
10 **FROM THE SPECIAL CONTRACT?**

11 A. Any rate greater than the short-term market energy rate of [REDACTED]
12 [REDACTED] would benefit remaining Avista customers in the short run. However, as
13 discussed above, it is possible that over time Avista would avoid additional costs. A rate
14 that results in revenues above the long-run marginal cost of [REDACTED] would give a
15 very large benefit to customers in the short run and ensure that the benefit remains
16 positive over time. To further the conservative nature of the analysis and ensure IEP
17 contributes to fixed costs under all plausible scenarios, an additional buffer of \$1 million
18 above the long-run marginal cost, or [REDACTED], provides for a 5 percent margin of
19 error in the study. Thus, the special contract rate should be set such that the contract
20 revenue is at least [REDACTED].

^{12/} This assumes that revenue associated with the lost load equaled the fully embedded cost. In reality, Schedule 25 rates exceed fully embedded costs, and lost revenue would be substantially higher.

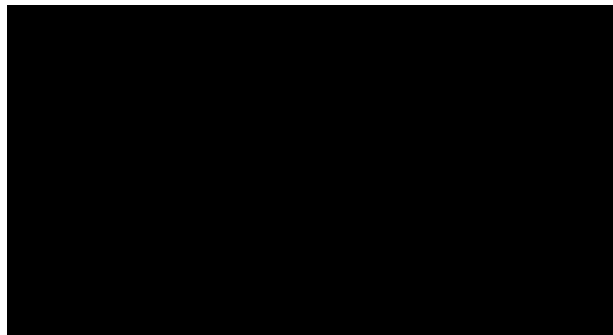
1 **Q. WHAT METHODOLOGY DO YOU RECOMMEND FOR ESTABLISHING THE**
2 **SPECIAL CONTRACT RATE?**

3 A. I recommend that the contract rate be set to [REDACTED]
4 [REDACTED].

5 **Q. WHAT IS IEP'S EMBEDDED COST OF SERVICE?**

6 A. IEP's embedded cost of service depends on revenue requirement inputs. These inputs are
7 uncertain and depend on the Commission's resolution of this proceeding. The range of
8 reasonably potential outcomes is no increase, up to Avista's requested increase.
9 Confidential Table 10 below presents the special contract rate and the resulting
10 contribution to fixed cost under a range of revenue increase outcomes.

11 **Confidential Table 10**



12
13 **Q. WHY DO YOU RECOMMEND THIS METHODOLOGY?**

14 A. While IEP's transition to a special contract benefits customers relative to a bypass, it may
15 be perceived by other customers as a cost increase. This is because IEP is currently
16 subsidizing other customers by virtue of paying above its cost of service,^{13/} and when IEP
17 transitions to a special contract this subsidy will decrease. As IEP's subsidy of other
18 customers decreases, rates for other customers will increase. I recommend that the

^{13/} See Exh. JDM-1T at 6 (Table 3) (showing Schedule 25 at 15% above rate parity).

1 special contract rate be set with sensitivity to the rate impact for other customers. Tying
2 the special contract rate to the embedded cost of service divorces the rate impact to other
3 customers from the final revenue requirement resulting from this rate case. For example,
4 if my testimony proposed a fixed number, such as the [REDACTED] floor recommended
5 above, and the Commission approves Avista's rate request as filed, the difference
6 between Avista's cost of service and special contract rate would be [REDACTED] rather
7 than the intended [REDACTED]. My proposal ensures that other customers will not face a
8 higher than intended rate impact should the Commission approve Avista's full requested
9 rate increase.

10 My methodology also ensures that the special contract rate exceeds the floor of
11 [REDACTED] established by my marginal cost study even in the scenario where the
12 Commission awards no rate increase to Avista.

13 **Q.** [REDACTED]

14 [REDACTED]

15 **A.** [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]

11
12 **Rate Impact**

13 **Q. HOW DOES YOUR PRICING AFFECT RATES OF OTHER CUSTOMERS?**

14 A. Avista’s requested revenue requirement is \$575 million. The fixed cost reduction of [REDACTED]
15 [REDACTED] of Avista’s requested revenue requirement.

16 **Q. DO YOU PROPOSE A SPECIFIC RATE TREATMENT ASSOCIATED WITH**
17 **THE SPECIAL CONTRACT?**

18 A. I do not propose a specific rate treatment at this time. Rate treatment of the impacts of
19 the special contract should be made within the broader context of a rate-spread and rate-
20 design analysis, which I have not been asked to perform.

21 **IV. DEMAND RESPONSE**

22 **Q. PLEASE DESCRIBE THE DEMAND RESPONSE COMPONENT OF THE**
23 **SPECIAL CONTRACT.**

24 A. The term sheet included as Exhibit KR-2 to Mr. Rasler’s testimony includes a [REDACTED]
25 demand response program. The program is designed to aid Avista’s transition to carbon
26 free generation. IEP will provide [REDACTED]

^{14/} Rasler, Exh. KR-2C at 2.

1
2
3
4

[REDACTED]
[REDACTED]
[REDACTED] ^{15/} [REDACTED]
[REDACTED].

**Q. HOW DOES THE DEMAND RESPONSE PROGRAM AID AVISTA’S
TRANSITION TO CARBON FREE GENERATION?**

A. Most new renewable resources are not dispatchable. For example, wind speed may be low during peak load hours. As a result, renewable resources are not responsive to Avista’s energy needs. The preferred portfolio in Avista’s IRP includes new gas generation in part due to the non-dispatchability of renewable resources.^{16/} Avista’s IRP also includes 25 MW of demand response in the same time frame as the new gas generation.^{17/} This demand response can reduce the amount of new gas generation that Avista builds.

**Q. IS DEMAND RESPONSE AVAILABLE TO AVISTA WITHOUT THE SPECIAL
CONTRACT?**

A. Avista will not be able to obtain demand response of the same nature without the special contract. Unlike new generation, demand response has limited procurement options. Demand response must be sourced from customers, and IEP is the only Avista customer large enough to provide more than 10 MW of demand response. This program is a unique opportunity for Avista to have a single point of contact for a large and reliable curtailment.

^{15/} Avista 2021 Electric Integrated Resource Plan, at Page 1-1.
^{16/} Id. at 11-6.
^{17/} Id. at 11-9.

1 **Q. HOW DOES THIS COMPARE WITH OTHER DEMAND RESPONSE**
2 **RESOURCES AVAILABLE TO AVISTA?**

3 A. Other examples of demand response programs in Avista’s IRP include time of use rates,
4 variable peak pricing, smart thermostats, and third-party contracts. The special contract
5 demand response agreement is larger than the combined size of all other demand
6 response programs Avista expects to acquire in Washington over the 20-year IRP
7 planning horizon.^{18/}

8 **Q. CAN AVISTA RELY ON THESE OTHER DEMAND RESPONSE RESOURCES**
9 **IN EVERY HOUR OF THE YEAR?**

10 A. No. Time of use rates and variable peak pricing are not dispatchable and only affect
11 demand in certain times of the day. Direct load control thermostats are only effective
12 when thermal equipment is operating. Avista’s other demand response programs are
13 tailored to address peak load.

14 **Q. ARE THERE SCENARIOS WHERE IEP’S DEMAND RESPONSE PROVIDES**
15 **VALUE OUTSIDE OF PEAK LOAD HOURS?**

16 A. Yes. IEP can provide load reduction in off-peak hours in the event of plant outages or, as
17 occurred recently with Northwest Pipeline, gas supply outages.

18 **Q. HOW WILL IEP REDUCE ITS LOAD IN RESPONSE TO A CURTAILMENT**
19 **REQUEST?**

20 A. As Mr. Rasler testifies, IEP’s primary energy consumption comes from operating a
21 Thermo-Mechanical Pulp (“TMP”) machine. [REDACTED]

22 [REDACTED] ^{19/} [REDACTED]

^{18/} Id.
^{19/} IEP faces operational limitations that prevent committing in advance to curtailments longer than four hours. However, IEP may be able to curtail for longer than four hours depending on operations at the time a curtailment is requested.

1 [Redacted]

2 [Redacted]

3 [Redacted]

4 **Q.** [Redacted]

5 [Redacted]

6 [Redacted]

7 **A.** [Redacted]

8 [Redacted]

9 [Redacted]

10 [Redacted]

11 [Redacted]

12 [Redacted]

13 **Q.** [Redacted]

14 [Redacted]

15 **A.** [Redacted]

16 [Redacted]

17 [Redacted] ^{20/} [Redacted]

18 [Redacted]

19 [Redacted]

20 [Redacted]

21 [Redacted]

^{20/} Avista preferred resource strategy in the 2021 Electric IRP acquires capacity resources in advance of the 2027 capacity shortfall, including demand response and new generation. This suggests there are avoided capacity costs associated with the demand response program prior to 2027.

1 [REDACTED]

2 [REDACTED]

3 **Q.** [REDACTED]

4 **A.** [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 **Q. WHAT DOES AVISTA’S 2021 IRP INDICATE REGARDING AVOIDED**
 13 **COSTS?**

14 **A.** Avista models demand response in its 2021 IRP. Each of the demand response products
 15 selected in the preferred resource strategy is reproduced below.

Table 11.4: PRS Demand Response Programs

Program	Washington	Idaho
Time of Use Rates	2 MW (2024)	2 MW (2024)
Variable Peak Pricing	7 MW (2024)	6 MW (2024)
Large C&I Program	25 MW (2027)	n/a
DLC Smart Thermostats	7 MW (2031)	n/a
Third Party Contracts	14 MW (2032)	8 MW (2024)
Behavioral	1 MW (2041)	n/a
Total	56 MW	16 MW

1 Additionally, Avista’s IRP models include price, duration, and capacity credit
 2 assumptions for these resources. The assumptions used in Avista’s models for demand
 3 response are excerpted in Table 11 below.^{21/}

Table 11

	Peak Credit			Duration of Energy		Ancillary Services Potential	Price per kW		
	Winter	Summer	Events	Event	Savings		2022	2027	2031
DLC Smart Thermostats - Cooling	0%	60%	12	3	32%	15.2	\$ 159.31	\$ 175.89	\$ 186.65
DLC Smart Thermostats - Heating	60%	0%	12	3	-14%	2.7	\$ 92.16	\$ 101.75	\$ 107.98
Third Party Contracts	60%	60%	8	4	100%	3.3	\$ 96.15	\$ 106.16	\$ 112.66
Time-of-Use Opt-in	60%	60%	88	6	100%	0	\$ 72.67	\$ 80.23	\$ 85.15
Time-of-Use Opt-out	60%	60%	88	6	100%	0	\$ 83.29	\$ 91.96	\$ 97.59
Variable Peak Pricing Rates	60%	60%	20	4	0%	0	\$ 32.64	\$ 36.03	\$ 38.24
Large C&I	60%	60%	20	4	0%	0	\$ 50.00	\$ 55.20	\$ 58.58

4 The characteristics of the demand response options, including peak credit, number and
 5 duration of events, and prices provide insight into the demand response avoided costs.
 6 The avoided cost associated with the proposed Large C&I demand response program in
 7 2027 is at least \$55 per kW. However, \$55 per kW represents a floor value for avoided
 8 cost. The more expensive demand response resources are not selected for Washington in
 9 2027 under the preferred resource strategy. However, third party contracts are selected
 10 for Washington in 2027 under certain scenarios, such as the Baseline 1 scenario. This
 11 demonstrates that third party contracts are a marginally economic resource in 2027.
 12 Therefore, the avoided cost of the demand response program is arguably close to \$106 in
 13 2027.

14 The preferred resource strategy does select the more expensive demand response
 15 resources in 2031 and 2032. This indicates that avoided costs grow over time. The

^{21/} See “DR” and “Resource Data” available at: <https://myavista.com/-/media/myavista/content/documents/about-us/our-company/irp-documents/emissions/2prism70gurobi120720irpbaseline1.xlsm> (last accessed April 21, 2021).

1 Commission should use \$106 as an average avoided cost measure for the duration of the
2 post-commitment period because third party contracts are marginally economic in 2027
3 and are selected resources in 2032.

4 Q. [REDACTED]

5 A. [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 Q. [REDACTED]

15 [REDACTED]

16 A. [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED] ^{22/} [REDACTED]

21 [REDACTED]

^{22/} This benefit is calculated as the difference between the avoided cost estimate of \$106 and the demand response payment [REDACTED]

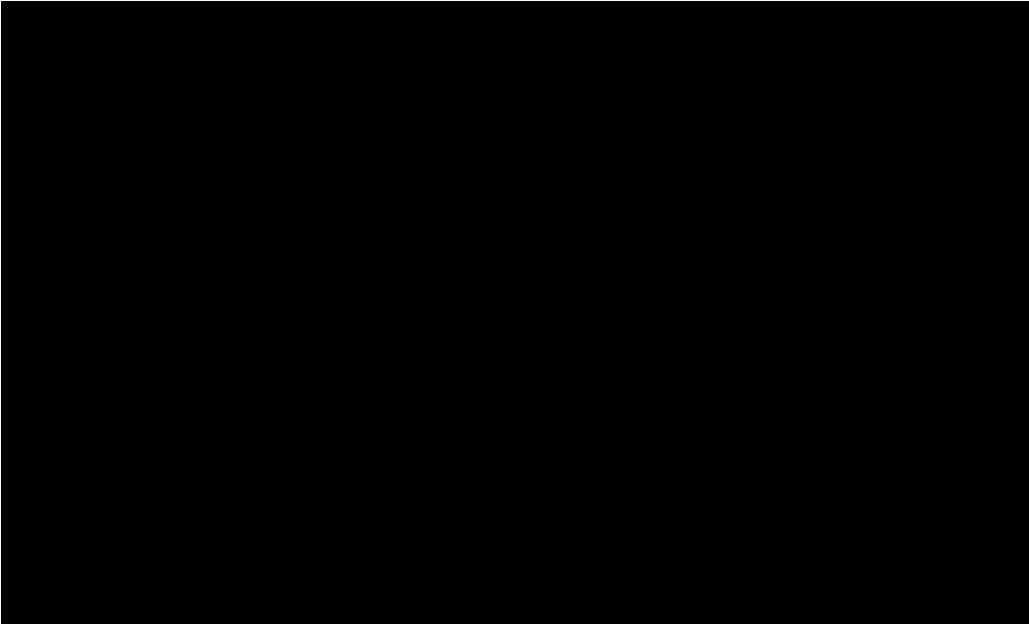
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Q. [Redacted]

A. [Redacted]
[Redacted]
[Redacted]
[Redacted] The 25th ranked day is 200 MW

lower than the highest ranked day. The second factor is that market prices may support curtailment even if Avista does not need to rely on the demand response program for capacity.

Confidential Figure 1



I anticipate that the majority of Avista’s load curtailments will be to take advantage of economic energy trading opportunities rather than to meet capacity needs. Energy markets typically have a few days per year with unusually high market prices. However, there are typically many days per year where energy prices are above retail

1 rates. [REDACTED] per year allows Avista to capture economic value from
2 outlying energy prices without over-burdening IEP with curtailment calls due to only
3 marginal economic energy trading opportunities.

4 **Q. IS IEP'S PARTICIPATION IN THE DEMAND RESPONSE PROGRAM**
5 **RELATED TO THE REQUESTED BYPASS RATE?**

6 A. Yes. As Mr. Rasler testifies, the demand response program is not costless to IEP; it
7 involves a substantial interruption of and modification to IEP's operations. The bypass
8 rate provided in the special contract helps to offset some of the costs of the demand
9 response program. This means that there is a relationship between the bypass rate and the
10 demand response rate. My proposed pricing for the bypass rate may need to be adjusted
11 if the demand response payment is below [REDACTED].

12 **V. CONCLUSION**

13 **Q. PLEASE SUMMARIZE YOUR TESTIMONY AND RECOMMENDATIONS.**

14 A. IEP has proposed terms for a special contract that result in large and ongoing benefits for
15 Avista ratepayers. IEP has a credible opportunity to bypass Avista and save a substantial
16 amount of money. This bypass would increase Avista rates by approximately [REDACTED]
17 [REDACTED] The proposed special contract results in a much smaller rate increase of [REDACTED]
18 [REDACTED] Avista customers benefit by avoiding a large rate increase associated with IEP's
19 bypass. In addition, Avista customers benefit by receiving access to a large and cost-
20 effective demand response program. [REDACTED]

21 [REDACTED]
22 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

23 A. Yes.