

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-20___

DIRECT TESTIMONY OF

SCOTT J. KINNEY

REPRESENTING AVISTA CORPORATION

1 **I. INTRODUCTION**

2 **Q. Please state your name, employer and business address.**

3 A. My name is Scott J. Kinney. I am employed as the Director of Power Supply at
4 Avista Corporation, located at 1411 East Mission Avenue, Spokane, Washington.

5 **Q. Would you briefly describe your educational and professional background?**

6 A. Yes. I graduated from Gonzaga University in 1991 with a B.S. in Electrical
7 Engineering and I am a licensed Professional Engineer in the State of Washington. I joined the
8 Company in 1999 after spending the first eight years of my career with the Bonneville Power
9 Administration. I have held several different positions at Avista beginning as a Senior
10 Transmission Planning Engineer. In 2002, I moved to the System Operations Department as a
11 Supervisor and Operations Support Engineer. In 2004, I was appointed as the Chief Engineer,
12 System Operations and as the Director of Transmission Operations in June 2008. I became the
13 Director of Power Supply in January 2013, where my primary responsibilities involve management
14 and oversight of short- and long-term resource planning, acquisition of power resources, and power
15 trading.

16 **Q. What is the scope of your testimony in this proceeding?**

17 A. My testimony provides an overview of Avista's evaluation and decision to join the
18 Western Energy Imbalance Market (EIM) operated by the California Independent System Operator
19 (CAISO). This includes preliminary and updated costs associated with market integration and on-
20 going operational support along with anticipated benefits associated with market operations.

1 A table of contents for my testimony is as follows:

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10 **Q. Are you sponsoring any exhibits?**

11 A. Yes, I am sponsoring 11 exhibits, as listed below:

- 12 • Exh. SJK-2 includes Avista's signed EIM Implementation Agreement with the
- 13 CAISO.
- 14 • Exh. SJK-3 includes the CAISO FERC filing of Avista's Implementation
- 15 Agreement.
- 16 • Exh. SJK-4 includes the FERC acceptance of Avista's Implementation Agreement.
- 17 • Exh. SJK-5 includes Utilicast Technology Assessment.
- 18 • Exh. SJK-6 includes Utilicast Metering and Controls Assessment.
- 19 • Exh. SJK-7 includes Avista's original EIM project Charter.
- 20 • Exh. SJK-8 includes Avista's Human Resource Plan.
- 21 • Confidential Exh. SJK-9C includes the cost estimate associated with the Human
- 22 Resource Plan.
- 23 • Exh. SJK-10 includes the updated EIM Scope document.
- 24 • Confidential Exh. SJK-11C includes the updated cost estimate associated with the
- 25 Human Resource Plan.
- 26 • Exh. SJK-12 includes the Energy and Environmental Economics (E3) EIM benefit
- 27 analysis report.
- 28

29

II. EIM BACKGROUND – DECISION TO JOIN

30 **Q. Please describe the circumstances which led to Avista's decision to join the**

31 **EIM.**

32 A. Avista has actively monitored the operation and expansion of the EIM since its
33 inception in the fall of 2014. The Company regularly participates in regional meetings and

1 dialogue associated with the EIM including the potential expansion of the EIM to a day ahead
2 market. Avista continuously evaluates the operational benefits associated with EIM participation,
3 and the associated risks of not participating in the market. One of the largest operational benefits
4 for current EIM participants is the ability to balance and regulate load and renewable resources by
5 leveraging available market resources, instead of relying on only internal resources to provide
6 regulation and flexible ramping.

7 Avista also closely monitors the impacts to the bi-lateral trading market as more entities
8 join the EIM. The integration of northwest utilities such as Portland General Electric (“PGE”),
9 Puget Sound Energy (“PSE”), Idaho Power (“IPC”) and Seattle City Light into the EIM has had
10 an impact on short term hourly market liquidity. In addition, the commitment of NorthWestern
11 Energy and the Bonneville Power Administration (BPA) to join the market in the next few years,
12 will put additional stress on near term hourly market liquidity. Due to the need to pass EIM
13 sufficiency and flexible ramping tests and meet other market transaction deadlines that occur well
14 before the operating hour, EIM participants are less likely to conduct bi-lateral transactions close
15 to the operating hour. This leads to significant risk and inefficiencies for non-market participants
16 to reliably and responsibly meet load service obligations and balance variable resources.

17 With over 82 percent of the load in the western interconnection committed to joining the
18 EIM by April 2022, non-participating utilities will face growing market liquidity risk. To mitigate
19 that risk, they will need to hold back more reserves to minimize exposure to in-hour fluctuations
20 or extended non-planned generation outages. Holding additional reserves will lead to higher
21 overall power supply costs, as excess available resources can’t be fully optimized, or additional
22 resources may need to be built or purchased.

23 **Q. Are there other circumstances that led to the Company’s decision?**

1 A. Yes. As Avista seeks to transition its resource portfolio to meet stated Company
2 clean energy goals, there are multiple factors that influence Avista’s renewable resource mix,
3 including the declining price of renewable resources, our customer’s increasing interest in
4 purchasing cleaner energy, and the implementation of new carbon emission policies in the West.
5 Based on competitive pricing and customer interest, Avista recently signed two Power Purchase
6 Agreements (PPA) for renewable resources – 20 MW of solar starting in December of 2018
7 (Adams-Neilson)¹ and 145 MW of wind starting in November 2020 (Rattlesnake Flat).

8 Avista also seen an increased interest from developers looking to integrate qualifying
9 resources that meet the requirements under the Public Utility Regulatory Policies Act (PURPA),
10 which may lead to additional PURPA renewable resources in the Avista Balancing Authority Area
11 (BAA). The Company is currently conducting a renewable request for proposal for up to 300MW
12 of clean non-emitting resources to further its transition to a cleaner resource portfolio. As
13 additional variable resources are integrated into the Avista BAA, it becomes more efficient and
14 cost-effective for Avista to rely on the EIM to help meet the in-hour variability of these resources,
15 instead of holding back reserves and dispatching Avista-owned resources to meet flexible ramping
16 requirements.

17 Based on the short-term market liquidity risks associated with being a non-EIM participant
18 and Avista’s changing resource portfolio, that will include additional variable resources, Avista
19 decided it was time to join the Western EIM to reduce risk and provide benefits to its customers.

20 **Q. What is the general timeline associated with joining CAISO?**

¹ As described by Company witness Mr. Kalich, all output of Adams-Neilson solar is assigned to our Solar Select Program.

1 A. Avista signed an EIM Implementation Agreement with the CAISO on April 25,
2 2019 with a planned go-live date of April 1, 2022. On December 11, 2019, CAISO filed the
3 implementation plan with FERC with a requested effective date of April 1, 2020 to allow Avista
4 to integrate into the market no later than April 1, 2022. FERC accepted the CAISO/Avista
5 Implementation Agreement on February 19, 2020. A copy of the EIM CAISO/Avista
6 Implementation Agreement, the CAISO FERC filing letter, and the FERC acceptance letter are
7 included in Exh. SJK-2, Exh. SJK-3 and Exh. SJK-4 respectively. Since the signing of its EIM
8 Implementation Agreement, Avista has decided to accelerate its market go-live date to March 2,
9 2022 to align with decisions made by both the BPA and Tacoma Power to start market operations
10 in March of 2022. There are significant efficiency and operational gains for all three entities to
11 start market operations on the same day. CAISO has approved the early start date for all three
12 utilities.

13

14

III. EIM INTEGRATION AND ON-GOING COSTS

15 **Q. What was the original estimated integration and on-going costs to support**
16 **EIM operations?**

17 A. As part of Avista's market monitoring and evaluation efforts between 2015 and
18 2017, Avista hired Utilicast² to determine preliminary costs of EIM participation in 2015. In the
19 second half of 2018, Utilicast was contracted to help Avista develop a technology assessment and
20 conduct a metering and controls assessment associated with EIM participation requirements.
21 Utilicast also updated the market costs assessment that it had previously conducted for the

² Utilicast is a provider of consulting services to the energy and utilities industry, providing expertise and experience in the areas of regional electricity market solutions, power systems operations, project implementation, analytics, energy services, customer care and related IT infrastructure.

1 Company in 2015. Exh. SJK-5 and Exh. SJK-6 include the Utilicast technology and metering
 2 assessments with updated market integration and on-going costs. Based on these assessments and
 3 preliminary planning completed in the first quarter of 2019, Avista originally estimated the cost to
 4 prepare for market entry would be between \$21.4 million and \$26.7 million (on a system basis).
 5 These costs included metering upgrades, generation control modifications, communication
 6 infrastructure additions and improvements, the purchase and integration of up to eight market-
 7 based software applications, the hiring of a System Integrator consultant, CAISO implementation
 8 fees and addition labor, including both internal existing Avista labor, as well as new employees.
 9 The on-going annual system costs to operate in the market were anticipated to be between \$3.5
 10 million and \$4.0 million in expense. The anticipated on-going costs included maintenance costs
 11 for software licenses and communication networks, the addition of 11-13 new employees to
 12 facilitate market operations and settlements (including a new five-person 24x7 hour EIM operating
 13 desk) and the CAISO grid management charge. Table 1 below provides a summary of the original
 14 integration and on-going costs associated with EIM operations.

15 **Table 1 – Original EIM Charter Cost Estimates**

| EIM Program Charter Estimates (as of 05/2019) | Implementation | Contingency | Totals | Annual O&M Expenses |
|--|----------------------|---------------------|----------------------|------------------------|
| Capital | \$ 18,129,000 | \$ 4,532,250 | \$ 22,661,250 | \$ - |
| Expense | \$ 2,380,000 | \$ 595,000 | \$ 2,975,000 | \$ 3,534,000 |
| Pre-Paid Expense | \$ 840,000 | \$ 210,000 | \$ 1,050,000 | \$ - |
| Total Costs | \$ 21,349,000 | \$ 5,337,250 | \$ 26,686,250 | \$ 3,534,000 |

20 In May 2019 Avista developed an EIM Program Charter to document the updated cost
 21 estimates, project implementation schedule, software and infrastructure projects, and define
 22 project governance. The EIM Charter is provided as Exh. SJK-7 and provides a full description
 23 of the CAISO market integration requirements, specific Avista projects including estimated capital

1 and expense costs, and the initial forecast of employee resources to support integration efforts and
2 on-going market operations.

3 Avista assumed existing resources would support the various meter and control upgrades,
4 software implementations and learn market requirements during the implementation phase.
5 However, some additional roles were identified for program implementation efforts, including an
6 EIM Program Manager and an Organization Change Management Specialist. Shortly after project
7 implementation, additional engineering support was needed to complete substation metering
8 design work, so a temporary Substation Engineer was hired. These temporary roles were planned
9 for the implementation phase only, without an expectation of transitioning to an on-going EIM-
10 related role post market entry. Original estimates included hiring between 11 and 13 new
11 employees to support on-going market operations. It was assumed that these new employees
12 would be hired 9-12 months before market go-live and approximately one-third of their time would
13 be allocated to the EIM project for market education and software training. As indicated in the
14 EIM Charter (Exh. SJK-7), Avista originally estimated incremental resource labor integration costs
15 to be approximately \$0.74 million and on-going incremental labor costs to be \$2.5 million.

16 **Q. Has Avista revised its EIM cost estimates and Preferred Resource Plan?**

17 A. Yes, updates were made to both labor and non-labor costs. After a year into the
18 EIM integration effort and acquiring a better understanding of the market operation support needs,
19 a detailed resource plan was created to identify program integration and operational support gaps.
20 The EIM Human Resource Plan and associated cost estimate are included as Exh. SJK-8 and
21 Confidential Exh. SJK-9C, respectively. After completing the preferred employee resource plan
22 including August 2020 revisions, Avista created the EIM Program Scope document which is
23 provided as Exh. SJK-10. The Human Resource Plan cost estimate was also updated and is

1 provided as Confidential Exh. SJK-11C. The EIM Program Scope document incorporates updated
 2 metering and network project designs and schedules; the new Human Resource Plan; and overall
 3 project cost estimates based on actual project spend through August of 2020 and remaining
 4 integration work. The total project estimates from the original Charter and the Scope document
 5 are provided in Table 2 (Original Charter) and Table 3 (Scope) for comparison. The associated
 6 incremental project spend estimate is provided in Table 4 (Incremental Spend). Therefore, the
 7 new total EIM integration cost estimate is \$32.1 million, and the on-going annual cost estimate is
 8 \$3.9 million. The incremental EIM integration cost estimate is \$30.7 million. Both updated cost
 9 estimates include contingency funds to cover unknown costs or increased costs above expected
 10 spend. This is consistent with Avista project estimating practices. The contingency is much lower
 11 than what was included in the original estimate since most projects have completed at least the
 12 60% design phase and the hiring of new employees is now set per the Human Resource Plan.

13 **Table 2 – Total EIM Charter Project Estimates**

| EIM Program Charter Estimates (as of 05/2019) | Implementation | Contingency | Totals | Annual O&M Expenses |
|--|----------------------|---------------------|----------------------|------------------------|
| Capital | \$ 18,129,000 | \$ 4,532,250 | \$ 22,661,250 | \$ - |
| Expense | \$ 2,380,000 | \$ 595,000 | \$ 2,975,000 | \$ 3,534,000 |
| Pre-Paid Expense | \$ 840,000 | \$ 210,000 | \$ 1,050,000 | \$ - |
| Total Costs | \$ 21,349,000 | \$ 5,337,250 | \$ 26,686,250 | \$ 3,534,000 |

18 **Table 3 – Total EIM Scope Project Estimates**

| EIM Program Scope Estimates (as of 08/2020) | Implementation | Contingency | Totals | Annual O&M Expenses |
|--|----------------------|---------------------|----------------------|------------------------|
| Capital | \$ 24,091,964 | \$ 2,600,000 | \$ 26,691,964 | \$ - |
| Expense | \$ 5,011,026 | \$ 400,000 | \$ 5,411,026 | \$ 3,907,100 |
| Total Costs | \$ 29,102,990 | \$ 3,000,000 | \$ 32,102,990 | \$ 3,907,100 |

Table 4 – Incremental EIM Scope Project Estimates

| EIM Program Scope Estimates (as of 08/2019) | Implementation | Contingency | Totals | Annual O&M Expenses |
|--|-----------------------|---------------------|----------------------|------------------------------------|
| Capital | \$ 24,091,964 | \$ 2,600,000 | \$ 26,691,964 | \$ - |
| Incremental Expense | \$ 3,608,880 | \$ 400,000 | \$ 4,008,880 | \$ 3,907,100 |
| Total Costs | \$ 27,700,844 | \$ 3,000,000 | \$ 30,700,844 | \$ 3,907,100 |

Q. Please describe the revised costs in the preferred Resource Plan and Scope document specific to labor costs.

A. The updated Resource Plan includes updates for how many new employees would be needed for operational support after joining the market and the preferred hire date for all new resources. As Avista continued to evaluate resource needs, the Company sought input from other EIM participating utilities including what roles and responsibilities were needed to successfully operate in the market post go-live. Avista met with these utilities, including Portland General Electric, Idaho Power Company, Arizona Public Service and PacifiCorp, to discuss the roles and responsibilities required to successfully operate in the market post go-live. These utilities indicated a separate EIM operating desk was required to interact with the CAISO and ensure reliable market operations. They also shared that they hired new employees to support settlement activities, data collection and review, network model maintenance, system operations support, resource bidding strategies, and new application technology support. Further, these EIM participating utilities indicated that too lean of a workforce at the time of entry had contributed to operational inefficiencies and recommended some additional personnel. After collecting this information, Avista consulted with Utilicast regarding the new job responsibilities and functions, and gathered input based on their knowledge with CAISO EIM requirements and experience integrating other EIM participating utilities.

1 As a result of the information gathered through the review process, Avista determined that
 2 an incremental 5 full time employees (for a total of 17 incremental full-time employees) would be
 3 necessary to ensure successful implementation and on-going operational support. In addition to
 4 revisions made based on external feedback, the Company also performed several internal reviews
 5 to finalize labor cost estimates based on anticipated hire dates. Reductions were made in August
 6 2020 to the original Resource Plan cost forecast to reflect 2020 hiring delays and the postponement
 7 of two positions – the Training Admin and one of the Settlement Analysts. These positions will
 8 be hired approximately six months after market go-live. Table 5 provides a comparison of the
 9 original new employee estimate and hire dates as provide in the EIM Charter, the Resource Plan
 10 and the revised estimate included in the Scope Program Document.

11 **Table 5 – EIM New Employee Plan Comparison**

| EIM FTE Estimates | Charter Estimates (as of 05/2019) | | Scope Estimates (as of 08/2020) | | |
|-----------------------------------|-----------------------------------|-----------|---------------------------------|-----------------------------------|-----------------------------------|
| | Quantity | Hire Date | Quantity | Org. Hire Date (as of 06/2020) | Rev. Hire Date (as of 08/2020) |
| Implementation Resources | | | | | |
| EIM Program Manager | 1 | Jan-19 | 1 | Jan-19 | |
| Org. Change Management Specialist | 1 | | 1 | Sep-20 | |
| Substation Engineer | | | 1 | Jan-20 | |
| Total | 2 | | 3 | | |
| Incremental EIM FTEs | | | | | |
| Power Supply Analyst | 1 | Oct-20 | 1 | Jul-21 | Sep-21 |
| Network Model Tech | 1 | Oct-20 | 1 | Jun-20 | |
| SCADA Tech | 1 | Oct-20 | 0 | | |
| EIM BA Desk | 1 | Jul-21 | 1 | Feb-20 | |
| EIM BA Desk | 1 | Jul-21 | 1 | Sep-20 | Oct-20 |
| EIM BA Desk | 1 | Jul-21 | 1 | Sep-20 | Oct-20 |
| EIM BA Desk | 1 | Jul-21 | 1 | Jan-21 | |
| EIM BA Desk | 1 | Jul-21 | 1 | Jan-21 | |
| EIM BA Desk | 0 | | 1 | Mar-21 | Mar-22 |
| Training Admin | 0 | | 1 | Mar-22 | |
| EIM BA Analyst | 0 | | 1 | Jul-21 | Sep-21 |
| Settlements Manager | 0 | | 1 | Sep-20 | Oct-20 |
| Data Management Operator | 1 | Oct-20 | 1 | Apr-21 | |
| Settlement Analyst | 1 | Apr-21 | 1 | Apr-21 | |
| Settlement Analyst | 0 | | 1 | Jul-21 | Jun-21 |
| Settlement Analyst | 0 | | 1 | Jul-21 | Aug-22 |
| Compliance | 0 or 1 | Apr-21 | 0 | | |
| IT Analyst | 1 or 2 | Oct-20 | 1 | Jun-20 | Oct-20 |
| IT Analyst | 0 | | 1 | Jun-20 | Jan-21 |
| Total | 11 to 13 | | 17 | | |

1 The Resources Plan includes a thorough description and justification for each new position.
 2 Avista believes the 17 employees represents a mature workforce needed to fully support
 3 implementation and on-going EIM operations. Once Avista has experience operating in the EIM
 4 market, additional EIM labor and roles requirements will be reassessed at that time. The updated
 5 on-going annual EIM loaded labor estimates increased from the original Charter estimate of \$2.5
 6 million to approximately \$3.2 million as shown in Table 6 below.

7 **Table 6 – Labor Cost Comparison**

| EIM HR Plan Incremental Loaded Labor Costs | Charter Estimates (as of 05/2019) | | | Scope Estimates (as of 08/2020) | | |
|--|-----------------------------------|---------------------------|---------------------|---------------------------------|---------------------------|---------------------|
| | Capital | Implementation Expense | Ongoing Expense | Capital | Implementation Expense | Ongoing Expense |
| EIM HR Plan | \$ 550,000 | \$ 185,000 | \$ 2,500,000 | \$ 2,255,219 | \$ 1,033,570 | \$ 3,177,467 |
| Grand Totals | \$ 550,000 | \$ 185,000 | \$ 2,500,000 | \$ 2,255,219 | \$ 1,033,570 | \$ 3,177,467 |

11 As it relates to integration, the new resource plan added \$1.7 million of capital and \$0.85
 12 million of expense related integration labor to the project based on the five additional employees
 13 and accelerating the hire dates to support software implementation, employee training, operator
 14 certification, and parallel testing. The original new employee estimate included only four months
 15 of labor costs to support parallel testing and employee training. The original project estimate in
 16 the Charter significantly underestimated incremental integration labor. The updated estimated
 17 incremental labor cost to hire the new employees to support integration effort is \$3.3 million, with
 18 \$2.25 million in capital related work and \$1.03 million in expense.³

19 The original Charter estimate for on-going annual O&M labor was \$2.5 million attributed
 20 to the original labor estimate of 11-13 incremental EIM employees. Labor has since been revised
 21 to include the estimated 17 incremental employees resulting in an increased annual labor estimate
 22 of \$3.2 million (system loaded).

³ The cost includes labor and labor loadings (primarily related to medical and retirement benefits).

1 **Q. Please now describe the revisions made in the EIM Program Scope document**
2 **that are not related to labor requirements.**

3 A. The significant factors contributing to the non-labor capital project estimate
4 changes in the Scope document are associated with required enhancements to the Avista Decision
5 Support System (ADSS) software and the inclusion of pre-paid software expenses as capital costs.
6 Prior to making the decision to join the EIM, cost estimates related to enhancements to the ADSS
7 system were approximately \$1.0 million and were included as part of Avista's productivity
8 business case, not EIM. These enhancements were intended to expand the ADSS software to
9 create intra-hour optimization runs and automated resource bidding. As these enhancements were
10 intended to maximize resource optimization, they were deemed productivity related and were
11 therefore not included in the original EIM Charter. Only those costs related to Utilicast support
12 for ADSS enhancements, in the amount of \$0.4 million were included in the original cost estimates.

13 However, after selecting the new market applications and working with the vendors on
14 specific design requirements, it was determined that additional ADSS requirements and
15 enhancements were deemed required in order to support EIM market operations and facilitate data
16 interchange between the different applications. Due to this change in scope, costs associated with
17 the ADSS enhancements were assigned to the EIM framework, resulting in an increase in system
18 EIM capital cost estimates by \$3.0 million (original \$1.0 million plus the system enhancements
19 for \$2.0 million), for a total revised estimate of \$3.4 million including Utilicast support. After
20 negotiating with the software vendors providing new EIM related market applications the costs
21 associated with pre-paid software expenses were determined to be capital costs. Therefore the
22 \$1.0 million in pre-paid expense was included in capital spend.

1 Changes to the non-labor expense estimates include Utilicast support costs, CAISO
 2 integration fees, and annual maintenance costs for new software applications. These costs are
 3 summarized in Table 7.

4 **Table 7 - Non-labor Expense**

| Vendor | Incremental Non-Labor Expense Estimate (as of 08/2019) | Go-Live Date | 2020 | 2021 | 2022* | Total |
|----------------------|---|--------------|-------------------|-------------------|-------------------|---------------------|
| PS | SettleCore | Mar-22 | \$ - | \$ - | \$ 35,000 | \$ 35,000 |
| PCI | EIM Suite | Mar-22 | \$ - | \$ - | \$ 140,553 | \$ 140,553 |
| PCI | Outage Management | Apr-21 | \$ - | \$ 56,640 | \$ 63,721 | \$ 120,361 |
| iTRON | MV90 | Jan-20 | \$ 13,347 | \$ 14,560 | \$ 10,920 | \$ 38,827 |
| | VER Forecast | Mar-22 | \$ - | \$ - | \$ 8,750 | \$ 8,750 |
| OATi | Tag Forwarding | Mar-22 | \$ - | \$ - | \$ 16,100 | \$ 16,100 |
| PCI | eTag Forwarding | Mar-22 | \$ - | \$ - | \$ 10,938 | \$ 10,938 |
| | Vendor EIM Software Training | | \$ - | \$ 13,699 | \$ 50,926 | \$ 64,625 |
| | Utilicast | | \$ 284,326 | \$ 481,000 | \$ 318,000 | \$ 1,083,326 |
| | Project Professional Services | | \$ 43,600 | \$ - | \$ - | \$ 43,600 |
| | CAISO Payments | | \$ 50,000 | \$ 200,000 | \$ 50,000 | \$ 300,000 |
| Totals: | | | \$ 391,273 | \$ 765,899 | \$ 704,908 | \$ 1,862,080 |
| *Thru September 2022 | | | | | | |

12 Utilicast expense costs are associated with collecting generation and interchange data to complete
 13 required operational and maintenance cost templates, system modeling, supporting Avista process
 14 changes and providing market training. The CAISO implementation fees are associated with the
 15 six milestone payments of the \$50,000 each per the signed EIM Integration Agreement and other
 16 associated fees as discussed in detail in the Scope document. The implementation of the EIM
 17 business application systems and the associated annual support costs are driven by software
 18 vendors changing how they license and deliver software solutions; an example includes moving
 19 from an on-premise solution to a cloud-based solution hosted by the software vendor. In addition,
 20 software vendors regularly increase the cost of on-going maintenance and support to accommodate
 21 the cost of enhancing, fixing and supporting their products, and to align with market driven forces
 22 such as annual consumer price index increases. To mitigate the risk of price escalation and attain
 23 cost certainty, the Company engaged in aggressive negotiations with each vendor to reduce the

1 non-labor expense and secure pricing for five years after market go-live. Details about each
2 software solution can be found in the EIM Scope document, Exh. SJK-10.

3

4

IV. EIM BENEFITS

5

Q. Please describe the estimated benefits from joining the EIM.

6

A. Avista contracted with Energy and Environmental Economics (E3)⁴ in the fall of
7 2017 to perform an EIM benefit analysis. E3 was chosen since they had previously conducted
8 multiple market benefit assessments for other EIM participants and had the best available system
9 model. This allowed Avista to compare results to the other utilities. The E3 assessment estimated
10 Avista could see a range of system annual benefits from \$2 million to \$12 million by participating
11 in the EIM. The E3 study is provided as Exh. SJK-12.

12

There are four main study assumptions that drive the range of potential EIM benefits: (1)
13 the amount of flexible hydro Avista bids into the market, (2) the amount of transmission that is
14 made available for market transactions, (3) the amount of renewable generation that is integrated
15 into Avista's BAA, and (4) the data source of the estimated benefits of other EIM participants,
16 which was used for comparison purposes and a proxy for market price variations. E3 varied the
17 assumption of these critical drivers to create 24 different study scenarios. Avista analyzed the 24
18 different scenarios and anticipates EIM system annual benefits to be approximately \$5.8 million,
19 which is an average of four of the 24 benefit scenarios (scenarios 6, 12, 18, 24). These four
20 scenarios assume: Avista maximizes hydro bids into the market; has increased renewable
21 generation into the Avista resource mix, due to new carbon emission policies; uses an average of

⁴ Energy+Environmental Economics (or E3) is an energy consulting firm that helps utilities, regulators, policy makers, developers, and investors make strategic decisions as they implement new public policies, respond to technological advances, and address customers' shifting expectations.

1 low and high transmission made available to the market; and an average of EIM benefits based on
2 modeled and actual data to represent price variations.

3 There is a high likelihood that Avista could see benefits move closer to the upper end of
4 the study range (\$12 million system) based on the actual benefits that have been published for
5 existing EIM participants. Market price volatility experienced in 2018 significantly increased the
6 benefits of current EIM participants, compared to anticipated results from their E3 studies. Both
7 IPC and PGE achieved EIM benefits in 2018 as calculated by the CAISO that were over five times
8 their anticipated benefits determined by E3 studies. Avista's resource mix and transmission
9 connection to other EIM participants most closely matches IPC and PGE so Avista should
10 observed higher benefits during volatile market conditions. In 2019, CAISO also reported annual
11 benefits for IPC and PGE of \$28.2 million and \$42.9 million respectively, well above estimated
12 studied values.

13 There are other operational benefits associated with EIM participation that were not
14 quantified in the E3 study. Participation in the EIM will improve system visibility and reliability
15 through improved modeling and new real-time monitoring. EIM participants also experience
16 improved outage coordination, both internal and external. According to the 2020 CAISO second
17 quarter EIM benefit report, a utility's total flexible ramping requirement can be reduced by 47-
18 54% because of the load and generation diversity that exists across the larger EIM footprint.

19 That flexible ramping requirement reduction is shared among the EIM participants. The
20 CAISO also calculates a reduction in renewable curtailments and associated greenhouse gas
21 emission as a result of EIM participation. None of these additional benefits were given an
22 economic value in the E3 study. However, after entering the EIM, Avista's customers will see
23 some unquantified financial benefit from these operating efficiencies.

1 **V. COST BENEFIT ANALYSIS**

2 **Q. Did Avista conduct an economic analysis to support joining the EIM?**

3 A. Yes. Prior to deciding to join the EIM, Avista performed an initial economic
4 analysis to determine the system annual benefits required to breakeven over a ten-year operating
5 period based on initial estimated EIM implementation and on-going costs based on two scenarios.
6 The first scenario assumed integration costs of \$21.4 million and on-going costs of \$3.5 million
7 (original expected system project costs) and the second scenario assumed integration costs of \$26.7
8 million and on-going costs of \$4.0 million (expected system with contingency). In order to break
9 even in 10 years, assuming integration costs of \$21.4 million, Avista would need to achieve system
10 annual benefits of approximately \$5.0 million. Assuming integration costs of \$26.7 million, Avista
11 would need to achieve annual system benefits of approximately \$6.0 million. As previously
12 discussed, based on the E3 benefit analysis, Avista estimated conservative annual EIM benefits of
13 \$5.8 million (system). Therefore, Avista initially anticipated positive revenue from EIM
14 participation in less than 10 years and could achieve breakeven much sooner if observed market
15 benefits are closer to what IPC and PGE have experienced in 2018 and 2019.

16 As previously discussed, the integration and on-going estimates associated with EIM
17 operations were updated based on the preferred Human Resource Plan and the inclusion of all
18 costs associated with required EIM modifications to the ADSS program (previously budgeted in a
19 different capital business case). Avista performed an additional economic analysis with the new
20 costs estimates. Based on the new integration cost of \$32.1 million and on-going costs of \$3.9
21 million, an annual revenue of \$7.8 million is needed to breakeven after 10 years of market
22 operations. This is still well within the range of estimated benefits determined by E3 and quite a
23 bit less than CAISO reported benefits for IPC and PGE in 2018 and 2019. If Avista's actual EIM

1 system benefits are closer to the potential upper bound of \$12 million, as determined by E3 and
 2 experienced by other similar situated EIM participating utilities, then Avista customers will see
 3 positive revenue in a much shorter time period. The economic analysis did not consider other EIM
 4 benefits such as reduced flexible ramping requirements, reliability and system visibility
 5 enhancements, and reductions in greenhouse gases. The economic analyses conducted for both
 6 the original and updated project cost estimates are provided in my workpapers accompanying this
 7 filed case.

8

9

VI. REQUESTED RATE RECOVERY

10 **Q. What EIM capital investment are the Company seeking recovery for in this**
 11 **rate filing?**

12 A. As discussed by Company witness Ms. Andrews the company has pro formed
 13 capital investment of \$14.3 million (Washington-share) that has or will transfer to plant between
 14 January 1, 2020 through project completion in March 2022.⁵ The amount pro formed in the
 15 Company's case totals approximately \$10.8 million⁶ (Washington-share) an average-monthly-
 16 average (AMA) basis as shown in Table 8 below.

17 **Table 8 – Pro Forma Capital Investment – WA Share**

18

19

20

21

| EIM Pro Forma Capital - Washington Share | | | | |
|---|---------------------|---------------------------|----------------------|--|
| 2020 | 2021 | 2022⁽¹⁾ | Total | Rate Period AMA Pro Forma |
| \$ 3,162,378 | \$ 3,493,027 | \$ 7,605,679 | \$ 14,261,084 | \$ 10,775,133 |
| (1) Capital addition planned for March 2022 included is a short-lived asset. | | | | |

⁵ The Revenue Requirement included in this case is based on the Original Charter. Scope document updates were approved by the EIM Executive Steering Committee post-filing and will be updated during the pendency of the case.

⁶ Net plant of \$9.4 million after reflecting accumulated depreciation and accumulated deferred federal income taxes.

1 Depreciation expense of \$1.4 million (Washington-share) associated with this pro forma
2 investment has also been included.

3 **Q. What EIM incremental expense costs are the Company seeking recovery for**
4 **in this rate filing?**

5 A. As discussed by Ms. Andrews, the Company has also pro formed incremental labor
6 and other expenses (Washington-share) totaling approximately \$1.4 million. This balance
7 represents, incremental labor expense of \$780,000, information technology (“IT) expense of
8 \$220,000 and system integrator (Utilicast) and CAISO implementation fee expenses of \$386,000⁷
9 Washington’s Incremental labor expense of \$780,000 represents the labor expense level expected
10 during the rate effective period, including new hires in 2020 and planned new hires through
11 September 30, 2022.⁸ Detailed information related to these new hires are discussed above and
12 included in workpapers included with the Company’s filing.

13 **Q. Does this conclude your direct testimony?**

14 A. Yes.

⁷ These amounts are based on the pro forma period of October 2021 through September 2022 and will not tie to annual monthly totals provided elsewhere in testimony.

⁸ The Company did not pro form increases associated with labor loadings, i.e. expected incremental pension, medical, and other labor costs. Therefore, total labor expenses included are conservative to actual planned labor expenses.