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REBUTTAL TESTIMONY OF

EMILY G. TRAETOW, DANIEL H. FISHER, STEPHEN J. GAUBE,

A. RUSSELL MANTIFEL, AND JAMES H. VANDEN BOS

Witnesses for Bonneville Power Administration

SUBJECT: POWER ENERGY IMBALANCE MARKET BENEFITS **Page**

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SUBJECT: POWER ENERGY IMBALANCE MARKET BENEFITS

Section 1: Introduction

Q. Please state your names and qualifications.

A. My name is Emily G. Traetow, and my qualifications are contained in BP-22-Q-BPA-39.

A. My name is Daniel H. Fisher, and my qualifications are contained in BP-22-Q-BPA-11.

A. My name is Stephen J. Gaube, and my qualifications are contained in BP-22-Q-BPA-14.

A. My name is A. Russell Mantifel, and my qualifications are contained in BP-22-Q-BPA-24.

A. My name is James H. Vanden Bos, and my qualifications are contained in BP-22-Q-BPA-40.

Q. Please state the purpose of your testimony.

A. The purpose of our testimony is to respond to the questions and concerns raised by rate case parties to BPA's proposed forecast of Energy Imbalance Market (EIM)-related benefits. We also respond to the position and recommendations of Joint Party 02 (JP02) concerning the allocation of EIM credits and charges between the Composite and Non-Slice cost pools.

Section 2: Power EIM Benefits Forecast

Section 2.1: E3 Study and EIM Benefits Forecast

Q. Which parties filed testimony concerning BPA's proposed forecast of EIM-related benefits?

A. Northwest Requirements Utilities (NRU), Public Power Council (PPC), and the Alliance of Western Energy Consumers (AWEC) filed testimony in which they describe their concerns with our proposal to set EIM benefits at $3.4 million per year, which, as we explained in our original testimony, was equal to the EIM costs allocated to Power rates.

Q. What concerns did these parties raise?

A. The parties' testimonies raised similar concerns. First, all three contend that BPA has under-estimated the value of EIM participation. Chalier, BP-22-E-AW-01, at 2; Deen & Linn, BP-22-E-PP-01, at 15; Stratman, BP-22-E-NR-01, at 28-29. They each propose, to varying degrees, that we revise the credit upward. To support this increase, they contend that BPA should have used the assessment of potential dispatch benefits performed by E3 and relied upon by BPA in the EIM Record of Decision (ROD) for its business case determination. *See* Chalier, BP-22-E-AW-01, at 17-18; Deen & Linn, BP-22-E-PP-01, at 15, 23; Stratman, BP-22-E-NR-01, at 27-28. These parties also dispute the reasons we gave in our Direct Testimony for not adopting the E3 Study results as our forecast, noting that the E3 Study was already discounted in various ways. *See* Chalier, BP-22-E-AW-01, at 17; Deen & Linn, BP-22-E-PP-01, at 21-22. Finally, these parties contend that by setting benefits significantly below the E3 Study, BPA is undermining its business case for joining the EIM and would need to revisit its business case before making the final decision to join. Deen & Linn, BP-22-E-PP-01, at 15; Stratman, BP-22-E-NR-01, at 28-29.

Q. What is your response?

A. We will respond to each general area of concern in the following sections. First, though, we will address an underlying premise that each party has implicitly assumed in its testimony regarding the E3 Study and benefits assessments. All parties assume that the E3 Study is, effectively, a forecast of EIM benefits for the BP-22 rate period. It is not.

Q. Please explain what the E3 Study actually shows.

A. Commissioned by BPA, the E3 Study estimates benefits resulting from EIM participation using industry-standard methods, consistent with methods used by the vast majority of current and future EIM participants. The purpose of the study was to determine whether expected future benefits (the duration of which was not defined, but certainly went beyond BP-22) justified investments necessary to enable EIM participation. A variety of analytical assumptions was necessary to isolate the value of EIM participation only, while limiting the impact of other factors. For every scenario and sensitivity, no specific future year was identified for simulation, but rather assumptions were made that BPA would be a "mature" participant at the point of evaluation.

The general benefits described in the E3 Study stand in stark contrast to a typical rate case forecast. To ensure cost recovery, BPA's normal net secondary revenue forecast must accurately reflect the anticipated sales of surplus energy, and purchases of energy when there's a deficit, for the upcoming rate period. The E3 methodology could be used to calculate EIM benefits after the fact, but those would not be comparable to our expectation of net secondary revenues today, nor would they accurately represent incremental revenue that BPA should count on for ratemaking and cost recovery purposes. The difficulty in accurately calculating EIM benefits lies primarily in determining the appropriate counterfactual – that is, an estimate of what would have happened in the absence of the EIM. This occurs because EIM participation can impact how the Federal Columbia River Power System (FCRPS) operates in a variety of ways. As one very simple example, BPA could observe very low (near-zero) prices in the EIM and opt for EIM purchases, reserving Federal generating capability for a higher-value future period. The future sales are not likely to be identified as EIM-related, and

though overall net secondary revenues improve, they do so without specifically identifying that EIM activity enabled the benefits.

Q. *Several parties contend BPA has changed its interpretation of the E3 Study. Please describe these customers' concerns.*

A. PPC contends BPA has made "changes in the characterization of the E3 analysis" relative to how it was characterized in the EIM ROD. Deen & Linn, BP-22-E-PP-01, at 23. PPC argues that this recharacterization is "troubling." *Id*. at 19. NRU notes its concern with BPA's present view of the E3 Study, contending that BPA "did not attempt to accurately forecast potential secondary dispatch benefits" or "even stand behind the underlying E3 Study that BPA used to make its Phase II decision." Stratman, BP-22-E-NR-01, at 28. NRU and PPC contend that it is incongruous for BPA to rely on the E3 Study for a decision to join the EIM, but then in ratemaking not use those same benefit levels in the first year and one-half of participation because they do not reflect "mature" participation. Stratman, BP-22-E-NR-01, at 27-28; Deen & Linn, BP-22-E-PP-01, at 15.

Q. *How do you respond?*

A. As we described above, the E3 Study was an analytical component of an investment decision and not an estimate of EIM benefits for the BP-22 rate period. This should not be a surprising result. When BPA sets its rates, we develop forecasts for the rate period for our costs, hydrological output, prices, loads, and other factors. These assessments are always forward looking, using the best available information, including expert opinion and BPA's business judgment. BPA does not assume that just because last year BPA had a good water year or saw high power prices, that this year will yield the same results. A fresh look was taken to consider all factors and new forecasts. Given that this is the standard approach we take to all other rate case forecasts, we do not see why a different strategy would apply to EIM benefits.

The E3 Study, in contrast, is far from a traditional rate case forecast. It is backward looking, estimating benefits from mature participation by examining what benefits BPA could have achieved had it been in the EIM during the study period (2016-2018) and operated consistent with E3's parameters. To use the E3 Study as our "de facto" forecast of EIM benefits, we would also have to assume that the water conditions, loads, prices, and operational constraints present in 2016-2018 would all also occur again over the FY 2022-2023 rate period. This would be an unprecedented assumption. We are unaware of any forecast in the rate case where BPA relies on a backward looking study that estimates hypothetical benefits for a historic period, for which BPA has no experience, and applies those benefits (or costs) to prospective future rates.

Q. *In response to a data request, PPC notes that BPA uses historical studies in various aspects of its ratemaking, such as calculating the capacity associated with delayed loss returns, historical south-to-north reservation on the intertie, the secondary sales forecast, natural gas forecasts, and others. See Attachment 1 (Data Response BPA-PP 30-01). If BPA uses historical information in other contexts, why would reliance on the E3 Study be any different?*

A. We agree with PPC that BPA uses historical information in ratemaking. However, the key difference with those uses and the E3 Study is that all of those studies reflect *actual* historical performance. That is, BPA was *selling* capacity over a historical period, BPA observed actual usage of the intertie, BPA's water was at the levels identified in its historical studies, etc. Critically, in each of these instances, BPA's *experience* over a historical period *informs* BPA's projection in and through the rate period. That experience and historical information is decidedly missing for the EIM. Relying on the E3 Study for our calculation of this rate credit would mean we are using a hypothetical

assumption about benefits, one which is completely uninformed by any actual experience. For the purposes of setting a rate credit in ratemaking, we do not think that is sound.

Q. *How should the E3 Study be viewed in light of the rate case?*

A. We discussed this in our Direct Testimony, Traetow *et al.,* BP-22-E-BPA-33, at 16, but believe reiterating those points here is appropriate. The E3 Study should be viewed for what it is: an assessment of EIM benefits over a historic period assuming BPA had been a mature participant in the EIM. In that vein, it is instructive of the range of potential benefits BPA may be able to achieve after we join the EIM and have ramped up to mature participation. The choice BPA will be facing in the Phase V EIM process will be whether joining the EIM is, among other factors, in BPA's business interest. That is what the E3 Study helps decide. It is not a rate case determination of the forecast of benefits BPA expects to include in rates upon initial entry into the EIM.

Q. *What other concerns did parties raise concerning BPA's view of the E3 Study?*

A. NRU contends that BPA should develop a better forecast of dispatch benefits for EIM participation for inclusion in the Non-Slice cost pool. BPA should either start from the E3 Study to develop the forecast, or if BPA believes it is no longer reasonable, produce evidence to that effect and work with customers outside of the rate case to develop a more accurate study. This study would need to be completed before the decision to join the EIM is made. Stratman, BP-22-E-NR-01, at 28-29. PPC contends that BPA relied extensively on the E3 Study in the EIM ROD and decided that it would rely on that study unless fundamental changes occurred to underlying facts or market rules, or a fundamental flaw was found with BPA's analysis. Deen & Linn, BP-22-E-PP-01, at 17. No market changes have occurred and no flaws have been found. *Id.* PPC states BPA acknowledges that relying on an outdated or flawed study for its business case would be

"unsound." *Id.* at 18. PPC further states that if BPA is not confident in the value of EIM participation, then it needs to revise its business case to ensure that proper assumptions are included in the rate case and in other decision-making processes. *Id.* at 15. If the concerns BPA has with the E3 Study require discounting the benefits level to only $3.4 million, then BPA must consider revisiting the cost-benefit analysis for its decision to join the EIM. *Id.* at 19, 23.

Q. How do you respond?

A. We will not discuss whether BPA should revisit the E3 Study in its final decision-making process for joining the EIM as that issue is not decided in the rate case. As to whether BPA must start from the E3 Study to develop its rate case forecast, we think that is unnecessary because of the different focus and scope of the E3 Study. As has been discussed, the purpose of the E3 Study was to support an investment decision; the E3 Study was never intended to be used to set rates, especially not for the first year and one half of EIM participation.

Section 2.2: Basis for BPA's Estimate of EIM Benefits

Section 2.2.1: Sound Business Principles Support BPA's Estimate

Q. You state above that the E3 Study serves a different purpose than a rate case forecast. Even if you could extrapolate the E3 Study to the BP-22 rate period, or develop another methodology that could produce other, higher EIM benefits for the BP-22 rate period, would you change your position that estimated EIM benefits should be equal to its costs?

A. No. Even if we could extrapolate the E3 Study to the BP-22 rate period or develop another methodology for estimating EIM Benefits, sound business principles would still support our proposal to hold EIM Benefits equal to costs for this rate period.

Q. Please explain.

A. There are three crucial unknowns for this rate period that we discussed in our original testimony and to which the parties have not adequately responded: (1) BPA has *not* made a decision to join the EIM; (2) BPA is entering an entirely new market with which it has no experience; and (3) other constraints, outside of BPA's control, would make forecasting any EIM benefits very uncertain.

Section 2.2.2: BPA Has Not Decided to Join the EIM

Q. Please explain what you mean that BPA has not decided to join the EIM.

A. As we described in our Direct Testimony, BPA has not made the formal decision to join the EIM. The process to make that decision is expected in Phase V, which is expected to commence shortly after the conclusion of the rate case. Traetow *et al.,* BP-22-E-BPA-33, at 18.

Q. Do the parties acknowledge that BPA has not made a decision to join the EIM yet?

A. Yes. AWEC acknowledges that BPA's decision to join has yet to occur. Chalier, BP-22-E-AW-01, at 18. It states, though, that there are significant "tailwinds" moving the agency in that direction. *Id.* Further, if BPA ultimately decides not to join, then BPA has risk mitigation measures in place to address any secondary revenue shortfall. *Id.* PPC makes a similar argument. Deen & Linn, BP-22-E-PP-01, at 24. PPC notes that the combination of existing risk mitigation tools and high reserves has positioned BPA to a 99.9 percent chance of paying the Treasury. *Id.* at 23-24. PPC sees no "substantial adverse impact" if BPA chose to not join the EIM. In addition, PPC notes that even if BPA decides not to join, there would likely be other "attractive opportunities" that would be available for BPA to monetize its capacity. *Id.* at 24.

Q. What is your response?

A. We think it is not consistent with sound business principles to assume that BPA would receive a significant amount of EIM benefits in the first year of *potential* participation. As the parties recognize, BPA has not decided to join the EIM. While BPA has certainty made significant investments of time in evaluating the EIM, and is poised to make its final decision of whether to join later this summer, the ultimate decision to participate has yet to be made. BPA does not think it a prudent business practice to include in rates hypothetical revenues from sales into a market that BPA has no experience with and has not officially decided to join. Rather, BPA believes it should include in its net secondary revenue forecast expected revenues of surplus power sales into a market that it (1) has already decided to participate in and (2) with which it has vast experience. Again, with the EIM, BPA (1) has not decided to join this market, and (2) has no experience with resource participation.

Q. How do you respond to the parties' statements that BPA can manage any revenue risk with BPA's risk mitigation measures and financial reserves?

A. We agree that Power's financial situation is healthy at the moment. However, as the past few rate periods have demonstrated, BPA's forecasts can significantly differ from actual experience, and revenues we thought were conservative estimates can easily evaporate after rates are set. In that context, we do not think it would be prudent to lean on risk mitigation measures and financial reserves in order to offset a revenue stream that is potentially unlikely to materialize. Power's strong financial position has taken years of concerted effort and policy development to achieve. Baking in higher revenue projections, such as crediting rates for benefits of a market BPA has not decided to join, cuts against those efforts. Already, BPA faces a series of cost and revenue risks that are outside of the agency's control. These risks include market prices,

water levels, generation outages, loads, and other factors. While BPA's risk mitigation tools and the current level of financial reserves position it well to address these unknowns, we believe it would be imprudent to add additional revenue risk to an already uncertain revenue future. Adding further risk would put additional pressure on its financial reserves and increase the likelihood that a risk mitigation measure may trigger. We believe assuming rate neutrality of any potential future EIM participation is the fundamentally sounder, and more business-like, approach.

Section 2.2.3: BPA's Inexperience with EIM

Q. In your Direct Testimony, you discussed a lack of "mature" participation in the EIM. Traetow et al., BP-22-E-BPA-33, at 15-16. How did parties respond to that statement?

A. AWEC, PPC, and NRU contend that we are being overly conservative in our approach to developing an EIM benefits forecast. Chalier, BP-22-E-AW-01, at 17; Deen & Linn, BP-22-E-PP-01, at 20-23; Stratman, BP-22-E-NR-01, at 26-28. AWEC contends that a "conservative" assumption would be to use only $24 million in the first full year of operation. Chalier, BP-22-E-AW-01, at 17. AWEC and PPC also note that the E3 study already accounts for BPA's minimal participation through its use of the Flexible Ramp Sufficiency Test (FRST) assumption. *Id.*; Deen & Linn, BP-22-E-PP-01, at 20. PPC further notes that using the FRST scenario, which they contend is a reasonable proxy for shallow entry into the EIM, would produce $18.3 million in additional benefits. This is more than five times the amount proposed by BPA Staff. Deen & Linn, BP-22-E-PP-01, at 23. PPC argues this assumption was intended to reflect minimum flexibility and already assumes BPA would not receive EIM benefits in up to 15 percent of the intervals. *Id.* at 20.

Q. Do you agree that the FRST assumption is an adequate "proxy for shallow entry into the EIM"?

A. No. All scenarios and sensitivities simulated in the E3 Study reflect mature participation because they all allowed E3's PLEXOS model to dispatch all allowable flexibility using perfect foresight. Said differently, the simulations reflect perfection that was adjusted to better illustrate the reality of mature participation. Although the FRST sensitivity had more flexibility constraints than other simulations E3 analyzed, it still relied on the same participation expertise as all other scenarios. Among other factors previously noted in testimony, BPA requires time and experience to gradually improve its ability to make flexibility available to the market and forecast relevant EIM prices.

For example, consider an illustrative hypothetical day from the E3 Study where BPA had 500 megawatts (MW) of incremental (INC) and decremental (DEC) flexibility in every hour of the day. The study assumed perfect knowledge, which impacts both the amount of flexibility dispatched and the periods in which it is dispatched. Prices for all 288 five-minute periods across the day were known, so the dispatch simulation had BPA INC capacity in the highest-price 144 periods and DEC capacity in the lowest-price 144 periods. The INC and DEC amounts were each the full 500 MW of flexibility that BPA possessed. In practice, particularly at go-live, BPA will not know its precise quantity of surplus flexibility on a forward basis and will have to rely on bid curves to achieve optimal dispatch rather than perfect price foresight. BPA expects to get better at both flexibility estimation and bid curve development as it gains EIM experience, but to assume that perfect foresight would exist throughout the first year and one half of EIM participation is, in our view, aggressive.

Q. NRU contends that BPA's reference to an analogy of a company purchasing a new piece of equipment is the only methodology BPA employed to forecast Non-Slice pool secondary revenues from participation in the EIM. Stratman, BP-22-E-NR-01, at 27. Do you agree?

A. While we do not agree that our analogy is a "methodology" or is our "only" reason for our proposal, we do agree that it is a persuasive example of why it is a sound business decision to set revenues equal to cost. As we explained in our Direct Testimony, the EIM is a new market for BPA. While BPA has experience with bidding into the California Independent System Operator (CAISO) real-time and day-ahead markets, in both cases we participated as an aggregate external resource. When BPA receives an award from the CAISO, all the CAISO can see is an interchange schedule from BPA's system resources meeting the dispatch instruction. Under this construct, the CAISO's market has no say in what projects or group of projects BPA used to fulfill the obligation. What the CAISO can see of BPA's resources, and what the CAISO could request BPA's resources to do, is limited.

Q. What is different about the EIM?

A. Participating in the EIM would be much more complex. The CAISO will see each generator within BPA's Balancing Area Authority (BAA). Because of this additional granularity, BPA needed to rethink how it portrays Federal generation so it could be compatible with the CAISO's system and receive the dispatch and congestion benefits of the EIM. As discussed in the EIM ROD, BPA decided to aggregate its most flexible resources into three groups. Capability from these aggregated groups will be offered into the EIM and, if dispatched, energy from *that* group of projects will be generated.

This level of precision in BPA's marketing of the FCRPS is unprecedented. BPA has always balanced its system between its various projects to ensure coordinated

operations of the FCRPS and will continue to do so in the EIM. But the level of granularity that will be expected of it in the EIM is new to BPA and will, in our assessment, require adaptation and hands-on process improvement. BPA has never had to ensure that generation from a particular group of resources is the source that fulfills a particular marketing commitment.

Compounding this complexity is the way BPA is proposing to participate in the EIM. BPA will be using a unique model of participation, using various EIM features, including Overlapping Resource Aggregation (ORA), Aggregated Participating Resources (APR), Aggregated Non-Participating Resource (ANPR), and Non-Generating Resource (NGR) functionality. In addition, BPA will be applying Generation Dispatch Factors (GDFs) to its aggregated resources. While BPA believes these features will enable BPA to participate in the EIM with the flexibility it needs, it will undeniably involve a period of exploration and testing to understand how these features work together and integrate with BPA's existing operations.

All this is to say, BPA expects that its initial bids of FCRPS generation into the EIM will be measured in order to learn and understand the economic and operational effects of its actions. We think, in light of these considerable changes, it is a prudent business decision to approach the first year of EIM operations with our lower level of assumed benefits. This will allow staff responsible for BPA operations and marketing to "take it slow" as we become more familiar with the systems, the processes, the charge codes, and the rules of the EIM.

Q. *Are there any other considerations in your view that support BPA's proposal to hold to a rate-neutral approach for EIM benefits this rate period?*

A. Yes. The way BPA will experience the benefits of participating in the EIM is different from our traditional method for calculating a rate credit. The EIM benefits discussed by

the E3 Study are referred to as "dispatch" benefits. This is an important distinction from traditional forecasting for secondary sales, which simply takes projected inventory of surplus energy and multiplies it by the projected future energy price. Joining the EIM, in and of itself, is not expected to increase BPA's inventory of surplus energy to make additional secondary sales. This is because the benefit of joining the EIM does not come from selling *more* energy on a net basis. Rather, the benefits of the EIM come from making the existing system more efficient through better pricing of sales or purchases. How or whether we will be able to translate this more efficient use into a quantifiable EIM rate credit that is distinguishable from the net secondary revenue credit is indeterminable at this point. We think that it will require real market experience and analysis to see if such a translation can occur.

Section 2.2.4: Other Constraints with EIM Participation

Q. In your Direct Testimony, you discussed certain other constraints that would likely reduce the "mature" level of benefits addressed in the E3 Study. Traetow et al., BP-22-E-BPA-33, at 19. One of those constraints was timing – you noted that the E3 Study assumed a full year of participation, but BPA would have to discount that by at least half due to its partial year of participation. Id. at 18. How did parties respond to that point?

A. PPC responded to that argument, noting that it could be readily estimated without additional work. Deen & Linn, BP-22-E-PP-01, at 19. Specifically, PPC notes that the forecasted benefits could be pro-rated to reflect the potential time period BPA would participate and sensitivities included in the analysis could be used to represent limited initial participation. *Id.*

Q. Do you agree with the PPC's point?

A. Even assuming we believed the E3 Study to be a correct reflection of the EIM benefits

we should expect for the BP-22 rate period (which we do not), simply crediting the E3 Study for six months of non-participation would not be sufficient in our view to determine a reasonable level of EIM benefits built solely from that study. We noted in our Direct Testimony that this discount would be needed for the obvious reason BPA would not be in the EIM for the six months. How that discount should be accounted for is uncertain. Simply reducing the E3 Study benefits by one-half for the first year of operations presumes that BPA's level of participation would be the same throughout the entire year. As we discussed in our Direct Testimony, and more fully above, we do not think that is correct. It is very likely BPA will take a measured approach to EIM participation, with participation beginning slow and incrementally increasing as we gain experience.

Q. *You also noted that certain operational constraints would warrant additional discounting. Traetow et al., BPA-22-E-BPA-33, at 18-19. How did parties respond to that?*

A. PPC notes that the EIM ROD describes that BPA provided a list of parameters that had to be maintained when E3 performed its analysis. These assumptions, which PPC notes E3 described as "conservative," included a 24-hour energy neutrality requirement, system feasible min/max limits, EIM-dispatchable capacity limited to available INC/DEC spin capacity at Big 10 projects[1], and a 75 percent success rate applied to calculated EIM benefits to offset perfect foresight in the PLEXOS modeling. Deen & Linn, BP-22-E-PP-01, at 21. PPC also describes how BPA, in the EIM ROD, worked to verify the dispatch results of E3's analysis. *Id.* PPC argues BPA verified model compliance with all constraints, ensured reasonableness of simulated dispatch, verified simulated net sales

[1] Grand Coulee, Chief Joseph, Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles, and Bonneville dams.

positions are within available transmission expectations, and performed other evaluations to ensure reasonableness. *Id.* PPC contends the EIM ROD concluded that the constraints enforced to limit EIM economic dispatches in the modeling indicate that the $29 million to $34 million of EIM benefits "is likely a conservative estimate" of the projected benefits. *Id.* at 22.

Q. What is your response?

A. The hypothetical constraints from the E3 Model were not intended to reflect forecasted actual constraints BPA would experience in its first year and one half of EIM participation. The constraints were intended to better approximate reasonable dispatches resulting from mature EIM participation. As previous testimony noted, the E3 Study is intended as a reasonable analytical component of an investment decision, not as a forecast for the first year and one half of EIM participation. Furthermore, no system as large as BPA has entered the EIM. There is no corollary to BPA on the market. The closest entity would be PacifiCorp, and their introduction to the market started out with system issues that required EIM adjustments. While the EIM has matured since that time, and we expect BPA to be in a better position to join than PacifiCorp, we have a very different resource and customer makeup. PPC notes that BPA performed a reasonableness check on net sales positions against available transmission expectations. We contend that a broad reasonableness check is not as robust as market experience when it comes to evaluating and ensuring sufficient transmission availability.

Q. In your Direct Testimony, you also noted that the E3 Study would need to be discounted to account for limits caused by transmission donations. Traetow et al., BP-22-E-BPA-33, at 19. PPC, however, contends that the original study was tested for transmission feasibility. Deen & Linn, BP-22-E-PP-01, at 22. PPC also contends BPA is adding new constraints not mentioned before to its view of the E3 Study, such as the explanation

BPA provided in data responses. Id. Do you agree?

A. BPA and E3 did perform a reasonability check to determine that net sales positions were within available transmission expectations, but we also acknowledge that uncertainty around transmission availability exists. For example, transmission donations across BPA's system are expected to differ from other EIM BAAs, and could potentially result in limitations on participants' access to various pricing nodes. There is also broad uncertainty across the EIM footprint around future compensation for transmission donations. Again, we contend that a broad reasonability check is not as robust as market experience, and believe market experience will serve as a better method to evaluate and ensure sufficient transmission availability.

Section 2.3: BPA's EIM Benefits Forecast is Equitable

Q. What other concerns did the parties raise with your forecast?

A. PPC notes that by capping the EIM benefit forecast to match EIM costs, BPA ensures customers will see no net rate benefit of potential EIM participation. Deen & Linn, BP-22-E-PP-01, at 20. PPC argues that this cap is "inequitable" because BPA is limiting the customer's benefit of participation without limiting its "risk exposure associated with BPA's participation." *Id.* at 19.

Q. Is it BPA's perspective that the EIM will result in no benefits?

A. Our proposal reflects a ratemaking approach for this rate period and is founded on our business judgment. But, in adopting this approach, we are not constraining BPA to only that level of benefits. Thus, it is possible we may receive greater benefits, but we are just not certain how those benefits will be realized or when. Our concern is with "front-loading" this credit into rates. By waiting and approaching BPA's initial participation cautiously, we are preserving the value of EIM participation for future rate periods.

Q. What will happen if actual EIM benefits exceed the credit?

A. As we mentioned in our Direct Testimony, Traetow *et al.,* BP-22-E-BPA-33, at 20, if BPA's performance in the EIM exceeds our forecast, the additional revenue, accrued as an unspecified portion of net secondary revenues, will be added to BPA's financial reserves. This has many benefits to Power customers, including lower current and future risk of triggering a risk mitigation measure, such as the Financial Reserves Policy Surcharge or Cost Recovery Adjustment Clause. It also provides greater rate stability to customers, as BPA is able to weather revenue loss in its rates if secondary revenues then fall off or unexpected costs are incurred. Further, with additional financial reserves, BPA's overall financial health is better, which supports the agency's credit rating. Additionally, if BPA's financial reserves exceed certain thresholds, a Reserves Distribution Clause could trigger, giving the Administrator an opportunity to repurpose the excess reserves for other, higher value purposes. Thus, even if customers don't initially see a rate benefit from BPA's EIM participation (should it exceed the credit), they nonetheless would see the benefits in future rate proceedings.

Q. PPC further argues that BPA should include a forecast based on "the best available information." Deen & Linn, BP-22-E-PP-01, at 20. How do you respond?

A. We agree that forecasts should be based on the best available information, but we also believe that any credit included in rates must be weighed against sound business judgement. As we described earlier, the E3 Study does not reflect the "best available information" to generate an EIM benefits forecast for the BP-22 rate period. Furthermore, for the reasons described above relating to BPA being a new entrant in the EIM, we do not believe it reasonable or prudent to assume BPA will begin receiving significant benefits beginning on day 1 of EIM participation.

Section 2.4: Parties' Alternatives

Q. Did the parties propose alternatives to BPA's credit?

A. Yes. AWEC proposed that BPA increase its credit for EIM benefits to $12 million in FY 2021 and $24 million in FY 2022. Chalier, BP-22-E-AW-01, at 2. PPC contends that BPA should assume a conservative $11.7 million in EIM benefits, resulting in a net benefit of $8.3 million. Deen & Linn, BP-22-E-PP-01, at 15.

Q. What is your response?

A. We considered these alternatives, but for reasons we discussed above, we believe that maintaining benefits equal to costs is the right approach.

Q. Do the parties make any other recommendations?

A. Yes. PPC further requests that BPA commit to making its EIM costs and benefits publicly available to ensure customers have transparency around costs and benefits. *Id.* at 24-25.

Q. Do you agree with this recommendation?

A. The CAISO calculates, and publishes on a quarterly basis, historical EIM benefits by participant. However, these calculated benefits will not be directly comparable to BPA net secondary revenues or any rate metrics. BPA will continue to investigate methods to quantify EIM benefits, while reminding stakeholders that EIM participation can change multiple aspects of system operations, increasing the difficulty in determining the appropriate counterfactual for benefit estimation. Additionally, during these later phases of the EIM decision process, BPA has received several requests to commit to post-go-live reporting on costs and benefits associated with joining and participating in the EIM. In response to these requests, BPA is developing a proposal regarding post-go-live reporting and BPA will share this proposal with customers as part of the EIM implementation process.

Q. Is it BPA's intent in this rate case to set a long-term methodology for estimating EIM benefits?

A. No. We made this point in our Direct Testimony and reiterate it here again. Once BPA has experience in the EIM, we will be better positioned to understand how EIM participation affects BPA's revenues. Armed with that data, we can revisit this issue in future proceedings to determine the best approach.

Section 3: Allocating Power's Actual EIM Benefits between Slice and Non-Slice

Q. Please provide a brief overview of BPA's proposal.

A. In our Direct Testimony, BPA proposed to allocate proportionately any costs and credits charged to Power Services, as a Participating Resource Scheduling Coordinator, by the CAISO to either the Composite Cost Pool or the Non-Slice Cost Pool by hour. Traetow *et al.,* BP-22-E-BPA-33, at 12. The proportional amount allocated to the Composite Cost Pool for power purchased would be the amount of non-regulation balancing DEC capacity offered in that hour divided by the total amount of DEC capacity offered to the CAISO EIM in that same hour. *Id.* The proportional amount allocated to the Composite Cost Pool for power sold would be the amount of non-regulation balancing INC capacity offered in that hour divided by the total amount of INC capacity offered to the CAISO EIM in that same hour. *Id.*

Q. What are JP02's concerns with this proposal?

A. JP02 does not support BPA's proposal to proportionally allocate charges and credits from non-regulation balancing capacity between the Composite Cost Pool and Non-Slice Cost pool. Cornelius & Schroettnig, BP-22-E-JP02-02, at 4. Instead, they support the "balancing capacity deployed first" method for allocation. *Id.*

Q. Do you agree that BPA should change its proposal to the "balancing capacity deployed first" method?

A. No. We still believe that the proportional or "*pro rata*" allocation proposal is a reasonable and justified method of allocating revenues for EIM dispatches between the Slice and Non-Slice cost pool. JP02 argues that the Balancing Reserves First (BR First) method is a better reflection of operational reality and prevents harm to Non-Slice customers. *Id.* at 5-6. As described below, we believe those arguments are speculative and based on a misunderstanding of the facts. Further, adopting the BR First method based on these arguments would likely require additional work by BPA Staff to demonstrate that the arguments justifying the BR First method are correct. Given that, we still believe that the *pro rata* method is a fair method and continues to propose that option.

Q. Why does JP02 support the "balancing capacity deployed first" method over BPA's proposal?

A. JP02 argues that the BR First method is appropriate in part because it better reflects the actual dispatch of energy. They rely in part on BPA's response to a data request attached to their testimony as BP-22-E-JP02-02-AT01 (Data Response SN-BPA-30-16). They state:

> However, BPA staff also stated that it would expect that any balancing reserves would be the first capacity offered in to the EIM and would thus always be represented on the left side of the bid curve (i.e., the lower cost side). Under most, if not all, circumstances we would expect that CAISO would dispatch the lowest cost capacity first. Therefore, we would expect the "balancing capacity deployed first" methodology to most closely align with how CAISO would dispatch the capacity that Power Services offers into the EIM in a given interval.

Cornelius & Schroettnig, BP-22-E-JP02-02, at 4-5.

Q. Do you agree?

A. No. This rationale does not convince us that the *pro rata* allocation method is inferior to BR First. The statement above does not address a critical element of our response in BP-22-E-JP02-02-AT01 – that in actuality BPA does not "color code" capacity when it is dispatched. This remains true, though the BR First proposal proceeds to do just that – to color code the energy dispatched and tie it to discrete capacity. The statement they reference discusses an economic principle that we also believe to be true most of the time. However, we cannot establish as a fact that the energy dispatched by the EIM will be the direct product of capacity held for Balancing Reserves. Further, we are concerned about adopting a proposal based on an argument that may require BPA to account for energy and capacity in such detail. That would likely require additional resources and introduce the above-described false sense of accuracy.

Q. JP02 also provides a detailed example of how the BR First method would operate. Id. at 5-6. Through this example, JP02 claims that BPA's proposal results in the non-Slice inventory being sold "at a loss," whereas the BR First method does not. Id. at 6. Do you agree?

A. No. JP02's example and related conclusion are flawed in two respects. First, JP02 assumes BPA would need to make a 1:1 reduction in capacity for the non-Slice energy associated with its respective *pro rata* share of EIM revenue. The example mistakenly conflates capacity with energy. The financial loss described in their example would not actually be incurred because the bid curve represents the cost of producing specific amounts of power for a specific period of time. In other words, the price is the cost (including opportunity cost) of energy production, not the price of capacity needed to stand ready to produce the energy. Thus, for the loss to occur, BPA would have needed to *produce* energy (MWhs) above 100MW (priced at $30/MWh) during that specific

operating period, with a price of $24/MWh. Because, in the example, BPA did not produce energy above 100MW, Bonneville did not incur a cost of $30/MWh, regardless of whether it reduced future inventory. Thus, the exchange of $30 energy for $24 energy does not take place and the harm does not occur.

Q. *What is the second way JP02's example is flawed?*

A. JP02 also asserts that this reduction in inventory would lead to a financial loss due to the price spread between the Locational Marginal Price (LMP) and the bid price for the capacity beyond the Balancing Reserves ($24 and $30 respectively). However, it is not clear that this would be needed or that it would have the impact they presume. As stated above, the $30 price is for energy (not capacity) at a specific time. Thus, to the extent that a reduction in inventory is needed, that reduction would be for a future period and the price for said capacity would be calculated separately instead of inheriting the $30 price. Further, with hydropower combined with storage, there are multiple options to respond to the dispatch that are not known in JP02's example.

Q. *JP02 also states that the burden of implementing the BR First method is minimal and is worth the additional complexity. Id. at 5-7. They note that it would only require adding a few lines of logic to an excel spreadsheet. Id. at 7. In addition, JP02 contends that the data needed for the methodology could be derived from settlement data provided by the CAISO – data BPA will have to retain in any event. JP02 argues that the burden of setting up this method is worth the effort compared to the significant benefit of adopting this "appropriate allocation." Id. Do you agree?*

A. No. As stated above, the benefits of this approach are speculative and possibly illusory. Our *pro rata* approach accepts the difficulty of "color coding" megawatts and the likelihood of that effort failing. Instead of attempting to color code megawatts, our proposal avoids that wasted effort by using a reasonable heuristic to achieve a

reasonable result. As such, our proposal does not require significant monitoring because it does not attempt to establish with absolute precision the "type" of capacity that made energy production possible. However, JP02 relies on BPA's ability to establish that fact, which would likely require monitoring and analysis to demonstrate it. We do not believe that effort would be worthwhile – at least not at this time.

For instance, consider the following situation: (a) BPA offers all of its non-regulation balancing reserves and an equal amount of Non-Slice secondary inventory into the market; and (b) the entire offered amount is deployed for the first half of the hour and zero MWh are deployed for the second half of the hour. Under our proposal, 50 percent of the MWh and dollars will go to the Composite Cost Pool and 50 percent will go to the Non-Slice Cost Pool. Under JP02's proposal, all of the deployed MWhs and dollars will go to the Composite Cost Pool. In order to more precisely align JP02's proposal with actual operations, BPA would have to implement a more granular allocation method, one that would be far more complex to implement than adding a few additional lines of code in Excel.

Stepping back, we believe it important to consider JP02's and our proposal from a broader perspective, specifically as it relates to the principle of simplicity and the tentativeness that both we and JP02 share about our proposals. Even if we accepted that JP02's proposal could be implemented by adding a few lines of logic to an Excel spreadsheet, it is by any measure more complex. The question then becomes, is that added complexity in JP02's proposal worth a deviation from a proposal that is simple to implement and achieves a reasonable result?

In this situation, we do not think so and believe if the principle of simplicity were to ever actually win the day, it would be in this type of situation. This is because of the small amount of money difference that would likely result from the three proposals that

we evaluated. It is our expectation that all three approaches would produce similar results, particularly in the context of other simplifying assumptions that BPA and its customers have agreed were not worth tracking – *e.g.*, BPA's trading floor costs and BPA's ongoing costs of implementing the Slice product. Further, both we and JP02 are not married to our proposals and share the view that, with more information, a different proposal may "rise to the top" in the future. Lastly, of the three proposals, the simpler solution represents the middle, essentially splitting the financial difference between JP02's BR First preference and the Balancing Reserves last option. *See* Traetow *et al.,* BP-22-E-BPA-33, at 13. In summary, our proposal is simpler, is expected to produce financial results within the tolerances of other choices we have made in the spirit of simplicity, and represents the middle solution of three equally reasonable alternatives. For initial EIM participation, we believe it to be the approach the Administrator should adopt in this case.

Q. *JP02 concludes its testimony by suggesting that, regardless of what method is adopted, BPA should re-evaluate the method it adopts in this rate process in future rate periods as it gains experience with the EIM. Cornelius & Schroettnig, BP-22-E-JP02-02, at 8. JP02 notes that as BPA and its customers becomes more familiar with the EIM, other methods may "rise to the top." Id. What is your response?*

A. We are willing to consider different allocation methods in future rate periods based on EIM experience. If it is demonstrated that the *pro rata* method does not produce reasonable outcomes, then BPA and customers would be well served to entertain other methods, which may include BR First. We believe the appropriate time to consider another approach, especially one that relies on accurate operational data, would be when we have empirical EIM experience.

Q. Does this conclude your testimony?

A. Yes.

ATTACHMENT 1

Response to Data Request BPA-PP-30-1

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Response is past due after seven (7) days.

Request (click to view)	Exhibit	Responded	Requesting Party	Responding Party	Date Filed	Response (click to view)
BPA-PP-30-1	**BP-22-E-PP-01**	**Yes**	**Bonneville Power Administration**	**Public Power Council**	**2/16/2021 4:10 PM**	**Select Request to view Response**

You are viewing page 1 of 1

Request Detail

Request ID: BPA-PP-30-1
Page Number: 19
Line Number: 4-6
Exhibit Filing: BP-22-E-PP-01

Technical Contact Name: Richard Greene
Technical Contact Phone:
Technical Contact Email: ragreene@bpa.gov
Legal Contact Name:
Legal Contact Phone:
Legal Contact Email:

Request Text:

Please identify where else in BPA's forecast of revenues for the BP-22 rate case BPA relies on a study from an historic period to estimate projected future benefits over the rate period.

Response Detail

Date Response Filed: 2/23/2021 2:06:40 PM
Contact Name: Michael Linn
Contact Phone: 360.606.9970
Contact Email: mlinn@ppcpdx.org
Response Text:

One example is the estimated capacity associated with delayed loss returns. PPC understands the analysis used to support the $8,138,733 credit to the Non-Slice Cost Pool was based upon historic hourly loss return obligations and oversupply loss waivers from fiscal years 2018, 2019 and 2020. Based on our reading of the Generation Inputs documentation, no modifications of the historic data were made. In another example, BPA used historical south to north reservations on the Southern Intertie from FY2018 to FY 2019 as a forecast for transmission rates because it represented a reasonable expectation of reservations for the BP-22 rate period. BPA also uses data from historic time periods in a variety of other ways. The Power Net Secondary Revenue modeling relies on many analyses that are based on historic time periods. For example, the PNW hourly intertie availability risk incorporated in the model is based on observed data from 2009 through 2018. The Natural Gas Price Risk Model was developed based on historic Henry Hub prices from January 1, 2009 to June 30, 2020. Both rely on historic data sets and statistical techniques to estimate a distribution of potential outcomes that could occur in the BP-22 rate period. Using historic time periods to estimate a range of potential future outcomes is essentially the same general approach as the E3 analysis which analyzed potential benefits over a range of years. Setting aside these specific examples, PPC firmly believes future benefits should reflect the best information available at the time rates are developed. In the case of EIM benefits, BPA undertook an extensive process that sought to analyze the potential benefits the agency could realize under EIM participation. BPA hired E3 to conduct an analysis that enforced constraints specific to the FCRPS to simulate FCRPS dispatch and calculate associated benefits over a range of historic years that had varying load and hydrological conditions. E3 also ran a variety of scenarios to analyze how other factors may impact EIM benefits. BPA staff then independently verified the analysis and, in fact, made modifications to ensure that E3's revenue simulations reflected the dispatch benefits of participating in the EIM and then further tested the robustness of the quantitative dispatch benefits range. See Bonneville Power Admin., Administrator's Record of Decision, Energy Imbalance Market Policy (September 2019) at 98-100 (attached; underline emphasis added). While the time period of the analysis was historic, BPA heavily relied on the study results that indicated future benefits to support its business case to join the EIM. Absent additional analysis or actual operating experience, the E3 study remains the best analysis of the potential benefits of BPA joining the EIM.

Files Submitted for this Response:

EnergyImbalanceMarketPolicyROD_PPCUnderlines.pdf

BONNEVILLE POWER ADMINISTRATION
DOE/BP-5137 • March 2021