BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 323

In the Matter of PACIFICORP, dba PACIFIC POWER 2018 Transition Adjustment Mechanism	STAFF'S RESPONSE BRIEF

I. INTRODUCTION

Staff of the Public Utility Commission of Oregon (Staff) responds to the Opening Brief submitted by PacifiCorp (or Company). Staff's brief addresses the following issues, which remain of continuing concern in PacifiCorp's 2018 Transition Adjustment Mechanism (TAM) filing:

(A) Company's burden regarding accuracy of Net Power Cost (NPC) forecast;

(B) GRID model validation;

(C) Day-Ahead Real-Time Transactions (DART) adjustment;

(D) Energy Imbalance Market (EIM) Inter-regional benefits;

(E) Cholla Coal Costs;

(F) Coal Plant Dispatch;

(G) Long-term coal contracts;

(H) Variable O&M in NPC dispatch;

(I) Qualifying Facilities; and

(J) Valuation of Renewable Energy Certificates (RECs)

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II. ARGUMENT

(A) The Company maintains the burden of proof for each element of its NPC forecast.

PacifiCorp consistently justifies its NPC forecast in this proceeding on the accuracy of its forecast *overall*, thus downplaying the individual elements that comprise its NPC forecast. CUB appears to share Staff's concern.[1] For example, in its Direct Testimony, the Company states:

> In previous TAM proceedings, PacifiCorp's NPC was systematically under-stated. In the 2016 TAM, the company proposed and the Commission adopted multiple modeling improvements designed to produce a more accurate NPC forecast. As a result, the 2016 TAM forecast was the most accurate of any of the previous TAMs compared to actual NPC.[2]

With regard to the DART adjustment, the Company presents the following exchange:

> Q. Based on the first full year of implementation, has the DA/RT adjustment increased the accuracy of the company's TAM forecast?
> A. Yes. The company's 2016 TAM forecast was closer to the company's actual NPC than any previous TAM forecast.[3]

Regarding QFs, the Company states that "Staff and CUB…unreasonably cherry-pick one component of QF costs without regard for the overall accuracy of the company's approach."[4] And most notably, the Company complains that:

> Staff and ICNU argue that PacifiCorp must perform a burdensome backcast analysis to verify the accuracy of its Generation and Regulation Initiative Decision Tools model (GRID), even though the 2016 variance between the company's actual NPC and the NPC included in rates was the lowest since 2008…Furthermore, the evidence demonstrates that the GRID model, together with the refinements approved by the Commission, produces a reasonable and accurate NPC forecast.[5]

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[1] CUB/200, Jenks/7 ("The Company asserts that because the overall Net Power Cost (TAM) forecasts have understated power costs, CUB is precluded from arguing that one element of power costs is actually overcharging customers. This statement ignores the DART, which was supposed to take care of the underforecast of NPC. This statement also ignores how in 2016, the Company actually over forecast the NPC elements in the TAM.").

[2] PAC/100, Wilding/7-8.

[3] PAC/100, Wilding/19.

[4] PAC/400, Wilding/3; *see also* PAC/400, Wilding/39 ("Staff relies too heavily on the number of delayed QFs, without considering the size of the delayed QFs, or the accuracy of the overall forecast of QF generation.").

[5] PAC/400, Wilding/3-4.

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Finally, regarding the modeling of variable operations and maintenance (O&M) costs for purposes of coal plant dispatch, the Company testifies that it supports the modeling and recovery of variable O&M costs in the TAM, even though according to the Company, it would not increase the accuracy of the TAM forecast.[6]

PacifiCorp implicitly seeks Commission validation of an inappropriate standard. In essence, the Company's testimony suggests that it believes the whole to be *greater* than the sum of its parts. However, the Commission is tasked with weighing the evidence presented on each issue, and PacifiCorp retains the burden of proving that each element of its NPC forecast is just and reasonable.[7] The whole, however, is *equally as important* as the sum of its parts. Without demonstrating that each element of its NPC forecast is reasonable, the Commission cannot conclude that the overall NPC forecast will produce just and reasonable rates. As Staff demonstrated in its testimony and discussed more fully below, it is possible to have a NPC forecast that appears accurate when compared to overall actuals—but this does not mean that the individual elements were accurately forecast and it does not ensure that the overall forecast will be accurate on a consistent basis.[8] PacifiCorp's argument relies on only a single year of results. There may be offsetting errors that could result in dramatically different results in future years.

Moreover, PacifiCorp's argument is inconsistent with and dismissive of general ratemaking principles. The TAM's purpose is to forecast NPC rates, and to set transition charges for the following year.[9] NPC rates are forecast using a future test year based on anticipated, normal utility operations. It is understood that despite the best efforts of all, the forecast will be wrong—actuals for some individual inputs will be higher, and some lower, than forecast. The

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[6] Hrg. Tr. at 107-108. When asked why the Company would support modeling variable O&M as a dispatch cost within the GRID model, despite his testimony that it would not increase the accuracy of GRID, Company witness Mr. Wilding stated that "It's a regulatory compromise." Hrg. Tr. at 108.

[7] *See e.g. In re PacifiCorp*, OPUC Docket No. UE 116, Order No. 01-787 at 6 (Sept. 7, 2001).

[8] Staff/500, Kaufman/6.

[9] *In re PacifiCorp*, OPUC Docket No. UE 307, Order No. 16-482 at 2-3 (Dec. 20, 2016).

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reason *why* the forecast is wrong is important to question and understand. If the variance is due to abnormal events, there may be no reason to adjust the methodology for the forecast—this is a risk that the utility is generally understood to bear between rate changes. On the other hand, if the variance is due to an error with the forecast methodology, it should be addressed because it will impact the ability of the forecast to be accurate, even for a normal year.

Finally, PacifiCorp's argument diminishes the policy and purpose underlying the PCAM. PacifiCorp's argument suggests that it believes customer should pay actual NPC, regardless of the reason that actuals have varied from the forecast.[10] But this is inconsistent with the purpose of the PCAM. The purpose of the PCAM is to ensure that the utility bears the normal business risk associated with actual power costs varying from forecast, while allowing for an adjustment in the event that power cost variances exceed those that are considered normal business risk.[11]

(B) GRID model validation is necessary in order to ensure the accuracy of NPC forecasts.

Model validation is necessary in order to identify the potential errors in the Company's NPC forecast. PacifiCorp concedes that there is not consensus among the parties as to what drove the variance between its 2016 NPC forecast and 2016 actual NPC.[12] CUB argued that the Company's actual results in 2016 were overstated by the Company's inclusion of the Joy Longwall in its actuals, but not in the forecast.[13] Staff submitted testimony that the Company's NPC forecast for 2016 contained two countervailing errors—a fuel cost input error and a DART error.[14] ICNU provided testimony that the variance is due in part to a variance in load, but short-term purchases are also a significant driver.[15] PacifiCorp also agrees that variances between

[10] *See also* PAC/400, Wilding/49.

[11] *In re PacifiCorp*, OPUC Docket No. UE 246, Order No. 12-493 at 13-15 (Dec. 20, 2012) (emphasis added). *See also In re Portland General Electric*, OPUC Docket No. UE 180, UE 181 and UE 184, OPUC Order No. 07-015 at 26-27 (Jan. 12, 2007).

[12] Hrg. Tr. at 91-92.

[13] CUB/200, Jenks/7-8.

[14] Staff/500, Kaufman/6.

[15] ICNU/100, Mullins/7.

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forecasts and actuals can be explained by GRID model errors.[16] No party disagrees that model validation is useful, though there is not agreement on the appropriate process, and no concrete proposal from the Company on a timeline to conduct the analysis.[17]

1. The Commission should order PacifiCorp to engage in model validation in accordance with Staff's and ICNU's recommendations.

Staff's proposed methodology provides an appropriate starting point in identifying the potential source of NPC forecast errors, which can then be used to determine what adjustments, if any, should be made to GRID or extra-model adjustments.[18] And as demonstrated at hearing, the Company's concerns that ICNU and Staff would require different model validation methodologies, thereby complicating the process, are unfounded.[19]

Although the Company is supportive of model validation, it continues to object to the analysis recommended by Staff and ICNU.[20] PacifiCorp proposes to address model validation through a workshop process, and to start with an in-depth analysis of how GRID impacts the variance between forecast and actual results.[21] Staff continues to object to the Company's proposal to validate GRID based on a comparison of forecasted and actual NPC, without controlling for input error, as it does not provide a method for improving the GRID model.[22] As stated above, Staff's recommendation for model validation would provide valuable insight into

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[16] Hrg. Tr. at 92-94.

[17] Hrg. Tr. at 98-99.

[18] PacifiCorp argues that Staff's proposed methodology is unclear as Staff has used different terms to describe its proposal. The record has been clear on this point throughout the proceeding. Staff notes that it stated in both its Opening and Rebuttal testimony that the parties had generally referred to the analysis as a backcast, but Staff found that term to be inaccurate. Staff/200, Kaufman/4, n. 3; Staff/500, Kaufman/2, n.5. Therefore, Staff revised its terminology to "Model Validation," which Dr. Kaufman indicated was a more generic term. Hrg. Tr. at 237-238. At no point, however, did Staff change the actual analysis that it requested, which is included in Staff/202, Kaufman/1.

[19] Hrg. Tr. 198-199.

[20] PacifiCorp Opening Brief at 24.

[21] PacifiCorp Opening Brief at 25.

[22] Staff/500, Kaufman/4.

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the accuracy of the Company's NPC forecast. Given PacifiCorp's and Staff's respective positions on the type of model validation that would be beneficial, informal workshops alone are insufficient to make concrete progress and address its concerns. As Dr. Kaufman testified in this proceeding, Staff's request for a backcast analysis in the previous TAM ultimately went unfulfilled both in that proceeding and in Commission-ordered workshops, and the Company declined to provide that analysis in this proceeding.[23] While no party contests the value of the workshops following UE 307,[24] they did not result in the analysis that Staff deems necessary. Additionally, Staff finds that the Company is best-positioned to conduct the analysis.[25]

Therefore, Staff recommends that the Commission: (1) order PacifiCorp to produce model validation analysis agreed to by Staff and ICNU, (2) order PacifiCorp to convene an initial workshop to address the specific analysis to be done in January 2018, (3) order PacifiCorp to use best efforts to finish the requested analysis prior to the filing of its 2019 TAM proceeding, and (4) direct Staff to report on the progress of this process at a public meeting prior to the Company's filing of its 2019 TAM. Such analysis will help to inform the source of PacifiCorp's under-recovery of NPC.[26]

2. The Company's DART adjustment highlights the importance and necessity of GRID model validation.

Staff testified that it is concerned with the Company's use of extra-model adjustments, such as the DART adjustment, to address under-recovery of NPC rather than attempting to identify the source of the error *within* GRID.[27] Instead of relying on extra-model adjustments, the Company should analyze and refine the GRID model itself.[28]

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[23] Staff/200, Kaufman/9.

[24] *See* PAC/1100.

[25] Staff/200, Kaufman/4; Hrg. Tr. at 219-220.

[26] Staff/200, Kaufman/10.

[27] Staff/500, Kaufman/4.

[28] Staff/500, Kaufman/16.

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PacifiCorp states that it has "not argued that its historical under-recovery of NPC is the only, or even the primary, basis for the DA/RT adjustment."[29] However, this is inconsistent with the Company's testimony in docket UE 296. The Company's outside expert witness, Mr. Frank C. Graves, testified that he was retained "to review [PacifiCorp's] pattern of systematic under-recovery of net power costs (NPC) *that arise largely from system balancing transactions.*"[30] Mr. Graves went on to testify that balancing transactions were consistent drivers of the Company's under-recovered NPC,[31] and found that the Company's proposed DART adjustment "will roughly restore base NPC rates to being fair estimates of actual average costs per MWh"[32] and "*will also make overall variances much closer to zero*, hence less burdensome on customers to absorb lagged over/under cost allocation."[33] The DART adjustment in that proceeding resulted in an increase to NPC more than five times greater than the next most significant modeling change proposed.[34] The testimony sponsored by the Company and relied upon by the Commission in approving the DART adjustment—over the objections of all other parties[35]—in conjunction with the Company's position in this case (that 2016 is the most accurate TAM since 2008), provides a reasonable basis for the parties and Commission to conclude that the DART adjustment was intended to address the Company's persistent under-recovery in NPC.

PacifiCorp also argues that Staff is requesting that the Commission require a backcast before affirming the DART adjustment, which it argues the Commission has never done for previous modeling changes.[36] PacifiCorp mischaracterizes Staff's testimony. With regard to the DART adjustment and model validation, Staff recommends the PacifiCorp be required to "revisit

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[29] PAC/800, Wilding/8; PacifiCorp Opening Brief at 16-17.

[30] Staff/716 at 4 (emphasis added).

[31] Staff/716 at 5.

[32] Staff/716 at 13.

[33] Staff/716 at 13 (emphasis added).

[34] Staff/718.

[35] *In re PacifiCorp*, OPUC Docket No. UE 296, Order No. 15-394 at 3 (Dec. 11, 2015).

[36] PacifiCorp Opening Brief at 28.

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the use and design of the DART mechanism after the Model Validation results are available to other parties."[37] And Staff has not requested that the Commission eliminate the DART adjustment altogether while a model validation process is undertaken.[38]

Finally, PacifiCorp's argument suggests that once the Commission has approved a modeling adjustment, the Company believes that questioning, validating and improving the adjustment is not an appropriate undertaking. Staff disagrees. Now that the parties have had several years with the DART adjustment in the TAM, it is an appropriate time to determine whether it is functioning as intended. Staff and PacifiCorp share the goal of wanting to ensure that the Company's NPC forecast is derived based on a reasonable approximation of the Company's operations in the following year, and that the rates resulting from that forecast are just and reasonable.

(C) The Commission should approve Staff's proposed improvements to the Company's DART adjustment.

Staff continues to have concerns with the Company's DART adjustment, and continues to recommend model validation as a way to confirm that the Company's balancing and real-time transactions are, in fact, the large driver of its under-recovery as the Company argued in UE 296 and that the DART adjustment functions as the Company contends.[39] In the interim, Staff proposes a number of improvements to the Company's DART adjustment.

1. The price adder component of DART should be modified with a properly correlated market price and system load.

Staff recommends that the price adder component of PacifiCorp's DART adjustment be modified back to a single market price per hub, with a monthly price shape that is correlated with PacifiCorp's retail load input.[40] The correlation would match the five year historic correlation

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[37] Staff/500, Kaufman/17.

[38] In briefing, PacifiCorp appears to concede this point. PacifiCorp Opening Brief at 6.

[39] Staff/500, Kaufman/16.

[40] Staff/200, Kaufman/19; Staff/500, Kaufman/16-17.

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between actual load and market prices.[41] This recommendation is appropriate because it is rational, forward looking,[42] and more representative of market prices. In contrast, PacifiCorp's approach is to indirectly achieve the same price-load correlation by artificially making every purchase at a higher price and every sale at a lower price.[43] PacifiCorp's price adder approach results in GRID inputs that are less accurate and less realistic than actuals.[44]

PacifiCorp criticizes Staff's recommendation, arguing that it "has never actually modeled a modified forward price curve to explain and demonstrate its proposed methodology"[45] and has not quantified how its recommendation would translate into an adjustment to NPC for purposes of the 2018 TAM. PacifiCorp's concludes that these points demonstrate that Staff's proposal is "fundamentally flawed and unworkable."[46] However, it does not follow that because Staff has not calculated an adjustment, the underlying logic and methodology is flawed and unworkable. As stated at the hearing, Staff finds its recommended methodology to be reasonable "because the methodology is reasonable"[47]—Staff's approach to rely on sound modeling techniques, rather than dollar adjustments, does not include an inherent bias towards increasing or decreasing the forecast. In contrast, PacifiCorp's approach appears to rely on modeling techniques that may lead to irrational results, but nonetheless have a dollar impact on NPC.[48]

PacifiCorp concedes that Staff's recommendation "could improve the representation of market prices in GRID,"[49] but argues that it "would still not capture the impact of uncertainty in the company's load and resource position and market prices between the day-ahead and hour-ahead

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[41] Staff/200, Kaufman/19.

[42] Hrg. Tr. at 219.

[43] Staff/200, Kaufman/12.

[44] Staff/200, Kaufman/12.

[45] PacifiCorp's Opening Brief at 9.

[46] PacifiCorp Opening Brief at 9.

[47] Hrg. Tr. at 219-220.

[48] Staff/200, Kaufman/12-15; Staff/500, Kaufman/19-22.

[49] PAC/400, Wilding/13.

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time frame.'"[50] However, Staff demonstrates that the day-ahead uncertainty and block transactions do not create a real incremental cost, which is the basis for Staff's recommendation to eliminate, or offset the residual value of monthly transactions, as discussed more fully in the next section.[51]

Finally, PacifiCorp argues that Staff's recommendation to replace the price component is "undercut by Staff's acknowledgment in its own hypothetical that GRID does not capture all system balancing costs and the 'DART price adder…remedies the DART problem.'"[52] However, PacifiCorp either misunderstands or misconstrues Staff's testimony in order to make this argument. The referenced testimony is comparing the first and second components of DART, specifically fixing prices within GRID versus making a second adjustment outside of GRID. The referenced testimony is not directly comparing correlated prices to a price adder. Staff's testimony demonstrates that only a within GRID adjustment is necessary. In sum, the price adder is a poor modeling technique, and it is more realistic to directly correlate prices and load.

2. The volume component of the DART adjustment should be eliminated, or alternatively, offset by the residual value of monthly transactions.

Staff's primary recommendation is to eliminate the day and month ahead components of the DART adjustment, as Staff finds this to be an unnecessary component because the pricing component of the DART adjustment captures the incremental DART costs.[53] In the alternative, Staff recommends that the volume portion of the DART adjustment be modified to account for the value of historic arbitrage transactions and the value of residual monthly and daily purchase contracts.[54]

PacifiCorp again criticizes Staff's proposal because Staff has not modeled or quantified its proposal in testimony.[55] As stated above, Staff's approach has been to rely on sound modeling

[50] PacifiCorp Opening Brief at 9.

[51] Staff/500, Kaufman/29-33.

[52] PacifiCorp Opening Brief at 10, citing to Staff/500, Kaufman/33.

[53] Staff/500, Kaufman/18; Staff/500, Kaufman/34.

[54] Staff/500, Kaufman/18; Staff/500, Kaufman/34.

[55] PacifiCorp Opening Brief at 11.

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techniques, rather than dollar adjustments, and does not include an inherent bias towards increasing or decreasing the forecast. Regardless, at the hearing, Staff calculated the value of this adjustment to be a \$12.75 million reduction on a system basis.[56]

Finally, PacifiCorp states that Staff has not provided sufficient testimony on the residual value of monthly contracts, including how the value would be calculated.[57] However, Staff testifies that "the residual value of monthly and daily purchase contracts be valued by multiplying the real time actual hourly price of the residual hours by the residual hourly volumes, and subtracting the residual cost of the contracts."[58]

3. Staff also generally supports normalizing the data underlying the DART adjustment.

If Staff's DART proposals are adopted, there is no need to normalize because there is no evidence that the five year historic correlation between load and prices is not normal. However, there is evidence that the Company's calculation of historic DART costs are not normal. The Company's approach to modeling DART costs ultimately results in a fixed cost adder approximately equal to historic costs.[59] For this reason, if the Commission affirms the Company's DART adjustment, it is critical that the historic data be normalized.

Both CUB and ICNU raised concerns with the Company's DART adjustment, and make proposals to normalize the historic data underlying the DART adjustment. CUB's testimony proposes that DART be properly normalized, with outlying years excluded in a similar manner as coal and gas plant outage rates.[60] Specifically, CUB proposes applying a collar to the DART history.[61] ICNU also raised concerns that DART costs are highly volatile, difficult to forecast, and that the Company's DART adjustment may be less necessary given its participation in the

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[56] Hrg. Tr. at 220-221.

[57] PacifiCorp Opening Brief at 11.

[58] Staff/200, Kaufman/19.

[59] Staff/500, Kaufman/15.

[60] CUB/100, Jenks/12-14.

[61] CUB/100, Jenks/12-13.

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EIM.[62] ICNU uses an alternate approach of considering how future DART costs will likely differ from historic DART costs.[63]

Staff evaluated and discussed each parties' testimony and proposals in its cross-answering testimony. As clarified at the hearing, Staff's recommendation is not absolute—but rather, Staff indicated that if the Commission were to adopt the proposals advocated by CUB or ICNU, certain adjustments would be necessary.[64] To be clear, Staff's recommendations on these issues are contingent on the Commission finding that Company's version of the DART model should be retained over Staff's version of the DART model.

In response to CUB's concerns, PacifiCorp increased its historical data set used in the case to sixty months in its initial filing. In response to CUB's opening testimony, PacifiCorp accepted CUB's proposed collar to exclude years triggering the Company's PCAM.[65] In response to CUB's testimony, Staff tested whether the Company's historical DART costs were normal. Staff found that there were several outlying years, in which abnormally high real time transactions lead to abnormally high DART costs.[66] Staff also concluded that future real time transactions are unlikely to be as high as the three abnormal years in the DART history.[67] Therefore, in its rebuttal and cross-answering testimony, the first opportunity that Staff had to evaluate CUB's proposal, Staff found that using a collar to exclude years based on whether the PCAM was triggered is problematic for two reasons. First, triggering the PCAM is dependent on asymmetrical deadbands, and there is no precedent for using an asymmetrical approach to normalizing data.[68] Second, triggering the PCAM is dependent on an earnings test.[69] Staff

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[62] ICNU/100, Mullins/9-13.

[63] ICNU/200, Mullins/2.

[64] Hrg. Tr. at 229.

[65] PacifiCorp Opening Brief at 14.

[66] Staff/500, Kaufman/27.

[67] Staff/500, Kaufman/27-28.

[68] Staff/500, Kaufman/28.

[69] Staff/500, Kaufman/28.

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argues that the earnings test is not relevant to whether the Company's day-ahead and real-time costs are normal.[70] As such, Staff finds that if the Commission accepts CUB's and PacifiCorp's proposal for a collar, the Commission should modify the collar with Staff's variant, which is a more appropriate means to normalize. Specifically, Staff recommends making the collar symmetrical, and eliminating the requirement of an earnings test. This means that the base years for the DART adjustment exclude abnormal years using a symmetric collar of $30 million NPC forecast variance. This collar would result in excluding the second half of 2011and all of 2013 and 2014 from the DART data.[71]

In response to ICNU's testimony regarding DART volatility, Staff observed that the volatility had a particular shape, more specifically a spike, in 2012, 2013 and 2014[72] and observed that the fact that these data points are clustered together supports ICNU's conclusion that they are abnormal.[73] Staff then performed a more thorough analysis of why DART costs vary so much over time and found that DART costs are highly correlated to the volume of real time transactions.[74] Unfortunately, PacifiCorp's DART adjustment is relatively fixed, and not responsive to the GRID forecast of future real time transaction volumes.[75] As a remedy to the fact that historic real time transactions are high, and the observation that future real time transaction are likely low, Staff proposed a normalization approach that excludes years with abnormally high real time transactions.[76] This results in an exclusion of 2013, 2014, and 2015.[77]

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[70] Staff/500, Kaufman/28.

[71] Hrg. Tr. 228-229.

[72] Staff/500, Kaufman/24.

[73] Staff/500, Kaufman/24.

[74] Staff/500, Kaufman/27.

[75] Staff/200, Kaufman/14. PacifiCorp attempts to rebut the claim that the DART adjustment is a fixed adder by implying that there is a variable pricing component and a fixed volume component, and that the variable component was substantial. However, Staff's testimony at Staff/200, Kaufman/12-14 shows that both the pricing component and the volume component are variable, but they are structured to add to a fixed amount. Staff demonstrates the fixed nature of DART with actual GRID runs as well. See Staff/200, Kaufman/11.

[76] Staff/500, Kaufman/29.

[77] Staff/500, Kaufman/29.

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PacifiCorp argues that Staff's proposal is arbitrary, because "each method identifies different years as outliers."[78] As discussed above, Staff's recommendation is an improvement on ICNU's and CUB's proposed methodologies, and not as stand-alone recommendations. Therefore, PacifiCorp's criticism is unfounded. PacifiCorp's second argument is undercut by its agreement to include CUB's proposed collar in this case—if the Commission has "already found that including the supposedly outlier years in the DA/RT calculation produces normalized results," what is the basis to accept its recommendation on CUB's collar?

Staff notes that the CUB collar proposal supported by PacifiCorp is not a proposal grounded in analysis of DART data,[79] and therefore, it is a generic approach to normalization that could be applied to any GRID inputs with equal basis. However, because both CUB and PacifiCorp supported it, Staff reviewed and analyzed the proposal, identified the unreasonable aspects of the proposal and proposed adjustments that would make the methodology more reasonable.

On the other hand, ICNU's proposal is grounded in data and evaluates whether historic transactions are representative of future transactions. This type of analysis does not require a long history of data, because it is simply comparing recent history to future expectations.[80] Because the future is expected to have low real time transactions, it is appropriate to only use historical years that have low real time transactions.[81]

4. Staff's recommendations in this case are not "repackaged" from prior proceedings.[82]

PacifiCorp argues that Staff and ICNU's arguments in this case are an attempt to repackage arguments raised in opposition to DART in prior TAM proceedings. The Company goes on to argue that Staff's and ICNU's arguments are "fundamentally indistinguishable from

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[78] PacifiCorp Opening Brief at 14.
[79] *See* CUB/100, Jenks/12-13.
[80] Staff/500, Kaufman/27-28.
[81] Staff/500, Kaufman/26-27.
[82] PacifiCorp Opening Brief at 7.

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those already considered and rejected by the Commission."[83] PacifiCorp is mistaken. Staff has presented new evidence in this proceeding that the Company makes substantially more profit off of market transactions than what is modeled in GRID with DART.[84] Staff also presents new argument that the extra system balancing transactions component of the DART adjustment is unnecessary because block transactions are purchased at the expected average price, and the residual value of those block transactions offsets the apparent incremental costs that they cause in the real time market. Finally, Staff presents new evidence that DART costs are directly related to the volume of short-term transactions, and that short-term transactions were abnormally high in the five year period used to calculate the DART adjustment. Eliminating or offsetting the additional balancing transactions volume component of the DART adjustment would make the DART adjustment more responsive to the forecasted volume of real time transactions.[85]

(D) The Commission should adopt Staff's forecast of Energy Imbalance Market inter-regional benefits.

1. PacifiCorp has consistently under-forecast its inter-regional EIM benefits.

PacifiCorp proposes to include [redacted] in total EIM benefits for 2018, a forecast that it notes is [redacted] than the forecasted benefits in the 2017 TAM.[86] Of that amount, inter-regional benefits are [redacted][87] Staff noted that the Company has chronically under-forecast its inter-regional EIM benefits, with forecasts that consistently produce benefit estimations that are reasonably accurate for the previous year's actuals, but fail to account for a steady trend in benefits.[88] For 2016, the Company projected $9.1 million[89] in inter-regional

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[83] PacifiCorp Opening Brief at 7.

[84] Staff/200, Kaufman/15-16.

[85] Staff/200, Kaufman/13-14.

[86] PacifiCorp Opening Brief at 29.

[87] PAC/500, Brown/4, confidential Table 1.

[88] Staff/400, Gibbens/7.

[89] Staff/717, page 37.

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benefits, and realized [redacted][90] in actual benefits.[91] For 2017, the Company forecast $19.2 million[92] in inter-regional benefits, and has already realized [redacted][93] in inter-regional benefits for January through July of this year. PacifiCorp also states that it is likely that actual inter-regional benefits will exceed the forecast for 2017.[94]

2. The Company's proposed methodology for forecasting 2018 inter-regional benefits does not account for a meaningful growth in EIM benefits above reasonably anticipated 2017 benefits.

In briefing, PacifiCorp acknowledges its past forecasts for inter-regional benefits have been "understated."[95] The Company also argues that its historic under-forecast of inter-regional EIM benefits "informed the company's decision to significantly increase its forecast of EIM benefits in this case."[96] However, this does not bear out when comparing what the Company is likely to realize in 2017 with its forecast for [redacted] in 2018. If the same trend continues as was present in 2015 and 2016,[97] the Company will realize more of its inter-regional benefits in July through December of this year than it did in January through June. This means that PacifiCorp is on track to realize more than [redacted] in inter-regional benefits *for 2017*, Staff finds this estimate to be conservative, as it does not include an adjustment for PGE entering in

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[90] Staff/700, attachment page 2.

[91] Staff notes that these benefits do not represent EIM inter-regional benefits as projected in the Company's Final Update. However, Staff/402 provides a comparison of estimated inter-regional benefits based on the Final Update and actual EIM benefits as reported in the Company's workpapers.

[92] Staff/715, page 19.

[93] Staff/720, attachment page 1. Staff notes that amounts for April, May, June and July 2017 are "preliminary." However, when asked, PacifiCorp witness Ms. Brown did not indicate that a significant deviation between the forecast of EIM benefits in the Company's final round of testimony and the Final Update. Hrg. Tr. at 149-151.

[94] Hrg. Tr. at 154.

[95] PacifiCorp's Opening Brief at 29.

[96] PacifiCorp's Opening Brief at 29.

[97] See Staff/700, attachment pages 1-2. For 2015 and 2016, the Company realized approximately [redacted] and [redacted] of its inter-regional benefits in the second half of the year, respectively.

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October 2017. Yet PacifiCorp proposes to include [redacted] in inter-regional benefits in 2018, which is only 7 percent higher than a conservative estimate for 2017.

At hearing, PacifiCorp witness Ms. Brown criticized that six months of 2017 actuals was not an appropriate basis to approximate the total expected benefits for calendar year 2017 because it does not account for the seasonality of EIM benefits.[98] However, Ms. Brown's criticism is inconsistent with the Company's proposed methodology for forecasting 2018 inter-regional benefits. The Company's methodology is also based on the most recent six months of validated EIM data (October 2016 through March 2017), which it argues is "more reflective of the expected 2018 market conditions."[99] However, this six month period also fails to account for seasonal effects. This means that Staff utilized a technique which is the same as the Company's methodology in order to have a discussion about 2017 expected actuals versus 2018 forecasts, and the Company criticized the methodology as being unrealistic and inaccurate. Moreover, the Company has provided no testimony that it anticipates a significant reduction to EIM inter-regional benefits in the latter half of 2017 compared to the first six months, or that the general trends in seasonality for inter-regional benefits are expected to be substantially different than previous years. While the Company does argue that there is "a point of saturation relative to the additional benefits that the company can achieve due to resource limitations,"[100] the Company has not seen a decrease in the EIM benefits, holistically, due to new participants thus far, and has not commissioned any studies or other types of analysis to quantify its claim.[101] In sum, despite its claims otherwise, the Company's methodology simply does not reflect a robust growth rate over the level of EIM benefits reasonably anticipated for 2017.

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[98] Hrg. Tr. at 161-162.

[99] PacifiCorp Opening Brief at 30.

[100] PAC/500, Brown/7.

[101] Hrg. Tr. at 158-159. Staff further notes that the Company made a similar claim in response to ICNU in UE 296, but as noted above, under-estimated EIM benefits by [redacted] in 2016.

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3. Staff's proposed methodology for forecasting inter-regional EIM benefits is reasonable and should be adopted.

Staff proposes to include in the TAM forecast [redacted][102] in inter-regional EIM benefits, which despite PacifiCorp's claims to the contrary, represents a *reduction* from its initial forecast.[103] Staff's recommended methodology, as described in its rebuttal testimony, takes a 12-month naïve forecast of the most recent validated data of actual inter-regional EIM benefits, which includes April 2016 through March 2017.[104] Next, Staff added the Company's proposed adjustments for new entrants and solar impacts.[105] Finally, Staff added 50 percent of the growth rate calculated based on the same period used for the naïve forecast.[106] Staff utilized a 12-month average, rather than a six month average, for precisely the reasons PacifiCorp identified at hearing—seasonal effects cannot be completely captured with only six months of data.[107]

PacifiCorp asserts that its forecast of benefits is nearly equal to the benefits proposed by Staff in its opening testimony, once Staff's growth rate is corrected.[108] PacifiCorp's argument that its proposed level of inter-regional EIM benefits is reasonable based on a comparison to Staff's original methodology, which the Company criticized by stating that it "is not consistent with the underlying fundamentals of what drives growth in EIM benefits," is perplexing. The

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[102] PacifiCorp misinterpreted Staff's rebuttal testimony. In it, Staff discussed the similarities between Staff's opening testimony forecast and reply testimony forecast. However, the number discussed and referenced to in testimony does not include the adjustment for transmission methodology. Staff's opening forecast was [redacted], a decrease of [redacted] to Staff's adjustment as noted in rebuttal testimony results in a total inter-regional forecast of [redacted].

[103] Staff/400, Gibbens/18.

[104] Staff/400, Gibbens/17.

[105] Staff/400, Gibbens/17.

[106] Staff/400, Gibbens/17.

[107] Staff/400, Gibbens/18.

[108] PacifiCorp Opening Brief at 32-33.

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Company's argument seems to suggest that the Commission should be concerned with the dollar amount of benefits included, rather than a principled approach.[109]

Staff's updated methodology, as described in its reply testimony, provides a principled and reasonable basis to forecast inter-regional benefits for 2018. It is founded on the same principles which the Commission approved previously in the TAM, but includes a consideration for a trend which has otherwise been missed. Staff's original methodology incorporated all month-to-month differences and the most possible data; however, Staff adjusted its methodology to a simplified calculation of the trend and updated the data used in an attempt to reduce disagreements and allow parties to focus on what a reasonable forecast would be.[110] Staff's main concern was that PacifiCorp's new estimate increase was based only on the fact that the upward trend in benefits had continued, and that 2017 actuals were increasing beyond 2016 numbers. PacifiCorp's focus on the initial methodology, which Staff updated in response to the Company's testimony, is irrelevant.

And contrary to PacifiCorp's arguments otherwise, Staff's inter-regional EIM benefits are not overstated.[111] Staff and PacifiCorp are both using data which occurred in 2016, and attempting to forecast inter-regional benefits that are roughly two years out from verified actuals. As Staff has shown, there is a clear trend present, and applying the trend to 2016 actuals a single time would create a forecast of 2017. Therefore, it is necessary to apply the trend a second time to the 2017 forecast in order to create a forecast for 2018 that assumes EIM inter-regional benefits will continue to increase. Staff chose to apply only 50 percent of the entire trend, as opposed to 200 percent, over the two year period, and include PacifiCorp's new entrant

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[109] Staff also notes that it is baseless for PacifiCorp to characterize Staff's correction of an error in testimony, which is appropriately done at the hearing, as a means to increase its forecasted benefits. PacifiCorp Opening Brief at 32-33. Staff did not identify any additional errors to correct related to its calculation of its adjustment under its current methodology, which suggests that the correction was intended to have the record reflect the analysis that Staff undertook. *See* Hrg. Tr. at 272.

[110] *See* Staff/400, Gibbens/16.

[111] PacifiCorp Opening Brief at 33.

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adjustments to create a methodology that is a blend of the Commission approved methodology and a mathematical approach. A separate adjustment for new entrants is necessary because the historical data does not include the benefits associated with new entrants joining the EIM. What history has shown is that in light of increasing benefits in the EIM, it is not Staff's methodology that would double count, but the Company's methodology that is only counting for a single year of what should be a two-year ahead forecast.

Staff's proposed methodology accounts for a clear trend in EIM benefits, while recognizing that there is a potential for a decrease in growth when compared to historical trends.[112] Fundamentally, despite its claims otherwise, PacifiCorp's proposal effectively means that the growth in benefits has stopped from 2017 onward, whereas Staff's proposed methodology assumes a rational level of increased benefit when compared to a reasonable projection for 2017—particularly in light of new entrants, which PacifiCorp and Staff agree will increase inter-regional EIM benefits in 2018. Staff therefore recommends that the Commission adopt its proposed EIM inter-regional benefit methodology, which results in a [redacted] reduction to NPC.

(E) The Commission should approve Staff's adjustment related to liquidated damages at the Company's Cholla plant.

Staff and PacifiCorp disagree about the appropriate ratemaking treatment for liquidated damages in 2018 at the Company's Cholla plant.[113] Staff continues to recommend that the Commission reduce PacifiCorp's NPC forecast by [redacted], which is the amount of liquidated damages associated with the Company's planned draw-down of the coal pile at Cholla.[114] Staff's proposal is that for purposes of 2018 NPC, liquidated damages be calculated under the assumption that PacifiCorp purchase the same amount of coal that it anticipates burning in

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[112] Staff/400, Gibbens/14.

[113] Staff/500, Kaufman/47.

[114] Staff/500, Kaufman/47.

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2018.[115] Staff notes that this is identical to the current treatment of liquidated damages in Portland General Electric power cost proceedings.[116] Furthermore, as discussed more fully below, Staff is not asking the Commission to direct PacifiCorp on how to conduct its physical operations.[117] However, Staff's recommendation is reasonable and prevents the opportunity to strategically shift coal minimum take requirements and liquidated damages between years.

Staff's testimony sets forth five reasons explaining and justifying its recommended adjustment.[118] First, Staff finds that the drawdown costs are more appropriately attributed to past operating years.[119] PacifiCorp argues that the costs associated with reducing current inventory levels are properly attributable to 2018,[120] consistent with standard ratemaking principles,[121] and that Staff's position is inconsistent with its position in previous rate cases.[122] First, Staff's recommendation does not seek to upset standard ratemaking principles. Rather, Staff's testimony demonstrates that utilities have an opportunity to shift coal contract cost risks to customers, by using the coal pile as a type of hedge, between years.[123] Second, Staff's position in this case is not inconsistent with its position in the 2017 TAM. Staff's position in PacifiCorp's 2017 TAM was that PacifiCorp had an insufficient coal contract risk mitigation policy.[124] In that docket, Staff recommended that PacifiCorp implement what appears to be its only coal contract risk mitigation procedure—relying on the coal pile inventory to mitigate

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[115] Staff/500, Kaufman/47.

[116] Docket No. UE 319 PGE/300, Niman-Peschka-Rodehorst/33 states "MONET currently models no difference in the carry forward (i.e., "roll over") of shortfall tons of coal…" This is a continuation of the treatment of coal contract shortfalls in UE 308. See Order No. 16-419, pages 4-5.

[117] Staff/500, Kaufman/51.

[118] Staff/500, Kaufman/47-48.

[119] Staff/500, Kaufman/48.

[120] PacifiCorp Opening Brief at 41.

[121] PacifiCorp Opening Brief at 41.

[122] PacifiCorp's Opening Brief at 42.

[123] Staff/500, Kaufman/48.

[124] UE 307 – Staff/400, Kaufman/39-40.

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liquidated damages.[125] This docket highlights why PacifiCorp's coal contract risk policy is insufficient. PacifiCorp's coal pile cannot provide a long-term buffer to liquidated damages because it has maximum operating limits.[126] In fact, PacifiCorp's proposed treatment in this case is exactly the opposite of Staff's recommendation in Docket No. UE 307. Rather than mitigating liquidated damages through the use of its coal pile, as recommended by Staff, PacifiCorp is amplifying the risks associated with liquidated damages by drawing down the coal pile during a period of low coal use. This increases liquidated damages, rather than decreases liquidated damages. Given its insufficient coal policies, PacifiCorp should not be permitted to shift the risk associated with these contracts from the Company to customers.

Second, Staff finds that a drawdown in 2018 is not necessary.[127] PacifiCorp argues that Staff's proposal to increase purchased coal would maintain an unreasonably high stockpile.[128] As discussed below, Staff is making a ratemaking proposal, not an operational proposal. This aside, the Company's argument is undercut by the fact that it has previously planned to operate at the current inventory level in the past without any substantial drawdown.[129] PacifiCorp argues that Staff has made the "wrong comparison;"[130] however, PacifiCorp's argument is not consistent with previous TAMs. In the 2017 TAM, PacifiCorp planned on maintaining year-end coal inventories of [redacted] tons.[131] In the current case, PacifiCorp originally planned to draw down the coal pile to [redacted] tons,[132] then increased the draw down to [redacted] tons in its July update.[133] If an inventory of [redacted] tons was safe and economical to plan for in 2016,[134] then it

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[125] UE 307 – Staff/400, Kaufman/42.

[126] PAC/600, Ralston/7-8.

[127] Staff/500, Kaufman/48-49.

[128] PacifiCorp Opening Brief at 40-41.

[129] Staff/500, Kaufman/48.

[130] PacifiCorp Opening Brief at 40-41.

[131] Staff/506, Kaufman/2.

[132] Staff/506, Kaufman/3.

[133] Staff/506, Kaufman/4.

[134] Staff/506, Kaufman/2.

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should still be safe an economical today. Staff's proposed ratemaking coal pile of [redacted] tons is smaller than PacifiCorp's proposed coal pile from the 2017 TAM.

Third, Staff finds that PacifiCorp's 2018 preliminary coal nominations are not prudent.[135] PacifiCorp argues that Staff's recommendation ignores the effective delivery limitations in its coal supply agreement.[136] PacifiCorp's argument relies on an assumption that Peabody would choose to [redacted] tons.[137] However, PacifiCorp fails to provide evidence that Peabody would [redacted] tons.[138]

Fourth, PacifiCorp could have made a coal nomination that did not bind it to either Staff's or PacifiCorp's proposed coal purchases.[139] The Company has not provided testimony or evidence that refutes this point.

Finally, Staff's recommendation does not limit PacifiCorp's actual operations.[140] PacifiCorp argues that Staff's proposal would mean that the Company would be forced to maintain an unreasonably high stockpile.[141] This is simply not the case. As Staff noted in its rebuttal testimony, its recommendation "should not be interpreted as a proposal that PacifiCorp keep the coal pile at questionably high levels," and in fact, "agrees that PacifiCorp should not allow the coal pile to grow to an unmanageable size."[142] Should PacifiCorp choose to draw down its coal pile in 2018, Staff finds that to be a ratemaking question for the 2018 PCAM.[143]

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[135] Staff/500, Kaufman/49-50.
[136] PacifiCorp Opening Brief at 41.
[137] PAC/1000, Ralston/10.
[138] PAC/1000, Ralston/10.
[139] Staff/500, Kaufman/50-51.
[140] Staff/500, Kaufman/51.
[141] PacifiCorp Opening Brief at 41.
[142] Staff/500, Kaufman/51.
[143] Staff/500, Kaufman/51.

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(F) The Commission should order PacifiCorp to analyze its methodology for coal plant dispatch to allow for the economic shut-down of coal plants.

Staff proposes in this case that PacifiCorp amend how it models coal plant dispatch in GRID to allow for the economic shut-down of coal plants.[144] PacifiCorp's GRID model does not currently have the capability of performing economic shutdowns of thermal generation plants, including coal plants.[145] Rather than shut uneconomic plants down, GRID dispatches the plants at the minimum operating capacity.[146] And then for gas plants, the Company employs a "gas screening process" to remedy the situation where a gas plant was dispatched at its minimum, but is then displaced by a lower cost resource.[147] In demonstration of this concept, Staff identified two potential coal plant shutdowns that had the effect of reducing forecast NPC by $3.7 million.[148] Staff's recommendation in this case is two-fold—first, Staff recommends that PacifiCorp be ordered to analyze its methodology for coal plant dispatch to allow for the economic shut-down of coal units, and second, Staff recommends the Commission require PacifiCorp to calculate the NPC of each of Staff's coal shutdown scenarios, and select the scenario with the lowest NPC, inclusive of the "no shutdown" scenario.

1. It is reasonable for PacifiCorp to update its modeling in the TAM to allow for the economic shut-down of coal plants.

Fundamentally, Staff finds that the Company should incorporate the economic shut-down of coal units, as it does for gas plants, when forecasting NPC. Staff finds this particularly important because the Company forecasts [redacted][149] Staff's

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[144] *See* Staff/200, Kaufman/21-24.

[145] PAC/400, Wilding/32; Hrg. Tr. at 112.

[146] PAC/400, Wilding/32.

[147] Hrg. Tr. at 112.

[148] Staff/500, Kaufman/35-36.

[149] Staff/712.

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methodology is similar to PacifiCorp's current gas screening process,[150] and seeks to overcome the model specification error inherent in GRID by allowing the model to achieve global optimization.[151] Staff's methodology also removes a constraint that is not consistent with the Company's actual operations.[152]

PacifiCorp argues that there is no basis for Staff's proposal to model the economic shut-down of coal plants because it that PacifiCorp has only shut-down coal plants in actual operations for limited purposes, is too narrowly focused on market prices, and does not consider non-operational issues that limit shut-downs.[153]

Staff's proposal does not ignore actual operations or market conditions. The TAM is a forward-looking proceeding, and on a forward-looking basis, Staff has demonstrated that coal shutdowns are economical and therefor likely to be the new normal. PacifiCorp characterizes the 2016 and 2017 events which lead to low market prices as not normal,[154] and therefore that coal operations prior to 2016 are representative of normal operations on a going forward basis. Staff responds that market prices are more important than natural gas prices or hydro generation.[155] Forecasted market prices are such that coal shutdowns in 2018 are economical.[156] Further, it is reasonable to assume that conditions for an economic shutdown of coal plants will exist in 2018 and beyond. PacifiCorp states that the 2017 economic coal shutdowns were driven by surplus solar generation.[157] The EIM market is a new market that exists in response to the growth of renewable generation.[158] Third party analysis of the EIM benefits focuses on the growth of

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[150] Hrg. Tr. at 255.
[151] Staff/200, Kaufman/21-22; Staff/500, Kaufman/35.
[152] Staff/200, Kaufman/22.
[153] PacifiCorp Opening Brief at 35-39.
[154] PAC/400, Wilding/33.
[155] Hrg. Tr. at 257-259.
[156] Staff/200, Kaufman/23.
[157] PAC/400, Wilding/30.
[158] Staff/100, Gibbens/6.

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renewable generation.[159] In its EIM forecast, PacifiCorp models 2018 market conditions driven by "the over-supply conditions in California caused by increased solar generation."[160] Further, PacifiCorp implies that coal is no longer the marginal resource when analyzing the EIM market.[161] The fact that Staff's coal shutdown scenarios result in lower net power costs demonstrates that expected market conditions allow for economic coal shutdown. There can be little doubt that the economic value of coal has dropped in recent years.

Contrary to PacifiCorp's claims, Staff's analysis is also not narrowly focused on market prices.[162] Dispatch of generation resources within the GRID model is function of market price.[163] This makes market price the fundamental factor that drives what resources the company operates, when market prices are higher less economic plants are dispatched, and when market prices are lower more economic plants are dispatched.[164] The fact that coal shutdowns result in lower NPC in GRID indicates that coal plants are less economical resources and should be shut down during periods of low market prices. PacifiCorp's focus on gas and hydro are only relevant to the extent that low gas prices and high hydro prices depress the market price.[165]

PacifiCorp also falsely claims that Staff's proposal did not consider "non-economic operational issues."[166] At the hearing, PacifiCorp identified 15 operational variables and asked Staff if the analysis considered the variables.[167] Staff stated that the analysis did consider these variables, and began explaining how each was considered.[168] Staff successfully explained the

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159 PAC/902, Brown/8-13.

160 PAC/900, Brown/3.

161 Hrg. Tr. at 157. PacifiCorp speculates that the marginal resource is either hydro, or gas, not coal.

162 PacifiCorp Opening Brief at 37-39.

163 Hrg. Tr. at 258.

164 Hrg. Tr. at 259.

165 Staff/500, Kaufman/36.

166 PacifiCorp Opening Brief at 36.

167 Hrg. Tr. at 260-261.

168 Hrg. Tr. at 260-261.

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consideration of six of the 15 but was interrupted by PacifiCorp before completing the explanation of the remaining nine.[169] Staff's proposed methodology is similar to the Company's gas screening process.[170] PacifiCorp claims that two factors differ between Staff's methodology and the gas screening process. First, PacifiCorp claims that the gas screening process does not prevent gas pants from dispatching in economic periods, while Staff's process does.[171] This occurs because Staff evaluates coal shutdowns on a less granular monthly basis than PacifiCorp's gas screening model.[172] This was acknowledged by Staff in opening testimony as a limitation, but the consequence of this limitation is that Staff's model *over* estimates net power costs.[173] Because Staff's analysis represents a minimum NPC adjustment, if PacifiCorp's concern was corrected, Staff's adjustment would actually be a larger reduction to the NPC estimate. Furthermore, this is not a difference in methodology, but a difference in granularity. It does not refute the fact that the process of identifying economic closure periods is similar between Staff's coal procedure and the Company's gas procedure.

PacifiCorp's second claim for why the screening process is different relates to differences in the fuel cost shape for gas and coal.[174] This concern however does not show a difference in process, but an apparent difference in inputs. The difference is only apparent because the gas screening process is subject to the same concern. The gas screening process includes coal price as an input to GRID.[175] PacifiCorp admits that as with the Staff coal screening the gas plant screening process impacts coal dispatch and therefor the average coal fuel price.[176] For this reason PacifiCorp's concern with Staff's process is equally applicable to PacifiCorp's gas

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[169] Hrg. Tr. at 261.

[170] Hrg. Tr. at 255.

[171] PacifiCorp Opening Brief at 39.

[172] Staff/200, Kaufman/22-23.

[173] Staff/200, Kaufman/23. Staff/500, Kaufman/38.

[174] PacifiCorp Opening Brief at 39.

[175] Hrg. Tr. at 122.

[176] Hrg. Tr. at 122.

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screening process. However, PacifiCorp does not update coal fuel prices until *after* the final gas plant shutdowns have been finalized.[177] Staff also acknowledged this shortcoming in testimony and recommended that prices are updated to reflect the potential for coal prices to be different.[178] Staff's recommendation remedies this shortfall because Staff recommends updating fuel prices and selecting the scenario with the lowest NPC.[179] This is an improvement upon PacifiCorp's gas screening process because Staff's approach selects the most economic scenario after updating prices while PacifiCorp's approach selects the most economic resource prior to updating prices.[180]

2. Staff recommends the Commission require PacifiCorp to calculate the NPC of each of Staff's coal shutdown scenarios, and select the scenario with the lowest NPC, inclusive of the "no shutdown" scenario.

Staff has presented evidence that based on current fuel and market prices, PacifiCorp's NPC forecast is lower with economic coal plant shutdowns than it is without them.[181] PacifiCorp attempts to redirect attention away from this fact and towards concerns about reliability and the shutdown plant and period selection process.[182] PacifiCorp's brief argues three points, whether coal shutdowns are normal, whether Staff considered operational issues, and whether Staff's methodology was consistent with the gas screening process.[183] However, PacifiCorp's brief does not argue that Staff's shutdown scenario is not economic. The bottom line is that PacifiCorp provides no evidence that Staff's actual proposed coal shutdown procedure violates any reliability standard, and PacifiCorp provides no calculations demonstrating that Staff's proposed coal shutdown scenario is more expensive than PacifiCorp's proposal.

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[177] Hrg. Tr. at 123.

[178] Staff/500, Kaufman/46.

[179] Staff/500, Kaufman/46.

[180] Hrg. Tr. at 123.

[181] Staff/200, Kaufman/23.

[182] PacifiCorp Opening Brief at 36-39.

[183] PacifiCorp Opening Brief at 36-39.

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PacifiCorp's modeling concerns are not valid because they apply equally to the gas screening process as Staff's coal screening process.[184] They involve minimal cost impacts,[185] or they are not applicable to the actual GRID results from Staff's scenarios.[186] Staff's proposal also provides flexibility to revert to a no shutdown scenario in the final NPC update if market conditions change sufficiently to make coal an economic resource. This represents an improvement to PacifiCorp's natural gas screening model, which does not revisit the shutdown selection after updating fuel costs impacts of shutdowns.

The Company argues that Staff's proposed shutdown for Cholla fails to account for PacifiCorp's APS contract obligations.[187] However, PacifiCorp failed to show that serving the APS contract with gas generation, renewable generation, market purchases or other coal plants is more expensive than serving the contract with Cholla generation.[188] At hearing, PacifiCorp admitted that it had not calculated the cost of serving the contract with other resources.[189] PacifiCorp also admits to actually performing an economic shutdown Cholla during the contract obligation period.[190]

3. Staff proposal allows PacifiCorp to test alternate shutdown scenarios if PacifiCorp believes it can identify a more economical combination of coal plant shutdowns.

During the hearing PacifiCorp noted that Jim Bridger 3 experienced much larger economic outages than Jim Bridger 1, and that Staff's proposal was focused on Jim Bridger 1.[191] The apparent implication is that Jim Bridger 3 is more optimal candidates for economic outages. Staff's testimony has consistently identified its adjustment as a minimal adjustment, and that

184 Hrg. Tr. at 119-123.

185 Staff/500, Kaufman/41.

186 Staff/500, Kaufman/44.

187 PacifiCorp Opening Brief at 38-39.

188 Hrg. Tr. at 127-128.

189 Hrg. Tr. at 127.

190 Hrg. Tr. at 129.

191 Hrg. Tr. at 268-269.

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there may be an even more economical combination of coal outages. Staff's proposal is to allow PacifiCorp the opportunity to proposal alternative economic shutdowns, to test them against Staffs proposal, and to select the scenario with the lowest power cost.[192] This provides PacifiCorp with a flexible framework within which PacifiCorp can still perform its own analysis to try to identify an optimal shutdown strategy.

Staff's proposal does not impose any operation requirements on PacifiCorp, and PacifiCorp is free to shutdown or not shutdown coal plants in actual operations as it deems appropriate.[193] However, PacifiCorp should anticipate parties testing PacifiCorp's 2018 coal shutdown decisions in the 2018 PCAM proceeding.

(G) The Commission should order PacifiCorp to produce a written report detailing its considerations and processes when evaluating long-term coal contracts.

In light of the coal concerns raised by Sierra Club, Staff recommended in its Rebuttal and Cross-Answering testimony that the Company provide a written report detailing the process and analysis it uses to evaluate and analyze new coal supply agreements.[194] PacifiCorp proposes to address this issue in a post-TAM workshop, "similar to the process used before this case."[195] PacifiCorp also notes that it and Sierra Club have agreed to a preliminary issues list for the proposed workshop, and that this addresses Sierra Club's concerns.[196]

While Staff found the workshop process following UE 307 generally useful,[197] wherein the parties discussed the Company's contract procurement strategy and practices,[198] the discussion at those workshops was not sufficient to address Staff's concerns as evidenced by

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[192] Staff/500, Kaufman/46.

[193] Staff/500, Kaufman/45-46.

[194] Staff/400, Gibbens/23.

[195] PacifiCorp Opening Brief at 43.

[196] PacifiCorp Opening Brief at 43.

[197] PAC/1100.

[198] *See* Hrg. Tr. at 167-168.

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Staff's recommendation in this case for a written report.[199] Staff does not believe that a workshop on this issue will lead to the Company developing written policies and procedures by which the parties can evaluate the Company's procurement strategy for long-term coal contracts.

(H) The Commission should order PacifiCorp to include variable Operations and Maintenance costs in NPC dispatch beginning with the next TAM proceeding.

Staff and Sierra Club recommend that the Company include variable Operations and Maintenance (O&M) costs in the dispatch decision of coal units in the GRID model.[200] Staff finds that including variable O&M costs in the dispatch decision improves the GRID model by ensuring that dispatch decisions are based on the most accurate estimate of true dispatch costs.[201]

PacifiCorp is amenable to modeling variable O&M costs in the TAM, but its agreement is contingent on the recovery of these costs in the TAM and PCAM.[202] When asked about the basis for the link in modeling with rate recovery, the Company indicated that its position was a "regulatory compromise,"[203] and did not dispute that variable O&M can be modeled in the TAM, but continue to be recovered in base rates.[204] The Company has also provided no evidence that rate recovery of these costs in the TAM will produce a more accurate NPC forecast.[205] As Staff pointed out in testimony, Portland General Electric (PGE) models variable O&M costs in its power cost modeling, but continues to recover these costs in base rates.[206] Staff believes that including these costs in the forecast model will provide the best estimate of the cost of dispatching coal units.[207]

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[199] Staff/400, Gibbens/23.

[200] Staff/400, Gibbens/22; Sierra Club/200, Vitolo/2.

[201] Staff/400, Gibbens/22.

[202] PacifiCorp's Opening Brief at 44; PAC/800, Wilding/47; Hrg. Tr. at 106.

[203] Hrg. Tr. at 108.

[204] Hrg. Tr. at 107.

[205] *See* Hrg. Tr. at 107.

[206] Staff/400, Gibbens/23.

[207] Staff/400, Gibbens/21.

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While Staff can appreciate that this modeling change may be complex,[208] Staff recommends that the Commission direct the Company to include variable O&M costs in its NPC forecast in the next TAM proceeding, and not leave this issue up to the parties to resolve in a workshop. Although Staff recognizes that Sierra Club and PacifiCorp have agreed to address this issue in a workshop and is amendable to participating in that workshop to work through specific modeling issues, Staff continues to oppose a change in the ratemaking treatment of variable O&M.[209] Given the parties' respective positions on the ratemaking treatment issue, Staff does not see that a workshop will lead to a meaningful or timely resolution of its concerns.

(I) The Commission should adopt the Company's proposed contract delay rate methodology for Qualifying Facilities.

Both Staff and CUB raised concerns over delays for QFs projected to come online after the final update in TAM proceedings, which results in overstated QF costs in forecast rates.[210] Staff noted that PacifiCorp's forecast of commercial operation dates (COD) was too ambitious for a significant percentage of QFs in 2017.[211] As such, Staff's Opening Testimony proposed to adjust the QF expense to account for the uncertainty in CODs of facilities planned to come online in 2018.[212] Specifically, Staff proposed to apply the average [redacted] delay from UE 307 results to each of the QFs forecast to come online after the final update to the 2018 TAM. This results in removal of the [redacted] from 2018 rates.[213]

CUB's Opening Testimony proposed a Contract Delay Rate (CDR) methodology based on a rolling average of the last three years of available data on the number of days contracts are

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[208] *See* PacifiCorp Opening Brief at 44.

[209] PAC/1112 at 2.

[210] Staff/300, Anderson/7; CUB/200, Jenks/6.

[211] Staff/300, Anderson/6-7.

[212] Staff/300, Anderson/7.

[213] Staff/300, Anderson/7.

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delayed after the final TAM update forecast.[214] This CDR would then be applied to all QF contracts in the TAM forecast.[215]

In its Reply Testimony, Staff considered CUB's proposal and updated its recommendation to use an average delay based on the last three years of QF CODs in the TAM, but weighting the average historical delay by the MW capacity of the QFs to calculate a weighted-average CDR.[216] Staff found that doing so would "be a more realistic QF forecasting method than the current practice of assuming no new QF will experience a delayed COD."[217]

In its surrebuttal testimony, the Company agreed to address COD delay concerns by implementing a Contract Delay Rate (CDR) using the same three year rolling average as proposed by CUB and Staff, and weighting the CDR based on the nameplate capacity of each QF consistent with Staff's proposal.[218] PacifiCorp also recommends that the CDR be counted based on the number of days in the TAM year, as opposed to total delay days (which may span more than the TAM year).[219]

Staff finds PacifiCorp's proposed methodology for a CDR to be a reasonable approach to addressing QF delays in the TAM forecast, and recommends that the Commission adopt PacifiCorp's proposed CDR methodology for the 2018 TAM. If adopted, Staff will continue to evaluate this methodology and its implementation in GRID for potential improvements that would result in a more accurate forecast of QF costs.

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[214] CUB/100, Jenks/10.

[215] CUB/100, Jenks/10.

[216] Staff/600, Anderson/12.

[217] Staff/600, Anderson/12.

[218] PAC/800, Wilding/48; PacifiCorp Opening Brief at 44-45.

[219] PAC/800, Wilding/48; PacifiCorp Opening Brief at 45.

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(J) The Commission should adopt PacifiCorp's proposed valuation of Renewable Energy Credits for the 2018 TAM only.

The value of freed-up Renewable Energy Credits (RECs) is an issue in this docket, as was the case with the two previous TAM proceedings. In all three proceedings, Calpine has argued that direct-access customers were paying twice for Renewable Portfolio Standard (RPS) compliance—once through transition charges, and again through rates charged by their Electric Service Supplier (ESS).[220] In response to Calpine's concerns, for the first time in a TAM proceeding, PacifiCorp proposed a REC credit in the transition adjustment calculation.[221] The REC credit is based on the future value of freed-up RECs, discounted to today's dollars.[222]

Calpine notes its appreciation for the progress on this issue, but recommends that the Commission direct PacifiCorp to either (1) value freed-up RECs using either the price of RECs recently sold by PacifiCorp or the price of RECs purchased through its 2016 RFP, or (2) that the Company agree to transfer to the ESS or retire on behalf of the direct access customer actual RECs.[223] PacifiCorp argues that its valuation methodology is consistent with previous Commission guidance, and that it is open to transferring RECs to the ESS, but that the parties and Commission need additional process in order to determine what framework, if any, is appropriate for transfer.[224] Therefore, PacifiCorp recommends the Commission adopt its valuation methodology in this proceeding, and initiate additional process to develop a REC transfer framework.[225]

Staff observed that there are several legal and policy questions implicated in REC credit valuation, direct transfer to the customer or ESS, and retirement of RECs on behalf of the

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220 Staff/600, Anderson/2.

221 PAC/100, Wilding/32-34.

222 PAC/100, Wilding/32-34.

223 Calpine Solutions/100, Higgins/4.

224 PacifiCorp's Opening Brief at 46.

225 PacifiCorp's Opening Brief at 46.

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customer or ESS.[226] Staff therefore supports PacifiCorp's valuation methodology for purposes of the 2018 TAM only, and notes that this is likely not the methodology that Staff would support on a permanent basis.[227] To address the issue on a long-term basis, Staff recommends the Commission direct the parties to address the transfer framework in a separate proceeding.[228] Staff notes that the RPS rulemaking docket, AR 610, would be an appropriate forum to address this issue.[229]

III. CONCLUSION

For the reasons stated above, Staff recommends that the Commission:

- Order PacifiCorp to produce model validation analysis agreed to by Staff and ICNU. To facilitate this process, Staff further recommends that Commission order PacifiCorp to convene a workshop n January 2018 to address the specific analysis to be done, order PacifiCorp to use best efforts to finish the requested analysis prior to the filing of its 2019 TAM proceeding, and direct Staff to report on the progress of this process at a public meeting prior to the Company's 2019 TAM filing.
- Approve Staff's proposed improvements to the Company's DART adjustment, including (1) modifying the price adder component of DART with a properly correlated market price and system load; (2) eliminate the volume component of DART, or alternatively, order that it be offset by the residual value of monthly transactions, which would result in a $12.75 million reduction to NPC. If the Commission adopts the DART adjustment recommended by ICNU, Staff recommends that the Commission exclude years with abnormally high real time transactions—2013, 2014 and 2015. If the Commission adopts the DART collar agreed to by CUB and PacifiCorp, Staff recommends that the

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[226] Staff/600, Anderson/7.

[227] Staff/600, Anderson/8.

[228] Staff/600, Anderson/8.

[229] Staff/600, Anderson/7.

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Commission modify the collar to make it a symmetric $30 million collar, and eliminate the requirement for an earnings test.

- Adopt Staff's proposed calculation of EIM benefits, which results in a [redacted] reduction to NPC.
- Adopt Staff's proposed [redacted] reduction to NPC for liquidated damages associated with the Company's planned draw-down of the coal pile at Cholla.
- Order PacifiCorp to analyze its methodology for coal plant dispatch to allow for the economic shut-down of coal plants, and adopt Staff's proposed $3.7 million reduction related to its analysis of economic shutdowns for coal plants in 2018.
- Order PacifiCorp to produce a written report detailing its considerations and processes when evaluating long-term coal contracts.
- Order PacifiCorp to include variable O&M costs in NPC dispatch beginning with the 2019 TAM proceeding.
- Adopt PacifiCorp's proposed contract delay rate methodology for Qualifying Facilities.
- Adopt PacifiCorp's proposed valuation of Renewable Energy Credits for the 2018 TAM only.

DATED this 26th day of September, 2017.

Respectfully submitted,

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CERTIFICATE OF SERVICE

UE 323

I certify that I have, this date, served STAFF'S RESPONSE BRIEF confidential pages in docket UE 323 upon the parties listed below via first class mail.

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