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Joint Party Comments on the Real-Time Market Neutrality Issue Paper/Straw Proposal

PacifiCorp and Portland General Electric ("Joint Parties") hereby submit the following comments to the California Independent System Operator Corporation ("CAISO") on the Real-Time Market Neutrality Issue Paper/Straw Proposal originally published April 24, 2019, and updated April 25, 2019, ("Straw Proposal"). The Joint Parties appreciate the opportunity to provide comments for the CAISO's consideration.

Initial Request for Policy Change

PacifiCorp and Idaho Power submitted, along with their comments on the CAISO's 2020 Policy Initiatives Catalog, a new initiative form to address the transfer out adjustment mechanism in charge code 64770 for real-time imbalance energy offset ("RTIEO"). PacifiCorp requested that enhancements needed to be made to better take into account revenue neutrality in the RTIEO. More specifically, as a result of the current charge code methodology and calculations, PacifiCorp transferred out $27.6 million of revenues from its balancing authority area ("BAA") to supposedly be made neutral. This issue has had a significant impact on the Joint Parties' EIM benefits and impacts other EIM Entities as well.

Real-Time Market Neutrality Straw Proposal

The CAISO's Straw Proposal stated that after an internal review, it believed that changes needed to be made to address issues in real-time market neutrality. More specifically, that the current settlement design results in real-time market neutrality being inappropriately moved to another BAA. The Joint Parties are concerned that the timing of this filing is not adequate given the adverse financial implications of the filing; therefore, given the significant impact to EIM settlements, the Joint Parties strongly support the CAISO's efforts to expedite the current stakeholder process to bring this initiative before the EIM Governing Body and the CAISO Board of Governors **at the earliest possible time**. Moreover, to ensure that the needed reforms can be reflected in the EIM settlements at the earliest possible date, the Joint Parties request that the CAISO seek waiver of FERC's 60-day notice provision to permit an effective date one day after

filing, consistent with the approach taken in Docket No. ER15-850 regarding the assessment of the EIM Administrative Charge to EIM participants. The proposed RTIEO tariff revision qualifies for the use of expedited tariff revisions as it corrects an issue that: (1) materially adversely impacts the market; (2) requires prompt prospective action; and (3) is susceptible to a clear-cut revision.

Similar to the CAISO's reasoning in its tariff filing with FERC on unexpected assessments being inconsistent with the intended effect of the EIM Administrative Charge that the CAISO and stakeholders developed in the original 2013 EIM design initiative, the Joint Parties believe that the calculation and allocation of neutrality in the RTIEO charge code is inconsistent with the below agreed upon principles from the Draft Final Proposal for the Energy Imbalance Market, September 23, 2013:

1. **Causation**: Costs will be charged to resources that benefit from the service the ISO procures through the market or drive procurement decision and resulting costs.
2. **Comparable Treatment**: Similarly situated resources and/or market participants should receive similar allocation of costs and not be unduly discriminated against.
3. **Accurate Price Signals**: The cost allocation design supports the economically efficient achievement of state and federal policy goals by providing accurate price signals from the ISO market.
4. **Incentivize Behavior**: Providing appropriate incentives is key to an economically efficient market.
5. **Manageable**: Market participants should have the ability to manage exposure to the cost allocation.
6. **Synchronized**: The cost drivers of the allocation should align as closely as possible to the selected billing determinant.
7. **Rational**: Implementation costs/complexity should not exceed the benefits that are intended to be achieved by allocating costs.

The Joint Parties believe that the current implementation of the RTIEO charge code is in contrast to the principles above and needs to be amended as soon as possible to prevent additional incorrect transfer amounts in the interim period.

Removal of Transfer Adjustments

The Joint Parties agree with the CAISO that a change is needed to address the real-time imbalance energy neutrality calculation included in the RTIEO charge code 64770. The CAISO's Straw Proposal states that the BPM Charge Code 64770 Configuration Guide section 3.6.2 will remove the "BAATransferInAdjustmentAmount" and the


"EIMBAATransferOutAdjustmentAmount". The initial RTIEO calculation and the transfer in/out adjustment will both be eliminated from the calculation of the RTIEO charge code.

The Joint Parties are supportive of the CAISO's proposed RTIEO changes for the following reasons:

1) The real-time imbalance energy neutrality should be calculated at the BAA level and allocated to the BAA giving rise to the neutrality consistent with the other two neutrality charge codes: real-time marginal loss offset and real-time congestion offset. There is no evidence to support allocating the RTIEO charge code in a manner differently than the real-time congestion and marginal loss offset charge codes.

2) The cost causation for allocating real-time imbalance energy neutrality to EIM exports is indirect, or non-existent, therefore, this neutrality should not be allocated to EIM exports. One of the largest creators of real-time imbalance energy neutrality for an EIM Entity is often unaccounted for energy ("UFE"). UFE for an EIM Entity is primarily created by a difference between the Open Access Transmission Tariff ("OATT") loss rate and market loss rates. It is unreasonable for an EIM export to transfer the rights and obligations associated with the exporting EIM Entities' UFE to the importing EIM Entity. The exported energy did not directly cause the UFE. In addition, due to the fact that the primary driver of market neutrality is created by a difference in loss factors between an EIM Entity's OATT and the CAISO market model, each BAA has no ability to manage its allocation costs.

3) When real-time imbalance energy neutrality is favorable, the transfer adjustment mechanism incentivizes incurring higher uninstructed imbalance energy ("UIE") and UFE, or not exporting to other EIM Entities. This allocation method creates an incentive in the market that does not promote an efficient outcome.

4) EIM Entity BAA real-time imbalance energy neutrality is large for many EIM Entities and the transfer adjustment mechanism creates "winners" and "losers" based partially on whether EIM Entities are importing or exporting and whether or not their BAA has favorable or unfavorable market neutrality.

5) The transfer out adjustment mechanism is best fitted for allocating amounts that are always unfavorable. UIE and UFE are in the denominator of the transfer out percentage so the larger the UIE and UFE the smaller the amounts transferred out. Good operating practice is to minimize UIE and UFE. Real-time imbalance energy neutrality can be either favorable or unfavorable. When real-time imbalance energy neutrality is favorable, UIE and UFE are incentivized and there is a disincentive to have EIM exports.

Thus, when real-time imbalance energy neutrality is favorable, the transfer out adjustment mechanism does not provide proper incentives.

6) The transfer adjustment mechanism creates a benefit or detriment to the EIM Entity depending on whether the net of the transfers are favorable or unfavorable. This benefit or detriment is not accounted for in the CAISO benefits reports. Eliminating the adjustment mechanism will assist in reconciling the revenues and expenses included in the calculation of the CAISO interregional benefits with the market charge codes on EIM Entity settlement statements.

Calculation Examples

The calculation for the amount of real-time imbalance energy neutrality transferred out of one EIM Entitiy's BAA into another BAA is shown in BPM 6477 section 3.6.10:

Initial RTIEO Settlement Amount x Transfer Out Percentage = Transfer Out Adjustment Amount

Per the RT Energy Quantity Pre-Calc BPM section 3.6.23 the Transfer Out Percentage is calculated as follows:

Transfer Out Percentage = BAA EIM Transfer Out Quantity / (BAA Gross UIE Quantity + BAA Gross UFE Quantity + BAA EIM Transfer Out Quantity)

The table below shows three scenarios for the transfer out percentage to help illustrate the impact of this billing determinant. In scenario #1 UIE and UFE are small relative to exports resulting in the transfer out percentage rounding to 100%. Under this scenario 100% of the real-time imbalance energy neutrality will be transferred out of the BAA and over to another BAA. This is an unfavorable result for the EIM Entity because the neutrality revenues that the BAA needs to be made neutral are 100% transferred out of its BAA. If the real-time imbalance energy neutrality is favorable the EIM Entity is incentivized to incur higher levels of UIE and UFE so that the favorable neutrality stays in the BAA. If the BAA neutrality is favorable the EIM Entity is better off in scenario #2 all other factors being equal.

	Scenario #1	Scenario #2	Scenario #3
UIE & UFE (MWh)	1	1,000	1
EIM Exports (MWh)	1,000	1	1
Transfer Out Percent	100%	0%	50%
Favorable BAA Market Neutrality	Unfavorable impact to EIM Entity	Favorable impact to EIM Entity	Unfavorable impact to EIM Entity
Unfavorable BAA Market Neutrality	Favorable impact to EIM Entity	Unfavorable impact to EIM Entity	Favorable impact to EIM Entity
	If UIE & UFE are immaterial relative to exports all neutrality transferred out	If EIM exports are immaterial relative to UIE & UFE no neutrality transferred out	If UIE & UFE together equal exports half neutrality transferred out

Below are two different scenarios designed to show the impact of the transfer adjustment mechanism. The first scenario shows real-time imbalance energy neutrality being created by UFE but no EIM transfers occur so the BAA is made neutral. The second scenario shows how the transfer out adjustment mechanism prevents the BAA from being neutral.

Scenario #1

Scenario Assumptions and Inputs

The BAA contains a generator that has submitted a base schedule of 100 MWh. The generator also generated 100 MWh resulting in no UIE. For an EIM Entity, the CAISO calculates the load base schedule of 95 MWh based on the generation base schedule less the EIM Entity's tariff loss rate which in this example is 5%. The EIM Entity calculates its settlement quality meter data ("SQMD") load actuals using the same tariff loss rate so 95 MWh is submitted as the meter value.

The CAISO market model runs and it calculates that the EIM Entity's loss factor should be 2%. The mismatch between the tariff loss rate and the market model run loss rate creates UFE of 3 MWh.

	Assumptions:				
1	Generator Base Schedule (MWh)	100	6	CAISO Market Loss Factor (%)	2%
2	Generator Settlement Quality Meter Data (MWh)	100	7	LMP Price (No MCL, MCC, GHG) ($/MWh)	$30
3	Load Base Schedule (MWh)	95	8	RTIEO Transfer Out Percent (%)	0%
4	Load Settlement Quality Meter Data (MWh)	95	9	No EIM Transfers	
5	EIM Entity Loss Tariff Loss Factor (%)	5%			

RTIEO Calculation

Below is the calculation of the RTIEO for this scenario. The initial RTIEO neutrality is $90. There are no exports during the scenario so the transfer out adjustment is zero.

Calculation of RTIEO		
BAA Total GHG Compensation	**A**	$0.00
+ BAA Total FMM IIE Settlement Amount	**B**	$0.00
+ BAA Total RTD IIE Settlement Amount	**C**	$0.00
+ BAA Total RTD UIE Settlement Amount	**D**	$0.00
+ BAA Total UFE Settlement Amount	**E**	$90.00
= BAA Total GHG, IIE, UIE and UFE	**F=Sum(ABCDE)**	**$90.00**
BAA Total RT Energy Congestion Amt	**G**	$0.00
BAA RT Loss Offset Amount	**H**	$0.00
MCC and MCL components in GHG, IIE, UIE and UFE	**I = Sum(GH)**	**$0.00**
GHG, IIE, UIE and UFE valued at SMEC after MCC and MCL Removed	**J=F-I**	$90.00
TotalFinancialValueTransfer	**K**	-
Initial RTIEO Settlement Amount	**L=J+K**	**$90.00**
x Transfer Out Percentage [0/(0+3+0)]	**M**	0%
= Transfer Out Adjustment Amount	**N=L*M**	$0.00
- Transfer In Adjustment Amount	**O**	$0.00
= RTIEO Settlement Amount	**P=-L+N-O**	**($90.00)**

Settlement Statements

Both the generator and the load had a metered value equal to their base schedule so there was zero UIE. There is $90 of UFE in charge code 64740 because the CAISO expected the EIM Entity to submit 98 MWh of load (network model showed 2% losses) but the EIM Entity only submitted 95 MWh (tariff assumed 5% losses) so CAISO added 3 MWh of load valued at the EIM Entity's EIM load aggregation point ("ELAP") price of $30/MWh. As seen in the calculation of RTIEO there was a $90 neutrality amount in the BAA, so a revenue of $90 is added in the RTIEO to make the BAA neutral. This results in the settlement statements equaling zero overall which the Joint Parties consider a reasonable result. It would not be reasonable for

this EIM Entity to pay $90 to market participants in other BAAs because there was UFE in their BAAs.

Charge Code Description	Quantity	Price	Amount
64750 RT Uninstructed Imbalance Energy	-	$30	-
64740 RT Unaccounted for Energy	3	$30	$90
64770 RT Imbalance Energy Offset			($90)
Total EIM Entity Settlement Statements			**$0**

Scenario #2

Scenario Assumptions and Inputs

The inputs and assumptions are very similar in the scenario with the exception of 1 MWh being incrementally instructed to be generated and delivered to another BAA through an EIM Transfer.

	Assumptions:				
1	Generator Base Schedule (MWh)	100	6	CAISO Market Loss Factor (%)	2%
2	Generator Settlement Quality Meter Data (MWh)	101	7	LMP Price (No MCL, MCC, GHG) ($/MWh)	$30
3	Load Base Schedule (MWh)	95	8	RTIEO Transfer Out Percent (%) [1/(0+3+1)]	25%
4	Load Settlement Quality Meter Data (MWh)	95	9	EIM Transfer out (MWh)	1
5	EIM Entity Loss Tariff Loss Factor (%)	5%			

RTIEO Calculation

Below is the calculation of the RTIEO for this scenario. The calculation of initial RTIEO (line L) is the same as in the prior scenario. However, because the EIM Entity had a transfer out during this interval 25% of the $90, $22.50 is transferred out to another BAA. This $22.50 revenue will end up being transferred into a different BAA as a transfer in adjustment billing determinant.

BAA Total GHG Compensation	**A**	$0.00
+ BAA Total FMM IIE Settlement Amount	**B**	(30.00)
+ BAA Total RTD IIE Settlement Amount	**C**	$0.00
+ BAA Total RTD UIE Settlement Amount	**D**	$0.00
+ BAA Total UFE Settlement Amount	**E**	$90.00
= BAA Total GHG, IIE, UIE and UFE	**F=Sum(ABCDE)**	**$60.00**
BAA Total RT Energy Congestion Amt	**G**	$0.00
BAA RT Loss Offset Amount	**H**	$0.00
MCC and MCL components in GHG, IIE, UIE and UFE	**I = Sum(GH)**	**$0.00**
GHG, IIE, UIE and UFE valued at SMEC after MCC and MCL Removed	**J=F-I**	$60.00
TotalFinancialValueTransfer	**K**	30.00
Initial RTIEO Settlement Amount	**L=J+K**	**$90.00**
x Transfer Out Percentage [1/(0+3+1)]	**M**	25%
= Transfer Out Adjustment Amount	**N=L*M**	$22.50
- Transfer In Adjustment Amount	**O**	$0.00
= RTIEO Settlement Amount	**P=-L+N-O**	**($67.50)**

Settlement Statements

On the settlement statements, the EIM participating resource will receive revenues of $30 in the instructed imbalance energy ("IIE") charge code for the 1 MWh that was instructed. However, the RTIEO charge code only offsets $67.50 of the total $90.00 UFE amount. Because $22.50 of the revenue needed to make the BAA neutral was transferred to another BAA, this EIM Entity incurred a $22.50 loss. The value of the energy transferred outside the BAA in this scenario was $30 but the EIM Entity only received revenue of $7.50. This is not a reasonable result. This unreasonable result was caused by the transfer adjustment mechanism transferring out $22.50 that the BAA needed to be made neutral. This example illustrates why the transfer adjustment mechanism should be eliminated.

Charge Code Description	Quantity	Price	Amount
64600 RT Instructed Imbalance Energy	1.00	$30	($30.00)
64750 RT Uninstructed Imbalance Energy	-	$30	$0.00
64740 RT Unaccounted for Energy	3.00	$30	$90.00
64770 RT Imbalance Energy Offset			($67.50)
Total EIM Entity & EPR Settlement Statements			**($7.50)**

Greenhouse Gas (GHG) Awards in the Financial Value Transfer Billing Determinant

The Joint Parties believe that the pricing of the "EIMBAATotalFinancialValueTransfer" billing determinant included in the RTIEO charge code needs to be modified so that it is always the

SMEC minus the GHG component. The pricing of the Financial Value Transfer component should not be used to allocate the GHG costs paid out in charge code 491. The financial value transfer billing determinant should be used to determine the value of transferred energy only, without regard to whether the transfer incurred a GHG obligation. The Joint Parties believe a separate new billing determinant or charge code should be created to allocate GHG costs to California BAAs. The deeming of GHG revenues are not dependent on EIM transfers. GHG revenues can be allocated to an EIM Entity whether they have imports, exports or no EIM transfers at all.

The RTIEO charge code 64770 is already very complex compared to many other CAISO charge codes. Adding financial value pricing logic that varies based on whether or not there are California deemed exports adds more complexity. The Joint Parties believe a better modification to address GHG issues is to completely remove the GHG awards from the calculation of RTIEO and create a new allocation charge code that is only paid by the CAISO and SMUD. This approach dramatically reduces the risk of issues being masked by the complexity associated with the RTIEO charge code. There is a far greater risk of future errors in the allocation of GHG revenues being unidentified if the allocation of GHG costs is kept as part of the RTIEO offset charge code. This also positions the settlement calculations for more flexibility should states other than California enact similar GHG programs.

The allocation of Bid Cost Recovery and the Flexible Ramping Product have their own allocation charge codes and the CAISO does not try to mix in their allocation along with the allocation of real-time imbalance energy neutrality. The RTIEO charge code should be used for only the calculation of market neutrality and not the allocation of GHG costs. Removing the GHG charge code would simplify the RTIEO charge code where UIE, IIE and UFE are evaluated for neutrality against the financial value of transfers valued at the system marginal energy cost less the GHG component.

An acceptable approach would be the creation of a new billing determinant in the RTIEO charge code, separate from the financial value transfer billing determinant that would be used for allocating GHG costs, but the Joint Parties believe a new charge code is preferable.

Other Initiatives Included

The Joint Parties believe the change in procedures to require the EIM Entity to submit EIM transfer system resource ("ETSR") E-tags with the CAISO is an enhancement of the current practice. The mechanism for settling ETSRs should be consistent across all EIM transfer points. This procedure change increases consistency. Moving from hourly integrated values to 5-minute granularity should improve settlement accuracy.

EIM Governing Body Role

The Joint Parties agree with the CAISO for the reasons stated in the Straw Proposal, that the entire initiative should be classified for EIM Governing Body decision under its primary authority.

Conclusion

The Joint Parties appreciate the CAISO's consideration of these comments.