

resources within an ancillary services sub-region to reflect both the scarcity demand curve value in the sub-region as well as the scarcity demand curve value in the expanded system region when there is a scarcity condition in both regions. Absent this clarification, the ISO requests rehearing of the *June 2010 Order* on this limited issue.

II. Background

As part of its review and approval of the ISO's new market design, the Commission directed the ISO to develop a reserve shortage scarcity pricing mechanism that applies administratively determined prices to various levels of reserve shortage.⁴ As part of its *September 2006 Order*, the Commission referred to the scarcity pricing designs adopted by PJM Interconnection (PJM) and the Midwest ISO (MISO) that allow reserve pricing during shortage conditions to rise to \$1,000/MWh.⁵ The Commission also referred to scarcity pricing designs adopted by the New York Independent System Operator and New England Independent System Operator that permit prices for both energy and reserves to rise as the severity of a shortage increases.⁶ The ISO modeled its scarcity pricing design after the New York and New England designs, which establish scarcity demand curve values within zones contained within the larger

⁴ *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274 (2006) ("*September 2006 Order*") at PP 1076-1079.

⁵ *Id.* at fn 472, citing *PJM Interconnection LLC*, 114 FERC ¶ 61,076 (2006); *Midwest Indep. Transmission Sys. Operator, Inc.*, 108 FERC ¶ 61,163 (2004).

⁶ *September 2006 Order* at fn. 472, citing *New York Indep. Sys. Operator, Inc.*, 103 FERC ¶ 61,339 (2003); *ISO New England, Inc.*, 104 FERC ¶ 61,130 (2003)

system area as well as demand curve values for reserves when there is a shortage condition across the entire system area.⁷ The ISO also tied scarcity demand curve values to the ISO's maximum energy bid price.⁸

Under the ISO's scarcity pricing proposal, the price for reserves rises automatically to administratively determined levels when there is a shortage of reserves in either the ISO's expanded system region or ancillary service sub-regions.⁹ As part of its design, the ISO proposed different scarcity demand curve values for reserves in the expanded system region and ancillary service sub-regions.¹⁰ Using these values, the ISO proposed to calculate ancillary service marginal prices during a reserve shortage based on how the ISO calculates ancillary service marginal prices when there is no reserve shortage.¹¹ The ISO's tariff allows the ISO to use higher quality reserves to meet the procurement requirement for lower quality reserves in the same ancillary services sub-region or in the expanded system region. Under non-scarcity conditions, the ancillary service marginal prices in a sub-region reflect both the shadow prices of the requirement constraint in the sub-region and the constraint in the expanded system region.¹² The ISO proposed to allow scarcity demand curve values to

⁷ ISO Final Proposal for Reserve Scarcity Pricing Design dated November 4, 2009 at 8-11. <http://www.caiso.com/245c/245cd04327ae0.pdf>

⁸ *Id.*

⁹ ISO December 23, 2010 filing at 3.

¹⁰ *Id.* at 6, Table 1.

¹¹ *Id.* at 3, *citing* ISO tariff sections 8.2.35, 27.1.2.1.

¹² The shadow price is the marginal value of relieving a particular constraint. See, ISO tariff, Appendix A.

add in a similar fashion when there is scarcity in both a sub-region and the expanded system region. This approach was intended to create a premium for reserves in an ancillary services sub-region when there is a shortage in that ancillary services sub-region.¹³

On March 31, 2010, the Commission requested additional information to evaluate the ISO's scarcity pricing proposal, including information related to the different scarcity demand curve values proposed for the expanded system region and ancillary service sub-regions.¹⁴ The ISO responded to the Commission's request for information and also proposed to include a scarcity demand curve for regulation down in the ISO's ancillary services sub-regions as part of its reserve scarcity pricing design.¹⁵ On June 29, 2010, the Commission issued an order accepting the ISO's scarcity pricing design and suspending the proposed tariff revisions subject to specific compliance directives, including that the ISO justify the different scarcity demand curve values for reserves in the ISO's expanded system region and ancillary service sub-regions or make these values consistent.

If the ISO makes scarcity demand curve values consistent in the expanded system region and ancillary services sub-region under the ISO's proposed design, ancillary service marginal prices in the sub-region could rise significantly higher than proposed by the ISO when there is a shortage condition in both the expanded system region and ancillary service sub-region. The ISO is

¹³ ISO Final Proposal for Reserve Scarcity Pricing Design dated November 4, 2009 at 13.

¹⁴ March 31, 2010 letter order requesting additional information at 2.

¹⁵ ISO April 30, 2010 filing at 2-5 and 12-13.

willing to modify its initial proposal in a compliance filing to make these demand curve values consistent for purposes of valuing reserves during a scarcity condition. But the ISO requests clarification that the Commission does not expect the ISO to add scarcity demand curve values across an ancillary service sub-region and the expanded system region when there is a shortage condition in both regions. Absent this clarification, the ISO requests rehearing of the *June 2010 Order*.

III. Statement of Issues and Specification of Error or Clarification

The ISO identifies the following statement of issues and specifications of error or clarification concerning the *June 2010 Order*.

1. The *June 2010 Order* finds that the scarcity demand curve values in the expanded system region are just and reasonable and that they provide an adequate incentive for supply and demand resources to resolve a shortage.¹⁶ If the Commission accepts the same demand curve values for the ISO's ancillary service sub-regions, the Commission must also find these sub-regional demand curve values are just and reasonable. There is, accordingly, no need to create a sub-regional premium by adding the scarcity demand curve values across the expanded system region and ancillary service sub-region when a shortage condition exists in both regions. The ISO requests that the Commission make this finding explicit. To the extent this finding is not consistent with the *June 2010*

¹⁶ *June 2010 Order* at P 39.

Order, the ISO respectfully submits that the *June 2010 Order* is in error and should be modified on rehearing.

2. The *June 2010 Order* relies on protests that argue that there is insufficient justification to use lower scarcity demand curve values in the ancillary services sub-regions than the expanded system region.¹⁷ Based on these protests, the Commission directed the ISO to justify the use of lower scarcity demand curve values in ancillary services sub-regions or make these values consistent with the values proposed for the expanded system region. Under non-scarcity conditions, the ISO's ancillary service marginal price for resources in a sub-region is calculated as the sum of the shadow price of the requirement constraint in the sub-region and the shadow price of the constraint in the expanded system region. This approach ensures that resources in the sub-region receive appropriate compensation for their contribution to meet the ancillary service requirements in both the sub-region and the expanded system region. The shadow price of the constraint in the sub-region reflects the resources' incremental value beyond their contribution to meet the requirement in the expanded system region. Under this approach, and if the scarcity demand curve values are the same in the ISO's expanded system region and sub-regions, the ancillary service marginal price in the sub-region will be twice as high as the scarcity demand curve value for the ancillary service in the expanded system region when there is a shortage in both regions. The *June 2010 Order*, however, does not articulate any rationale to sum scarcity demand curve values across the expanded system region and sub-regions. If the Commission accepts

¹⁷ *June 2010 Order* at PP 24-27.

the same demand curve values for the ISO's ancillary services sub-regions and the expanded system region, the Commission will obviate the need to apply an additional sub-regional premium when there is scarcity in both the expanded system region and within an ancillary services sub-region. The ISO requests that the Commission make this finding explicit. To the extent this finding is not consistent with the *June 2010 Order*, the ISO respectfully submits that the *June 2010 Order* is in error and should be modified on rehearing.

IV. Request for Clarification or in the Alternative Rehearing

A. The Commission's rationale for adoption of the expanded system region demand curve values applies equally to the ISO's ancillary services sub-regions

The Commission's *June 2010 Order* directs the ISO to either justify the different scarcity demand curve values for reserves in the ISO's expanded system region and ancillary service sub-regions or make these values consistent.¹⁸ The *June 2010 Order*, however, does not explicitly state that if the ISO makes the scarcity demand curve values in the expanded system region and ancillary services sub-region consistent then the ISO should not add these values together to calculate ancillary service marginal prices when there is a reserve shortage in both regions. The ISO respectfully requests the Commission to make this clarification explicit. If the Commission were to accept the same demand curve values for the ISO's ancillary services sub-regions as applied to the expanded system region but require the ISO to continue to add these values

¹⁸ *June 2010 Order* at P 43.

together when there is a reserve shortage in both the expanded system region and sub-regions, the Commission would commit legal error.

In its *June 2010 Order*, the Commission determined the ISO's proposed scarcity demand curve values in the expanded system region are just and reasonable and that they provide an adequate incentive for supply and demand resources to resolve a shortage.¹⁹ The Commission based this determination on the fact that these demand curve values can rise as high as the ISO's maximum energy bid price, the demand curve values are higher than the current ancillary services bid cap and approach the maximum scarcity prices accepted by the Commission for PJM, MISO, New York and New England. The Commission also accepted the ISO's showing that these demand curve values provide adequate price signals to promote future investment and innovation. For purposes of referencing the demand curve values in the expanded system region, the ISO reprints Table 1 submitted with its initial filing.

¹⁹ *June 2010 Order* at P 39.

Table 1 - Scarcity Demand Curves proposed by ISO

Reserve	Demand Curve Value (\$/MWh)					
	Percent of Energy Max Bid Price		Max Energy Bid Price = \$750/MWh		Max Energy Bid Price = \$1000/MWh	
	Expanded System Region	System Region and Sub-Region	Expanded System Region	System Region and Sub-Region	Expanded System Region	System Region and Sub-Region
Regulation Up	20%	10%	\$150	\$75	\$200	\$100
Spinning	10%	10%	\$75	\$75	\$100	\$100
Non-Spinning Shortage > 210 MW	70%	25%	\$525	\$188	\$700	\$250
Shortage > 70 & ≤ 210 MW	60%		\$450		\$600	
Shortage ≤ 70 MW	50%		\$375		\$500	
Upward Sum	100%	45%	\$750	\$338	\$1000	\$450
Regulation Down Shortage > 84 MW	70%	25%	\$525	\$188	\$700	\$250
Shortage > 32 & ≤ 84 MW	60%		\$450		\$600	
Shortage ≤ 32 MW	50%		\$375		\$500	

Under the ISO’s scarcity pricing design, the demand curve values for the expanded system region reflect the maximum scarcity values the ISO will use to calculate ancillary service marginal prices for resources to address a shortage in the expanded system region. The maximum ancillary service marginal price for a shortage in the expanded system region is 100 percent of the ISO’s maximum energy bid price. If these values are sufficient to resolve a shortage in the expanded system region, they should also be sufficient to resolve a shortage in the ISO’s ancillary services sub-regions. If the ISO applies the expanded system demand curve values to its ancillary services sub-regions, the findings that support acceptance of these values for the expanded system region apply equally to the sub-regions: the values will rise as high as the maximum energy bid price, the values are higher than the current ancillary services bid cap of \$250

MWh²⁰, the values will approach the same maximum scarcity prices accepted by the Commission for other regional transmission operators and independent system operators and the scarcity values should promote future investment and innovation within the ISO's sub-regions.²¹

Moreover, a resource that qualifies to resolve a shortage condition in both the expanded system region and ancillary service sub-region will always be compensated at a price at least equal to its bid. This fact eliminates the need to provide a premium for the resource in a sub-region. Currently, the maximum energy bid price is \$750 MWh.²² The maximum energy bid price will increase to \$1,000 MWh on April 1, 2011.²³ If the ISO relies on a resource's energy bid at or near the maximum energy bid price to address an ancillary services shortage, the price paid to the resource will reflect maximum possible opportunity cost of that energy bid whether the resource is satisfying a shortage in the expanded system region or in a sub-region. The practical effect of making the demand curve values in the expanded system region and ancillary service sub-regions consistent while maintaining the additive feature of these values would be to create scarcity premiums that far exceed the maximum possible opportunity costs incurred by resources, if the ISO market uses their bids to resolve a reserve shortage instead of energy dispatch. There is no record evidence to

²⁰ ISO tariff section 39.6.1.3.

²¹ The Commission has determined that the rates established for the expanded system region are just and reasonable as proposed by the ISO under Section 205 of the Federal Power Act. 16 U.S.C. § 824d. If the ISO proposes these same rates for the ancillary service sub-region, the Commission should also approve them as just and reasonable.

²² ISO tariff section 39.6.1.1.

²³ *Id.*

support ancillary service marginal prices that can rise to 200 percent of the maximum energy bid cap during a shortage condition.

Table 1-A reflects the scarcity demand curve values for the ISO’s expanded system region and ancillary service sub-region when these two values are made consistent and are not additive to calculate ancillary service marginal prices. Under this approach, the highest scarcity price for upward reserves in the expanded system region or the ancillary sub-regions will be 100 percent of the maximum energy bid price. Absent further direction, the ISO intends to submit a compliance filing consistent with this approach.

Table 1-A Consistent Demand Curves without Additive Feature

Reserve	Demand Curve Value (\$/MWh)					
	Percent of Energy Max Bid Price		Max Energy Bid Price = \$750/MWh		Max Energy Bid Price = \$1000/MWh	
	Expanded System Region	System Region and Sub-Region	Expanded System Region	System Region and Sub-Region	Expanded System Region	System Region and Sub-Region
Regulation Up	20%	20%	\$150	\$150	\$200	\$200
Spinning	10%	10%	\$75	\$75	\$100	\$100
Non-Spinning						
Shortage > 210 MW	70%	70%	\$525	\$525	\$700	\$700
Shortage > 70 & ≤ 210 MW	60%	60%	\$450	\$450	\$600	\$600
Shortage ≤ 70 MW	50%	50%	\$375	\$375	\$500	\$500
Upward Sum	100%	100%	\$750	\$750	\$1000	\$1000
Regulation Down						
Shortage > 84 MW	70%	70%	\$525	\$525	\$700	\$700
Shortage > 32 & ≤ 84 MW	60%	60%	\$450	\$450	\$600	\$600
Shortage ≤ 32 MW	50%	50%	\$375	\$375	\$500	\$500

B. The *June 2010 Order* does not justify adding scarcity demand curve values across ancillary service sub-regions and the expanded system region if the ISO makes the scarcity values in these regions consistent.

In its *June 2010 Order*, the Commission recognizes the protests of the Western Power Trading Forum and J. P. Morgan that object to the ISO's proposal "to apply lower scarcity prices" to the ISO's sub-regions.²⁴ These protests largely challenge establishing different scarcity demand curve values based on the applicability of reliability standard WECC BAL-STD-002 to the expanded system region. WPTF and J.P. Morgan argue that another reliability standard, NERC Standard TOP-002-2a, requires the ISO to ensure the deliverability of reserves within the expanded system region.²⁵ The Commission accepted this argument and determined that the ISO did not demonstrate that use of "a lower rate" for its ancillary service sub-region is just and reasonable.²⁶ As explained above, the ISO is willing to modify its initial proposal in a compliance filing to apply the same scarcity demand curve values to the expanded system and its sub-region. But the Commission's *June 2010 Order* does not provide a rationale to sum scarcity demand curve values across the expanded system region and ancillary service sub-regions when scarcity conditions exist in both the expanded system region and the sub-region, if the ISO makes scarcity demand curve values consistent in these regions.²⁷ Allowing the

²⁴ *June 2010 Order* at PP 16- 27.

²⁵ *June 2010 Order* at PP 18-19- 30

²⁶ *June 2010 Order* at P 38.

²⁷ The Commission's Orders must be supported by substantial evidence under Federal Power Act § 313(b), 16 U.S.C. § 825l(b). The Commission must also articulate "a satisfactory

increased scarcity demand curve values in the ancillary services sub-regions to sum together with scarcity demand curve values from the expanded system region would dramatically exceed the maximum energy bid price, which represents the maximum possible opportunity cost for energy bids to relieve the scarcity. If the Commission intends for the ISO to maintain this additive feature in such circumstances, the ISO requests rehearing of the *June 2010 Order*.²⁸

V. Conclusion

The Commission should clarify its *June 2010 Order* to state explicitly that if the ISO makes the scarcity demand curve values consistent for reserves in the expanded system and ancillary service sub-regions, the ancillary service marginal price for resources in a sub-region should not reflect both the scarcity demand curve values for both the expanded system region and the sub-region even if scarcity conditions exist in both the expanded system region and the sub-region. The ISO intends to submit a compliance filing that makes the scarcity demand curve values consistent in the expanded system region and ancillary services sub-regions. But, absent further direction and consistent with the relief requested in this pleading, the ISO will eliminate the feature that calculates ancillary service marginal prices by adding scarcity values across the expanded

explanation for its action including a 'rational connection between the facts found and the choice made.'" *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (citations omitted).

²⁸ The ISO intends to continue to allow shadow prices to sum under the principle of ancillary service substitution when calculating ancillary service marginal prices during non-scarcity conditions.

system region and ancillary service sub-regions when there is a shortage in both regions.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon all of the parties listed on the official service list for the captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California this 29th day of July 2010.

Anna Pascuzzo
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