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March 2, 2011

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

**Re: California Independent System Operator Corporation
Filing in FPA Section 206 Proceeding Concerning
Virtual Award Charge
Docket No. ER11-2128-___**

Dear Secretary Bose:

The California Independent System Operator Corporation ("ISO")[1] submits this filing to demonstrate the justness and reasonableness of the proposed percentage value for calculating the rate for the Virtual Award Charge, as directed by the Federal Energy Regulatory Commission (the "Commission") in the order issued in this proceeding on January 31, 2011.[2] The Virtual Award Charge is a new service charge under the ISO's Grid Management Charge ("GMC") which was implemented in connection with the ISO's implementation of convergence bidding.

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1 The ISO is sometimes referred to as the CAISO. Capitalized terms not otherwise defined herein have the meanings set forth in the Master Definitions Supplement, Appendix A to the ISO tariff. In this filing, the terms convergence bidding and virtual bidding are used interchangeably.

2 *California Independent System Operator Corp.*, 134 FERC ¶ 61,070 (2011) ("January 31 Order"). The January 31 Order also conditionally accepted the compliance filing submitted by the ISO in this proceeding on November 15, 2010 ("November 15 Compliance Filing"), subject to the ISO's submittal of a further compliance filing within 30 days. The ISO is submitting that compliance filing at the same time as the instant filing.

I. Background

On November 20, 2009, the ISO submitted in Docket No. ER10-300-000 a filing that set forth the design policy for implementing convergence bidding in the ISO's markets ("Convergence Bidding Design Filing"). In that filing, the ISO explained that following GMC service charges will be applied to convergence bidding: the forward scheduling charge, the market usage day-ahead charge (only for the day-ahead market for energy), and the settlements, metering, and client relations charge. The ISO also explained that market participants desired the GMC for convergence bids to be a set dollar per megawatt-hour charge that could be easily incorporated into their bidding strategies. Because the billing determinants for the forward scheduling charge and the market usage charge are not charged on a dollars per cleared megawatt-hour basis, the ISO proposed to create a new service charge for convergence bidding. The ISO further stated that the revenue generated by this new convergence bidding GMC service charge will be applied to the existing forward scheduling charge and market usage charge for the day-ahead market for energy.[3]

The Commission, in an order issued February 18, 2010, approved the Convergence Bidding Design Filing in principle, with certain modifications.[4] As relevant here, the Commission found it just and reasonable for the ISO to establish "a new convergence bidding charge," which is now known as the Virtual Award Charge. The Commission accepted the ISO's reasoning that the convergence bidding charge should be based on certain service charges under the ISO's Grid Management Charge ("GMC"), because convergence bidding is solely a financial transaction. The Commission also stated that it would not rule on the level of the convergence bidding charge (*i.e.*, the Virtual Award Charge rate) until the ISO filed proposed tariff language to implement it.[5]

On June 25, 2010, the ISO filed revisions to the ISO tariff in Docket No. ER10-1559-000 to implement convergence bidding effective February 1, 2011, consistent with the directives in the February 18 Order ("Convergence Bidding Tariff Amendment"). The Convergence Bidding Tariff Amendment included proposed modifications to Schedule 1 of Appendix F of the ISO tariff ("Appendix F"), which concerns the calculation of the GMC, to set forth how the Virtual Award Charge rate would be calculated. One of the proposed components of the

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3 Convergence Bidding Design Filing at 30.

4 *California Independent System Operator Corp.*, 130 FERC ¶ 61,122 (2010) ("February 18 Order").

5 *Id.* at PP 111, 113. Further, the Commission authorized the ISO to assess the convergence bidding charge on a per-MWh basis and found that other independent system operators ("ISOs") and regional transmission organizations ("RTOs") assess similar charges on a per-MWh basis. *Id.* at P 113.

rate calculation for the Virtual Award Charge set forth in Appendix F was "a percentage of the Forward Scheduling Charge and Market Usage – Forward Energy service categories based upon the total annual forecasted cleared supply and demand."

In an order issued October 15, 2010, the Commission conditionally accepted the tariff revisions contained in the Convergence Bidding Tariff Amendment.[6] As relevant here, the Commission explained that it had already found the Virtual Award Charge reasonable in the February 18 Order, subject to the ISO's provision and the Commission's acceptance of details concerning the level of that charge. The Commission found that the general reference to "a percentage" in the above-quoted language in Appendix F was ambiguous and could be read as giving the ISO too much discretion in determining the Virtual Award Charge. The Commission stated that it would defer making a determination on the level of the Virtual Award Charge and directed the ISO to revise Appendix F to remove the ambiguity.[7]

The ISO submitted tariff revisions in the November 15 Compliance Filing to comply with the October 15 Order. The tariff revisions included the proposed modification of Appendix F to replace "a percentage" with the specific percentage value of nine percent. The ISO explained that this is the percentage the ISO determined should be used in the calculation of the Virtual Award Charge rate through the 2011 budget and GMC stakeholder process, and that the nine percent value was presented for stakeholder review and input in a series of public meetings.[8] Although a number of parties filed comments and protests regarding the tariff revisions contained in the November 15 Compliance Filing, only a single set of comments addressed the proposed tariff revisions related to the Virtual Award Charge. The ISO addressed all comments on the November 15 Compliance Filing in an answer filed on December 21, 2010 ("December 21 Answer").

In the January 31 Order, the Commission conditionally accepted the November 15 Compliance Filing but found that the ISO exceeded the scope of its compliance obligation when it proposed the nine percent value for calculating the Virtual Award Charge rate. The Commission stated that it would consider the Virtual Award Charge rate separately from the November 15 Compliance Filing,

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6 *California Independent System Operator Corp.*, 133 FERC ¶ 61,039 (2010) ("October 15 Order"). As requested by the ISO, the Commission accepted the tariff revisions to implement convergence bidding effective February 1, 2011, and accepted the proposed *pro forma* convergence bidding entity agreement included in the Convergence Bidding Tariff Amendment effective October 18, 2010. *Id.* at PP 19-21.

7 *Id.* at PP 213, 218.

8 November 15 Compliance Filing at 7.

as a new filing under Section 205 of the Federal Power Act ("FPA"). Considered as an FPA Section 205 filing, the Commission found that the proposed Virtual Award Charge rate did not meet the requirements to be considered just and reasonable under the FPA. Specifically, the Commission stated that "CAISO assumes that convergence bidding will lead to a ten percent increase in MW volume of cleared virtual and physical bids, but CAISO provides no explanation for this assumption."[9] In the interests of ensuring that convergence bidding would begin on schedule, the Commission accepted the proposed nine percent value for filing, to become effective on February 1, 2011, subject to refund and a further Commission order. The Commission also established an investigation under Section 206 of the FPA to evaluate the nine percent value and directed the ISO to make a filing providing justification for that value within 30 days, *i.e.*, by March 2.[10]

On February 2, 2011, the Commission issued in this proceeding its "Notice of Institution of Section 206 Proceeding and Refund Effective Date" ("February 2 Notice"), which directed that the refund effective date would be the date the February 2 Notice was published in the Federal Register. Pursuant to that directive, the refund effective date is February 9, 2011.[11]

II. Demonstration of the Justness and Reasonableness of the Nine Percent Value for Calculating the Virtual Award Charge Rate

The ISO's GMC consists of multiple separate service charges. Different GMC service charges apply to different activities of market participants. The Virtual Award Charge is a new GMC service charge that applies to convergence bidding.[12]

The attached Declaration of Margaret Miller, Manager, Market Design and Regulatory Policy for the ISO addresses how the ISO determined the nine percent value for calculating the Virtual Charge Award rate. As Ms. Miller explains, the ISO determined the nine percent value based on benchmarking against the convergence bidding practices of the following other ISOs and RTOs: PJM Interconnection, L.L.C. ("PJM"), the New York Independent System Operator, Inc. ("NYISO"), the Midwest Independent Transmission System

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9 January 31 Order at P 78.

10 *Id.* at PP 69, 77-78.

11 *See* 76 Fed. Reg. 7187 (Feb. 9, 2011) (containing the February 2 Notice).

12 The ISO's settlements, metering, and client relations charge also applies to scheduling coordinators that submit virtual bids, but as the ISO previously explained, no tariff changes were needed to apply this existing GMC service charge to virtual bidders. Convergence Bidding Tariff Amendment at 35.

Operator, Inc. ("MISO"), and ISO New England Inc. ("ISO-NE"). These are all the other ISOs and RTOs that have implemented convergence/virtual bidding.[13]

Because the ISO did not have actual market data on the impact of convergence bidding on the bid volume in the ISO's markets prior to the implementation of convergence bidding, the ISO determined that it was reasonable to initially establish the rate for the Virtual Award Charge based on actual market data from other ISOs and RTOs that have implemented convergence/virtual bidding. The ISO's benchmarking approach is consistent with the Commission's conclusion in the February 18 Order that the ISO's proposed convergence bidding charge is "comparable to those of other ISOs/RTOs."[14]

Through this benchmarking process, the ISO determined that it was reasonable to assume that, in the year that convergence bidding is implemented (2011), the implementation of convergence bidding will cause the ISO to experience an incremental increase of approximately 10 percent in the MW volume of cleared bids (including both virtual and physical bids) as compared with the MW volume of cleared physical bids in the preceding year (2010).[15] This ISO determination is supported by the ISO PowerPoint presentation provided as Exhibit 1 to the Declaration, which was included as part of a larger presentation the ISO made to stakeholders in the convergence bidding stakeholder process on July 9, 2009.[16] As shown in the presentation, convergence bidding represented approximately 10 percent of the volume of cleared physical and virtual bids in the MISO market in 2008, and convergence bidding represented approximately 10 percent of the volume of cleared physical and virtual bids in the ISO-NE market in 2008.

Ms. Miller notes that some of the percentage values shown in Exhibit 1, for the PJM, NYISO, and MISO markets, are either above or below 10 percent (ranging from approximately 5 to 20 percent). The ISO determined that the 10 percent figure is well within that range and is sufficiently representative to be used as the basis for its own estimate of the increase in MW volume resulting from the implementation of convergence bidding in the ISO.[17]

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[13] Miller Declaration at Paragraph 5.

[14] February 18 Order at P 113.

[15] Miller Declaration at Paragraph 6.

[16] *See* PowerPoint presentation entitled "Benchmarking with Other ISOs on Bid Volumes," at Slides 8 through 15 of the larger PowerPoint presentation entitled "Straw Proposal for Design of Convergence Bidding," available on the ISO's website at http://www.caiso.com/23e4/23e4f0033cb50.pdf.

[17] Miller Declaration at Paragraph 7 and Exhibit 1.

As Ms. Miller states, given an incremental increase of approximately 10 percent in the MW volume of cleared virtual and physical bids in 2011 as compared with the MW volume of cleared physical bids in 2010, it follows that the MW volume of cleared virtual and physical bids in 2011 is anticipated to be 110 percent of the MW volume of cleared physical bids in 2010. Dividing the 10 percent incremental increase for 2011 by the 110 percent volume figure for 2011 equals nine percent. This is how the ISO determined the nine percent value for calculating the Virtual Award Charge rate as set forth in Appendix F.[18]

Ms. Miller also notes that she attended a stakeholder meeting in the GMC stakeholder process held on April 21, 2010. As shown in the meeting notes contained in Exhibit 2 to Ms. Miller's Declaration, a stakeholder posed the question "How did you derive the 9%?" The ISO's written response to that question was "Assume you have 100% of the costs for physical. Once you increment the virtuals will be 10% more. Then what we need to do to recover would be 10% / 110%." Thus, the ISO explained in the GMC stakeholder process exactly how it determined the nine percent value.[19]

Further, Ms. Miller states that, at the GMC stakeholder meeting held on April 21, 2010, the ISO delivered the PowerPoint presentation contained in Exhibit 3 to Ms. Miller's Declaration. As shown on slides 10-11 of the presentation, the ISO estimated that, based on its 2010 budget and anticipated market volumes, the use of the nine percent value in the calculation of the Virtual Award Charge rate would result in a rate of $0.078 per gross cleared MWh.[20] The actual Virtual Award Charge rate based on the actual (rather than estimated) GMC budget for 2011 has turned out to be lower – $0.0618 per gross cleared MWh.[21]

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18 *Id.* at Paragraph 8.

19 *Id.* at Paragraph 9 and Exhibit 2.

20 *Id.* at Paragraph 10 and Exhibit 3. As shown in Exhibit 3, the ISO estimated the Virtual Award Charge rate pursuant to a three-step calculation. First, the 2010 dollar values for the Forward Scheduling Charge and Market Usage – Forward Energy service categories were added together and then multiplied by the nine percent value, which resulted in a dollar amount of $3,837,563. Second, the estimated cleared MWh for 2010 was multiplied by the 10 percent estimated increase in market volume (counting supply and demand as separate gross volumes) due to the implementation of virtual bidding, which resulted in a MWh volume amount of 49,200,000. Third, the $3,837,563 amount was divided by the 49,200,000 MWh amount, which resulted in the estimated Virtual Award Charge rate of $0.078.

21 The current Virtual Award Charge rate of $0.0618 per gross cleared MWh is set forth in the row for Charge Type 4533 contained in a document entitled "GMC Rates 2011," which is available on the ISO website at http://www.caiso.com/286f/286f96395f970.pdf. This rate will apply for 2011. The ISO is conducting a GMC stakeholder processes this year that is likely to result in new rates for all GMC charges in the future.

Both the ISO's proposed nine percent value and the resulting Virtual Award Charge rate satisfy the justness and reasonableness requirement of the FPA. As explained above, it was reasonable for the ISO to adopt the nine percent value based on its benchmarking against the convergence bidding practices of other ISOs and RTOs. Moreover, the resulting Virtual Award Charge rate of $0.0618 per gross cleared MWh is almost exactly midway within the range of dollar levels of the convergence bidding/virtual bidding charges for those other comparable entities: PJM's rate is $0.045, ISO-NE's rate is $0.06, the NYISO's rate is $0.065, and the MISO's rate is $0.085.[22] As noted above, the ISO determined that it was reasonable to initially establish the rate for the Virtual Award Charge benchmarked against other ISOs and RTOs that have implemented convergence/virtual bidding.

As the Commission has explained, "the courts and this Commission have recognized that there is not a single just and reasonable rate. Instead, we evaluate [proposals under Section 205 of the FPA] to determine whether they fall into a zone of reasonableness. So long as the end result is just and reasonable, the [proposal] will satisfy the statutory standard."[23] The proposed nine percent value and resulting Virtual Award Charge rate are both well within the zone of reasonableness based on the relevant data available to the ISO, because they are comparable to the similar values for other ISOs and RTOs.

The methodology that the ISO has used to determine the proposed nine percent value and resulting Virtual Award Charge rate are also consistent with the Commission's specific findings concerning the ISO's convergence bidding charge in its order on the Convergence Bidding Design Filing:

> Cost causation principles do not require costs to be allocated with exacting precision, as long as the costs incurred are reasonably commensurate with the benefits received. We expect that it would be difficult for the CAISO to isolate the incremental increase in the costs of convergence bidding activities that these fees are designed to recover. Rather, the CAISO has taken an alternative approach

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22 *See* Commission Letter Order, Docket No. ER10-95-000 (Dec. 2, 2009); NYISO's Proposed Tariff Revisions to Allocate a Portion of Rate Schedule 1 Charges to Non-Physical Market Transactions to Special Case Resources, and to Emergency Demand Response Program Participants and Request for Shortened Comment Period and for Expedited Action," Docket No. ER10-95-000, at 7 (Oct. 23, 2009); Convergence Bidding Design Filing at 31-32.

23 *Calpine Corp. v. California Independent System Operator Corp.*, 128 FERC ¶ 61,271, at P 41 (2009) (citations omitted). *See also New England Power Co.,* 52 FERC ¶ 61,090, at 61,336 (1990), *aff'd*, *Town of Norwood v. FERC,* 962 F.2d 20 (D.C. Cir. 1992) (rate design proposed need not be perfect, it merely needs to be just and reasonable), *citing Cities of Bethany*, *et al. v. FERC,* 727 F.2d 1131, 1136 (D.C. Cir.), *cert. denied*, 469 U.S. 917 (1984) (utility needs to establish that its proposed rate design is reasonable, not that it is superior to all alternatives).

> that allocates a nominal share of the relevant costs to convergence bidding activities. We find that this practical approach to ratemaking is, in this context, fair to all market participants in that it will reasonably allocate costs to those causing them.[24]

For all these reasons, the Commission should find that, with the additional explanation provided in this filing, the ISO has demonstrated that the proposed nine percent value to be used in calculating the Virtual Award Charge is just and reasonable.

III. Conclusion

The ISO requests that the Commission accept this filing as complying with the directives in the January 31 Order to explain the basis for the assumption that convergence bidding will lead to a ten percent increase in MW volume of cleared virtual and physical bids and to demonstrate the justness and reasonableness of the nine percent value for calculating the Virtual Award Charge rate. Please contact the undersigned with any questions regarding this matter.

Respectfully submitted,

/s/ Bradley R. Miliauskas

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[24] February 18 Order at P 112, *citing Sithe/Independence Power Partners, L.P. v. FERC*, 285 F.3d 1, 5 (D.C. Cir. 2002); *Midwest ISO Transmission Owners v. FERC*, 373 F.3d 1361, 1369 (D.C. Cir. 2004); and *Illinois Commerce Commission v. FERC*, 576 F.3d 470, 477 (7th Cir. 2009).

Declaration of Margaret Miller
Manager, Market Design and Regulatory Policy

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	))	**Docket No. ER11-2128-___**

DECLARATION OF MARGARET MILLER

I, Margaret Miller, hereby provide my declaration in support of the filing of the California Independent System Operator Corporation ("ISO") in this proceeding to demonstrate the justness and reasonableness of the proposed nine percent value for calculating the Virtual Award Charge rate.

1. I am employed as Manager, Market Design and Regulatory Policy for the ISO. I have worked in the electric power system industry for over ten years. Between 1997 and 1999, I was a Client Relations Representative for the ISO. From 1999 to 2000, I served as a Portfolio Analyst for PG&E Energy Services. I was a Product Consultant for Silicon Energy Software from 2000 to 2002. In 2003, I returned to the ISO as Lead Engineering Specialist, in which position I served as a subject matter expert for the ISO's new market design. I began in my current position in 2007. I received a Bachelor of Arts degree from the University of California, Santa Barbara in 1990 and a Master of Business Administration degree from the University of San Francisco in 2002.

2. In my position as Manager, Market Design and Regulatory Policy, I was responsible for managing the design and development of the ISO's convergence bidding market feature, which went into effect on February 1, 2011. The convergence

bidding market feature is the result of result of several years of effort on the part of stakeholders and the ISO. I was directly involved in all aspects of designing and developing the convergence bidding market feature, including the creation of the Virtual Award Charge and the ISO tariff language needed to implement it.

3. The Virtual Award Charge is based on certain service charges under the ISO's Grid Management Charge ("GMC"). The GMC itself consists of multiple separate service charges. Different GMC service charges apply to different activities of market participants. The Virtual Award Charge is a new GMC service charge that applies to convergence bidding. In designing the Virtual Award Charge, the ISO concluded that, because convergence bidding is solely a financial transaction, cost causation principles suggest that only certain existing service charges under the GMC that are specific to participation in the day-ahead market should apply to convergence bidding.

4. The Virtual Award Charge rate is calculated pursuant to Schedule 1 of Appendix F of the ISO tariff ("Appendix F"), which sets forth how the different service charges of the GMC are determined. One of the components of the Virtual Award Charge rate calculation set forth in Appendix F is "nine percent of the Forward Scheduling Charge and Market Usage – Forward Energy service categories based upon the total annual forecasted cleared supply and demand."

5. The ISO determined the nine percent value for calculating the Virtual Award Charge rate based on benchmarking against the convergence bidding volumes and

practices of the following other independent system operators ("ISOs") and regional transmission organizations ("RTOs"): PJM Interconnection, L.L.C. ("PJM"), the New York Independent System Operator, Inc. ("NYISO"), the Midwest Independent Transmission System Operator, Inc. ("MISO"), and ISO New England Inc. ("ISO-NE"). Because the ISO did not have actual market data on the impact of convergence bidding on the bid volume in the ISO's markets prior to the implementation of convergence bidding, the ISO determined that it was reasonable to initially establish the rate for the Virtual Award Charge based on actual market data from these other ISOs and RTOs that have implemented convergence/virtual bidding.

6. Pursuant to its benchmarking process, the ISO determined that it was reasonable to assume that, in the year that convergence bidding is implemented (2011), the implementation of convergence bidding will cause the ISO to experience an incremental increase of approximately 10 percent in the MW volume of cleared virtual and physical bids as compared with the MW volume of cleared physical bids in the preceding year (2010). This ISO determination is supported by the ISO PowerPoint presentation that is provided as Exhibit 1 to my Declaration. That presentation was included as part of a larger presentation the ISO made to stakeholders in the convergence bidding stakeholder process on July 9, 2009. As shown in Slides 8 through 15 of the presentation, convergence bidding represented approximately 10 percent of the volume of cleared physical and virtual bids in the MISO market in 2008, and convergence bidding represented approximately 10 percent of the volume of cleared physical and virtual bids in the ISO-NE market in 2008.

7. Other percentage values shown in Exhibit 1 for the PJM, NYISO, and MISO markets are either above or below 10 percent (ranging from approximately 5 to 20 percent). The ISO determined that the 10 percent figure is well within that range and is sufficiently representative to be used as the basis for its own estimate of the increase in MW volume resulting from the implementation of convergence bidding in the ISO.

8. Given an incremental increase of approximately 10 percent in the MW volume of cleared virtual and physical bids in 2011 as compared with the MW volume of cleared physical bids in 2010, it follows that the MW volume of cleared virtual and physical bids in 2011 is anticipated to be 110 percent of the MW volume of cleared physical bids in 2010. Dividing the 10 percent incremental increase for 2011 by the 110 percent volume figure for 2011 equals nine percent. This is how the ISO determined the nine percent value for calculating the Virtual Award Charge rate as set forth in Appendix F.

9. The ISO discussed this derivation of the nine percent value with stakeholders in the 2011-2012 GMC stakeholder process. As shown in the meeting notes contained in Exhibit 2 to my Declaration, I took part in a GMC stakeholder meeting on April 21, 2010. As also shown in the meeting notes, a stakeholder posed the question "How did you derive the 9%?" The ISO's written response to that question was "Assume you have 100% of the costs for physical. Once you increment the virtuals will be 10% more. Then what we need to do to recover would be 10% / 110%." Thus, the ISO explained in the GMC stakeholder process exactly how it determined the nine percent value.

10. At the GMC stakeholder meeting held on April 21, 2010, the ISO also delivered the PowerPoint presentation contained in Exhibit 3 to my Declaration. As shown on slides 10-11 of the presentation, the ISO estimated that, based on its 2010 budget and anticipated market volumes, the use of the nine percent value in the calculation of the Virtual Award Charge rate would result in a rate of $0.078 per gross cleared MWh. The actual Virtual Award Charge rate based on actual (rather than estimated) GMC budget for 2011has turned out to be lower – $0.0618 per gross cleared MWh.

I affirm under penalty of perjury that the foregoing statements are true and correct to the best of my knowledge, information, and belief.

Margaret Miller

Executed in Folsom, California, this 2nd day of March, 2011.

Exhibit 1

California ISO
Your Link to Power

Benchmarking with other ISOs on Bid Volumes

Margaret Miller
Senior Market & Product Specialist

CB Benchmarking

	PNodes	Bid at PNode	SCs	Physical*** Bids Count	Virtual Bids Count	% VB Count	Physical Bids MW	Virtual Bids MW	% VB MW
PJM	8290	8290	550		See Graphs from State of Market Report				
NYISO	6000**	300	370						
MISO	1896	1896	300*		See Graphs from State of Market Report				
ISO-NE	952	952	400		See Graphs from State of Market Report				
CAISO	3500	3500	100		See Graphs from State of Market Report				

CB Benchmarking (Slide 2 of 3)

	Min Max	Admin Fees	Transaction Fees	BCR Uplift Fees	Bid Limitations
PJM		Yes	.06 per bid segment .045 for cleared bids	Yes	1. Ability to impose SC Daily Limit 3000 bid/offer segments 2. Credit limits
NYISO	1 MW for first bid segment	Yes	.10 per submitted virtual bid regardless of segments .05 for cleared bids (credited 50%) Sliding scale based on SCUC performance (min .03 – max $1.00)	Yes	1. Total Volume 2X Generation Capacity at Location 2. Soft Bid Volume Cap 3. Credit Limits
MISO	0.1MW	Yes	No transaction fees	Yes	1. Daily Virtual MW Limit can be imposed 2. Credit Limits
ISO-NE	1 MW	Yes	.005 per bid segment .06 bid cleared	Yes	1. Bid limits unknown 2. Credit Limits
CAISO	1 MW	Yes TBD	To be determined	Yes	1. Credit Limits 2. Other limits to be determined

CB Benchmarking Sources

	Source
PJM	2008-annual-report.ashx, lmp-model-info http://www.monitoringanalytics.com/reports/Reports/2009/Virtual_Bidding_Volumes_In_PJM_May2003_to_Mar2009.pdf
NYISO	DVT Concept Design 6/26/09, Approved Customer List
MISO	http://www.caiso.com/200c/200c8a5c1f8d0.pdf, MidwestISOFactSheet_May09.pdf, Market BPM
ISO-NE	http://www.caiso.com/1fb9/1fb9eb329740.pdf, financialreport_2008, pnode table 6/4/09,

PJM State of the Market Q1'09

CB is 17% Cleared Demand

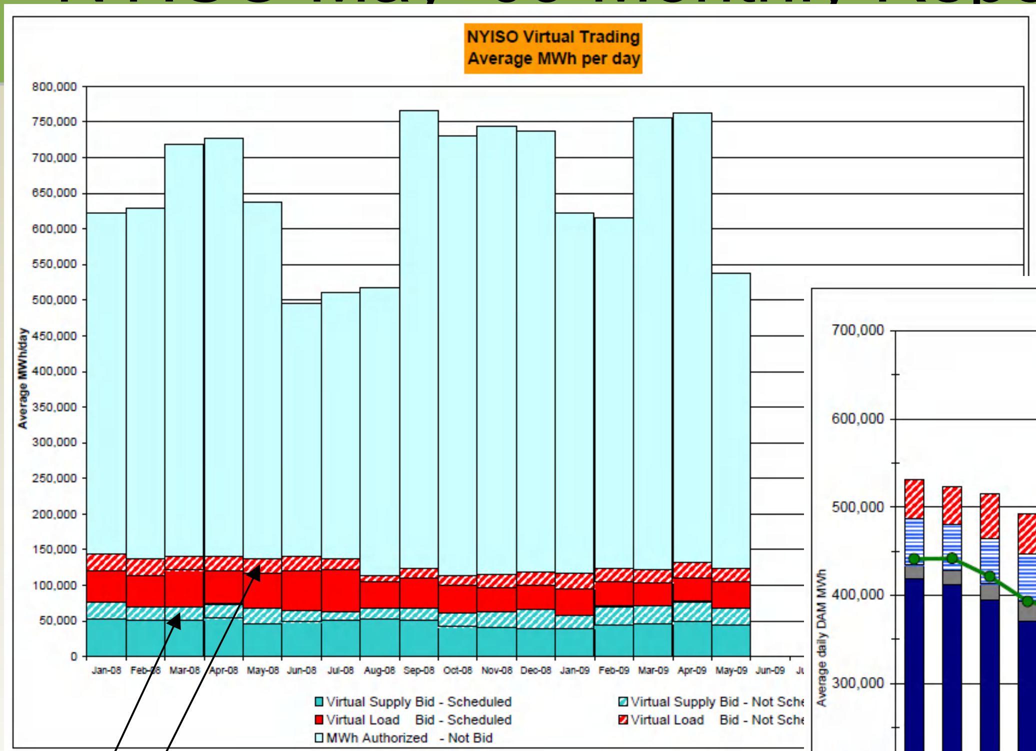
	Day Ahead				Real Time	Average Difference	
	Cleared Fixed Demand	Cleared Price Sensitive	Cleared DEC Bid	Total Load	Total Load	Total Load	Total Load Minus DEC Bid
Average	76,683	2,018	15,882	94,583	81,174	13,409	(2,473)
Median	76,088	2,029	15,969	94,205	80,261	13,944	(2,025)
Standard deviation	10,701	344	2,241	12,828	11,715	1,113	(1,128)

	Day Ahead			Real Time	Average Difference	
	Cleared Generation	Cleared INC Offer	Cleared Generation Plus INC Offer	Generation	Cleared Generation	Generation Plus INC Offer
Average	83,480	13,617	97,097	81,987	1,493	15,110
Median	83,199	13,429	96,899	81,406	1,794	15,494
Standard deviation	12,230	1,604	13,093	11,417	812	1,676

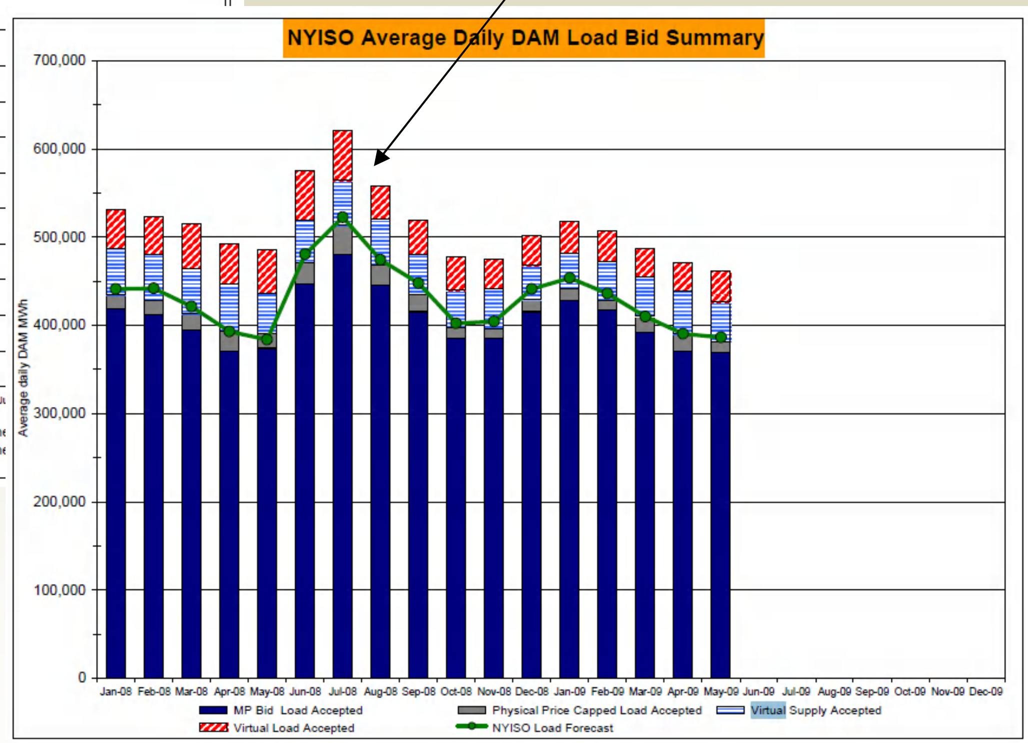
Approx 30 – 40% additional virtual bid volume submitted but not cleared

CB is 14% of Cleared Supply

NYISO May '09 Monthly Report



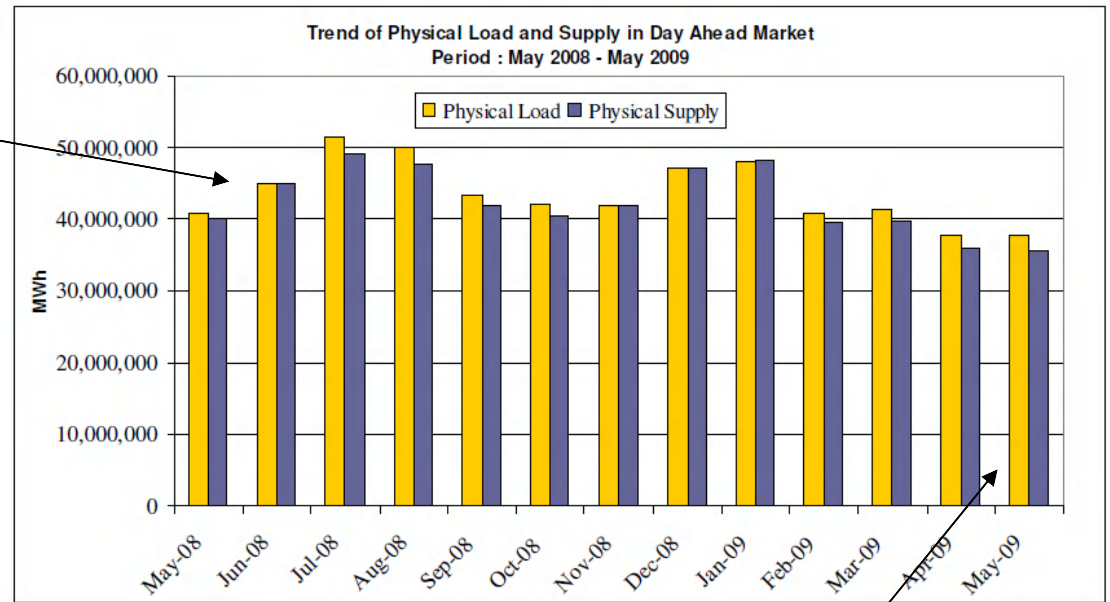
Cleared VB ~5% DAM

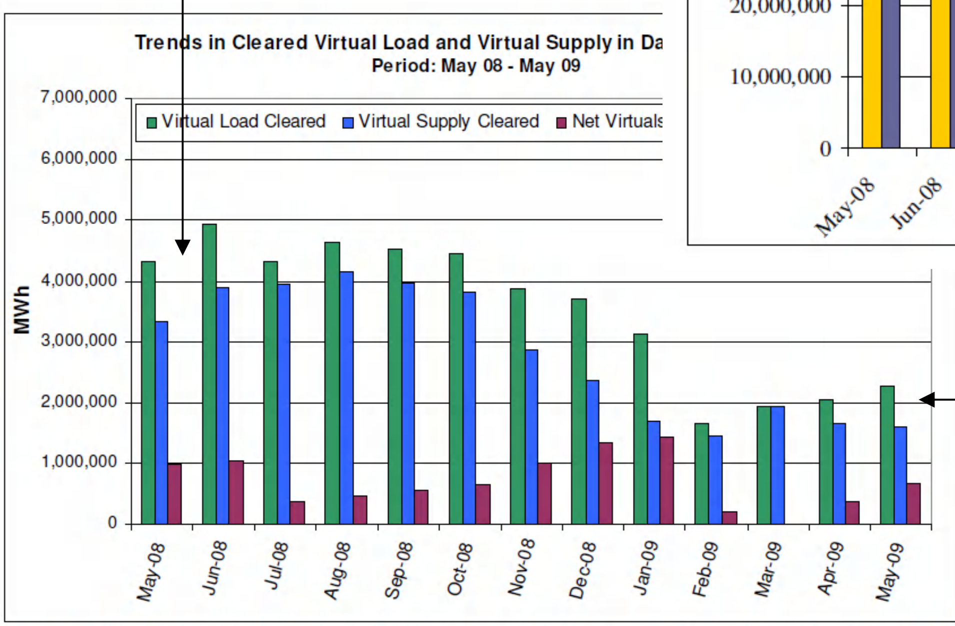


~20% VB not cleared in DA

MISO May ’09 Market Report

VB ~10% DAM in ‘08





* Net Virtual is defined as the difference between Cleared Virtual Load and Cleared Virtual Supply.

’09 VB Approaching 5% DAM

ISO-NE 2008 Annual Markets Report

VB 10% Cleared Demand

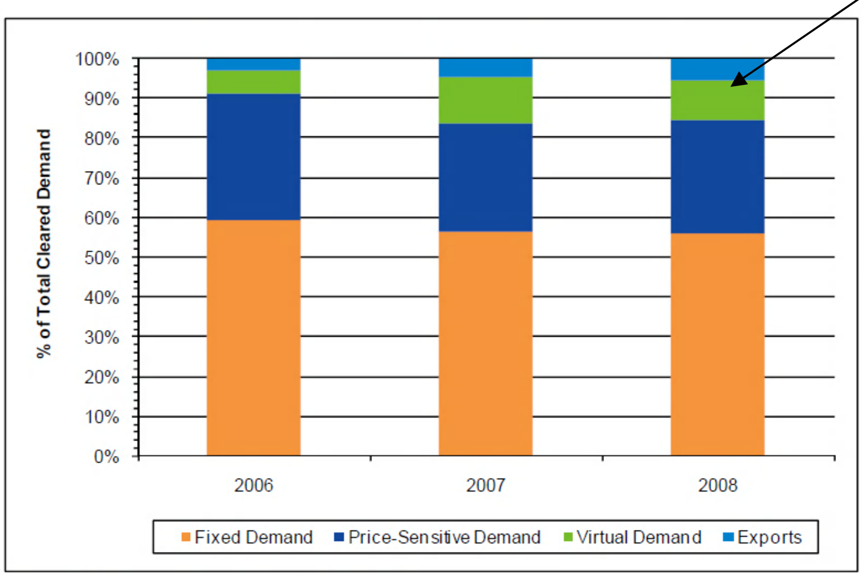


Figure 3-5: Day-ahead demand by category.

VB 10% Cleared Supply

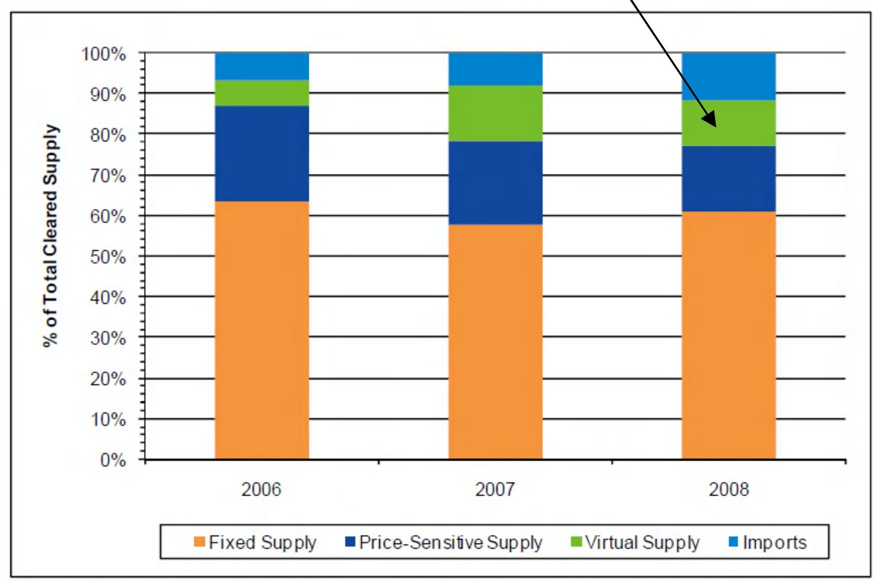


Figure 3-6: Day-ahead supply as a percentage of total cleared supply.

Exhibit 2

California ISO
Your Link to Power

California Independent
System Operator Corporation

2011 - 2012 GMC Stakeholder Process

ISO Folsom Facility, Building 101A

April 21, 2010

10:00 a.m. – 4:00 p.m.

Meeting Notes

Attendees:

Name	Organization		Name	Organization
Sean Neal	MID		Jan Cogdill	CAISO
David Cohen	TANC		Judith Sanders	CAISO
Lisa Yoho	Citigroup Energy		Charles Snay	CAISO
Kolby Kettler	Citigroup Energy		Ryan Seghesio	CAISO
Burt Hansen	SCE		Christina Ernandes	CAISO
Steve Greenleaf	JP Morgan		Tom Cuccia	CAISO
Brian Theaker	Dynegy		Don Tretheway	CAISO
			Dennis Estrada	CAISO
			Michael Epstein	CAISO
			Chhanna Prak	CAISO
			Stephanie O'Guinn	CAISO
Via Telephone			Via Telephone	
Robert Bonner	ConocoPhillips		Lisa McGee	Mirant
Bob Caracristi	NCPA		Jim Mclellan	Morgan Stanley
Jon Chadbourne	Arclight Energy		Margaret Miller	CAISO
Jackie DeRosa	Customized Energy		Zahra Nazarali	TransAlta
Caroline Emmert	ACES Power Marketing		Sharon Oleksak	Portland General Electric
Saeed Farrokhpay	FEC		John Perry	TID
Thomas Flynn	SCE		Leslie Pompel	BPA
Carl Funke	SDG&E		Uma Ramanathan	CAISO
Steven Greenlee	CAISO		Abigail Seto	PG&E
Steve Hess	Edison Mission		Masoud Shafa	WAPA

Gifford Jung	Powerex		Tony Stapleton	COP
Natalie Karas	Duncan Weinberg		Virginia Thompson	EDF Trading
Jessica Kastarian	SMUD		Melie Vincent	APX
Maury Kruth	FERC		Michelle Volk	BPA
Nancy Le	City of Anaheim		Ellen Wolfe	Resero Consulting
Sue Mara	RTO Advisors		Kathleen Wright	CDWR
Rajani Mardella	CAISO		Ali Yadzi	Morgan Stanley

Questions or comments about the GMC should be directed to: GMC@caiso.com

Michael Epstein, Director of Financial Planning, opened the meeting with a brief introduction of the purpose of the meeting and a perspective of the Grid Management Charge (GMC) rate structure.

Following Mr. Epstein were:

Charles Snay, Lead Financial Analyst & Donald Tretheway, Sr Market and Product Developer

Stakeholders were given an opportunity to ask questions and provide comments and suggestions.
Questions and comments received during the workshop are summarized in the following tables.

Opening Remarks

#	Comment/Question/Suggestion	Stakeholder	CAISO Respondent	ISO's Initial Response/Views
1	Will there be any budget data for 2011 during the August GMC Stakeholder meeting or will we have to wait until October?	TANC	M. Epstein	If the data is available, we will provide that to you. Preliminary data will be provided at the August meeting.
2	Will the CAISO be holding a firm line on the Revenue Requirement cap?	TANC	M. Epstein	We anticipate holding the same dollar amount for a straight forward rate extension.
3	Will the rates and cost allocates be included in the Convergence Bidding tariff filing or the GMC filing in September?	Dynegy	M. Epstein	The rates will be in the budget and the structure will be in the tariff filing.
4.	How can the CAISO complete the FERC filing in November if there won't be board approval until December?	TANC	M. Epstein	These are two separate processes. We will file on November 1st and then we will go to the board in December for approval of the rates and the budget.
5.	Will the FERC filing on November 1st have the rate structure and the rate for 2011?	TANC	M. Epstein	No. This will have the revenue cap and the structure. It will also have the determinants, but no dollars. Once the budget is approved, then we can allocate dollars for each of the components.
6.	Will the structure of the Convergence Bidding billing determinants be in the GMC filings?	MID	C. Snay	We will present how the GMC structure works for Convergence Bidding and where the dollars are coming from.
7.	What is the contingency plan consider the worst case scenario in that the CAISO exceeds the $197 million cap?	TANC	M. Epstein	We will not exceed the cap. If so, a 205 filing is the only other option.

Cost of Service Study Review

#	Comment/Question/Suggestion	Stakeholder	CAISO Respondent	ISO's Initial Response/Views
1	It has been a few years since there has been a full 23-13 filing and statements by FERC. In this type of filing, will you provide the Revenue Requirement for the forecasted test year? If you are going to be thinking about making a filing in June 2011, are you committing yourself to a formula change and rate redesign during that period?	TANC	J. Sanders	These are issues we have yet to explore. We will take these comments under review.
2	We are interested in the 2012 test year analysis for the cost of service. We would like to look back, analyze and provide input as to how the process is working and how we envision this to be.	MID	M. Epstein	We appreciate this comment and want to address any concerns you may have.

2001-2003 GMC Refund

#	Comment/Question/Suggestion	Stakeholder	CAISO Respondent	ISO's Initial Response/Views
1.	What do you mean by elimination of dynamic scheduling?	MID	M. Epstein	Billing for 2001 and serving for load. Part of the FERC order was to eliminate that.
2.	In regards to billing to SC's and invoicing for credits: were the credits broken up by bucket?	MID	M. Epstein	To the best of our knowledge, it was broken up by charge type. MID has received all of this data to validate.

April 2010 Rate Adjustment

#	Comment/Question/Suggestion	Stakeholder	CAISO Respondent	ISO's Initial Response/Views
1.	Will volumes come back after MUFE?	Dynegy	C. Snay	Probably, but it may take several months for the increase.
2.	What caused the 36.3% reductions in exports?	TANC	C. Snay	There is no real evidence as to what caused this decrease, but the costs are increasing so much that we may continue to see a decline.
3.	Is the $1.82/MW rate assuming that you are going to see a further decrease in exports?	TANC	C. Snay	No. It's calculated based on the Revenue Requirement and the revised revenue adjusted forecast. This is the rate considering that everything stays the same from April onward.
4	Why does the CAISO feel the need to make a first quarter rate adjustment?	TANC	C. Snay	Before Payment Acceleration, we did not have the visibility. We had to wait until June for data. Now we can have a better vision of the data and this is the first time we have made a first quarter rate adjustment.

Status of Market Usage Forward Energy Charge

#	Comment/Question/Suggestion	Stakeholder	CAISO Respondent	ISO's Initial Response/Views
1.	Can you please tell us what the settlement MUFE rate is?	TANC	J. Sanders	The rate would be based on the same volume; close to $0.06/Mw.
2.	Is there a potential for a true-up or rate adjustment?	TANC	J. Sanders C. Snay	Only if FERC does not approve the charge before June 1st. The rate will be different then it is now.

Convergence Bidding Overview

#	Comment/Question/Suggestion	Stakeholder	CAISO Respondent	ISO's Initial Response/Views
1	Do other ISO's also do a revenue credit in the following year?	TANC	D. Tretheway	The revenue credit is very similar to what other ISO's do today.
2	What have other ISO's rate designs looked like?	MID	D. Tretheway	All are of a per cleared MW basis; MISO, PJM ISO NE all follow this. After benchmarking, our rates are very similar to other ISO's.
3	Nodal bids?	SCE	D. Tretheway	There will be 10 bid segments. If you put a full bid in, the charge will be $0.05 per bid segment.
4.	How did you derive the 9%?	TANC	D. Tretheway	Assume you have 100% of the costs for physical. Once you increment, the virtuals will be 10% more. Then what we need to do to recover would be 10%/110%.
5.	Why not just allocate 10% if the above is the assumption?	TANC	D. Tretheway	We are looking at a way to develop a forecasted rate as to how we would be calculating this going forward. What percentage is virtual and what percentage is physical. We could agree that we should do 10%, but based upon the other ISO's establishing the rate first, this is a straightforward methodology
6.	If the costs of Convergence Bidding are now going to be recovered in a unique way, is this going to be part of the cost of service discussion in 2011?	Dynegy	C. Snay	Yes, that is correct.

7.	Does the bid segment recover the 9%	MID	D. Tretheway	Not in the current year. In the following year we would credit from the previous year. The primary reason for per bid segment charge is to discourage Market Participants from fishing bids on all nodes.
8.	Is this a one-time thing in 2012?	SCE	C. Snay	In 2012 we will have to see how the cost of service study goes. We may make some small modifications. Some kind of charge will be in place.
9.	The $0.08 charge reminds us of the MUFE charge. Why are we looking at a gross MW cleared but at MUFE we are looking at the greater of?	Citigroup Energy	C. Snay	An existing structure is in placed for netting. This is a transition to prevent major cost shifts to a few market participants. We will pursue a gross charge for Convergence Bidding.
10.	Are all of the software costs for Convergence Bidding in the revenue requirement?	TANC	J. Cogdill	They are in the 2010 rate and are coming through bond funds.

GMC Revenue Requirement

#	Comment/Question/Suggestion	Stakeholder	CAISO Respondent	ISO's Initial Response/Views
1	For Convergence Bidding, is the CAISO contemplating a whitepaper describing all of the costs?	MID	M. Epstein	No. The costs are presented on the slide.
2	Could stakeholders request billing impact analysis for Convergence Bidding and how it will apply to them in 2011?	MID	C. Snay	We do not have data for Convergence Bidding yet.
4.	Will the half cent charge be credited in the following year but not the gross clearing charge?	TANC	M. Epstein	The clearing charge is just a recovery of costs.
5.	Since it is collected based on a specific charge code, will the tariff state which bucket the credit will apply to?	TANC	D. Tretheway	This is already in the tariff.

2012 Cost of Service Study

#	Comment/Question/Suggestion	Stakeholder	CAISO Respondent	ISO's Initial Response/Views
1	Is the ISO willing to have a subset of internal meeting for stakeholders to participate in?	TANC	M. Epstein	Our initial thoughts were to develop an internal proposal for June 18th and have further discussion later on. We will have a white paper in the August timeframe but are open to taking your suggestion under review.
2	Is the ISO planning on using the Excel model?	TANC	M. Epstein	We are planning on using the model with some updates.
3	Is the internal team thinking about the new cost allocations? Have you been in contact with other ISO to see their approaches and strategies?	TANC	C. Snay	We have not done this, but we will look into it. We first want to determine what the definitions are and they we will look to the allocations after that. Also, the internal team is looking at a lot of other options such as Activity Based Costing (ABC).
4.	Can you please explain the SMCR allocation based on the settlement charge?	SCE	M. Epstein	The SMCR has been allocated to different buckets and then based on that. This is the existing structure and is not anything new. Things will be changing in 2014 since all of the bonds will be paid off; costs will go away and the debt service will be paid off.
5.	Looking at other ISO's, I think that the update to the whitepaper should be focused on what their customer charge (GMC) would be.	TANC	C. Snay	We will be looking at this.
6.	Is this the case that there is a time recording system? Has this been implemented?	SCE	C. Snay	We now have ABC. We currently have 10 cost codes at a high level.

Additional Comments

#	Comment/Question/Suggestion	Stakeholder	CAISO Respondent	ISO's Initial Response/Views
1	Can you please elaborate on what the long term proposal is for the revenue ceiling?	TANC	M. Epstein	We do not have a long term forecast at this point in time. This is somewhere above the $200 million mark, but we do not have an exact amount.
2	To what extent do you want to discuss a longer term revenue cap? I guess we would need to have some type of multi-year, big picture dollars for staffing to evaluate this?	TANC	M. Epstein	We will give you numbers to see where we are coming from. At the end of the process we will want to talk about the longer term visions and new mapping.
3	It appears that in developing the billing determinants that you have not taken price elasticity into consideration. Now that you have ten years of data, do you think you should be more sophisticated?	TANC	M. Epstein	If we subtract the ten years of old market data, we will only have one year of new market data by the middle of 2011 and we will only have eighteen months of data for 2012

Exhibit 3

GMC Stakeholder Process 2011-2012

April 21, 2010
10 am - 2 pm Lake Tahoe Conf Rooms

Agenda

- Opening remarks
- Timeline Review
- Status of GMC 2001-2003 Refund
- Review of GMC rate adjustments in 2010
- Status of settlement of 2010 GMC Market Usage Forward Energy (MUFE) structure
- Proposal on structure and rates for convergence bidding for 2011
- Plan for 2011 GMC revenue requirement
- Filing of 2011 rate extension
- Plan for cost of service study for 2012 GMC rates

Timeline for 2011 budget, GMC rates and convergence bidding

You are here

Overview of GMC Process and Convergence bidding April 21, 2010

Budget Conf Call June 24, 2010

GMC Stakeholder Meeting Aug 19, 2010

Request Board Approval for GMC Extension and Convergence Bidding

Sept 2010

Budget Conf Call Oct 14, 2010

FERC Filing

Not later than Nov. 1, 2010

Request Board approval of Budget Dec 2010

Opportunities for Stakeholder Input

California ISO
Your Link to Power

Timeline for 2012 GMC cost of service study

You are here

Overview of GMC Process and Convergence bidding
April 21, 2010

Initial Stakeholder responses on GMC allocations, issues, etc.
June 18, 2010

GMC Stakeholder Meeting (review definitions)
Aug 19, 2010

GMC Stakeholder Meeting to discuss Mapping of Service Categories to Cost Centers
Nov 18, 2010

Review Billing Determinants and spreading of costs with Stakeholders
February 2011

Present updated GMC structure to stakeholders
June 2011

Opportunities for Stakeholder Input

California ISO
Your Link to Power

Status of 2001 – 2003 GMC refund

- GMC refund paid out in March 2010
  - Refund for 2001 of $1.8M plus interest of $1.2M for all 3 GMC categories
  - Reallocation of $4.1M of credits for removal of specified behind the meter and standby capacity generation for 2001 to 2003 and elimination of dynamic scheduling for 2001 reliability bucket

April 2010 GMC Rate Adjustments

GMC rate adjustments effective April 1, 2010 due to Lower volumes in export MWhs and number of forward schedules

- Core Reliability Services -Exports rate increased from $1.1652 to $1.8291 per MWh
  - Core Reliability Services revised quantity forecast of 4,739,625 MWh is 36.2% lower than budgeted quantity of 7,439,739 MWh
- Forward Scheduling rate increased from $1.7078 to $2.5319 per schedule
  - Forward Scheduling revised quantity forecast of 8,768,556 schedules is 32.5% lower than budgeted quantity of 12,999,740 schedules

California ISO
Your Link to Power

Status of 2010 GMC MUFE Structure

Proposed 2010 GMC MUFE Offer of Settlement

- Incorporates methodology submitted by the ISO in October 2009
- Rate will be adjusted based on new forecasted volumes
- Eliminates Inter SC Trades (ISTs) from the calculation
- Uses the “greater of” the absolute value of supply or demand scheduled in the forward market as the volume determinant
- Settlement filed with FERC on March 23, 2010
- Rate will go into effect on June 1, 2010 subject to refund unless FERC rules on the Offer of Settlement prior to that date

Convergence Bidding Overview

- Convergence bidding will be a new GMC service category consisting of 2 charge codes
  - One charge code for a per bid segment rate
  - One charge code for a cleared bid rate (per MWh)
- Designed to recover costs that are in the Forward Scheduling and Market Usage Forward Energy service categories
- These rates will be filed as part of the 2011 GMC rate extension
- Anticipate convergence bidding to go live 2/1/2011

Convergence Bidding
Bid Segment Rate

- An $0.005 per-segment fee will be imposed on submitted convergence bids
  - Designed to alleviate bid volume limitations economically
  - Revenues from the fee will be credited against the next year's GMC imposed on cleared convergence bids (gross MWh)
  - Design limits incentives to submit out of the money bid segments without imposing additional "net cost" on convergence bids
  - CAISO will evaluate magnitude on an on-going basis

Convergence Bidding Rate (Based on 2010 Budget and Volumes)

- Assumed 10% incremental cleared MW above physical estimate of 246,000,000 MW
- 9% of Forward Scheduling and MUFE costs allocated to convergence bidding - $3.9M
- Gross cleared MW rate is $0.078

California ISO
Your Link to Power

Convergence Bidding Rate Table

	Dollars	Volume (MWh)	Rate
2010 Forward Scheduling	$22,201,462		
2010 MUFE	$20,438,138		
Total:	$42,639,590		
9% of Total:	$3,837,563		
2010 estimated cleared MWh		246,000,000	
10% of estimated cleared Volume		24,600,000	
Gross counting both sides (*2)		49,200,000	
Rate:			$.078

Plan for 2011 GMC Revenue Requirement and Rate Extension

- Conference calls tentatively scheduled for June 24 and October 14 to discuss revenue requirement
- Targeting revenue requirement of $197 Million
  - Continuing to stay at or under budget
  - Cash funding Capital Projects costs
- Stakeholder meeting August 19 to discuss rate extension
- Present rate extension at September Board meeting (no October Board meeting this year)
- Present budget at December Board meeting

Cost of Service Study for 2012 GMC Rates: Assumptions and Phases

- Start with existing structure (plus convergence bidding)
- Seek stakeholder input on allocations and other issues
  - Settlements, Metering and Client Relations allocated based on settlement charges
  - 35% of Core Reliability Services going to Energy Transmission Services, both Net Energy and Uninstructed Energy
  - 80%/20% split of Energy Transmission Services between metered load and uninstructed imbalance energy

Cost of Service Study for 2012 GMC Rates

Milestones

- Review definitions of categories and map software to categories
- Map cost centers and debt service to categories
- Review billing determinants and modify if appropriate
- Review impacts using 2010 data
- Propose long term revenue requirement ceiling
- Seek stakeholder input at completion of milestones

Cost of Service Study for 2012 GMC Rates: Next Steps in 2010

ISO reviewing GMC definitions, allocations and cost center mapping with stakeholders:

- June 18
  - Initial stakeholder responses on allocations of Settlements, Metering and Client Relations, Core Reliability Service & Energy Transmission Services, other issues
- August 19
  - Review of definitions with stakeholders
- November 18
  - Review of mapping of cost centers and debt service with stakeholders

Cost of Service Study for 2012 GMC Rates: Tentative Calendar 2011

- February 2011

  Discuss with stakeholders:

  - GMC categories
  - Billing determinants
  - Review impacts using 2010 data
  - Propose long term revenue requirement ceiling
- June 2011
  - File revised GMC rate structure
- June and October 2011
  - Stakeholder meeting to review 2012 revenue requirement
- Other meetings as necessary

Cost of Service Study for 2012 GMC Rates: Stakeholder Input Requested

- Please send written comments, suggestions, and questions to GMC@caiso.com by close of business June 18, 2010
  - Process suggestions and improvements
  - Proposed calendar of events
  - SMCR allocation based on settlement charges
  - 35% of Core Reliability Services going to Energy Transmission Services, both Net Energy and Uninstructed Energy
  - 80%/20% split of Energy Transmission Services between metered load and uninstructed imbalance energy
  - Billing determinants
  - Other issues
  - Questions

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing documents upon all of the parties listed on the official service list for the above-referenced 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 Washington, D.C. this 2nd day of March, 2011.

/s/ Bradley R. Miliauskas
Bradley R. Miliauskas