

ATTACHMENT A
AFFIDAVIT OF DOUG BOCCIGNONE

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

California Independent System Operator Corporation) Docket No. ER18-1344-000

AFFIDAVIT OF DOUG BOCCIGNONE

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Doug Boccignone and I am employed by Flynn Resource Consultants Inc. My business address is 5440 Edgeview Drive, Discovery Bay, California 94505.

Q. On whose behalf are you submitting this affidavit?

A. I am submitting this affidavit on behalf of the California Municipal Utilities Association (“CMUA”), the Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (collectively, the “Six Cities”), the City of Santa Clara, and the City and County of San Francisco to respond to comments related to the California Independent System Operator Corporation’s (“CAISO”) Congestion Revenue Rights Auction Efficiency Track 1A filing.

Q. Please describe your qualifications.

A. I am a registered professional electrical engineer in the State of California. I hold a B.S. in Industrial Engineering and Engineering Management from Stanford University and a B.A. from Claremont McKenna College in Management-Engineering, with high honors. I have over 30 years of experience working for and consulting with utilities, generators

and marketers. The bulk of my experience is in the California market, before, during and after the transition to the CAISO. I am presently a principal at Flynn Resource Consultants Inc., where I provide strategic advice on complex energy-related business issues to municipal utilities and community choice aggregators. Much of my work involves evaluating CAISO protocols and market rules, including those related to Congestion Revenue Rights, and their impacts on municipal utilities.

Q. Have you previously provided testimony to this Commission or the California Public Utilities Commission?

A. Yes. I provided direct and answering testimony to the Commission in the Pacific Gas & Electric Company Scheduling Coordinator Services Tariff proceeding, FERC Docket Nos. ER00-565-000, ER00-565-007, and I provided an affidavit in support of a protest in the Integrated Balancing Authority Area (IBAA) proceeding, FERC Docket No. ER08-1113-000. I also have provided testimony to the California Public Utilities Commission in San Diego Gas & Electric's Valley-Rainbow transmission project proceeding.

II. PURPOSE

Q. What is the purpose of your Affidavit?

A. The purpose of my Affidavit is to demonstrate that the parties holding most of the CAISO auction CRRs are not actually using CAISO transmission. Therefore, their auction CRRs are not being used as financial equivalents to firm transmission. Further, the vast majority of auction CRRs held by entities contributing the most to the CRR auction shortfall are not consistent with what one would expect for an entity that might be trying to facilitate transactions at CAISO Trading Hubs or Default Load Aggregation Points (DLAPs). The parties that are

actually using CAISO transmission, in contrast, often hold a relatively high percentage of their auction CRRs that sink at the CAISO Trading Hubs or DLAPs. These parties would continue to have access to these auction CRRs under CAISO's Track 1A filing limiting the auction CRRs to delivery pairs as is currently done in the CRR allocation process. Finally, modeling a greater number of contingencies and constraints in the CRR model without the limitation on non-delivery pairs would create additional opportunities for CRR auction participants to profit from "selling" counterflow CRRs that relieve CRR model constraints at prices consistently higher than their value, and therefore it is important for the Commission to approve the proposed limitation on non-delivery pairs.

Q. Are your findings based on an assessment prepared by you or by knowledgeable persons under your supervision and upon whose expertise, judgment and opinions you rely in performing your duties?

A. Yes, my findings are based on my analysis of FERC Electric Quarterly Report (EQR) energy transactions sinking in the CAISO Balancing Authority Area (referred to as CAISO EQR energy transactions) and of the CAISO CRR Auction inventory for 2017.

Q. Is the information that is contained in your testimony and that you are sponsoring true and correct to the best of your knowledge and belief?

A. Yes.

III. BACKGROUND AND APPROACH

Q. What is driving the CAISO’s proposed Track 1A changes to the CRR auction process?

A. The CAISO, the CAISO Market Surveillance Committee, the CAISO Department of Market Monitoring, and many CAISO market participants, particularly Load Serving Entities (LSEs) serving the vast majority of the load within California, have expressed concerns about the persistent, significant differences between the revenues received by the CAISO from the CRR auction participants and the congestion payments made to the auction CRR holders. The CRR auction revenue shortfalls¹ (referred to as auction shortfalls) average approximately \$100 million annually.

Q. What approach and data did you use to address protester assertions about the Track 1A filing?

A. Protesters assert that the Commission’s open access policies will be contravened by aspects of the Track 1A filing, but they have failed to provide a complete account of data related to their actual transactions in the CAISO organized markets, including their participation in the underlying CAISO energy markets. To address this lack of data about parties’ actual participation in the CAISO energy and CRR auction markets, I utilized FERC EQR data and CAISO CRR auction data.

¹ The “auction revenue shortfall” refers to the revenue collected in the CRR auction for CRRs less the revenues collected from the day-ahead market for those CRRs.

Q. What is FERC Electricity Quarterly Report data?

A. All public utilities, including power marketers, are required to file quarterly reports to FERC with information about their sales of energy and transmission.² With limited exceptions, non-public utilities must file the EQR if they make annual wholesale sales above the *de minimis* market presence threshold of 4,000,000 MWh on average over the preceding three years. Certain sales made by non-public utilities above this threshold are not required to be reported in the EQR. I focused on EQR energy transactions with points of delivery within the CAISO Balancing Authority Area. These transactions can benefit from the congestion hedging properties of the CAISO Auction CRRs. I excluded CAISO EQR Energy Imbalance transactions (*i.e.*, Real-Time Market 5-minute and 15-minute transactions, including CAISO Energy Imbalance Market transactions), since these are ineligible for CRR congestion protection.

Q. Did you make any adjustments to the CAISO EQR energy data?

A. In limited circumstances, I either excluded data if it appeared to be for Capacity transactions that were incorrectly labeled as Energy transactions, or adjusted data that clearly had not been properly converted from kWh units to MWh units. The exclusions were of such small magnitude that they would not have had a material impact on the results, but were obvious errors that were easy to correct. The unit conversions were necessary because the volumes from just a

² “[T]here should be consistent reporting requirements for both power marketers and traditional utilities. We will apply equal filing requirements for both traditional utilities and power marketers. These filing requirements will provide information consistent with the requirements of FPA section 205(c). The public interest in the disclosure of the information to be reported is the same regardless of whether the agreements and power sales at issue are made by power marketers or traditional utilities.” (Source: [Order No. 2001](#), Paragraph 134)

“Every utility with a tariff on file with the Commission pursuant to Part 35 of the Commission's regulations must file the Electric Quarterly Report, even if there are no contracts under any of a utility's tariffs or rate schedules, or no sales were made during the quarter.” (Source: [Revised Public Utility Filing Requirements](#), 101 FERC ¶ 61,067 (2002), Paragraph 3)

single entity's incorrectly reported transactions otherwise would have exceeded the annual energy transactions of all other market participants combined. The exclusions were applied to less than 0.0002% of the 2017 CAISO EQR energy transactions, and the unit conversions were applied to less than 0.03% of the 2017 CAISO EQR energy transactions.

Q. What CAISO CRR auction data did you use?

A. CAISO publishes the results of its annual/seasonal and monthly CRR auctions on its OASIS website. I utilized the OASISLive software developed by Power Market Consulting, Inc. to obtain and summarize the 2017 CRR auction results. Because the annual/seasonal results span an entire quarter, I normalized the seasonal data by multiplying the seasonal CRR quantities by a factor of three to convert them to monthly equivalent quantities and added these to the monthly CRR auction quantities. I then divided the total by 12 to obtain average monthly-equivalent auction CRR quantities for each entity. I linked the CAISO CRR auction data to the CAISO EQR energy transaction data available for each CRR auction holder. In limited cases, I combined auction holdings from companies with multiple CRR identifiers to align with individual CAISO EQR energy transaction data and *vice versa*.

IV. FERC AND CAISO DATA SHOW THE VAST MAJORITY OF AUCTION CRRS ARE NOT BEING USED TO PROVIDE OPEN ACCESS TO CAISO TRANSMISSION

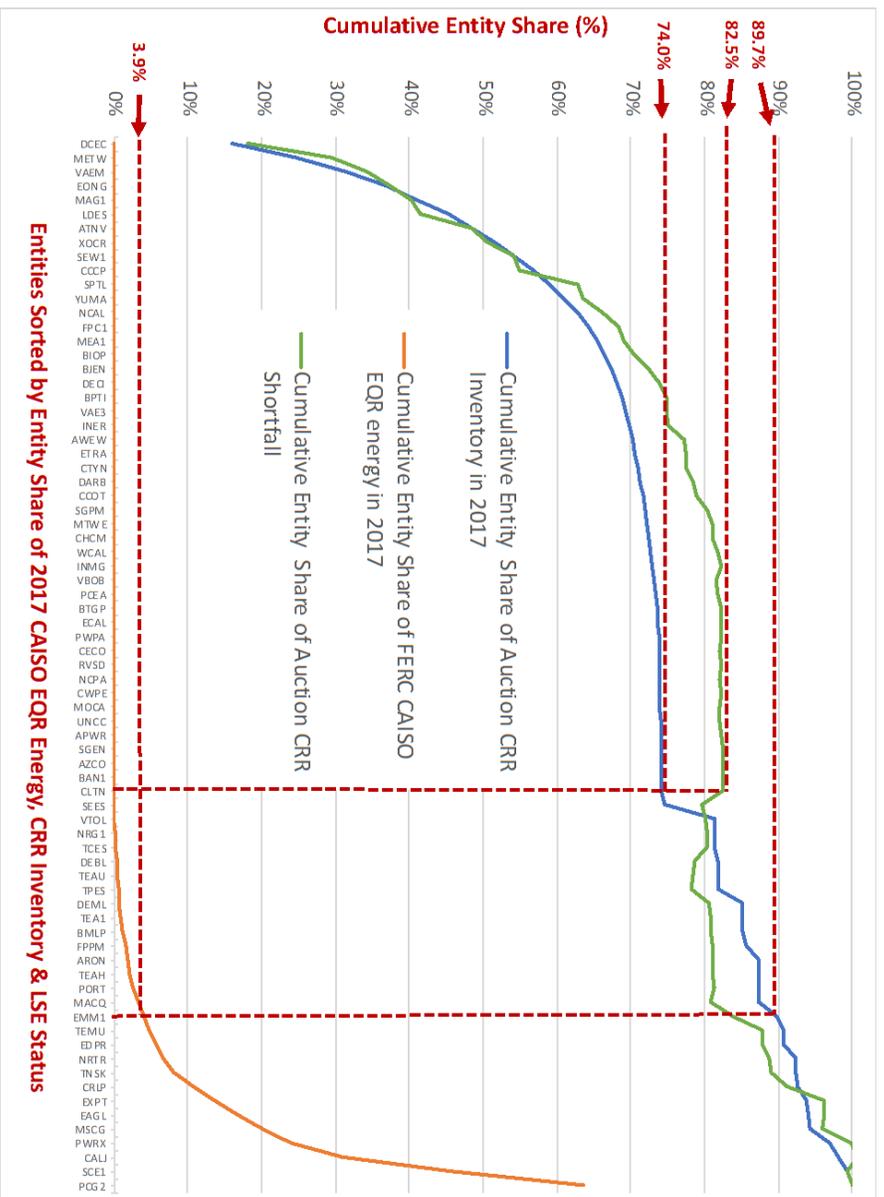
Q. Do you agree with the claims that the changes proposed by CAISO in its Track 1A filing would inhibit CRR Auction participants' ability to have open access to CAISO transmission?

A. No. Based on my analysis of CAISO EQR energy transaction data and CAISO CRR auction data, I do not agree with these claims. As shown in Figure 1, nearly ninety percent (89.7%) of the auction CRRs are held by parties that account for less than four percent (3.9%) of the volume of all reported CAISO EQR energy transacted in 2017. Nearly three-quarters (74.0%) of the CAISO auction CRRs are held by entities that, according to the EQRs, had no CAISO energy transactions.³ The latter group accounted for nearly eighty-three percent (82.5%) of the CRR Auction shortfall. The auction participant with the largest share of CRRs, DC Energy California, LLC, on average held 22,552 MW of monthly-equivalent auction CRRs (of 140,851 MW auction-wide monthly-equivalent CRRs) and accounted for \$18.3 million of the \$100.3 million CRR auction shortfall in 2017. This equates to sixteen percent (16.0%) of the auction CRRs and more than eighteen percent (18.3%) of the CRR auction shortfall. DC Energy California, LLC reported no CAISO EQR energy transactions in 2017 and therefore used no CAISO transmission. A party that is not making an energy sale has not used any CAISO

³ There are nine non-jurisdictional LSEs within this group that utilize CAISO transmission to serve load that are not required to report CAISO EQR energy transactions. Their participation in the CRR auctions is negligible, at 0.6% of auction CRRs. Most of their auction CRRs are counterflow sales CRRs from unwinding allocation positions and therefore not used to firm transmission. These parties actually reduce the CRR auction shortfall by 0.6%.

transmission to deliver energy and therefore does not need a CRR to make any transmission financially firm.

Figure 1: 2017 Auction CRRs, Shortfall and CAISO EQR Energy⁴



⁴ Attachment 1 includes the list of the auction CRR owners and corresponding Owner IDs.

Q. What if those parties are engaging in financial transactions with third parties who themselves are utilizing CAISO transmission? Wouldn't the CRR auction participants have a need to procure auction CRRs so that their counterparties could obtain the financial equivalent of firm transmission?

A. The CRR auction participants protesting the CAISO's Track 1A filing have presented no evidence that they are engaging in financial transactions with third parties who are utilizing CAISO transmission that needs to be financially firmed. Nor have they demonstrated that their access to the auction CRRs materially benefits the CAISO markets by significantly improving the efficiency of financial transactions in these markets. If these parties were engaged in financial transactions within the CAISO market area to a significant degree, I would expect them to hold large portions of their auction CRR positions sinking at the Trading Hubs or DLAPs, since those would be more liquid trading locations for the financial transactions. But the 2017 CAISO CRR auction data does not bear this out. Figure 2 shows that the non-LSE entities⁵ with the largest share of the auction CRRs and with no CAISO EQR energy transactions procure small portions of their auction CRRs sinking at Trading Hub/DLAPs. The twelve (12) entities reporting no CAISO EQR energy transactions and having at least two percent (2%) each of the auction CRRs (collectively, over 61%), hold only 0.4% to 4.9% of their auction positions in Trading Hub/DLAP sinking CRRs.⁶ It is unreasonable to assume that such a small percentage of the total auction CRRs sinking at Trading Hub/DLAP would have a

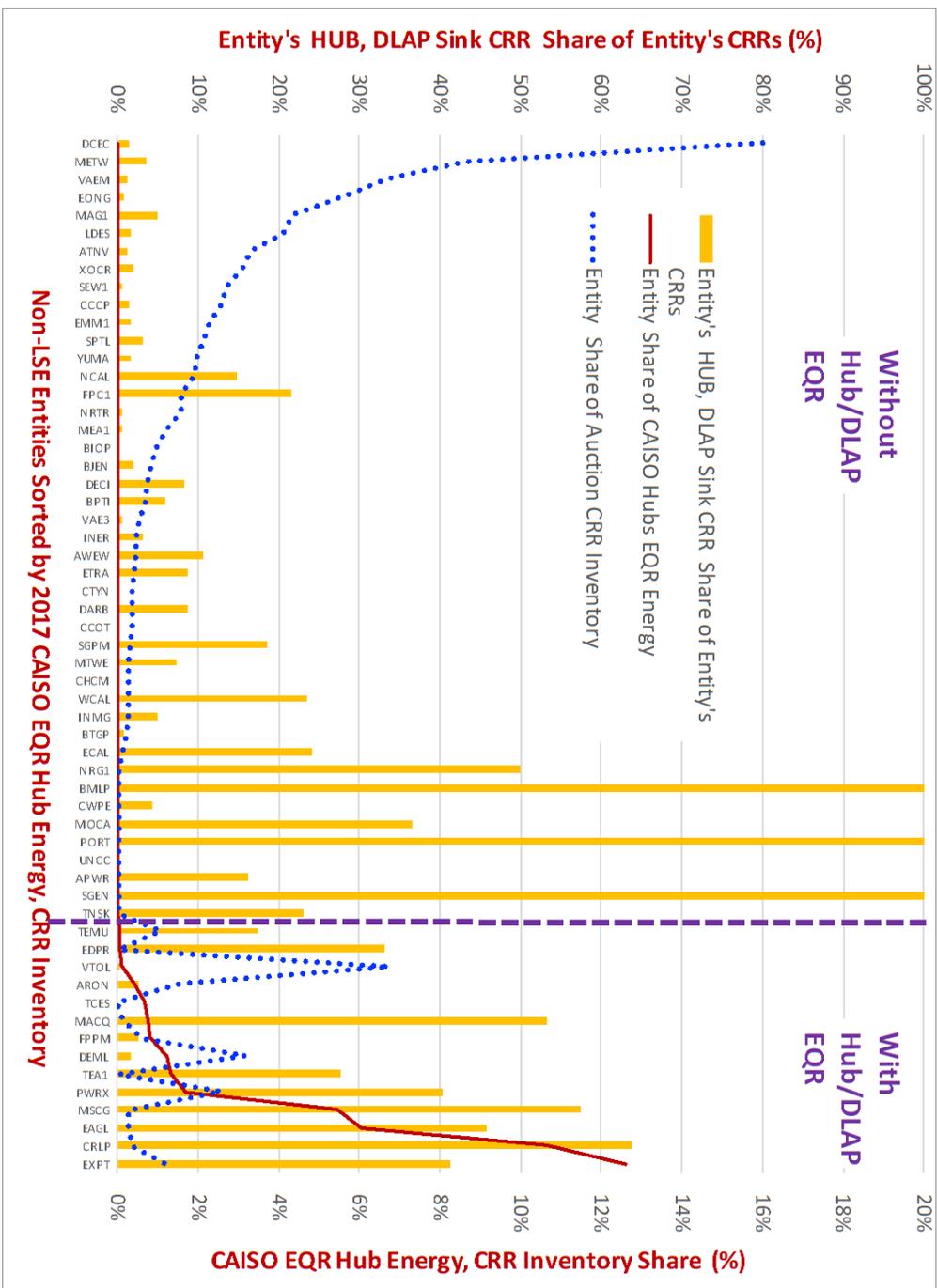
⁵ Attachment 1 identifies whether an auction participant is an LSE or a non-LSE.

⁶ Vitol, Inc. would be in this group, but for it reporting 0.1% of the CAISO EQR energy transacted at CAISO Trading Hubs/DLAPs. 0.3% of Vitol's auction CRRs sink at Trading Hubs/DLAPs, while Vitol holds 6.8% of monthly-equivalent auction CRRs in 2017.

material impact on the efficiency of financial markets within the CAISO, particularly with no evidence that the parties holding those CRRs are engaging in such transactions. It also is unreasonable to expect that the 95.1% - 99.6% of these parties' CRR positions that are not sinking at Trading Hubs/DLAPs are essential for supporting the small fraction of their CRRs sinking at Trading Hubs/DLAPs.

Many non-LSE auction CRR holders with smaller shares of the auction CRRs and with no CAISO EQR energy transactions similarly procure small portions of their auction CRRs sinking at Trading Hubs/DLAPs, while others within this group procure larger portions of their auction CRRs sinking at Trading Hubs/DLAPs. Some of the non-LSE parties reporting CAISO EQR energy transactions at the Trading Hubs or DLAPs procure a substantial portion of their auction CRRs sinking at the Trading Hubs or DLAPs (See the right-hand-side of Figure 2). This behavior is what one would expect from a party wanting to hedge exposure to congestion associated with its energy sales that use CAISO transmission. These parties would continue to be able to do so after CAISO's Track 1A filing is implemented, as it allows auction CRRs sourced from generators or interties to be sunk at the Trading Hubs or DLAPs.

Figure 2: 2017 Non-LSEs Auction CRRs, Hub CRRs and CAISO EQR Hub Energy



Even if parties may be using the CRRs they acquire in the auction to facilitate financial transactions with third parties, one would have to assume that either they are passing on the savings to their counterparty by exploiting CAISO customers to subsidize their transactions with third parties or locking in the profits from the CRR auction shortfalls by charging the expected value to their counterparties. Either way, the consumers who pay for the underlying CAISO transmission are harmed by subsidizing the CRR auction participants or their counterparties.

The Commission should not rely on unsubstantiated claims that CRR auction participants are engaging in financial transactions that have a material impact on the efficiency of the CAISO energy markets. At a minimum, the parties engaging in transactions with the claimed benefits should be required to demonstrate the volume of their transactions, counterparties, prices, locations, and the nexus between their CRR holdings and their financial transactions so that the Commission can determine whether the purported benefits of the CRR auction outweigh the inefficiency shortfalls. This is the same information the Commission required of market participants in Order No. 2001 to “provide the Commission and the public with a more complete picture of wholesale market activities which affect jurisdictional services and rates, thereby helping to monitor for any market power and to ensure that customers are protected from improper conduct” including booked out transactions that do not result in physical delivery of power.⁷

⁷ 99 FERC ¶ 61, 107 (Docket No. RM01-8-000; Order No. 2001, paragraphs 32, 160, 274-294).

V. CAISO'S TRACK 0 AND TRACK 1A EFFORTS TO IMPROVE CONTINGENCY MODELING AND OUTAGE MODELING ARE NOT LIKELY TO BE SUFFICIENT TO ADDRESS THE CRR AUCTION SHORTFALLS

Q. Do you agree with parties' statements that the CAISO's Track 0 efforts and the portion of its Track 1A proposal that are intended to improve contingency modeling and outage modeling will address the CRR Auction inefficiency problem, and therefore make the Track 1A delivery pair limitations unnecessary?

A. No, I do not. Modeling a greater number of contingencies and constraints in the CRR model, particularly ones that are not frequently binding in the actual Day-Ahead Market, without the limitation on non-delivery pairs will create additional opportunities for CRR auction participants to profit from "selling"⁸ counterflow CRRs that relieve CRR model constraints at prices consistently higher than their value.

Q. What is the basis for your concern?

A. In analyzing the 2017 CRR auction data summarized in Figure 3, nearly all of the non-LSE CRR auction participants that "sold" counterflow CRRs in the auction made money on both their prevailing flow purchase CRRs and their counterflow sales CRRs (represented by positive values of both blue and orange bars in Figure 3). This suggests that some of their CRR auction bids exploit constraints that are binding in the CRR auction model, but that are not binding in the actual Day-Ahead Market. This bidding activity lowers the cost and increases the quantity of prevailing flow purchase CRRs in

⁸ The current CRR auction does not allow bidders to directly sell a CRR. Instead, parties bid negative prices for the counterflow positions and then "pay" a negative price for the position. The net result is the same as a sale, and I refer to these as sales in this affidavit. CAISO is proposing to change this approach to allow parties to directly sell CRRs as part of the Track 1A filing.

the auction, and then recipients often paradoxically are paid for congestion in the Day-Ahead Market that is in the opposite direction of the flows in the CRR auction model, or pay less for the congestion charges than they were paid in the auction. In contrast, the LSE CRR auction participants typically incurred losses on their auction sales (See the orange bars to the right in Figure 3), and rarely made a profit on auction purchases.⁹ That is, the CRR auction undervalued the counterflow relative to the Day-Ahead Market for these CRRs. These parties would have received more revenues had they held their allocation CRRs, rather than selling them into a CRR auction that undervalued those CRRs.

Six (6) auction participants added greater than one million dollars each to the shortfall in 2017 on both their sales CRRs and their purchase CRRs. The entity with the greatest amount of counterflow CRRs, DC Energy California, LLC was paid \$6.6 million for an average of 12,533 MW monthly-equivalent counterflow CRRs (of 50,794 MW auction-wide monthly-equivalent counterflow CRRs) and received associated Day-Ahead Market congestion revenues totaling \$0.5 million. The auction model had predicted that the holder would pay counterflow congestion charges, but actual Day-Ahead Market congestion was in the opposite directions. DC Energy California, LLC paid \$17.2 million for an average of 9,447 MW monthly-equivalent prevailing flow purchase CRRs (of 80,871 MW auction-wide monthly-equivalent prevailing flow purchase CRRs) and received associated Day-Ahead Market congestion revenues totaling \$28.4 million. Thus, their counterflow sales CRRs added \$7.1 million to the CRR auction shortfall (of \$20.1 million auction-wide counterflow sales CRR shortfall), and their prevailing flow

⁹ A significant portion of the LSE auction participants likely are unwinding their allocation CRR positions and are harmed by the auction process undervaluing the prevailing flow CRRs.

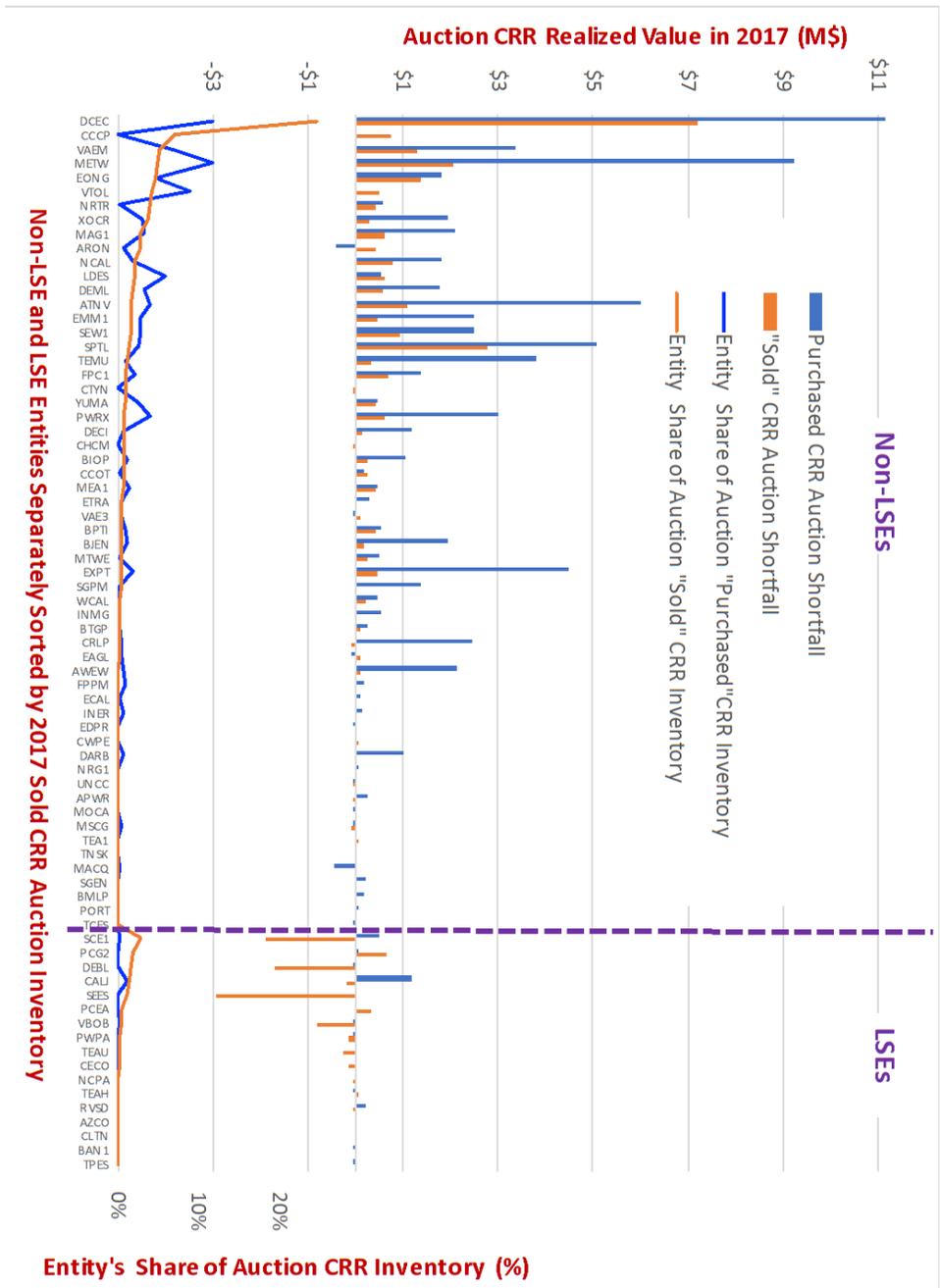
purchase CRRs added \$11.2 million (of \$79.9 million auction-wide prevailing flow purchase CRR shortfall)¹⁰ to the CRR auction shortfall in 2017.¹¹

In summary, the CRR auction undervalues congestion for purchase CRRs, but overvalues counterflow for sales CRRs, particularly for the positions taken by non-LSEs. Conversely, for LSEs unwinding allocations, the auction tends to undervalue the counterflow CRR sales. As discussed above, the majority of the entities that are receiving the majority of the payments that contribute to the auction revenue shortfall are not holding significant portions of their CRRs sinking to DLAPs/Trading Hubs. As such, the entire Track 1A proposal is necessary to mitigate the shortfall, especially the element of the Track 1A proposal that limits auction CRRs to delivery pairs.

¹⁰ There also were an average of 9,186 MW monthly-equivalent auction CRRs that cleared at a price of \$0. The auction-wide shortfall attributed to these free CRRs was \$0.4 million in 2017).

¹¹ The auction shortfalls attributed to DC Energy California, LLC of \$7.1 million (“sold” CRRs) and \$11.2 million (“purchased” CRRs) are represented by the first orange and blue bars, respectively in Figure 3.

Figure 3: 2017 CRR Auction Purchase & Sales Shortfalls



Q. What conclusions do you draw from your analysis of the EQR Energy Transaction Data and CRR Auction Data?

A. I conclude that the auction CRRs that contribute most to the CRR auction revenue shortfall are not being used to provide the financial equivalent of firm transmission service. They are primarily owned by entities that make few or no energy sales into the CAISO Balancing Authority Area. In contrast, the holders of auction CRRs that do use them for hedging physical transactions are utilizing sources and sinks that will satisfy the delivery pair requirement, allowing continuation of those types of uses upon implementation of Track 1A. Finally, modeling a greater number of contingencies and constraints in the CRR model without the limitation on non-delivery pairs would create additional opportunities for CRR auction participants to profit from “selling” counterflow CRRs that relieve CRR model constraints at prices consistently higher than their value , and therefore it is important for the Commission to approve the proposed limitation on non-delivery pairs.

Q. Does that conclude your affidavit?

A. Yes.

Attachment 1: CAISO 2017 Annual/Monthly CRR Auction IDs, Owner Names and LSE Identification

CRR Owner ID	CRR Owner Name	LSE
TPES	3 Phases Energy Services, LLC	Yes
APWR	Amber Power	No
AWEW	Appian Way Energy Partners West, LLC	No
AZCO	Arizona Electric Power Cooperative, Inc.	Yes
ATNV	ATNV Energy	No
BIOP	BioUrja Power, LLC	No
BJEN	BJ Energy, LLC	No
BPTI	Blackout Power	No
EMM1	Boston Energy Trading and Marketing, LLC	No
BMLP	Brookfield Energy Marketing LP	No
CCOT	Calicot Energy LLC	No
CALJ	Calpine Energy Services, L.P.	Yes
BAN1	City of Banning	Yes
RVSD	City of Riverside	Yes
CCCP	Clear Power LLC	No
CECO	Commerce Energy, Inc.	Yes
CWPE	CWP Energy, Inc.	No
DARB	Darby Energy, LLLP	No
DCEC	DC Energy California, LLC	No
DEML	Direct Energy Business Marketing, LLC	No
DEBL	Direct Energy Business, LLC (Includes DEB1, SEL1, SEL2)	Yes
DECI	Dynasty Energy California Inc.	No
EAGL	EDF Trading North America, LLC	No
EDPR	EDP Renewables North America LLC	No
BTGP	Engelhart CTP (US), LLC	No
ETRA	ETRACOM, LLC	No
EXPT	Exelon Generation Company	No
FPC1	Freepoint Commodities, LLC	No
CHCM	Hemsworth Capital Midwest LP	No
INER	Inertia Power VII, LLC	No
INMG	Intergrid Management Group LLC	No
ARON	J. Aron & Company	No
LDES	Louis Dreyfus Energy Services, LP	No

CRR Owner ID	CRR Owner Name	LSE
MACQ	Macquarie Energy, LLC	No
MAG1	MAG Energy Solutions, Inc.	No
MEA1	Mercuria Energy America, Inv.	No
METW	MET West Trading, LLC	No
MTWE	Montana Wind Energy, Inc.	No
MOCA	Monterey CA, LLC	No
MSCG	Morgan Stanley Capital Group Inc.	No
FPPM	NextEra Energy Marketing, LLC	No
SEES	Noble Americas Energy Solutions, LLC	Yes
NCPA	Northern California Power Agency	Yes
NRTR	NRG Power Marketing LLC	No
NRG1		No
PCG2	Pacific Gas & Electric	Yes
PCEA	Peninsula Clean Energy Authority	Yes
PORT	Portland General Electric Company	No
PWPA	Power and Water Resources Pooling Authority	Yes
PWRX	Powerex Corp.	No
SEW1	Saracen Energy West, LP	No
SGPM	Sempra Gas & Power Marketing, LLC	No
SGEN	Sempra Generation	No
NCAL	Sesco Caliso, LLC	No
WCAL		No
ECAL		No
CRLP	Shell Energy North America (US), L.P.	No
CLTN	Shell Energy North America (US), L.P. for Colton	Yes
SPTL	Sirius Power Trading, LLC	No
SCE1	Southern California Edison	Yes
TNSK	Tenaska Power Services Co.	No
TEA1	The Energy Authority, Inc.	No
TEAH	Redwood Coast Energy Authority	Yes
TEAU	The Regents of the University of California	Yes
TEMU	TransAlta Energy Marketing (US) Inc.	No
TCES	TransCanada Energy Sales Ltd.	No
CTYN	Tyne Hill Investments LP	No
UNCC	Uncia Energy LP - Series C	No
EONG	Uniper Global Commodities	No

CRR Owner ID	CRR Owner Name	LSE
VBOB	Valley Electric Association, Inc.	Yes
VAE3	Velocity American Energy Master I, LP	No
VAEM		No
VTOL	Vitol, Inc.	No
XOCR	XO Energy Cal2, LP	No
YUMA	Yuma Electric, LLC	No

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation) Docket No. ER18-1344-000

STATEMENT OF CERTIFICATION

Pursuant to 18 C.F.R section 385.2005(b)(3) and 28 U.S.C. section 1746, I certify under penalty of perjury that the foregoing is true and correct.

Executed on June 20, 2018


Doug Boccignone

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing upon each of the parties shown on the official service list compiled by the Secretary of the Commission by depositing copies thereof in the first class mail, postage prepaid and/or by electronic mail.

Dated at Washington, DC this 20th day of June, 2018.

/s/ Harry A. Dupre
Harry A. Dupre
Duncan, Weinberg, Genzer
& Pembroke, P.C.
1615 M Street, NW, Suite 800
Washington, DC 20036
(202) 467-6370
had@dwgp.com