

October 24, 2016

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NW
Washington, DC 20426

**Re: California Independent System Operator Corporation
Filing of CAISO Rate Schedule No. 84
Docket No. ER17-_____ -000**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) submits for filing and acceptance the Planning Coordinator Agreement dated July 21, 2016, between the CAISO and the Metropolitan Water District of Southern California (MWD).¹ The Planning Coordinator Agreement sets forth the terms under which the CAISO will serve as the Planning Coordinator² for the transmission facilities owned by MWD and that are part of the bulk electric system located within CAISO's balancing authority area (collectively, MWD BES Facilities).³ Under the Planning Coordinator Agreement, MWD will pay the CAISO an annual service fee for its services as Planning Coordinator during the initial three year term of the agreement.

The CAISO respectfully requests that the Commission accept the Planning Coordinator Agreement. The agreement promotes reliability within the CAISO's balancing authority area, and compliance with NERC standards, by allowing the CAISO to serve as MWD's Planning Coordinator. The CAISO requests an effective date of December 26, 2016.

¹ The CAISO submits the Planning Coordinator Agreement pursuant to Rule 205 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.205 and Section 205 of the Federal Power Act, 16 U.S.C. § 824d.

² The term "Planning Coordinator" is defined in the North American Electric Reliability Corporation (NERC) Reliability Functional Model. The NERC Reliability Functional Model (Version 5) defines Planning Coordinator as "The functional entity that coordinates, facilitates, integrates and evaluates (generally one year and beyond) transmission facility and service plans, and resource plans within a Planning Coordinator area and coordinates those plans with adjoining Planning Coordinator areas." *NERC Reliability Functional Model, Function Definitions and Functional Entities*, Version 5, page 22 (November 30, 2009).

³ The specific MWD BES Facilities are set forth in Attachment 1 to the Planning Coordinator Agreement.

I. Background

The NERC Reliability Standards establish the Planning Authority, which is synonymous with the term “Planning Coordinator,” as one of the functional entities within the NERC Functional Model. The CAISO is registered as a Planning Authority.⁴ As required by NERC regulations, the Planning Authority coordinates and integrates transmission facility and service plans, resource plans, and protection system plans among the Transmission Planners, Resource Planners, and Distribution Providers within its area of purview.⁵ These activities include the review and integration of reinforcement and corrective action plans developed by the functional entities (i.e., Planning Authority, Transmission Planner, and Resource Planner) whose area of responsibility is within the Planning Authority’s area with respect to established reliability needs, as well as providing procedures, protocols, modeling and methodology software, etc. for consistent use within its area.

The NERC Reliability Functional Model further describes that the Planning Coordinator:

(1) coordinates and collects data for system modeling from Transmission Planners, Resource Planners, and other Planning Coordinators;

(2) coordinates transfer capability (generally one year and beyond) with Transmission Planners, Reliability Coordinators, Transmission Owners, Transmission Operators, Transmission Service Providers, and neighboring Planning Coordinators;

(3) coordinates plans with the Reliability Coordinator and other Planning Coordinators on reliability issues;

(4) receives plans from Transmission Planners and Resource Planners;

(5) collects information including (a) transmission facility characteristics and ratings from the Transmission Owners, Transmission Planners, and Transmission Operators, (b) demand and energy forecasts, capacity resources, and demand response programs from Load-Serving Entities, and Resource Planners, (c) generator unit performance characteristics and capabilities from Generator Owners, and (d) long-term capacity purchases and sales from Transmission Service Providers;

⁴ The CAISO is also registered as a Balancing Authority, Transmission Operator, and Transmission Service Provider.

⁵ NERC Reliability Functional Model, Function Definitions and Functional Entities, Version 5, pages 22-23.

(6) collects and reviews reports on transmission and resource plan implementation from Resource Planners and Transmission Planners;

(7) submits and coordinates the plans for the interconnection of facilities to the Bulk Electric System within its Planning Coordinator area with Transmission Planners and Resource Planners and adjacent Planning Coordinator areas, as appropriate;

(8) provides and informs Resource Planners, Transmission Planners, and adjacent Planning Coordinators of the methodologies and tools for the simulation of the transmission system; and

(9) facilitates the integration of the respective plans of the Resource Planners and Transmission Planners within the Planning Coordinator area.⁶

Through its Transmission Control Agreement, the CAISO currently acts as the Planning Coordinator for its participating transmission owners, who have transferred their transmission lines and associated facilities to the CAISO's operational control. Consistent with the CAISO's registration as a Planning Coordinator, its participating transmission owners are registered as Transmission Planners.

There are other transmission owners, known as "adjacent systems," who have facilities or systems that are connected to the transmission network under CAISO operational control, but are not within the CAISO's planning coordinator boundary. Some of these transmission owners do not have a Planning Coordinator. Because these adjacent systems are not within the CAISO's planning coordinator area boundary, the NERC regulations do not require the CAISO to be their Planning Coordinator. NERC regulations do, however, require these adjacent systems to be responsible for the planning of their own systems and, thus, to be represented by a registered Planning Coordinator.

Recently, the CAISO identified several adjacent systems who are not represented by a Planning Coordinator. In an effort to enhance system reliability under the NERC Functional Model, the CAISO offered to provide Planning Coordinator services on behalf of these adjacent systems. MWD expressed an interest in the CAISO's offer.⁷

After further discussions with MWD, the parties negotiated and executed a Planning Coordinator Agreement, whereby the CAISO has agreed to serve as the Planning Coordinator for MWD in exchange for a modest service fee, discussed in detail below. This agreement allows adjacent systems, like MWD, to have a Planning Coordinator and, thus, furthers the NERC reliability objective that all transmission owners have a Planning Coordinator.

⁶ *Id.*

⁷ MWD is registered with NERC as a Transmission Owner. The CAISO is also discussing this offer with other parties.

II. The Planning Coordinator Agreement

The Planning Coordinator Agreement details the contractual terms, including the scope of work and the fee, under which the CAISO will provide Planning Coordinator services to MWD. The fundamental purposes served by the Planning Coordinator Agreement are described below.

A. The Planning Coordinator Agreement Establishes the Parties' Respective Responsibilities

The Planning Coordinator Agreement establishes the respective obligations of the CAISO and MWD, which are set forth in Article II.

Specifically, the CAISO must maintain its registration as a Planning Coordinator with NERC and serve as the Planning Coordinator for the MWD BES Facilities. In conjunction with these services, the CAISO will be responsible for compliance, as determined by the Commission, NERC, and the Western Electricity Coordinating Council, with all reliability standards applicable to a Planning Coordinator for the MWD BES Facilities. Because the CAISO is already a Planning Coordinator for its participating transmission owners, it will be able to leverage its existing processes in serving as the Planning Coordinator for MWD.

MWD is responsible for maintaining its registration with NERC as a Transmission Owner and will either register with NERC as a Transmission Planner or will engage a third party qualified as a Transmission Planner. Currently, Southern California Edison is registered as the Transmission Planner for the MWD BES Facilities. MWD is responsible for ensuring that either it or its third party Transmission Planner is in compliance, as determined by the Commission, NERC and the Western Electricity Coordinating Council, with all reliability standards applicable to a Transmission Planner and Transmission Owner for the MWD BES Facilities. Consistent with its responsibility to meet reliability standards applicable to a Transmission Owner, MWD is solely responsible for implementing necessary corrective actions, modifications or changes to its BES facilities.

B. The Planning Coordinator Agreement Describes the Parties' Duties of Cooperation and Coordination

To facilitate the fulfillment of the parties' roles and responsibilities, Article III of the Planning Coordinator Agreement sets forth the parties' duties of cooperation and coordination with each other.

Specifically, Attachment 2 to the Planning Coordinator Agreement illustrates the various areas in which the parties will coordinate their efforts, including the sharing and assessment of data related to interconnections, transmission planning, transfer capability and stability limits, modeling, uninstructed flow limits, and transmission relay loadability. In addition, the parties will cooperate with each other regarding all

compliance related activities with respect to the Planning Coordinator and Transmission Planner functions. This includes complying with a reasonable request for data or assistance from the other party to demonstrate compliance with an applicable Reliability Standard and to support the party's self-certifications, potential violation reviews or audits.

C. The CAISO Will Charge MWD an Annual Service Fee in Exchange for Its Planning Coordinator Services

The Planning Coordinator Agreement specifies that MWD will pay an annual service fee during the initial three-year term of the agreement.⁸ The fee reflects MWD's pro rata share of the CAISO's costs for transmission planning. The CAISO calculated the costs of transmission planning in a 2013 cost of service study that formed the basis of the CAISO's 2015 Grid Management Charge Update. The CAISO allocated costs to MWD based on its number of circuits of transmission facilities as a portion of the total number of circuits of transmission facilities for which the CAISO conducts planning. The discussion paper of the 2015 Grid Management Charge Update and spreadsheets documenting the derivation and allocation of the transmission planning costs are included with the Declaration of April Gordon in Attachment B.⁹

D. Other Provisions

The Planning Coordinator Agreement includes a variety of standard provisions that round out the parties' commitments. These include confidentiality (Section 4.2), termination (Section 4.4), dispute resolution (Section 4.5), representations and warranties (Section 4.6), limitations of liability (Section 4.7.1), governing law and venue (Section 4.13) and certain miscellaneous provisions.

III. Next Steps

Following Commission acceptance of this filing, the CAISO will complete the transmission plan studies and its collection and assessment of the data necessary to meet its Planning Coordinator obligations.

IV. Effective Date

The CAISO requests that the Planning Coordinator Agreement be made effective December 26, 2016.

⁸ Planning Coordinator Agreement, Section 4.1 and Exhibit A. The CAISO anticipates that the service fee for the first year of the term of the Agreement will be approximately \$15,525.

⁹ The cost allocation methodology used to determine the annual service fee for MWD is the same methodology used for calculating the annual service fee for the City and County of San Francisco in connection with their Planning Coordinator Agreement with the ISO and which was approved by the Commission in 2015.

V. Request for Confidential Treatment

Attachment 1 to the Planning Coordinator Agreement is a diagram of MWD's bulk electric system facilities and, thus, includes Critical Energy Infrastructure Information (CEII) (as defined in 18 C.F.R. §388.113) that is being submitted pursuant to 18 C.F.R §388.112. Accordingly, the information is exempt from mandatory public disclosure requirements under the Freedom of Information Act (FOIA), 5 U.S.C. § 552, and should be withheld from public disclosure. Notwithstanding this fact, the CAISO requests that the Commission provide the CAISO with notice of any FOIA requests and the opportunity to participate in any proceeding initiated to determine whether the Commission should direct disclosure of the aforementioned information. Attachment 1 to the Planning Coordinator Agreement is included as Attachment C, with the public version being redacted.

VI. Request for Waivers

The CAISO believes this filing constitutes a new service (Planning Coordinator services) to a new customer (MWD), and is thus an initial rate schedule, subject to section 35.12 of the Commission's regulations, 18 C.F.R. § 35.12 (2016). This filing substantially complies with the requirements of section 35.12 of the Commission's regulations, 18 C.F.R. § 35.12 (2016), applicable to filings of this type. The CAISO respectfully requests waiver of any such requirement to the extent this filing does not satisfy that requirement.

In the event the Commission concludes that this filing is a change in a rate tariff or service agreement, the CAISO submits that the filing also substantially complies with the requirements of section 35.13 of the Commission's rules, 18 C.F.R. § 35.13 (2016), applicable to filings of this type. The CAISO respectfully requests waiver of any such requirement to the extent this filing does not satisfy that requirement.

In either event, there is good cause to waive filing requirements that are not material to the Commission's consideration of the Planning Coordinator Agreement.

VII. Service

The CAISO has served copies of this filing upon all scheduling coordinators, the California Public Utilities Commission, and the California Energy Commission. In addition, the CAISO has posted the filing on the CAISO website.

Enclosed for filing is each of the following:

- (1) This letter of transmittal; and
- (2) Planning Coordinator Agreement (Attachment A);
- (3) Declaration of April Gordon, Manager of Financial Planning and Procurement (Attachment B); and
- (4) Attachment 1 to the Planning Coordinator Agreement, fully redacted for the public version (Attachment C).

VIII. Correspondence

The CAISO requests that all correspondence, pleadings, and other communications concerning this filing be served upon the following:

John E. Spomer*
Senior Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel: (916) 608-7257
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E-mail: jspomer@caiso.com

* Individual designated for service pursuant to Rule 203(b)(3), 18 C.F.R. § 203(b)(3).

IX. Conclusion

The CAISO respectfully requests that the Commission accept this filing and permit the Planning Coordinator Agreement, CAISO Rate Schedule No. 84, to be effective December 26, 2016. If there are any questions concerning this filing, please contact the undersigned.

Respectfully submitted,

By: /s/ John E. Spomer

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Attorneys for the California Independent
System Operator Corporation

Attachment A – Clean Tariff Records
Planning Coordinator Agreement between
California Independent System Operator Corporation and
Metropolitan Water District of Southern California

PLANNING COORDINATOR AGREEMENT

THIS AGREEMENT is dated this 21st day of July 2016, and is entered into, by and between:

(1) The Metropolitan Water District of Southern California, a governmental entity, having its principal place of business located at 700 North Alameda Street, Los Angeles, California 90012 (“MWD”);

and

(2) the California Independent System Operator Corporation, a California nonprofit public benefit corporation, having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 250 Outcropping Way, Folsom, California 95630 (“CAISO”).

MWD and CAISO are sometimes hereinafter referred to individually as “Party” or collectively as the “Parties”.

RECITALS

A. WHEREAS, Section 215 of the Federal Power Act, 16 USC 824, requires all users, owners and operators of the bulk-power system to comply with applicable reliability standards approved by the Federal Energy Regulatory Commission (“FERC”) (“Reliability Standards”); and

B. WHEREAS, North American Electric Reliability Corporation (“NERC”) and the Western Electricity Coordinating Council (“WECC”) have developed Reliability Standards, certain of which apply to CAISO and MWD, and NERC has delegated to WECC enforcement of the Reliability Standards in the Western Interconnection including California; and

C. WHEREAS, MWD owns transmission facilities that are part of the Bulk Electric System (“BES”) and are located within CAISO’s Balancing Authority Area (“BAA”) (collectively, “MWD BES Facilities”), but MWD is not a Participating Transmission Owner (“PTO”) as that term is defined in the FERC approved tariff of CAISO (“CAISO Tariff”); and

D. WHEREAS, MWD’s current MWD BES Facilities are set forth in the diagram attached as Attachment 1 (Attachment 1 contains Confidential Information and is subject to Section 4.2); and

E. WHEREAS, MWD is registered with NERC as a Transmission Owner; and



F. WHEREAS, as of the Effective Date, MWD is not registered as a Transmission Planner but may register with NERC in the future as a Transmission Planner; and

G. WHEREAS, MWD and Southern California Edison (“SCE”) have entered into a Reliability Standards Agreement (“Delegation Agreement”), wherein SCE has agreed to serve as the Transmission Planner, Transmission Operator, and Resource Planner on behalf of MWD; and

I. WHEREAS, CAISO is registered with NERC as a Planning Authority (which is synonymous with “Planning Coordinator”); and

J. WHEREAS, CAISO and MWD have determined that there is a need to identify a Planning Coordinator for MWD BES Facilities, currently and into the foreseeable future; and

K. WHEREAS, CAISO has determined it is qualified to be the Planning Coordinator for MWD; and

L. WHEREAS, the Parties are entering into this Agreement in order to establish the terms and conditions on which CAISO and MWD will discharge their respective duties and responsibilities as set forth herein.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, THE PARTIES AGREE as follows:

AGREEMENT

ARTICLE I

DEFINITIONS AND INTERPRETATION

1.1 Definitions. Capitalized words in this Agreement that are not defined herein shall have the meanings set forth in NERC’s “Glossary of Terms Used in NERC Reliability Standards” (“NERC Glossary of Terms”).

1.2 Rules of Interpretation. The following rules of interpretation and conventions shall apply to this Agreement:

(a) if there is any inconsistency between this Agreement and the NERC Glossary of Terms, the NERC Glossary of Terms will prevail to the extent of the inconsistency;

(b) the singular shall include the plural and vice versa;

- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) “includes” or “including” shall mean “including without limitation”;
- (e) references to an Article, Section or Attachment shall mean an Article, Section or Attachment of this Agreement, as the case may be, unless the context otherwise requires;
- (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a “person” includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

ARTICLE II

GENERAL RESPONSIBILITIES OF THE PARTIES

2.1 Description of CAISO Responsibilities. While the Agreement is in effect, CAISO shall have the following responsibilities:

- (a) CAISO will be registered with NERC as a Planning Authority (which is synonymous with Planning Coordinator);
- (b) CAISO will serve as the Planning Coordinator (as that term is defined in the NERC Reliability Functional Model) for the MWD BES Facilities; and,

(c) CAISO will be responsible for compliance, as determined by FERC, NERC and WECC, with all Reliability Standards applicable to a Planning Coordinator for the MWD BES Facilities.

CAISO shall not, as a condition of performing the services set forth above, require MWD to become a PTO.

2.2 Description of MWD Responsibilities. While the Agreement is in effect, MWD shall have the following responsibilities:

(a) MWD will either register with NERC as a Transmission Planner (“TP”) or will engage a third party qualified as a TP (“its TP”). Currently, SCE is registered as the TP for MWD’s BES Facilities;

(b) MWD will ensure that either it or its TP will be responsible for compliance, as determined by FERC, NERC and WECC, with all Reliability Standards applicable to a Transmission Planner for the MWD BES Facilities; and,

(c) Whenever MWD registers as a TP or engages a third party (other than SCE) to be its TP, MWD’s Authorized Representative (as provided pursuant to Section 4.21) will provide written notice to the CAISO’s Authorized Representative (as provided pursuant to Section 4.21).

ARTICLE III

PROCEDURES AND COMPLIANCE

3.1 Coordination. The Parties agree that, for illustrative purposes only, Attachment 2 to this Agreement describes how CAISO and MWD anticipate coordinating with each other while carrying out their respective responsibilities for a Planning Coordinator or a Transmission Planner with respect to the MWD BES Facilities. The Authorized Representatives may revise Attachment 2 by mutual written agreement. Regardless of the terms set forth in Attachment 2, the Parties agree that they must each meet their respective responsibilities for a Planning Coordinator or a Transmission Planner.

3.2 CAISO’s Use Of Existing Practices, Procedures and Processes. Except as otherwise agreed by the Parties, to the extent applicable, CAISO will utilize its existing practices, procedures, and processes in performing its responsibilities as the Planning Coordinator for MWD. For the avoidance of doubt, the Parties clarify that requests for new or modified interconnections to the MWD BES Facilities may be processed pursuant to the interconnection procedures adopted by MWD and are not required to be undertaken pursuant to

CAISO's existing practices, procedures and process for interconnections to PTO facilities.

3.3 Interconnections to PTO Facilities. This Agreement does not change the respective rights and responsibilities of CAISO and MWD with respect to interconnections to PTO facilities.

3.4 MWD's Responsibility for its Facilities. MWD or its TP will coordinate and cooperate with CAISO, as the Planning Coordinator for the MWD BES Facilities, in accordance with applicable Reliability Standards and will seek in good faith to reach agreement where possible on study assumptions, impacts and acceptable solutions. Nonetheless, consistent with its responsibility to meet Reliability Standards applicable to a Transmission Owner, MWD has final authority over and is solely responsible for implementing necessary corrective actions, modifications or changes to its BES Facilities.

3.5 Provision of Data. MWD or its TP will provide to CAISO in a timely manner all model data, including Facility ratings, necessary for CAISO to perform the studies required for CAISO to fulfill its responsibilities as Planning Coordinator for the MWD BES Facilities.

3.6 Compliance.

3.6.1 The Parties will cooperate with each other with respect to all compliance related activities applicable to the Transmission Planner and the Planning Coordinator functions, including, but not limited to audits.

3.6.2 Each Party shall comply with a reasonable request for data or assistance from the other Party to the extent reasonably necessary to demonstrate compliance with Reliability Standards applicable to the Transmission Planner and the Planning Coordinator functions, including providing reports or data reasonably necessary to support the other Party's self-certifications, potential violation reviews, or audits.

3.7 Additional Studies or Assessments by CAISO. MWD may request CAISO to undertake additional studies or assessments that are not within CAISO's responsibility as a Planning Coordinator. At its sole discretion, CAISO may agree to undertake such studies or assessments, subject to reimbursement for the cost of such work by MWD in accordance with Section 4.1.2 of the Agreement.

ARTICLE IV

GENERAL TERMS AND CONDITIONS

4.1 Payment

4.1.1 Annual Service Fee. MWD will compensate CAISO for its services as Planning Coordinator under this Agreement by paying CAISO an annual service fee (“Annual Fee”), which will not exceed an aggregate sum of \$55,000 during the Current Term of the Agreement.

CAISO shall invoice MWD for the first Annual Fee within thirty (30) days of the Effective Date, and shall invoice MWD within thirty (30) days of each anniversary to the Effective Date during the Current Term consistent with Section 4.1.3. MWD will pay the invoice no later than thirty (30) days after receipt thereof.

The Annual Fee will be based on the number of BES transmission circuits that are owned by MWD and included in the CAISO’s Transmission Register multiplied by CAISO’s long term transmission planning process (“TPP”) cost per transmission circuit. The TPP cost per transmission circuit will be based on the CAISO annual budget and Grid Management Charge Rates as amended from time to time and the total number of circuits owned by the PTOs included in CAISO’s most current transmission plan. The calculation of the Annual Fee for the first year of the Current Term is set forth in Attachment 3. Subsequent Annual Fees will be calculated in the same manner using data from the most recently published California ISO Grid Management Charge Update Cost of Service Study.

4.1.2 Hourly Fees. If, pursuant to Section 3.7, MWD requests CAISO to undertake additional studies or assessments that are not within CAISO’s responsibility as a Planning Coordinator, and CAISO agrees to undertake such studies or assessments, MWD shall compensate CAISO at an hourly rate that is based on CAISO’s internal labor costs plus overhead. Before any studies or assessments are undertaken, CAISO and MWD will agree in writing on the applicable hourly rate, the scope of work, and a total fee estimate. CAISO shall submit to MWD monthly invoices for such studies or assessments consistent with Section 4.1.3 of the Agreement no later than thirty days after undertaking such work.

4.1.3 Invoices. Invoices furnished by CAISO under this Agreement will be sent to MWD at the address specified in Attachment 4 to this Agreement in a form acceptable to MWD and include a unique invoice number. MWD will provide CAISO with an acceptable form of invoice no later than the Effective Date of the Agreement. Payment shall be made by MWD to CAISO at the address specified in Attachment 4 to this Agreement.

4.1.4 Total Payment. Total payment by MWD to CAISO during the Current Term of the Agreement for Annual Fees and Hourly Fees for additional studies or assessments will not exceed an aggregated \$80,000.

4.2 Confidentiality

4.2.1 Both Parties understand and agree that, in the performance of the work or services under this Agreement or in contemplation thereof, a Party (a "Recipient") may have access to private or Confidential Information (as defined below) which may be owned or controlled by the other Party (a "Discloser") and that such information may contain proprietary or confidential details, the disclosure of which to third parties may be damaging to the Discloser. Both Parties agree that all Confidential Information disclosed by a Discloser to a Recipient shall be held in confidence by the Recipient and used only in performance of the Agreement, except to the extent such information is required to be disclosed by local, State or Federal laws and regulations or by court or public agency order. "Confidential Information" means (i) all written materials marked "Confidential", "Proprietary" or with words of similar import provided to either Party by the other Party, and (ii) all observations of equipment (including computer screens) and oral disclosures related to either Party's systems, operations and activities that are indicated as such at the time of observation or disclosure, respectively, provided that such indication is confirmed in writing within five (5) business days of the disclosure. Confidential Information includes portions of documents, records and other material forms or representations that either Party may create, including but not limited to, handwritten notes or summaries that contain or are derived from such Confidential Information.

4.2.2 In the event that disclosure of confidential or proprietary information is required by local, State or Federal laws and regulations or by court or public agency order, the Recipient shall give prior written notice to the Discloser as far in advance as reasonably possible. To the extent permitted by law, the Recipient shall cooperate with the Discloser in the event the Discloser seeks a protective order or other appropriate remedy to prevent such disclosure and, if such a protective order or other remedy cannot be obtained by such Discloser, the Recipient shall disclose only that portion of the confidential or proprietary information that is legally required to be disclosed.

4.2.3 Notwithstanding Sections 4.2.1 and 4.2.2 above, each Party to this Agreement shall not have breached any obligation under this Agreement if Confidential Information is disclosed to a third party when the Confidential Information: (a) was in the public domain at the time of such disclosure or is subsequently made available to the public consistent with the terms of this Agreement; or (b) had been received by either Party at the time of disclosure through other means without restriction on its use, or had been independently developed by either Party as shown through documentation; or (c) is

subsequently disclosed to either Party by a third party without restriction on use and without breach of any agreement or legal duty; or (d) subject to the provisions of Section 4.2.2, is used or disclosed pursuant to statutory duty or an order, subpoena or other lawful process issued by a court or other governmental authority of competent jurisdiction.

4.2.4 The Parties acknowledge that the CAISO must comply with Section 20 of the CAISO Tariff.

4.3 Effective Date. This Agreement shall be effective as of the later of the date it is executed by the Parties or the date accepted for filing and made effective by FERC (“Effective Date”) and shall remain in full force and effect for three (3) years from the Effective Date (“Current Term”) or until terminated pursuant to Section 4.4 of this Agreement. Beginning on the Effective Date, CAISO will commence activities necessary to perform the services described in Section 2.1 herein. The Parties may mutually agree in writing to extend the term of the Agreement at any time.

4.3.1 Nothing contained herein shall be construed as affecting in any way the right of CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC’s rules and regulations promulgated thereunder, and MWD shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC’s rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered.

4.4 Termination

4.4.1 Termination by CAISO. CAISO may terminate this Agreement by giving thirty (30) days prior written notice of termination to MWD in the event that MWD commits any material default under this Agreement which, if capable of being remedied, is not remedied within thirty (30) days after CAISO has given to MWD written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Section 4.9 of this Agreement. In addition, CAISO may terminate this Agreement by giving not less than a one year prior written notice of termination to MWD. With respect to any notice of termination given pursuant to this Section, if filing at FERC is required for this Agreement, CAISO must file a timely notice of termination with FERC. In the case of a MWD uncured material default, the filing of the notice of termination by CAISO with FERC will be considered timely if the filing of the notice of termination is made after the preconditions for termination have been met, and CAISO files the notice of termination within sixty (60) days after issuance of the notice of default. The Agreement shall terminate effective on the later of (i) the date specified in the

notice of termination, or (ii) in the event filing of the notice of termination is required, the date FERC accepts such notice.

4.4.2 Termination by MWD. MWD may terminate this Agreement by giving not less than ninety (90) days prior written notice of termination to CAISO. With respect to any notice of termination given pursuant to this Section, if filing at FERC is required for this Agreement, CAISO must file a timely notice of termination with FERC. The filing of the notice of termination by CAISO with FERC will be considered timely if the request to file a notice of termination is made, and CAISO files the notice of termination with FERC within thirty (30) days of receipt of MWD's notice of termination. The Agreement shall terminate effective on the later of (i) the date specified in the notice of termination, or (ii) in the event filing of the notice of termination is required, the date FERC accepts such notice.

4.4.3 Termination by Mutual Agreement. The Parties may terminate this Agreement at any time upon mutual agreement in writing. In the event filing of the termination is required, CAISO shall file a timely notice of termination with FERC. The filing of the Agreement's termination by CAISO with FERC will be considered timely if the CAISO files the notice of termination with FERC within thirty (30) days of the mutual agreement to terminate. The Agreement shall terminate effective on the later of (i) the mutually agreed date of termination, or (ii) in the event filing of the notice of termination is required, the date FERC accepts such notice.

4.4.4 Effect of Expiration or Termination. Upon the expiration or termination of this Agreement for any reason, each Party will be released from all obligations to the other Party arising after the date of expiration or termination, except that expiration or termination of this Agreement will not (i) relieve either Party of those terms of this Agreement which by their nature are intended to survive, including without limitation Section 4.1.3 (Invoices), Section 4.2 (Confidentiality), Section 4.5 (Dispute Resolution), Section 4.6 (Representations and Warranties), Section 4.7 (Liability), Section 4.8 (Insurance), Section 4.11 (Notices), Section 4.13 (Governing Law and Forum), Section 4.18 (Mergers), Section 4.19 (Severability), and Section 4.20 (Amendments), (ii) relieve MWD of its payment obligations for services already rendered in accordance with the terms of this Agreement, or (iii) relieve either Party from any liability arising from any breach of this Agreement.

4.4.5 Transition Assistance. Except in the case of a termination for a default by MWD, if MWD so requests, CAISO will reasonably assist MWD to transition to another Planning Coordinator, including providing data and assistance, provided that MWD will reimburse CAISO for its reasonable costs of such assistance.

4.5 Dispute Resolution. The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. If such efforts do not result in settlement, Section 4.13 shall apply.

4.6 Representation and Warranties. Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

4.7 Liability.

4.7.1 Limitation of Liability. Neither Party shall be liable to the other Party under any circumstances, whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits, loss of earnings or revenue, loss of use, loss of contract or loss of goodwill, arising out of or in connection with this Agreement or the services performed in connection with this Agreement.

4.7.2 Assessment of Penalties. If FERC, NERC or WECC assesses one or more monetary penalties against CAISO as a Planning Coordinator for the violation of one or more applicable Reliability Standards, and the conduct or omission(s) of MWD as a TP, or its TP, contributed, in whole or in part, to the violation(s) at issue, then the CAISO may recover from MWD that portion of the penalty that resulted from MWD's conduct or omissions(s) provided that each of the conditions set forth in Section 14.7.2.1 of the CAISO Tariff are met except that references to the Market Participant that caused or contributed to the violation at issue should be taken to be references to MWD, and instead of the payment provisions described in Section 14.7.2.5 of the CAISO Tariff, the payment provisions in Section 4.1.3 of this Agreement shall apply.

4.8 Insurance. CAISO is responsible for maintaining in force, during the full term of the Agreement, reasonable levels of Commercial General Liability, Workers' Compensation, Commercial Auto Liability and Professional Liability insurance coverage.

4.9 Uncontrollable Forces Tariff Provisions. The Parties agree that Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Sections 14.1, 14.2 and 14.3 of the CAISO Tariff to Market Participants shall be read as a reference to MWD and references to the CAISO Tariff shall be read as references to this Agreement.

4.10 Assignments. Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. In the case of MWD, a prior written consent must be executed and approved in the same

manner as this Agreement. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.

4.11 Notices. The Parties agree that any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4.1 of the CAISO Tariff, provided that all references in Section 22.4.1 of the CAISO Tariff to Market Participants shall be read as a reference to MWD and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed, shall be made to the representative of the other Party indicated in Attachment 4.

4.12 Waivers. Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matters arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

4.13 Governing Law and Forum. This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder.

The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement, shall be brought in any of the following forums, as appropriate: any court of the State of California or any federal court of the United States of America located in either Los Angeles or Sacramento in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

4.14 Compliance with Laws. The Parties shall keep themselves fully informed of all federal, state and local laws in any manner affecting the performance of this Agreement, and must at all times comply with such applicable laws as they may be amended from time to time.

4.15 Taxes. Payment of any taxes, including possessory interest taxes and California sales and use taxes, levied upon or as a result of this Agreement, or the services delivered pursuant hereto, shall be the obligation of the CAISO.

4.16 Equal Employment Opportunity, Affirmative Action, and Notification of Employee Rights Under the NLRA. MWD is an equal opportunity employer and a federal contractor. Consequently, the Parties agree that, as applicable, they will abide by the requirements of 41 CFR 60-1.4(a), 41 CFR 60-300.5(a), and 41 CFR 60-741.5(a) and that these regulations are incorporated herein by reference. These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. These regulations require that covered entities take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status, or disability. The Parties additionally agree that, as applicable, they will abide by the written affirmative action program requirements of 41 CFR 60-1.40, 41 CFR 60-300.40, and 41 CFR 60-741.40. The Parties also agree that, as applicable, they will abide by the requirements of Executive Order 13496 (29 CFR Part 471, Appendix A to Subpart A), relating to the notice of employee rights under federal labor laws. The Parties further agree that, as applicable, they will abide by the requirements of Federal Acquisition Regulation Clauses 52.222-26 (Equal Opportunity), 52.222-35 (Equal Opportunity for Veterans), 52.222-36 (Affirmative Action for Workers with Disabilities), and 52.222-40 (Notification of Employee Rights Under the National Labor Relations Act) and that these regulations are incorporated herein by reference. CAISO agrees to submit to MWD evidence of compliance with this article, as applicable, within 30 days of a request.

4.17 Subcontracting. Neither Party may subcontract this Agreement, or any part of thereof, unless such subcontracting is first approved by the other Party in writing. Neither Party shall, on the basis of this Agreement, contract on behalf of or in the name of the other Party. An agreement made in violation of this provision shall confer no rights on any Party and shall be null and void.

4.18 Merger. This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

4.19 Severability. If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental

agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

4.20 Amendments. This Agreement may be amended from time to time by the mutual agreement of the Parties in writing. The Attachments hereto may be modified from time to time by the Authorized Representatives in writing and such modification shall not constitute an amendment to this Agreement. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective.

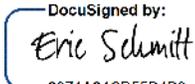
4.21 Authorized Representatives. The Parties hereby designate their respective initial Authorized Representatives listed in Attachment 4 as the persons authorized to represent such Party in carrying out the implementation and administration of this Agreement as specified herein. Either CAISO or MWD may change the designation of any of its Authorized Representatives by Notice in accordance with this Agreement. The Authorized Representatives shall have no authority to amend any provision of this Agreement.

4.22 Counterparts. This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.



IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed as of the dates written hereinafter.

California Independent System Operator Corporation:

By:  _____
0971A84CB56B4B8...

Name: Eric Schmitt

Title: VP, Operations

Date: 7/6/2016

Metropolitan Water District of Southern California:

By:  _____
ABE99E1AF6E8404...

Name: Debra Man

Title: Asst General Manager/COO

Date: 7/21/2016

Attachment 1

Diagram

CRITICAL ENERGY INFRASTRUCTURE
INFORMATION

REDACTED PURSUANT TO

18 CFR § 388.112

Attachment 2

CAISO and MWD Coordination for PC and TP Requirements

1. Interconnections

Applicable standard: FAC-002-2

With respect to interconnections to the MWD BES Facilities, MWD or its TP will conduct reliability impact studies pursuant to its facilities interconnection procedures and will provide facility interconnection information and study results to the CAISO. As appropriate, the CAISO will incorporate information from MWD or its TP's reliability impact studies in CAISO's Large Generator Interconnection Procedure ("LGIP") and Transmission Planning Process ("TPP") studies. MWD or its TP and CAISO will jointly evaluate, coordinate and cooperate on reliability impact studies.

2. Transmission Planning

Applicable NERC standard and WECC criteria: TPL-001-4; WECC Regional Criteria TPL-001-WECC-CRT-2.1

MWD or its TP will participate in the CAISO TPP. MWD or its TP will submit to the CAISO the information about the MWD system that the CAISO requires to undertake its TPP. The CAISO will undertake its TPP in accordance with its Tariff and BPMs.

3. SOLs, Transfer Capability and Stability Limits

Applicable standards: FAC-010-2.1, FAC-013-2, FAC-014-2.

CAISO documents and shares its SOL Methodology for use in developing SOLs within its Planning Authority Area, and includes sharing its SOL Methodology with MWD or its TP. MWD or its TP will establish, and provide to CAISO, SOLs for the MWD system consistent with the CAISO SOL Methodology. CAISO will adopt SOLs for its Planning Authority Area, incorporating as appropriate the information provided by MWD or its TP. MWD or its TP will provide CAISO MWD BES Facility ratings for CAISO to include in its transfer capability studies performed under FAC-013-2. CAISO will provide its Transfer Capability Methodology and assessment results to MWD or its TP. MWD or its TP will provide to CAISO MWD's list of multiple MWD/Adjacent System contingencies (if any) which result in stability limits on the MWD system for use by the CAISO as appropriate in carrying out its responsibilities under FAC-014-2.

4. Modeling

Applicable standards: MOD-016-1.1, MOD-017-0.1, MOD-018-0 and MOD-019-0.1, which will be replaced by MOD-031-1 (effective 7/1/2016); MOD-032-1 R1 (7/1/2015); and MOD-032-1 R2, R3, R4 (effective 7/1/2016)

MWD or its TP will provide to CAISO MWD's transmission system load and modeling data pursuant to the requirements from MOD-032-1. Currently, MWD provides such data to SCE as its TP. SCE provides MWD's data to the CAISO in accordance with a document entitled "CAISO & SCE Joint Transmission Planning Base Case Preparation Process", which is available on the caiso.com website. This document includes requirements from MOD-032-1 and the WECC Data Preparation Manual. The CAISO will include this data in its documentation for its Planning Authority Area and/or Balancing Authority Area, developed consistent with the NERC MOD Standards, the CAISO Tariff and BPMs, that identify the scope and details of the actual and forecast (a) Demand data, (b) Net Energy for Load data, and (c) controllable DSM data to be reported for system modeling and reliability analyses. The CAISO will use the MWD's transmission system load and modeling data provided by MWD or its TP as needed to meet CAISO's obligations under MOD-031-1 and MOD-032-1 respectively. There are currently no MWD interruptible demands or DCLM load data on the MWD system.

5. UFLS

Applicable standard: PRC-006-2

MWD or its TP will participate in and/or provide information as necessary for CAISO's studies and activities related to PRC-006-2.

6. Transmission Relay Loadability

Applicable standard: PRC-023-3

CAISO will include the MWD BES Facilities in its Transmission Register as non-PTO facilities and will include such Facilities in its determination of assessments required under PRC-023-3 R6. Upon request, MWD or its TP will provide Facilities information needed by CAISO to perform its PRC-023-3 R6 evaluations.

7. Nuclear

Not Applicable.



Attachment 3

[Exemplar] Calculation of Annual Service Fee For 2016

Table 1 – TPP Cost Calculation Using 2015 GMC Update Cost of Service Study¹

Cost of Long Term Transmission Planning ²						
ABC Level 2 Activities (\$ in thousands) all in Systems Operations	ABC Level 1	ABC Level 2	Amount	2014 Factor	Allocation	
Regulatory contract procedures	80001	201	\$378	0%	-	
Manage Generator Interconnection Procedures (GIP) agreements	80001	202	\$818	0%	-	
Manage GIP	80001	203	\$2,342	0%	-	
Long Term Transmission Planning – TPP	80001	204	\$4,273	50%	\$2,137	
New transmission resources	80001	205	\$552	0%	-	
Transmission maintenance studies	80001	206	\$499	0%	-	
Load resource data	80001	207	\$268	0%	-	
Season assessment	80001	208	\$223	0%	-	
Queue management	80001	209	\$615	0%	-	
Annual Delivery Assessment	80001	210	25	0%	-	
Subtotal: TPP Direct costs (see reference 2)			\$9,993		(1) \$2,137	
Total System Operations Direct Costs (see reference 1, Table 22)					(2) \$48,915	
Percentage of TPP to ABC level 2 Direct Costs [(1)/(2)]					(3) 4.37%	
Total System Operations Indirect Dollars (see reference 1, Table 22)					(4) \$88,809	
Subtotal: TPP related indirect costs [(3) x (4)]					(5) \$3,879	
Total Direct and Indirect level 2 TPP costs [(1) + (5)]					(6) \$6,016	

Annual Planning Coordinator Service Charge Calculation (\$ in thousands)

Total number of PTO transmission circuits in ISO 2014/2015 Transmission Plan	(7) 1550
Total number of transmission circuits in MWD system	(8) 4
TPP cost per PTO transmission circuit in ISO 2014/2015 Transmission Plan [(6) / (7)]	(9) \$3.88
Initial Annual Planning Coordinator service charge (\$ in 1000s) [(8) x (9)]	\$15.525

¹ California ISO 2015 GMC Update Cost of Service Study, April 2, 2014

² Table 14; California ISO 2015 GMC Update Cost of Service Study, April 2, 2014

Attachment 4

Notices & Authorized Representatives

1. As to the CALIFORNIA INDEPENDENT SYSTEM OPERATOR:

Authorized Representative:

Neil Millar
Executive Director, Infrastructure Development
California Independent System Operator Corporation
Street: 250 Outcropping Way
City / State / Zip: Folsom, CA 95630
Phone: (916) 608-1113
Email: nmillar@caiso.com

Contract Administration:

Attn: Regulatory Contracts
Phone: (916) 351-4400
Email: RegulatoryContracts@caiso.com

2. As to METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA:

Authorized Representative:

Jon C. Lambeck
Manager, Power Operations and Planning
Metropolitan Water District of Southern California
Street: 700 North Alameda Street
City / State / Zip: Los Angeles, CA 90012
Phone: (213) 217-7381
Facsimile: (213) 830-4529
Email: jlambeck@mwdh2o.com

Contract Administration:

Attn: Ann Finley or Ernest Hahn
Phone: (213) 217-7136 or (213) 217-7185
Email: afinley@mwdh2o.com or ehahn@mwdh2o.com

CAISO Invoices:

Submit invoices to MWD's Accounts Payable Section at:
Email: AccountsPayableBusiness@mwdh2o.com

Send copy of invoices to: Jon C. Lambeck
Phone: (213) 217-7381
Email: jlambeck@mwdh2o.com

With additional Notices of an Event of Default or Potential Event of Default to:

Attn: MWD Legal Department
Phone: (213) 217-6317
Email: mparsons@mwdh2o.com

Attachment B – Declaration of April Gordon
Planning Coordinator Agreement between
California Independent System Operator Corporation and
Metropolitan Water District of Southern California

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

**California Independent System) Docket No. ER17-____-000
Operator Corporation)**

**DECLARATION OF APRIL GORDON
ON BEHALF OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

I, April Gordon, state as follows:

1. I am employed as Manager of Financial Planning and Procurement for the California Independent System Operator Corporation (the "CAISO"). My business address is 250 Outcropping Way, Folsom, California 95630. I am responsible for the CAISO's budget preparation and management; long term planning; corporate procurement and contract management. As part of my duties at the CAISO, I oversee the development of the CAISO's grid management charge.

2. I participated in the creation of the "California ISO – 2015 GMC Update Cost of Service Study – April 2, 2014", attached as Exhibit 1 to my declaration, and the spreadsheets calculating estimated costs that the CAISO will incur to provide planning services to the Metropolitan Water District of Southern California ("MWD") under the Planning Coordinator Agreement between the CAISO and MWD, attached as Exhibit 2 to my declaration.

3. To the best of my knowledge, the information provided in Exhibits 1 and 2 is a true and accurate description and estimate of the costs that the CAISO will incur in providing planning services to MWD, under the Planning Coordinator Agreement between the CAISO and MWD, in 2016 for each billing unit identified.

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

Executed on: October 24, 2016

/s/ April Gordon
April Gordon

Exhibit 1 to the Declaration of April Gordon
California ISO – 2015 GMC Update Cost of Service Study – April 2, 2014
Planning Coordinator Agreement between
California Independent System Operator Corporation and
Metropolitan Water District of Southern California



California ISO

**2015 GMC Update
Cost of Service Study**

April 2, 2014

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Executive Summary

The revenue requirement limit established by the ISO and developed with stakeholders during the 2012 grid management charge (GMC) stakeholder initiative and budget process will expire on December 31, 2014. According to tariff section 11.22.2.5, the ISO is required to seek Federal Energy Regulatory Commission (FERC) approval of another revenue requirement maximum for the period beginning January 1, 2015. To determine whether changes should be made to the revenue requirement cap or the GMC structure, the ISO has updated its 2012 cost of service analysis, which was based on 2010 costs, for 2015 and beyond.

By way of background, the ISO implemented activity based costing (ABC) in 2010, which was utilized for the 2012 cost of service study to restructure the GMC rate design. The new GMC design was vetted through a comprehensive stakeholder process and approved by the ISO Board of Governors (ISO Board) and FERC in 2011 to be effective on January 1, 2012. The structure contains three cost categories: market services, system operations and congestion revenue rights (CRR) services and percentages that are applied to the revenue requirement to determine the amount in the three cost categories upon which rates are set. The market services charge code is designed to recover costs the ISO incurs for running the markets. The system operations charge code is designed to recover costs the ISO incurs for reliably operating the grid in real time. The CRR charge code recovers costs the ISO incurs for running the CRR markets.

The updated 2015 cost of service analysis uses 2013 data to determine the percentages for the three cost categories, as reflected in the table below and is summarized in Exhibit 2. This cost of service analysis also updated the energy imbalance market (EIM) and transmission ownership rights (TOR) rates. The ISO has posted the EIM rate update development and the TOR rate update development in the other papers posted at the same time as this cost of service update.

Summary of Cost Category Percentages

Cost Category Percentages from Cost of Service Studies	2010 Study effective for 2012	2013 Study to effective for 2015	Change
Market Services	27%	27%	-
System Operations	69%	70%	1%
CRR Services	4%	3%	(1%)

The 2012 Cost of Service Study Overview and Activity Based Costing (ABC)

On September 30, 2011, FERC approved the ISO's redesigned GMC with an effective date of January 1, 2012.¹ As part of the 2012 GMC stakeholder initiative that led up to the FERC submission, the ISO conducted a cost of service study based, for the first time, on the recently implemented Activity Based Costing (ABC) model (2012 cost of service study), using 2010 ISO costs.² The ISO then used the 2012 cost of service study to calculate the cost allocation percentages assigned to the three cost of service "buckets": market services, system operations and CRR services, as well as the associated fees including the TOR fee.

This 2015 cost of service study uses the same ABC modeling and cost allocation methodology used to calculate the cost allocation percentages and TOR fee. However, the 2015 cost of service study updates the 2012 analysis by using 2013 data and also incorporates changes to the level 1 and 2 ABC processes that the ISO has made since the 2012 cost of service study. As discussed in more detail below, the ISO in 2011 completed its implementation of all ABC level 2 processes. At the start of 2013, ABC encompassed nine level 1 processes that align with the ISO's core business processes (see chart below). These processes were then broken down into 153 level 2 activities that align with a level 1 process and are a granular breakdown of the core business functions. See Exhibit 1 for a description of the ISO business process framework overview.

¹ See *California Independent System Operator Corp.* 136 FERC ¶61,236 (2011).

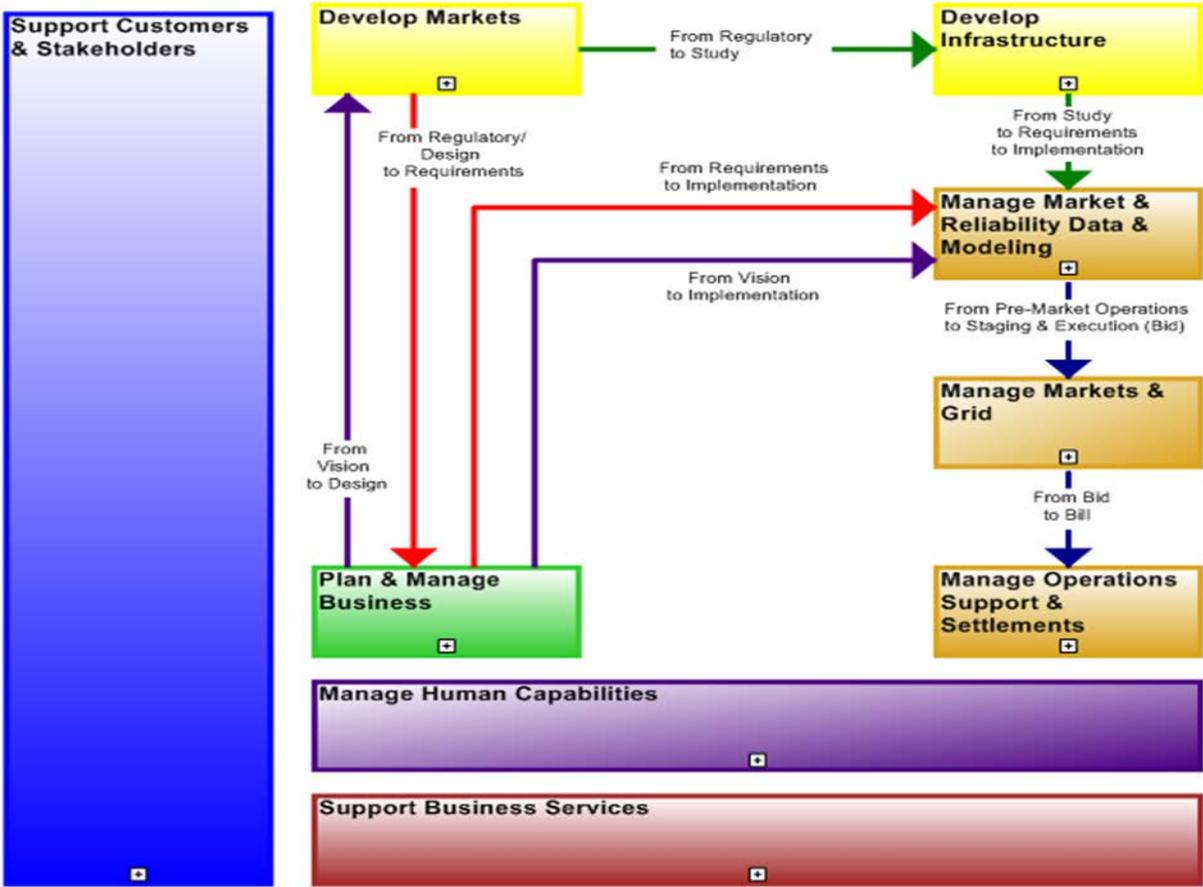
² The 2012 cost of service study can be found at: <http://www.caiso.com/Documents/2012Cost-ServiceStudyDiscussionPaperwithExhibits.pdf>

Application of ABC to GMC Structure

When the ISO, in 2010, conducted the 2012 cost of service study, time reporting for ABC level 1 activities had just been implemented. Full level 2 reporting, using activity codes and time sheet reporting, commenced in 2011 and has now been completed. This process is continually being reviewed and developed, and changes in definitions and levels have occurred since the 2012 cost of service study.

Currently, the ABC analysis has disaggregated the ISO into nine core processes (level 1 activities). Each of the core activities were further broken down into major processes (level 2 activities) that were mapped to the level one activity.

Mapping of ISO Core Business Processes



The level 2 processes discussed in this study are mapped and defined as of January 1, 2013. The level 1 activities can be categorized into two types: (1) direct operating costs —

those that can be directly mapped to a market, grid service or customer; and (2) support or indirect costs — those that support the direct activity.

Table 1 — Level 1 ABC Activities

Level 1 ABC Activity	Direct or support cost	Number of Level 2 activity codes	Level 1 Charge Code
Develop Infrastructure	Direct operating cost	11	80001
Develop Markets	Direct operating cost	9	80002
Manage Market and Reliability Data and Modeling	Direct operating cost	21	80004
Manage Market and Grid	Direct operating cost	13	80005
Manage Operations Support and Settlements	Direct operating cost	19	80006
Support Customers and Stakeholders	Direct operating cost	11	80010
Plan and Manage Business	Support costs	15	80008
Support Business Services	Support costs	46	80009
Manage Human Capabilities	Support costs	8	80003

Mapping of ABC Direct Operating Activities

These activities are defined, linked to specific processes, and measurable. Using the three GMC categories, the level 2 activities were mapped as either (1) all in one category or not in the category (100% or 0%); (2) a split between two categories (50% / 50%); or (3) partially in one category or another (80% or 20%) — or in the case of CRRs, a small portion of the activity (10%).

Table 2 — Mapping of ABC Direct Operating Activities to Cost Categories

Mapping of ABC level 2 Direct Operating Activities to Cost Categories						
ABC Level 2 Activities	Cost Code	Market services	System Operations	CRR services	Indirect	Comments
		% of cost to allocate to category				
Definitions used in allocation		100%				the costs are entirely to support the market results and function resulting in a financially binding schedule or ancillary servicer award
			100%			the costs are entirely to support system operations
				100%		the costs are entirely to support the CRR process
					100%	Attributes are not distinguishable to any specific category
		50%	50%			the costs support equally both market and system operations
		45%	45%	10%		this is a 50/50 split after a minimum allocation to CRRs
		80%	20%			the costs are predominantly market related but have some operational relationship
		20%	80%			the costs are predominantly operational flow based but have some market relationship
Develop Infrastructure (DI) (80001)						

Mapping of ABC level 2 Direct Operating Activities to Cost Categories						
ABC Level 2 Activities	Cost Code	Market services	System Operations	CRR services	Indirect	Comments
% of cost to allocate to category						
Regulatory contract procedures	201				100%	Attributes are not distinguishable to any specific category
Manage generation interconnection project (GIP) agreements	202		100%			managing the building and maintaining of the grid thus the costs are entirely to support system operations
Manage GIP	203		100%			
Long-term transmission planning	204		100%			
New transmission resources	205		100%			
Transmission maintenance studies	206		100%			
Load resource data	207		100%			
Seasonal assessment	208		100%			
Queue management	209		100%			
Annual delivery assessment	210		100%			
Develop Markets (DM) (80002)						
Manage tariff amendments	227				100%	Attributes are not distinguishable to any specific category
Post-order rehearing comp	228				100%	
State / Federal regulatory policy	229				100%	
Business process manual change management process	230				100%	
Develop infrastructure policy	231		100%			managing the building and maintaining of the grid thus the costs are entirely to support system operations
Perform market analysis	232	100%				the costs are entirely to support the market results & function
Develop market design	233	100%				
Regulatory contract negotiations	234				100%	Attributes are not distinguishable to any specific category
Manage Market and Reliability Data and Modeling (MMR) (80004)						
Manage full network model (FNM) maintenance	301	50%	50%			the costs support equally both market and system operations
Plan and develop operations simulator training	302	20%	80%			significantly more operational procedures, thus the costs are predominantly operational flow based but have some market relationship
ISO meter certification	303		100%			measuring flows on the grid thus the costs are entirely to support system operations
Energy measure acquisition and analysis (EMMAA) telemetry	304		100%			measuring flows on the grid thus the costs are entirely to support system operations
Metering system configuration for market resources	305		100%			
Manage CRRs	307			100%		the costs are entirely to support the CRR process
Manage credit and collateral	308	45%	45%	10%		this is a 50/50 split after a minimum allocation to CRRs
Resource management	309	50%	50%			resource attributes that support both thus the costs support equally both market and system operations
Manage reliability requirements	310		100%			relates to actual system operations thus the costs are entirely to support system operations
Manage operations planning	311		100%			
Manage WECC seasonal studies	312		100%			
Participating intermittent resource projects (PIRP)	313	20%	80%			significantly more operational procedures, thus the costs are predominantly

Mapping of ABC level 2 Direct Operating Activities to Cost Categories						
ABC Level 2 Activities	Cost Code	Market services	System Operations	CRR services	Indirect	Comments
% of cost to allocate to category						
Manage & facilitate procedure maintenance	314	20%	80%			operational flow based but have some market relationship
Procedure administration and reporting	315	20%	80%			
Plan and develop operations training	316	20%	80%			
Execute and track operations training	317	20%	80%			
California Electric Training Advisory Committee (CETAC) activities	318		100%			relates to actual system operations thus the costs are entirely to support system operations
Provide stakeholder training	320				100%	Attributes are not distinguishable to any specific category
SC management	321				100%	
Manage Markets and Grid (MMG) (80005)						
Manage day ahead (DA) market support	352	100%				the costs are entirely to support the market results & function
Operations real time (RT) support	353	50%	50%			the costs support equally both market and system operations
Outage model and management	355		100%			relates to actual system operations thus the costs are entirely to support system operations
Manage DA market	358	50%	50%			while managing market it results in system starting point for operational flows thus the costs support equally both market and system operations
Manage pre and post scheduling	359		100%			relates to actual system operations thus the costs are entirely to support system operations
Manage operations engineering support	362	20%	80%			based on support of DA and RT thus the costs are predominantly operational flow based but have some market relationship
RT market – shift supervisor – manage post DA and pre RT	363	50%	50%			the costs support equally both market and system operations
RT Operations – generation and RT renewables coordinator (GRC) desks - maintain balancing area and manage RT pre dispatch	364	20%	80%			based on support of DA and RT thus the costs are predominantly operational flow based but have some market relationship
RT Operations – transmission desk – manage transmission and electric system	365		100%			relates to actual system operations thus the costs are entirely to support system operations
RT Operations – scheduling desk – manage RT interchange scheduling	366		100%			
Manage Operations Support and Settlements (MOS) (80007)						
Manage price validation & corrections	401	50%	50%			related to proper outage allocation thus the costs support equally both market and system operations
Manage dispute analysis & resolution	402				100%	Attributes are not distinguishable to any specific category
Manage the market quality system (MQS)	403	50%	50%			portion of MQS relates to operational flows thus the costs support equally both market and system operations
Manage data requests	404				100%	Attributes are not distinguishable to any specific category
Manage regulation no pay & deviation penalty calculations	405		100%			measuring actual performance thus the costs are entirely to support system operations
Manage rules of conduct	406				100%	Attributes are not distinguishable to any specific category

Mapping of ABC level 2 Direct Operating Activities to Cost Categories						
ABC Level 2 Activities	Cost Code	Market services	System Operations	CRR services	Indirect	Comments
% of cost to allocate to category						
Periodic meter audits	407		100%			measuring actual performance thus the costs are entirely to support system operations
ISO remote intelligence gateway (RIG) engineering	408		100%			
Manage energy measurement acquisition & analysis	409		100%			
Manage market clearing	411	45%	45%	10%		this is a 50/50 split after a minimum allocation to CRRs
Manage market billing & settlements	412	45%	45%	10%		
Manage reliability must run (RMR) settlements	413		100%			Supports reliability on the grid thus the costs are entirely to support system operations
Manage settlements release cycle	414	45%	45%	10%		this is a 50/50 split after a minimum allocation to CRRs
Manage market performance	417	50%	50%			the costs support equally both market and system operations
Manage dispute analysis and resolution	418				100%	Attributes are not distinguishable to any specific category
Perform market validation	419	50%	50%			the costs support equally both market and system operations
Support Customers and Stakeholders (SCC) (80010)						
Represent ISO externally	539				100%	Attributes are not distinguishable to any specific category
Client inquiries	601				100%	
Account management	602				100%	
Stakeholder processes	603				100%	
Develop participating transmission owners	605		100%			managing the building and maintaining of the grid thus the costs are entirely to support system operations
Service new clients	606				100%	Attributes are not distinguishable to any specific category
Government affairs	609				100%	Attributes are not distinguishable to any specific category
Communications and public relations	610				100%	

Allocation of Debt Service and Capital

Debt service is the aggregation of principle, interest, and a 25 percent debt service reserve on the 2008 and 2009 bonds. The debt service is the capital spent on projects over the last six years because the 2008 bonds rolled up the 2004, 2006 and 2007 bonds. The assets funded were broken down into operations related software, general software and fixed assets. The 2009 bonds funded the corporate headquarters so the debt service was allocated 100 percent to indirect. The revenue requirement also includes cash funded capital. The funds raised from the GMC go to maintaining a long term capital reserve fund, which varies from the capital project budget for that year. The number of and cost for capital projects vary significantly from year to year. The annual budget approves the spending limits for capital but not the projects themselves. A proposed listing is provided but the actual projects are subject to review

and approval by an internal management committee as needed during the year. Because of the uncertainty of the actual projects coming on line, 100 percent of the cash funded capital will be allocated to indirect.

Table 3 — Allocation of Debt Service and Capital to GMC Cost Categories

Allocation of Debt Service and Capital to GMC cost categories					
System	Market services	System operations	CRR services	Indirect	Comments
% of cost to allocate to category					
2008 Bond Debt Service					
Operations Related Software					
Automated Dispatch System (ADS)		100%			RT instructions from market to system operations thus the costs are entirely to support system operations
Automated Load Forecast System (ALFS)	50%	50%			market & operations both need forecasts thus the costs support equally both market and system operations
CRR			100%		the costs are entirely to support the CRR process
DMM & compliance tools (SAS MARS)	50%	50%			the costs support equally both market and system operations
Energy Management System (EMS)		100%			the costs are entirely to support system operations
Existing Transmission Contracts Calculator (ETCC)		100%			This is a balancing authority responsibility
FNM / State estimator	50%	50%			Needed for market and system operations thus the costs support equally both market and system operations
Integrated Forward Market (IFM)	50%	50%			results support both financially binding schedules and system operations thus the costs support equally both market and system operations
MQS	50%	50%			aligns with direct operating process thus the costs support equally both market and system operations
Master file	50%	50%			
Meter Data Acquisition System (MDAS)		100%			data feed reflecting settling actual flow of systems operations performance thus the costs are entirely to support system operations
New Resource Interconnection (RIMs)	20%	80%			based on staff training for market services & system operations thus the costs are predominantly operational flow based but have some market relationship
Open Access Same Time Information System (OASIS)	50%	50%			the costs support equally both market and system operations
Operational Meter Analysis & Reporting (OMAR)		100%			same as MDAS thus the costs are entirely to support system operations
PIRP	20%	80%			based on staff training for market services & system operations thus the costs are predominantly operational flow based but have some market relationship
Portal	50%	50%			the costs support equally both market and system operations
CAISO Market Results interface (CMRI)	50%	50%			
Process Information System (PI)		100%			the costs are entirely to support system operations
RT markets	20%	80%			support & provide actual dispatches to balance system thus the costs are predominantly operational flow based but have some market relationship
HA Scheduling Protocol (HASP)	50%	50%			includes market power mitigation thus the costs support equally both market and system operations
Resource Adequacy	50%	50%			
RMR application Validation Engine (RAVE)	50%	50%			The costs support equally both market and system operations
Scheduling & Logging for ISO CA (SLIC)	50%	50%			

Allocation of Debt Service and Capital to GMC cost categories					
System	Market services	System operations	CRR services	Indirect	Comments
% of cost to allocate to category					
Control Area Scheduler (CAS)		100%			This is a balancing authority responsibility
Scheduling Infrastructure Business Rules (SIBR)	50%	50%			This contains interface to operations thus the costs support equally both market and system operations
Settlements & Market Clearing (SaMC)	15%	75%	10%		Based on DA and RT charge codes which settle 12 intervals operations hour for operations versus hourly for market thus after a minimum allocation to CRRs the costs are predominantly operational flow based but have some market relationship
General Software and Fixed Assets					
Client relations & engineering analysis tools				100%	Attributes are not distinguishable to any specific category
Local Area Network (LAN), WAN & monitoring (Tivoli)				100%	
Office automation desktop laptop (OA)				100%	
Oracle Corporate Financials				100%	
Security External Physical & ISS (CUDA)				100%	
Storage (EMC symmetrix)				100%	
Land and feasibility studies				100%	
NT servers and WEB servers				100%	
New system equipment				100%	
Office equipment, physical facilities software, furniture & leasehold improvements				100%	
2009 Bond Debt Service					
Iron Point headquarters				100%	Attributes are not distinguishable to any specific category
Cash Funded Capital					
Capital Project fund				100%	Amounts and projects vary yearly thus attributes are not distinguishable to any specific category

Allocation of Non-Payroll Support Costs

For the next step, significant non-payroll costs were pulled out of the operations and maintenance budget and allocated to buckets based on specific charge codes or to indirect costs. (see Table 4 next page)

Table 4 — Allocation of Non-Payroll Support Costs to GMC Cost Categories

Allocation of Non-Payroll Support Costs to GMC Cost Categories					
System	Market services	System operations	CRR services	Indirect	Comments
% of cost to allocate to category					
Technology Division					
Hardware and software maintenance and leases				100%	Attributes are not distinguishable to any specific category
Communications (AT&T)				100%	
Occupancy costs				100%	
Operations Division					
PIRP forecasting costs	20%	80%			Use 80004 activity 313
General Counsel and Administrative Services Division					
Outside legal fees, financial audits and bank fees				100%	Attributes are not distinguishable to any specific category
SSAE 16 audit	45%	45%	10%		Use 80007 activity 412
Operational assessment	TBD	TBD			To be based on total % for 80005
Insurance				100%	Attributes are not distinguishable to any specific category

Allocation of ABC Support activities

The ABC support activities were allocated to indirect.

Table 5 — Allocation of ABC Support activities to GMC Cost Categories

Allocation of ABC support activities to GMC Cost Categories						
System	Cost Code	Market services	System operations	CRR services	Indirect	Comments
% of cost to allocate to category						
Plan and manage business	80008				100%	Attributes are not distinguishable to any specific category
Support business services	80009				100%	
Manage human capabilities	80003				100%	

Allocation of Other Income and Operating Reserve Credit

The remaining revenue requirement components, other income and operating reserve credit, were then analyzed and allocated to buckets based on specific charge codes or to indirect costs.

Table 6 — Allocation of Other Income to GMC Cost Categories

Allocation of Other Income to GMC Cost Categories					
System	Market services	System operations	CRR services	Indirect	Comments
% of cost to allocate to category					
SC application fee				100%	Hardware and software maintenance and leases
MSS penalties				100%	
SC training fees				100%	
PIRP forecasting fees	20%	80%			Use 80004 activity 313
LGIP study fees		100%			Use 80001 activity 203
Interest				100%	Hardware and software maintenance and leases
COI path operator fees	TBD	TBD			To be based on total %s from 80005

Table 7 — Allocation of Operating Reserve Revenue Credit to GMC Cost Categories

Allocation of Operating Reserve Revenue Credit to GMC Cost Categories					
System	Market services	System operations	CRR services	Indirect	Comments
% of cost to allocate to category					
Change in operations and maintenance budget				100%	Hardware and software maintenance and leases
25% debt service reserve on 2008 bonds	TBD	TBD	TBD	TBD	Based on %s from 2008 bonds debt service allocation
25% debt service reserve on 2009 bonds				100%	Hardware and software maintenance and leases
Revenue changes				100%	
Expense changes				100%	

Indirect Costs

Indirect costs are aggregated and then allocated proportional to direct costs. After this mapping is completed it can be applied to the ISO revenue requirement to derive the related cost of service.

Costing the 2013 Revenue Requirement

The allocation matrix of level 2 activities and software was applied to the ISO's 2013 revenue requirement (based on the budget approved by the ISO Board in December 2012) to determine the costs associated with three categories: market services, system operations and CRR services. The 2013 revenue requirement data and employee hours are the most recent information available to both determine the GMC cost category percentage updates and the updated revenue requirement for the ISO's 2015 GMC tariff filing.

Table 8 — Components of the 2013 revenue requirement:

Revenue Requirement	2013 Budget (\$ in thousands)
Operating and maintenance costs	\$ 162,907
Debt service 2008 bonds	24,666
Debt service 2009 bonds	17,847
Cash funded capital	24,000
Other income	(7,900)
Operating reserve	(25,492)
Total Revenue Requirement	\$ 196,028

Completing the analysis required the following steps:

1. Breaking out non-ABC Operating and maintenance (O&M) support costs and applying cost category percentages to these costs;
2. Mapping the ABC direct and support O&M costs into two components: level 2 activities and support costs. This process involved:
 - a. allocating cost centers to level 1 ABC activities
 - b. applying cost category percentages to level 1 support costs
 - c. obtaining time estimates for level 2 activities for those level 1 activities that are direct operating costs
 - d. allocating costs to level 2 activities
 - e. applying cost category percentages;
3. Mapping remaining revenue requirements to cost categories and applying cost category percentages to these costs;
4. Aggregating costs and allocating indirect costs to cost categories based on percentage of direct costs, allocating fees to the three buckets and determining resulting cost category percentages; and
5. Dividing resulting costs by estimated volumes to determine 2013 rates using revised cost category percentages.

Step 1: Breaking Out Non-ABC Support Costs

There are two types of O&M costs; those that are activity related such as costs attributed to personnel, and non-ABC costs such as facilities costs. The O&M budget was broken down into those two categories. The significant non-ABC support costs were removed from the divisions and allocated separately.

Table 9 — Mapping Costs to ABC Activities and Non-ABC Support Costs

Mapping Costs to Direct and Support Activities and Non-ABC Support Costs		2013 Budget (\$ in thousands)		
		Total	ABC Activities	Non-ABC
Division				
Chief Executive Officer	2100	\$ 4,589	\$ 4,589	\$ -
Market and Infrastructure Development	2200	13,991	13,991	
Technology	2400	58,653	38,319	20,334
Operations	2500	42,724	42,021	703
General Counsel and Administrative Services	2600	27,070	19,234	7,836
Market Quality and Renewable Integration	2700	5,871	4,887	984
Policy and Client Services	2800	10,009	10,009	
Total		\$ 162,907	\$ 133,050	\$ 29,857

These budgeted costs were allocated using the percentages shown in *Table 4 — Allocation of Non-Payroll Support Costs to GMC Cost Categories*.

Table 10 — Allocation of Non-ABC Support to Cost Categories

Allocation of Non-ABC support costs									
Non-ABC support costs	Market Services	System Operations	CRRs	Indirect	2013 Budget	Market Services	System Operations	CRRs	Indirect
	% of costs allocated to activity				Cost of category \$ in thousands				
Technology Division									
Hardware and software maintenance and leases				100%	\$ 8,941	\$ -	\$ -	\$ -	\$ 8,941
Communications (AT&T)				100%	5,952				5,952
Occupancy costs				100%	5,441				5,441
Operations Division									
PIRP forecasting costs	20%	80%			1,687	337	1,350		
General Counsel and Administrative Services Division									
Outside legal fees, financial audits and bank fees				100%	5,180				5,180
SSAE 16 audit	45%	45%	10%		539	243	243	53	
Operational assessment	17%	83%			200	34	166		
Insurance				100%	1,917				1,917
Total					\$ 29,857	\$ 614	\$ 1,759	\$ 53	\$ 27,431

Step 2: Allocation of O&M Costs

For activity related O&M costs, the recent ABC structure was utilized to allocate costs between the cost categories. ISO activities have been broken out into nine level 1 ABC activities as shown in *Table 1 — Level 1 ABC Activities*. For those direct operating level 1 activities, the associated level 2 activities were mapped to one of the three cost categories as shown in *Table 2 — Mapping of ABC Level 2 Direct Operating Activities to Cost Categories*. The level 1 support activities were allocated to ABC support costs.

The O&M budget is comprised of approximately 103 cost centers. As discussed above, ISO staff has been coding their time to ABC level 1 and level 2 activities since 2011. The time for 2013 was collected and the percentage breakdown of each cost center by the level one and level 2 direct activities was determined. The percentage was applied to the activity budget for the cost center to allocate the cost center activity budget by dollars to the level one and level 2 direct operating activities.

ABC Direct Operating Activities

Table 11 — Mapping Division Hours to Direct Operating Activities

Mapping Division Hours to Direct Operating activities	Percentage of time related to direct operating activities					
	Develop infrastructure (DI)	Develop markets (DM)	Manage market and reliability and data modeling (MMR)	Manage markets and Grid (MMG)	Manage operations support and settlements (MOS)	Support customers and stakeholders (SCS)
Organization Name	80001	80002	80004	80005	80007	80010
Chief Executive Officer (CEO)						
Market and Infrastructure Development (MID)	74%	20%	2%			
Technology (Tech)			4%	3%	1%	
Operations (Ops)			21%	53%	18%	
General Counsel and Administrative Services (GCAS)		2%	4%		1%	
Market Quality and Renewable Integration (MQRI)	3%	46%	3%	6%	33%	
Policy and Client Services (PCS)			7%			87%
Total	8%	4%	9%	19%	7%	6%

The hours were aggregated by level 2 activity.

Table 12 — Mapping Division hours to level 2 activities

ABC Level 2 Activities	Cost Code	ISO Divisions							Total
		CEO 2100	MID 2200	Tech 2400	Ops 2500	GCAS 2600	MQRI 2700	PCS 2800	
Develop Infrastructure (DI) (80001)									
Regulatory contract procedures	201		100%						4%
Manage GIP agreements	202		100%						8%
Manage GIP	203		98%			2%			27%
Long-term transmission planning	204		100%						42%
New transmission resources	205		100%						3%
Transmission maintenance studies	206		100%						4%
Load resource data	207		100%						3%
Seasonal assessment	208		100%						3%
Queue management	209		100%						6%
Annual delivery assessment	210		100%						
Total			99%			1%			100%
Develop Markets (DM) (80002)									
Manage tariff amendments	227					100%			6%
Post-order rehearing comp	228		100%						1%
State / Federal regulatory policy	229		86%		14%				10%
Business process manual change management process	230		15%					85%	1%
Develop infrastructure policy	231		100%						14%
Perform market analysis	232						100%		28%
Develop market design	233						18%		38%
Regulatory contract negotiations	234		82%						2%
Total			59%		1%	6%	34%		100%
Manage Market & Reliability Data & Modeling (MMR) (80004)									
Manage FNM maintenance	301			74%	22%		4%		14%
Plan and develop operations simulator training	302			10%	90%				3%
ISO meter certification	303				100%				4%
EMMAA telemetry	304				100%				1%
Metering system configuration for market resources	305				100%				1%
Manage CRRs	307				100%				5%
Manage credit and collateral	308					100%			6%
Resource management	309				96%		4%		9%
Manage reliability requirements	310		38%		57%		5%		9%
Manage operations planning	311				96%		4%		13%
Manage WECC seasonal studies	312				100%				1%
PIRP	313				100%				
Manage & facilitate procedure maintenance	314				100%				8%
Procedure administration and reporting	315				100%				
Plan and develop operations training	316				95%		5%		7%
Execute and track operations training	317				97%		3%		13%
CETAC activities	318				100%				1%
Provide stakeholder training	320							100%	3%
SC management	321							100%	2%
Total			3%	12%	72%	6%	3%	4%	100%
Manage Markets and Grid (MMG) (80005)									

		ISO Divisions							
ABC Level 2 Activities	Cost Code	CEO 2100	MID 2200	Tech 2400	Ops 2500	GCAS 2600	MQRI 2700	PCS 2800	Total
Manage DA market support	352			94%	6%				
Operations RT support	353			57%	20%		23%		5%
Outage model and management	355				100%				11%
Manage DA market	358				100%				10%
Manage pre and post scheduling	359				100%				4%
Manage operations engineering support	362				100%				4%
RT market – shift supervisor – manage post DA and pre RT	363				100%				8%
RTO – GRC desks - maintain balancing area and manage RT pre dispatch	364				100%				24%
RTO – transmission desk – manage transmission and electric system	365				100%				19%
RTO – scheduling desk – manage RT interchange scheduling	366				100%				15%
Total				3%	96%		1%		100%
Manage Operations Support & Settlements (MOS) (80007)									
Manage price validation & corrections	401			20%	80%				2%
Manage dispute analysis & resolution	402			2%	98%				10%
Manage MQS	403			13%	87%				16%
Manage data requests	404				100%				2%
Manage regulation no pay & deviation penalty calculations	405				100%				
Manage rules of conduct	406				100%				2%
Periodic meter audits	407				100%				
ISO RIG engineering	408				100%				5%
Manage energy measurement acquisition & analysis	409				100%				12%
Manage market clearing	411					100%			2%
Manage market billing & settlements	412				96%	4%			17%
Manage RMR settlements	413				100%				
Manage settlements release cycle	414				100%				11%
Manage market performance	417						100%		3%
Manage dispute analysis and resolution	418							100%	
Perform market validation	419			1%	14%		85%		17%
Total				3%	78%	2%	17%		100%
Support Customers and Stakeholders (SCC) (80010)									
Represent ISO externally	539		16%	40%	1%	29%	7%	7%	3%
Client inquiries	601							100%	14%
Account management	602							100%	10%
Stakeholder processes	603							100%	7%
Develop participating transmission owners	605							100%	
Service new clients	606							100%	3%
Government affairs	609							100%	43%
Communications and public relations	610							100%	20%
Total						1%		98%	100%
Direct O&M			19%	5%	57%	2%	6%	11%	100%

Cost of Direct Operating Activities

These costs were inputs into the allocation matrix shown in *Table 2 — Mapping of ABC Level 2 Direct Operating Activities to Cost Categories* to get the costs to the cost categories.

Table 13 — Allocation of Division Costs to Direct Operating Activities

Mapping costs to direct and support activities & Other costs	Allocation of direct operating costs (\$ in thousands)						
	Develop infrastructure (DI)	Develop markets (DM)	Manage market and reliability and data modeling (MMR)	Manage markets and Grid (MMG)	Manage operations support and settlements (MOS)	Support customers and stakeholders (SCS)	Direct operating activities
Organization Name	80001	80002	80004	80005	80007	80010	Total
Chief Executive Officer (CEO)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Market and Infrastructure Development (MID)	9,726	3,340	352		3	37	13,458
Technology (Tech)	26		1,305	802	215	99	2,447
Operations (Ops)	3	79	7,491	24,689	5,509	4	37,775
General Counsel and Administrative Services (GCAS)	62	355	583		153	65	1,218
Market Quality and Renewable Integration (MQRI)	176	1,997	293	286	1,229	16	3,997
Policy and Client Services (PCS)		28	452		24	8,965	9,469
Total	\$ 9,993	\$ 5,799	\$ 10,476	\$ 25,777	\$ 7,133	\$ 9,186	\$ 68,364

The costs were aggregated by level 2 activity.

Table 14 — Allocation of Division Costs to Level 2 activity

ABC Level 2 Activities	Cost Code	ISO Divisions							Total
		CEO 2100	MID 2200	Tech 2400	Ops 2500	GCAS2 2600	MQRI 2700	PCS 2800	
Develop Infrastructure (DI) (80001)									
Regulatory contract procedures	201	\$ -	\$ 378	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 378
Manage GIP agreements	202		818						818
Manage GIP	203		2,251	26	3	62			2,342
Long-term transmission planning	204		4,273						4,273
New transmission resources	205		376				176		552
Transmission maintenance studies	206		499						499
Load resource data	207		268						268
Seasonal assessment	208		223						223
Queue management	209		615						615
Annual delivery assessment	210		25						25
Total			9,726	26	3	62	176		9,993
Develop Markets (DM) (80002)									
Manage tariff amendments	227					355			355
Post-order rehearing comp	228		30						30
State / Federal regulatory policy	229		485		79				564
Business process manual change management process	230		5					28	33
Develop infrastructure policy	231		829						829
Perform market analysis	232		2				1,602		1,604
Develop market design	233		1,847				395		2,242
Regulatory contract negotiations	234		142						142
Total			3,340		79	355	1,997	28	5,799
Manage Market & Reliability Data & Modeling (MMR) (80004)									

ABC Level 2 Activities	Cost Code	ISO Divisions							Total
		CEO 2100	MID 2200	Tech 2400	Ops 2500	GCAS2 2600	MQRI 2700	PCS 2800	
Manage FNM maintenance	301			1,274	377		73		1,723
Plan and develop operations simulator training	302			31	269				300
ISO meter certification	303				416				416
EMMAA telemetry	304				100				100
Metering system configuration for market resources	305				70				70
Manage CRRs	307				574				574
Manage credit and collateral	308					583			583
Resource management	309				875		35		910
Manage reliability requirements	310		352		535		44		930
Manage operations planning	311				1,262		59		1,322
Manage WECC seasonal studies	312				71				71
PIRP	313				1				1
Manage & facilitate procedure maintenance	314				841				841
Procedure administration and reporting	315				11				11
Plan and develop operations training	316				679		35		714
Execute and track operations training	317				1,336		47		1,384
CETAC activities	318				73				73
Provide stakeholder training	320							286	286
SC management	321							167	167
Total			352	1,305	7,490	583	293	453	10,476
Manage Markets and Grid (MMG) (80005)									
Manage DA market support	352			107	8				115
Operations RT support	353			695	250		286		1,231
Outage model and management	355				2,921				2,921
Manage DA market	358				2,564				2,564
Manage pre and post scheduling	359				974				974
Manage operations engineering support	362				1,148				1,148
RT market – shift supervisor – manage post DA and pre RT	363				2,021				2,021
RTO – GRC desks - maintain balancing area and manage RT pre dispatch	364				6,093				6,093
RTO – transmission desk – manage transmission and electric system	365				4,956				4,956
RTO – scheduling desk – manage RT interchange scheduling	366				3,754				3,754
Total				802	24,689		286		25,777
Manage Operations Support & Settlements (MOS) (80007)									
Manage price validation & corrections	401			31	125				156
Manage dispute analysis & resolution	402			16	709				725
Manage MQS	403			150	992				1,142
Manage data requests	404				97				97
Manage regulation no pay & deviation penalty calculations	405				8				8
Manage rules of conduct	406				165				165
Periodic meter audits	407				4				4
ISO RIG engineering	408				332				332
Manage energy measurement acquisition & analysis	409				926				926
Manage market clearing	411					111			111
Manage market billing & settlements	412				1,160	42			1,202
Manage RMR settlements	413				10				10

ABC Level 2 Activities	Cost Code	ISO Divisions							
		CEO 2100	MID 2200	Tech 2400	Ops 2500	GCAS2 2600	MQRI 2700	PCS 2800	Total
Manage settlements release cycle	414				807				807
Manage market performance	417						208		208
Manage dispute analysis and resolution	418							24	24
Perform market validation	419		3	18	175		1,020		1,216
Total			3	215	5,510	153	1,228	24	7,133
Support Customers and Stakeholders (SCC) (80010)									
Represent ISO externally	539		36	88	3	65	16	16	224
Client inquiries	601							1,318	1,318
Account management	602							889	889
Stakeholder processes	603				1			665	666
Develop participating transmission owners	605							8	8
Service new clients	606							299	299
Government affairs	609			10				3,979	3,989
Communications and public relations	610							1,793	1,793
Total			36	98	4	65	16	8,967	9,186
Direct O&M			\$ 13,458	\$ 2,447	\$ 37,775	\$ 1,218	\$ 3,997	\$ 9,469	\$ 68,364

For direct operating activities the costs were aggregated at level 2 and allocated to the cost category identified in *Table 2 — Mapping of ABC Level 2 Direct Operating Activities to Cost Categories*.

Table 15 — Mapping ABC Direct Operating Activities to Cost Categories

ABC Direct Operating Activities										
ABC Level 2 Activities	Cost Code	Market Services	System Operations	CRR Services	Indirect	2013 Budget	Market Services	System Operations	CRR Services	Indirect
% of costs allocated to activity						Cost of category \$ in thousands				
Develop Infrastructure (DI) (80001)										
Regulatory contract procedures	201				100%	\$ 378	\$ -	\$ -	\$ -	\$ 378
Manage GIP agreements	202		100%			818		818		
Manage GIP	203		100%			2,342		2,342		
Long-term transmission planning	204		100%			4,273		4,273		
New transmission resources	205		100%			552		552		
Transmission maintenance studies	206		100%			499		499		
Load resource data	207		100%			268		268		
Seasonal assessment	208		100%			223		223		
Queue management	209		100%			615		615		
Annual delivery assessment	210		100%			25		25		
Total DI						9,993		9,615		378
Develop Markets (DM) (80002)										
Manage tariff amendments	227				100%	355				355
Post-order rehearing comp	228				100%	30				30
State / Federal regulatory policy	229				100%	564				564
Business process manual change management process	230				100%	33				33
Develop infrastructure policy	231		100%			829		829		
Perform market analysis	232	100%				1,604	1,604			
Develop market design	233	100%				2,242	2,242			
Regulatory contract negotiations	234				100%	142				142

ABC Direct Operating Activities

ABC Level 2 Activities	Cost Code	Market Services	System Operations	CRR Services	Indirect	2013 Budget	Market Services	System Operations	CRR Services	Indirect	
					% of costs allocated to activity			Cost of category \$ in thousands			
Total DM						5,799	3,846	829		1,124	
Manage Market & Reliability Data & Modeling (MMR) (80004)											
Manage FNM maintenance	301	50%	50%			1,724	862	862			
Plan and develop operations simulator training	302	20%	80%			300	60	240			
ISO meter certification	303		100%			416		416			
EMMAA telemetry	304		100%			100		100			
Metering system configuration for market resources	305		100%			70		70			
Manage CRRs	307			100%		574			574		
Manage credit and collateral	308	45%	45%	10%		583	262	262	59		
Resource management	309	50%	50%			910	455	455			
Manage reliability requirements	310		100%			931		931			
Manage operations planning	311		100%			1,321		1,321			
Manage WECC seasonal studies	312		100%			71		71			
PIRP	313	20%	80%			1		1			
Manage & facilitate procedure maintenance	314	20%	80%			841	168	673			
Procedure administration and reporting	315	20%	80%			11	2	9			
Plan and develop operations training	316	20%	80%			714	143	571			
Execute and track operations training	317	20%	80%			1,383	277	1,106			
CETAC activities	318		100%			73		73			
Provide stakeholder training	320				100%	286				286	
SC management	321				100%	167				167	
Total MMR						10,476	2,229	7,161	633	453	
Manage Markets and Grid (MMG) (80005)											
Manage DA market support	352	100%				115	115				
Operations RT support	353	50%	50%			1,231	616	615			
Outage model and management	355		100%			2,921		2,921			
Manage DA market	358	50%	50%			2,564	1,282	1,282			
Manage pre and post scheduling	359		100%			974		974			
Manage operations engineering support	362	20%	80%			1,148	230	918			
RT market – shift supervisor – manage post DA and pre RT	363	50%	50%			2,021	1,011	1,010			
RTO – GRC desks - maintain balancing area and manage RT pre dispatch	364	20%	80%			6,093	1,219	4,874			
RTO – transmission desk – manage transmission and electric system	365		100%			4,956		4,956			
RTO – scheduling desk – manage RT interchange scheduling	366		100%			3,754		3,754			
Total MMG						25,777	4,473	21,304	-	-	
Total MMG %						100%	17%	83%			
Manage Operations Support & Settlements (MOS) (80007)											
Manage price validation and corrections	401	50%	50%			156	78	78			
Manage dispute analysis & resolution	402				100%	725				725	
Manage MQS	403	50%	50%			1,142	571	571			
Manage data requests	404				100%	97				97	
Manage regulation no pay & deviation penalty calculations	405		100%			8		8			

ABC Direct Operating Activities										
ABC Level 2 Activities	Cost Code	Market Services	System Operations	CRR Services	Indirect	2013 Budget	Market Services	System Operations	CRR Services	Indirect
					% of costs allocated to activity		Cost of category \$ in thousands			
Manage rules of conduct	406				100%	165				165
Periodic meter audits	407		100%			4		4		
ISO RIG engineering	408		100%			332		332		
Manage energy measurement acquisition & analysis	409		100%			926		926		
Manage market clearing	411	45%	45%	10%		111	50	50	11	
Manage market billing & settlements	412	45%	45%	10%		1,202	541	541	120	
Manage RMR settlements	413		100%			10		10		
Manage settlements release cycle	414	45%	45%	10%		807	363	363	81	
Manage market performance	417	50%	50%			208	104	104		
Manage dispute analysis and resolution	418				100%	24				24
Perform market validation	419	50%	50%			1,216	608	608		
Total MOS						7,133	2,315	3,595	212	1,011
Support Customers and Stakeholders (SCC) (80010)										
Represent ISO externally	539				100%	224				224
Client inquiries	601				100%	1,318				1,318
Account management	602				100%	889				889
Stakeholder processes	603				100%	666				666
Develop participating transmission owners	605		100%			8		8		
Service new clients	606				100%	299				299
Government affairs	609				100%	3,989				3,989
Communications and public relations	610				100%	1,793				1,793
Total SCC						9,297		8		9,297
Total Direct O&M						\$ 68,364	\$ 12,863	\$ 42,512	\$ 845	\$ 12,144
Direct O&M %						100%	19%	62%	1%	18%

ABC Support Activities

The same process yielded the following percentages for the three support activities.

Table 16 — Mapping Division Hours to Support Activities

Mapping support activities	Percentage of time related to support operating activities		
	Manage human capabilities (MHC)	Plan and manage business (PMB)	Support Business Services (SBS)
Organization Name	80003	80008	80009
Chief Executive Officer	0%	14%	86%
Market and Infrastructure Development	0%	0%	3%
Technology	0%	9%	83%
Operations	0%	1%	8%
General Counsel and Administrative Services	21%	7%	64%
Market Quality and Renewable Integration	0%	2%	7%
Policy and Client Services	0%	0%	5%
Total	2%	5%	40%

These costs were inputs into the allocation matrix shown in *Table 5 — Allocation of ABC Support activities to GMC Cost Categories* to get the costs to the cost categories.

Table 17 — Mapping Division Costs to Support Activities

Mapping support activities	Percentage of time related to support operating activities			
	Manage human capabilities (MHC)	Plan & manage business (PMB)	Support business services (SBS)	Support activities
Organization Name	80003	80008	80009	Total
Chief Executive Officer	\$ -	\$ 1,838	\$ 2,751	\$ 4,589
Market and Infrastructure Development			533	533
Technology		4,911	30,961	35,872
Operations	5	1,109	3,132	4,246
General Counsel and Administrative Services	4,918	1,891	11,207	18,016
16Market Quality and Renewable Integration		213	677	890
Policy and Client Services	1	11	528	540
Total	\$ 4,924	\$ 9,973	\$ 49,789	\$ 64,686

For support activities the costs were aggregated and allocated as shown in *Table 5 — Allocation of ABC Support activities to GMC Cost Categories*.

Table 18 — Mapping ABC Support Activities to Cost Categories

Allocation of ABC Support Activities									
ABC Level 1 Activities	Market Services	System Operations	CRR Services	Indirect	2013 Budget	Market Services	System Operations	CRR Services	Indirect
	% of costs allocated to activity				Cost of category \$ in thousands				
Manage Human Capabilities (80003)				100%	\$ 4,924				\$ 4,924
Plan & Manage Business (80008)				100%	9,973				9,973
Support Business Services (80009)				100%	49,789				49,789
Total					\$ 64,686				\$ 64,686

Step 3 — Allocating Remaining Revenue Requirements to Cost Categories

Debt Service and Cash Funded Capital

The allocation of costs is based on the percentage allocation in *Table 3 — Allocation of Debt Service and Capital to GMC Cost Categories*. (see Table 19 below)

Table 19 — Mapping Debt Service and Cash Funded Capital to Cost Categories

Debt Service and Capital									
System	Market Services	System Operations	CRR Services	Indirect	2013 Budget	Market Services	System Operations	CRR Services	Indirect
	% of costs allocated to activity				Cost of category \$ in thousands				
Operations Related Software									
ADS		100%			\$ 30	\$ -	\$ 30	\$ -	\$ -
ALFS	50%	50%			79	40	39		
CRRs			100%		855			855	
DMM & compliance Tools	50%	50%			478	239	239		
EMS		100%			1,923		1,923		
ETCC		100%			5		5		
FNM / State estimator	50%	50%			182	91	91		
IFM	50%	50%			6,365	3,183	3,182		
MQS	50%	50%			1,013	506	507		
Master file	50%	50%			409	205	204		
MDAS		100%			15		15		
NRI	20%	80%			219	44	175		
OASIS	50%	50%			66	33	33		
OMAR		100%			96		96		
PIRP	20%	80%			45	9	36		
Portal	50%	50%			473	236	237		
CMRI	50%	50%			411	206	205		
PI		100%			137		137		
RT market	20%	80%			1,271	254	1,017		
HASP	50%	50%			1,270	635	635		
Resource Adequacy	50%	50%			43	21	22		
RAVE	50%	50%			5	3	2		
SLIC	50%	50%			295	147	148		
CAS		100%			47		47		
SIBR	50%	50%			1,801	900	901		
SaMC	15%	75%	10%		3,407	511	2,555	341	
Total operations related software					20,940	7,263	12,481	1,196	
General Software and Fixed Assets									
Client relations & engineering analysis tools				100%	154				154
LAN, WAN & monitoring				100%	650				650
OA				100%	80				80
Oracle Corporate Financials				100%	606				606
CUDA				100%	99				99
Storage				100%	889				889
Land & feasibility studies				100%	238				238
NT servers and WEB servers				100%	232				232
New system equipment				100%	400				400
Office equip, furniture and leasehold imp				100%	378				378
Total general software and fixed assets				100%	4,204	239	239		3,726
Total 2008 bond debt service \$					\$ 24,666	\$ 7,263	\$ 12,481	\$ 1,196	\$ 3,726
Total 2008 bond debt service %					100%	29%	51%	5%	15%

Debt Service and Capital									
System	Market Services	System Operations	CRR Services	Indirect	2013 Budget	Market Services	System Operations	CRR Services	Indirect
	% of costs allocated to activity				Cost of category \$ in thousands				
2009 Bond debt service									
Iron Point headquarters				100%	\$ 17,847				\$ 17,847
Cash Funded Capital									
Capital Project fund				100%	\$ 24,000				\$ 24,000

Miscellaneous Revenue

The components of other revenue were reviewed and all revenues allocated pursuant to *Table 6 — Allocation of Other Income to GMC Cost Categories.*

Table 20 — Mapping Miscellaneous Revenue to Cost Categories

Allocation of Miscellaneous Revenue									
Type	Market Services	System Operations	CRR Services	Indirect	2013 Budget	Market Services	System Operations	CRR Services	Indirect
	% of costs allocated to activity				Cost of category \$ in thousands				
SC application fee				100%	\$ 100	\$ -	\$ -		\$ 100
MSS penalties				100%	250				250
SC training fees				100%	150				150
Intermittent resource forecasting fee	20%	80%			1,600	320	1,280		
LGIP study fees		100%			2,000		2,000		
Interest				100%	1,800				1,800
COI path operator fees	17%	83%			2,000	340	1,660		
Total miscellaneous revenue					\$ 7,900	\$ 660	\$ 4,940		\$ 2,300

Operating Reserve Credit

The components of the operating reserve credit were reviewed and allocated pursuant to *Table 7 — Allocation of Operating Reserve Revenue Credit to GMC Cost Categories.* (see Table 21 below)

Table 21 — Mapping Reserve Credit to Cost Categories

Allocation of Operating reserve credit									
Type	Market Services	System Operations	CRR Services	Indirect	2013 Budget	Market Services	System Operations	CRR Services	Indirect
	% of costs allocated to activity				Cost of category \$ in thousands				
Decrease in 15% reserve for O&M				100%	\$ 21	\$ -	\$ -	\$ -	\$ 21
25% debt service reserve 2008 bonds	29%	51%	5%	15%	5,680	1,647	2,897	284	852
25% debt service reserve 2009 bonds				100%	3,570				3,570
Revenue changes				100%	9,266				9,266
Expense changes				100%	6,955				6,955
Total					\$ 25,492	\$ 1,647	\$ 2,897	\$ 284	\$ 20,664

Step 4 — Aggregating Revenue Requirement into Cost Categories

The individual revenue requirements were aggregated and indirect costs allocated based on the total of direct costs. See Exhibit 2 for a summary of the cost of service study.

Table 22 — Mapping Revenue Requirement to Cost Categories

Revenue Requirement (\$ in thousands)	2013 Budget	Market Services	System Operations	CRR Services	Indirect
Direct O&M \$	\$ 68,364	\$ 12,863	\$ 42,512	\$ 845	\$ 12,144
Support O&M \$	64,686				64,686
Non-ABC support O&M \$	29,857	614	1,759	53	27,431
Total O&M	162,907	13,477	44,271	898	104,261
Debt Service 2008 bonds	24,666	7,263	12,481	1,196	3,726
Debt Service 2009 bonds	17,847				17,847
Debt Service 2008 bonds	24,000				24,000
Total debt service and capital	66,513	7,263	12,481	1,196	45,573
Other income	(7,900)	(660)	(4,940)		(2,300)
Operating reserve	(25,492)	(1,647)	(2,897)	(284)	(20,664)
Total before allocation of indirect	196,028	18,433	48,915	1,810	126,870
Allocate indirect based on direct cost %		27%	70%	3%	
Allocate indirect		34,255	88,809	3,806	(126,870)
Total Revenue to Collect \$	\$ 196,028	\$ 52,688	\$ 137,724	\$ 5,616	
Total Cost Category percentages	100%	27%	70%	3%	

Step 5 — Calculation of 2013 Rates Using New Cost Category Percentages

Although not necessary to determine the cost category percentages, the rates are needed to determine the EIM fee are covered in a separate paper and summarized in Exhibit 2. The GMC rates are determined by first estimating fees as shown in the following table.

Table 23 — Estimation of Fee Revenue and mapping of Fees to Cost Categories

Fee	Estimated 2013 volumes	Rate	Revenue (in thousands)	Cost Category
Bid segment fees	40,659,200	\$0.005 per bid	\$ 203	Market Services
Inter-SC trades	2,750,910	\$1.00 per trade	2,781	
SCID fees	173	\$1,000 per month	2,079	
TOR charges	3,679,322	\$0.27 per MWh	993	System Operations
CRR auction bid fee	186,318	\$1.00 per bid	186	CRR Services
Total Fees			\$ 6,242	

Then the fees are deducted from the revenue requirement resulting in the remaining revenue requirement to collect. The remaining amount to collect is divided by the estimated volumes of billing determinants for each cost category to determine the respective rates.

Table 24 — 2013 GMC Rates Using Revised Cost Category Percentages

Revenue Requirement	2013 Budget	Market Services	System Operations	CRR Services
Revenue Requirement in thousands of \$	\$ 196,028	\$ 52,688	\$ 137,724	\$ 5,616
Less Fees				
Bid segment fees	(203)	(203)		
Inter-SC trade fees	(2,781)	(2,781)		
SCID fees	(2,079)	(2,079)		
TOR charges	(993)		(993)	
CRR auction bid fees	(186)			(186)
Total fees	(6,242)	(5,063)	(993)	(186)
Remaining revenue requirement to collect	\$ 189,786	\$ 47,625	\$ 136,731	\$ 5,430
Estimated volumes in thousands of MWh		514,168	474,712	566,649
Less grandfathered contracts			(7,179)	
Estimated volumes		514,168	467,533	566,649
2013 rates using revised percentages		\$ 0.0926	\$ 0.2925	\$ 0.0096

Summary of Cost Category Percentages

The results of the cost of service analysis for the cost category percentages that will go into effect in 2015 are as reflected in the following table.

Summary of Cost Category Percentages for 2015

Category	Percentage
Market Services	27%
System Operations	70%
CRR Services	3%

Exhibit 2 to the Declaration of April Gordon
Long Term Transmission Planning Cost Calculation
Planning Coordinator Agreement between
California Independent System Operator Corporation and
Metropolitan Water District of Southern California

Long Term Transmission Planning Cost Calculation

As of 7/30/2015

2015 GMC update meeting April 17, 2014 Cost of service Study

<http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=72F94714-E777-4666-96B5-2948F249F67C>

Exhibit 2 - 2013 Cost of Service Study Summary

http://www.caiso.com/Documents/Exhibit2-2013Cost-ServiceStudySummaryMar6_2014.pdf

Cost of Long Term Transmission Planning (LTPP)						
ABC Level 2 Activities (\$ in thousands) all in Systems Operations	Code	System Operations	Indirect	Amount	LTPP Factor	Allocation to LTPP
From Page 2 - 2013 ABC Level 2 Direct Costs						
Develop Infrastructure (DI)	80001					
Regulatory contract procedures	201		100%	\$ 378	0%	\$ -
Manage Generator Interconnection Proceedings (GIP) agreements	202	100%		\$ 818	0%	-
Manage GIP	203	100%		\$ 2,342	0%	-
Long Term Transmission Planning - LTPP	204	100%		\$ 4,273	50%	2,137
New transmission resources	205	100%		\$ 552	0%	-
Transmission maintenance studies	206	100%		\$ 499	0%	-
Load resource data	207	100%		\$ 268	0%	-
Season assessment	208	100%		\$ 223	0%	-
Queue management	208	100%		\$ 615	0%	-
Annual delivery assessment	210	100%		\$ 25	0%	-
Total LTPP Direct costs (activity 204 = \$4,273 x factor of 50%)				\$ 9,993		\$ 2,137
From Page 1 - 2013 Revenue Requirement using 2013 ABC Data						
Total System Operations Costs before allocation of indirect costs						\$ 48,915
Percentage of LTPP costs to ABC level 2 Direct Costs (\$2,137 / \$48,915)						4.37%
Total System Operations Indirect Dollars Allocated						\$ 88,809
LTPP allocated indirect costs (4.37% x \$88,809)						\$ 3,879
Total Long Term Transmission Planning costs (\$2,137 + \$3,879)						\$ 6,015

Annual Planning Coordinator Service Charge Calculation

Total number of transmission circuits in ISO 2012/2013 Transmission Plan	1,550
Total number of transmission circuits in MWD system	4
LTPP cost per transmission circuit in ISO 2012/2013 Transmission Plan	\$ 3.88
Annual Planning Coordinator service charge (\$ in 1000s)	\$ 2.000

Long Term Transmission Planning Processes

Exhibit 1 - Business Process Framework v4.0 with Charge codes

http://www.aiso.com/documents/Exhibit1-BusinessProcessFrameworkV4_0-ChargeCodesJan29_2014.pdf

From Page 2 - Develop Infrastructure (DI) 80001

Manage Long Term Transmission Plan activity code 204

Component of LTPP	%
1) ISO Transmission Plan: Produce a forward-looking, coordinated transmission plan that provides for full NERC/WECC compliance obligations as well as proactive infrastructure planning initiatives, including economic transmission that facilitates a robust and efficient market	50%
2) Support CPUC Resource Adequacy (RA) through the determination of all LCR requirements for the ISO Controlled Grid; the determination of all import, zonal, and inter-zonal allocations that are used to define RA obligations for the LSEs	5%
3) Generator Interconnection Study obligations	5%
4) Renewable Integration analysis to assess operational reliability and infrastructure requirements to meet 33% requirements by 2020	5%
5) On an annual basis, assess and validate feasibility of all Long-term CRRs	5%
6) Perform annual congestion studies to a) Define and summarize term "significant and reoccurring" congestion b) Develop mitigation plan c) Provide the upgrade and congestion costs	10%
7) Conduct Deliverability and Locational Capacity Studies in support of the CPUC resource adequacy requirements	5%
8) Generation and transmission reliability assessment (i.e., Planning Reserve Margin and transmission probabilistic planning)	5%
9) Sub-regional/Regional/National work on Planning Issues through NERC, FERC, and WECC	5%
10) Special projects; Represent the ISO in technical groups and committees	5%
Total	100%

Critical Energy Infrastructure Information Redacted Pursuant to 18 C.F.R § 388.112

Attachment C

Attachment 1 to Planning Coordinator Agreement

Between

California Independent System Operator Corporation

And

Municipal Water District of Southern California

[NOTE: This sheet is submitted as the public version of Attachment C to satisfy eTariff filing requirements. All substantive content of Attachment C has been redacted.]

Public Version

CEII Material Redacted

Attachment 1

Diagram

CRITICAL ENERGY INFRASTRUCTURE
INFORMATION

REDACTED PURSUANT TO

18 CFR § 388.112