



California ISO  
Your Link to Power

California Independent  
System Operator Corporation

January 25, 2008

**VIA HAND DELIVERY**

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

Re: **California Independent System Operator Corporation**  
**Docket Nos. ER06-615-003; ER06-615-005**  
**Request for Confidential Treatment of Attachment**

Dear Secretary Bose:

The California Independent System Operator Corporation ("ISO") hereby submits an original and five copies of a report, entitled "FIRST ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR EVALUATING DEMAND RESPONSE IN THE CAISO; Re: Calendar Year 2007" (hereinafter, "Report"), pursuant to the Commission's June 25, 2007 Order on Compliance Filings, 119 FERC ¶ 61,313 (2007) ("June 25 Order"). At Paragraph 226 of the June 25 Order, the Commission directed the CAISO to file annual reports evaluating demand response within the CAISO. Subsequent to the July 25 Order, the Commission granted an extension of the deadline to file the initial annual report to January 25, 2008.<sup>1</sup>

The CAISO is requesting confidential treatment of this Report, which is included as Attachment A to this filing, pursuant to Section 388.112 of the Commission's Regulations. Confidential treatment of this Report is appropriate because the Report contains commercially-sensitive data regarding the participation of one entity in the CAISO's markets. Consistent with Section 388.112, the CAISO is submitting an original and five copies of the redacted version of the Report, along with the full version of the Report, which is sealed and marked as confidential.

---

<sup>1</sup> Notice of Extension of Time, dated January 16, 2008, FERC Accession No. 200801163035.

**COMMUNICATIONS**

Correspondence regarding this filing should be directed to:

Baldassaro "Bill" Di Capo Counsel The California Independent System Operator Corporation 151 Blue Ravine Road Folsom, CA 95630 bdicapo@caiso.com Tel: (916) 608-7157 Fax: (916) 608-7222	John Goodin Lead, Demand Response Market & Product Development The California Independent System Operator Corporation 151 Blue Ravine Road Folsom, CA 95630 jgoodin@caiso.com Tel: (916) 608-7154 Fax: (916) 608-7222
--	--

**CONTENTS OF FILING**

The following documents are included in this filing:

This Transmittal Letter;

Attachment A      Report, entitled "FIRST ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR EVALUATING DEMAND RESPONSE IN THE CAISO; Re: Calendar Year 2007

Respectfully submitted,



Baldassaro "Bill" Di Capo  
Counsel for the California Independent  
System Operator Corporation

**ATTACHMENT A**



## Introduction

The California Independent System Operator Corporation (“CAISO”) submits this report, entitled “FIRST ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR EVALUATING DEMAND RESPONSE IN THE CAISO; Re: Calendar Year 2007” (hereinafter, “Report”), pursuant to the Commission’s June 25, 2007 Order on Compliance (*California Independent System Operator Corp.* 119 FERC ¶ 61,313 (2007) “June 25, 2007 Order on Compliance Filings” (hereinafter “June 25 Order”). At Paragraph 226 of the June 25 Order, the Commission directed the CAISO to file annual reports evaluating demand response within the CAISO.

Paragraph 226 of the June 25 Order states as follows:

226. Finally, we direct the CAISO to file annual reports evaluating its demand response programs, including the amount of demand response it has elicited. The CAISO should file the first report January 15, 2008. At a minimum, the CAISO’s report must include: (a) information on customer enrollment for each demand response program in terms of the number of customers and total potential in load reduction in MWs; and (b) information on total load reductions achieved per program per event during the prior year, including the CAISO’s system load at time of curtailments, total MWs reduced, total payments for reductions and effects of the demand response programs on wholesale prices.[*FN See, e.g. ISO New England, Inc., 102 FERC [Paragraph] 61,202 (2003)*]

Subsequently, the Commission granted an extension of the deadline to file initial annual report to January 25, 2008.<sup>1</sup>

As of the date of this Report, direct participation by entities seeking to offer load into CAISO’s markets under a demand response paradigm, operating akin to a generation or supply-side resource, is accomplished via the vehicle of the CAISO’s Participating Load Agreement. This has been the case for the period of 2007, which is covered in this Report, and for the time frame of the year 2000 through the date of this Report.

The CAISO is actively engaged in activities to promote the development of demand resources through a collaborative process with California’s energy agencies, the California Public Utilities Commission (“CPUC”) and the California Energy Commission (“CEC”), and other stakeholders interested in developing demand response at the state level and coordinating and integrating the resources with the CAISO’s wholesale markets

---

<sup>1</sup> Notice of Extension of Time, dated January 16, 2008, Accession No. 200801163035.

under MRTU. The CAISO outlined these activities and processes in its Second Status Report, filed in September 2007.<sup>2</sup>

The CAISO is cognizant of the fact that the June 25 Order anticipated that the CAISO would include an analysis of the impact of demand response market dispatches on wholesale market prices. Regrettably, the CAISO submits that the state of demand resource participation and market penetration, and the nature of the Participating Load resources as pumping resources rather than peak curtailment retail loads, is such that the 2007 data is not capable of meaningful analysis on wholesale market price effects. As demand resource product development increases, the CAISO will strive to include such analysis in future reports.

### **Executive Summary and Request For Confidential Treatment**

The Participating Load Agreement is the vehicle that allows Demand Response resources to participate in CAISO's wholesale markets in a manner akin to a supply-side generator. Participating Load is more properly characterized as a mechanism which enables Demand Response resources to interface with the CAISO as a dispatchable resource and to create a relationship governed by the CAISO Tariff.

Current Participating Load consists of three (3) active participants, representing nine (9) resources.

- The CAISO has not included data for the Pumped Hydro Storage Facilities within this Report. The CAISO has chosen this approach for the reason that these facilities operate differently than classic demand response resources: They either: a) affirmatively schedule; or b) increase load, rather than operating like traditionally recognized demand response resources, which curtail load when dispatched.
- Accordingly, when the Pumped Hydro Storage Facilities are culled out, this Report covers the demand response participation of one (1) participant [the California Department of Water Resources ("CDWR")] and [REDACTED] resources. The resources are [REDACTED] aggregated loads representing [REDACTED] MWs.

Because the information in this Report focuses upon only one participant, the CAISO is submitting this Report with an accompanying request for Confidentiality and the CAISO is concurrently submitting a Redacted Version/Public Version (in which the Confidential information has been redacted).

---

<sup>2</sup> Second Status Report of the California System Operator on Demand Response Development, dated September 17, 2007, filed concurrently with the CAISO's Motion for Leave to Late File Second Status Report One Day Out of Time, Accession No. 20070917-5079.

On average, in 2007, the CAISO system needed approximately 812 MWs of Non-spinning Reserve capacity per hour to operate. The Participating Load covered in this Report contributed █ MWs of this product, either through accepted bids or self provision. This quantity provided by the Participating Load participant represents nearly █% of the CAISO's hourly Non-spinning Reserve need for 2007.

- CDWR's Participating Load resources offered (or self-provided) Non-spinning Reserve capacity into the CAISO ancillary services ("A/S") market nearly every hour of the year (i.e. nearly 100% of all hours in 2007). Moreover, these resources were successful in receiving an A/S award approximately █% of the hours in 2007.
- In 2007, CDWR's Participating Load resources offered (bid and/or self provided) an hourly maximum of █ MW and a minimum of █ MW of Non-spinning Reserve capacity to the CAISO. On average, █ MW per hour was bid or self-provided to the CAISO.

### **Background Discussion of Current Mechanism for Demand Response Participation in the CAISO's Markets: Participating Load**

Since 1999, the mechanism for Demand Response resources to participate directly in the CAISO's market has been the CAISO's Participating Load Agreement. Under current Participating Load requirements, individual or aggregated loads of 1 MW or greater can provide ancillary services<sup>3</sup> (non-spinning reserves) and supplemental energy to the CAISO.<sup>4</sup> The Participating Load Agreement enables load to participate as price-responsive demand in the CAISO's ancillary services, non-spinning reserves market and in the CAISO's real-time supplemental energy (aka imbalance energy) market. Three key components allow Participating Load to function as a generation-substitute resource. These components are represented in three key documents:

- (1) A Participating Load Agreement—under which the provider of the load agrees to provide curtailable load or dispatchable load, and submit eligible bids or self-schedules through a Scheduling Coordinator, pursuant to applicable provisions of the CAISO tariff;
- (2) A Participating Load Technical Standard—setting forth communication and other standards that Participating Loads must meet. For example, pursuant to the technical standards, aggregated loads provide Energy Management System (EMS) telemetry, which is the means by which Participating Load submits real-time

---

<sup>3</sup> "Ancillary Services" is sometimes referred to in this Report as "A/S."

<sup>4</sup> The CAISO is proposing to change the minimum offer requirement, for Participating Load resources, to 0.1 MW (100 kW), as outlined in the CAISO's *Straw Proposal- Post-release 1 MRTU Functionality for Demand Response*. This document can be found on the CAISO website using the following link: <http://www.caiso.com/1c91/1c919e0e11c30.pdf>

values from related to A/S that such load provides to the CAISO. This telemetry allows the CAISO to continuously monitor the status, location and amount of reserves available, as required by reliability criteria set by the Western Electricity Coordinating Council (WECC) and the North American Electric Reliability Council (NERC); and

- (3) A Participating Load Acceptance Test document—outlining certain tests that comprise a certification/implementation process, through which aggregated load is tested, to confirm that such load meets the requirements of the CAISO Participating Load Technical Standards.<sup>5</sup>

Although loosely referred to both within the CAISO and externally as a “program,” Participating Load is more properly characterized as a mechanism which enables Demand Response resources to interface with the CAISO as a dispatchable resource, akin to a generator, and is able to provide, among other things, settlement-quality meter data to the CAISO. In addition to satisfying the physical interface requirements to the CAISO and its systems, the terms of the Participating Load Agreement provide that the relationship between the resource and the CAISO shall be governed by the CAISO Tariff, in a manner similar to a supply-side resource on the CAISO-controlled grid.

#### Procedural History of Participating Load

The CAISO’s Participating Load Agreement was filed as part of the CAISO Tariff Amendment No. 17 on June 17, 1999 and was subsequently accepted by the Commission in August 1999.<sup>6</sup> The Participating Load Agreement has, as a primary component, a provision in which the load operator agrees that it will be bound by the CAISO Tariff in connection with its participation in the CAISO markets.

Subsequently, participation by loads in the CAISO’s markets was further addressed in CAISO Tariff Amendments No. 29. The CAISO filed is proposed Amendment 29, and Commission accepted the Tariff amendments, in calendar year 2000<sup>7</sup>. With FERC’s order approving Amendment No. 29 a Tariff section now designated as Section 4.7 of the Simplified & Reorganized Tariff was added.<sup>8</sup> This

---

<sup>5</sup> Additional information and documents pertaining to Participating Load can be found at the CAISO website using the following link: <http://www.caiso.com/docs/2005/10/05/2005100520280423155.html>

<sup>6</sup> The Commission accepted the Tariff revisions and proposed effective dates in Amendment No. 17, with certain modifications, by order issued on August 16, 1999. *California Independent System Operator Corporation*, 88 FERC ¶ 61,182 (1999)

<sup>7</sup> FERC accepted CAISO Tariff Amendment No 29 in its June 29, 2000 Order [*California Independent System Operator Corporation*, 91 FERC ¶ 61,324 ], which accepted Amendment No. 29 additions and modifications to the CAISO Tariff,

<sup>8</sup> When originally added, this Section was numbered as Section 2.2.16. The Section states:

#### **4.7 Relationship Between ISO and Participating Loads.**

The ISO shall only accept bids for Supplemental Energy or Ancillary Services, or Schedules for self-provision of Ancillary Services, from Loads if such Loads are

section makes it clear that Participating Loads must meet certain standards for participation in the CAISO's markets. The standards are posted on the CAISO Home Page; these standards include requirements discussed in this Report.

### **Participating Load as Demand Response**<sup>9</sup>

#### Historical Participation From Participating Load

After the formalization of the CAISO's Participating Load mechanism in the year 1999, seven (7) market participants signed a Participating Load Agreement with the CAISO. These seven participants were: (1) Ancillary Services Coalition; (2) California Consumer Power and Conservation Financing Authority; (3) New West Energy; (4) New Energy California, LLC; (5) Pacific Gas & Electric Co ("PG&E"); (6) Southern California Edison ("SCE"); and (7) California Department of Water Resources ("CDWR")

These original seven (7) participants had forty-nine (49) unique Participating Load resources, having a total capacity of 4,610 MWs. Of this total,

- [REDACTED] MWs consisted of [REDACTED] participating load water-related resources associated with four (4) Pumped Hydro Storage Facilities.
- [REDACTED] MWs was represented by [REDACTED] aggregated loads which are aggregations of (11) large water-related pumps; and
- the remaining 230 MWs were comprised of four (4) market participants having thirty-two (32) retail loads (= 32 resources).

However, all of the 230 MWs of Participating Load resources represented by the retail load are no longer active demand response participants. From the CAISO's perspective, and under its processes and procedures, CAISO deems the resources to have been deactivated (meaning that the Resource IDs have been inactivated and can no longer interface with CAISO's scheduling and bidding applications).

In large part, the drop-off of retail load resources from Participating Load occurred because the CAISO terminated its "Demand Relief Program," a demand response program that the CAISO had established and which was operational for an approximate one-year period. This Program was terminated due to concerns raised by

---

Participating Loads which meet standards adopted by the ISO and published on the ISO Home Page. The ISO shall not schedule Energy or Ancillary Services from a Participating Load other than through a Scheduling Coordinator.

<sup>9</sup> The following discussion regarding participants and participating resources is derived from data appearing on Schedule 1 forms, which are attached to the individual Participating Load Agreements that have been signed by the Participating Load participants.

various stakeholders, and the CPUC, that retail load participation in CAISO demand response programs would overlap with the multiplicity of retail-level, end-use customer demand response programs, thereby resulting in potential double payment, among other concerns.

Current Participation in Demand Response (Three Participants; Nine Resources)

Of these seven (7) original Participating Load market participants, three (3) are currently active in 2007 and schedule and/or bid a total of nine (9) Participating Load resources into the CAISO's markets. [REDACTED] of these resources are associated with Pumped Hydro Storage Facilities.

What appears to be a reduction in the number of Participating Loads is, in part, due to the fact that, over time, certain Participating Load resources have been aggregated, and placed under a single Participating Load Resource Identification (aka "Resource ID"). This is the case with eleven (11) of the original Participating Load resources (water-related pumping) that are now aggregated under [REDACTED] Resource IDs.

The resource facilities can be broken down as follows:

- (1) Facility: Helms Pumped Hydro Storage Facility  
Participant: Pacific Gas & Electric ("PG&E")  
No. of Resource IDs: [REDACTED]
- (2) Facility: Eastwood (A component of a larger hydro system, the Big Creek Hydro System)  
Participant: Southern California Edison Company  
No. of Resource IDs: [REDACTED]
- (3) Facilities: [REDACTED] active resources; [REDACTED] facilities are Pumped Hydro Storage resources; [REDACTED] are water pumping facilities.  
Participant: California Department of Water Resources ("CDWR")  
No. of Resource IDs: [REDACTED]  
- [REDACTED] for the Pumped Hydro Storage Facilities;  
- [REDACTED] for a group of 11 (or more) pumps that are aggregated into [REDACTED] separate Participating Load "facilities" for scheduling and settlement purposes.<sup>10</sup>

<sup>10</sup> The eleven (11) were originally identified in CDWR's Participating Load Agreement, Schedule 1. The CAISO believes that some of the eleven pumps may, in fact, be aggregations of subsets of smaller pumps, which are grouped under one Resource ID. However, for purposes of this Report, the CAISO believes that verification of this additional level of detail is not relevant.

### Exclusion of Pumped Hydro Storage Facilities in this Report

*For purposes of this Report, the CAISO has not included data for the Pumped Hydro Storage Facilities, and these facilities are not covered within this Report.*

The CAISO has chosen this approach for the reason that these facilities operate differently than classic demand response resources. In this regard, the operators of Pumped Hydro Storage Facilities typically either a) affirmatively schedule their pumping load (i.e. activate and initiate water pumping) or b) submit an offer to increase their load (i.e. increase “pumping”), based on the wholesale market price.

These actions differ from, and are actually, the opposite of, traditional demand response activity. Traditionally, demand response resources are considered to be energy-consuming devices or load which typically offers to a) with respect to energy, curtail or reduce its consumption at a particular price or b) in the case of capacity, offer non-spinning reserve to the CAISO in the form of stand-by readiness to curtail/reduce.

For this reason this Report will not present data regarding Pumped Hydro Storage Facilities. Instead, the Report concentrates on demand response resources that are traditionally recognized and characterized as demand response resources, because they curtail load when dispatched.

### Summary the CAISO’s Participating Load Program in 2007

#### Reporting Period for this Report; Time Constraints of the Data Set

In order to produce and present relevant data for this Report, in a manner consistent with the Commission’s June 25 Order, the CAISO must rely, in large part, upon underlying data compiled from the CAISO’s settlement system. It is important to note that the settlement system is structured such that it performs settlements more than thirty (30) days in arrears of the dispatch of the resource. Under the CAISO’s settlement process, Preliminary Settlement Statements are published thirty-eight (38) business days following the actual trade date, and Final Settlement Statements are published fifty-one (51) business days, following the actual trade date. As a result of the time-lag in reconciliation and settlement, the data set available for the CAISO to use for this Report mirrors the time lag.

Accordingly, the data which is available and is reported herein (the “Reporting Period”) covers the time period from January 1, 2007 through November 15, 2007, having been taken from:

- final settlement data for the period January 1, 2007 through October 29, 2007, and

- preliminary settlement data for the remaining period, October 30, 2007 through November 15, 2007.

For reference and interpretation of the data in this Report, the January 1, 2007 to November 15, 2007 Reporting Period comprises:

- eighty-seven percent (87%) of the 2007 calendar year period,
- 7,676 hours out of 8,760 total hours in the calendar year, or
- 319 out of 365 calendar days.

As the CAISO indicates in the cover letter transmitting this Report, the CAISO respectfully submits that future annual reports could convey better information if the filing deadline permitted the reporting period to capture an entire twelve (12) month, 365 day calendar year. Because the supporting data for annual reports must come from settlement data that is not available until 50 days after December 31<sup>st</sup>, an adjustment of the annual filing date would be necessary.

In addition, the CAISO Department of Market Monitoring (DMM) produces an annual report on the performance of the markets administered by the CAISO. This DMM annual report covers the period of January 1<sup>st</sup> through December 31<sup>st</sup> of the year that is the subject of the report, and is published in a late-March to April time frame. Information in the DMM annual report pertaining to subjects such as system resource adequacy, ancillary services quantities and market performance, and other subjects, would be useful to CAISO personnel in producing this annual report on demand response participation within the CAISO markets.

For these reasons, the CAISO indicates in its cover letter that it respectfully requests that the Commission consider an adjustment of the annual reporting requirement set forth in Paragraph 226 of the June 25 Order, to change the annual filing deadline date to May 30th.

#### **Non-spin Capacity Awards and Payment from Participating Load Resources:**

In the CAISO's wholesale markets, market participants have the choice to either bid Ancillary Services (such as Non-Spinning Reserves), or to self-provide them. Market Participants that choose to bid Ancillary Services receive the Market Clearing Price. Accordingly, they receive a payment from the CAISO for the A/S capacity type that was offered and accepted. On the other hand, Market Participants that elect to self-provide A/S effectively offset all (or a portion) of their A/S obligation, thus minimizing or eliminating the quantity of A/S capacity they must procure from the market.

Participating Load resources offered (or self-provided) Non-spinning Reserve capacity into the CAISO ancillary services ("A/S") market nearly every hour of the year

FIRST ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
EVALUATING CAISO DEMAND RESPONSE IN THE CAISO

Re: Docket Nos. ER06-615-003; ER-06-615-005

*REDACTED VERSION – Privileged Material Redacted Pursuant to 18 C.F.R. § 388.112*

(i.e. nearly 100% of all hours in 2007). Moreover, these resources were successful in receiving an A/S award approximately █% of the hours in 2007.

On average, in 2007, the CAISO system needed approximately 812 MWs of Non-spinning Reserve capacity per hour to operate.<sup>11</sup> The Participating Load covered in this Report contributed █ MWs of this product, either through accepted bids or self provision. This quantity represented nearly █% of the CAISO’s hourly Non-spinning Reserve need in 2007.

However, the range of Non-spinning Reserve capacity offered (or self provided) exhibited some variations during certain, limited hours in 2007. In this regard, CDWR’s Participating Load resources offered (bid and/or self provided) an hourly maximum of █ MW and a minimum of █ MW of Non-spinning Reserve capacity on certain occasions. On average, however, █ MW per hour was bid or self-provided to the CAISO.

<b>Total Non-spin Capacity Bid (MW)</b>	<b>Total Hours Non-spin Capacity Bid (Hrs)</b>	<b>Total Non-spin Capacity Awarded (MW)</b>	<b>Total Hours Non-spin Capacity Awarded (Hrs)</b>	<b>Total Non-spin Capacity Payments (\$)</b>	<b>Total Non-spin Capacity Self-provided (MW)</b>	<b>Total Hours Non-spin Capacity Self-provided (Hrs)</b>
█	█	█	█	█	█	█

**No-Pay for Unavailable Non-spin Capacity from Participating Load Resources:**

No-Pay is a settlement mechanism to encourage resources, both generators and Participating Loads, to keep awarded Ancillary Services available for CAISO dispatch by following dispatch instructions and avoiding uninstructed deviations, for example. When triggered, No-Pay results in the rescission of a payment for the provision of Spinning Reserve and/or Non-spinning Reserve when, subsequent to i) the A/S Award for such Ancillary Services and ii) CAISO payment for the services, the Ancillary Service becomes Undispatchable Capacity, Unavailable Capacity, Undelivered Capacity, or, in certain circumstances, unsynchronized capacity. In 2007, only approximately █% of

<sup>11</sup> This procurement average of 812 MWs per hour is based upon an average hourly system load of 27,944 for the relevant reporting period of this report, Jan 1, 2007 to Nov 15, 2007.

FIRST ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
EVALUATING CAISO DEMAND RESPONSE IN THE CAISO

Re: Docket Nos. ER06-615-003; ER-06-615-005

*REDACTED VERSION – Privileged Material Redacted Pursuant to 18 C.F.R. § 388.112*

the total Non-spinning capacity awarded to Participating Load resources was rescinded through the No-Pay settlement mechanism.

<b>Total Non-spin Capacity Awarded and Self-provided (MW)</b>	<b>Total Non-spin Capacity Unavailable Subject to the No Pay Provision (MW)</b>	<b>Total Non-spin Capacity Payment Rescinded Subject to the No-Pay Provision (\$)</b>
██████████	██████████	██████████

**Real-time Energy & Payment from Participating Load Resources:**

To meet its real-time reliability needs, the CAISO dispatches real-time energy from the Participating Load resources when it is economic to do so, based on the submitted bids that the Scheduling Coordinator has submitted to the CAISO for the Participating Load resource. A Participating Load Resource is paid for the amount of energy that the resource is instructed to deliver to the CAISO. Any deviations associated with the CAISO’s real-time instruction, i.e. under-deliveries, will be charged to the Participating Load resource, as uninstructed energy. The *Total Energy Payments* value as shown in the Table below is the net settlement of the CAISO’s instructed energy and the uninstructed energy.

<b>Total Real-time Energy Offered (MW)</b>	<b>Total Real-time Energy Offered (Hrs)</b>	<b>Total No. of Dispatches (Events)*</b>	<b>Total Real-time Instructed Energy (MW)</b>	<b>Total Real time Energy Delivered (MW)</b>	<b>Total Energy Payments (\$)</b>
██████████	██████████	█	██████████	██████████	██████████

*\*Where dispatches greater than 0.01 MW, in any interval, are aggregated by trade hour.*

**Real-time Energy Dispatch Detail for Participating Load Resources:**

See Appendix A to this Report for a detailed breakdown of Real-time energy dispatch, by hourly event.

**Summary of CAISO Events by Month and Hour:**

Given that the Participating Load resources reported here are associated with large pumping resources used to move water around the state of California, the Participating Load resources do not exhibit the more traditional summer-peak demand response characteristic that one expects from demand response resources.

However, the fact that the large pumping resources can participate in the wholesale markets in all months and hours of the year means such resources can be of great benefit to a system operator such as the CAISO and to wholesale electricity markets.

**CAISO Dispatches by Month:**

The data below demonstrates the broad availability of these Participating Load resources.

Month	Days	Hours
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November*		
<b>Total:</b>		

TABLE 5 CAISO Dispatches by Hour																							
HOUR INTERVALS																							
1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18	19	20	21	22	23	24	
Count of Dispatches per Interval																							

**Retail Demand Response Programs Operated by California’s Investor-Owned Utilities**

In California, the vast majority of demand response is developed through retail demand response programs that are authorized by the CPUC and funded, designed and operated by the IOUs.<sup>12</sup> Demand Response programs and budgets are approved by the CPUC on a three-year program cycle with program year 2007 being part of the 2006-2008 program cycle. The CPUC-authorized budget for demand response programs (and associated technical assistance and technical incentives) for the 2006-2008 program cycle is approximately \$324 million, with the 2007 portion being approximately \$115 million.<sup>13</sup>

The utility demand response programs can generally be classified as price-responsive programs and reliability-based programs. Price-responsive programs are generally triggered Day Ahead or Day-of, based on non-emergency/price-related triggers. On the other hand, the reliability-based programs are only triggered during emergency conditions, be it a system emergency or a local transmission emergency.

As of October 2007, the aggregate number of MWs enrolled versus expected<sup>14</sup> in each demand response category (price-responsive and reliability-based), aggregated for the three large IOUs under the jurisdiction of the CPUC<sup>15</sup> are as follows:

<sup>12</sup> Certain Publicly Owned Utilities in California also operate demand response programs, but the CAISO is not including information about these programs in this Report.

<sup>13</sup> Based upon information conveyed to the CAISO by the CPUC Energy Division.

<sup>14</sup> Enrolled MWs represent the total MWs subscribed under each demand response program, without consideration of compliance or performance. Expected MWs represent the load reduction the IOU expect to obtain during a demand response event based on historical compliance or performance of each program.

<sup>15</sup> The three IOUs are PG&E, SCE and SDG&E.

<b>Program Type</b>	<b>Enrolled MW<sup>16</sup></b>	<b>Expected MW<sup>17</sup></b>	<b>Service Accounts*</b>
Price-Responsive	1,042.8	438	5,956
Reliability-based	1,762.5	1,649	333,315**

\* Based on enrolled values

\*\*Large number of service accounts, due to A/C cycling style programs

IOU data on expected MWs is based upon non-formal compilations made by the CPUC, Energy Division, in the case of PG&E and SDG&E, and from IOU Monthly reports filed with the CPUC, in the case of SCE.

Triggering Events for IOU Demand Response Programs:

In 2007, among the three IOUs, there were a total of 43 event-days from June through October.

Event-days by Month for all Three IOUs

The following information consists of aggregated data compiled from utility monthly reports submitted by the IOUs to the CPUC regarding the operation of their interruptible and demand response programs.<sup>18</sup>

<sup>16</sup> Aggregated data provide by the utilities in monthly reports to the CPUC on the operation of interruptible and demand response programs, specifically:

- Report of Pacific Gas and Electric Company (U 39 M) On Interruptible Load and Demand Response Programs for October 2007, dated November 21, 2007, Table I-1
- Report of Southern California Edison Company (U338-3) on Interruptible Load Programs and Demand Response Programs, dated November 21, 2007, Attachment A, Table I-1
- SDG&E October 2007 Report on Interruptible and Outage Programs, dated November 21, 2007, Oct 2007 PUC Rpt.xls, *SDG&E Subscription* worksheet.

<sup>17</sup> Data aggregated from the following sources:

- For SCE: Report of Southern California Edison Company (U338-3) on Interruptible Load Programs and Demand Response Programs, dated November 21, 2007, Attachment A, Table I-1A
- For PG&E and SDG&E: Data on Expected MW values was provided to the CAISO by CPUC Energy Division staff via email dated January 23, 2008.

<sup>18</sup> The information from the period June 2007 through October 2007 is derived from October reports submitted by PG&E, SCE, and SDG&E to the CPUC and dated November 21, 2007 (See footnote 17, *supra*, for further detail regarding the reports).

<b>Month</b>	<b>Event-days</b>
June	8
July	13
August	16
September	4
October	2

*\*Includes event-days associated with testing certain utility demand response programs*

For any particular IOU, an event-day may have both a reliability-based and price-responsive triggering event; thus, in 2007, 115 price-responsive event-days were called and 52 reliability-based event-days were called in total by the three IOUs in this time period. The breakdown, by IOU, of event-days is as follows:

Demand Response Events, Broken Down by IOU

The following event data was provided by the utilities to the CPUC on the operation of interruptible and demands response programs:<sup>19</sup>

<b>IOU</b>	<b>Price-Responsive Event-days</b>	<b>Reliability-based Event-days</b>
PG&E	39	13
SCE	30	6
SDG&E	50	33

The total MWs curtailed for price-responsive and reliability-based programs over the forth-three (43) event-days between June and October of 2007 was 3,323 MW and 794 MW respectively.

<sup>19</sup> Specifically, the information is taken from the following reports:

- Report of Pacific Gas and Electric Company (U 39 M) On Interruptible Load and Demand Response Programs for October 2007, dated November 21, 2007, Table I-4
- Report of Southern California Edison Company (U338-3) on Interruptible Load Programs and Demand Response Programs, dated November 21, 2007, Attachment A, Table I-4
- SDG&E October 2007 Report on Interruptible and Outage Programs, dated November 21, 2007, Oct 2007 PUC Rpt.xls, *SDG&E Event Summary* worksheet.

---

FIRST ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
EVALUATING CAISO DEMAND RESPONSE IN THE CAISO

Re: Docket Nos. ER06-615-003; ER-06-615-005

***REDACTED VERSION – Privileged Material Redacted Pursuant to 18 C.F.R. § 388.112***

Additional detail regarding utility demand response reporting values can be found in IOU monthly demand response reports submitted regularly to the CPUC by each utility. In preparing this Report, the CAISO reviewed and compiled underlying data from the IOU monthly demand response reports submitted to the CPUC for the calendar month of October 2007. This underlying data is not included with this Report.









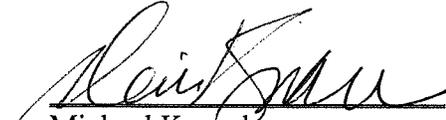
APPENDIX A TO:  
 FIRST ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
 EVALUATING CAISO DEMAND RESPONSE IN THE CAISO  
 Re: Docket Nos. ER06-615-003; ER-06-615-005  
 REDACTED VERSION - Privileged Material Redacted Pursuant to 18 C.F.R. § 388.112

REAL TIME ENERGY DISPATCH BY HOURLY EVENT				
DR Dispatch Event		Hourly Average System Load (MW)	Data	Totals
Day	Hour			
			[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total Real-time Energy Dispatched; (MW)				[REDACTED]
Total Real-time Energy Delivered; (MW)				[REDACTED]
Total Energy Payment; (\$)				[REDACTED]

## CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list for the captioned proceedings, in accordance with Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Washington, D.C., on this 25<sup>th</sup> day of January, 2008.

  
Michael Kunselman