

January 17, 2012

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 No. ER06-615-\_\_\_\_**

Dear Secretary Bose:

The California Independent System Operator Corporation ("ISO") hereby submits its report entitled "2011 ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR EVALUATING DEMAND RESPONSE PARTICIPATION IN THE ISO; Reporting Period: Calendar Year 2011" (hereinafter, "Fifth Annual Report").

The ISO has marked the report as Attachment A to this transmittal letter. The Commission has directed the ISO file annual report on demand response participation in the Commission's June 25, 2007 Order on Compliance (California Independent System Operator Corp. 119 FERC ¶ 61,313 (2007) at P 226.

Because there were multiple demand response participants in 2011 it has not been necessary this year for the ISO to prepare both a confidential version and a public version of the report, as the information is conveyed in aggregated fashion and so does not identify the specific bidding information of the three demand response participants. In a previous report, when the ISO was able to provide aggregated data in this fashion, one demand response participant asked the ISO to provide it a customized report showing just its compiled bidding information. The ISO declined this request and determined that it would not disaggregate the reporting information and prepare a custom report for each customer because it was unduly burdensome, beyond the scope of the reporting requirement, and because the information was already available to the market participants through the ISO settlement process.

## **ATTACHMENT A**

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**ATTACHMENT A**

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

California Independent System Operator  
Corporation

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Docket Nos. ER06-615-\_\_\_\_

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**2011 ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM  
OPERATOR EVALUATING DEMAND RESPONSE PARTICIPATION IN THE  
ISO**

Reporting Period: Calendar Year 2011

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Date: January 17, 2012

Baldassaro "Bill" Di Capo  
Senior Counsel  
California Independent System Operator  
Corporation

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## **ATTACHMENT A**

### **INTRODUCTION**

The California Independent System Operator Corporation (“ISO”) submits this “2011 ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR EVALUATING DEMAND RESPONSE PARTICIPATION IN THE ISO; (hereinafter, “2011 Annual Report”)<sup>1</sup> This 2011 Annual Report is the fifth annual report which the ISO has filed since the Commission imposed the reporting requirement. Unlike in most previous years, there are sufficient demand response providers that the ISO does not need to provide a confidential version and a public version which redacts specific demand response provider information. This report presents demand response provider information in aggregated form.

#### **The Commission’s June 25, 2007 Order Establishes the ISO’s Obligation to Submit an Annual Report**

The reporting requirement stems from the Commission’s June 25, 2007 Order on Compliance in the proceeding commonly known as the “MRTU Docket.” The order provided that:

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)*]<sup>2</sup>

### **EXECUTIVE SUMMARY**

#### **Types of Demand Response Participation in the ISO**

**Participating Load:** The Participating Load product is a dispatchable demand resource offered to the ISO through a demand response provider who also acts as the load serving entity for the underlying load. The Participating Load Agreement establishes the relationship between the demand response provider and the ISO and provides that the relationship is governed by the ISO Tariff.

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<sup>1</sup> The ISO is sometimes referred to as the CAISO.

<sup>2</sup> *California Independent System Operator Corp.* 119 FERC ¶ 61,313 (2007) “June 25, 2007 Order on Compliance Filings” (hereinafter “June 25, 2007 Order”) at P 226.

**Proxy Demand Resource:** The ISO initiated its proxy demand resource product on August 2010.<sup>3</sup> The proxy demand resource product was developed with extensive stakeholder input in response to the FERC Order No. 719, which required that the ISO amend its market rules to permit an Aggregator of Retail Customers (aka demand response provider) to bid demand response on behalf of retail customers directly into the ISO organized market.<sup>4</sup> The Proxy Demand Resource Agreement establishes the relationship between the demand response provider and the ISO and provides that the relationship is governed by the ISO Tariff.

**Reliability Demand Response Resource:** The ISO is awaiting FERC approval of its reliability demand response resource tariff amendment, which was filed on May 20, 2011.<sup>5</sup> The reliability demand response resource product enables retail emergency-triggered demand response programs, including interruptible, air conditioning, and agricultural pumping load programs, to be integrated into ISO markets and operations. This product was borne out of a multi-party settlement agreement that resolves a myriad of concerns the ISO had about the quantity, use and the resource adequacy treatment of retail emergency-triggered demand response programs. Assuming FERC approval, the ISO plans to implement this product in the spring of 2012.

### **Demand Response Participation**

As of the date of this report, the ISO has three total active demand response participants. The ISO Participating Load product has one active participant; the California Department of Water Resources State Water Project (“CDWR-SWP”). This participant schedules, bids, and settles under six (6) unique Participating Load resource IDs, which can represent multiple underlying aggregated pump loads.

The proxy demand resource product has two active participants; Pacific Gas and Electric (“PG&E”) and San Diego Gas & Electric (“SDG&E”). These participants bid under four unique proxy demand resource IDs, which represent multiple underlying aggregated retail service accounts.

- **Scope of this Report** This report follows the practice of the ISO’s previous annual reports of not including data for Pumped Hydro Storage Facilities. As the ISO originally explained in its First Annual Report, the reason for this approach is that these facilities operate differently than traditional demand response resources, in that pumped hydro storage facilities affirmatively schedule and increase load as well as provide load curtailment. The ISO believes that this report’s focus on traditional demand response resources results in more meaningful content, because the reported information can be more meaningfully compared against

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<sup>3</sup> *Order Conditionally Accepting Tariff Changes and Directing Compliance Filing*, 132 FERC ¶ 61,045 (issued July 15, 2010), accessible on the ISO’s website at <http://www.caiso.com/27d9/27d9cbb6770.pdf>.

<sup>4</sup> *Wholesale Competition in Regions with Organized Electric Markets, Order No. 719*, FERC Stats. & Regs. ¶ 31,281 (2008) at P 154, *order on reh’g*, Order No. 719-A, 74 Fed. Reg. 37,776 (Jul. 29, 2009), FERC Stats. & Regs. ¶ 31,292, *order on reh’g and clarification*, Order No. 719-B, 129 FERC ¶ 61,252 (2009).

<sup>5</sup> The reliability demand resource product is the subject of Docket No. ER11-3616-000.

other regions and organized markets, which was a primary purpose for imposing the reporting obligation.

### **Contribution of Demand Response to Non Spinning Reserves Needs for 2011**

On average, over the January 1<sup>st</sup> to November 30<sup>th</sup> period covered in this report, the ISO system needed approximately 849 MW of Non-spinning Reserve capacity per hour to operate. The demand response market participants that are the subject of this report contributed, on average, 107 MW of Non-spinning Reserve, either through accepted bids or self provision. These 107 MW represents 13% of the ISO's hourly Non-spinning Reserve need for 2011.

In 2011, demand resources cleared (bid and self provided) an hourly maximum of 120 MW and a minimum of 0.5 MW of Non-spinning Reserve capacity to the ISO. On average, 107 MW per hour was bid or self-provided to the ISO.

## **SUMMARY THE ISO'S DEMAND RESPONSE PROGRAMS FOR THE 2011 TIME PERIOD**

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### **Participating Load**

In 2011, there were six (6) active Participating Load resources associated with large pumping resources.<sup>6</sup>

The active Participating Load resources in the reporting period can be broken down as follows:

Participant:	California Department of Water Resources State Water Project ("CDWR SWP")
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No of Resource IDs:	Total of <u>six</u>
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These Participating Load Resources represent an aggregation of pumps; they have been aggregated into separate Participating Load "facilities," for scheduling and settlement purposes.

### **Proxy Demand Resources**

In 2011, there were four active proxy demand resources. The active proxy demand resources in the reporting period can be broken down as follows:

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<sup>6</sup> These six Participating Load resources are unique, non-pumped hydro storage facilities.

Participant: Pacific Gas and Electric (“PG&E”)

No of Resource IDs: Total of three

These proxy demand resources represent an aggregation of retail service accounts assembled into three unique resources for scheduling and settlement purposes.

Participant: San Diego Gas & Electric (“SDG&E”)

No of Resource IDs: Total of one

This proxy demand resource represents an aggregation of retail service accounts assembled into a single resource for scheduling and settlement purposes.

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

The reporting for the 2011 Annual Report reflects the same time constraints as the previous annual reports with respect to the time frames for which the data can be captured and conveyed by the January 15<sup>th</sup> due date. In order to produce and present relevant data consistent with the June 25, 2007 Order, the ISO must largely cull, correlate, and set out information compiled from a larger pool of underlying data in the ISO’s settlement system. Thus, the ISO’s information gathering is constrained by the structure of the ISO’s settlement system and to the extent data can be timely analyzed and presented for inclusion in the 2011 Annual Report. The data set for this report runs from January 1, 2011 through November 30, 2011 (“Reporting Period”) since not all December 2011 settlement data elements are timely available to incorporate into this report; therefore, data through the end of the calendar year cannot be gathered and compiled for the full year before the report due date of January 15.

The January 1, 2011 to November 30, 2011 Reporting Period comprises:

- Ninety-two percent (92%) of the 2011 calendar year period,
- 8,016 hours out of 8,760 total hours in the calendar year, or
- 334 out of 365 calendar days.

For future reporting purposes, the ISO respectfully submits that future annual reports could convey better information if the filing deadline were shifted, so that the reporting period could capture an entire twelve (12) month, 365 day calendar year. Later in the year, the ISO will file a motion with the Commission, asking to change the reporting date, to present this issue to the Commission. The file date would be best

adjusted to a period more than 90 days after the calendar-year end to ensure final settlement data can be analyzed and included in the report.

In addition, the ISO Department of Market Monitoring (DMM) produces an annual report on the performance of the markets administered by the ISO. 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 ISO personnel in producing this annual report on demand response participation within the ISO markets.

## **THE STATE OF DEVELOPMENT IN CALIFORNIA OF RETAIL DEMAND RESPONSE INTENDED TO BE INTEGRATED INTO THE ISO MARKET**

### **The CPUC is Continuing to Address the Rules for Retail Customers to Directly Bid Demand Response into the California ISO Market**

The ISO launched its proxy demand resource product on August 10, 2010, and intends to implement its reliability demand response resource product in the spring of 2012, provided FERC tariff approval.<sup>7</sup> In June 2010, the California Public Utilities Commission (CPUC) issued a decision directing investor owned utilities to prepare to bid demand response into the ISO markets using proxy demand resource pilot programs.<sup>8</sup>

While a positive first step, the CPUC decision expressly limited the participation by bundled utility customers to participate other than through an Investor Owned Utility (“IOU”) pilot program, noting that “no party disputes that the ... [CPUC] has authority over the potential impacts of direct bidding on consumer protection, long-term procurement, resource adequacy requirements, or Loading Order [fn omitted] related issues.”<sup>9</sup>

The CPUC decision did, however, allow for direct access customers, those that procure their electricity through a third-party electricity provider, to offer demand response in the ISO market through the proxy demand resource product. The CPUC decision also identified several important issues that the CPUC stated had to be resolved and clarified before it would allow all customers to offer demand response into the ISO market. Those issues include resolution of demand response compensation (now the subject of FERC Order No. 745), resolving information needs between parties involved

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<sup>7</sup> As indicated above, the ISO’s tariff amendment to establish the reliability demand resource product is the subject of Docket No. ER11-3616-000.

<sup>8</sup> CPUC Decision 10-06-002, issued in Proceeding R.07-01-041. The decision can be accessed on the CPUC’s website at: [http://docs.cpuc.ca.gov/PUBLISHED/FINAL\\_DECISION/118962.htm](http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/118962.htm).

<sup>9</sup> *Id.* at p. 10. In support of this principle, the CPUC Decision cited to Docket No. RM07-19-001, Order No. 719-A, 128 FERC ¶ 61, 059 at P 54. [“We recognize that demand response is a complex matter than is subject to the confluence of state and federal jurisdiction....”]

in a demand response transaction, and CPUC jurisdiction and oversight over third-party (i.e. non-IOU) demand response providers.<sup>10</sup>

Apart from compensation concerns being addressed at the wholesale level, the CPUC has taken steps to develop a retail tariff rule, Rule 24, which will guide the terms, conditions and obligations of retail parties to a wholesale demand response transaction. This activity have been moving forward slowly with a draft Rule 24 proposed and parties providing sets of comments on the rule.<sup>11</sup>

Until the CPUC proceeding resolves these outstanding issues, the CPUC's prohibition on utility bundled customers offering demand response other than through IOU pilot programs will likely remain in effect. While market participants have expressed interest to the ISO in the proxy demand resource product, to date, there has only been limited participation. The ISO believes that the relatively slow pace of demand response participation in the ISO market is because of 1) state and federal regulatory uncertainty around demand response compensation and, 2) the lack of a clear CPUC policy on whether there shall be resource adequacy capacity payments for third-party delivered demand resources offered directly into the wholesale market.

**To Date, the Situation in California Remains that There is No Avenue for Non-IOU Demand Response Providers to Access Resource Capacity Revenue Streams Under the CPUC's Resource Adequacy Program**

Robust participation of demand response in the wholesale market is limited because of the inability for third-party demand response providers to access resource adequacy ("RA") capacity payments. Currently, the CPUC has not established rules that allow third-party demand response resources to qualify as supply-comparable resource adequacy resources. Instead, resource adequacy treatment is only given to demand response that is enrolled in a utility retail demand response program or procured by an IOU.

Demand response enrolled in a utility program comes "off the top" of a load serving entity's resource adequacy requirement (by reducing the level of demand for which the IOU must procure RA resources). Without direct access to resource adequacy capacity payments, the ISO believes it will be very difficult for a competitive demand response delivery paradigm to develop in California. The ISO continues to petition the CPUC to eliminate this barrier and pursue a path for the competitive procurement of all demand response.

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<sup>10</sup> CPUC Decision 10-06-002 at Section 3.4 [*Implementation Timing*] at pp. 16-21.

<sup>11</sup> This activity is taking place within Phase 4 (the Direct Participation Phase) of Proceeding R.07-01-041. Information regarding ongoing activities can be found on the CPUC's proceeding webpage for R.07-01-041 at <http://docs.cpuc.ca.gov/published/proceedings/R0701041.htm>.

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**NON-SPIN CAPACITY AWARDS AND PAYMENT FROM PARTICIPATING  
LOAD RESOURCES**

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In the ISO's wholesale market, market participants can chose to bid Ancillary Services (such as Non-Spinning Reserves), or to self-provide them. Market participants that choose to bid ancillary services receive the Ancillary Service Market Clearing Price. Accordingly, the ISO makes payment to them for the ancillary service capacity type that was offered and accepted. On the other hand, those market participants that fulfill their ancillary service obligation by self-providing effectively receive an offset of their ancillary service obligation. The offset reduces or eliminates the quantity of ancillary service capacity that they must procure from the market.

On average, for the Reporting Period, the ISO system needed approximately 849 MW of Non-spinning Reserve capacity per hour to operate. This procurement average of 849 MW per hour is based upon the total ISO system requirement for non-spinning reserve capacity divided by the total number of hours for the reporting period of Jan 1, 2011 to Nov 30, 2011, which equates to 8,016 hours.

The Participating Load participant covered in this report contributed, on average, 103 MW of non-spinning reserves either through accepted bids or through self-provision. This quantity of Participating Load contribution represented nearly 12% of the ISO hourly Non-spinning Reserve need during the Reporting Period.

However, the range of Non-spinning Reserve capacity offered (or self provided) exhibited some variations during certain, limited hours in 2011. In this regard, Participating Load resources cleared (bid and/or self provided) an hourly maximum of 120 MW and a minimum of 0.5 MW of Non-spinning Reserve capacity on certain occasions. On average, however, 107 MW per hour was bid or self-provided to the ISO.

<b>Total Non-spin Capacity Bid (MW)</b>	<b>Total Non-spin Capacity Awarded (MW)</b>	<b>Total Non-spin Capacity Payments (\$)</b>	<b>Total Non-spin Capacity Self-provided (MW)</b>
665,914	5,683	\$4,444	853,999

*\* These values represent cumulative totals based on all demand response resources.*

**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 ISO dispatch (i.e., by following dispatch instructions and by avoiding uninstructed deviations). When triggered, the No-Pay mechanism results in the rescission of payment for the provision of Spinning Reserve and/or Non-spinning Reserve when, subsequent to: i) the ancillary service award for such ancillary services and ii) the ISO payment for the services, the

ancillary service becomes either undispachable capacity, unavailable capacity, undelivered capacity, or, in certain circumstances, unsynchronized capacity.

In 2011, only a fractional percentage of the total non-spinning capacity awarded to demand resources (approximately 0.2%) was rescinded through the No-Pay settlement mechanism during the reporting period.

<b>TABLE 2 - Summary of Unavailable Non-Spin Capacity</b>		
<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>
859,682	1,611	\$51.50

### **Real-time Energy and Payment from Participating Load Resources**

To meet its real-time reliability needs, the ISO dispatches real-time energy from dispatchable demand resources when it is economic to do so, based on the submitted bids that the Scheduling Coordinator has submitted to the ISO for Participating Load resources. A Participating Load resource can bid to curtail energy and to consume energy, in a fashion similar the way a generator can bid both incremental and decremental energy, by increasing or decreasing the generators energy output.

Per ISO real-time dispatch instructions, a Participating Load resource is either paid for the amount of energy that the resource is instructed to curtail or pays for the amount of energy that the resource is instructed to consume. (This is analogous to the ISO paying a generator to increase output (“INC”) and, correspondingly, the generator paying the ISO to decrease output (“DEC”) relative to the resource’s scheduled energy amount.) Any deviations associated with the ISO’s real-time dispatches, i.e. under-deliveries or over-deliveries, will be settled with the Participating Load resource as uninstructed energy.

The *Total Energy Settlement* values shown in Table 3 and Table 4 below are the net settlement of the ISO’s instructed and uninstructed energy for dispatches to decrease consumption and for dispatches to increase consumption, respectively.

<b>TABLE 3- Decrease Energy Dispatches- Real-time Energy &amp; Settlement Summary</b>				
<b>Total Real-time Energy Offered (MW)</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 to DR Resources (\$)</b>
1,814,447	274	773	552	\$296,186

*\*Where dispatches equal to or greater than 0.015 MW, in any interval, are aggregated by trade hour.*

<b>TABLE 4- Increase Energy Dispatches- Real-time Energy &amp; Settlement Summary</b>				
<b>Total Real-time Energy Offered (MW)</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 Charges to DR Resources (\$)</b>
0	0	0	0	\$0

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

See Appendix A to this 2011 Annual Report for a detailed breakdown of Real-time energy dispatch, by hourly event.

**SUMMARY OF ISO EVENTS BY MONTH AND HOUR**

Given that the majority of dispatchable demand resource megawatts reported here are associated with large pumping resources used to move water, 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 Participating Load resources, like large pumping resources, can participate in the ISO markets in all months and hours of the year means such resources can be of benefit to the ISO as the system operator and helps further demonstrate the comparability that exists in the ISO wholesale market between supply-side and demand-side resources.

**ISO Real-time Dispatches by Month**

The data below demonstrates the broad availability of these Participating Load resources to provide real-time imbalance energy, both the ability to increase and decrease energy consumption based on ISO system needs.

Table 5 below lists the days and hours by month that Participating Load resources were called to curtail load, i.e. decrease energy and Table 6 lists the days and hours by

month that Participating Load resources were called on to consume energy, i.e. increase energy consumption. Table 7 lists the number of dispatch events by hour for the Reporting Period.

Month	Days	Hours
January	4	12
February	1	2
March	3	4
April	1	1
May	1	1
June	4	5
July	2	2
August	1	1
September	2	5
October	2	2
<b>Total:</b>	<b>21</b>	<b>35</b>

Month	Days	Hours
None	NA	NA

Hour Intervals																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Count of Dispatches per Interval																							
4	1	2	3	3	2	2	1	1	0	1	1	3	2	0	0	2	1	0	2	0	1	2	3

**SUMMARY ISO DEMAND RESPONSE RESULTS ACROSS COMPLIANCE YEARS**

For 2011, the percentage of demand response contribution towards the ISO hourly average non-spinning reserve capacity requirement remained stable at approximately 12% from 2010.

Both bidding and self-providing ancillary services from demand resources grew in the ISO market in 2011 relative to 2010. Real-time energy offers from demand resources continued to increase in 2011 relative to 2010 by 85.6%, even though the amount of energy the market required for economic dispatch from demand response moderately declined to 13.5%.

Below are summary tables of comparative results across compliance years:

**TABLE 8**

**Annual DR Contribution to Hourly Avg. Non-spin Capacity Requirement**

Compliance Reporting Year	Hourly Avg. Non-spin Requirement (MW)	Hourly Avg. Awarded Non-spin Quantity (MW)	Percentage of Hourly Non-spin Requirement (%)
2007	812	87	10.7%
2008	899	71	7.9%
2009	906	71	7.8%
2010	883	103	12%
2011	849	107	12.6%

**TABLE 9**

**Year-to-Year Comparison of Non-spin Capacity from Demand Resources\***

Comparison Years	Compliance Reporting Year	Total Non-spin Capacity Bid (% Diff)	Total Non-spin Capacity Awarded (% Diff)	Total Non-spin Capacity Self-Provided (% Diff)
2007/2008	2008	15.7%	-31.9%	-17.9%
2008/2009	2009	-9.0%	-83.6%**	164.6%**
2009/2010	2010	-52.3%	-67.0%	57.2%
2010/2011	2011	95%	-200%	5.3%

\* (-) is a decrease and (+) is an increase in percentage difference between years

\*\* Significant increase in the amount of Non-spin capacity self-provided in 2009 vs. 2008

**TABLE 10**

**Year-to-Year Comparison of Compliance from Demand Resources Providing Non-spin\***

Comparison Years	Compliance Reporting Year	Total Non-spin Capacity Awarded and Self-Provided (% Diff)	Total Non-spin Capacity Unavailable Subject to No Pay (% Diff)	Total Non-spin Capacity Payment Rescinded Due to No Pay Provision (% Diff)
2007/2008	2008	-26.9%	-18.0%	-69.0%
2008/2009	2009	15.0%	-72.3%	-21.3%
2009/2010	2010	46.5%	365.9%	6.2%
2010/2011	2011	4.4%	-200%	-198%

\* (-) is a decrease and (+) is an increase in percentage difference between years

**TABLE 11**  
**Year-to-Year Comparison of Real-time Energy from Demand Resources (Load Curtailments)\***

Comparison Years	Compliance Reporting Year	Total Real-time Energy Offered (% Diff)	Total No. of Dispatches	Total Real-time Energy Instructed (% Diff)	Total Real-time Energy Delivered (% Diff)
2007/2008	2008	-25.5%	55.4%	16.1%	1.2%
2008/2009	2009	-55.4%	320.8%	-22.1%	-0.4%
2009/2010	2010	252.2%	-67.1%	-67.4%	-63.2%
2010/2011	2011	85.6%	64.7%	28.7%	-13.5%

\* (-) is a decrease and (+) is an increase in percentage difference between years

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**APPENDIX A to 2011 ANNUAL REPORT**

2011 ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
EVALUATING ISO DEMAND RESPONSE PARTICIPATION IN THE ISO  
Docket No. ER06-615-\_\_\_\_

<b>REAL TIME ENERGY DISPATCH BY HOURLY EVENT</b>			
<b>Dispatch Event</b>		<b>Data</b>	<b>VALUE</b>
<b>Day</b>	<b>Hour</b>		
1/20/2011	1	Real-time Energy Dispatched; (MW)	16.95
		RT Energy Delivered; (MW)	9.03
		Energy Payment; (\$)	\$10,307.04
		Hourly Avg. System Load; (MW)	28,001
1/29/2011	1	Real-time Energy Dispatched; (MW)	75.40
		RT Energy Delivered; (MW)	1.04
		Energy Payment; (\$)	\$9,582.97
		Hourly Avg. System Load; (MW)	25,330
	2	Real-time Energy Dispatched; (MW)	65.41
		RT Energy Delivered; (MW)	1.00
		Energy Payment; (\$)	\$14,144.69
		Hourly Avg. System Load; (MW)	26,541
	3	Real-time Energy Dispatched; (MW)	77.36
		RT Energy Delivered; (MW)	0.92
		Energy Payment; (\$)	\$1,363.38
		Hourly Avg. System Load; (MW)	26,096
4	Real-time Energy Dispatched; (MW)	0.87	
	RT Energy Delivered; (MW)	0.19	
	Energy Payment; (\$)	\$42.23	
	Hourly Avg. System Load; (MW)	25,358	
5	Real-time Energy Dispatched; (MW)	0.14	
	RT Energy Delivered; (MW)	0.76	
	Energy Payment; (\$)	\$2.92	
	Hourly Avg. System Load; (MW)	24,361	
6	Real-time Energy Dispatched; (MW)	10.58	
	RT Energy Delivered; (MW)	14.65	
	Energy Payment; (\$)	\$321.64	
	Hourly Avg. System Load; (MW)	22,899	
7	Real-time Energy Dispatched; (MW)	14.11	
	RT Energy Delivered; (MW)	66.95	
	Energy Payment; (\$)	\$350.86	
	Hourly Avg. System Load; (MW)	21,686	
12	Real-time Energy Dispatched; (MW)	1.51	
	RT Energy Delivered; (MW)	4.05	
	Energy Payment; (\$)	\$31.71	
	Hourly Avg. System Load; (MW)	19,733	

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**APPENDIX A to 2011 ANNUAL REPORT**

2011 ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
EVALUATING ISO DEMAND RESPONSE PARTICIPATION IN THE ISO  
Docket No. ER06-615-\_\_\_\_

	13	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$) Hourly Avg. System Load; (MW)	4.15 11.48 \$102.76 20,590
	14	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$) Hourly Avg. System Load; (MW)	1.31 2.90 \$33.42 21,781
	24	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$) Hourly Avg. System Load; (MW)	0.55 0.20 \$14.75 23,364
1/30/2011	3	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$) Hourly Avg. System Load; (MW)	4.43 0.68 \$2,281.91 26,987
1/31/2011	17	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$) Hourly Avg. System Load; (MW)	0.54 1.15 \$136.20 27,767
2/18/2011	4	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$) Hourly Avg. System Load; (MW)	75.39 49.96 \$40,335.42 28,059
	5	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$) Hourly Avg. System Load; (MW)	0.63 6.99 \$446.63 26,513
3/9/2011	6	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$) Hourly Avg. System Load; (MW)	0.00 10.41 \$0.09 23,927
3/14/2011	13	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$) Hourly Avg. System Load; (MW)	4.72 44.62 \$1,330.24 23,089
	14	Real-time Energy Dispatched; (MW) RT Energy Delivered; (MW) Energy Payment; (\$)	6.11 74.33 \$3,826.54

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**APPENDIX A to 2011 ANNUAL REPORT**

2011 ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
EVALUATING ISO DEMAND RESPONSE PARTICIPATION IN THE ISO  
Docket No. ER06-615-\_\_\_\_

		Hourly Avg. System Load; (MW)	25,041
3/26/2011	22	Real-time Energy Dispatched; (MW)	4.25
		RT Energy Delivered; (MW)	36.62
		Energy Payment; (\$)	\$667.46
		Hourly Avg. System Load; (MW)	22,389
4/12/2011	13	Real-time Energy Dispatched; (MW)	6.30
		RT Energy Delivered; (MW)	14.69
		Energy Payment; (\$)	\$5,426.46
		Hourly Avg. System Load; (MW)	23,187
5/12/2011	23	Real-time Energy Dispatched; (MW)	0.14
		RT Energy Delivered; (MW)	59.54
		Energy Payment; (\$)	\$18.74
		Hourly Avg. System Load; (MW)	29,005
6/1/2011	1	Real-time Energy Dispatched; (MW)	30.73
		RT Energy Delivered; (MW)	57.09
		Energy Payment; (\$)	\$20,959.78
		Hourly Avg. System Load; (MW)	25,987
6/3/2011	20	Real-time Energy Dispatched; (MW)	16.23
		RT Energy Delivered; (MW)	0.03
		Energy Payment; (\$)	\$15,614.81
		Hourly Avg. System Load; (MW)	28,305
6/20/2011	24	Real-time Energy Dispatched; (MW)	3.35
		RT Energy Delivered; (MW)	0.08
		Energy Payment; (\$)	\$712.20
		Hourly Avg. System Load; (MW)	36,498
6/30/2011	17	Real-time Energy Dispatched; (MW)	10.57
		RT Energy Delivered; (MW)	15.16
		Energy Payment; (\$)	\$3,124.15
		Hourly Avg. System Load; (MW)	30,220
	18	Real-time Energy Dispatched; (MW)	0.63
		RT Energy Delivered; (MW)	10.21
	Energy Payment; (\$)	\$597.69	
	Hourly Avg. System Load; (MW)	31,212	
7/3/2011	11	Real-time Energy Dispatched; (MW)	5.00
		RT Energy Delivered; (MW)	1.20
		Energy Payment; (\$)	\$3,946.46
		Hourly Avg. System Load; (MW)	22,362
7/23/2011	5	Real-time Energy Dispatched; (MW)	6.22
		RT Energy Delivered; (MW)	0.27

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		Energy Payment; (\$)	\$3,173.08
		Hourly Avg. System Load; (MW)	28,359
8/1/2011	20	Real-time Energy Dispatched; (MW)	2.95
		RT Energy Delivered; (MW)	0.85
		Energy Payment; (\$)	\$2,559.94
		Hourly Avg. System Load; (MW)	38,095
9/8/2011	23	Real-time Energy Dispatched; (MW)	2.72
		RT Energy Delivered; (MW)	0.23
		Energy Payment; (\$)	\$142.84
		Hourly Avg. System Load; (MW)	38,362
	24	Real-time Energy Dispatched; (MW)	8.16
		RT Energy Delivered; (MW)	0.63
		Energy Payment; (\$)	\$228.23
		Hourly Avg. System Load; (MW)	37,201
9/9/2011	7	Real-time Energy Dispatched; (MW)	0.31
		RT Energy Delivered; (MW)	0.96
		Energy Payment; (\$)	\$77.81
		Hourly Avg. System Load; (MW)	23,798
	8	Real-time Energy Dispatched; (MW)	2.19
		RT Energy Delivered; (MW)	2.23
		Energy Payment; (\$)	\$217.67
		Hourly Avg. System Load; (MW)	23,353
	9	Real-time Energy Dispatched; (MW)	0.73
		RT Energy Delivered; (MW)	1.03
		Energy Payment; (\$)	\$178.37
		Hourly Avg. System Load; (MW)	22,877
10/7/2011	4	Real-time Energy Dispatched; (MW)	0.00
		RT Energy Delivered; (MW)	18.75
		Energy Payment; (\$)	\$0.36
		Hourly Avg. System Load; (MW)	26,728
10/13/2011	1	Real-time Energy Dispatched; (MW)	35.20
		RT Energy Delivered; (MW)	31.11
		Energy Payment; (\$)	\$1,041.07
		Hourly Avg. System Load; (MW)	34,138

## COMMUNICATIONS

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## CONTENTS OF FILING

The following documents are included in this filing:

- (1) This Transmittal Letter;
- (2) Attachment A Report, entitled "2011 ANNUAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR EVALUATING DEMAND RESPONSE PARTICIPATION IN THE ISO; Reporting Period: Calendar Year 2011"

Respectfully submitted,  
**By: /s/ Baldassaro "Bill" Di Capo**  
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