

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE  
STATE OF CALIFORNIA**

Order Instituting Rulemaking to Consider Refinements to and Further Development of the Commission's Resource Adequacy Requirements Program.

Rulemaking R.05-12-013  
(December 15, 2005)

**REPLY COMMENTS OF  
THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
ON STAFF RECOMMENDATIONS ON  
CAPACITY MARKET STRUCTURE**

Pursuant to the rulings of the Assigned Administrative Law Judge for the California Public Utilities Commission ("Commission" or "CPUC"), dated January 18, February 4, and February 19, 2008, the California Independent System Operator Corporation ("CAISO") submits the following reply comments:

**I. SUMMARY**

If the goal of the Commission is to allow a meaningful role for competitive market-based investment to provide needed electric infrastructure – including new generation, upgrades to existing generation, demand response and transmission – it is critical for the Commission in this proceeding to adopt a multi-year forward framework for committing capacity to serve the load and operating needs of the CAISO balancing authority area. Today's one-year ahead Resource Adequacy ("RA") process will not provide sufficient lead time, either for investment decisions and commitments by investors or for economical comparison of alternative infrastructure investments in a manner that yields the most cost-effective outcomes for consumers. Moreover, once the decision is made to provide a multi-year forward RA commitment framework that will

attract competitive market-based investment, a Centralized Capacity Market (“CCM”) structure provides the most effective, fair and transparent way to accomplish that objective as well as related state policy objectives, while preserving full state authority over RA as contemplated in the Energy Policy Act of 2005.

Some parties commenting in this proceeding argue that a CCM structure will cause the Commission to relinquish authority over RA to the Federal Energy Regulatory Commission (“FERC”). The most important response to this argument is to emphasize the Commission’s continuing authority over the bilateral procurement of its regulated Load Serving Entities (“LSEs”), which will in no way be diminished by the adoption of a CCM framework. The CAISO further suggests the opposite of these parties’ assertions may be true – a bilateral framework may reduce the Commission’s control over procurement through, for example, reduced ability for its decisions to affect procurement criteria and pricing through the CAISO’s backstop procurement mechanism. The parties who advocate the bilateral model based on the fear of loss of Commission control ignore the important role of the CAISO backstop under a permanent bilateral framework. Specifically, in the absence of a more robust, transparent capacity pricing mechanism on a permanent basis, the backstop mechanism will assume heightened significance because it may be the only source of transparent price signals for new investment in locations that have a capacity deficiency.<sup>1</sup> Under a CCM design, however, the backstop mechanism can be integrated into the CCM structure through the

---

<sup>1</sup> In the context of the CAISO’s recent stakeholder process to develop the Interim Capacity Procurement Mechanism (“ICPM”), the CAISO concluded it was not appropriate to use the ICPM to provide investment price signals in deficient locations, given, *inter alia*, the interim nature of the ICPM and the CAISO’s desire not to step ahead of the Long Term RA decision. If the forthcoming Commission decision does not provide for a transparent forward price signal to stimulate investment,

reconfiguration auctions, and as such the backstop will not serve as the only source of a transparent price and would simply inherit any environmental constraints that may be included in the primary auction, rather than a stand-alone backstop mechanism that is not structurally linked to forward RA procurement.

The opponents of a CCM also argue that the CCM will force the Commission to compromise its ability to implement state environmental policy. This argument also is ill-founded and controvertible. Under a CCM, bilateral contracting can still be the predominant form of RA capacity procurement, and the CAISO expects that the Commission will continue the Long Term Procurement Proceeding (“LTPP”) as the means to exercise oversight of the procurement practices of its regulated LSEs. In particular, the LTPP can be a primary vehicle for the Commission to implement state environmental policy, with or without a CCM. The advantage of the CCM, however, is that it also can incorporate environmental constraints to supplement the results of bilateral procurement, and such constraints can apply starting from the primary auction through the sequence of reconfiguration or backstop auctions. Thus the specter of “cheap coal” dominating a CCM auction with no possibility to invoke environmental procurement criteria is simply a scare tactic.<sup>2</sup>

Opponents of a CCM assert that it will result in vastly higher costs to consumers. This assertion rests on the presumptions that under the bilateral model (1) LSEs will be

---

this matter will have to be reconsidered in the context of developing a permanent backstop mechanism.

<sup>2</sup> Moreover, even if no environmental constraints were included in the CCM design or the LTPP requirements, investment decisions are also made in consideration of the costs of compliance with environmental regulation and the impacts of such regulation on expected revenues in energy and ancillary services. Given the already established greenhouse gas reduction goals in AB32, the prospects for investment in a coal plant to serve California will be extremely slim given the high number of emissions allowances such a plant would be required to obtain.

able to pay existing resources less for RA capacity than they pay for new investment, and (2) that paying less to existing resources even if feasible would be unequivocally advantageous to consumers. The CAISO disagrees with both presumptions. First, the purported savings would be eroded both by suppliers who will calculate their offer prices to try to earn their estimates of the fair market value of their capacity, and by the activities of financial intermediaries that will offer profitable market-making services to buyers and sellers to compensate for the absence of a transparent market. Second, contrary to assertions that paying a market clearing capacity price to existing resources will prevent dirty and inefficient resources from retiring, the CAISO would point out that the ability to earn a market clearing price could enable such resources to invest in environmental upgrades and repowering which could meet state environmental objectives at lower cost than driving them to retire and replacing them with new resources. Tightening environmental restrictions and rising costs of compliance (e.g., greenhouse gas allowances) will tend to limit the output of the inefficient or dirty plants. Instead of letting them slip into retirement, however, the recent CAISO study on renewable integration has pointed out that they may be needed primarily for ancillary services, such as regulation, and load following to support the shift of the supply fleet to include increasing amounts of intermittent renewables. In this case paying them a sufficient capacity payment will support the objective of meeting environmental goals reliably and cost effectively. Opponents of a CCM assert that it is incompatible with and will preclude an eventual transition to the gold-standard “energy-only” market. The first thing to point out is that, based on the experience of PJM Interconnection, LLC (“PJM”) and ISO New England, Inc. (“ISO-NE”), market-based investment does not appear in

energy-only markets with bid caps of \$1,000 per MWh, i.e., where there are no meaningful capacity payments. Accordingly, it appears that without bid caps in the multi-thousand dollar range – and credible assurances to investors that policy makers will not intervene when prices hit that range for hours at a time under peak conditions – new investment in response to an energy-only market in California is a vision of the more distant future. Moreover, the energy-only markets of the Electric Reliability Council of Texas and the Midwest Independent System Operator, Inc., are still too new to provide any evidence of success in attracting investment, whereas the ISO-NE’s recent first run of its Forward Capacity Market (“FCM”) cleared the full quantity of demanded capacity at the price floor, including a substantial quantity of new investment in demand response. The argument that a CCM will prevent a, eventual transition to an energy-only market is also incorrect. Suppliers in a competitive CCM will calculate their offer prices to reflect expected earnings in the spot markets. If an energy-only market is found later to be desirable for California, then bid caps will be lifted to allow spot market prices to rise, and prices in the CCM will fall commensurately as spot market earnings reduce the need for RA capacity payments.

Some parties commenting in this proceeding oppose a multi-year forward commitment of RA capacity on the grounds that it will stifle Direct Access. That may be true under the bilateral model they advocate, but in the context of a CCM the opposite is true. Under the bilateral model it is necessary to establish individual procurement requirements for each LSE which, as opponents of a multi-year forward framework argue, are onerous enough in today’s one-year ahead RA process, particularly for smaller LSEs that may be subject to significant amounts of load migration. In a multi-

year forward process, these parties argue, the burden on such LSEs would be insurmountable, and they are probably correct – but only if it is assumed that these LSEs will all have the same multi-year forward forecast-based procurement obligations and compliance provisions. In a CCM framework, however, each LSE, in conjunction with its regulatory authority, can adopt the amount of forward procurement that best fits its business model, then allow the CCM to meet the capacity needs of the system and the local areas, and each LSE will be charged only for its share of the CCM procurement based on its realized load in each delivery month. For this reason a CCM structure in a multi-year forward framework, besides being a boon to Direct Access, also allows for simpler administration and more equitable cost allocation than a bilateral structure.

One party argues for the bilateral non-CCM model, but recognizes the need for a multi-year forward capacity commitment process. It goes on to suggest that the Commission open a single-issue proceeding to decide the optimal time horizon for the multi-year forward process, and then simply move today's one-year forward process to fit that time horizon. The CAISO believes that this suggestion is unrealistic. One issue likely to be extremely contentious, among others, will be how to establish enforceable four- or five-year forward RA procurement obligations for LSEs, particularly smaller LSEs whose business model depends on the Direct Access program. The CAISO therefore believes that a multi-year forward non-CCM long-term RA design would adversely impact the viability of Direct Access.

In summary, the CAISO believes that the bilateral proposals, with or without a multi-year forward capacity commitment process, are thinly-veiled arguments for a

return to the pre-restructuring paradigm whereby all investment in electric infrastructure was made through regulated-monopoly Investor Owned Utility (“IOU”) procurement or construction. The CAISO does not believe that such a return to the past would be in the best interests of consumers, with respect to the overall cost of electricity, the allocation of risk between ratepayers and investors, and the cost of achieving the state’s environmental policy objectives in a timely manner. The CAISO believes that California residents and electricity consumers will be better off on all counts with a long-term RA framework that provides a meaningful role for competitive market-based investment through a multi-year forward CCM-based structure.

A meaningful role for competitive market-based investment does not mean having blind faith in uncontrolled, unregulated “free” markets and their participants to provide the needed infrastructure when and where needed at reasonable prices. There is no such thing as a “free” market. Thus, the policy decision that is required is not markets *versus* regulation, it is to find the right balance of markets *and* regulation. California’s initial market structure clearly did not find the right balance, as the crisis experience proved. Following the crisis the Commission, working closely with its regulated LSEs, the California Energy Commission, the CAISO and other industry participants, has come a long way toward achieving the effective balance of markets and regulation, as demonstrated by the successes of the RA program thus far. At the same time the CAISO – also working closely with the Commission and its staff and all the stakeholders – has completely overhauled its spot markets to create a structure that will send transparent and accurate price signals for efficient short-run operation, more extensive demand response, and new infrastructure investment. Most recently the

Commission has responded to AB32 by proposing a major environmental regulation – a cap-and-trade system for greenhouse gas allowances – which explicitly takes into account the need to align the market-based components of environmental regulation with well-functioning, transparent wholesale markets.<sup>3</sup> The next major piece of a well-balanced market-and-regulatory structure to be decided and developed is the long-term RA framework.

The Commission could decide, of course, that it prefers to return to the pre-restructuring investment paradigm and adopt one of the bilateral models. It is worth pointing out, however, that that paradigm assigns all investment risks and costs to ratepayers instead of investors, and the rates that resulted under that paradigm in the 1980s and 1990s became powerful drivers for industry restructuring. Thus, going back to that paradigm would not be without risks and costs for ratepayers, which the advocates of such a return via the bilateral model sidestep by offering logically-flawed assertions of the dangers of a multi-year forward CCM structure. The CAISO believes that California’s electric industry participants – consumers in particular – deserve better than a return to the old paradigm. They deserve a renewed commitment to find the workable, environmentally sound and cost-effective balance of competitive markets and regulatory oversight.

---

<sup>3</sup> “Interim Opinion on Greenhouse Gas Regulatory Strategies,” Proposed Decision of President Peevey in Rulemaking 06-04-009, dated 3/13/2008.



## II. CAISO REPLY COMMENTS

### A. **Multi-Year Forward Commitment Of RA Capacity And Transparent Capacity Prices Are Needed To Attract Market-Based Investment In Generation And Demand Response, And To Provide An Efficient Means To Compare Supply And Transmission Investment Alternatives.**

The BTG proposal of retaining today's one-year forward RA obligation and showing, combined with spot energy-based markets limited by the currently-anticipated bid cap levels (which will rise to \$1,000/MWh after two years of MRTU market operation), will not be sufficient by themselves to attract market-based investment in generation and demand response.<sup>4</sup> Absent a multi-year forward RA commitment process, a market-based investment climate would require much higher levels of energy bid caps than are currently planned for the CAISO markets. Further, the prospects for adopting bid caps in the multi-thousand dollar range seem unlikely for the foreseeable future, and the CAISO expects that even if the BTG parties who advocate an "energy-only" market were successful in raising the bid caps to an effective level, in the range of \$5,000 per MWh, potential investors would still be wary of regulatory intervention at the first sign of prices anywhere near that level. As a result, the CAISO believes that a decision to adopt the BTG proposal will, in effect, be a decision to obtain all new supply investment through IOU-based procurement for many years to come.

---

4 The ISO-NE and PJM experiences have clearly proven this. Those markets for several years relied on "energy-only" markets with bid caps in the \$1,000 per MWh range and no meaningful capacity payments to compensate for the inability of new generating resources to be viable on spot market earnings alone. The resulting inability to attract new investment led both entities to develop new forward capacity markets.

The CAISO notes that a multi-year forward capacity commitment process and a CCM can be effective in inducing new investment in demand response. One noteworthy recent success was achieved in the first running of the ISO-NE FCM, where the total requirement of over 32,000 MW of capacity for the 2010-11 timeframe was fully procured at a clearing price that equaled the price floor, and which included 1188 MW of new demand-side projects among the 1813 MW of investment in new resources. Admittedly, the possibility of high spot energy prices would also be a strong incentive to invest in demand response, but as noted above it is not likely that bid caps over \$1,000/MWh will be adopted in California during the next several years.

Similarly, a multi-year forward commitment process through a CCM can provide a transparent, economically efficient means for owners of existing plants to evaluate investment in repowering or environmental upgrades versus retirement. And, as was described in the CAISO's section of the Staff Report and its initial comments, a CCM will also provide a transparent mechanism for making economic decisions to build or not to build transmission upgrades depending on the prices and quantities of RA capacity offers.

**B. A CCM Would Not Cause The State To Give Up Its Resource Adequacy Authority To FERC, Nor to Compromise Its Ability to Implement State Environmental Policy.**

The BTG asserts that its proposal would retain state control over procurement, whereas a CCM would cede that control to FERC. The CAISO believes that BTG's assertion is not logical. The adoption of a CCM would have no obvious adverse impact on state authority over resource adequacy.

The BTG argument misses the crucial points that under any RA structure, the Commission would retain full authority over the bilateral procurement of its regulated LSEs,<sup>5</sup> the results of which would be self-supplied by the LSEs into the CCM auctions, and the CAISO would need to have a FERC-approved backstop mechanism in any event. Regarding bilateral procurement, the CAISO expects that the CPUC will continue using the LTPP as a vehicle for reviewing and approving the IOU procurement plans. Through the LTPP the CPUC can exercise its full authority and implement environmental and other policy objectives with respect to procurement by the IOUs to meet their requirements, with the IOU-procured RA capacity then offered as self-supply into the CCM.

With respect to the backstop, participants in the CAISO's recent stakeholder process to design the Interim Capacity Procurement Mechanism ("ICPM") can attest to the nature and extent of controversy over price determination, which the CAISO believes was appropriately resolved for purposes of this interim mechanism as a transition to the Long Term RA framework the Commission will adopt in the instant proceeding. If the Commission now decides that the RA framework will not include a forward CCM, the CAISO will need to reopen all aspects of the backstop discussion to develop a design that is no longer interim but permanent. In that context it is likely that, in the absence of a CCM that provides an efficient capacity price signal based on the cost of new entry in local areas where there is a deficiency and additional infrastructure

---

<sup>5</sup> The CAISO notes that it has recommended, in its recommendations contained in the Staff Report and its initial comments, that the Commission adopt a multi-year forward collaborative state assessment of capacity needs, which would provide comprehensive analysis and information to inform bilateral procurement by LSEs. The CAISO believes that such a process is needed irrespective of the design of the long-term RA framework the Commission adopts, and in the instant Reply presumes the adoption of such a process although it is not discussed further herein.

is needed, a more permanent backstop mechanism would need to take on that role and provide benchmark prices for negotiating forward bilateral RA contracts. Moreover it is likely that such a framework would be less affected by Commission decisions than would a CCM. The reason is that a CAISO-operated mechanism to backstop a purely bilateral procurement framework would be a stand-alone mechanism that is not linked explicitly to the mechanisms and processes governing bilateral procurement, whereas under a CCM the backstop could be an explicit element of the CCM structure through the reconfiguration auctions. For example, if state environmental policy objectives are incorporated as constraints in the CCM, those constraints would apply to the reconfiguration auctions as well. In contrast, if the backstop is a stand-alone reliability procedure it may be more difficult for to incorporate such policy objectives.

Thus, assertions that a CCM will compromise the Commission's ability to implement state environmental policy are also not valid. The CCM (including the primary and reconfiguration auctions) can be designed to incorporate constraints that ensure that particular quantities of particular resource types will clear.<sup>6</sup> By enforcing such constraints the auctions would not simply take the lowest-cost coal plant irrespective of its environmental attributes, as the BTG asserts, but would optimize to achieve lowest cost subject to the environmental constraints. Even without such constraints, rising environmental compliance costs will cause a coal plant that may have been low-cost to become more expensive and hence be dispatched less over time as cleaner units with lower or no compliance costs enter the market and displace it. In fact, if the market,

---

<sup>6</sup> The CAISO's recommendations included in the Staff Report and its initial comments explained that in addition to constraints on the CCM, there will be significant market-based investment incentives in the spot prices for energy and ancillary services, including changing prices for ancillary services as

given increasing needs for renewable integration, valued the reliability support provided by the coal plant's capacity, e.g., the ability to provide regulation, then the CCM would be the most efficient mechanism to recover capacity payments needed to keep the plant available.

Another consideration is that other environmental policy initiatives will have substantial implications for RA procurement, such as the proceeding underway to examine retirement or repowering of generation units using once-through cooling, as discussed further below. How such various environmental regulatory drivers are integrated into the RA structure remains to be worked out and will benefit from a centralized market mechanism that provides transparent market-based price information.

The CAISO fully supports adopting an RA framework that will be effective in preserving state authority over RA and implementing state environmental policy in a timely manner and cost-effectively. Such a framework would include both the CPUC RA proceedings such as the LTPP as well as the CAISO-operated RA elements such as a CCM.

**C. Arguments About Unjust And Unreasonable Cost Impacts Of A CCM Are Erroneous.**

BTG and PG&E assert that a CCM will result in huge excess costs to consumers, based on the concept that paying a market clearing price to all RA capacity that clears the CCM will over-pay existing resources (and thus create a "wealth transfer" from consumers to suppliers) in comparison to a purely bilateral approach whereby LSEs can

---

the need for the services increases to support renewable integration, and for environmental compliance, such as possible greenhouse gas allowance markets under a cap-and-trade system.

pay the existing resources just enough to stay in business. This argument is erroneous in several ways.

First, the argument erroneously assumes that there is no consumer benefit to paying the clearing price to all capacity that clears, even if it enables existing resources to earn a return above their costs of staying in business. Although the approach advocated by these parties might appear cost-effective in the short run, it can easily result in an excessive amount of retirements by facilities that are unable to earn enough to invest in environmental upgrades or repowering. A good illustration of this is “once-through cooling,” a power plant design feature that applies to roughly 21,000 MW of installed capacity within the CAISO balancing authority area and has recently been targeted as having significant adverse environmental impacts. Under a CCM where such capacity can earn the CCM clearing price, owners of these resources will be able to make economically efficient decisions whether to cease operating or invest in environmental upgrades in response to any policy initiatives to eliminate once-through cooling. Under the proposed bilateral approach to avoid paying a market clearing capacity price, these existing resources may have little or no choice but to exit the market, removing a potentially large amount of supply capacity which tends to be concentrated in load pockets and which could, if their revenues justified the investment, remain in operation with less ultimate environmental impact than developing alternative supply capacity for these areas.

Second, the argument assumes that it is feasible to realize substantial short-term consumer savings by paying existing resources less than new investment. This argument is analogous to the well-refuted argument that a “pay-as-bid” regime is

cheaper for buyers than a “pay-the-market-clearing-price” regime. It has been well established that in a pay-as-bid regime, bidding behavior changes as suppliers try to estimate what the market clearing price would be and incorporate that into their supply offers. This outcome will extend to the markets for environmental compliance. If there are no transparent market price signals on which suppliers can base their estimates, their estimates will be highly diverse, with no obvious relationship to each resource’s underlying cost structure, and thus will blur any cost basis to a comparison among their offer prices. As a result, the purported cost savings to consumers will be eroded, and the process will not necessarily choose the most efficient resources. In contrast, a competitive market clearing price regime is known to provide strong incentives to suppliers to bid their lowest acceptable price to maximize their chance of being selected when they are assured that they will earn the clearing price. Alternatively, if a potential investor knows that a new facility will start to receive a much lower capacity price once its status changes from “new” to “existing” it will incorporate that expectation into its offer price prior to committing to constructing the new resource.

If there are transparent capacity price signals, there would likely be some convergence among suppliers’ estimates of the expected clearing price, thus mitigating to some extent the problem of selecting less efficient resources over more efficient ones. But this would not do anything to achieve the cost savings that BTG and PG&E assert consumers would receive under a purely bilateral approach. Moreover, under a purely bilateral approach the CAISO will need to design and implement a permanent backstop procurement mechanism which would by default become the centralized

capacity pricing mechanism that sets a benchmark price for bilateral contracting for RA capacity.

A final point worth noting on this topic is that the absence of transparent markets provides opportunities for third-party intermediaries to capture a significant share of the consumer and producer surpluses that the bilateral proponents assert will be realized as savings to consumers. When centrally-clearing transparent markets are not available such intermediaries provide valuable “market-maker” services by reducing transaction costs for buyers and sellers, but they do so less efficiently than a CCM because each such intermediary controls only a portion of the market. Thus the bilateral versus CCM distinction can be viewed as a distinction between non-transparent, less efficient markets in which consumer and producer surpluses are captured by private market makers, versus transparent efficient markets where the surpluses are realized by the buyers and sellers. The result is that the purported cost savings from adopting a bilateral approach rather than a CCM has little chance of being realized by the consumers to any great extent.

**D. A CCM Framework Is More Compatible With Direct Access Than The Other Proposals.**

The BTG characterizes the CAISO as having an “inherent conflict between two of the CAISO’s key recommendations,” namely, the multi-year forward commitment of RA capacity, and the support for a framework that relies primarily on bilateral procurement by LSEs. The BTG asserts that there is an inconsistency of the CAISO’s positions, stating that “ESPs are unlikely to engage in such procurement multiple years in advance given the uncertainty of their customer loads and, particularly if DA is reopened, the IOUs may be similarly reluctant.” Such a dilemma would be problematic in a purely



bilateral, or bilateral plus CAISO backstop framework. But the BTG misses the essential point that this dilemma is solved by a CCM structure in which each LSE's obligation becomes binding on that LSE only at the end of the delivery month and is settled financially based on the LSE's actual load in that month. Under such a structure, each LSE, in conjunction with its regulatory authority, can decide how much (or how little) it wants to engage in bilateral procurement. The CCM will procure what is needed at the CAISO system level, and in each Local Capacity Area, and will also enforce other procurement constraints that may apply (such as a renewable quota) – all without having to attribute requirement to specific LSEs in advance of the delivery period. The CAISO believes that such an approach provides maximum flexibility to all, but especially to the smaller LSEs who may experience a significant share of their load migrating to another LSE.

The BTG goes on to state, “Even today, in the current bilateral RA framework with DA suspended, the IOUs do not fill their entire capacity portfolios multiple years in advance, and if a greater portion of their load becomes contestable, one would expect even less IOU long-term forward procurement.” This argument is clearly more damaging to PG&E's proposal than to a CCM design, because PG&E argues against adopting a CCM and recommends retaining a purely bilateral framework, yet argues forcefully for a multi-year forward capacity commitment. In the next section the CAISO points out some of the difficulties in moving the current RA framework several years ahead of the delivery period, which PG&E does not address. Suffice it to say here that multi-year forward procurement requirements in a direct access context will likely be extremely burdensome to smaller ESPs absent a CCM.

On a related point, PG&E argues that if a CCM design is adopted it should include opt out provisions, through which LSEs who are fully self-provided may totally bypass the CCM and its settlement process and thereby avoid any associated cost allocation. The CAISO acknowledges the valid concern behind this PG&E recommendation, and fully supports the principle that all LSEs should appropriately accept the risks and costs associated with their own procurement decisions and should not be subject to risks or costs resulting from the actions of other LSEs. The CAISO has reservations about PG&E's proposed opt-out provisions as the best way to achieve this principle, and has described potentially severe unintended consequences of such an approach in its initial comments. The unintended consequences the CAISO identified in the initial comments had to do with the potential of the opt-out provisions to allow an LSE to avoid some portion of cost allocation for which it rightfully should be responsible, and the potential for a large volume of load opting out of the CCM to undermine the value of the CCM clearing price as a signal for new investment. In addition, the CAISO points out that to the extent that significant quantities of load opt out of the CCM, any CCM uplift charges that must be allocated to LSEs will fall on the relatively small remaining share of the load that was not able to opt out, which will result in high per-MWh charges to that load. Moreover, because of the likely aversion to extensive bilateral procurement by smaller LSEs as discussed above, it will tend to be these smaller LSEs that will then disproportionately bear any CCM uplift costs that may arise, for example, when the actual load in a given delivery month is less than the load on which that month's RA capacity procurement was based. As a consequence, allowing significant opt out capability from the CCM structure could reduce the benefits of the CCM in supporting a

more robust Direct Access environment. Given these complexities, the CAISO recommends that the best approach for the Commission to take would be to adopt the high-level principle stated above regarding fair and accurate allocation of costs to LSEs, and then allow the CCM design process to determine the best way to achieve that principle.

**E. PG&E's Recommendation To Conduct A Single-Issue Proceeding To Decide The Time Horizon For A Multi-Year Forward Modification To Today's Ra Framework Underestimates The Difficulty Of The Problem.**

PG&E suggests that a Commission proceeding to decide a single issue – the optimal time horizon for the multi-year forward RA capacity commitment process – is all that is needed to implement their proposal. This suggestion apparently assumes that the rest of the current RA rules and procedures can simply be shifted in time with little additional modification. This view leaves out several important and controversial issues, however, which must be addressed in order to implement a bilateral RA approach on a multi-year forward commitment horizon. The CAISO expects, for example, that it will be difficult to resolve issues such as how to determine each LSE's multi-year forward procurement obligation, what portion of an LSE's total load plus planning reserve margin must be procured five, four or three years ahead of delivery, what triggers will be used for either granting waivers from requirements or penalizing procurement shortfalls, and what penalty prices will be assessed when they are triggered. These issues can be expected to be particularly difficult to resolve in a context where an expansion of the Direct Access program may unfold over the next several years, which will subject each LSE's five-year forward load forecast to a high degree of uncertainty. Even with the proposed electronic bulletin board, the burden is still on the individual LSEs and

suppliers to trade efficiently – a transaction cost challenge that will surely be profitable to third-party intermediaries.

There are many factors to be considered regarding the requirement that will be necessary in the forward timeframe. First, utilizing the bilateral model, there must be a method for LSEs to handle over- and under-procurement. Once the forward commitment is made, LSEs will need a method to adjust their requirements and their capacity holdings given load forecast revisions. An appropriate backstop mechanism must be developed, as discussed above. Another consideration is the possible difficulty faced by Direct Access and smaller LSEs to meet their requirements which may lead to significant inefficiency. For example if a small LSE's requirement is 2 MW in the future period, they may have difficulty procuring a quantity so small as a reasonable price. Finally, some of the RA counting rules may need to be revisited. To illustrate this point, the annual counting rules for wind are based on an average of the last three years. This type of scenario, as it is, probably would not fit into the proposed four- or five-year ahead time-frame scheme.

A multi-year forward commitment based on requiring exact quantities of RA capacity from each LSE will be more administratively cumbersome than an aggregate control area requirement plus local requirements necessary for the CCM. It will take more complex administrative processes and more resources to track individual LSE requirements in a forward timeframe than it would to work with an aggregate requirement that sets the demand in a CCM, and it will be more difficult for each LSE. Additionally this task will necessarily be divided between jurisdictional and non-jurisdictional entities.

**F. The Commission Does Not Need To Fully Specify A Backstop Mechanism In Its Long Term RA Framework Decision.**

PG&E argues that it is essential to protect against circumstances where a “market failure” leads to unanticipated regulatory intervention, thus undermining the climate of certainty for investors that the long-term RA framework is intended to create. In this regard PG&E recommends ex ante (1) specifying regulators’ expectations of what constitutes market success, (2) defining what would constitute a market failure, and (3) specifying what backstop actions would be taken when such market failure occurs. In this regard PG&E appears mainly to view market failure as the failure of the primary CCM auction to procure the required amounts of RA capacity.

The CAISO shares PG&E’s sense of importance regarding stable market rules for the investment climate and the potential for unexpected regulatory intervention to disrupt that stability. The CAISO does not, however, support PG&E’s proposal to fully articulate the three items noted above as a precondition to starting the CCM. Moreover, the CAISO believes that the problem of market failure in the form of under-procurement is possibly a greater concern in the bilateral framework than in the CCM framework, because each LSE’s complete compliance with its multi-year forward requirements will depend on numerous factors including, inter alia, penalties for any shortfall, formulas for allocation of backstop procurement costs, and the liquidity of the Direct Access market. Unless the multi-year forward LSE requirements are for 100 percent of each LSE’s load forecast plus planning reserve margin, and there are sufficiently strong incentives to fully meet these requirements, the likelihood of a procurement shortfall in this time frame and the need to resort to backstop action will be high.

Fundamentally, the CAISO believes that issues of appropriate backstop actions should be discussed further in the context of the comprehensive CCM design process, and should not and need not be decided by the Commission in the instant proceeding. That said, there are a few concerns that must be carefully weighed. First, in the context of a CCM, if the market design lays out a precise definition of market failure and specifies clear actions or procedures to follow when market failure occurs, those elements will form the basis of economic decisions by suppliers whether or not to participate in the CCM. Thus, the CAISO is concerned that by fully specifying these elements ex ante, it may be equivalent to offering two alternative markets for sellers to choose between, and may in turn undermine the incentives to participate in the CCM.

Second, in the context of a bilateral approach, and particularly a multi-year forward bilateral approach, the extent to which LSEs meet their forward procurement requirements will depend to a great degree on their financial incentives to do so, or equivalently, the penalties they will face for any shortfall in forward procurement. As noted earlier, setting such penalties is one of the thornier challenges of extending the bilateral RA framework into a multi-year forward time horizon. In the present discussion, this question relates directly to PG&E's argument paraphrased above – how to specify market failure, and what actions to take when it occurs. Is it a market failure if the LSE determines that it would be less expensive to fall short of its forward procurement requirement and pay the associated penalty and its portion of the backstop charges than it would be to contract bilaterally for the full amount of its requirement? Is it a market failure if the aggregate LSE procurement shortfall and hence the quantity

procured through the CAISO backstop mechanism exceeds a certain percentage of the total requirement at the system level or in a local area?

In summary, the questions of market success or failure, and the appropriate backstop actions to take in the event of such a failure, have their counterparts in the bilateral framework as well as the CCM framework. In either framework, a procurement shortfall is a procurement shortfall and must be addressed, but the CAISO believes the problem is more readily manageable in the CCM framework because, from the CCM perspective there are no LSE-specific shortfalls to be tracked and penalized, and no potential for market failure to be exacerbated by the settings of the under-procurement penalties.

**G. The CAISO Urges the Commission to Make Threshold Decisions and Articulate Overarching Policy Goals to Initiate Design and Development of a CCM Structure, and Not to Make Specific CCM Design Decisions in This Proceeding.**

As a conclusion to these Reply Comments, the CAISO emphasizes its recommendation that the Commission make the key threshold decisions necessary to adopt a multi-year forward RA commitment framework based on a CCM, and to articulate the high-level state policy goals that such a framework must achieve. Such a decision would affirm the Commission's intent to provide a meaningful role for competitive market-based infrastructure investment in supply and demand resources, and would initiate the subsequent detailed CCM design process, which would then adopt the stated policy goals as guiding principles for the effort.

Consistent with the above, the CAISO further recommends that the Commission refrain from deciding the details of the CCM design. The CAISO recognizes that following such a threshold decision, there will be issues that remain unanswered and

perhaps new ones that will arise, some of which should be addressed in a subsequent Commission proceeding as well as many other issues of CCM design that should be addressed through the CAISO stakeholder process. The CAISO believes that these two processes can be conducted in parallel after the Commission provides its policy direction. However, if the Commission adopts a CCM and at the same time specifies design details of that CCM ex ante, the CAISO is concerned that this will make it more difficult to approach CCM design from a whole-system perspective, and to specify the various design details in an optimal manner that achieves the best comprehensive, internally consistent and workable long-term RA structure. The CAISO is particularly concerned about certain elements of Staff Recommendation 1, on which the CAISO commented in the previous round of comments (see, in particular, pp. 13-23). Although Staff Recommendation 1 was presented as a centralized capacity market approach, several of its elements – including the 90 percent forward procurement and CCM opt-out requirement on the IOUs, and the ex post PER deduction applying only to capacity that clears the CCM, among others – have the potential to undermine the ability of the CCM to achieve the objective of attracting market-based investment based on accurate, transparent price signals. The CAISO therefore recommends that the Commission not establish Staff Recommendation 1 or its specific components as a basis for initiating discussion in subsequent activities on CCM design.



### III. CONCLUSION

For the foregoing reasons, the CAISO respectfully requests that the Commission adopt the CAISO's positions and recommendations in this matter, and establish a long-term RA framework, including a multi-year forward capacity commitment process and CCM structure, consistent with the discussion in these comments.

Respectfully submitted,

**/s/Beth Ann Burns**

Beth Ann Burns

Senior Counsel

CALIFORNIA INDEPENDENT SYSTEM  
OPERATOR CORPORATION

151 Blue Ravine Road

Folsom California 95630

Tel. (916) 351-4400

Fax. (916) 608-7296

Email: [bburns@caiso.com](mailto:bburns@caiso.com)

## CERTIFICATE OF SERVICE

I hereby certify that on March 14, 2008, I served, by electronic mail and United States Mail, a copy of Reply Comments of The California Independent System Operator on Staff Recommendations on Capacity Market Structure on all parties in Docket Number R.05-12-013.

DATED at Folsom, California on March 14, 2008.

**/s/ Susan L. Montana**

Susan L. Montana

[smontana@caiso.com](mailto:smontana@caiso.com)

An Employee of the California  
Independent System Operator

ANDREW B. BROWN  
ELLISON, SCHNEIDER & HARRIS, LLP  
2015 H STREET  
SACRAMENTO, CA 95811  
abb@eslawfirm.com

ADAM J. KATZ  
MCDERMOTT WILL & EMERY LLP  
600 13TH STREET, NW,  
WASHINGTON, DC 20005  
ajkatz@mwe.com

G. ALAN COMNES  
NRG ENERGY, INC.  
1819 ASTON STREET, SUITE 105  
CARLSBAD, CA 92008  
alan.comnes@nrgenergy.com

FRANK ANNUNZIATO  
AMERICAN UTILITY NETWORK INC.  
10705 DEER CANYON DR.  
ALTA LOMA, CA 91737-2483  
allwazeready@aol.com

ANDREA WELLER  
STRATEGIC ENERGY  
3130 D BALFOUR RD., SUITE 290  
BRENTWOOD, CA 94513  
aweller@sel.com

BRIAN T. CRAGG  
GOODIN MACBRIDE SQUERI RITCHIE & DAY  
505 SANSOME STREET, SUITE 900  
SAN FRANCISCO, CA 94111  
beragg@goodinmacbride.com

SCOTT BLAISING  
BRAUN & BLAISING, P.C.  
915 L STREET, STE. 1270  
SACRAMENTO, CA 95814  
blaising@braunlegal.com

C. ANTHONY BRAUN  
BRAUN & BLAISING P.C.  
915 L STREET, SUITE 1270  
SACRAMENTO, CA 95814  
braun@braunlegal.com

BARRY R. FLYNN  
FLYNN RESOURCE CONSULTANTS, INC.  
5440 EDGEVIEW DRIVE  
DISCOVERY BAY, CA 94514  
brflynn@flynnrci.com

CATHIE ALLEN  
PACIFICORP  
825 NE MULTNOMAH STREET, SUITE 2000  
PORTLAND, OR 97232  
californiadockets@pacificorp.com

CARMEN BASKETTE  
ENERNOC, INC.  
594 HOWARD STREET, SUITE 400  
SAN FRANCISCO, CA 94105  
cbaskette@enernoc.com

Charlyn A. Hook  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 4107  
SAN FRANCISCO, CA 94102-3214  
chh@cpuc.ca.gov

CONSTANCE PARR LENI  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH ST  
MS-20  
SACRAMENTO, CA 95814  
Cleni@energy.state.ca.us

CAROLYN KEHREIN  
ENERGY MANAGEMENT SERVICES  
1505 DUNLAP COURT  
DIXON, CA 95620-4208  
cmkehrein@ems-ca.com

COURTNEY WEDDINGTON  
COMMERCE ENERGY INC  
222 W. LAS COLINAS BLVD., STE. 950-E  
IRVING, TX 75039  
cweddington@commerceenergy.com

DAVID LLOYD  
NRG ENERGY  
1817 ASTON AVENUE, SUITE 104  
CARLSBAD, CA 92008  
david.lloyd@nrgenergy.com

DAN L. CARROLL  
DOWNEY BRAND, LLP  
555 CAPITOL MALL, 10TH FLOOR  
SACRAMENTO, CA 95814  
dcarroll@downeybrand.com

DAVID E. MORSE  
1411 W. COVELL BLVD., SUITE 106-292  
DAVIS, CA 95616-5934  
demorse@omsoft.com

DIRK A. VAN ULDEN  
UNIVERSITY OF CALIFORNIA  
1111 FRANKLIN STREET, ROOM 6207  
OAKLAND, CA 94607  
dirk.vanulden@ucop.edu

DOUGLAS MCFARLAN  
MIDWEST GENERATION EME  
440 SOUTH LASALLE ST., SUITE 3500  
CHICAGO, IL 60605  
dmcfarlan@mwgen.com

Andrew Campbell  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 5203  
SAN FRANCISCO, CA 94102-3214  
age@cpuc.ca.gov  
AKBAR JAZAYEIRI  
SOUTHERN CALIFORNIA EDISON COMPANY  
2241 WALNUT GROVE AVE. ROOM 390  
PO BOX 800  
ROSEMEAD, CA 91770  
akbar.jazayeri@sce.com

ALEXANDER B. MAKLER  
CALPINE CORPORATION  
3875 HOPYARD ROAD, SUITE 345  
PLEASANTON, CA 94588  
alexm@calpine.com

ANNA MCKENNA  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
amckenna@caiso.com

Bishu Chatterjee  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
bbc@cpuc.ca.gov

BETH VAUGHAN  
CALIFORNIA COGENERATION COUNCIL  
4391 N. MARSH ELDER COURT  
CONCORD, CA 94521  
beth@beth411.com

BARRY F. MCCARTHY  
MCCARTHY & BERLIN, LLP  
100 PARK CENTER PLAZA, SUITE 501  
SAN JOSE, CA 95113  
bmcc@mcCarthyLaw.com

CHARLES A. BRAUN  
BRAUN & BLAISING, P.C.  
915 L STREET, STE. 1420  
SACRAMENTO, CA 95814  
braun@braunlegal.com

BRIAN THEAKER  
DYNEGY  
980 NINTH STREET, SUITE 2130  
SACRAMENTO, CA 95814  
brian.theaker@dynegy.com

CARLA PETERMAN  
UCEI  
2547 CHANNING WAY  
BERKELEY, CA 94720  
carla.peterman@gmail.com

CALIFORNIA ENERGY MARKETS  
517-B POTRERO AVENUE  
SAN FRANCISCO, CA 94110  
cem@newsdata.com

CHRISTOPHER A. HILEN  
SIERRA PACIFIC POWER COMPANY  
6100 NEIL ROAD  
RENO, NV 89511  
chilen@sppc.com

CRAIG MARTIN  
CALPINE CORPORATION  
19100 VISTA DE MONTANAS  
MURRIETA, CA 92562  
cmartin@calpine.com

CRYSTAL NEEDHAM  
EDISON MISSION ENERGY  
18101 VON KARMAN AVE., STE 1700  
IRVINE, CA 92612-1046  
cneedham@edisonmission.com

CYNTHIA A. FONNER  
CONSTELLATION ENERGY GROUP INC  
500 WEST WASHINGTON ST, STE 300  
CHICAGO, IL 60661  
Cynthia.A.Fonner@constellation.com

DAVID BRANCHCOMB  
BRANCHCOMB ASSOCIATES, LLC  
9360 OAKTREE LANE  
ORANGEVILLE, CA 95662  
david@branchcomb.com

DONALD BROOKHYSER  
ALCANTAR & KAHL LLP  
1300 S.W. 5TH AVENUE, SUITE 1750  
PORTLAND, OR 97201  
deb@aklaw.com

DENINIS DE CUIR  
DENNIS W. DE CUIR, A LAW CORPORATION  
2999 DOUGLAS BOULEVARD, SUITE 325  
ROSEVILLE, CA 95661  
dennis@ddccuir.com

Donna J. Hines  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 4102  
SAN FRANCISCO, CA 94102-3214  
djh@cpuc.ca.gov

DESPINA NIEHAUS  
SAN DIEGO GAS AND ELECTRIC COMPANY  
8330 CENTURY PARK COURT, CP32H  
SAN DIEGO, CA 92123-1530  
dniehaus@semprautilities.com

ANN HENDRICKSON  
COMMERCE ENERGY, INC.  
222 WEST LAS COLINAS BLVD., SUITE 950E  
IRVING, TX 75039  
ahendrickson@commerceenergy.com

G. ALAN COMNES  
NRG ENERGY, INC.  
1819 ASTON STREET, SUITE 105  
CARLSBAD, CA 92008  
alan.comnes@nrgenergy.com

ARTHUR HAUBENSTOCK  
PACIFIC GAS AND ELECTRIC COMPANY  
MC B30A PO BOX 770000  
SAN FRANCISCO, CA 94177  
ALHJ@pge.com

ANNA MCKENNA  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
amckenna@caiso.com

BONNIE S. BLAIR  
THOMPSON COBURN LLP  
1909 K STREET, N.W., SUITE 600  
WASHINGTON, DC 20006  
bblair@thompsoncoburn.com

BILL CHEN  
CONSTELLATION NEWENERGY, INC.  
ONE MARKET STREET  
SPEAR TOWER, 36HT FLOOR  
SAN FRANCISCO, CA 94105  
bill.chen@constellation.com

BOB ANDERSON  
APS ENERGY SERVICES CO. INC.  
5255 COUNTY RD 139 SE  
STEWARTVILLE, MN 55976-8085  
Bob\_Anderson@apses.com

BARBARA R. BARKOVICH  
BARKOVICH & YAP, INC.  
44810 ROSEWOOD TERRACE  
MENDOCINO, CA 95460  
rbarkovich@earthlink.net

HSI BANG TANG  
AZUSA LIGHT, POWER & WATER  
729 N. AZUSA AVENUE  
AZUSA, CA 91702-9500  
btang@ci.azusa.ca.us

CASE ADMINISTRATION  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVENUE  
LAW DEPARTMENT, ROOM 370  
ROSEMEAD, CA 91770  
Case.Admin@sce.com

CENTRAL FILES  
SAN DIEGO GAS AND ELECTRIC COMPANY  
8330 CENTURY PARK COURT, CP31E  
SAN DIEGO, CA 92123  
centralfiles@semprautilities.com

CYNTHIA HINMAN  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
CHinman@caiso.com

CHARLES MEE  
CALIFORNIA DEPARTMENT OF WATER  
RESOURCES  
3310 EL CAMINO AVENUE, LL90  
SACRAMENTO, CA 95821  
cmee@water.ca.gov

CARL PECHMAN  
POWER ECONOMICS  
901 CENTER STREET  
SANTA CRUZ, CA 95060  
cpechman@powereconomics.com

DANIEL A. KING  
SEMPPRA ENERGY  
101 ASH STREET, HQ 12  
SAN DIEGO, CA 92101  
daking@sempra.com

DEREK BANDERA  
NERGY, INC.  
1901 NORTH MOORE STREET  
ARLINGTON, VA 22209  
dbandera@reliant.com

DEBRA LLOYD  
CITY OF PALO ALTO  
250 HAMILTON AVE.  
PALO ALTO, CA 94301  
debra.lloyd@cityofpaloalto.org

DON P. GARBER  
SAN DIEGO GAS AND ELECTRIC  
101 ASH STREET  
SAN DIEGO, CA 92101-3017  
DGarber@sempra.com

DAVID X. KOLK  
COMPLETE ENERGY SERVICES INC  
41422 MAGNOLIA STREET  
MURRIETA, CA 92562  
dkolk@compenergy.com

DANIEL W. DOUGLASS  
DOUGLASS & LIDDELL  
21700 OXNARD STREET, SUITE 1030  
WOODLAND HILLS, CA 91367  
douglass@energyattorney.com

ANTHONY J. IVANCOVICH  
CALIFORNIA INDEP. SYSTEM OPERATOR CORP  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
aivanco@caiso.com

ALAN COMNES  
WEST COAST POWER  
3934 SE ASH STREET  
PORTLAND, OR 97214  
alan.comnes@nrgenergy.com

ANDREW L. HARRIS  
PACIFIC GAS & ELECTRIC COMPANY  
PO BOX 770000 MAIL CODE B9A  
SAN FRANCISCO, CA 94177  
alho@pge.com

AUDRA HARTMANN  
DYNEGY, INC.  
980 NINTH STREET, SUITE 2130  
SACRAMENTO, CA 95814  
Audra.Hartmann@Dynegy.com

BETH ANN BURNS  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
LEGAL & REGULATORY DEPARTMENT  
FOLSOM, CA 95630  
bburns@caiso.com

BRIAN K. CHERRY  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 770000, MAIL CODE: B10C  
SAN FRANCISCO, CA 94177  
bk7@pge.com

KEVIN BOUDREAU  
CALPINE CORPORATION  
717 TEXAS AVE.  
HOUSTON, TX 77002  
boudreau@calpine.com

BIANCA BOWMAN  
PACIFIC GAS AND ELECTRIC COMPANY  
77 BEALE STREET, MAIL CODE B9A  
SAN FRANCISCO, CA 94105  
brbc@pge.com

CLAUDIA GREIF  
3144 ALANHILL LANE  
SAN MATEO, CA 94403  
c.greif@comcast.net

CARLA BANKS  
COMPLETE ENERGY  
1331 LAMAR, SUITE 650  
HOUSTON, TX 77010  
cbanks@complete-energy.com

CENTRAL FILES  
SAN DIEGO GAS AND ELECTRIC COMPANY  
8330 CENTURY PARK COURT-CP31E  
SAN DIEGO, CA 92123-1530  
centralfiles@semprautilities.com

CHRISTOPHER C. OHARA  
NRG ENERGY  
211 CARNEGIE CENTER DRIVE  
PRINCETON, NJ 8540  
chris.ohara@nrgenergy.com

CATALIN MICSA  
CAISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
cmicsa@caiso.com

CURTIS KEBLER  
GOLDMAN, SACHS & CO.  
2121 AVENUE OF THE STARS  
LOS ANGELES, CA 90067  
curtis.kebler@gs.com

DAN SILVERIA  
SURPRISE VALLEY ELECTRIC CORPORATION  
PO BOX 691  
ALTURAS, CA 96101  
dansvec@hdo.net

Donald J. Brooks  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
dbr@cpuc.ca.gov

DENNIS M.P. EHILING  
KIRKPATRICK & LOCKHART NICHOLSON  
GRAHAM  
10100 SANTA MONICA BLVD., 7TH FLOOR  
LOS ANGELES, CA 90067  
dehling@kling.com

DIANE I. FELLMAN  
FPL ENERGY, LLC  
234 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102  
diane\_fellman@fpl.com

DAVID MARCUS  
PO BOX 1287  
BERKELEY, CA 94701  
dmarcus2@sbglobal.net

DESPINA PAPAPOSTOLOU  
SAN DIEGO GAS AND ELECTRIC COMPANY  
8330 CENTURY PARK COURT-CP32H  
SAN DIEGO, CA 92123-1530  
dpapapostolou@semprautilities.com

DAVID A. SANDINO  
CALIFORNIA DEPARTMENT OF WATER  
RESOURCES  
1416 9TH STREET RM 1118  
SACRAMENTO, CA 95814  
dsandino@water.ca.gov

ED CHANG  
FLYNN RESOURCE CONSULTANTS, INC.  
2165 MOONSTONE CIRCLE  
EL DORADO HILLS, CA 95762  
edchang@flynnrci.com

EVELYN KAHL  
ALCANTAR & KAHL, LLP  
120 MONTGOMERY STREET, SUITE 2200  
SAN FRANCISCO, CA 94104  
ek@a-klaw.com

ERIC OLSON  
NAVIGANT CONSULTING INC.  
3100 ZINFANDEL DR., STE 600  
RANCHO CORDOVA, CA 95670-6078  
eolson@navigantconsulting.com

KAREN TERRANOVA  
ALCANTAR & KAHL, LLP  
120 MONTGOMERY STREET, STE 2200  
SAN FRANCISCO, CA 94104  
filings@a-klaw.com

GREG BASS  
SEMPRA ENERGY SOLUTIONS  
101 ASH STREET, HQ09  
SAN DIEGO, CA 92101-3017  
gbass@semprasolutions.com

UNIVERSITY OF CALIFORNIA  
1111 FRANKLIN STREET, 6TH FLOOR  
OAKLAND, CA 94607  
george.getgen@ucop.edu

GRACE LIVINGSTON-NUNLEY  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 770000 MAIL CODE B9A  
SAN FRANCISCO, CA 94177  
GX.L2@pge.com

IRYNA KWASNY  
DEPT. OF WATER RESOURCES-CERS DIVISION  
3310 EL CAMINO AVE., STE.120  
SACRAMENTO, CA 95821  
ikwasny@water.ca.gov

JENNIFER CHAMBERLIN  
STRATEGIC ENERGY, LLC  
2633 WELLINGTON CT.  
CLYDE, CA 94520  
jchamberlin@strategicenergy.com

JEFFREY P. GRAY  
DAVIS WRIGHT TREMAINE, LLP  
505 MONTGOMERY STREET, SUITE 800  
SAN FRANCISCO, CA 94111-6533  
jeffgray@dwt.com

JOHN GOODIN  
CALIFORNIA ISO  
151 BLUE RAVINE RD.  
MARKET & PRODUCT DEVELOPMENT  
FOLSOM, CA 95630  
jgoodin@caiso.com

JEDEDIAH GIBSON  
ELLISON SCHNEIDER & HARRIS  
2015 H STREET  
SACRAMENTO, CA 95814  
jig@eslawfirm.com

JANE E. LUCKHARDT  
DOWNEY BRAND LLP  
555 CAPITOL MALL, 10TH FLOOR  
SACRAMENTO, CA 95814  
jluckhardt@downeybrand.com

Joe Como  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 5033  
SAN FRANCISCO, CA 94102-3214  
joc@cpuc.ca.gov

JOY A. WARREN  
MODESTO IRRIGATION DISTRICT  
1231 11TH STREET  
MODESTO, CA 95354  
joyw@mid.org

JUDY PAU  
DAVIS WRIGHT TREMAINE LLP  
505 MONTGOMERY STREET, SUITE 800  
SAN FRANCISCO, CA 94111-6533  
judypau@dwt.com

JOSEPH F. WIEDMAN  
GOODIN MACBRIDE SQUERI DAY & LAMPREY  
LLP  
505 SANSOME STREET, SUITE 900  
SAN FRANCISCO, CA 94111  
jwiedman@goodinmacbride.com

KAREN A. LINDH  
LINDH & ASSOCIATES  
7909 WALERGA ROAD, NO. 112, PMB 119  
ANTELOPE, CA 95843  
karen@klindh.com

KIRBY DUSEL  
NAVIGANT CONSULTING, INC.  
3100 ZINFANDEL DRIVE, SUITE 600  
RANCHO CORDOVA, CA 95670  
kdusel@navigantconsulting.com

DEVRA WANG  
NATURAL RESOURCES DEFENSE COUNCIL  
111 SUTTER STREET, 20TH FLOOR  
SAN FRANCISCO, CA 94104  
dwang@nrdc.org

Elizabeth Dorman  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 4300  
SAN FRANCISCO, CA 94102-3214  
edd@cpuc.ca.gov

Elizabeth Stoltzfus  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
eks@cpuc.ca.gov

CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
e-recipient@caiso.com

FRED MASON  
CITY OF BANNING  
176 EAST LINCOLN  
BANNING, CA 92220  
fmason@ci.banning.ca.us

GURCHARAN BAWA  
PASADENA WATER AND POWER  
150 S. LOS ROBLES, SUITE 200  
PASADENA, CA 91101  
gbawa@cityofpasadena.net

GIFFORD JUNG  
POWEREX CORPORATION  
666 BURRARD STREET, SUITE 1400  
VANCOUVER, BC V6C 2X8  
gifford.jung@powerex.com

MICHAEL WERNER  
CALIFORNIA DEPARTMENT OF WATER  
RESOURCES  
3310 EL CAMINO AVE, LL90  
SACRAMENTO, CA 95821  
heronin@water.ca.gov

IRENE K. MOOSEN  
53 SANTA YNEZ AVENUE  
SAN FRANCISCO, CA 94112  
irene@igc.org

JACQUELINE DEROSA  
CUSTOMIZED ENERGY SOLUTIONS  
101 PARKSHORE DRIVE SUITE 100  
FOLSOM, CA 95630  
jderosa@ces-ild.com

JENINE SCHENK  
APS ENERGY SERVICES  
400 E. VAN BUREN STREET, SUITE 750  
PHOENIX, AZ 85004  
jenine.schenk@apses.com

JIM HENDRY  
SAN FRANCISCO PUBLIC UTILITIES COMM.  
1155 MARKET STREET, 4TH FLOOR  
SAN FRANCISCO, CA 94103  
jhendry@sfwater.org

JEDEDIAH J. GIBSON  
ELLISON SCHNEIDER & HARRIS LLP  
2015 H STREET  
SACRAMENTO, CA 95811  
jig@eslawfirm.com

JAMES MCCLAIN  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
C  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
jmcclain@caiso.com

UNIVERSITY OF CALIFORNIA  
1111 FRANKLIN STREET, 6TH FLOOR  
OAKLAND, CA 94607  
john.rolle@ucop.edu

JOHN PACHECO  
CA DEPT. OF WATER RESOURCES  
3310 EL CAMINO AVENUE, SUITE 120  
SACRAMENTO, CA 95821  
jpacheco@water.ca.gov

JULIE L. MARTIN  
NORTH AMERICA GAS AND POWER  
501 WESTLAKE PARK BLVD.  
BP ENERGY COMPANY  
HOUSTON, TX 77079  
julie.martin@bp.com

JIM WOODWARD  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS 20  
SACRAMENTO, CA 95814-5504  
jwoodwar@energy.state.ca.us

KATHRYN WIG  
NRG ENERGY, INC.  
211 CARNEGIE CENTER  
PRINCETON, NY 8540  
Kathryn.Wig@nrgenergy.com

Kathryn Auriemma  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
kdw@cpuc.ca.gov

DAVID WITHROW  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
dwithrow@caiso.com

EDWARD W. ONEILL  
DAVIS WRIGHT TREMAINE LLP  
505 MONTGOMERY STREET, SUITE 800  
SAN FRANCISCO, CA 94111-6533  
edwardoneill@dwt.com

ED LUCHA  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 770000, MAIL CODE B9A  
SAN FRANCISCO, CA 94177  
ELL5@pge.com

EDWARD V. KURZ  
PACIFIC GAS AND ELECTRIC COMPANY  
77 BEALE STREET  
SAN FRANCISCO, CA 94105  
evk1@pge.com

FRED MOBASHERI  
ELECTRIC POWER GROUP  
201 S. LAKE AVE., SUITE 400  
PASADENA, CA 91101  
fmobasher@aol.com

GREGORY T. BLUE  
ENXCO DEVELOPMENT CORP.  
5000 EXECUTIVE PARKWAY, STE. 140  
SAN RAMON, CA 94583  
gblue@enxco.com

GRANT A. ROSENBLUM  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
grosenblum@caiso.com

HOLLY B. CRONIN  
CALIFORNIA DEPARTMENT OF WATER  
RESOURCES  
3310 EL CAMINO AVE., LL-90  
SACRAMENTO, CA 95821  
hcronin@water.ca.gov

L. JAN REID  
COAST ECONOMIC CONSULTING  
3185 GROSS ROAD  
SANTA CRUZ, CA 95062  
janreid@coastecon.com

JEFFERY D. HARRIS  
ELLISON, SCHNEIDER & HARRIS LLP  
2015 H STREET  
SACRAMENTO, CA 95814-3109  
jdh@eslawfirm.com

JESUS ARREDONDO  
NRG ENERGY INC.  
4600 CARLSBAD BLVD.  
CARLSBAD, CA 92008  
jesus.arredondo@nrgenergy.com

JAMES MAYHEW  
MIRANT CORPORATION  
1155 PERIMETER CENTER WEST  
ATLANTA, GA 30338  
jim.mayhew@mirant.com

KAREN E. BOWEN  
WINSTON & STRAWN LLP  
101 CALIFORNIA STREET, 39TH FLOOR  
SAN FRANCISCO, CA 94111  
jkarp@winston.com

JAMES MCMAHON  
CRA INTERNATIONAL  
50 CHURCH ST.  
CAMBRIDGE, MA 2138  
jmcMahon@crai.com

JOHN R. REDDING  
ARCTURUS ENERGY CONSULTING  
44810 ROSEWOOD TERRACE  
MENDOCINO, CA 95460  
johnredding@earthlink.net

JANINE L. SCANCARELLI  
FOLGER, LEVIN & KAHN, LLP  
275 BATTERY STREET, 23RD FLOOR  
SAN FRANCISCO, CA 94111  
jscancarelli@flk.com

John Walser  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
jw6@cpuc.ca.gov

KENNETH E. ABREU  
853 OVERLOOK COURT  
SAN MATEO, CA 94403  
k.abreu@sbglobal.net

KATIE KAPLAN  
INTEGRATED ENERGY SOLUTIONS LLC  
2701 DEL PASO ROAD, SUITE 130-304  
SACRAMENTO, CA 95835  
katie@iesolutionsllc.net

KEVIN WOODRUFF  
WOODRUFF EXPERT SERVICES, INC.  
1100 K STREET, SUITE 204  
SACRAMENTO, CA 95814  
kdw@woodruff-expert-services.com

DONALD SCHOENBECK  
RCS, INC.  
900 WASHINGTON STREET, SUITE 780  
VANCOUVER, WA 98660  
dws@r-c-s-inc.com

E.J. WRIGHT  
OCCIDENTAL POWER SERVICES, INC.  
5 GREENWAY PLAZA, SUITE 110  
HOUSTON, TX 77046  
ej\_wright@oxy.com

ELENA MELLO  
SIERRA PACIFIC POWER COMPANY  
6100 NEIL ROAD  
RENO, NV 89520  
emello@sppc.com

VICKI E. FERGUSON  
BRAUN & BLAISING P.C.  
915 L STREET, SUITE 1420  
SACRAMENTO, CA 95814  
ferguson@braunlegal.com

Farzad Ghazzagh  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 4209  
SAN FRANCISCO, CA 94102-3214  
fxg@cpuc.ca.gov

GARY DESHAZO  
CALIFORNIA ISO  
PO BOX 639014  
FOLSOM, CA 95763-9014  
gdeshazo@caiso.com

GRETCHEN SCHOTT  
RELIANT ENERGY, INC.  
1000 MAIN STREET  
HOUSTON, TX 77002  
gschott@reliant.com

HUGH TARPLEY  
COMPLETE ENERGY  
1331 LAMAR SUITE 650  
HOUSTON, TX 77010  
htarpley@complete-energy.com

JEANNE B. ARMSTRONG  
GOODIN MACBRIDE SQUERI RITCHIE & DAY LLP  
505 SANSOME STREET, SUITE 900  
SAN FRANCISCO, CA 94111  
jamstrong@goodinmacbride.com

JEFF LAM  
POWEREX CORP  
666 BURRARD STREET, SUITE 1400  
VANCOUVER, BC V6C 2X8  
jeff.lam@powerex.com

JACQUELINE GEORGE  
CALIFORNIA DEPARTMENT OF WATER  
RESOURCES  
3310 EL CAMINO AVE, RM. 120  
SACRAMENTO, CA 95821  
jgeorge@water.ca.gov

JAMES ROSS  
REGULATORY & COGENERATION SERVICES, INC.  
500 CHESTERFIELD CENTER, SUITE 320  
CHESTERFIELD, MO 63017  
jimross@r-c-s-inc.com

JOHN W. LESLIE  
LUCE, FORWARD, HAMILTON & SCRIPPS, LLP  
11988 EL CAMINO REAL, SUITE 200  
SAN DIEGO, CA 92130  
jleslie@luce.com

JENNIFER A. MORRISSEY  
CLEARY GOTTlieb STEEN & HAMILTON LLP  
2000 PENNSYLVANIA AVE., NW, SUITE 900  
WASHINGTON, DC 20006  
jmorrissey@cgsb.com

JEANNETTE OLKO  
650 NORTH LA CADENA DRIVE  
COLTON ELECTRIC DEPARTMENT  
COLTON, CA 92324  
jolko@ci.colton.ca.us

JAMES D. SQUERI  
GOODIN, MACBRIDE, SQUERI, DAY & LAMPREY  
505 SANSOME STREET, SUITE 900  
SAN FRANCISCO, CA 94111  
jsqueri@goodinmacbride.com

JAMES WEIL  
AGLET CONSUMER ALLIANCE  
PO BOX 37  
COOL, CA 95614  
jweil@aglet.org

KEONI ALMEIDA  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
151 BLUE RAVINE RD.  
FOLSOM, CA 95630  
kalmeida@caiso.com

Kevin R. Dudeney  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
kd1@cpuc.ca.gov

KEITH MCCREA  
SUTHERLAND, ASBILL & BRENNAN  
1275 PENNSYLVANIA AVENUE, NW  
WASHINGTON, DC 20004-2415  
keith.mccrea@sablaw.com

KENNY SWAIN  
NAVIGANT CONSULTING  
3100 ZINFANDEL DRIVE, SUITE 600  
RANCHO CORDOVA, CA 95670  
kenneth.swain@navigantconsulting.com

KEVIN J. SIMONSEN  
ENERGY MANAGEMENT SERVICES  
646 EAST THIRD AVENUE  
DURANGO, CO 81301  
kjsimonsen@ems-ca.com

KARLEEN O'CONNOR  
WINSTON & STRAWN LLP  
101 CALIFORNIA STREET 39TH FLR  
SAN FRANCISCO, CA 94111  
koonor@winston.com

KRIS G. CHISHOLM  
CALIFORNIA ELECTRICITY OVERSIGHT BOARD  
770 L STREET, SUITE 1250  
SACRAMENTO, CA 95814  
kris.chisholm@eob.ca.gov

Laurence Chaset  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 5131  
SAN FRANCISCO, CA 94102-3214  
lau@cpuc.ca.gov

DONALD C. LIDDELL  
DOUGLASS & LIDDELL  
2928 2ND AVENUE  
SAN DIEGO, CA 92103  
liddell@energyattorney.com

LAWRENCE KOSTRZEWA  
EDISON MISSION ENERGY  
18101 VON KARMAN AVE., STE 1700  
IRVINE, CA 92612-1046  
lkostrzewa@edisonmission.com

LEE TERRY  
CALIFORNIA DEPARTMENT OF WATER  
RESOURCES  
3310 EL CAMINO AVENUE  
SACRAMENTO, CA 95821  
lterry@water.ca.gov

MARCIE MILNER  
CORAL ENERGY RESOURCES, L P  
4445 EASTGATE MALL, SUITE 100  
SAN DIEGO, CA 92121  
marcie.milner@shell.com

BRUCE MCLAUGHLIN  
BRAUN & BLAISING, P.C.  
915 L STREET SUITE 1420  
SACRAMENTO, CA 95814  
mclaughlin@braunlegal.com

MELANIE GILLETTE  
ENERNOC, INC.  
115 HAZELMERE DRIVE  
FOLSOM, CA 95630  
mgillette@enernoc.com

MIKE JASKE  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS-22  
SACRAMENTO, CA 95814  
mjaskel@energy.state.ca.us

MARC PRYOR  
CALIFORNIA ENERGY COMMISSION  
1516 9TH ST, MS 20  
SACRAMENTO, CA 95814  
mpryor@energy.state.ca.us

MICHAEL SHAMES  
UTILITY CONSUMERS' ACTION NETWORK  
3100 FIFTH AVENUE, SUITE B  
SAN DIEGO, CA 92103  
mshames@ucan.org

MICHAEL A. YUFFEE  
MCDERMOTT WILL & EMERY LLP  
600 THIRTEENTH STREET, N.W.  
WASHINGTON, DC 20005-3096  
myuffee@mwc.com

NANCY TRONAAS  
CALIFORNIA ENERGY COMMISSION  
1516 9TH ST. MS-20  
SACRAMENTO, CA 95814-5512  
ntronaas@energy.state.ca.us

PHILIP HERRINGTON  
EDISON MISSION ENERGY  
18101 VON KARMAN AVENUE, STE 1700  
IRVINE, CA 92612-1046  
pherrington@edisonmission.com

PHILIP D. PETTINGILL  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
ppettingill@caiso.com

JOHN DUTCHER  
MOUNTAIN UTILITIES  
3210 CORTE VALENCIA  
FAIRFIELD, CA 94534-7875  
ralfd241a@cs.com

RICK C. NOGER  
PRAXAIR PLAINFIELD, INC.  
2711 CENTERVILLE ROAD, SUITE 400  
WILMINGTON, DE 19808  
rick\_noger@praxair.com

KERRY HATTEVIK  
MIRANT CORPORATION  
696 WEST 10TH STREET  
PITTSBURG, CA 94565  
kerry.hattevik@mirant.com

GREGORY S.G. KLATT  
DOUGLASS & LIDDELL  
411 E. HUNTINGTON DRIVE, SUITE 107-356  
ARCADIA, CA 91007  
klatt@energyattorney.com

AVIS KOWALEWSKI  
CALPINE CORPORATION  
3875 HOPYARD ROAD, SUITE 345  
PLEASANTON, CA 94588  
kowalewskia@calpine.com

KEN SIMS  
SILICON VALLEY POWER  
1601 CIVIC CENTER DR. NO. 201  
SANTA CLARA, CA 95050  
ksims@siliconvalleypower.com

LAURA GENAO  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVENUE  
LAW DEPARTMENT  
ROSEMead, CA 91770  
laura.genao@sce.com

LINDA Y. SHERIF  
CALPINE CORPORATION  
3875 HOPYARD ROAD, SUITE 345  
PLEASANTON, CA 94588  
linda.sherif@calpine.com

LORENZO KRISTOV  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
lkristov@caiso.com

LEEANNE UHLER  
CITY OF RIVERSIDE  
2911 ADAMS STREET  
RIVERSIDE, CA 92504  
luhler@riversideca.gov

MARK J. SMITH  
FPL ENERGY  
3195 DANVILLE BLVD, STE 201  
ALAMO, CA 94507  
mark\_j\_smith@fpl.com

MICHAEL B. DAY  
GOODIN MACBRIDE SQUERI DAY & LAMPREY  
LLP  
505 SANSOME STREET, SUITE 900  
SAN FRANCISCO, CA 94111  
mday@goodinmacbride.com

MICHAEL A. BACKSTROM  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVENUE  
ROSEMead, CA 91770  
michael.backstrom@sce.com

Matthew Deal  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 5215  
SAN FRANCISCO, CA 94102-3214  
mjd@cpuc.ca.gov

MANUEL RAMIREZ  
CITY AND COUNTY OF SAN FRANCISCO  
1155 MARKET STREET, 4TH FLOOR  
SAN FRANCISCO, CA 94103  
mramirez@sfgwater.org

Mark S. Wetzell  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 5009  
SAN FRANCISCO, CA 94102-3214  
msw@cpuc.ca.gov

Nancy Ryan  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 5217  
SAN FRANCISCO, CA 94102-3214  
ner@cpuc.ca.gov

SHMUEL S. OREN  
UNIVERSITY OF CALIFORNIA AT BERKELEY  
ETCHEVERRY HALL 4119  
BERKELEY, CA 94720-1777  
oren@ieor.berkeley.edu

PHILIPPE AUCLAIR  
11 RUSSELL COURT  
WALNUT CREEK, CA 94598  
philha@astound.net

PETER TELLEGEN  
COMPLETE ENERGY  
1331 LAMAR, SUITE 650  
HOUSTON, TX 77010  
ptellegen@complete-energy.com

RICHARD H. COUNIHAN  
ENERNOC, INC.  
594 HOWARD ST., SUITE 400  
SAN FRANCISCO, CA 94105  
rcounihan@enernoc.com

RONALD MOORE  
GOLDEN STATE WATER/BEAR VALLEY ELECTRIC  
630 EAST FOOTHILL BOULEVARD  
SAN DIMAS, CA 91773  
rkmoore@gswater.com

KATHLEEN ESPOSITO  
CRESTED BUTTE CATALYSTS LLC  
PO BOX 668  
CRESTED BUTTE, CO 81224  
kesposito@cbccatalysts.com

KIMBERLY KIENER  
IMPERIAL IRRIGATION DISTRICT  
504 CATALINA BLVD.  
SAN DIEGO, CA 92106  
kмкиener@cox.net

Karen P. Paull  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 4300  
SAN FRANCISCO, CA 94102-3214  
kpp@cpuc.ca.gov

KEITH SWITZER  
GOLDEN STATE WATER COMPANY  
630 EAST FOOTHILL BLVD.  
SAN DIMAS, CA 91773-9016  
kswitzer@gswater.com

LISA A. COTTLE  
WINSTON & STRAWN LLP  
101 CALIFORNIA STREET, 39TH FLOOR  
SAN FRANCISCO, CA 94111  
lcottle@winston.com

LISA M. DECKER  
CONSTELLATION ENERGY GROUP, INC.  
111 MARKET PLACE, SUITE 500  
BALTIMORE, MD 21202  
lisa.decker@constellation.com

LYNN MARSHALL  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS-22  
SACRAMENTO, CA 95814  
lmarshall@energy.state.ca.us

LISA G. URICK  
SAN DIEGO GAS & ELECTRIC COMPANY  
101 ASH STREET, HQ-12  
SAN DIEGO, CA 92101  
LURick@sempra.com

MARY LYNCH  
CONSTELLATION ENERGY COMMODITIES GROUP  
2377 GOLD MEDAL WAY, SUITE 100  
GOLD RIVER, CA 95670  
mary.lynych@constellation.com

MARC D. JOSEPH  
ADAMS, BROADWELL, JOSEPH & CARDOZO  
601 GATEWAY BLVD., STE. 1000  
SOUTH SAN FRANCISCO, CA 94080  
mdjoseph@adamsbroadwell.com

MIKE EVANS  
CORAL POWER, LLC  
4445 EASTGATE MALL, SUITE 100  
SAN DIEGO, CA 92121  
michael.evans@shell.com

MICHAEL MAZUR  
3 PHASES RENEWABLES, LLC  
8333 ZITOLA TER  
PLAYA DEL REY, CA 90293-7835  
mmazur@3phasesRenewables.com

MIKE RINGER  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS-20  
SACRAMENTO, CA 95814  
mringer@energy.state.ca.us

MICHAEL TEN EYCK  
CITY OF RANCHO CUCAMONGA  
10500 CIVIC CENTER DRIVE  
RANCHO CUCAMONGA, CA 91730  
MTENEYCK@CI.RANCHO-CUCAMONGA.CA.US

JESSICA NELSON  
PLUMAS-SIERRA RURAL ELECTRIC CO-OP  
73233 HIGHWAY 70 STE A  
PO BOX 2000  
PORTOLA, CA 96122-2000  
notice@psrec.coop

PATRICIA GIDEON  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 770000  
PG&E, MAIL CODE B9A  
SAN FRANCISCO, CA 94177  
peg8@pge.com

PHILLIP J. MULLER  
SCD ENERGY SOLUTIONS  
436 NOVA ALBION WAY  
SAN RAFAEL, CA 94903  
philm@scedenergy.com

PATRICIA THOMPSON  
SUMMIT BLUE CONSULTING  
2920 CAMINO DIABLO, SUITE 210  
WALNUT CREEK, CA 94597  
pthompson@summitblue.com

BOB EMMERT  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
remmert@caiso.com

Robert L. Strauss  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
rls@cpuc.ca.gov

KEITH JOHNSON  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
kjohnson@caiso.com

KIM KIENER  
504 CATALINA BLVD.  
SAN DIEGO, CA 92106  
kмкиener@fox.net

Katie Liu  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 4103  
SAN FRANCISCO, CA 94102-3214  
kql@cpuc.ca.gov

KURT DUVALL  
CITY OF CORONA  
730 CORPORATION YARD WAY  
DEPT. OF WATER AND POWER  
CORONA, CA 92880  
kurt.duvall@ci.corona.ca.us

LES PEREIRA  
NORTHERN CALIFORNIA POWER AGENCY  
180 CIRBY WAY  
ROSEVILLE, CA 95678  
Les.Pereira@ncpa.com

LISA WEINZIMER  
PLATTS MCGRAW-HILL  
695 NINTH AVENUE, NO. 2  
SAN FRANCISCO, CA 94118  
lisa\_weinzimer@platts.com

LYNN M. HAUG  
ELLISON & SCHNEIDER  
2015 H STREET  
SACRAMENTO, CA 95814-3109  
lmh@eslawfirm.com

LANA WONG  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH ST., MS-20  
SACRAMENTO, CA 95814  
lwong@energy.state.ca.us

UNIVERSITY OF CALIFORNIA  
1111 FRANKLIN STREET, 6TH FLOOR  
OAKLAND, CA 94607  
matthew.stclair@ucop.edu

MICHEL PETER FLORIO  
THE UTILITY REFORM NETWORK (TURN)  
711 VAN NESS AVENUE, SUITE 350  
SAN FRANCISCO, CA 94102  
mflorio@turn.org

MICHAEL J. GERGEN  
LATHAM & WATKINS LLP  
555 ELEVENTH STREET, NW  
SUITE 1000  
WASHINGTON, DC 20004-1304  
michael.gergen@lw.com

MARGARET E. MCNAUL  
THOMPSON COBURN LLP  
1909 K STREET, N.W., SUITE 600  
WASHINGTON, DC 20006  
mmcnaul@thompsoncoburn.com

MRW & ASSOCIATES, INC.  
1814 FRANKLIN STREET, SUITE 720  
OAKLAND, CA 94612  
mrw@mrwassoc.com

MARIO VILLAR  
SIERRA PACIFIC POWER COMPANY  
6226 W SAHARA AVENUE MS26  
LAS VEGAS, NV 89146  
mvillar@nevpc.com

NANCY RADER  
CALIFORNIA WIND ENERGY ASSOCIATION  
2560 NINTH STREET, SUITE 213A  
BERKELEY, CA 94710  
nrader@calwea.org

MARK L. PERLIS  
DICKSTEIN SHAPIRO LLP  
1825 EYE STREET, NW  
WASHINGTON, DC 20006  
perlism@dicksteinshapiro.com

PAMELA J. MILLS  
SAN DIEGO GAS & ELECTRIC  
8330 CENTURY PARK COURT, CP32H  
SAN DIEGO, CA 92123  
pmills@semprautilities.com

RACHEL MCMAHON  
CEERT  
1100 11TH STREET, SUITE 311  
SACRAMENTO, CA 95814  
rachel@ceert.org

RAYMOND HUNG  
PG&E  
PO BOX 770000 MAIL CODE B9A  
SAN FRANCISCO, CA 94177  
RHHJ@pge.com

Rahmon Momoh  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 4205  
SAN FRANCISCO, CA 94102-3214  
rmm@cpuc.ca.gov

RANDY NICHOLSON  
SAN DIEGO GAS & ELECTRIC  
8830 CENTURY PARK COURT, CP32H  
SAN DIEGO, CA 92123  
RNicholson@Semprautilities.com

ROBIN SMUTNY-JONES  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630  
rsmutny-jones@caiso.com

RYAN FLYNN  
PACIFICORP  
825 NE MULTNOMAH, SUITE 1800  
PORTLAND, OR 97232  
ryan.flynn@pacificorp.com

SARA O'NEILL  
CONSTELLATION NEW ENERGY, INC.  
ONE MARKET STREET  
SPEAR TOWER, 36TH FLOOR  
SAN FRANCISCO, CA 94105  
sara.oneill@constellation.com

Simon Baker  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
sbg@cpuc.ca.gov

Sudheer Gokhale  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 4209  
SAN FRANCISCO, CA 94102-3214  
skg@cpuc.ca.gov

STACY AGUAYO  
APS ENERGY SERVICES  
400 E. VAN BUREN STREET, SUITE 750  
PHOENIX, AZ 85004  
stacy.aguayo@apses.com

STEVEN KELLY  
INDEPENDENT ENERGY PRODUCERS ASSN  
1215 K STREET, SUITE 900  
SACRAMENTO, CA 95814  
steven@iepa.com

TOM BRILL  
SEMPRA ENERGY CORPORATE CENTER  
101 ASH STREET-HQ13A  
SAN DIEGO, CA 92101-3017  
tbrill@sempra.com

THOMAS DARTON  
PILOT POWER GROUP, INC.  
9320 CHESAPEAKE DRIVE, SUITE 112  
SAN DIEGO, CA 92123  
tdarton@pilotpowergroup.com

TONY ZIMMER  
NORTHERN CALIFORNIA POWER AGENCY  
180 CIRBY WAY  
ROSEVILLE, CA 95678-6420  
Tony.Zimmer@ncpa.com

VALERIE WINN  
PACIFIC GAS & ELECTRIC  
77 BEALE STREET, B9A  
SAN FRANCISCO, CA 94105  
vfw3@pge.com

WAYNE TOMLINSON  
RUBY PIPELINE, LLC  
2 NORTH NEVADA AVENUE, 14TH FLR  
COLORADO SPRINGS, CO 80903  
william.tomlinson@clpaso.com

RANDALL PRESCOTT  
BP ENERGY COMPANY  
69 WINN STREET, FIRST FLOOR  
BURLINGTON, MA 1803

ROGER VANHOY  
MSR PUBLIC POWER AGENCY  
1231 11TH STREET  
MODESTO, CA 95352  
rogerv@mid.org

ROBERT STODDARD  
CRA INTERNATIONAL  
200 CLARENDON ST., T-32  
BOSTON, MA 2116  
RStoddard@crai.com

STEPHANIE LA SHAWN  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 770000, MAIL CODE B9A  
SAN FRANCISCO, CA 94177  
SIL7@pge.com

C. SUSIE BERLIN  
MC CARTHY & BERLIN, LLP  
100 PARK CENTER PLAZA, SUITE 501  
SAN JOSE, CA 95113  
sberlin@mccarthyllaw.com

SHAUN HALVERSON  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 770000  
PG&E MAIL CODE B9A  
SAN FRANCISCO, CA 94177  
SEHC@pge.com

SEEMA SRINIVASAN  
ALCANTAR & KAHL, LLP  
120 MONTGOMERY STREET, SUITE 2200  
SAN FRANCISCO, CA 94104  
sls@a-klaw.com

STEVE KOERNER  
EL PASO CORPORATION  
2 NORTH NEVADA AVENUE  
COLORADO SPRINGS, CO 80903  
steve.koerner@elpaso.com

SUE MARA  
RTO ADVISORS, LLC.  
164 SPRINGDALE WAY  
REDWOOD CITY, CA 94062  
sue.mara@rtoadvisors.com

TOM BRILL  
SEMPRA ENERGY CORPORATE CENTER  
101 ASH STREET, HQ13A  
SAN DIEGO, CA 92101-3017  
tbrill@sempra.com

TREVOR DILLARD  
SIERRA PACIFIC POWER COMPANY  
6100 NEIL ROAD, MS 84A50  
PO BOX 10100  
RENO, NV 89520-0024  
tdillard@sppc.com

TRACEY DRABANT  
BEAR VALLEY ELECTRIC SERVICE  
PO BOX 1547  
BIG BEAR LAKE, CA 92315-1547  
traceydrabant@bves.com

VIDHYA PRABHAKARAN  
GOODIN,MACBRIDE,SQUERL,DAY,LAMPREY  
505 SANSOME STREET, SUITE 900  
SAN FRANCISCO, CA 94111  
vprabhakaran@goodinmacbride.com

WILLIAM W. WESTERFIELD, III  
ELLISON, SCHNEIDER & HARRIS, LLC  
2015 H STREET  
SACRAMENTO, CA 95814  
www@eslawfirm.com

MIKE KASABA  
QUIET ENERGY  
3311 VAN ALLEN PLACE  
TOPANGA, CA 90290

ROD AOKI  
ALCANTAR & KAHL, LLP  
120 MONTGOMERY STREET, SUITE 2200  
SAN FRANCISCO, CA 94104  
rsa@a-klaw.com

ROBIN J. WALTHER, PH.D.  
1380 OAK CREEK DRIVE., 316  
PALO ALTO, CA 94305  
rwalther@pacbell.net

SAEED FARROKHPAY  
FEDERAL ENERGY REGULATORY COMMISSION  
110 BLUE RAVINE RD., SUITE 107  
FOLSOM, CA 95630  
saeed.farrokhpay@ferc.gov

SCOTT TOMASHEFSKY  
NORTHERN CALIFORNIA POWER AGENCY  
180 CIRBY WAY  
ROSEVILLE, CA 95678-6420  
scott.tomashefsky@ncpa.com

STEVE ISSER  
GOOD COMPANY ASSOCIATES  
816 CONGRESS AVE., SUITE 1400  
AUSTIN, TX 78701  
sisser@goodcompanyassociates.com

SEBASTIEN CSAPO  
PG&E PROJECT MGR.  
PO BOX 770000  
MAIL CODE B9A  
SAN FRANCISCO, CA 94177  
sscb@pge.com

STEVEN HUHMANN  
MORGAN STANLEY CAPITAL GROUP INC.  
2000 WESTCHESTER AVENUE  
PURCHASE, NY 10577  
steven.huhmann@morganstanley.com

SOUMYA SASTRY  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 770000  
MAIL CODE B9A  
SAN FRANCISCO, CA 94177  
svs6@pge.com

TRENT CARLSON  
RELIANT ENERGY, INC.  
1000 MAIN STREET  
HOUSTON, TX 77002  
tcarlson@reliant.com

THERESA L. MUELLER  
CITY ATTORNEY'S OFFICE  
CITY HALL, ROOM 234  
SAN FRANCISCO, CA 94102  
theresa.mueller@sfgov.org

THEODORE ROBERTS  
SEMPRA GLOBAL  
101 ASH STREET, HQ 13D  
SAN DIEGO, CA 92101-3017  
troberts@sempra.com

WAYNE AMER  
MOUNTAIN UTILITIES  
PO BOX 205  
KIRKWOOD, CA 95646  
wamer@kirkwood.com

WILLIAM W. WESTERFIELD III  
ELLISON SCHNEIDER & HARRIS, LLP  
2015 H STREET  
SACRAMENTO, CA 95814  
www@eslawfirm.com

DAVID J. COYLE  
ANZA ELECTRIC COOPERATIVE, INC  
58470 HIGHWAY 371  
ANZA, CA 92539-1909

REED V. SCHMIDT  
BARTLE WELLS ASSOCIATES  
1889 ALCATRAZ AVENUE  
BERKELEY, CA 94703  
rschmidt@bartlewells.com

REID A. WINTHROP  
PILOT POWER GROUP, INC.  
8910 UNIVERSITY CENTER LANE, SUITE 520  
SAN DIEGO, CA 92122  
rwinthrop@pilotpowergroup.com

Aram Shumavon  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
sap@cpuc.ca.gov

SETH D. HILTON  
STOEL RIVES  
111 SUTTER ST., SUITE 700  
SAN FRANCISCO, CA 94104  
sdhilton@stoel.com

STEPHEN KEEHN  
SEMPRA ENERGY CORPORATE CENTER  
101 ASH STREET-HQ13A  
SAN DIEGO, CA 92101-3017  
skeehn@sempra.com

STEPHEN J. SCIORTINO  
CITY OF ANAHEIM  
201 SOUTH ANAHEIM BLVD., SUITE 802  
PUBLIC UTILITIES DEPARTMENT  
ANAHEIM, CA 92805  
ssciorfino@anaheim.net

STEVEN S. SCHLEIMER  
BARCLAYS BANK, PLC  
200 PARK AVENUE, FIFTH FLOOR  
NEW YORK, NY 10166  
steven.schleimer@barclayscapital.com

Traci Bone  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
ROOM 5206  
SAN FRANCISCO, CA 94102-3214  
tbo@cpuc.ca.gov

THOMAS CORR  
SEMPRA GLOBAL  
101 ASH STREET, HQ 08 C  
SAN DIEGO, CA 92101-3017  
tcorr@sempraglobal.com

THOMAS S KIMBALL  
MODESTO IRRIGATION DISTRICT  
1231 11TH STREET  
MODESTO, CA 95352-4060  
tomk@mid.org

Melissa Semcer  
CALIF PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
AREA 4-A  
SAN FRANCISCO, CA 94102-3214  
unc@cpuc.ca.gov

WILLIAM H. BOOTH  
LAW OFFICES OF WILLIAM H. BOOTH  
67 CARR DRIVE  
MORAGA, CA 94596  
wbooth@booth-law.com

JUSTIN C. WYNNE  
BRAU & BLAISING, P.C.  
915 L STREET, SUITE 1270  
SACRAMENTO, CA 95814  
wynne@braunlegal.com

ROBERT MARSHALL  
PLUMAS SIERRA RURAL ELECTRIC COOP.  
PO BOX 2000  
PORTOLA, CA 96122-2000