

September 23, 2005

**BY HAND DELIVERY**

Docket Office  
State of California Public Utilities Commission  
505 Van Ness Avenue, Room 2001  
San Francisco, CA 94102

Re: Order Instituting Rulemaking to Promote Policy and Program Coordination and Integration in Electric Utility Resource Planning - Rulemaking 04-04-003

Dear Sir/Madam:

Enclosed for filing is an original and five copies of the **COMMENTS OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 E) ON THE CALIFORNIA PUBLIC UTILITY COMMISSION ENERGY DIVISION CAPACITY MARKETS WHITE PAPER** issued in connection with the above-referenced proceeding.

Please file the original and return the stamped copy in the envelope provided. Thank you for your assistance with this matter.

Very truly yours,

/s/  
Edward V. Kurz

EVK/dl

Enclosures

cc: President Michael R. Peevey  
ALJ Mark S. Wetzell  
Jack Fulcher, Energy Division (five copies)  
Official Service List for R-04-04-003

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

Order Instituting Rulemaking to Promote  
Policy and Program Coordination and  
Integration in Electric Utility Resource  
Planning.

R. 04-04-003

U 39 E

**COMMENTS OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)  
ON THE CALIFORNIA PUBLIC UTILITY COMMISSION ENERGY DIVISION  
CAPACITY MARKETS WHITE PAPER**

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**INTRODUCTION**

Pursuant to the Chief Administrative Law Judge’s Ruling Providing Notice of Availability of Staff Capacity Markets White Paper and Providing for Comments issued on August 25, 2005 (“Chief ALJ Ruling”), Pacific Gas and Electric Company (“PG&E”) submits these comments on the Capacity Markets White Paper (“White Paper”) developed by Energy Division Staff of the California Public Utilities Commission (“CPUC”). PG&E thanks the Energy Division for its considerable work in summarizing and analyzing existing capacity markets and issues addressing the potential use of such a market in California, as presented in the White Paper. PG&E supports the development of a capacity market for California, and has been working with the broad-based Coalition for California Energy Policy Reform to develop a cohesive package of market design policy reform principles that includes adoption of a capacity market.

The goal for such a market should be an open, transparent capacity market with the following critical elements: (i) sufficiency of supplies to ensure reliable service on a short and long-term basis; (ii) competitive pricing; (iii) each load serving entity (“LSE”) paying its equitable share of costs, with provision for tracking and exchanging resource adequacy (“RA”) commitments; (iv) accommodation of bilateral contracts; and (v) stability and predictability -- to provide reliable market signals and eventually be sufficiently robust to provide adequate

incentives for merchant investment in new capacity on the strength of the market (although, as noted by the Coalition for California Energy Policy Reform, the resources that California will need within the next few years can only result from long-term contracts with interested, credit-worthy entities, such as the investor-owned utilities (“IOUs”). PG&E is committed to continuing to work with the Energy Division and other market participants to develop a suitable capacity market that will function within California’s comprehensive wholesale market design.

PG&E agrees with the Energy Division that much can be learned from existing capacity markets, but PG&E cautions that considerable differences exist between the Eastern and Western energy markets. Eastern capacity market constructs cannot simply be adopted in California; each element must be carefully tailored to the unique circumstances that exist in California and the Western Electric Coordinating Council (“WECC”).

In accordance with the ruling of the Chief Administrative Law Judge, PG&E’s comments on the White Paper are organized into the following sections:

- I. Lessons Learned and Related Policy Questions Outlined in Section VI.E of the White Paper.
- II. Staff’s Recommendations Outlined in Section VII of the White Paper;
- III. Appropriate Roles and Responsibilities of the Commission and CAISO in the Development, Design, and Potential Implementation of Capacity Markets in California Outlined in Section VIII of the White Paper; and
- IV. Other Significant Issues Presented by the White Paper.

**I. Responses to Lessons Learned and Related Policy Questions outlined in Section VI.E of the White Paper.**

**1. Energy Division Question: “Would a downward sloping demand curve capacity market construct, similar to the New York approach, be an appropriate mechanism to support California’s resource adequacy program?”**

PG&E believes that an administratively determined, downward-sloping demand curve-based capacity market can support California’s resource adequacy program, but, as discussed below, cannot attain resource adequacy goals by itself for the foreseeable future. This type of capacity market would provide several important benefits, the most important of which are price stability and predictability. While the details of how that demand curve will be set are critically important to an efficient market and to sending the right price signals, those details can and should be worked out collaboratively with interested markets participants.

It is very important to recognize that a capacity market using a NYISO-type demand curve would not ‘set’ the resulting reserve margins at some pre-specified level, such as the 15-17% approved by the CPUC. Under the NYISO model, the reserve margin is established as a result of market supply bids received; those resources submitting bids are paid according to the demand curve. The adoption of this type of demand curve-based capacity market inherently assumes that the reserve levels can either exceed, fall within, or fall below the desired reserve margin range. The economic theory behind such markets has been that, if properly set, the price signal would elicit the desired market responses (*i.e.*, when planning reserves are below the desired level, higher prices would create an increased incentive for bidding capacity into the market, whereas lower prices would decrease that incentive when planning reserves are above the desired level). A critically important question for the Commission is how its resource adequacy requirements, particularly the planning reserve margin, could or should coexist with a capacity market. For the regulatory credibility essential to a successful capacity market, the Commission must make clear, in advance, how it would react if the actual reserve margin provided through operation of the market is less than the target planning reserve margin.

While PG&E believes that a capacity market would assist California in maintaining existing resources in the near term, PG&E and the Coalition for California Energy Policy Reform believe that a capacity market alone cannot, for the foreseeable future, provide sufficient incentive for financing new resources. In theory, with a long enough track record, a capacity market would provide sufficient comfort to financial interests to make investments in new resources, in reliance on the capacity market’s continued existence and stability of terms. In the interim, long-term bilateral contracts with credit-worthy entities, such as the IOUs, and utility-owned generation will be required to provide the new resources needed to attain the Commission’s resource adequacy objectives. In the long term, PG&E hopes that proposed new resources can attract sufficient financing on their own, based on the strength of a wholesale market that includes a capacity market.

**2. Energy Division Question: “Would a capacity market, such as in New York, assist LSEs to make adjustments by being able to sell excess capacity or buy it when they are short?”**

Capacity markets support the exchange of uniform capacity products, and may be easier for some market participants to use to acquire capacity than the bilateral market.

**3. Energy Division Question: “Would this mechanism assist California in meeting its goals to be resource adequate and reach a minimum of 15-17% reserve margins?”**

As noted above, a capacity market would not, by itself, guarantee that California would meet its desired 15-17% reserve level. A capacity market with a downward-sloping demand curve and both locational and resource-class attributes would have other worthwhile benefits, such as supporting trading of capacity products between LSEs and suppliers.

**4. Energy Division Question: “To address deliverability concerns and meet the ISO’s requirements, is it appropriate to investigate solutions for local areas as a first step?”**

Yes. Local area requirements are an important component of RA requirement design and a necessary future design element for capacity markets. The CAISO’s draft local reliability study concluded that there are many local areas with extensive local requirements.<sup>1</sup> That conclusion makes it imperative that local areas solutions are investigated as early as possible -- prior to, or at least simultaneously with, development of the capacity market itself. It is worth investigating whether a capacity market structure can be developed with a consistent set of rules that would be uniformly appropriate for both general and local cases.<sup>2</sup> It is critical that any CAISO local capacity requirements be consistent with the orders and direction of the CPUC pursuant to the RA proceeding.

**5. Energy Division Question: “Do capacity markets in local areas that are designed with downward sloping demand curves significantly mitigate energy and capacity market power concerns? What are other appropriate steps (e.g. subtraction of peak energy rents)?”**

While the level of capacity payments are established and mitigated within downward-sloping demand curve-based capacity markets, the downward-sloping demand curve does not, in and of itself, mitigate market power for the associated energy. The reduction of capacity payments for peak energy rents, as discussed in response to Recommendation 3 below, would provide some disincentive to exercise market power, but additional energy mitigation rules

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<sup>1</sup> See CAISO, Local Capacity Technical Analysis; Overview of Study Report and Revised Results (July 26, 2005) available at <http://www.caiso.com/docs/09003a6080/36/b0/09003a608036b0c1.pdf> (last checked Sept. 21, 2005).

<sup>2</sup> PG&E recognizes some differences will be necessary to address local area needs. For example, local area target requirements are determined through the application of transmission planning contingencies, whereas the system target was established based on an overall 1-10 planning standard to arrive at 15-17% reserve requirement.

(including local market power mitigation measures and price caps) will be required to protect against market power for energy in any event, consistent with the level of market power concerns.

### **III. Responses to Staff's Recommendations Outlined in Section VII of the White Paper**

#### **Recommendation 1: Adopt a short-run capacity market approach with a downward sloping capacity-demand curve for the CAISO.**

PG&E supports adoption of a capacity market with a downward sloping capacity-demand curve. Critical elements associated with this approach include:

- How the demand curve interacts with the market supply curve in order to set a capacity market clearing price;
- How the demand curve and capacity market interact with the planning reserve requirement;
- The time periods are associated with the demand and supply curves. Capacity value varies significantly from month-to-month, and the amount of capacity needed by LSEs also varies by month, raising a question as to whether the demand curve will be static, or whether there will be monthly supply bid curves.
- How a capacity market complements bilateral transactions for capacity. Will the capacity volumes traded through this market be based on residual needs, or will they represent the full requirement (and are bilateral capacity transactions only settled financially)?

#### **Recommendation 2: Further investigate alternative availability metrics (e.g. UCAP v. ISO-NE's proposed metric based on performance during shortage conditions) and ensure development of an availability metric that is applicable to hydro, wind, thermal and other generation technologies, and to appropriate demand response products.**

PG&E conditionally supports this recommendation. Availability metrics are important to ensure that resources count appropriately, and that they perform when they are called upon. The details of these metrics can and should be worked out collaboratively with interested markets participants to provide the proper incentives.

**Recommendation 3: Consider subtraction of peak energy rents from the capacity payment.**

PG&E agrees that peak energy rents should be subtracted from the capacity payment, preferably adjusted by class of unit. PG&E believes that ISO-NE's ex-post approach serves all market participants better than the ex-ante approach used in NYISO. In the ISO-NE model, the ex-post peak energy and reserve rents ("PER") are subtracted from capacity payments to suppliers at the conclusion of the monthly capacity auction; ISO-NE calculates the PER based on the actual energy prices and what the hypothetical unit would have earned, averaged over the preceding 12 months. The ex-post approach also reduces the risks for the supplier by providing more certainty of revenue (being based on actual market results and not assumptions), as well as more effectively limiting capacity market power by subtracting out payments resulting from withholding. In contrast, the NYISO approach shifts the demand curve downward to reflect the ex-ante estimation of the PER. The ex-ante approach creates uncertainty as to price spikes that is eliminated by using the ex-post approach.

**Recommendation 4: Adopt reasonable locational installed capacity requirements with locally varying demand curves.**

PG&E supports this recommendation. PG&E notes that under WECC grid planning standards, remedial action schemes ("RAS") can be used to drop load involuntarily to meet certain types of local area requirements. Provisions for the use of such schemes to be used to meet local RA should be formulated, so that ratepayers do not incur unnecessary costs in meeting local RA.

**Recommendation 5: Consider protecting against capacity exports during times of tight supply through the use of capacity prices that fluctuate seasonally.**

PG&E assumes that the capacity market will work in conjunction with RA requirements established by the CPUC. Those RA requirements call for monthly demonstrations of capacity procured, and therefore any capacity market should have a monthly term, rather than seasonal or annual terms. PG&E believes that allowing prices to fluctuate monthly may be appropriate for such a capacity market, but that fluctuating prices will not reliably prevent the export of capacity. From a market perspective, resources should not be required to sell their capacity to LSEs serving load in California, or to the California capacity market. In a competitive market, a generator's capacity should go to those who value it the most. In emergency situations, energy



that has been committed to exports may be recalled for use in California, so long as the capacity has been sold to LSEs serving load in California and that market rules provide for such recall. The Commission has no basis for protecting against capacity exports outside of such emergencies.

**Recommendation 6: Investigate the dependability of capacity import contracts during times of high West-wide load.**

PG&E believes that a lengthy investigation is not necessary. California has always relied on imports to meet its needs during time of high load and will continue to rely on imports in the future. Rules for RA will need to consider imports as a part of the resource mix.

**Recommendation 7: Make the fixed-cost recovery curve explicit.**

PG&E does not believe that an explicit fixed-cost recovery curve is a necessary element of a successful capacity market, as the use of a downward-sloping demand curve, with market response determining prices based on the curve, will result in fixed-cost recovery. Making the fixed-cost recovery curve explicit removes the competitive market aspect of establishing capacity markets, which PG&E believes is not a desirable result.

**Recommendation 8: Strive for regulatory credibility.**

PG&E agrees that regulatory credibility is a critical element for the success of a capacity market and to develop a workable, sustainable policy for California's energy markets. PG&E is committed to working with the CPUC, the CAISO and other interested parties to achieve this goal.

**III. Response to Appropriate Roles and Responsibilities of the Commission and CAISO in the Development, Design, and Potential Implementation of Capacity Markets in California Outlined in Section VIII of the White Paper**

PG&E believes the roles of the CAISO and CPUC need to be delineated clearly and that each entity needs to work closely with, and support the decisions of, the entity primarily responsible for any given element, as well as to work with market participants.

PG&E believes that the CPUC should have the primary role in addressing the following issues:

1. Identifying the reliability criterion (such as a 1-day in 10-years loss of load expectation), and translating this criterion into a planning reserve margin objective;

2. Determining the maximum capacity price level that any LSE must pay, even when short;
3. Determining the maximum capacity reserve level (i.e., the point at which capacity payments reach zero);
4. Determining the target level of capacity;
5. Determining the historic variability (standard deviation) of capacity;
6. Calculating and, as necessary, estimating the cost of capital for the lowest-cost capacity;
7. Drawing the demand curve based on the variables discussed above; and
8. Establishing resource counting rules, standards and metrics, including adjustments based on non-performance.

PG&E believes that the CAISO should have the primary role in addressing the following issues:

1. Identifying local areas and their needs through the grid planning process;
2. Monitoring unit performance, and enforcing rules when units fail to perform;
3. Establishing and enforcing market power monitoring and mitigation rules;
4. Identifying problems in the market and communicating such problems to the CPUC and FERC on a timely basis;
5. Incorporating the capacity market construct, and any associated RA rules, into its tariffs, such that they are applicable to all CAISO participants serving load; and
6. Collecting payments for capacity market obligations from all CAISO participants that serve loads, and paying resources that provide that capacity from the payments collected from those load-serving participants.

#### **IV. Response to Other Significant Issues Presented by the White Paper**

As the Energy Division notes, it is important to understand that Eastern capacity markets are undergoing considerable review and redesign in an attempt to address their deficiencies. No Eastern capacity market has a proven, thoroughly successful track record. The Energy Division should review the reasons for those deficiencies and the success of those continued design changes to prevent incorporating known flaws into the development of the California capacity market.

PG&E also believes that the following issues merit careful consideration:

- Until such time as a capacity market can provide the incentive for new resources, how will new resources be built? Who will build them? Who will determine what type of resources should be built, and where they should be sited? What measures need to be employed to ensure needed resources are built, and that their costs are equitably allocated?
- How do RA requirements, including the planning reserve margin, mesh with the capacity market construct?
- Will there be an obligation on generators to bid into the capacity market if they are not subject to a capacity contract? If they do not bid in, is it clear that the CAISO will not have any rights to call on their generation?

### **CONCLUSION**

PG&E commends the Commission's Energy Division for undertaking this evaluation of capacity markets, and for initiating the discussion of a California capacity market among market participants. PG&E believes that a well-designed capacity market has much to offer California, and PG&E looks forward to working with the Commission and other market participants to achieve the promise of such a market.

Respectfully submitted,

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By:                                 /s/                                  
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September 23, 2005

CERTIFICATE OF SERVICE BY ELECTRONIC MAIL OR U.S. MAIL

I, the undersigned, state that I am a citizen of the United States and am employed in the City and County of San Francisco; that I am over the age of eighteen (18) years and not a party to the within cause; and that my business address is Pacific Gas and Electric Company, Law Department B30A, 77 Beale Street, San Francisco, CA 94105.

I am readily familiar with the business practice of Pacific Gas and Electric Company for collection and processing of correspondence for mailing with the United States Postal Service. In the ordinary course of business, correspondence is deposited with the United States Postal Service the same day it is submitted for mailing.

On the 23rd day of September, 2005, I served a true copy of:

**COMMENTS OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)  
ON THE CALIFORNIA PUBLIC UTILITY COMMISSION ENERGY DIVISION  
CAPACITY MARKETS WHITE PAPER**

**[XX]** By Electronic Mail – serving the enclosed via e-mail transmission to each of the parties listed on the official service list for R.04-04-003 with an e-mail address.

**[XX]** By U.S. Mail – by placing the enclosed for collection and mailing, in the course of ordinary business practice, with other correspondence of Pacific Gas and Electric Company, enclosed in a sealed envelope, with postage fully prepaid, addressed to those parties listed on the official service list for R.04-04-003 without an e-mail address.

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 23<sup>rd</sup> day of September, 2005, at San Francisco, California.

/s/

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DONNA LEE