

## APPENDIX 1

# ADVISORY FORWARD ENERGY COMMITMENT (AFEC) - AN ALTERNATIVE TO ACAP April 18, 2002

### A. General Principles

The ISO has the responsibility for reliable operation of its control area encompassed by PG&E, SCE and SDG&E, municipal utilities that have joined, and other municipal and publicly owned utilities with interconnection agreements.

Local Regulatory Authorities (LRA) have jurisdiction and responsibility to govern procurement of electric energy for use by the retail customers under their jurisdiction. For the IOUs this is the California Public Utilities Commission (CPUC) and for Municipalities, Irrigation Districts and other similar entities, it is their respective governing boards, councils or commissions. Collectively, these LRAs govern more than several dozen load serving entities (LSE).<sup>1</sup>

In order for the ISO to better prepare for the operation of the grid in real-time, it is necessary for the ISO to have advance knowledge (in advance of the day-ahead market) of the expected operational capability and contractual commitments of generators with PGA agreements. In addition, the ISO needs to understand the relationship of projected load levels to expected generation levels, and the extent to which sufficient supply resources have been procured to meet expected load and reserves.

Both the ISO and the State Inter-Agency Working Group (IWC) recognize the need for LSEs to acquire sufficient resources to meet their demand through an optimal combination of owned-generation, long-, mid-, and short-term contracts and spot purchases. The State, through its respective authorities, is currently engaged in ensuring that California possesses sufficient energy resources.

While the IWC agrees with the need for sufficient resources, as noted in our previous comments to the ISO staff and Board, the IWC continues to have strong and numerous reservations about the ISO's Available Capacity (ACAP) proposal, particularly in the form released April 3. These concerns are noted in our comments to the ISO Staff and in Appendix 2 attached to IWC's comments to the Comprehensive MD02 proposal.

The foundation of operational reliability lies in three things: (1) accurate load forecast and schedules, (2) dependable resource performance, and (3) availability of sufficient resources to meet expected load and reserve levels.

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<sup>1</sup> LSE includes investor-owned utilities, municipal and other publicly owned utilities, and energy service providers for direct access customers.

Our AFEC proposal implements these three foundational principles:

1. It is mandatory for load to forecast accurately and schedule accurately.
2. It is mandatory for supply resources to schedule accurately and perform according to schedules and accepted bids.
3. It is essential for the ISO to know ahead of real-time operation the quantity and location of resources expected to meet load, and to know what is expected of the ISO should this load or resource schedule not materialize or perform.

The IWG believes the AFEC proposal provides for these three elements in a way superior to that of ACAP. In addition, the AFEC proposal recognizes the appropriate jurisdictions of all entities involved in the California electricity framework.

The elements of this AFEC proposal can be implemented on October 1, 2002, or shortly thereafter and will therefore begin immediately to help the ISO with operational reliability.<sup>2</sup> In contrast, ACAP's actual operational impacts do not materialize until ACAP capacity contracts exist between LSEs and generators, which is not likely until 2004.

To recognize the mandate and expertise of the ISO in operating the grid, and recognizing the jurisdiction of those who control long-term retail energy procurement policies, the following is offered as a preferred alternative to the ACAP element of the ISO MD02 market redesign proposal.

#### **B. General Framework**

The ISO, interested State Energy Agencies and LSEs will create an Advisory Forward Energy Commitment (AFEC) process.

The guiding principle of the AFEC process is to enable the ISO to be aware, sufficiently in advance of the Day Ahead market, of the amount of energy resources and reserves acquired by the LSEs to meet expected needs. The AFEC process will accomplish the purposes listed below.

1. Allow the ISO to interact with, and provide input to, LSEs and LRAs regarding desired levels of supply needed to reliably operate the grid.
2. Share information with all interested parties and develop accurate supply and demand forecasts, including estimates of ancillary services requirements such as reserves. These forecasts should be done on a sub-utility level when

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<sup>2</sup> In a recent stakeholder meeting discussion the use and scheduling of reserves for this summer, the ISO indicated that as much as 80% of its real-time operational uncertainties and difficulties would be solved if load schedules and generator performance were accurate and predictable.

necessary to address issues of regional reliability and transmission constraints.

3. Apprise the ISO with relative certainty of the upcoming resource situation sufficiently in advance of actual operation.
4. Apprise the ISO of the mix of resources and their respective availabilities.
5. Allow the procurement processes overseen by the LRAs to be effectively integrated with reliable operation of the grid.
6. Allow development of mutually-agreed upon guidelines for tabulating energy and capacity available from various categories of resources. For example, recognizing the value of capacity from the DWR/CERS Contracts is a critical feature for assuring supply availability. In such valuations, actual contract performance, and not contract terms and conditions, should be the basis for these guidelines.

In addition the AFEC process should allow the ISO to:

1. Minimize real-time balancing activity and out-of market activity.
2. Avoid creating any new markets for capacity or purchase capacity (other than as currently done in the day-ahead and hour-ahead markets) on behalf of any LSE.

### **C. AFEC Process and LSE Requirements**

The structure and process of AFEC is as follows:

The AFEC process would research and publish advisory non-binding estimates on the level of energy and reserves to reliably operate the grid in real-time and run small balancing markets. This should be an open process to allow appropriate stakeholder and other expert input. This information then forms the benchmark in the AFEC process.

LRAs commit to ensuring that they will develop resource procurement processes and mechanisms for LSEs under their jurisdiction that will require resources to match accurate load forecasts.

The AFEC process would examine not only reserve levels needed in real-time, but given historic forced outage rates, and equipment failures, would develop the level of reserves needed Month Ahead and Week Ahead in advance of real-time to assure availability of minimum levels at real-time.

The AFEC process would develop reporting processes and timelines by which all Load Serving Entities (LSEs) would report to the ISO their own level of energy and reserve procurement. This may be a Month Ahead report with Week Ahead and Day Ahead updates, or whatever is needed. The content, timing and format of these reports would be developed in the AFEC process. These reports from LSEs are mandatory. As a result of reviewing these reports, the ISO would take no action to remedy any deficiency they believe to exist other than to notify the respective LSE of the deficiency compared to the benchmark and the potential consequences to their load, such as potential for increased costs and greater probability of rotating outages.

It is critical to note that these reports are not to cause the ISO to procure, or otherwise act on behalf of the LSEs, except to acquire needed operating reserves not self-provided, consistent with WSCC standards. Procurement is the responsibility of the LRAs and LSEs. The ISO has a legitimate interest, however, in knowing the level of resources procured and the resources availability and readiness to provide for grid reliability. .

#### **D. Participating Generator Reporting Requirements**

In parallel with the reports each LSE is obligated to provide, each generator with a PGA is required to file a comparable Month Ahead and Week Ahead report that describes the portions of its capacity that are encumbered by commitments and the portion that is available, after adjusting for maintenance outages previously scheduled with the ISO. These reports are mandatory. They should describe commitments in a manner that enables the ISO to link PGA reports to the reports each LSE provides about its loads and resource commitments.

A critical deficiency in the current California market structure is the absence of any obligation on suppliers to conform to submitted schedules. The efficacy of the AFEC process requires that this deficiency be remedied. All resources scheduled with the ISO, therefore, should be explicitly obligated to perform as scheduled and according to proffered bids that are accepted after scheduling timelines. The information provided by the AFEC generator reports, together with existing PGA obligations to perform, a continuation of "Must-Offer" requirements, and implementation of the proposed "Residual Unit Commitment" process, will collectively assist the ISO in knowing what resources are available to be used as operating reserves and ensure reliable operation of the system.

#### **E. Interaction of the AFEC Process and ISO Grid-Operation**

The AFEC process will provide greater information about forward commitments than the ISO has had available to date. By comparing LSE and generator reports, the ISO can develop an understanding of load uncovered and generation available. Once Day Ahead is reached, the ISO will rely upon its normal scheduling and operating practices, as modified by the MD02 proposals.

The LSEs will accurately schedule load and resources in the Day Ahead and Hour Ahead processes created by the ISO. The ISO will then operate in real-time knowing the resources with commitments to the LSEs will be available. The ISO will monitor unit performance and imports schedules provided by the LSE, and communicate significant deviations to the LSE.

Absent other instructions from the LSE, the ISO will assume that each LSE wishes to serve all its customers at whatever prices are necessary to obtain supply. If an LSE does not wish to accept the cost consequences of this policy, it may notify the ISO of other actions to be taken in a manner to be determined in the AFEC process with necessary input from LRAs and other stakeholders.

In addition, if an LSE elects to provide less than the benchmark quantities developed in the AFEC process, then any consequences associated with ISO real-time activities undertaken to remedy the LSE's shortfall would be assigned to the deficient LSE. The ISO settlement process would use cost causation principles to calculate the costs of energy provided and any fines levied by WSCC for reserve deficiencies to LSEs failing to satisfy the AFEC benchmark.

If ISO resources could not overcome physical shortages, then load curtailment programs and rotating outages would first be initiated for LSEs whose scheduled resources fell short of the AFEC benchmark.

## Appendix 2

# RELATIONSHIP OF AFEC TO OTHER MARKET DESIGN ELEMENTS

April 18, 2002

As with any design approach, there are interrelationships between elements of the design. The following additional design parameters are needed to enhance the efficacy of the Advisory Forward Energy Commitment (AFEC) approach.

1. **Load Forecasting Accuracy.** The AFEC process must address at least short-term load forecasting. The ISO, LSEs, CPUC, and CEC and other agencies with expertise and interest should be involved to achieve a consensus regarding the necessary level of accuracy and the conventions to be used for weather for this critical feature of AFEC.
2. **Schedule Accuracy.** A second basic requirement of AFEC after accuracy of forecast is that load is scheduled accurately. If this is not done several aspects of the ISO design fail. These include:
  - (a) Congestion management results will be meaningless and transmission allocation will be irrelevant.
  - (b) Ancillary service requirements must then be assigned by the ISO. This leads to a procurement and cost assignment scheme that gives rise to cost shifting and other problems. When schedules are accurate, MCP changes are less subject to manipulation.
  - (c) The numbers used to run the grid are completely disconnected from the numbers used by LSEs. This results in overly complex settlement schemes to try to compensate for lack of accuracy and complex efforts to assign costs according to cost causation. In addition, numerous gaming opportunities exist when load disappears in forward markets and exists only in real-time. This schedule inaccuracy according to the ISO causes significant real-time operational problems.
3. **Obligation to Perform.** The AFEC proposal requires that all resources scheduled with the ISO must be expressly obligated to perform as scheduled and instructed by the ISO. It is insufficient to expect that counter-incentives will anticipate all the complex interrelated issues facing each separate supplier. A simple obligatory statement that supply is obligated to perform as a condition of continuing market based rate authority is not an onerous obligation. The penalties for non-performance have already been spelled out, and the IWC is not

necessarily proposing new penalties. This explicit link "you have to perform as advertised to have market based rates" is a simple precondition to play in the market.

4. **Must-Offer.** AFEC proposal requires that the "Must-Offer" requirement be a continuing part of the market in California. It should continue to be applied to all PGA resources in California, rather than phased out as is the case in the ACAP proposal. The ACAP proposal phases out "must offer" when expensive new ACAP resources have been acquired. There is no need to acquire new resources when existing PGA resources can be assured to operate through a continued "must offer" obligation. As noted by the ISO, such a requirement is not onerous, and should also be a condition of market-based rate authority. Such an obligation should fairly compensate an owner for start-ups, minimum load costs, and should protect consumers from withholding where owners wait for the ISO call to avoid start-up costs. Currently the ISO proposes to net these cost bases start-up payments from market revenues. This continues to be appropriate. It will be essential to also understand how bilateral incentives fit into this gaming opportunity. Some exceptions for energy limited resources and Hydro units will continue to be appropriate.
5. **Residual Unit Commitment.** Residual Unit Commitment should continue to be an essential feature of the market design under either AFEC or ACAP. Locational market power is not solved by any congestion reform, and is not solved by ACAP unless it is extended to small locational areas. Locational issues exist in the steady-state, and frequently are created when transmission maintenance is performed or when transmission outages occur. The current RMR scheme designed to address locational reliability issues is subject to gaming. When RMR units are out or when they are "declared broken," bids from units at the same plant that are not RMR must be taken to solve the reliability issue. Depending on the bids allowed, the plant owner may make more money with the accepted bids than they lose in lost capacity payments under the RMR contract. In addition, RMR units do not solve reliability problems created by transmission maintenance or outages. Real locational mitigation requires that ALL units must be subject to commitment, at cost-based start-up and minimum load payments and mitigated bids, with appropriate payment to owners to ensure no losses. This approach is not inconsistent with other schemes in place today already approved by FERC.
6. **Ancillary Services.** Ancillary services (A/S) will probably be mainly self-supplied under the AFEC proposal, unlike the ACAP proposal in which unscheduled ACAP resources become a pool from which the ISO selects A/S units. Any residual procurement must be done in a simultaneous security-constrained optimization with energy markets day-ahead. The IWG believes the current ISO A/S proposal is compatible with A/S in our AFEC proposal.

7. **State Power Contracts.** The ACAP proposal raises major concerns about the capacity credit toward ACAP requirements for various types of resources. State contracts must be accorded their full value in serving load. If the AFEC proposal is accepted then all of the participants in the AFEC process will be able to make the appropriate evaluation of the capacity in the contracts. This is a correct outcome, since the CPUC is the entity that assigns the costs associated with the contracts to the IOUs. If the AFEC proposal is not adopted and the ISO files some form of ACAP then the following points are critical.
- a. The full value of the state contracts must be recognized, and California end use consumers must not be required to pay for additional resources unless they needed in fact, rather than in theory. Historic FERC practice has been to "honor" existing contracts by requiring the ISO to accommodate the terms and conditions of those contracts. The state contracts must be treated as existing contracts, and their full capacity and energy value must count toward forward commitment obligations. The state contracts were signed well before any discussion of a forward commitment obligation by any regulatory body.
  - b. What any regulatory authority may wish for in a forward capacity contract at the end of the development of a scheme remains uncertain. Accordingly, the existing state contracts must be grandfathered, similar to the grandfathering allowed for pre-AB1890 municipal transmission and interconnection contracts. Grandfathering should be to 12/31/02. This would allow the state to complete any contracts needed in the interim, while both the ISO and the PUC are working on the future.
  - c. With respect to accounting for the full capacity and energy value of a forward capacity contract, the regulatory authority must look at actual resource performance, not whether the terms and conditions perfectly comport to a scheme not contemplated at the time of signing. This will allow an accurate valuation of the capacity contained in the contracts. To the extent that performance under the contract is 100%, that contract should be allocated 100% of its associated capacity and energy in assessing the LSE's forward commitment obligation. If performance is less than 100%, the ISO should indicate exact performance shortfalls in the previous month, and if justified, that contract should be given a lower MW allocation, consistent with its actual performance.
  - d. This "performance accounting" should be used whether or not the contracts are unit specific. Whether or not the contracts are initially unit specific, they become so in the DA time frame. CERS calls on the contracts under existing terms and conditions. In doing so, CERS submits a inter SC trade to the ISO. The counterparty to the contract submits a matching inter SC trade and identifies the resource serving the trade. The transaction as a



whole must pass ISO validation. The resource is then identified in the DA time frame.

8. **Locational Market Power.** Ongoing efforts to control locational market power will be a permanent feature of any market design, including AFEC. However, a resource planning process strongly linked to State Agencies and LRAs will have a greater opportunity to recognize the consequences of existing locational issues and steer physical system upgrades to reduce the magnitude of the problem. Even if transmission additions are made so there is no problem in normal operation, odd transmission configurations should not result in the imposition of exorbitant rates on a particular group of customers. The IWG has been specific that it believes that locational market power controls should be tight and consistent with the generator bid screens/AMP process.