

Experience in Electric Market Restructuring: A California Perspective

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Primary Functions of Public Utility Rates

- Capital Attraction
- Efficiency Incentive
- Consumer Rationing (Demand control)
- Compensatory Income Transfer

Objectives of Rate Design

- Simplicity
- Understandability
- Public Acceptability
- Freedom from Controversy
- Fairness
- Feasibility of Application
- Stability

CPUC Resource Adequacy Requirement proceeding (“RAR” rules)

- Applicable to LSEs under CPUC jurisdiction (i.e., IOUs)
 - ESPs have not challenged compliance obligation
 - Munis indicate compliance consistent with internal planning practices
 - AB380 proposes to codify obligation, sent to Governor
- 15% - 17% Planning Reserve Margin
 - 115% - 117% of Forecasted Load
- LSEs initially required to make RAR Showings on year-ahead and month-ahead bases
 - Year-Ahead RAR showing: LSEs demonstrate 90% of 115% (=103.5% forward compliance)
 - Month-Ahead RAR showing: LSEs demonstrate remaining 10%

CPUC Resource Adequacy Requirement proceeding (“RAR” rules) Cont.

- CPUC intends RAR to be demonstrated with qualified capacity resources that are screened for deliverability on a forward basis
- Under Phase 1 rules, Firm LD contracts given full value
 - The vast majority of Firm LD contracts:
 - are energy and financial hedging instruments;
 - cannot point to specific physical resources; and therefore
 - cannot be screened for deliverability on either year-ahead or month-ahead bases
- Phase 2 rules to determine how Firm LD contracts can be screened for deliverability on a forward basis – October Decision expected

CAISO Market Redesign and Technology Upgrade ("MRTU") Proposal

- Nodal LMP used to financially settle generators
- Aggregated nodal LMP to financially settle loads
- Integrated Forward Market/Residual Unit Commitment Process design (IFM/RUC)
 - Day-Ahead co-optimization of energy, transmission and ancillary services
 - No balanced schedule requirement
 - Hour-Ahead Scheduling Process (HASP): No separate hour-ahead market
 - Real-time balancing energy market
- No Virtual Bidding
- \$500/MWh energy bid cap (hard cap, not soft cap), with transition to \$1,000/MWh.
- \$250/MWh ancillary service and RUC availability bid cap (hard cap, not soft cap).

CAISO Market Redesign and Technology Upgrade (“MRTU”) Proposal, Cont.

- PJM-like local market power mitigation of energy bids, with Frequently Mitigated Unit (FMU) bid adders and cost-plus-10% for all other locally mitigated units.
 - Local market power mitigation for RUC availability bids.
 - Deferral for now of a more extensive reserve shortage scarcity pricing mechanism
 - CAISO “contracting of local area reliability resources” to backstop CPUC RAR and CAISO LMP
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- FERC did not specifically rule on the integration of CPUC RAR rules and CAISO MRTU LMPM proposal since the details of both are still under development (i.e., opportunity remains to propose Capacity Market, tradable Capacity Product and tariff backstop Capacity Payment mechanism for MRTU)

The Interrelated Set of Problems

- CPUC's RAR rules:
 - Will result in some capacity not being forward contracted by LSEs (i.e., "non-RA capacity")
 - Must address how Firm LD contracts can be screened for deliverability on a forward basis
- CAISO's current market design
 - includes the most stringent market power mitigation elements of all ISOs/RTOs
 - does not include a forward capacity market like all of the other ISOs/RTOs
- Question: How do we assure both resource adequacy and revenue adequacy?

The Interrelated Set of Problems Cont.

- CAISO's local market power mitigation ("LMPM") will likely apply to most of the units not forward contracted by LSEs
- Southern California has, and is expected to have for at least the next three years, a shortage of generating capacity
 - Every megawatt of capacity will be required, on-peak, to meet increasing demands for electricity
 - Consideration of mothballing or retirement of existing generation in Southern California is impractical during the next several years
- Established record contemplates capacity solution
- Resource Adequacy should not be expected without also assuring Revenue Adequacy

The Interrelated Set of Solution Elements

■ Capacity Payment

- REQUIRED to replace Must Offer Obligation/Minimum Load Cost Compensation (CAISO MOO/MLCC tariff provisions)
- Also REQUIRED after MRTU implementation in absence of central Capacity Market to backstop CPUC RAR and CAISO LMPM

■ Bilaterally Tradable Capacity Product

- An “answer” to the Firm LD controversy is required
- There’s no need to modify the standard forms of Firm LD currently transacted under Master Agreements
- Amending the Master Agreements would be problematic and could further discourage LSE transactions involving energy and financial hedging

■ Central Capacity Market

- Is a necessary backstop to assure both Resource Adequacy and Revenue Adequacy in the presence of mitigated spot energy markets
- Designed properly, can be a successor to the CPUC’s compliance mechanism

Why a Capacity Payment is Required

- For now, CAISO's current market design includes the most stringent market power mitigation elements of all ISOs/RTOs while, at the same time, it does not include a central capacity market like all of the other ISOs/RTOs to assure both resource adequacy and revenue adequacy.
- Unlike the other ISOs/RTOs, CAISO is currently in a capacity shortage situation; of which the CAISO is shortest in Southern California.
- Unlike the other ISOs/RTOs, CAISO is significantly dependent on both hydroelectric power and imports from other regions.

Why a Capacity Payment is Required Cont.

- CAISO currently relies on a combination of RMR and MOO/MLCC in an attempt to assure grid reliability and to compensate generators;
 - both approaches are cost-based
 - interfere with forward contracting, and
 - do not encourage infrastructure investment
- CAISO has been criticized by FERC with respect to the lack of meaningful price signals
- CAISO's new CEO has admitted, in a June 2 FERC technical conference, that CAISO's MOO/MLCC tariff provisions amount to nothing more than "free capacity".
- The CAISO should amend its tariff to include a capacity payment mechanism to replace its current MOO/MLCC tariff provisions.

Why a Capacity Payment is Still Required After MRTU Implementation

Until such time as a central capacity market can be implemented, CAISO's MRTU must include some form of capacity payment mechanism that creates incentives for LSEs to forward contract and that encourages infrastructure investment.

- The CAISO's proposal to backstop LSE forward contracting with a CAISO local capacity contract will have the opposite effect.
- "CAISO backstop contracts", like RMR contracts, will prove to be disincentives to LSE forward contracting and will not encourage infrastructure investment.
- Without a capacity payment mechanism, as an interim measure applied in the absence of a central capacity market, CAISO's MRTU proposal is functionally incomplete.

How a Capacity Product Would Function

- A tradable unbundled capacity product would facilitate CPUC RAR compliance showings, screened for deliverability on forward basis
- LSEs, and generators, need an unbundled capacity product that can be transacted to fulfill capacity requirements without interfering with the traditionally robust transaction of Firm LD energy contracts
 - Most inter-company transactions in California and WECC are various forms of Firm LD contracts

How a Capacity Product Would Function Cont.

- Draft “confirms” for standard Master Agreement transactions have been developed by the stakeholders
- The CPUC’s RAR Workshop Report included a stakeholder proposal as an Attachment and asked for comments on whether it should be adopted (as one of several products available to LSEs in RAR Showings)
- Unbundled capacity products are not yet traded in California or WECC, but PG&E filed Advice Letter 2695-E on August 3, 2005 at the CPUC requesting approval
- Unbundled capacity products may also be transacted through a central Capacity Market in the future

Why a Central Capacity Market is Required Sooner Rather Than Later

- There needs to be a transparent backstop to the CPUC's RAR rules for LSE bilateral contracting to assure both Resource Adequacy and Revenue Adequacy
- A central Capacity Market would operate in complement to the bilateral market to transparently price all capacity at market value to minimize or eliminate "free-riders"
- To accomplish a competitive market price, the central Capacity Market should be cleared sufficiently forward of the relevant delivery period to allow new-entry capacity to compete
- See Coalition Capacity Market Principles for additional discussion