



FERC TECHNICAL CONFERENCE

FLEXIBLE AND LOCAL RESOURCES NEEDED FOR RELIABILITY IN THE CALIFORNIA WHOLESALE MARKET

SACRAMENTO, CA

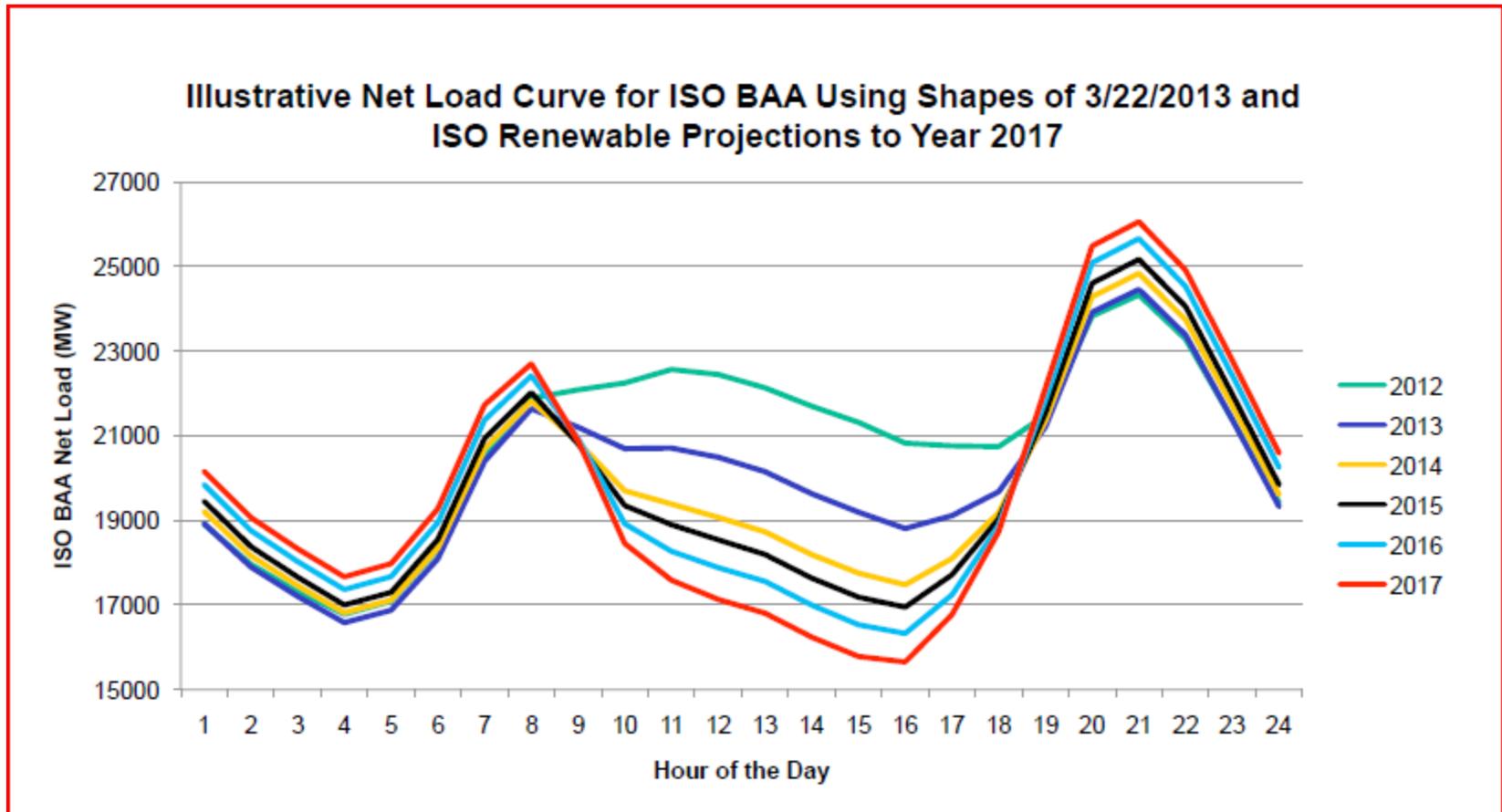
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LIFE IS CHANGING



Source: CAISO

THE PROBLEM

Ensure grid reliability is balanced against excessive customer costs.

The grid operator has an obvious measure of success – no blackouts. But no measure of customer cost.

Where should the “missing money” that generator owners need to cover their costs come from?

We must ask and answer: Will a 3-yr forward capacity procurement mandate increase grid reliability with an acceptable impact to customer choice and costs?

IMPACT TO DA CUSTOMERS

The Joint Proposal for forward RA capacity procurement will likely result in:

- Higher credit risk exposure to the Energy Service Provider
- Expected purchasing premium for capacity to Direct Access customers
- Increased liability on Direct Access customer balance sheet

Will DA customers simply focus on their business and revert to the IOU's?

SOLUTIONS

1. Make all RA generation procurement equal

- Current CPUC procurement policies often prefer new generation over existing generation
- Procurement of existing generation resources “uses up” existing capacity and ensures lowest costs to ratepayers; does not strand capacity

✓ RA Costs:

- New generation RA: \$16.80/kw-month⁴
- Existing generation RA: \$2.50/kw-month⁵

2. Implement the Bulletin Board adopted by the CPUC, which will provide price transparency as well as facilitate a market.

SOLUTIONS (2)

3. The CAISO proposed annual long-term planning assessment (4-10 years) will provide helpful information to all market participants, particularly on the need to procure. The CAISO should compare its forecast of need with future capacity market prices to assure that price signals reflect scarcity.

4. CAISO backstop could work with the current RA annual procurement if the CAISO used a procurement similar to the “SRA” or Summer Reliability Agreement procurement used in 2000 to procure 1200 MW of peaking capacity.

STRUCTURAL ISSUES

Allow Generators to Mothball Power Plants

- Historically, we simply operate uneconomic plants. We maintain them, test them, and pay for their fixed costs. This does not align with demand or the economy.
- We now are focused on the problem; Is the time ripe to address this issue with permitting and regulatory agencies to allow air, wastewater and other permits to be suspended, and later reinstated?

Should “the obligation to serve” assigned to the IOU’s be revisited?

- Most Direct Access customers go to other ESP’s;
- Should DA customers provide a 1-year notification to the IOU?
- Should the 14% DA cap be lifted? When?

STRUCTURAL ISSUES (2)

ESP's will buy energy, and consequently capacity, forward if there is potential exposure to high energy prices.

- Is this happening?
- Why is liquidity drying up in the West?

POLICY ISSUES TO REVISIT

Is the current procurement policy, particularly Cost Allocation Mechanism (CAM), in the ratepayer's interest?

Do we want to move from markets to mandates? What is the cost?

If the issue is cost recovery for a generator for years 1-3, to be operational for years 4-6, who is in the best position to identify and capture those costs?

How can we assign risk to those entities that can best manage it?

POLICY ISSUES TO REVISIT (2)

Will forward RA procurement for local, system and flexible capacity harm ratepayers?

- Increased liability; reduced liquidity and borrowing capacity
- Increased cost due to credit risk
- Will a DA customer want to tie up credit in their energy procurement, or will they simply go back to the IOU?

Allow ESP's to buy RA on a timeframe aligned with DA customer's needs and business plans, typically annually.

WHERE DO CAPACITY MARKETS WORK TODAY?

PJM^{1,3}

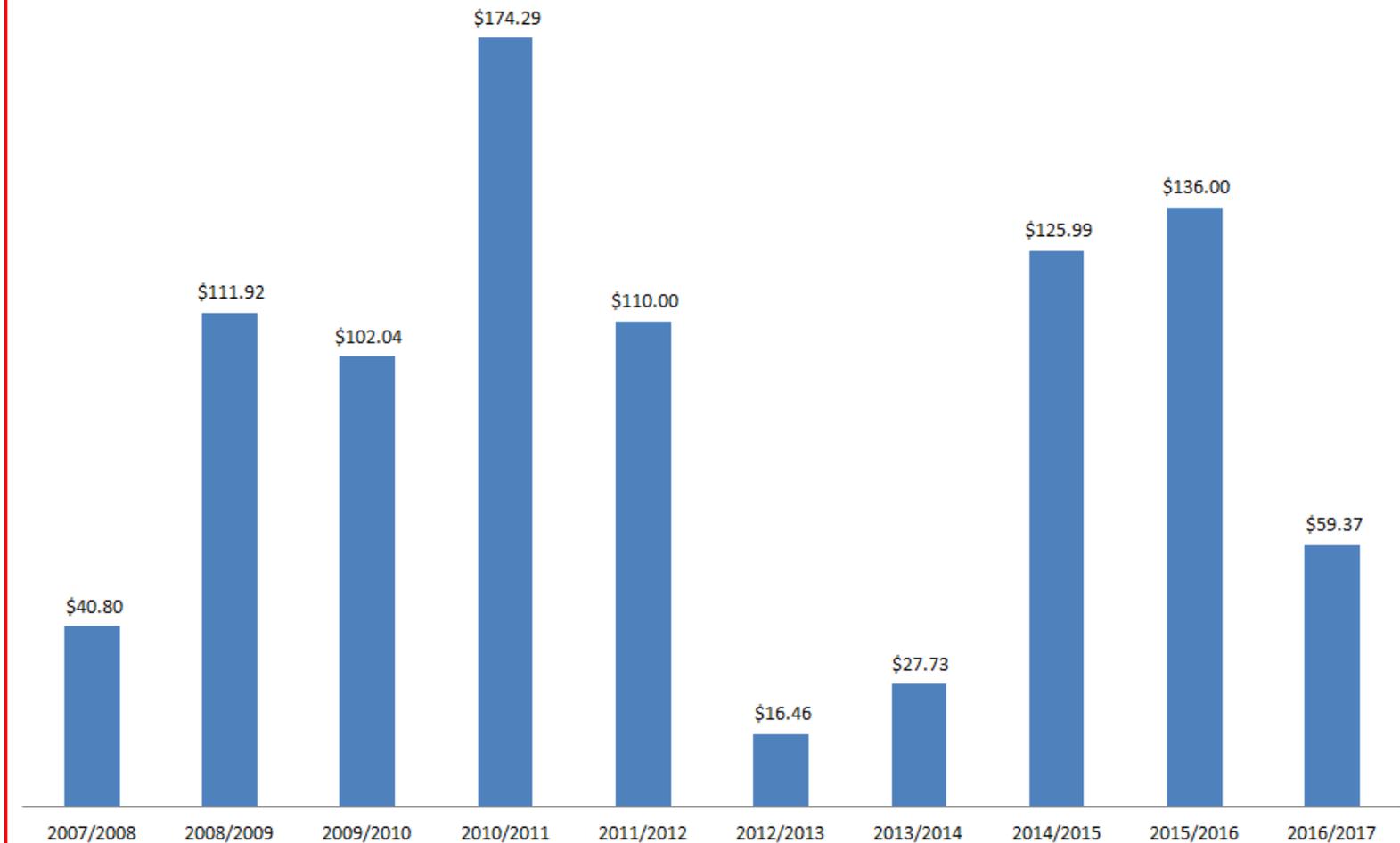
- \$50 billion; 93% to existing generation owners; 1.8% to new gen
- Equivalent to 129 new Combined Cycle plants
- NJ & MD – mandated ratepayer subsidized generation
- Can a market be competitive if all bids are mitigated?

Auction concerns:

- Complexity
- Unpredictability and changing rules
- Lack of buyer side mitigation
- Black box pricing model

PJM PRICE VOLATILITY

PJM RTO Base Residual Auction Results per MW - DAY⁶



PJM BASE RESIDUAL AUCTION RESULTS



2016/2017 RPM Base Residual Auction Results

2016/2017 Base Residual Auction Results Discussion

Table 1 contains a summary of the RTO clearing prices resulting from the 2016/2017 RPM Base Residual Auction in comparison to those from 2007/2008 through 2015/2016 RPM Base Residual Auctions.

Table 1 –RPM Base Residual Auction Resource Clearing Price Results in the RTO

Auction Results	RTO									
	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012 ¹	2012/2013	2013/2014 ²	2014/2015 ³	2015/2016 ⁴	2016/2017 ⁵
Resource Clearing Price	\$40.80	\$111.92	\$102.04	\$174.29	\$110.00	\$16.46	\$27.73	\$125.99	\$136.00	\$59.37
Cleared UCAP (MW)	129,409.2	129,597.6	132,231.8	132,190.4	132,221.5	136,143.5	152,743.3	149,974.7	164,561.2	169,159.7
Reserve Margin	19.2%	17.5%	17.8%	16.5%	18.1%	20.9%	20.2%	19.6%	20.2%	21.1%

1) 2011/2012 BRA was conducted without Duquesne zone load.

2) 2013/2014 BRA includes ATSI zone

3) 2014/2015 BRA includes Duke zone

4) 2015/2016 BRA includes a significant portion of AEP and DEOK zone load previously under the FRR Alternative

5) 2016/2017 BRA includes EKPC zone

WHERE ELSE DO WE SEE CAPACITY MARKETS?

Where else do we see capacity markets?

- Hotels?
- Pizza?
- Milk?
- Airlines?
- Car rentals?

CONCLUSIONS

- If all ESP's procure from all existing generation resources, capacity costs will approach CONE.
- Market transparency is important, and can be achieved through the current direction to institute a bulletin board system through the CPUC.
- The potential exposure to high forward energy and ancillary services prices will incentivize ESP's to procure energy and ancillary services forward.
- The CAISO proposed annual long-term reliability planning assessment will inform ESP's as to additional procurement which may be required.
- A CAISO run backstop Reliability Services procurement, similar to the Summer Reliability Agreement in 2000, would provide backstop procurement should LSE's be deficient.
- The capacity auction process should be vetted thoroughly to avoid

REFERENCES

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3. “Does Competitive Electricity Require Capacity Markets? The Texas Experience” Kleit, Andrew & Michaels, Robert, February 2013
4. SDG&E Notice of Application 13-06-XXX to Fill the Local Capacity Requirement Need identified in CPUC Decision 13-03-029 (Bill Insert, July 2013)
5. CPUC 2011 Resource Adequacy Report, Brooks, Donald & Gannon, Jaime, February 5, 2013
6. PJM 2016/2017 RPM Base Residual Auction Results

