CPM: The big picture and CPM design implications

Discussion presentation for the Market Surveillance Committee

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The Big Picture

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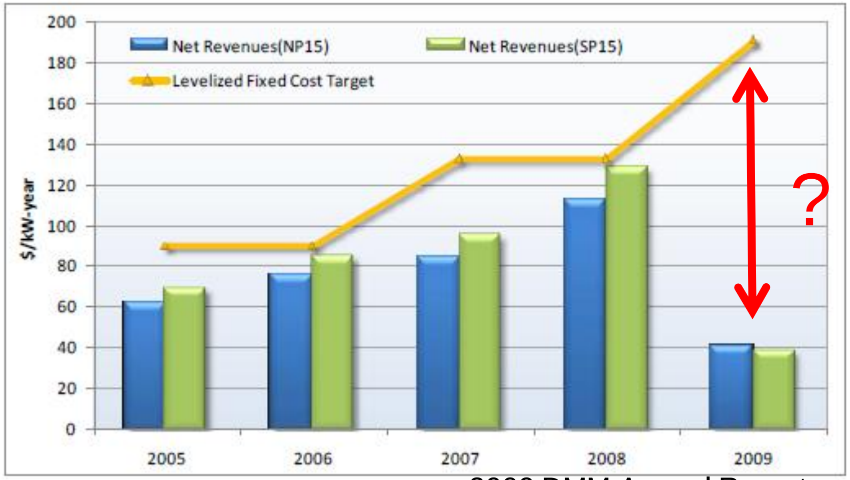
1. Revenue shortfalls for existing gas assets are staggering and expected to get worse

2. Greatest Irony: RPS brings much higher demands on flexibility and much lower market revenues

This is a "significant societal problem"!
(CAISO Governor Foster describing this revenue shortfall situation)

Figure 2.18 Estimated net revenue of hypothetical combined cycle unit



2009 DMM Annual Report

Study highlights several market impacts and directions for potential design reforms needed for 20% RPS (3)

- Effect of declining energy market revenues on capability of gas-fired generation to invest in additional operational flexibility
  - ➢ Need to examine pricing and definition of wholesale market products and relationship of wholesale market revenues, CPUC LTPP, and RA program in supporting needed investments

California ISO

Slide 127

September 17, 2010 Renewable Integration CAISO Presentation

Big picture pieces - more

- Centralized capacity market discussions have ended, at least for the time being
- CPUC policy effectively establishes RA price cap and floor
- Mandated planning reserve margins serve to reduce scarcity energy and ancillary service revenues
- Capped and mitigated [essentially] energy-only market with oversupply is unlikely to fill the revenue gap

The opportunity and the threat

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- CPM is one, limited part of the design
  - CPM will not solve revenue adequacy problems, but could be a useful tool
  - CPM could be used to:

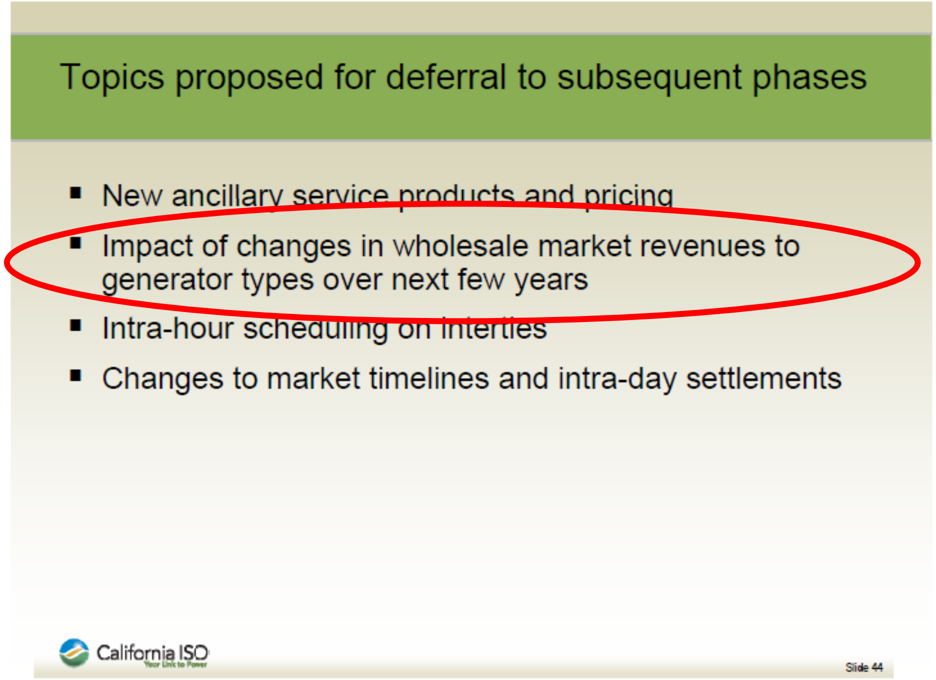
    (1) discourage reliance on backstop mechanisms,

    (2) encourage forward contracting, and

    (3) create an investment signal
- CAISO CPM proposal expands (e.g., for NQC inadequacies, forestalling retirements, solving operational requirements) rather than discourages use without basis for need beyond15% RA planning reserve margin
  - Poor pricing design will worsen compensation shortfall situation

Thought Questions

- If this isn’t the right place and time for the CAISO to provide market-based investment signals when is the right time?
  - Deferred to exceptional dispatch – new products
  - Deferred to renewable integration – new products
  - Deferred to ….when?



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Thought Questions - more

- If we implement this CPM design proposed by the CAISO…
  - Will there be fewer market signals for the new services than are needed?
  - Will there will be increasing uplifts with essentially no ability for LSEs to hedge increased costs?
  - Will we have inefficient capital allocation?
    - Where will the incremental $s come from for least-cost retooling of existing fleets?
    - Or will we require new higher-cost resources to take their place?

Thought Questions - more

- What are the other long-term ramifications of paying a capacity price that is based only on going forward fixed cost and that provides no return on capital?

- Also, in terms of total compensation, California policies discriminate in pricing between “new” and “existing” generation with existing generation largely constrained to “going forward” costs
  - Is this policy sustainable and what inefficient outcomes might it lead to?

Thought Questions - last

- FERC => adequacy of resources has significant effect on wholesale rates and services and therefore is subject to Commission jurisdiction
  - How will CAISO assure that CAISO FERC Tariff produces economically efficient investment in new and existing resources, an essential component of long term resource adequacy?