MARKET SURVEILLANCE COMMITTEE

Market Power Mitigation Issues

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Principles of Market Power Mitigation

- Competition (anti-trust) policy evolved to focus on ex-ante rather than ex-post interventions.
  - Merger review, market-based rates, etc.
  - No compunction to sell
- Real-time intervention of bids and offers is a very rare and unusually aggressive form of competition policy
  - U.S. Energy law sets standards beyond normal anti-trust laws
  - Not seen very often outside of electricity, or even outside the U.S.
- But there is a reason why competition regulation tends to “mitigate” the use of mitigation.
  - Usually very hard to estimate firm marginal costs, costly to second-guess decision making of firms.

Principles of Market Power Mitigation

- So why do we mitigate offers in power markets?
  - Costs and benefits of mitigation
- Market power in electricity can be severe in limited time frames
  - Could be very costly to ignore even transient market power
- At times seemingly small market shares can grant significant market power
- Calculation of marginal costs of traditional plants, while not easy, can be reasonably done with good fuel price data.
  - Even if mitigated, firms can earn prices above MC

Growing Challenges of Mitigation

- Regions where gas prices are less liquid and transparent
- Estimation of DEBS for alternative resources is very difficult
  - Large scale hydro: what is the right value of water?
  - Short-duration storage: what is opportunity cost?
  - Should we even try to mitigate VERS?
- The consequences of false positives could be more than just a firm losing some money for a day.
  - Could appeal unrecovered gas costs to FERC, but not if a battery is drained too early in the day

Mitigating Mitigation: Two Specific Proposals

- Broadly apply metrics of net-position
  - Could be static measures or dynamic measures, but should do *something*
  - Two decades of research has shown net position has a dominant impact on firm behavior
- Limit mitigation to “net pivotal” suppliers
  - Several options for doing this
  - If largest 1 or 2 suppliers are fully mitigated, how much market power to the rest really have?

Spot market revenue with forward (or retail) commitments

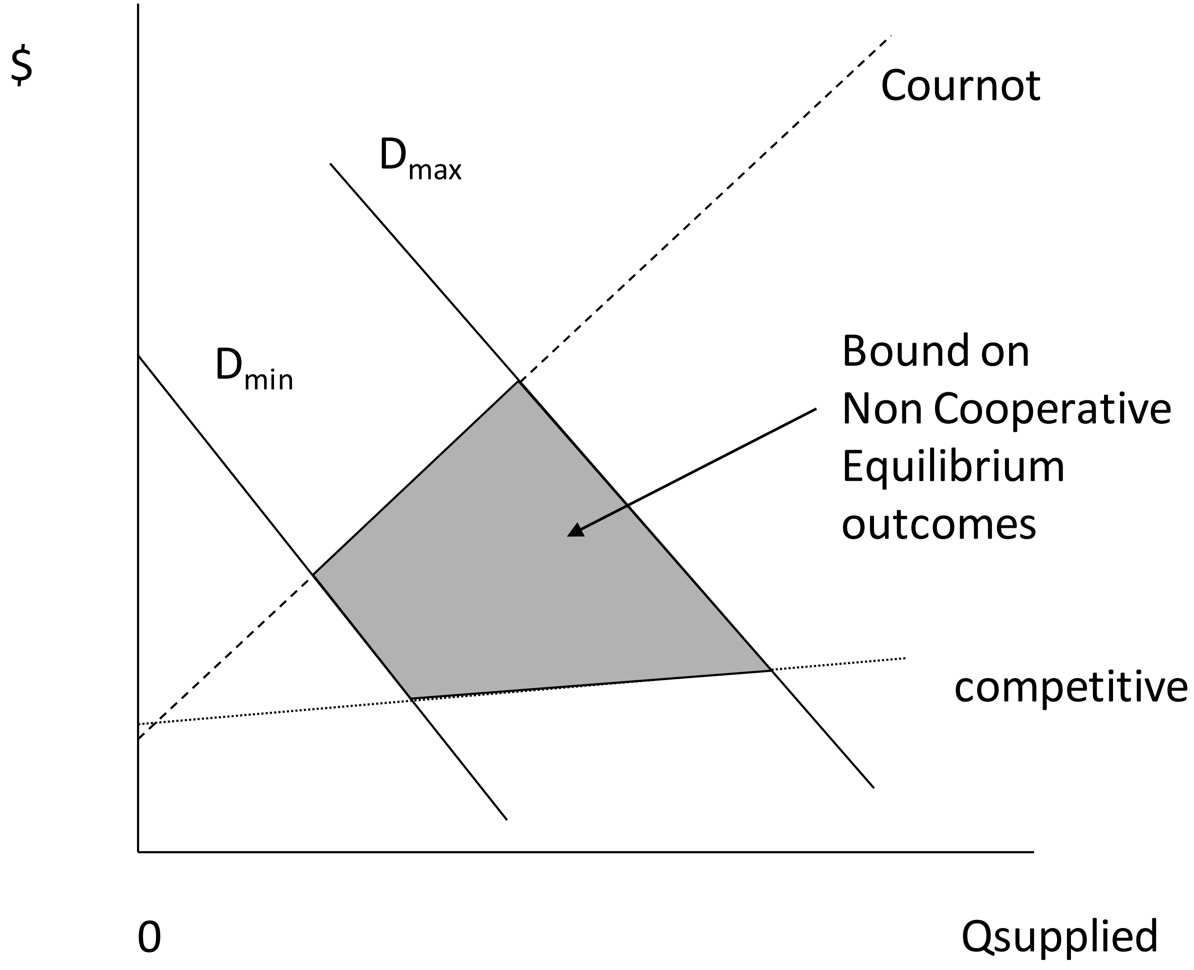
- Total Revenue is the sum of all sales (forward and spot), Qc = forward commitment quantity.

$$TRs(Q) = Ps(Q) * [Q-Qc]$$

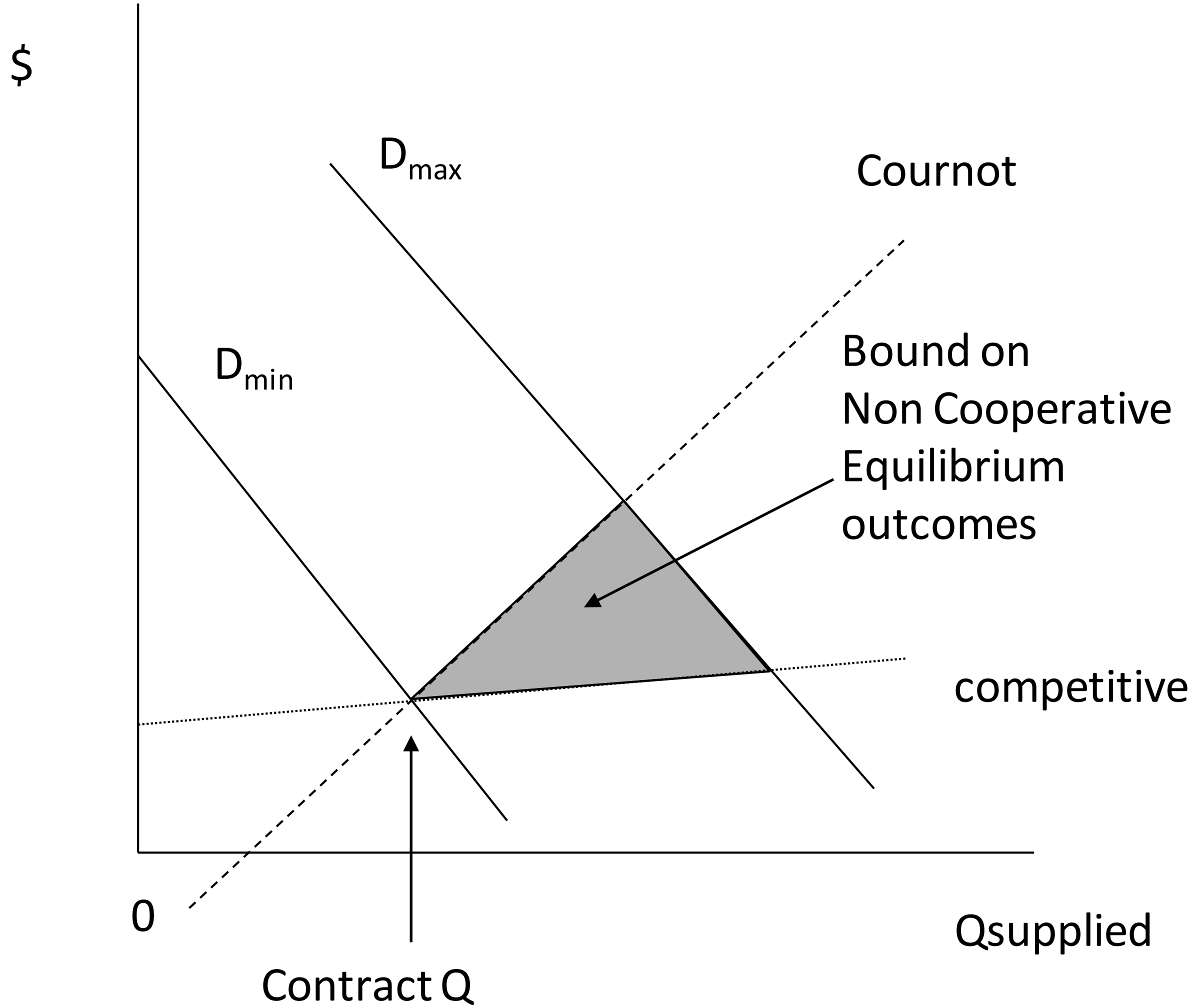
- Marginal Revenue is the change in total revenue from increasing (or decreasing) actual output by a small (marginal) amount

$$MRs(Q) = Ps(Q) + \Delta Ps(Q) * [Q-Qc]$$

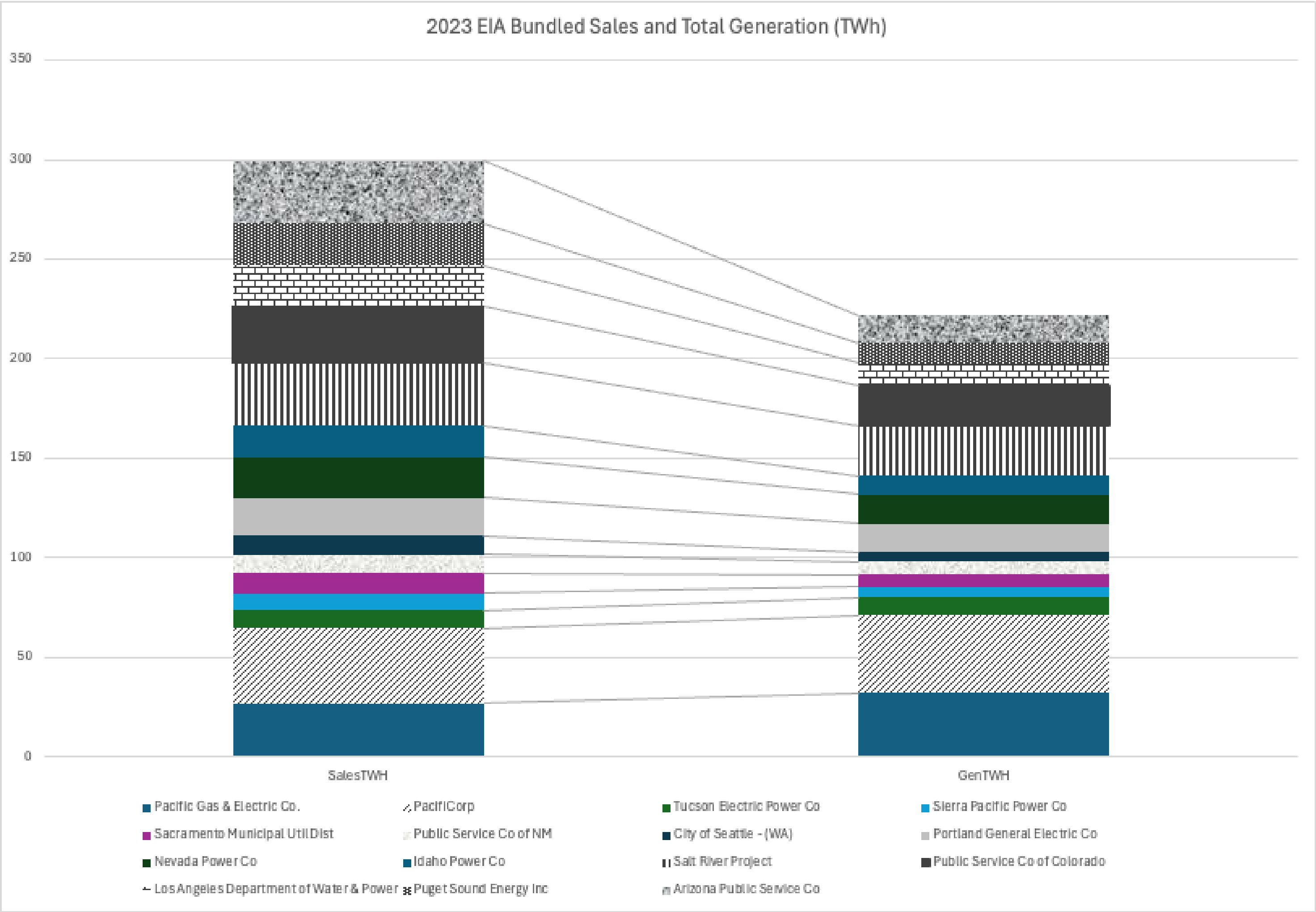
Bounds on Non-Cooperative Outcomes



Vertical Commitments Reduce Bounds



Retail and Generation in EIM 2023



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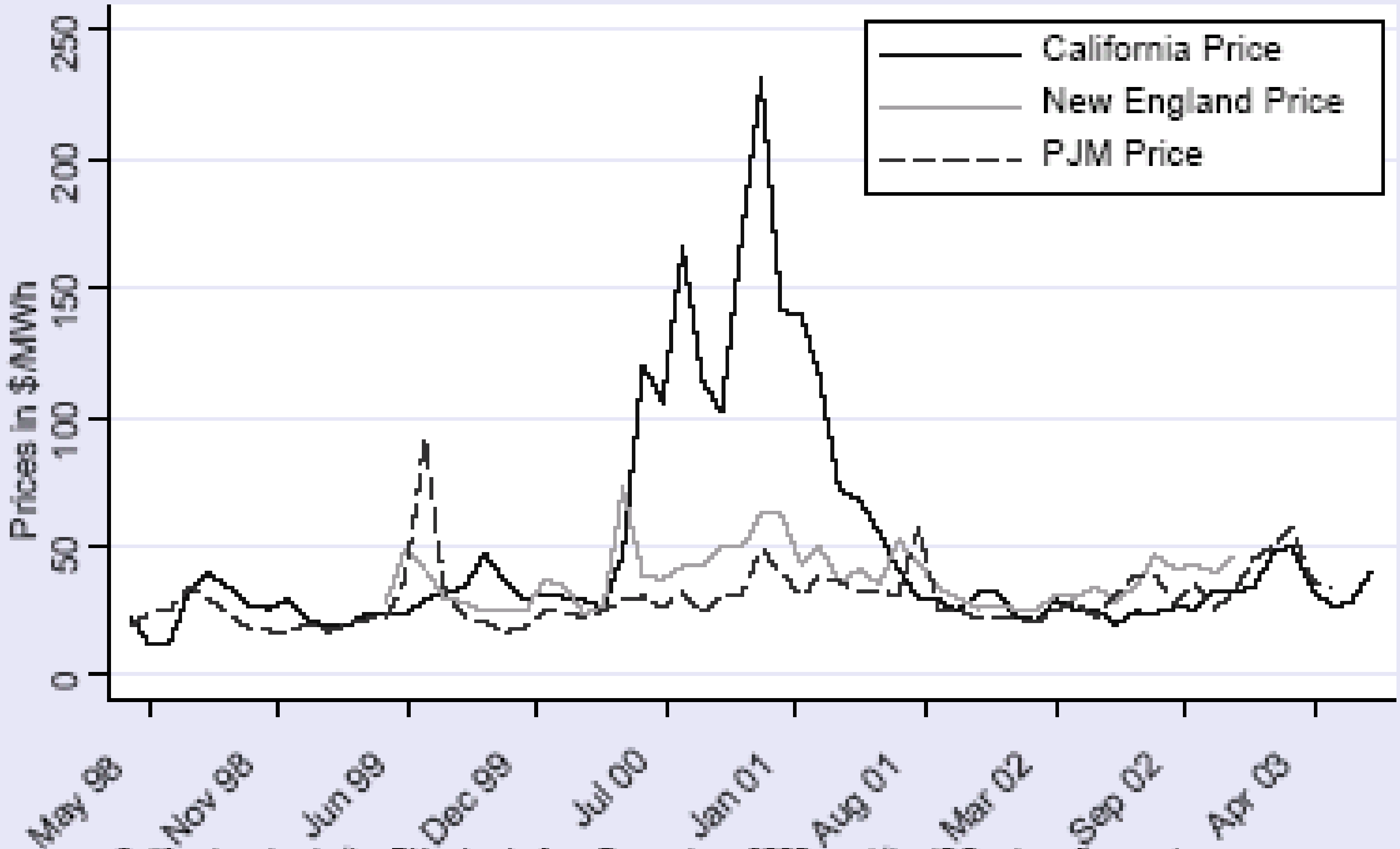
  - Several options for doing this
    - Test first, second and *fourth* largest
    - Test fourth, fifth, and six if 1,2&3 are mitigated
  - If largest 1 or 2 suppliers are fully mitigated, how much market power to the rest really have?
    - Especially in heavily concentrated systems like EIM

additional slides

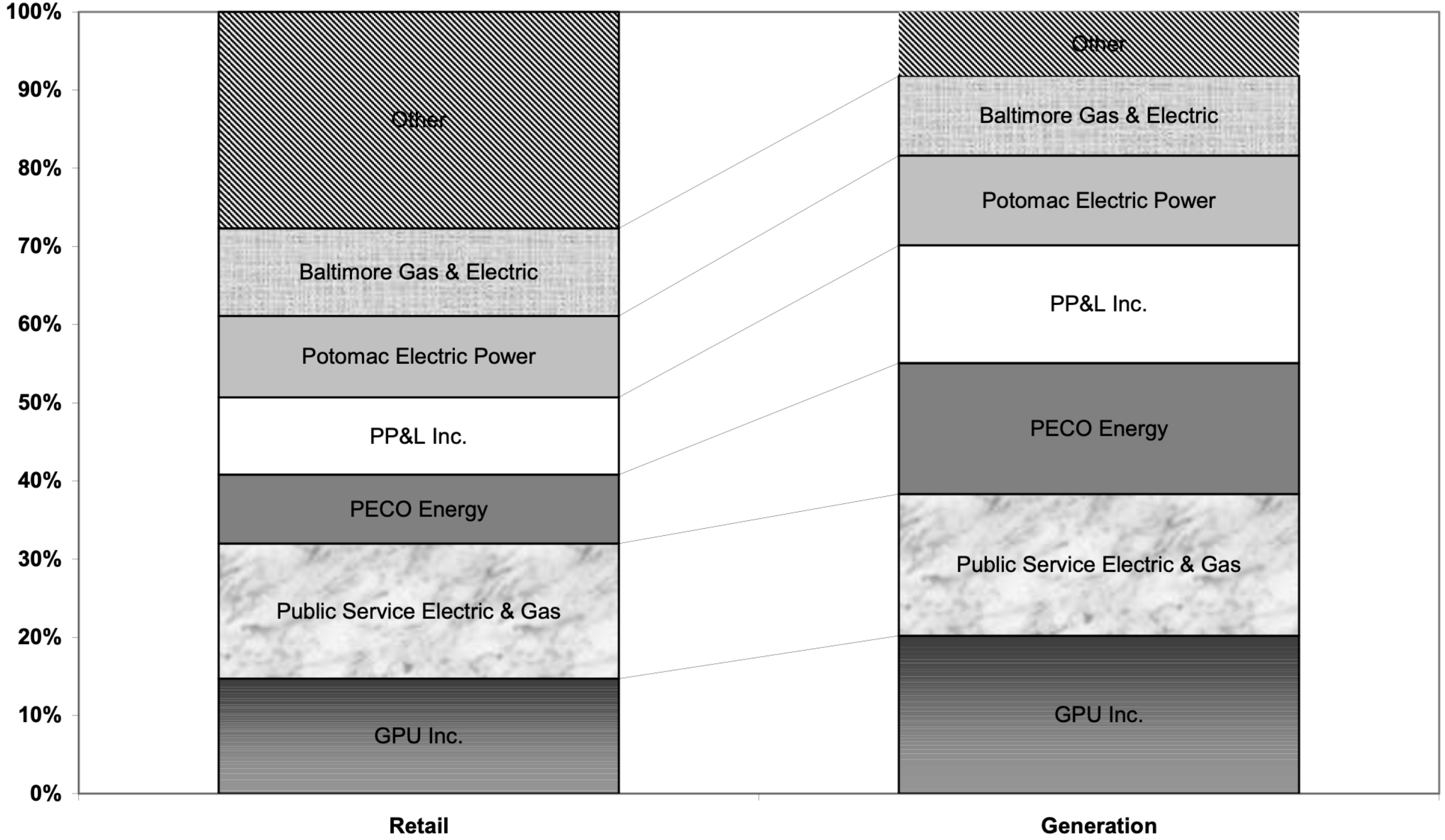
Price Path in All Markets

California, New England, and PJM Monthly Averages

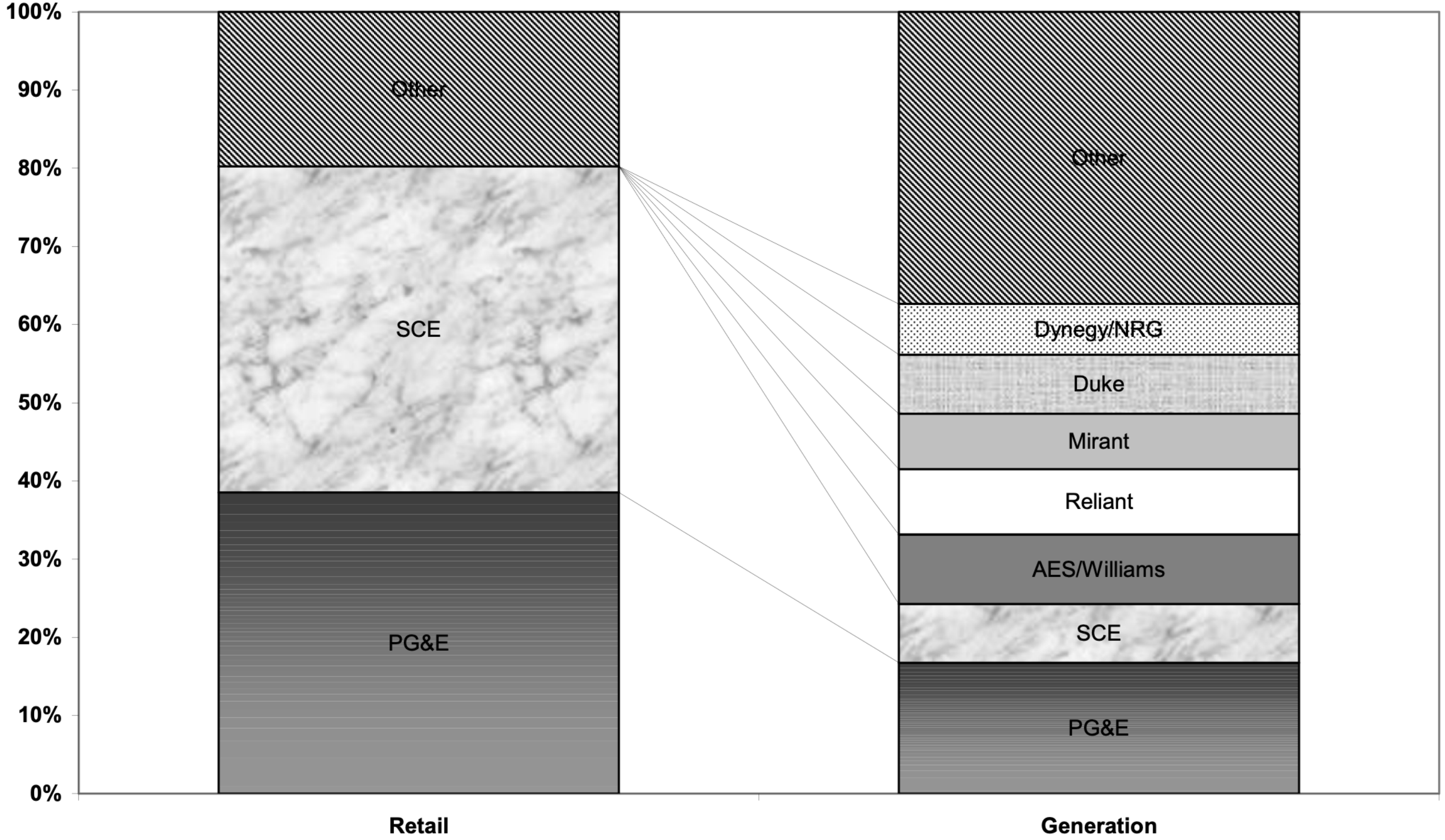


California price is the PX price before December, 2000, and the ISO price afterwards.

Retail and Generation in PJM, 1999



Retail and Generation in California 1999



Retail and Generation in EIM 2023