Regulation of Utility Power Procurement and Hedging Activities

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Topics

- Some basic conceptual/philosophical issues
- California’s power procurement framework
- Some observations on:
  - Current power procurement realities and challenges
  - Some differences between hedging and speculative trading
  - Challenges in designing procurement incentives
Some Basic Conceptual/Philosophical Issues

- In states without retail competition, there is clearly a legitimate public interest in regulating utility procurement.

- But one can legitimately ask: In states with retail competition, why should utility procurement be regulated? Doesn’t this indicate a certain lack of conviction in the retail competition model?

- Nonetheless, presumably based on raw political imperative alone, most states with retail competition also regulate utility procurement decisions.
  - Various approaches:
    1. Confine utility to short-term and spot purchases to encourage customer migration to competitive retailers (i.e., no meaningful hedging)
    2. Farm out procurement for default service to a third party (e.g., Texas)
    3. Farm out default service procurement to multiple wholesale suppliers through slice-of-load auctions (BGS)
    4. Impose hedging responsibility on utilities and oversee complex utility procurement portfolios
Utility Power Procurement in California: Background

- Under California’s electricity restructuring, utilities were required to procure all of their power out of the day-ahead and real-time markets
  - The motivation was to avoid utilities incurring more stranded costs through long-term contracting and to encourage customers to migrate to competitive retailers to get hedged products
  - This framework proved to be a disaster even in the absence of a retail rate freeze
    - SDG&E was not subject to a retail rate freeze in Summer 2000, but passing through the high wholesale spot prices was *politically infeasible*

- When SCE and PG&E became insolvent in January 2001, the California Department of Water Resources was recruited into the power procurement role
Utilities Resumed the Power Procurement Function in 2003 Under a New Framework

- DWR was statutorily precluded from procuring power beyond December 31, 2002

- A statutory procurement framework was needed to restore financial community confidence sufficiently to enable utilities to resume procurement

- Assembly Bill 57 was adopted in September 2002
  - Restored utility credit ratings to an acceptable level by reducing procurement risk exposure
  - Replaced after-the-fact reasonableness reviews with “upfront standards and criteria” known prior to transaction execution
  - Assured expeditious flow-through to ratepayers of procurement under collections and over collections
  - Assured regulatory avenue for pre-approval of contracts
Procurement Review Group

Originally established to expedite pre-approval of certain hedging contracts as utilities resumed procurement in late 2002

Serves as a forum for dialogue and improved understanding between utilities and their non-market participant constituencies
  » Regulatory staff, consumer advocates, environmentalists, etc.

Not a decision-making body
  » Utilities remain responsible for their own final procurement decisions and PRG participants retain all their rights to formal legal due process

There seems to be a broad consensus that the PRGs have been tremendously successful in improving mutual understanding of differing viewpoints and some degree of conflict resolution
Basic Elements of Utility Procurement Plans

- Identification of procurement needs over multi-year time period
  - Hourly supply and demand forecasts
  - Calculation of residual net short (RNS) and residual net long (RNL) positions
  - Calculation of natural gas requirements

- Establishment of procurement limits
  - Results in a dollar-cost-averaging approach which modulates rates of forward hedging commitments based on market conditions

- Identification of permitted procurement processes and products

- Establishment of risk metrics and limits
  - Consumer Risk Tolerance (CRT)
  - Credit, collateral, and counterparty concentration limits
Current Challenge: How Will New Generation Investment Be Motivated in States with Retail Competition?

- Following the implosion of the “merchant” generation model in 2002, no new generation will be able to secure needed financing without a long-term power purchase contract (e.g., 10 years) with a creditworthy counterparty.

- In retail-competition states, no load-serving entities (i.e., neither utilities nor competitive retailers) have a sufficiently secure customer base to allow them to sign the long-term power purchase contracts (e.g., 10 years) necessary to support new generation investment.

- **Quandary:** Where will the new generation investment come from?
Are “Basic Generation Service” (BGS) Auctions the Answer?

- BGS auctions voluntarily assign a slice-of-load service responsibility to willing competitive wholesalers for periods of 1-3 years. Monetize and privatize the risks of customer load migration.

- BGS auctions essentially outsource the risks of providing “default service” in markets with retail competition and unpredictable load migration.

- However, BGS auctions probably will not, by themselves provide financial support for new generation investment.
Assuring Generation Resource Adequacy in California

- CPUC now requires all load-serving entities to verify forward contracting for 90% of their customer requirements (including a 17% reserve margin) one year forward and 100% one month forward
  - But this requirement, by itself, is not likely to support new generation investment

- SCE has received authority to contract forward for 10 years for new physical generation additions and to spread costs across all LSEs in SCE’s service territory through a “wires” charge
  - Everyone regards this as a transitional solution

- In the longer run, it is hoped that well-structured “capacity” markets will solve the new generation conundrum
  - However, this is an untested “hope” and multi-year contracting will still likely be required
What Are Some of the Differences Between Power Procurement Risk Management (Hedging) and Power Trading?

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<thead>
<tr>
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<th>Risk Management/ Hedging</th>
<th>Trading</th>
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<tbody>
<tr>
<td><strong>Objective</strong></td>
<td>◼ Minimize cost/risk of procuring needed power</td>
<td>◼ Make profits</td>
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<tr>
<td><strong>Identity of the “Principal”</strong></td>
<td>◼ Ratepayers (with regulator acting as the principals’ proxy)</td>
<td>◼ Owners/shareholder</td>
</tr>
<tr>
<td><strong>Constraints</strong></td>
<td>◼ At the end of the day, must take a long position equal to retail customer demand</td>
<td>◼ Need take no position on any given day or hour</td>
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<tr>
<td><strong>Employee Skill</strong></td>
<td>◼ Risk management</td>
<td>◼ Speculative acumen</td>
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<tr>
<td><strong>Typical Time Horizon</strong></td>
<td>◼ Both short and long-term transactions</td>
<td>◼ Usually emphasize shorter term transactions</td>
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**Procurement Incentives**

- Why not address the principal-agent issue and reduce/eliminate the need for regulatory oversight and reasonableness reviews by imposing a procurement incentive framework on utilities?

- In concept, this sounds like a great idea, but can such a framework be designed in such a way as to be:
  - Even-handed and fair for both consumers and shareholders,
  - Incentivize appropriate procurement/hedging decisions, and
  - Eliminate the need for any after-the-fact reasonableness reviews?
### Alternative Procurement Benchmarks (Examples of General Categories)

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<tr>
<th>Reasonably Hedgeable by Utility</th>
<th>Simple Benchmark</th>
<th>Complex Benchmark</th>
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<tbody>
<tr>
<td></td>
<td>Index of day-ahead and/or real-time electricity prices</td>
<td>Weighted average mix of specific short-term and long-term prices with fixed weights</td>
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<tr>
<td>Difficult/Impossible to Hedge the Benchmark</td>
<td>An arbitrary fixed price (e.g., $50/MWh)</td>
<td>Complex variable-weighted average of numerous market prices (e.g., SDG&amp;E’s former Generation Incentive Mechanism)</td>
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<td></td>
<td>Average wholesale price in New Zealand</td>
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Broad Difficulties Encountered In Designing Procurement Incentives

- If the benchmark is “hedgeable”, utilities can minimize their risk by simply replicating the benchmark
  » Is this really the way you want utilities to behave? (e.g., purchasing most or all of their power out of the spot market)

- If the benchmark is largely “unhedgeable”, then fairness becomes a major issue (e.g., an arbitrary $50/MWH, or the price of power in New Zealand)
  » Perhaps such a benchmark will reward/punish the utility for doing better/worse (i.e., it’s directionally correct), but does reasonably proficient procurement behavior at least break even compared to the benchmark?

- Even if we can design an incentive mechanism with a fair \textit{ex ante} distribution of outcomes, is this \textit{ex ante} distribution so wide that the regulatory process cannot credibly commit to delivering the rewards/penalties \textit{ex post}
  » And, if the \textit{ex ante} distribution of possible rewards/penalties must be constrained in order to be believable/reliable, will regulators then insist on retaining their right to reasonableness reviews?