

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?

	Risk Management/ Hedging	Trading
<i>Objective</i>	<ul style="list-style-type: none">■ Minimize cost/risk of procuring needed power	<ul style="list-style-type: none">■ Make profits
<i>Identity of the “Principal”</i>	<ul style="list-style-type: none">■ Ratepayers (with regulator acting as the principals’ proxy)	<ul style="list-style-type: none">■ Owners/shareholder
<i>Constraints</i>	<ul style="list-style-type: none">■ At the end of the day, must take a long position equal to retail customer demand	<ul style="list-style-type: none">■ Need take no position on any given day or hour
<i>Employee Skill</i>	<ul style="list-style-type: none">■ Risk management	<ul style="list-style-type: none">■ Speculative acumen
<i>Typical Time Horizon</i>	<ul style="list-style-type: none">■ Both short and long-term transactions	<ul style="list-style-type: none">■ Usually emphasize shorter term transactions

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)

	<i>Simple Benchmark</i>	<i>Complex Benchmark</i>
<i>Reasonably Hedgeable by Utility</i>	<ul style="list-style-type: none"> ■ Index of day-ahead and/or real-time electricity prices 	<ul style="list-style-type: none"> ■ Weighted average mix of specific short-term and long-term prices with fixed weights
<i>Difficult/Impossible to Hedge the Benchmark</i>	<ul style="list-style-type: none"> ■ An arbitrary fixed price (e.g., \$50/MWh) ■ Average wholesale price in New Zealand 	<ul style="list-style-type: none"> ■ Complex variable-weighted average of numerous market prices (e.g., SDG&E's former Generation Incentive Mechanism)

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 ***ex ante*** distribution of outcomes, is this ***ex ante*** distribution so wide that the regulatory process cannot credibly commit to delivering the rewards/penalties ***ex post***
 - » And, if the ***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?