



WILL RE-REGULATION END MERCHANT GENERATION? (AND SHOULD WE CARE)?

**Harvard Electricity Policy Group
May 30, 2002**

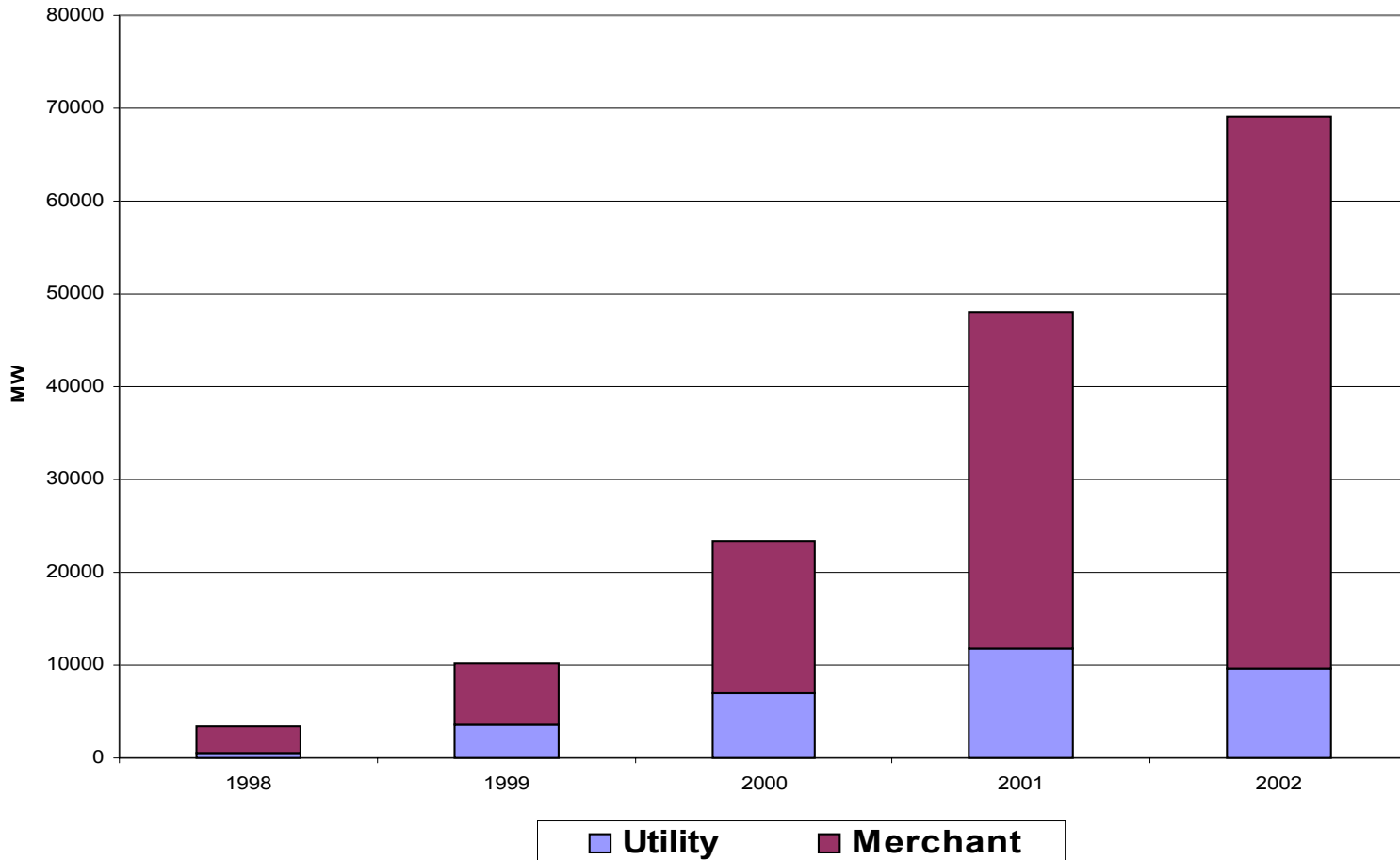
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Introduction



- ◆ **Merchant generation has been a success story (so we should care).**
 - **New, efficient capacity**
 - **Laws of economics working**
 - **Markets working**
- ◆ **But re-regulation now threatens merchant generation**
 - **Faulty economics -- the curious notion of “withholding”**
 - **Market intervention in New York**
 - **Is volatility a political impossibility?**
 - **Can a capacity requirement compensate?**
- ◆ **Wall Street’s doing the withholding**
- ◆ **Avoiding a return to cost-plus generation**

Merchant Generation Provides 120 GW of New Capacity in Five Years



Source: U.S. Energy Information Administration, Electric Power Annual, 1998-2000, "Summary of Planned Capacity Additions, 2001 and 2002 (web site)"

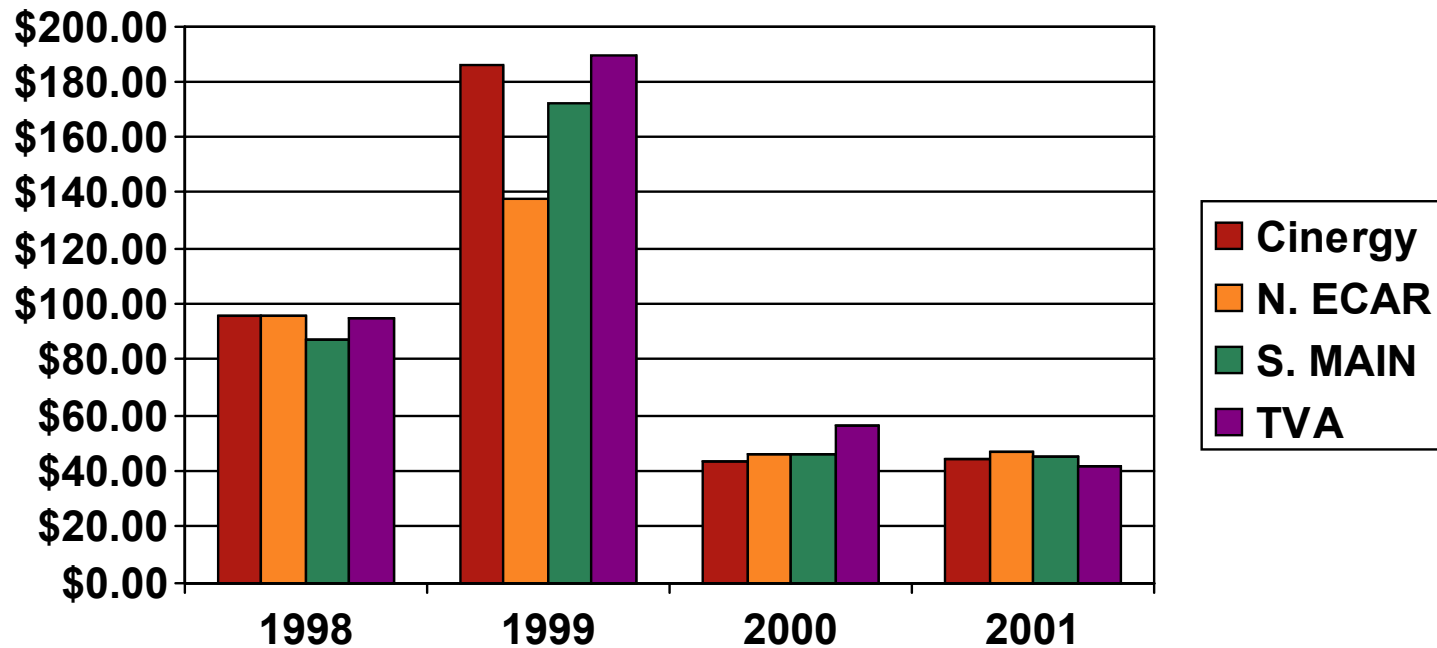
Good? Muy Bueno!

- ◆ **Capital Efficient – e.g., least cost capital structures, sale/leasebacks.**
- ◆ **Fuel Efficient – e.g., least cost fuel source, fuel mix, heat rates, capital v. operating costs.**
- ◆ **Location Efficient – e.g., supply/demand (price), interconnection costs.**
- ◆ **Risk Efficient – owner has risk, not customers.**
- ◆ **Tax Efficient – e.g., synthetic leases.**
- ◆ **Operationally Efficient – e.g., lower forced outage rates.**
- ◆ **Environmentally Efficient – e.g., externalities internalized, no eminent domain used.**



Meanwhile, the Law of Supply and Demand Is Working on the Supply Side ...

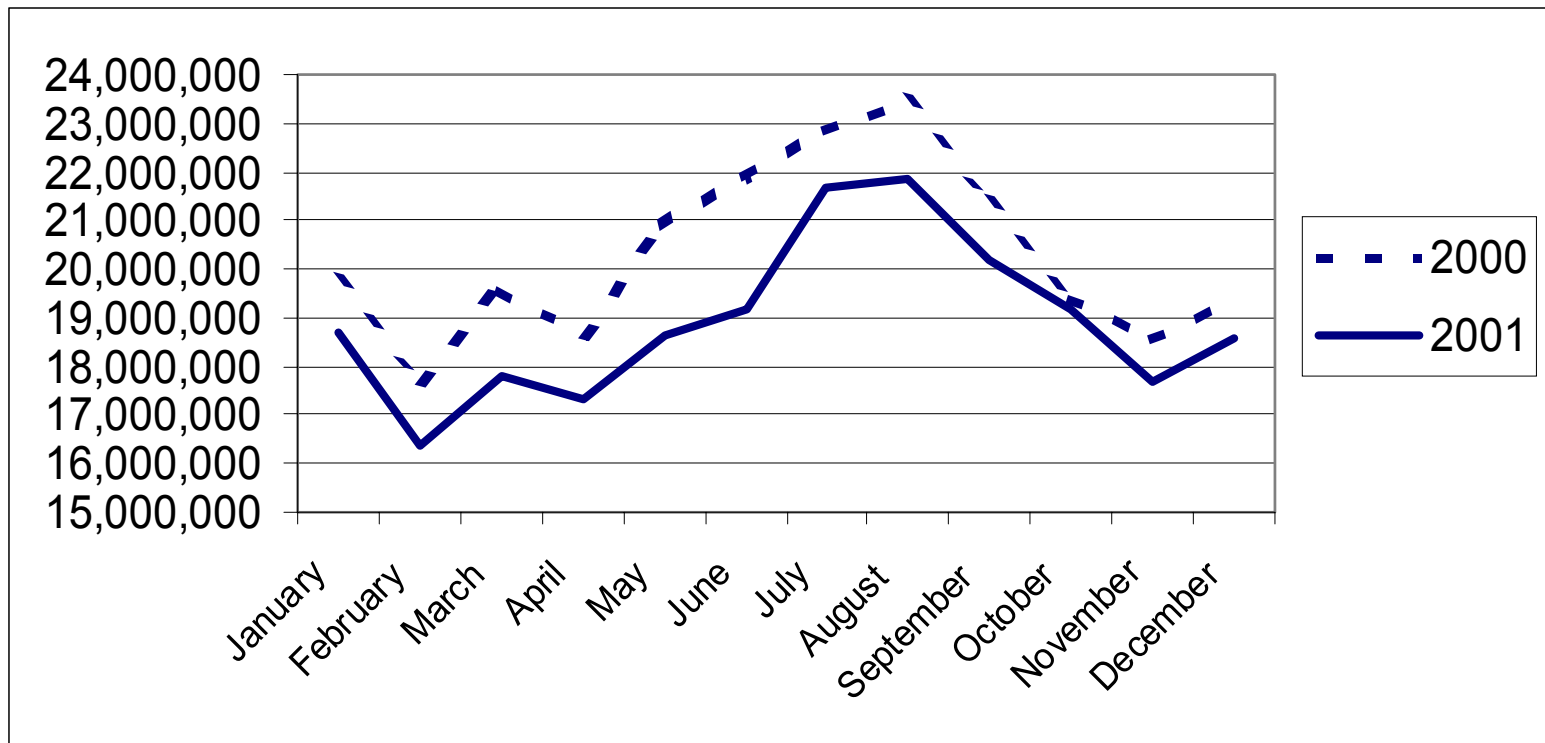
Supply responds to higher prices in the Midwest and summer prices go way down



Source: Power Markets Week Price Index Database, Day Ahead Spot Prices for July-August of years shown.

And Working on the Demand Side....

Demand responds to higher prices in California



Source: California Energy Commission, ISO Energy
Year-to-Date Data, weather and growth adjusted.

Markets Are Still Working

- ◆ **PJM State of the Market Report for 2000**
 - **Energy markets “reasonably competitive”**
 - **Capacity markets “reasonably competitive”**
 - **Regulation market “competitive”**
- ◆ **NYISO Annual Report on Markets for 2001**
 - **“markets performed relatively well”**
 - **“markets have been workably competitive”**
- ◆ **ISO-NE Energy Institute Report for 1999-2001**
 - **“results to date are encouraging...”**



Yet, Re-Regulation Looms



- ◆ **Faulty economics -- the curious notion of “withholding”**
- ◆ **New York’s AMP and new supply**
- ◆ **Volatility impossible?**
- ◆ **Can a capacity requirement compensate?**
- ◆ **Wall Street now doing the withholding**
- ◆ **Can we avert a return to cost-plus generation?**

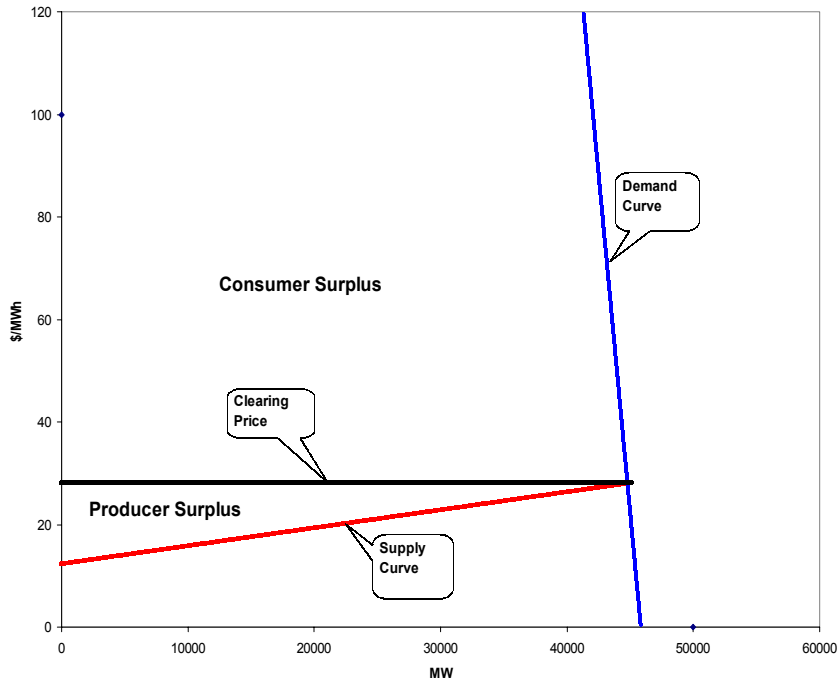
Faulty Economics: Curious Notion of “Withholding”

- ◆ **Are these economic/physical “withholders”?**
 - **Grocer charging more than wholesale?**
 - **Airline charging more than incremental fuel?**
 - **Factory running at less than capacity?**
 - **Employee seeking a salary more than commuting expense?**
- ◆ **Novel “duty to deal” not part of antitrust law.**
- ◆ **Expectation that a generator in central pool with capacity requirement should be a marginal cost bidder in the real time market has morphed into a “market power” principle with sweeping application to:**
 - **bilateral markets**
 - **pure energy markets**
 - **forward markets**
 - **wholesale trading**

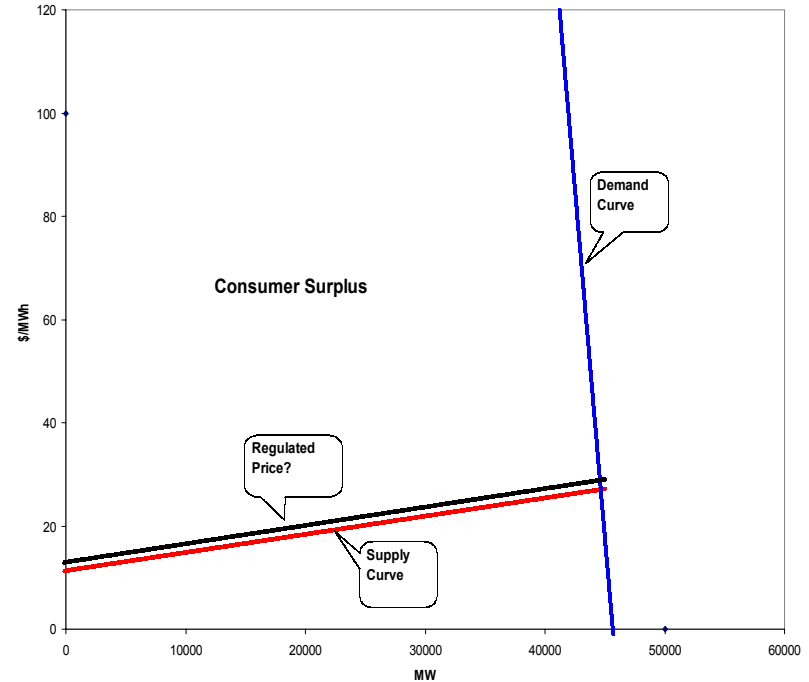


Extension of Withholding Principle from Central Pool to Bilateral Market

Central Pool



Bilateral Market



Producer surplus (return of/on capital) placed at regulatory risk if “withholding” principle is applied to individual units in bilateral market.

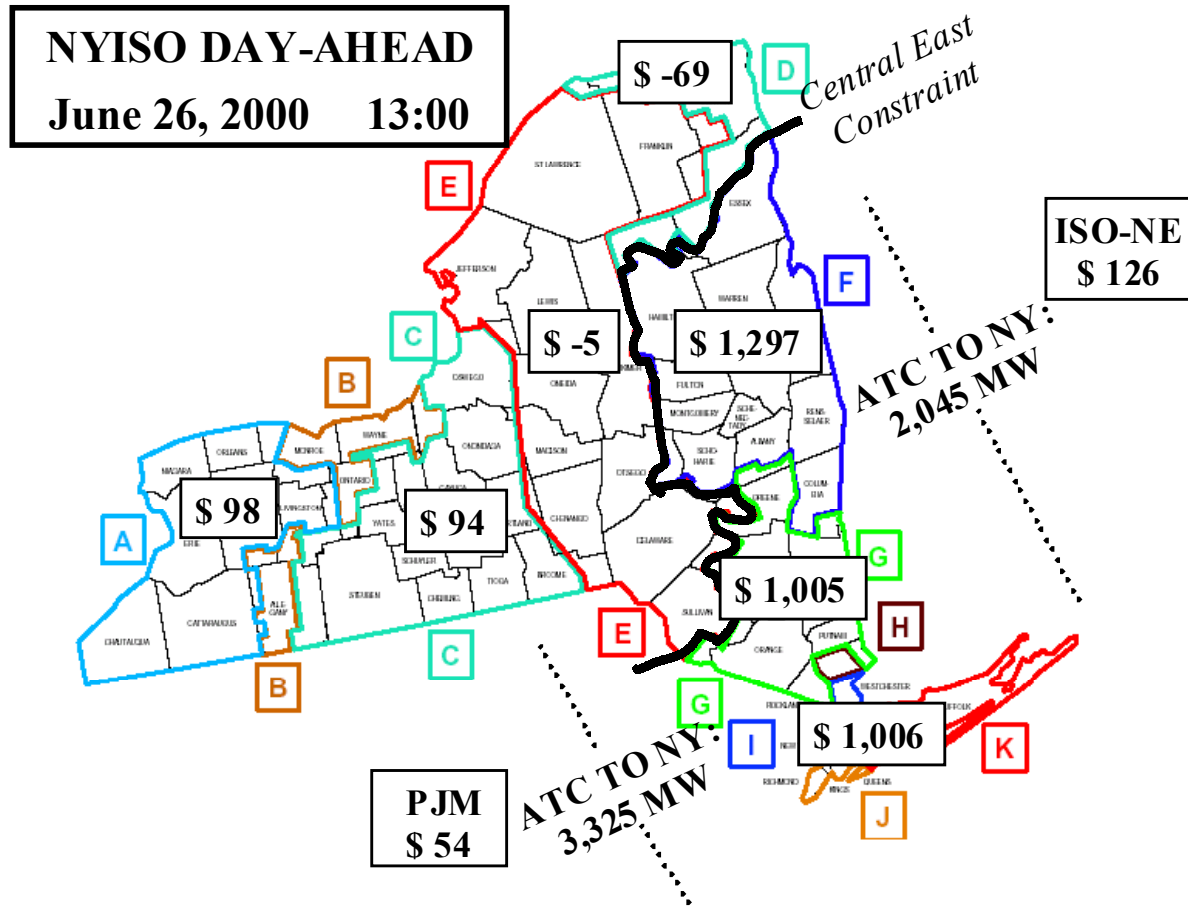


Extension of Withholding Principle to Wholesale Trading

- ◆ Wholesale trading now 6 billion MWh annually – almost double annual retail sales.
- ◆ Refund condition invites buyer to renege on obligation by claiming agreed-upon price more than seller's "out of pocket" costs.
- ◆ Large regulatory risks will transcend narrow margins in wholesale trading, cutting market participants and market liquidity.

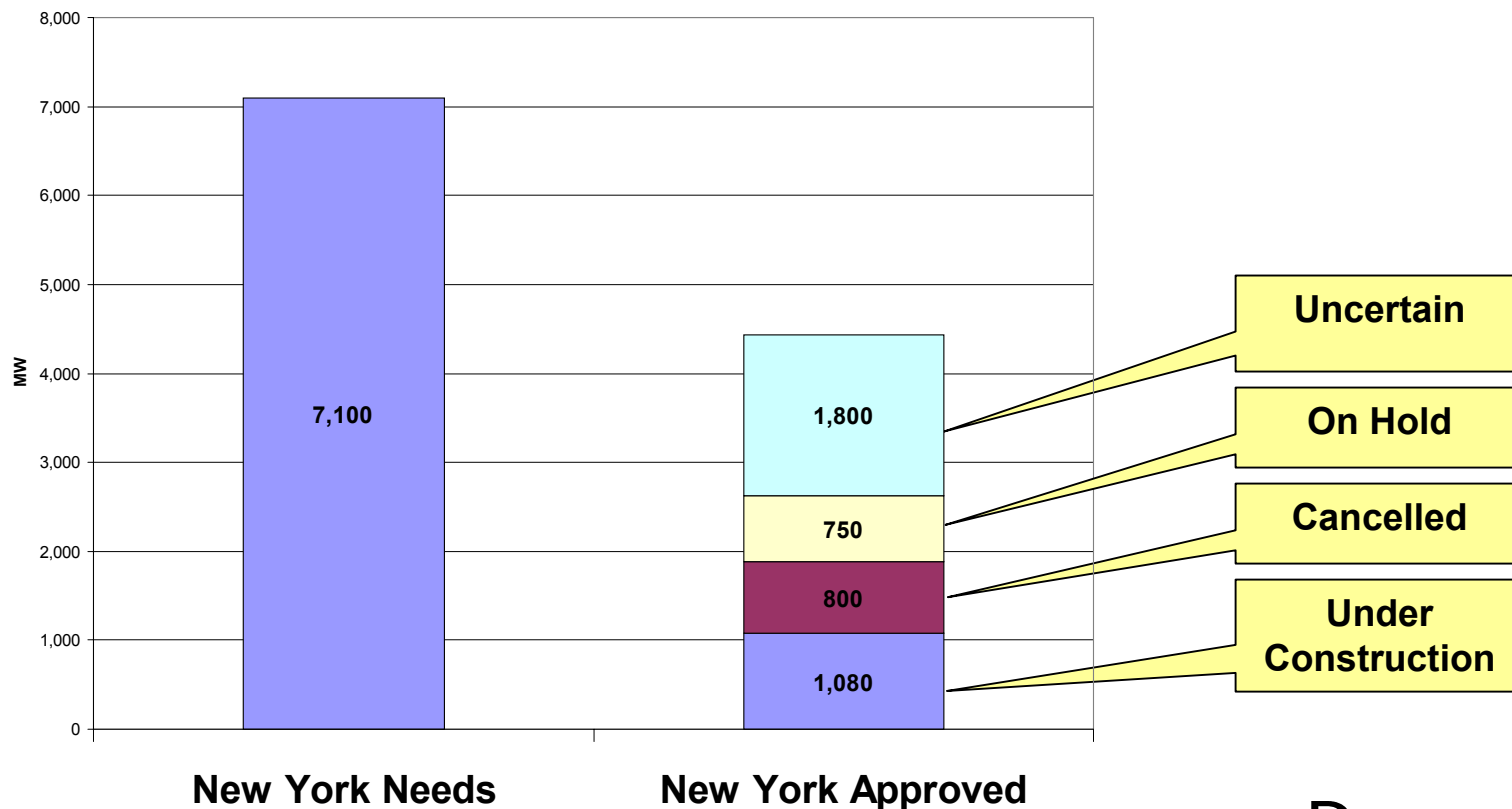


New York: "AMP" Debuts As a Market Power Fix to a Seams Problem



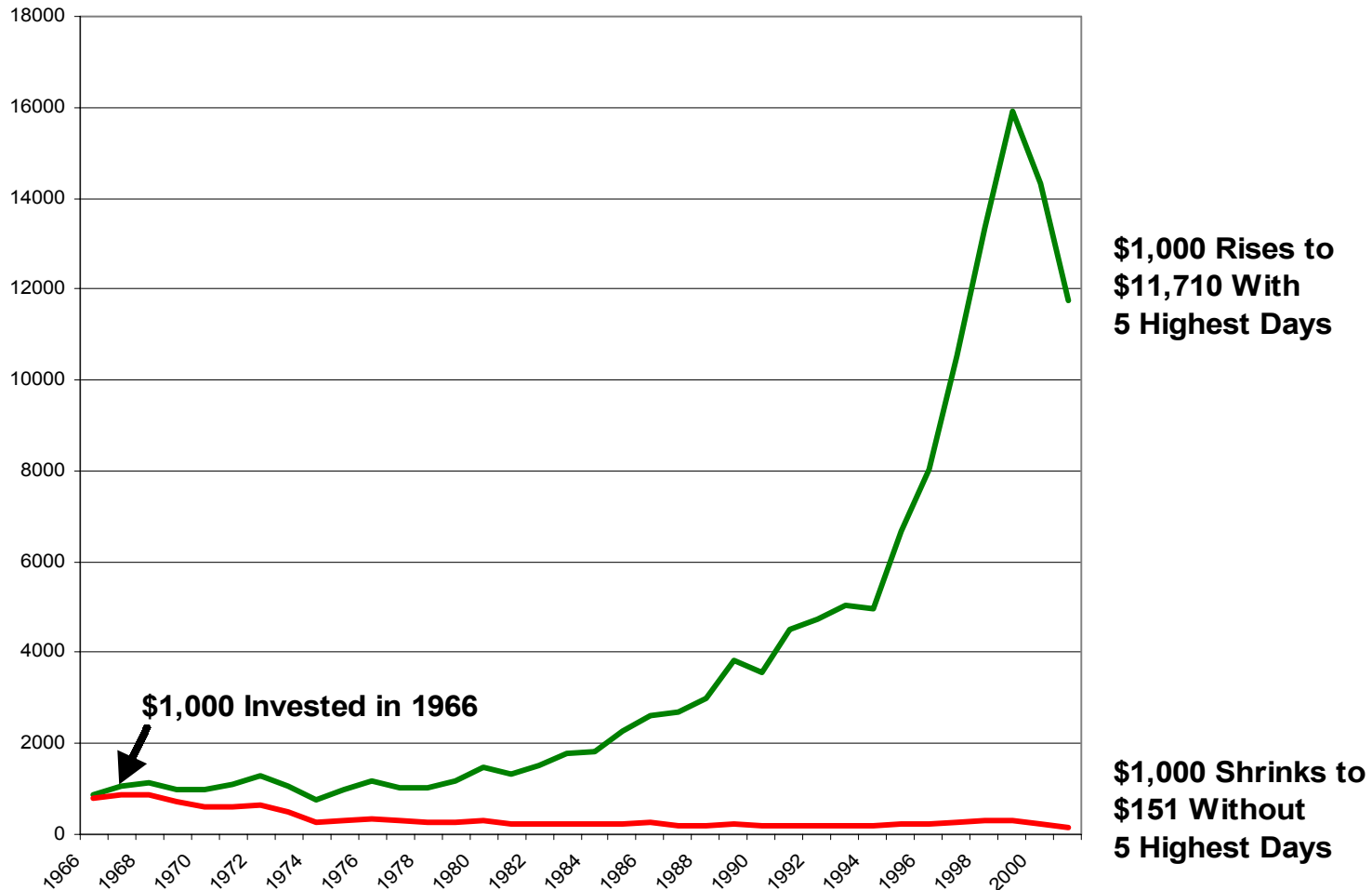
New York Now Facing Capacity Shortage in 2005

- ◆ “Generation project development activity has ground to a halt in most of the Northeast.” ESAI 2-15-02
- ◆ First of four factors affecting development: “Re-regulation” ESAI 4-1-02



Volatility Critical – For Wall Street Itself

THE TOPS IN FINANCIAL MARKETS: \$1,000 INVESTED IN 1966
WITH AND WITHOUT 5 HIGHEST DAYS EACH YEAR



Source: Birinyi Associates, as reported at www.fundadvice.com/FEhtml/MTStrategies/0112.html.

Disturbing Data Points

- ◆ **Vintaging: Treat *new new* generation (after today) differently from *old new* generation (after Order 888's promise) to avoid negative effect of mitigation. FERC NYISO Order**
- ◆ **Old jargon resurfaces: Past generator prices occurred in a “locked-in period.” FERC ISO-NE Order.**
- ◆ **Market mitigation: Needed so “can control prices when supplies are low.” Senior FERC Official.**



Can a Capacity Requirement Compensate?

- ◆ **Energy prices way above \$ 1,000/MWh are necessary to sustain peaking units, e.g., 1 day in 10 years LOLP in an energy only system equates to \$12,000-27,500/Mwh energy cap (Hobbs, et al.; Kahn).**
- ◆ **Such energy prices are no longer possible under price caps, market mitigation, the “withholding” concept, and political reality.**
- ◆ **A capacity requirement is a necessary but not sufficient condition for generation adequacy, e.g., energy only system with \$12,000/Mwh energy cap \approx energy/capacity system with \$1,000/Mwh energy cap + \$61,000/Mw/year capacity price.**
- ◆ **Presumes producer surplus from energy revenue *and* actual capacity revenue (not problematic revenue such as with a capacity cap).**



So Is Wall Street Taking a Powder?

◆ Goldman, Sachs:

- **Investors will perceive “a potential open-ended refund obligation for industry participants...”**
- **“...capped upside in periods of scarcity but no downside protection in periods of surplus.”**
- **Investors “redirect their investment dollars...”**

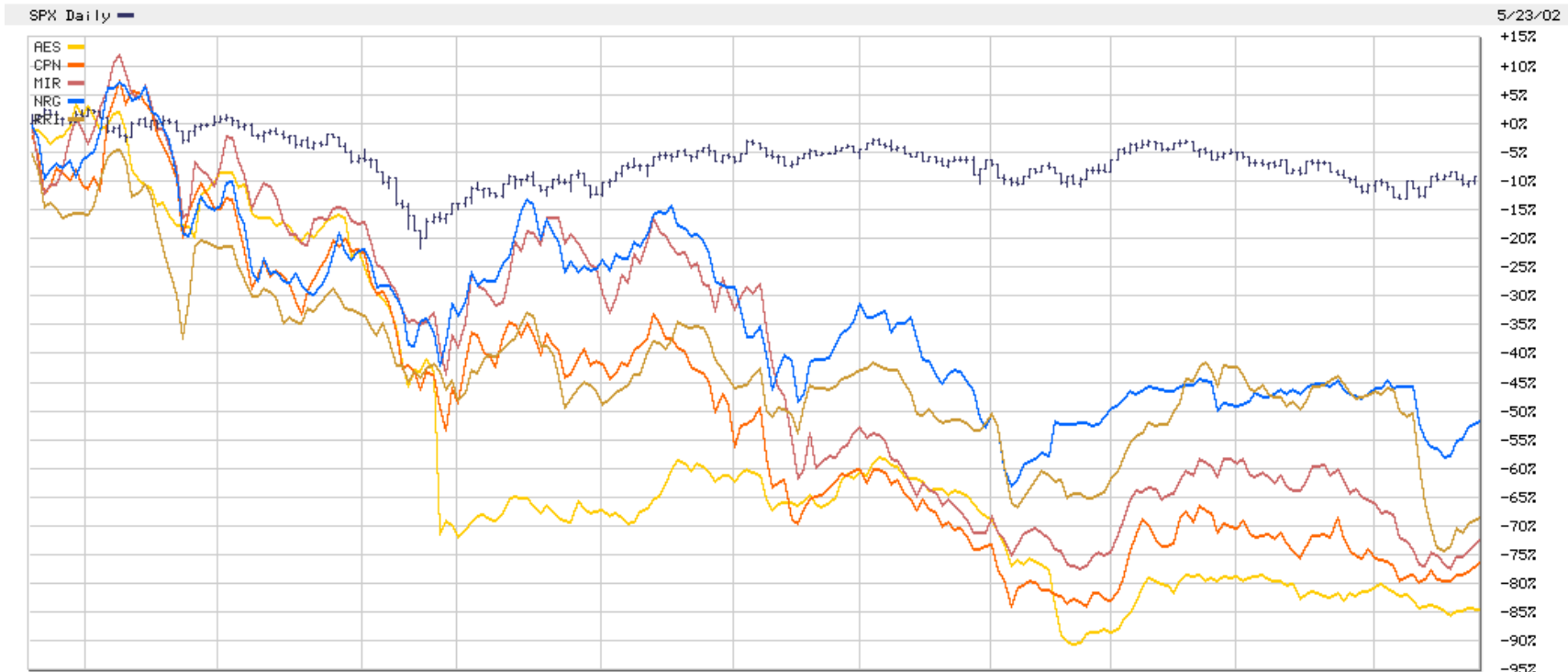
◆ Deloitte & Touche:

- **Adds “risk of unpredictable regulatory ‘refunds’ to the normal business risk...”**
- **Higher risks and constrained returns lead to capital flight.**



The Real Withholding Problem Emerges

**Regulatory risk causes “economic withholding” –
*capital is withheld from new generation capacity.***



**DECLINES IN GENERATOR VALUATION
RELATIVE TO S&P 500
JUNE 19, 2001 TO MAY 24, 2002**

The Next 120 GW Won't Be Easy



Can We Avoid a Return to Cost-Plus, Rate Based Generation?

- ◆ **Focus on market structure – not behavioral micro-management.**
- ◆ **Respect contracts.**
- ◆ **Disavow retroactive refunds.**
- ◆ **Limit “withholding” concept to generator bids in the real time market of a central pool with a capacity requirement.**
- ◆ **Include a capacity requirement in the Standard Market Design.**
- ◆ **Explicitly recognize role of volatility in achieving efficient generation, transmission and demand side investment.**





THANK YOU!



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