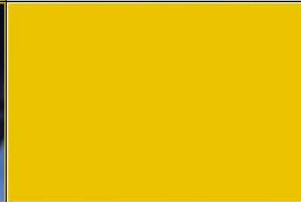
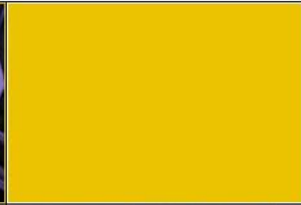




## Competitive Baseload:

Market signals and competitive response

**Steven Corneli**  
Vice President  
Regulatory and Government Affairs  
NRG Energy, Inc.



# Are high gas prices and tight margins inducing competitive baseload investment?



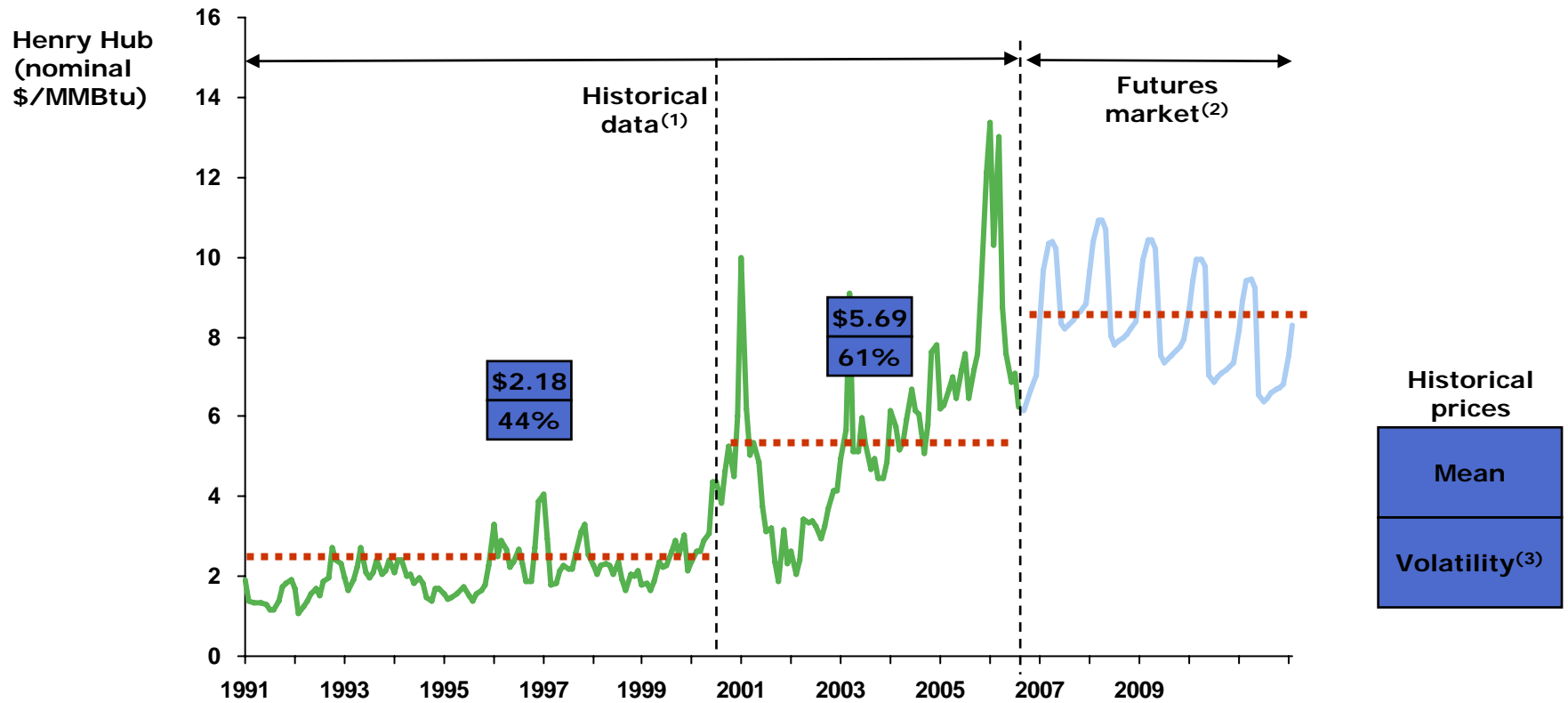
- **YES!**
- **NRG recently announced plans to build 10,500 MW of new and repowered merchant capacity**
  - 2700 MW of ABWR nuclear in Texas
  - 2300 MW IGCC “three pack” in NY, CT and DE
  - 1600 MW of state-of-art PC/solid fuel in TX and LA
  - Acquired Padoma Wind Power for aggressive wind development
  - Combined cycle and efficient CTs in Los Angeles, San Diego, NYC, SWCT, Houston
- **Increasing NRG’s baseload power by 56% while *reducing* carbon emissions per MWH by 22%**
- **Other competitive companies are also proposing coal and nuclear baseload investment**
- **Much of proposed investment is in organized markets**

## Three factors driving competitive investment

- 1. Shrinking reserve margins due to economic growth and retirements of generation**
- 2. Higher electricity prices, driven by tightening reserve margins and higher gas prices**
- 3. Competitive wholesale markets that create**
  - a) investment opportunities for less costly power alternatives
  - b) consumer and LSE appetite to contract for new, less costly power supplies

*All three together provide the most powerful incentive and are needed for the development of a balanced and efficient mix of technologies*

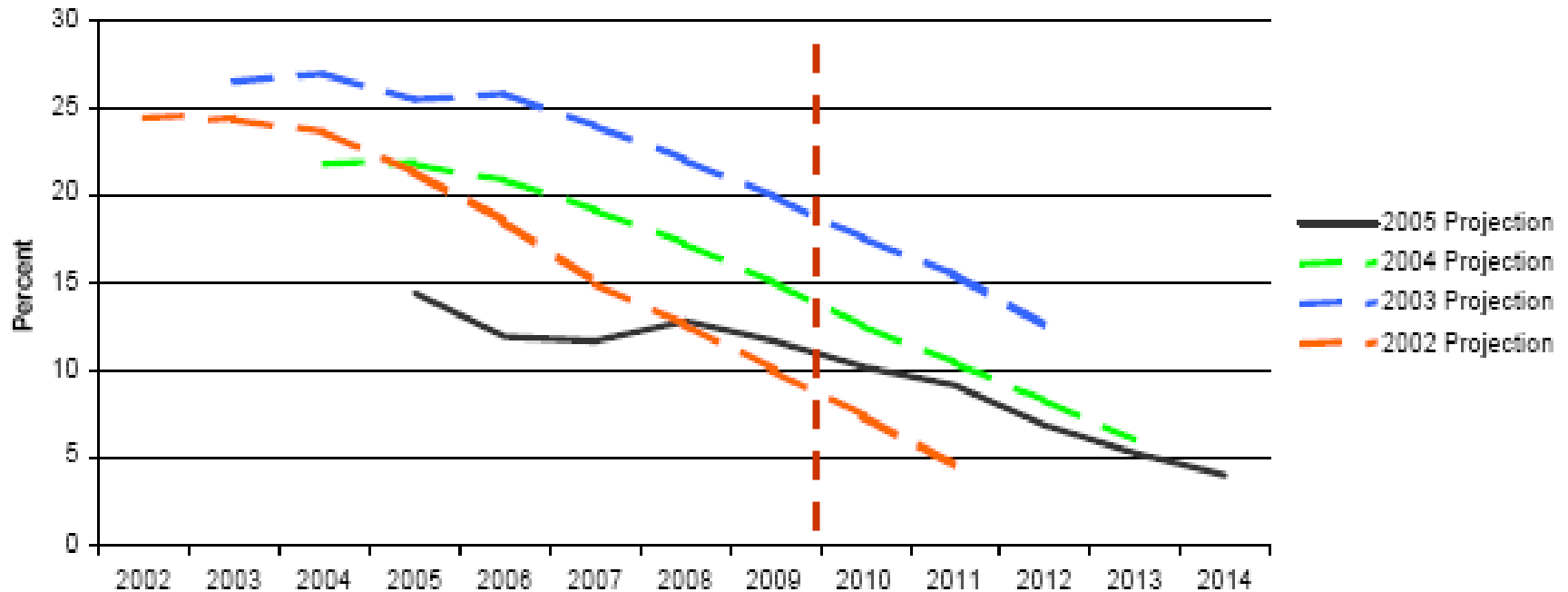
# Major step up in gas prices and volatility since last wave of investment



- (1) Average monthly Henry Hub spot prices from January 1991 through May 2006
- (2) NYMEX futures contract prices for May 2004 through December 2010, as of June 2006
- (3) Volatilities quoted are historical monthly volatilities

# ERCOT Reserve Margins Declining

ERCOT Capacity Margins - Summer

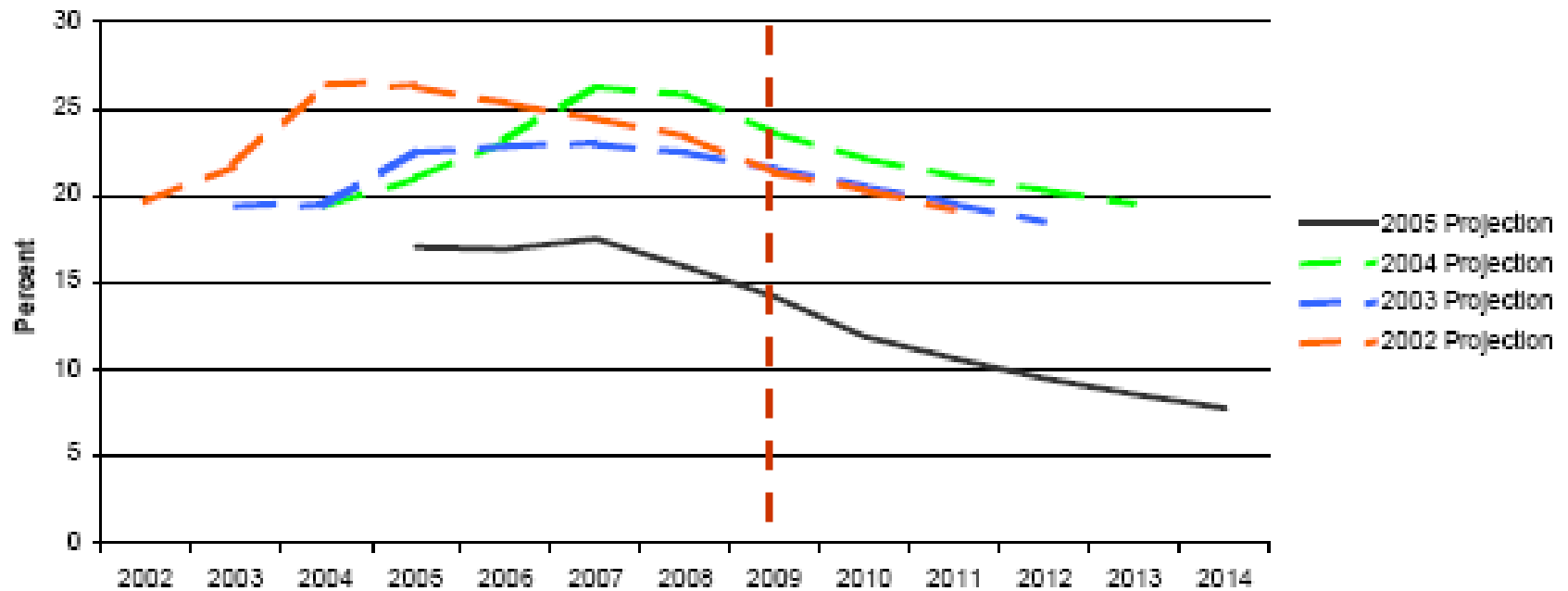


**70% of ERCOT Capacity Gas-Fired**

# New York & New England Capacity Margins Declining



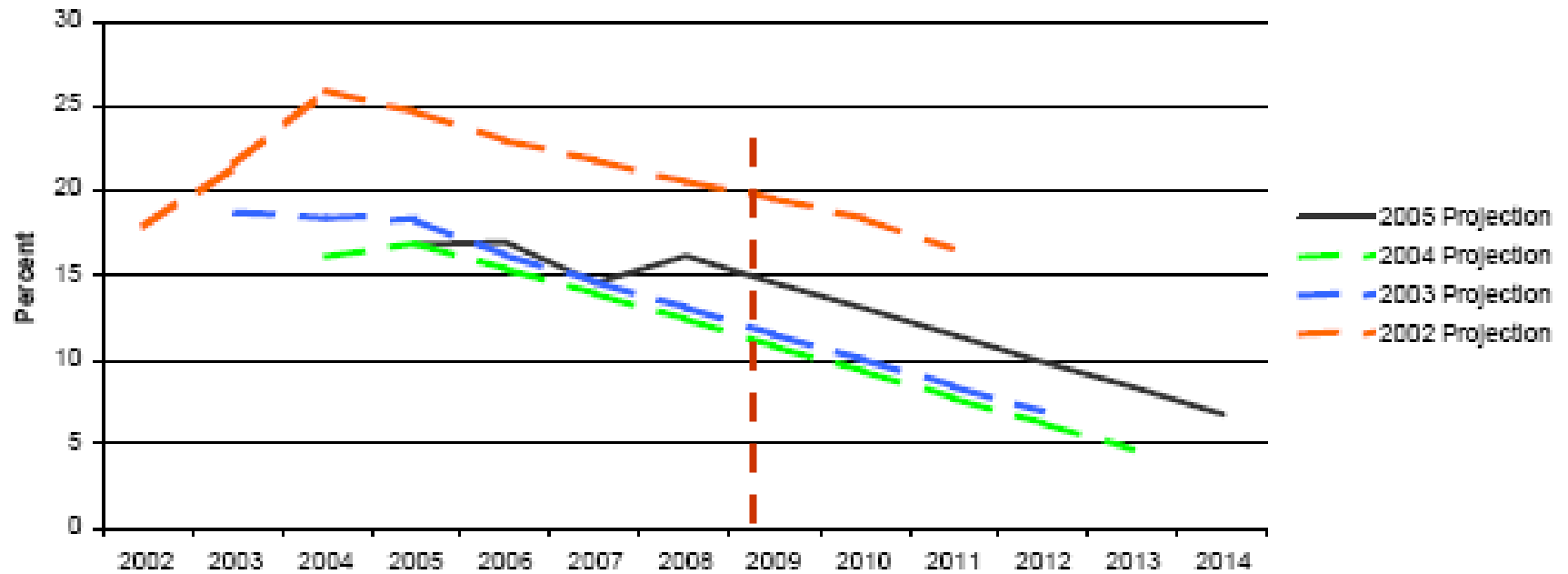
NPCC-U.S. Capacity Margins - Summer



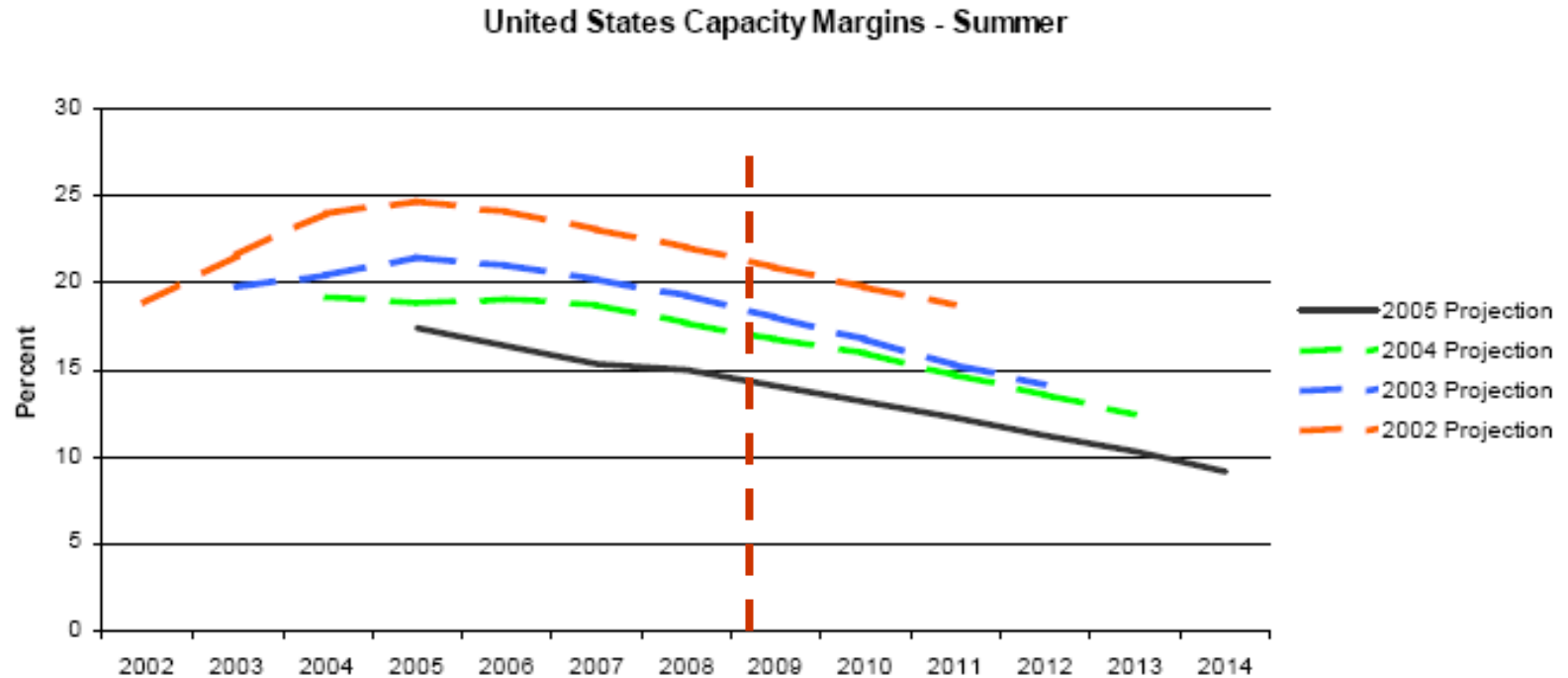
***61% of New England Capacity Gas or Oil Fired***

# Eastern PJM Capacity Margins Declining

MAAC Capacity Margins - Summer



# Overall US Capacity Margins Declining



- **Other hot spots –**
  - California: additional 3700 MW targeted by 2009
  - Ontario and Upper Midwest
- **Unusually high temperatures pushing new demand records past projections and further eroding reserve margins.**

# Why competitive investment?

- Competitive procurement offers the best deal to consumers -- go head to head against incumbents and competitors, and let the best project win
- Competitors bear the risk of cost over-runs, contract performance and business risk, rather than passing these risks through to customers
- Competitive power companies have proven our ability to build a lot of capacity, using innovative technology, on time and on budget
- New nuclear, clean coal, and other new technologies need the discipline and vigor of competition to get them on line quickly and in a commercially viable manner

# What do we look for when deciding where to invest?



1. Emerging shortages
2. Excessive reliance on natural gas as a fuel
3. A market environment that causes customers to face the resource costs of power through the prices they pay for electricity
  - a. Strong scarcity pricing in energy market
  - b. Well-designed capacity market
4. Regulatory regime that supports competitive prices and facilitates long term competitive bilateral contracts

# Steps regulators can take to help

## 1. Solve the “missing money” problem

- Forward procurement in capacity or “energy options” market
- Ensure balanced supply and demand and price signals that reflect the cost of new entry

## 2. Support and use competitive procurement

- LSEs and large customers should find the most competitive way to meet new energy needs, including longer term contracts

## 3. Encourage policies that support the competitive development of new baseload technologies

- Especially important in developing the next wave of technologies capable of meeting baseload needs while addressing growing environmental concerns

# Innovative policies

## ■ Workforce development

- Needed new power plants will require tens of thousands of skilled workers

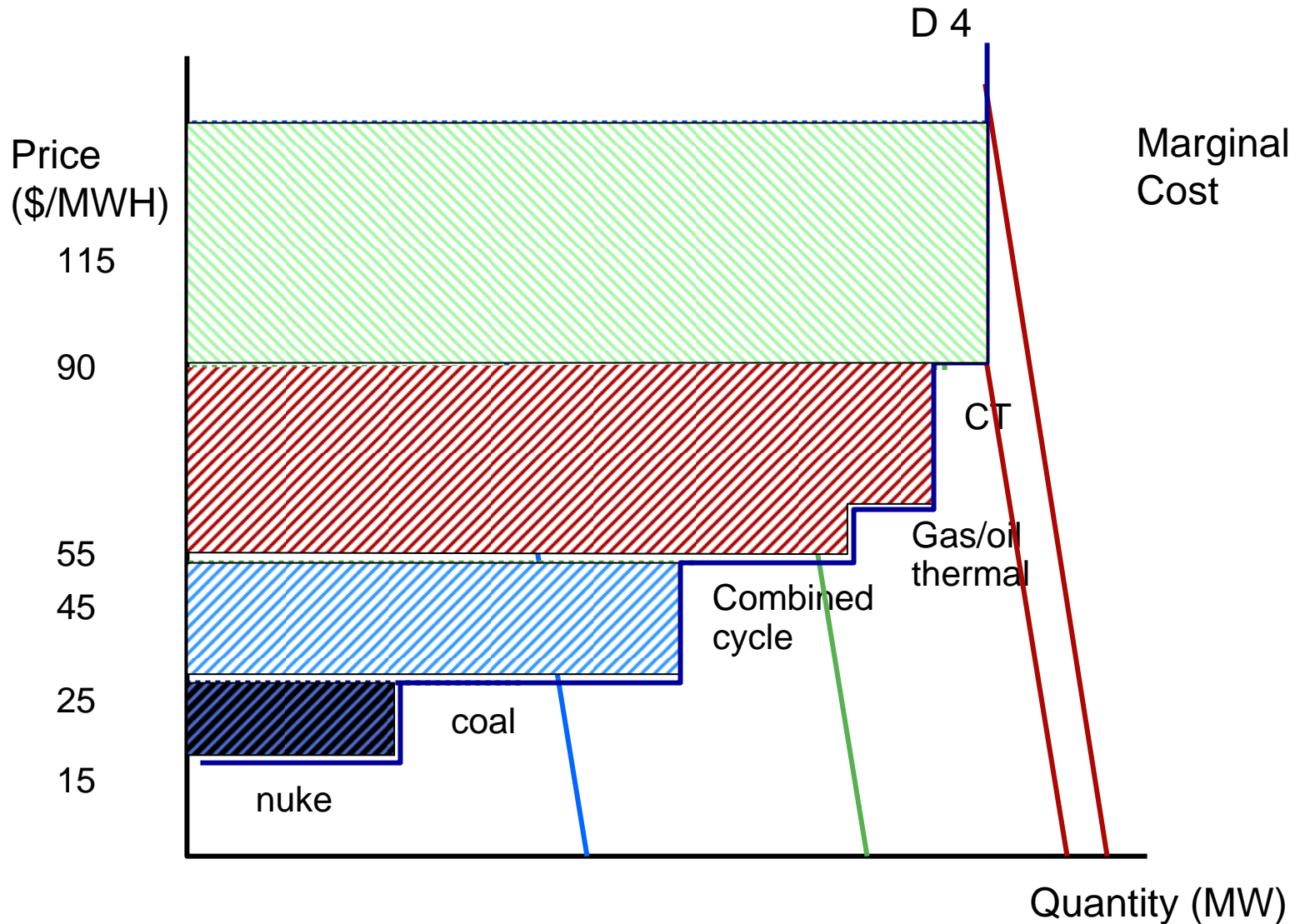
## ■ Carbon storage and sequestration

- IGCC proposed “separation ready” -- need a place to store it and a way to get it there

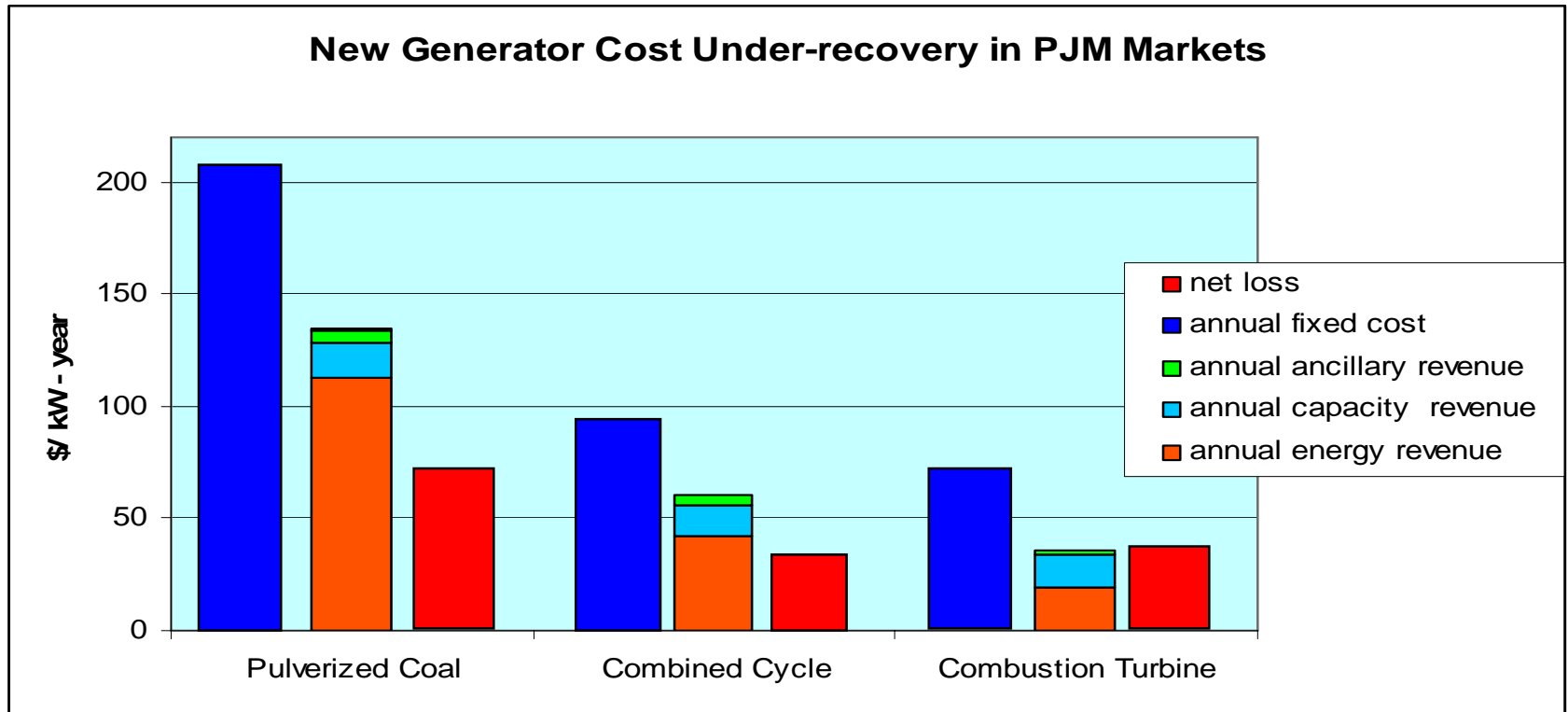
## ■ New technology acceleration

- Cost and availability risk higher with new technology
- Tax credits, loan guarantees, and development grants
- New technology risk sharing

# Solving the "missing money" problem



# Economic Losses For New Generation in PJM's Energy Market



Source: PJM Market Monitoring Unit, "2004 State of The Market Report"