

# Letting the Facts Speak Texas' Reliable Electricity Market

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March 2014

# Why the Panic Set in: 2012

- Four main things are responsible for the push to abandon competition and adopt a centralized capacity market:
  - Rent Seeking:
    - Generators: “The energy-only market is inherently incapable of supporting resource adequacy.” – NRG
    - Wall Street: “Many constituents continue to argue that now is precisely the time to tackle reforms—when there is latitude within the reserve margin to ‘pay’ generators for their capacity while it’s generally affordable. We agree with the sentiments.” – UBS
  - May 2012 ERCOT Capacity, Demand and Reserves Report: 9.8% reserve margin by 2014
  - June 2012 Brattle Group Report: projects a permanent sub-10% reserve margin; “In a worst-case year with the extreme weather of 2011, 27 loss-of-load events, 92 loss-of-load hours, and 248 hours with prices at the cap are projected.”
  - Panic by policymakers: “The lights aren’t going out on my watch.”

# What the Foundation has Said

- “If we let it work, the world-class Texas electricity market will power Texas' future.” – July 9, 2012.
- “The record shows that we don’t need a capacity market.” – Dec. 18, 2012
- “We have to first understand that concerns over reliability and profitability are overstated. Concerns about future shortages are based on projections that overstate demand and understate supply.” – Sept. 2013.
- “A majority of the PUC’s commissioners, appointed by the governor, have announced their support for a capacity market out of the mistaken belief we are running out of electricity. But this simply isn’t the case.” – Nov. 15, 2013

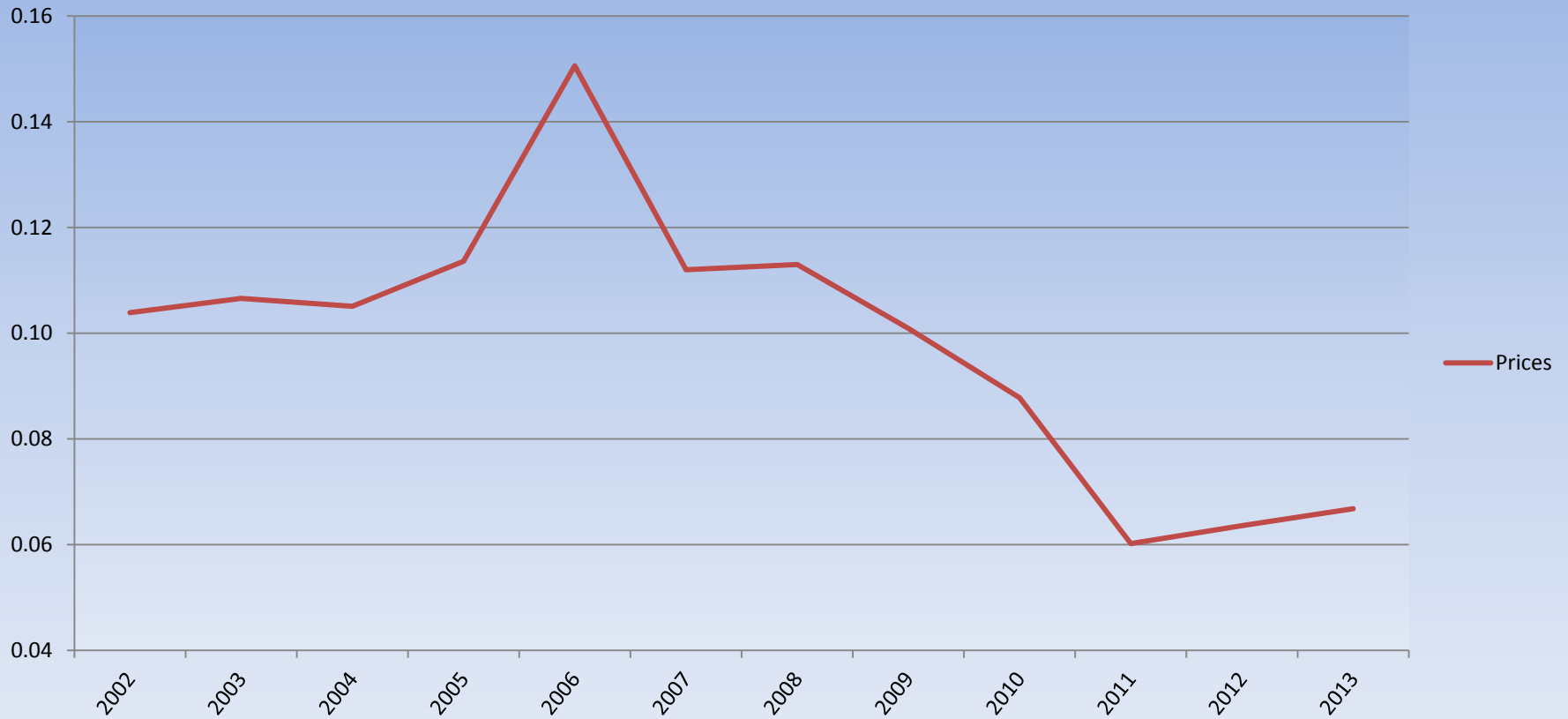
# The Faulty Rationale Behind the Push for a Capacity Market

- Disregard of
  - Law of supply and demand
  - Harm to reliability caused by increased intervention in the market
  - Market innovation, including demand response
  - Unreliability of capacity markets
- Reliance on
  - Flawed peak demand forecasts
  - Flawed reserve margin forecasts
  - Flawed economic models

# Supply and Demand 101

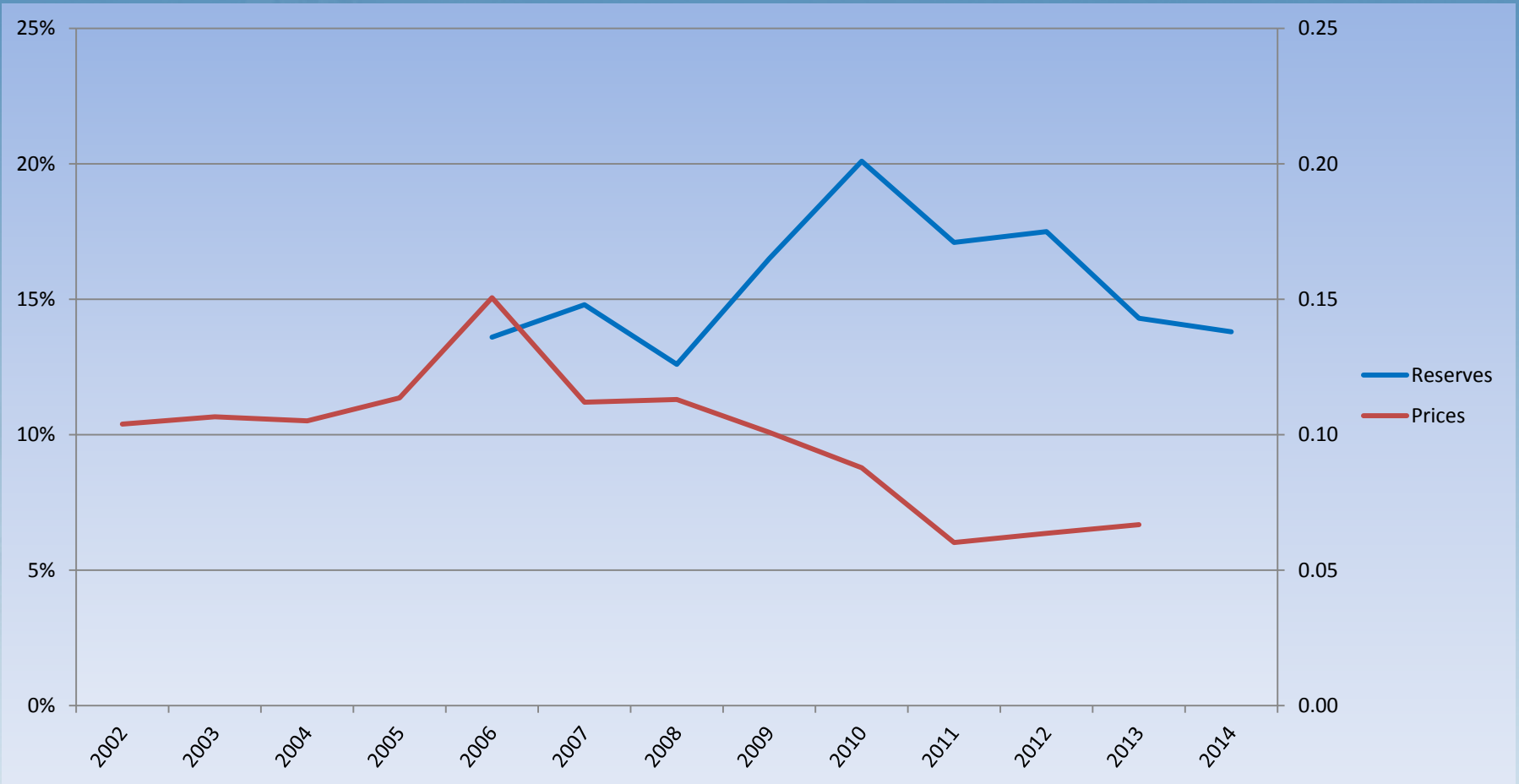
## Low Market Prices

Prices- cents per kWh



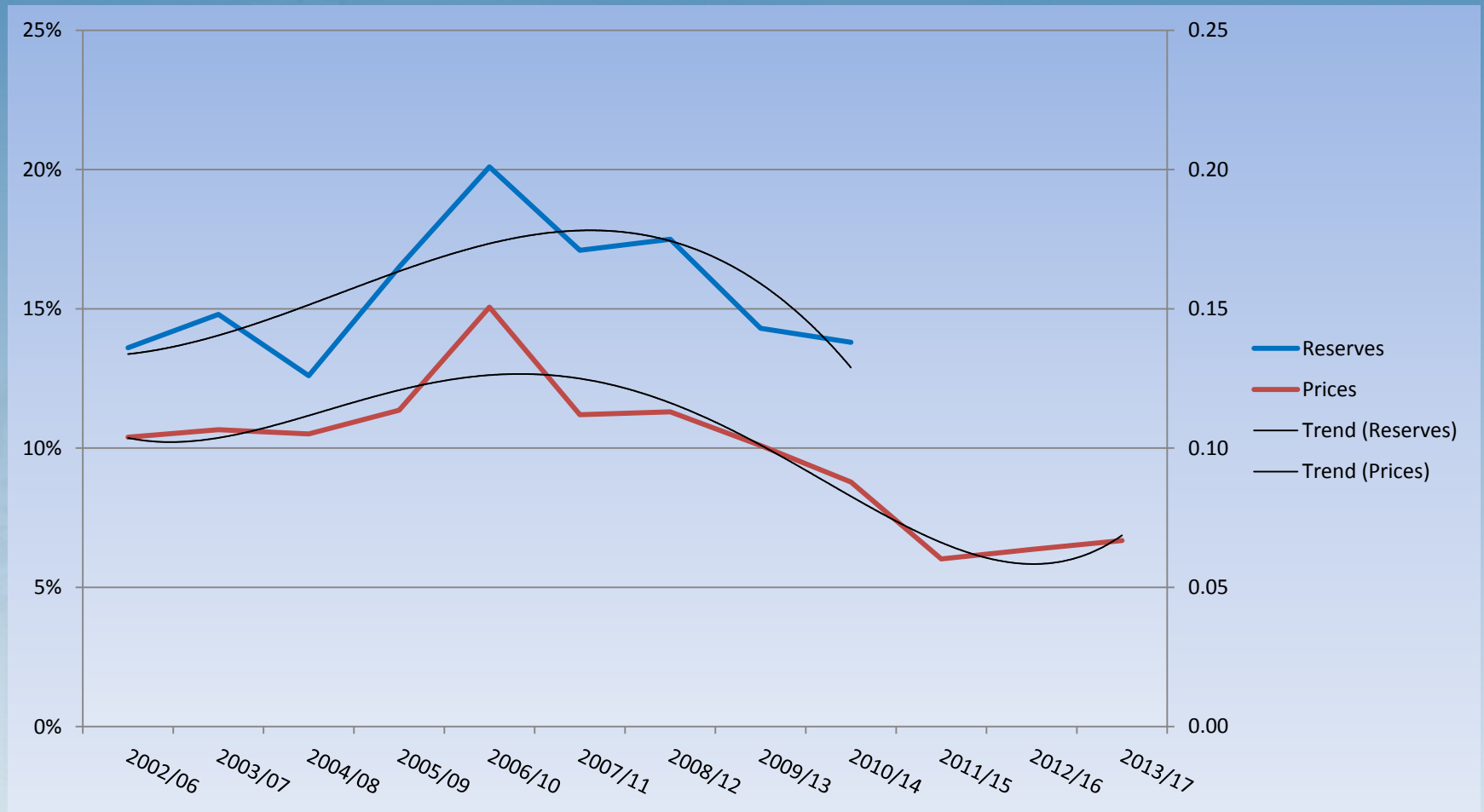
# Supply and Demand 101

## Low Market Prices = High Reserve Margins



# Supply and Demand 101

## Reserves Trail Market Prices by 4 Years



# Increased Intervention: Texas

| Government Actions that Negatively Impact Competition, Costs, and/or Capacity                      | Year      | Entity      |
|----------------------------------------------------------------------------------------------------|-----------|-------------|
| System benefit fund and low income customer discount                                               | 2001      | Legislature |
| Wholesale Shame/Price Cap                                                                          | 2001/2009 | PUC         |
| Requiring special affidavits from wholesale market participants regarding power trading activities | 2002      | PUC         |
| Implementation of a code of conduct rule to govern participation in the ERCOT wholesale market     | 2004      | PUC         |
| Increase in Texas Renewable Portfolio Standard                                                     | 2005      | Legislature |
| Proposed \$270 million enforcement action against a wholesale market participant                   | 2005      | PUC         |
| Defining the term "market power" for the ERCOT market                                              | 2006      | PUC         |
| Require PUCT approval of mergers and acquisitions                                                  | 2007      | Legislature |
| Increase requirements for REP certification                                                        | 2009      | Legislature |
| Require common terms on electricity bill                                                           | 2009      | Legislature |
| Increase in Retail Electricity Provider certification requirements                                 | 2009      | PUC         |
| Increase the state's energy efficiency goals                                                       | 2010      | PUC         |
| Require REPs to offer deferred payment plans to customers based on income or age                   | 2010      | PUC         |
| Authorize PUC to order disgorgement of revenues from companies found violation various laws        | 2011      | Legislature |
| Authorize emergency cease and desist authority for the PUC                                         | 2013      | Legislature |



# Increased Intervention: U.S.

| Government Actions that Negatively Impact Competition, Costs, and/or Capacity                                        | Year            | Entity        |
|----------------------------------------------------------------------------------------------------------------------|-----------------|---------------|
| Production Tax Credit                                                                                                | 1992            | U.S. Congress |
| Cross-State Air Pollution Rule (CSAPR)                                                                               | Pending—SCOTUS  | EPA           |
| Greenhouse Gas (GHG) Regulation of Stationary Sources                                                                | Pending         | EPA           |
| Electric Utility Maximum Achievable Control Technology Standards for Mercury and Hazardous Pollutants (Utility MACT) | Pending--Courts | EPA           |
| Maximum Achievable Control Technology for Industrial Boilers (Utility MACT)                                          | Partial Effect  | EPA           |
| Power Plant Cooling Water Intake Structure (CWIS) Rule                                                               | Pending         | EPA           |
| Coal Combustion Residual Rule                                                                                        | Pending         | EPA           |

# Market Innovation/Demand Response

- Texans use about 360 million megawatt hours of electricity each year; reliability issue involves perhaps only 1.3 million megawatt hours, 0.36% of annual use
- Peak use is slowing, diverging from economic growth because of market innovation in demand response
  - Load serving entities pushing innovation
  - Interruptible loads
  - Free nights and weekends
  - Time of use pricing

# Unreliability and Expense of Capacity Markets

- There is no evidence that capacity markets boosts capacity
  - From 2007 – 2011, capacity payments funded only about 7,000 MW of new generation, about 4 percent of PJM's installed capacity
  - During the same period, Texas' energy-only market produced over 10,000 MW of new generating capacity, about 12 percent of ERCOT's installed capacity
- Capacity markets are just as vulnerable to operational and capacity disruptions as Texas' energy-only market, if not more so; witness PJM's September blackouts
- Capacity markets force consumers to subsidize services that they could get from an energy-only market at a cheaper, more efficient price
- Consumers in PJM have spent \$54 billion on capacity payments since 2007, or \$900 per person
- Capacity payments in 2010 added \$140 to an average residential bill
- Texas capacity payments are estimated to run \$3.2 billion a year; projected savings are highly speculative and unlikely to occur

# Flawed Peak Demand Forecasts

| Comparison of Load Forecasts |        |        |        |        |        |        |        |        |        |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                              | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 2021   | 2022   |
| May 2012                     | 70,087 | 73,552 | 76,001 | 77,596 | 78,919 | 79,411 | 81,382 | 82,765 | 84,013 |
| Jan 2014                     | 68,096 | 69,057 | 70,014 | 70,871 | 71,806 | 72,859 | 73,784 | 74,710 | 75,631 |
| Margin of Error              | 2.92%  | 6.51%  | 8.55%  | 9.49%  | 9.91%  | 8.99%  | 10.30% | 10.78% | 12.45% |

# Flawed Reserve Margin Forecasts

| Comparison of ERCOT Reserve Margin Forecasts |       |       |        |        |        |        |
|----------------------------------------------|-------|-------|--------|--------|--------|--------|
|                                              | 2013  | 2014  | 2015   | 2016   | 2017   | 2018   |
| May 2012 Forecast                            | 14.3% | 9.8%  | 6.9%   | 6.5%   | 5.8%   | 5.8%   |
| Oct. 2012 Forecast                           | 16.0% | 12.1% | 9.7%   | 9.9%   | 9.8%   | 10.4%  |
| Dec. 2012 Forecast                           | 13.2% | 10.9% | 10.5%  | 8.5%   | 8.4%   | 7.1%   |
| May 2013 Forecast                            |       | 13.8% | 11.6%  | 10.4%  | 10.5%  | 9.4%   |
| February 2014 Forecast                       |       | 16.0% | 15.42% | 14.11% | 12.84% | 13.43% |

# Brattle's Flawed Economic Models

- “These estimates **only describe** long-term average prices at equilibrium. They **do not describe** this year or the next few years. ... They **assume** only the current level of demand response.”
- “We **simulate** the energy margins ... We compare these energy margins as **estimated** ... We use outputs from ERCOT’s Loss of Load Expectation (LOLE) **Model** to **estimate** ... We **estimate** generators’ net revenues ... We rely on ERCOT’s LOLE **model** to **project** ... This **model estimates** ... it is similarly useful to us for **estimating** the frequency ... To support our study, ERCOT’s planning department provided **simulation results** ... The **choice** of weather-years and the probability weights assigned to each year strongly affect the **model results** ... We discount **projected** scarcity margins ... we **estimate** the energy margins a combustion turbine would earn ... We also **calculate** the average energy margins that a combustion turbine would earn over each of the 15 weather years ... We **estimated** non-scarcity margins using a regression analysis ... we **assumed** a 1-in-15 chance of extreme 2011 weather occurring.”
- “In a worst-case year with the extreme weather of 2011, 27 loss-of-load events, 92 loss-of-load hours, and 248 hours with prices at the cap are projected.” **Reality: Texas made it though 2011 with no loss of load due to capacity.**

# Competitive Market Reality Today

Environment & Energy

1:03 PM FRI FEBRUARY 7, 2014

## New Report Shows Texas May Have Sufficient Energy Reserves Until 2020

Estimating the Economically Optimal Reserve Margin in ERCOT

January 31, 2014

THE **Brattle** GROUP



### Review of Preliminary Load Forecast

“There is no crisis,” echoed state Sen. Troy Fraser, a leading opponent to creating capacity payments for generators, with each new report. The commission’s three members now seem to agree. “We’re getting information now that suggest we have room to breathe,” said Commissioner Brandy Marty. “It’s good news.”

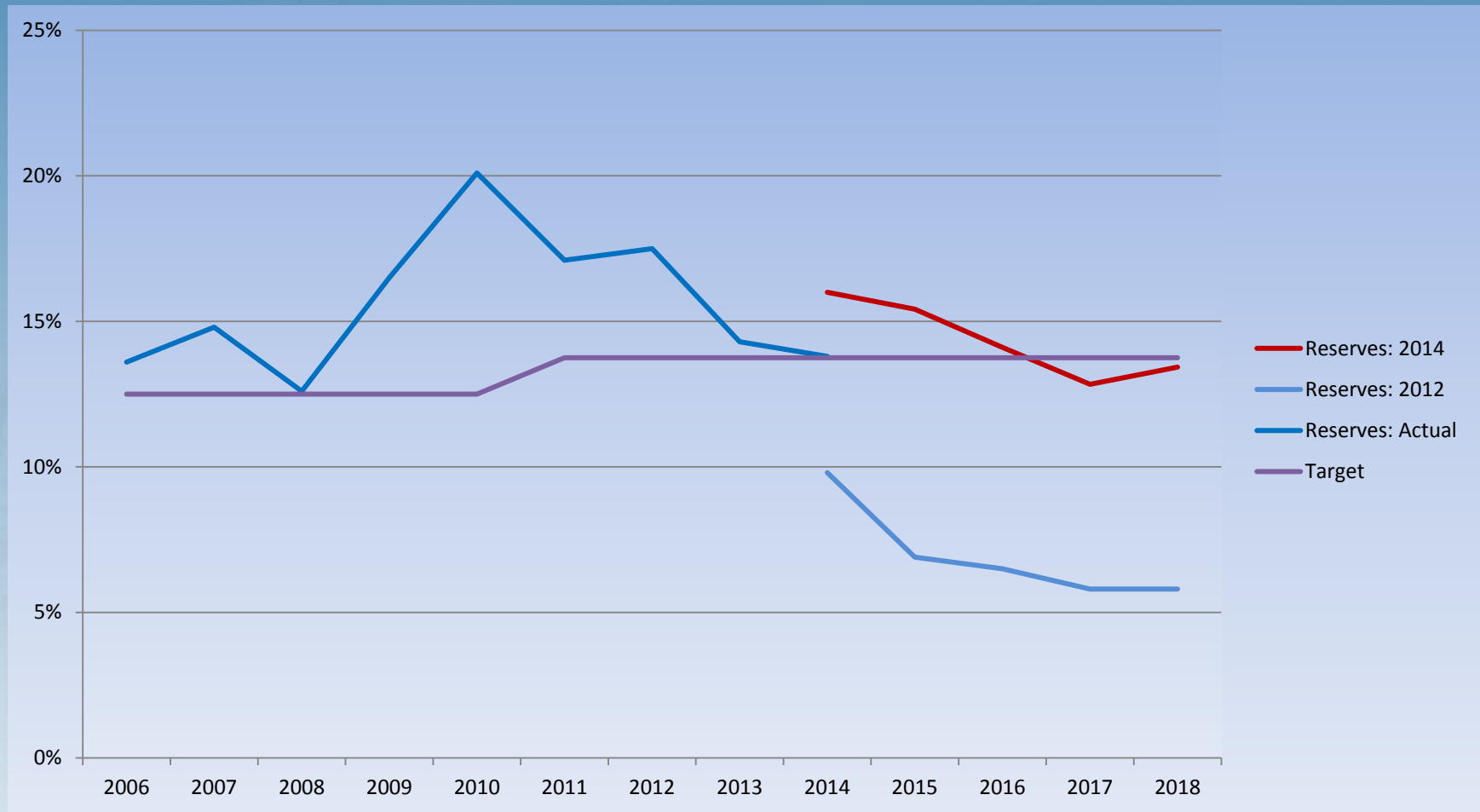
TO: Chairman Donna L. Nelson  
Commissioner Brandy D. Marty

FROM: Commissioner Kenneth W. Anderson, Jr. *KWA*

2-40  
PUBLIC UTILITY COMMISSION  
FILING CLERK

By 2019 our energy market will be twenty years old, and still operating at a reserve capacity above the Brattle predicted natural equilibrium of 11.5% or the economically optimal reserve margin of 10.2%, and only slightly below ERCOT's current 13.75% target reserve margin.

# Actual v. Projected ERCOT Reserve Margins



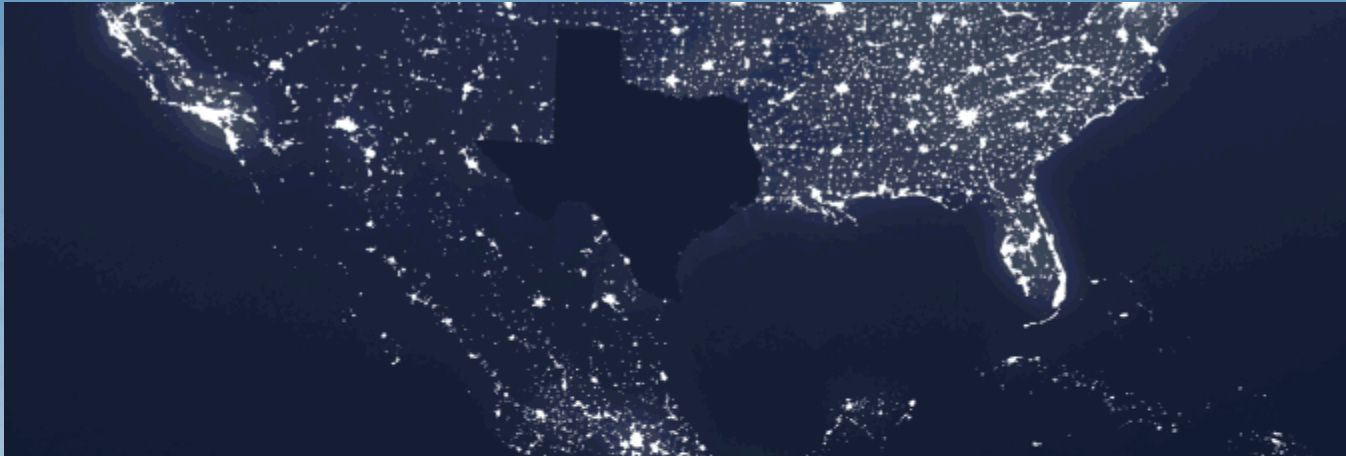


# Texas Already has a Capacity Market

- The term 'energy-only,' used to describe the current Texas market, is at best a misleading term because a large portion of power flows under contracts between REPs and generators focused on providing adequate capacity. The truth is that Texas' competitive market is already functioning as a capacity market without the \$3.2 billion electricity tax and excessive regulation proposed by advocates of a centralized capacity market.
- Brattle and the PUC think an 'energy-only' market only focuses only producing electricity at marginal cost.
- This same approach is what leads to the flat supply curve in ERCOT auctions, resulting in artificially low prices and the ORDC.

# Yet the Generators Haven't Stopped

**Despite sufficient reserves, Texas power providers warn of rolling blackout risk**

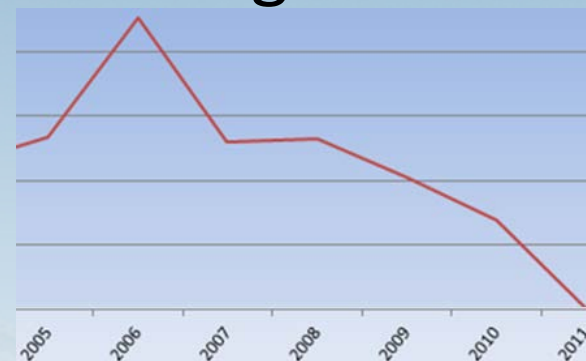


## Is This Our Future?

Electricity is essential to our everyday lives, and our growing economy. Did you know Texas is on course for a power reliability crisis, with the potential for regular rolling blackouts in just a few short years? With low temperatures earlier this week, we

# Generator Problems Stem from Poor Investment Decisions circa 2007

- “Electricity prices began plummeting soon after Optim's founding in 2007” – WSJ
- EFH, likely heading to bankruptcy, was founded 2007
- Debt turns NRG’s operating profit into a loss
- Companies borrowed assuming higher prices would continue—they were wrong
  - 2005-06 Katrina and Rita
  - 2006 Price to Beat
  - 2007 Competition
  - 2008 Great Recession



# Generator Problems Stem from Poor Investment Decisions circa 2007

- Generators and their bankers, e.g., Goldman Sachs, want relief from poor investment decisions circa 2007
- Wall Street investors and generators want better terms for current investments

# Texas' Growing Economy Makes it the Top Location for New Investment

- Calpine's purchase of 1,000 MW gas-fired plant
- Blackstone Group's purchase of three gas-fired plants
- NRG's effort to move gas turbines to Texas
- UBS "still seeing 'incremental' gas generation entering the market"

# The 2015 Texas Legislature

- Justified or not, the PUC process/capacity market push has momentum
- Unlikely that the PUC will do anything this year that can't be undone by the Legislature
- Legislature did not weigh in on issue in 2013
- Anti-capacity market coalition may fragment: big business; environmental and consumer groups; small business; free market groups

# Improving Reliability Depends on Less, not More, Intervention: Recommendations

- The market should determine the appropriate level of reserves:
  - PUC should not mandate a hard reserve margin target/adopt a capacity market;
  - ERCOT should reexamine the basis of the target reserve margin
- The PUC should eliminate the high system-wide offer cap
- The PUC and ERCOT should more closely evaluate the ability of current and potential market driven demand response to handle peak load strains on the system
- ERCOT should examine its protocols and system designs, especially when it comes to impact on prices; and improve reserve margin forecast by including more resources

# Improving Reliability Depends on Less, not More, Intervention: Recommendations

- The Texas Legislature should prohibit a capacity market in statute
- The Texas Legislature should reevaluate both the board structure of ERCOT and the PUC's reach into ERCOT's operations
- The Texas Legislature should reorient/eliminate the Independent Market Monitor and the regulation of market power abuse
- The Texas Legislature should reduce the PUC's excessive regulatory authority:
  - Eliminate the PUC's ability to approve mergers and acquisitions
  - Eliminate the PUC's ability to disgorge revenue
  - Eliminate the PUC's ability to issue emergency cease and desist orders
- The Texas Legislature should eliminate the Texas Renewable Portfolio Standard; Texas policymakers should oppose the extension of the federal Production Tax Credit



# Texas' Competitive Market is Working

- While the Texas market has some challenges, we are not running low on electricity
- The competitive market is already maintaining resource adequacy and improving reliability, both on the supply and demand sides
- The path to improved reliability lies through increased market efficiency and decreased government intervention
- Consumers are being asked to pay to assuage the fears of policymakers
  - The capacity market is a perfect example of regulatory capture
  - The capacity market will harm Texas consumers, harm reliability, and harm the Texas economy
- Continuing Texas' competitive, energy-only market is the best path forward to a reliable, affordable supply of electricity for Texans
- Whatever decision is made, the Texas Legislature, not the PUC, should make the decision about the future of Texas' electricity market

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