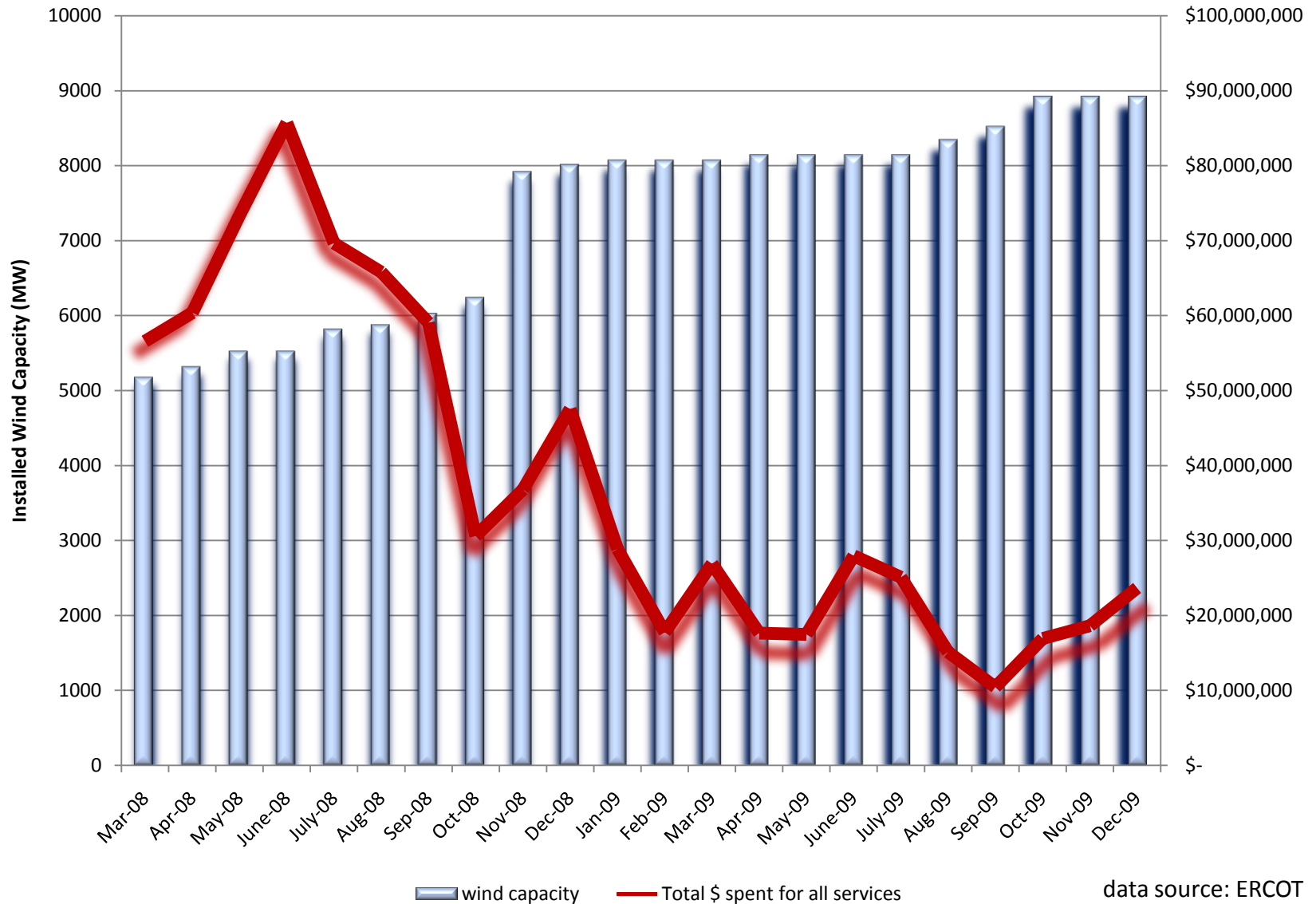


# Considerations in opposition to the Wholesale Market Subcommittee recommendation of the Reliant proposal for assignment of ancillary services costs to wind generation

presented to the  
ERCOT Technical Advisory Committee  
March 4, 2010

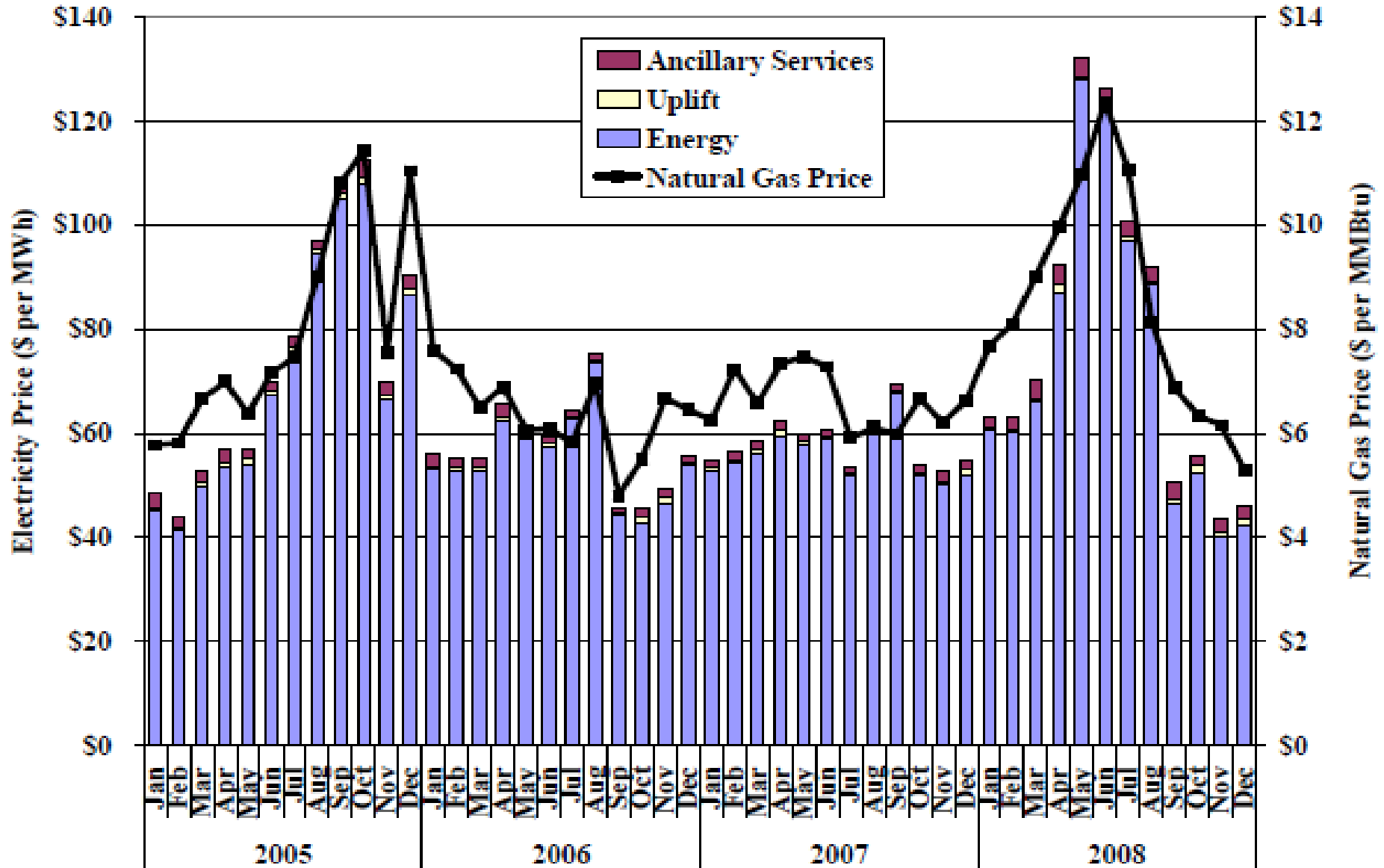


# Combined cost per month for URGS, DRGS, NSRS, and RRS (March 2008-Dec. 2009)

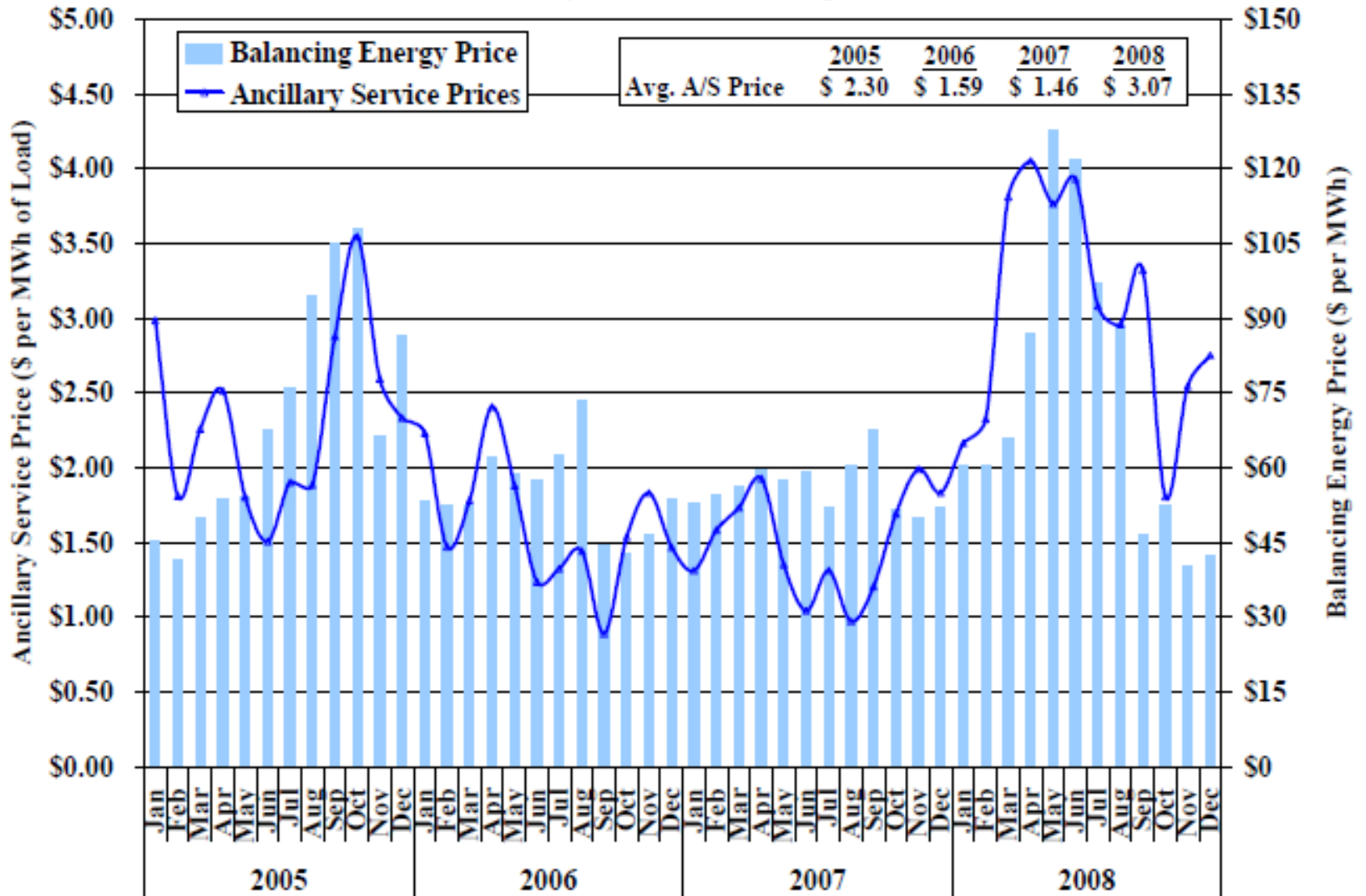


data source: ERCOT

## Average All-in Price for Electricity in ERCOT



## Ancillary Service Costs per MWh of Load



source: Potomac Economics, 2008 ERCOT State of the Market Report, p. 33.

## Total Load Weighted Average Price (\$/MWH)\*

[MCPE weighted by Total Zonal Load]

*\*Represents the average price for loads within the zone*

<b>LOAD ZONE</b>	<b>Nov 2009</b>	<b>Oct 2009</b>	<b>Sep 2009</b>	<b>Aug 2009</b>	<b>Jul 2009</b>	<b>Jun 2009</b>	<b>May 2009</b>	<b>Apr 2009</b>	<b>Mar 2009</b>	<b>Feb 2009</b>	<b>Jan 2009</b>
South	\$27.77	\$31.22	\$30.82	\$32.51	\$35.67	\$82.81	\$32.97	\$24.27	\$26.35	\$27.27	\$34.69
North	\$27.75	\$30.25	\$26.96	\$32.47	\$35.81	\$35.15	\$32.99	\$24.82	\$32.21	\$27.89	\$32.31
Houston	\$27.72	\$31.61	\$31.25	\$32.81	\$35.68	\$61.82	\$32.70	\$24.58	\$29.11	\$27.19	\$32.78
West	\$27.02	\$27.84	\$24.32	\$29.84	\$33.75	\$32.95	\$24.57	\$12.93	\$25.70	\$19.93	\$24.04

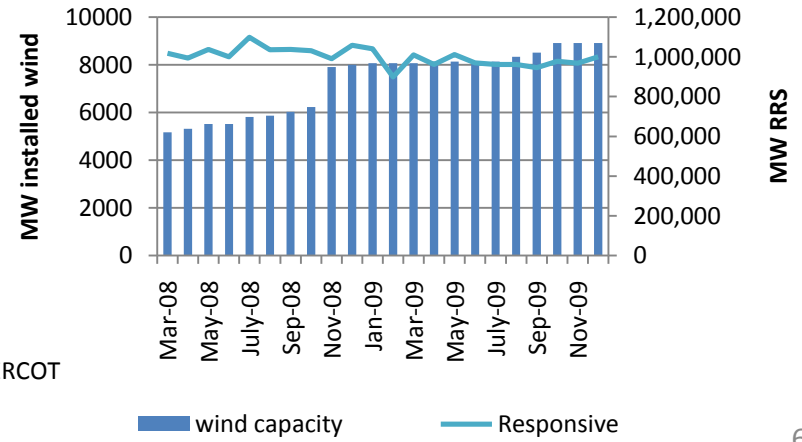
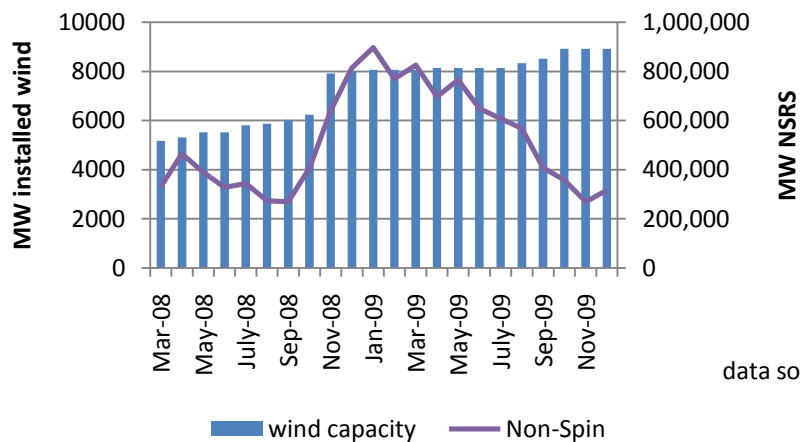
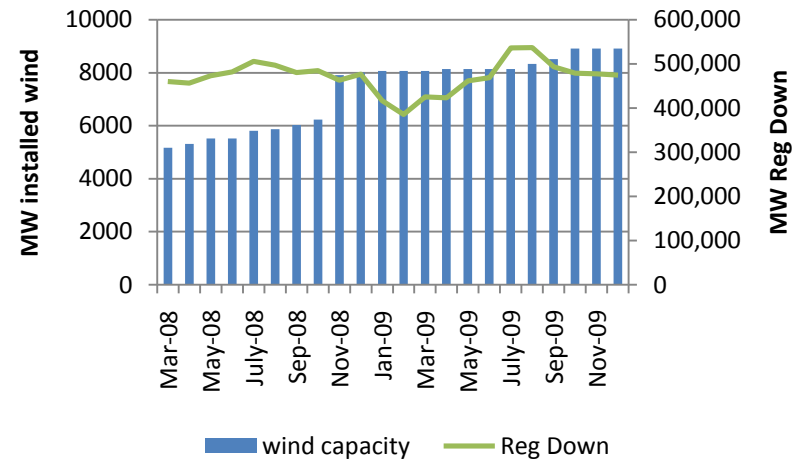
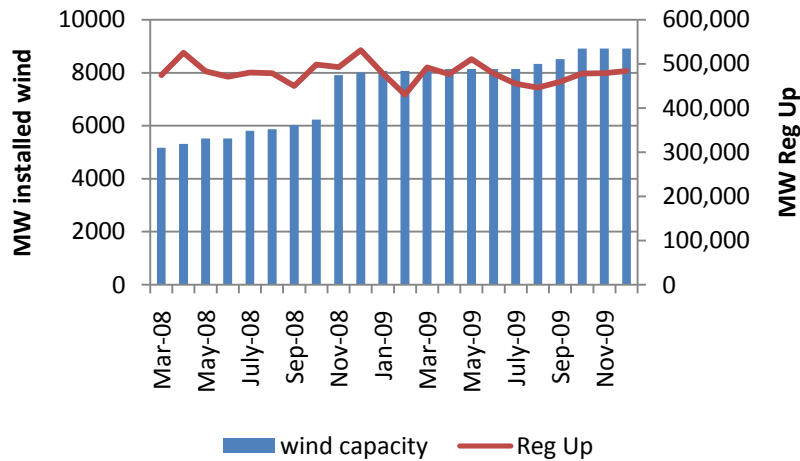
<b>LOAD ZONE</b>	<b>Nov 2008</b>	<b>Oct 2008</b>	<b>Sep 2008</b>	<b>Aug 2008</b>	<b>July 2008</b>	<b>Jun 2008</b>	<b>May 2008</b>	<b>Apr 2008</b>	<b>Mar 2008</b>	<b>Feb 2008</b>	<b>Jan 2008</b>
South	\$41.11	\$55.19	\$46.77	\$88.47	\$97.86	\$147.24	\$171.09	\$83.65	\$64.34	\$63.26	\$60.24
North	\$40.69	\$48.98	\$45.38	\$89.19	\$97.08	\$104.37	\$86.41	\$74.92	\$69.64	\$59.05	\$62.31
Houston	\$40.88	\$56.01	\$48.61	\$88.40	\$97.30	\$129.48	\$152.76	\$100.00	\$68.19	\$60.06	\$60.16
West	\$34.62	\$41.16	\$43.72	\$84.92	\$90.98	\$82.22	\$58.01	\$58.59	\$38.52	\$56.84	\$52.04

source: Market Operations Report to the ERCOT Board of Directors, Jan. 19, 2010

## Wind generation has had limited impact on ancillary services procurement

In November 2008, ERCOT modified the methodology for procurement of NSRS to account for net load uncertainty. No other ancillary services procurement methodologies have been modified due to wind penetration on the system. As the charts below illustrate, the monthly procured volumes of capacity services have remained relatively stable with the exception of NSRS.

Comparisons of installed wind capacity vs. monthly volume procured for Reg Up, Reg Down, NSRS, and RRS (March 2008-Dec. 2009)

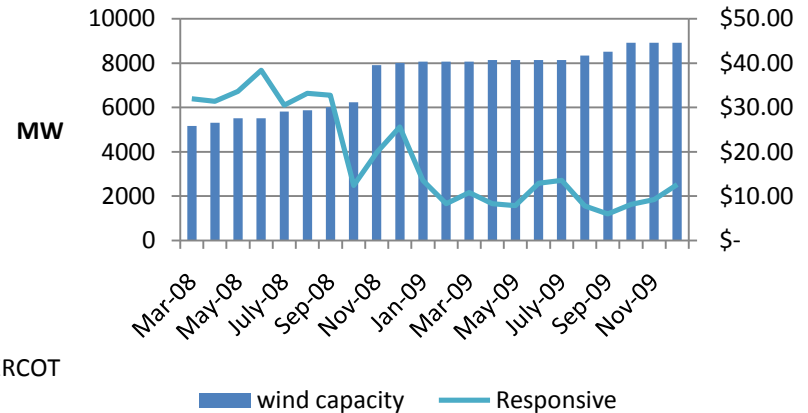
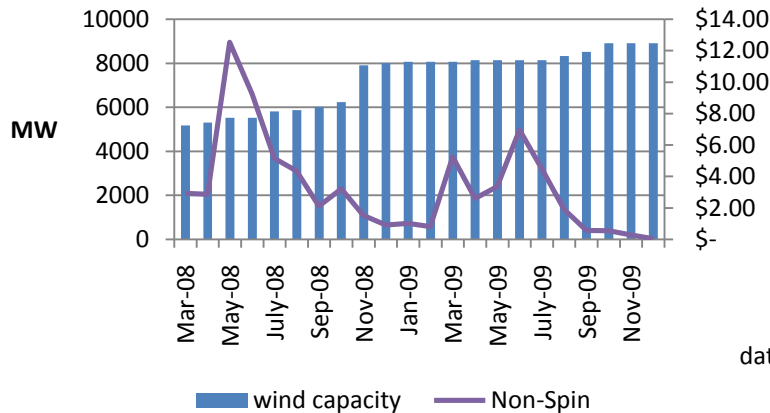
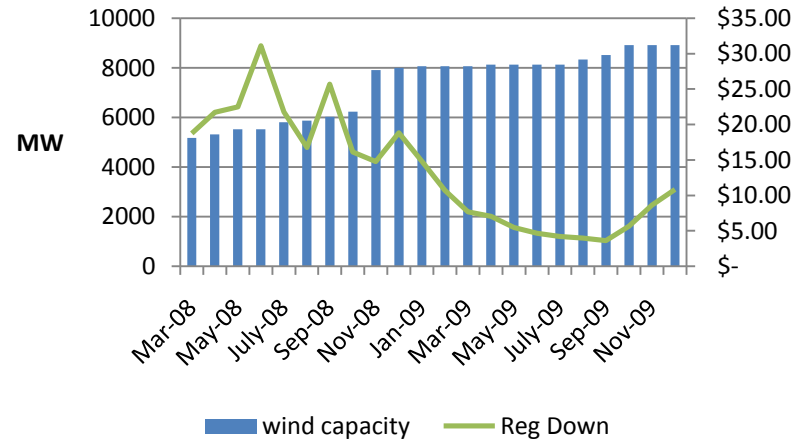
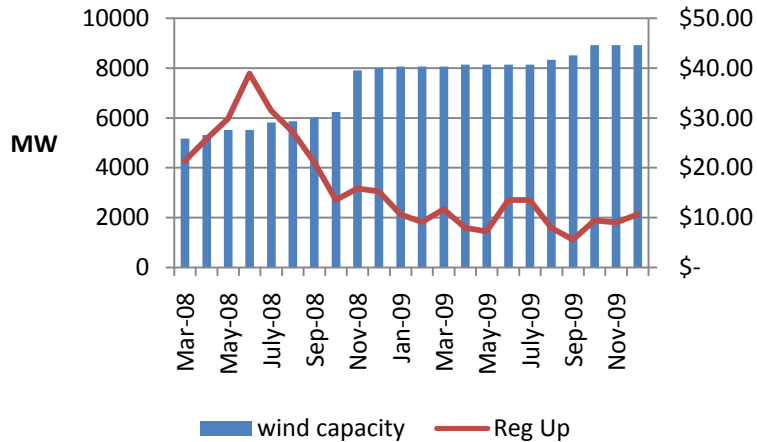


data source: ERCOT

## Cost per MW for capacity services has decreased as wind capacity has increased

The average daily price per MW for capacity services has generally declined from a multi-year peak in April-June 2008 even as installed wind capacity has increased approximately 3,400 MW. Note the fluctuations in per MW cost of NSRS do not synch with the Nov. '08 methodology change. Also note the one service with a wind consideration added to the procurement methodology has been and still remains the least expensive of the market-based capacity services.

Comparisons of installed wind capacity vs. average daily price per MW for Reg Up, Reg Down, NSRS, and RRS (March 2008-Dec. 2009)

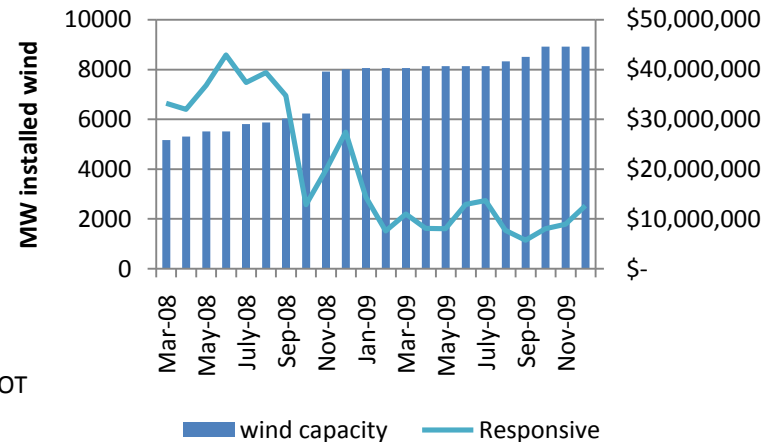
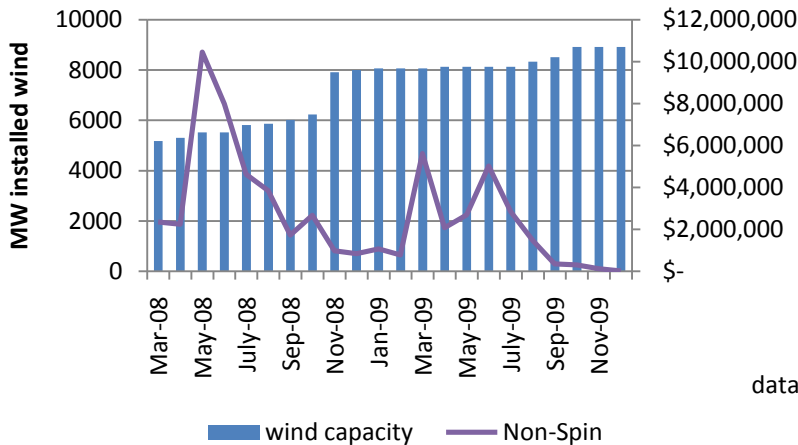
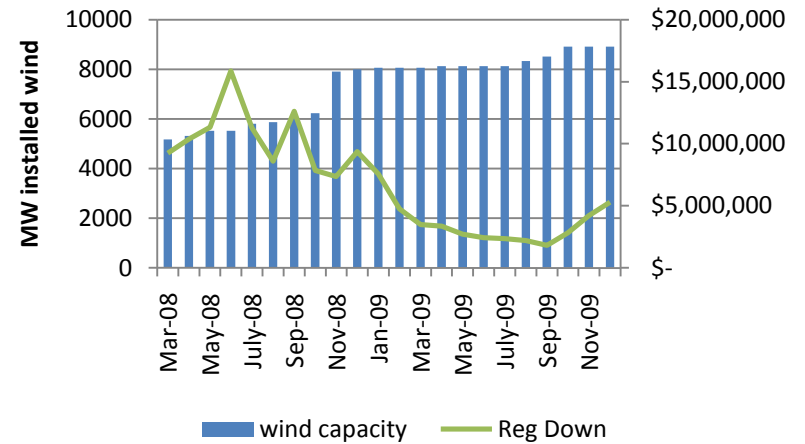
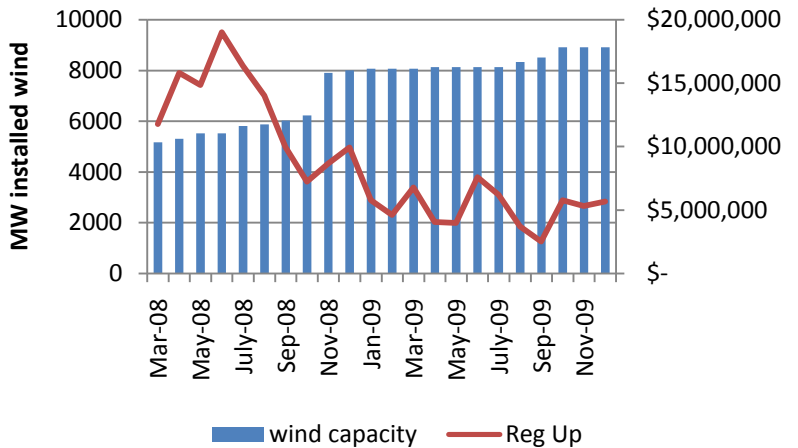


data source: ERCOT

## Total ancillary services costs have decreased as wind capacity has increased

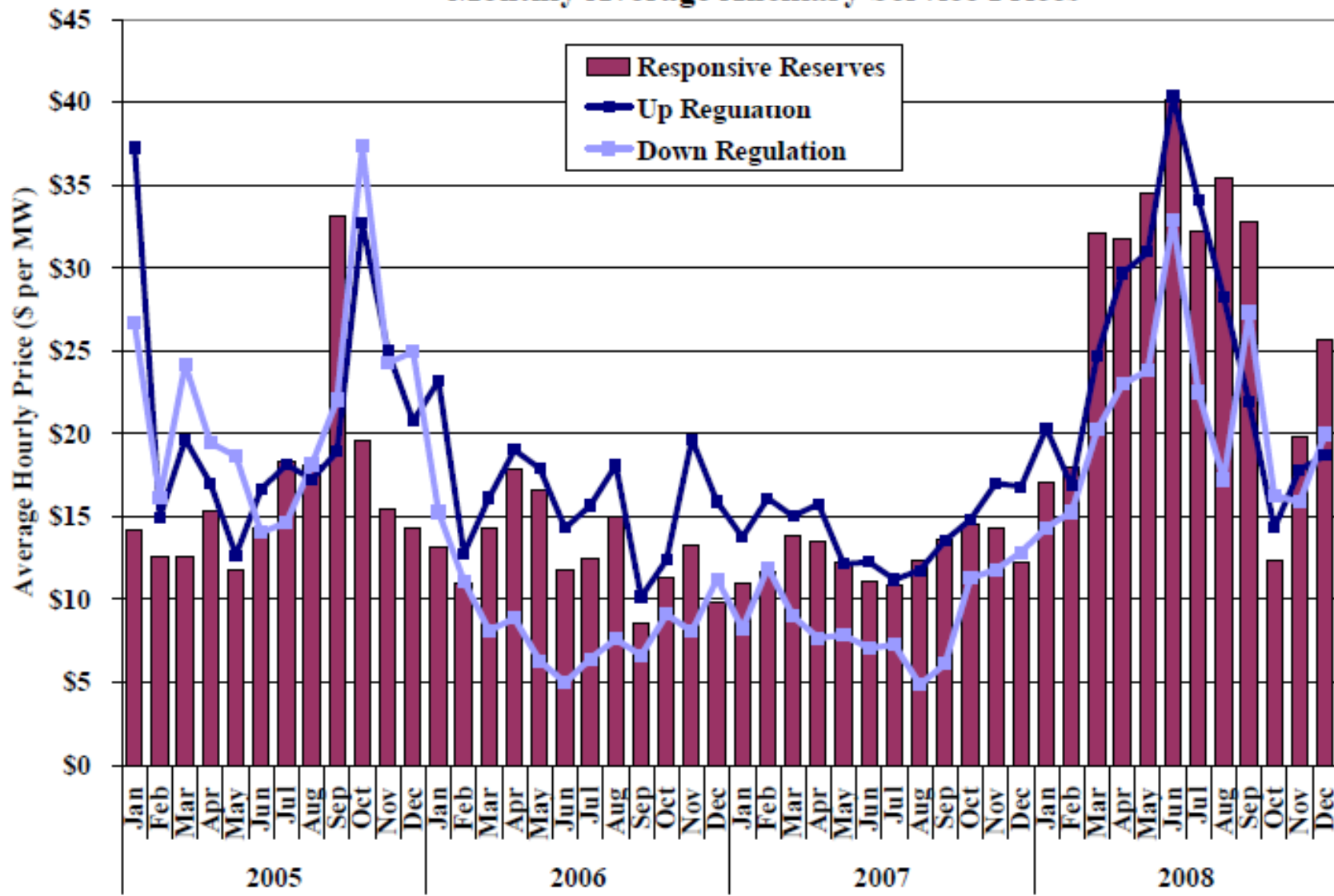
Ancillary services pricing outcomes through much of 2009 trended downward even as installed wind capacity significantly increased. As the charts below illustrate, the combined monthly costs of Regulation, Non-Spin, and Responsive fell from a June 2008 high of \$85.7 million to a Sept. 2009 low of \$10.4 million while installed wind increased 3,000 MW during those months.

Comparisons of installed wind capacity vs. monthly cost of Reg Up, Reg Down, NSRS, and RRS (March 2008-Dec. 2009)



data source: ERCOT

## Monthly Average Ancillary Service Prices



source: Potomac Economics, 2008 ERCOT State of the Market Report, p. 29

# WALL STREET JOURNAL

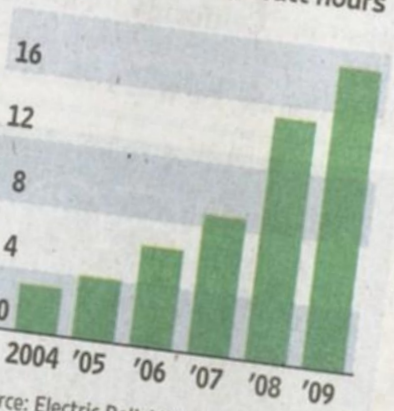
TUESDAY, MARCH 2, 2010 - VOL. CCLV NO. 49

## Natural Gas Tilts at Windmills in Power Feud

BY RUSSELL GOLD

### Greener Energy

Texas's wind power production, in millions of megawatt hours



Source: Electric Reliability Council of Texas

Wind power was a bit player in Texas as recently as four years ago. Today, wind turbines produce a significant share of the state's electricity.

But the growth of wind power has attracted powerful critics: the owners of natural-gas power plants.

Many environmental groups talk of how wind and relatively clean-burning natural gas can partner to displace dirtier coal, creating a path to power the U.S. while releasing fewer greenhouse gases. A bitter fuel fight

in Texas points to a different future: one in which gas and wind are foes.

The gas and wind factions have been clashing over the state's operating rules for the past several months. The gas people say the playing field is tilted in wind's favor; wind accuses gas of trying to snuff out the nascent windmill sector.

The success of wind power in Texas has come at the expense of natural gas. If the wind build-out continues, by 2013 the amount of gas consumed to make electricity could fall by 18.5%, as gas plants sit idle for

longer, according to Tudor Pickering & Holt, a Houston-based energy investment bank.

At the heart of the battle is a fight over the vicissitudes of wind itself. The wind industry argues that since it can't control when the wind blows, it shouldn't be held to the same rules that require everyone else to make payments when they fail to deliver promised power. The natural gas generators say everyone should operate under the same rules, and laments that wind's success is merely coming at the expense of another rela-

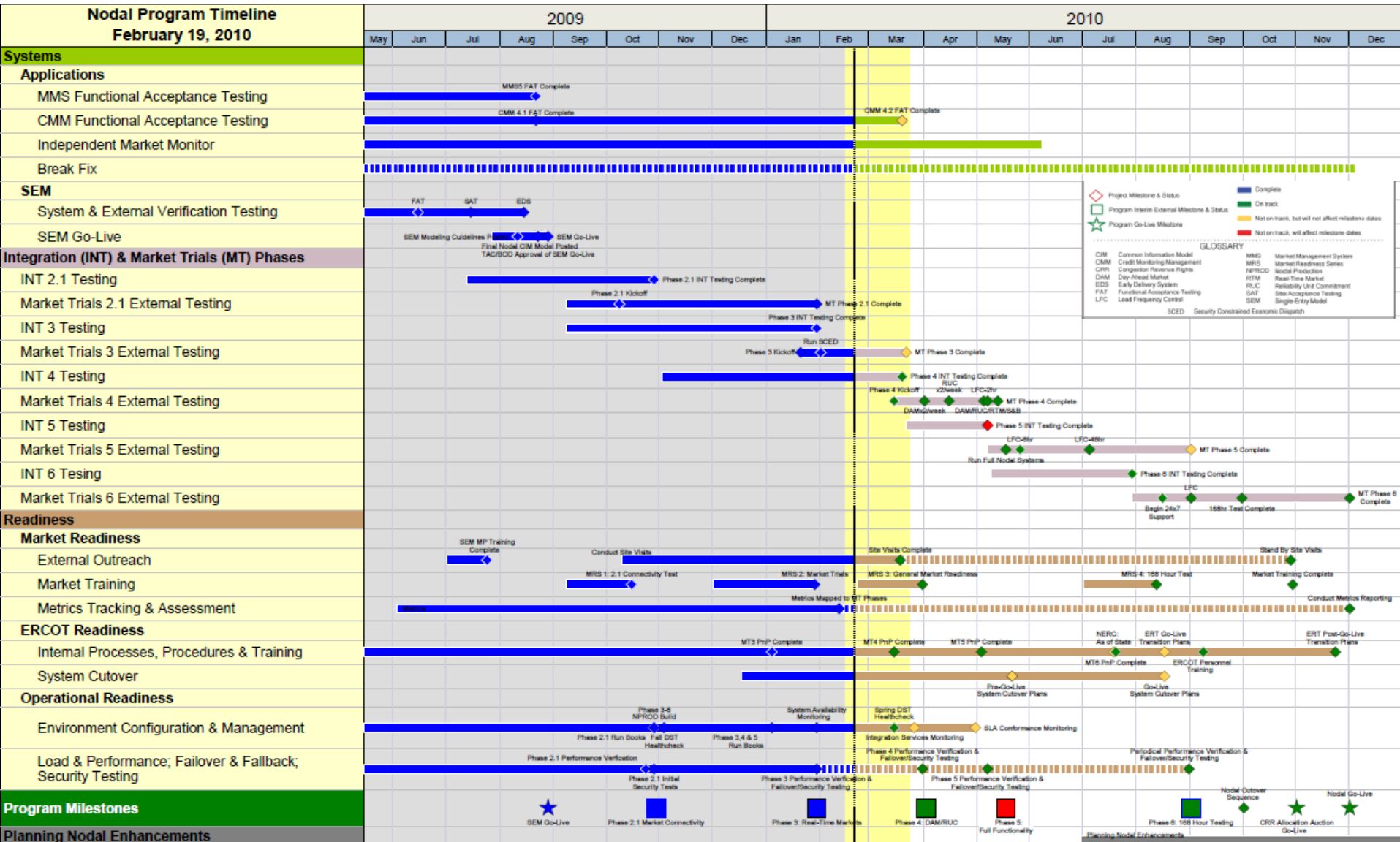
Please turn to page A20

overstated. A new tool is doing a good job of predicting when the wind will blow, says Kent Saathoff, Ercot's head of operations. Wind "is something we've become accustomed to. We've learned to operate with it."



power from fossil-fuel plants shouldn't be held to the same rules. Wind is a variable, uncontrollable fuel, whereas coal and nuclear generators can stockpile fuel when their

Eli Meir Kap





***a better  
approach***

# Recommended motion for adoption by TAC

- TAC declines to endorse either of the WCATF options for assignment of ancillary services costs to wind generators at this time.
- TAC recommends to the ERCOT Board of Directors that further discussion of possible assignment of ancillary services costs to market participants based on cost causation principles be tabled until such time as sufficient volume and quality of data from nodal market operations is available to inform the discussion.
- In the interim, TAC directs its subcommittees, working groups, and task forces to continue the work of addressing the planning and operational challenges of integrating wind and other renewable technologies as appropriate within the constraints imposed by the zonal to nodal market transition effort.