



ERCOT Proposed Ancillary Service Methodology

ERCOT Board of Directors
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Proposed Changes

- Regulation Reserve (RGS)
 - **Accounts for the expected increase in installed Wind Generation for the upcoming month**
 - **Provision to increase regulation requirements if the last 30 day average CPS1 score falls below 100**
- Non-Spinning Reserve (NSRS)
 - **Moves away from a flat 1354 MW procurement around peak load hours depending on temperature forecasts**
 - **Considers Load Forecast Risk and Wind Forecast Risk**

Why is NSRS needed in Off Peak Hours?

- Risk is no longer limited to Load forecast uncertainty and forced outages of generation. It includes Wind forecast uncertainty.
- The next slide shows an example of risk associated with low Load and high wind output and the reliability impact of additional reserves.
- This example used the resource plans from April 16th
 - Used Generation Forced outage rates of the same category of generation from the NERC Generating Availability Data System (GADS)
 - Load Forecast accuracy distribution calculated from the last 5 years of data
 - GE wind forecast accuracy distribution used from the GE Report done for CREZ.

Sample Study 04-16-2008 at 2AM: Fast Start

Total Capacity [MW]	Fast Start [MW] (Included in Total Capacity)	Risk (LOLP) (Considers 1150 MW Demand Response)
30821	0	1 day every 8.16 months
31387	566	1 day every 1.65 years
31952	1131	1 day every 4.24 years
32528	1707	1 day every 12.1 years
33089	2268	1 day every 36.5 years
Load: 23347 MW Wind: 4345 MW		

What is the increase to the NSRS Procurement Cost?

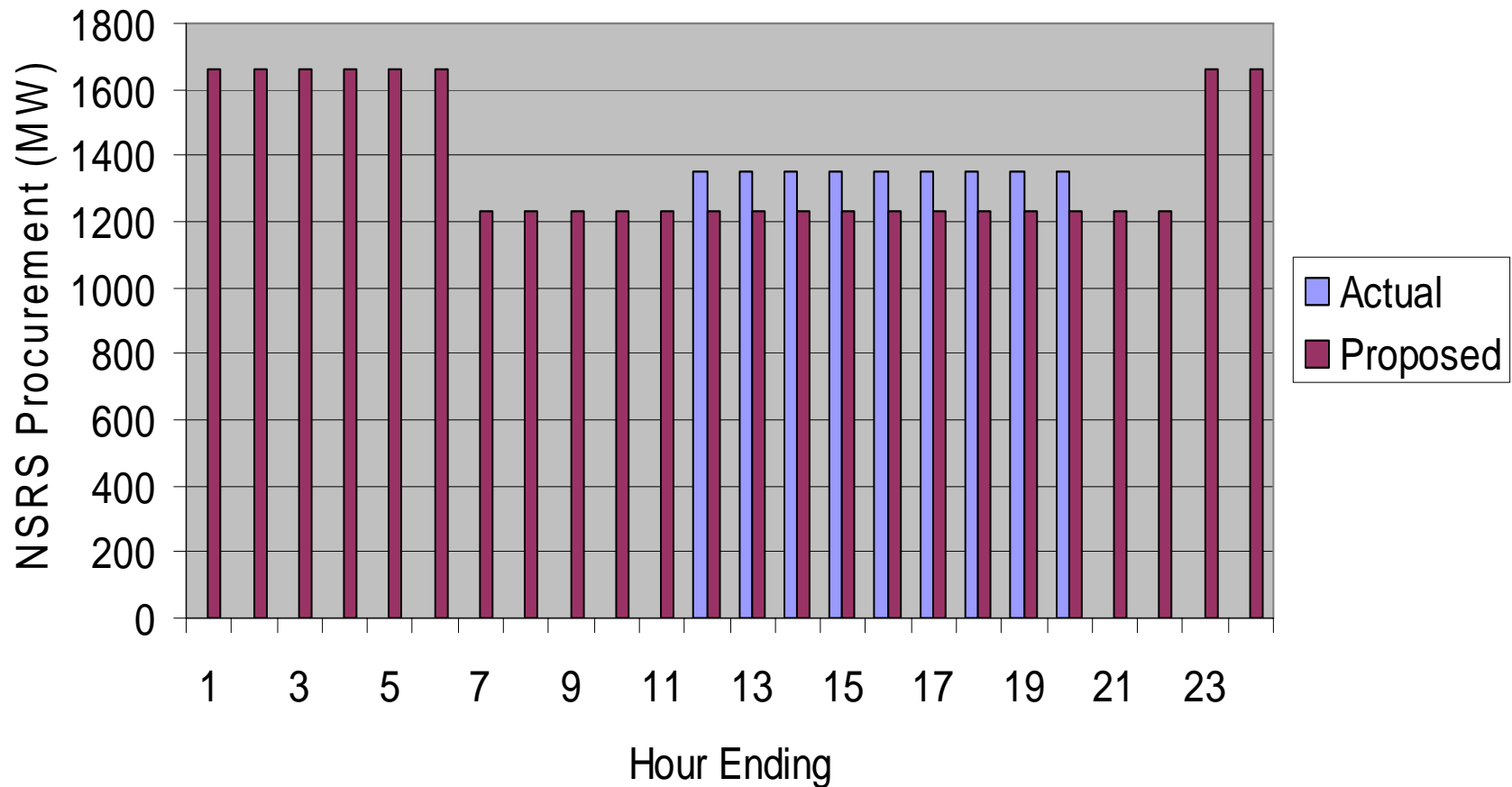
- **For hours in which NSRS was purchased, use the MCPC for that hour times the new quantity of NSRS (quantity may be higher or lower).**
- **For all off-peak hours during which NSRS was not purchased, assume a clearing price of \$4 per MWh.**
- **For all on-peak hours during which NSRS was not purchased, assume that the clearing price for that hour would be equal to clearing price at the hour during which NSRS was first purchased for the day.**
- **Assume that self arranged NSRS has the same MCPC value.**

Cost of NSRS with Assumptions

Month	Off-Peak (1-6,22,24) or On-Peak (7-22)	Cost Using Old Methodology	Cost Using New Methodology
June	Off-Peak	\$0.00	\$572,155.63
	On-Peak	\$9,024,504.78	\$9,873,673.35
July	Off-Peak	\$0.00	\$1,199,205.58
	On-Peak	\$5,172,604.96	\$5,824,400.00
August	Off-Peak	\$0.00	\$1,523,258.05
	On-Peak	\$4,381,747.10	\$6,698,622.29
September	Off-Peak	\$0.00	\$1,592,004.21
	On-Peak	\$2,058,513.28	\$3,304,884.44
Total	Off-Peak	\$0.00	\$4,886,623.47
	On-Peak	\$20,637,370.12	\$25,701,580.08

Total Price Difference for 4 Months of Study: ~\$9.95 Million

Actual vs. Proposed NSRS Procurement for September 15th, 2008



- **The current RGS methodology evaluates the amount of RGS that was used last month and the same month a year ago.**
- **The GE study confirmed that the current methodology for procuring RGS would continue to work. However, ERCOT should account for any increase in installed wind capacity for the upcoming month.**
- **The next slide shows that the increase to RGS requirements due to increases in installed wind capacity for October was minor.**
- **Because the increase to RGS due to installed wind capacity for upcoming months appears to be small and there was not a major change to the RGS procurement methodology, ERCOT does not believe this change will cause a significant difference in RGS costs.**

Regulation for October

Current Methodology

IE	Up	Down
1	835	875
2	835	515
3	635	805
4	455	760
5	575	580
6	1145	745
7	1295	825
8	945	1180
9	1140	865
10	990	650
11	695	900
12	690	705
13	795	725
14	680	805
15	540	860
16	750	680
17	735	755
18	955	785
19	880	1005
20	1210	910
21	1110	870
22	630	935
23	760	930
24	785	840

Proposed Methodology (Affected Values in Yellow)

IE	Up	Down
1	840	875
2	845	525
3	635	805
4	455	760
5	575	580
6	1150	745
7	1305	825
8	945	1180
9	1140	865
10	1000	650
11	695	905
12	690	710
13	805	725
14	680	805
15	540	860
16	750	685
17	735	755
18	970	805
19	880	1005
20	1215	925
21	1110	885
22	630	935
23	760	935
24	790	845

- **Purchase NSRS based on the accuracy of the wind and load forecasts.**
 - Procurements are no longer based on largest unit in ERCOT
 - Procure NSRS for On-Peak and Off-Peak hours
- **Incorporate the impact of increasing wind generation on Regulation.**
 - Utilizes GE study results to determine amount of Regulation Reserve required to cover increasing wind installations
- **Increase Regulation Procurement if the average CPS1 score dropped below 100 in the previous 30 days.**

Questions ?