



June 2008 Grid Operations

ERCOT Board of Directors
19 August 2008

Kent Saathoff

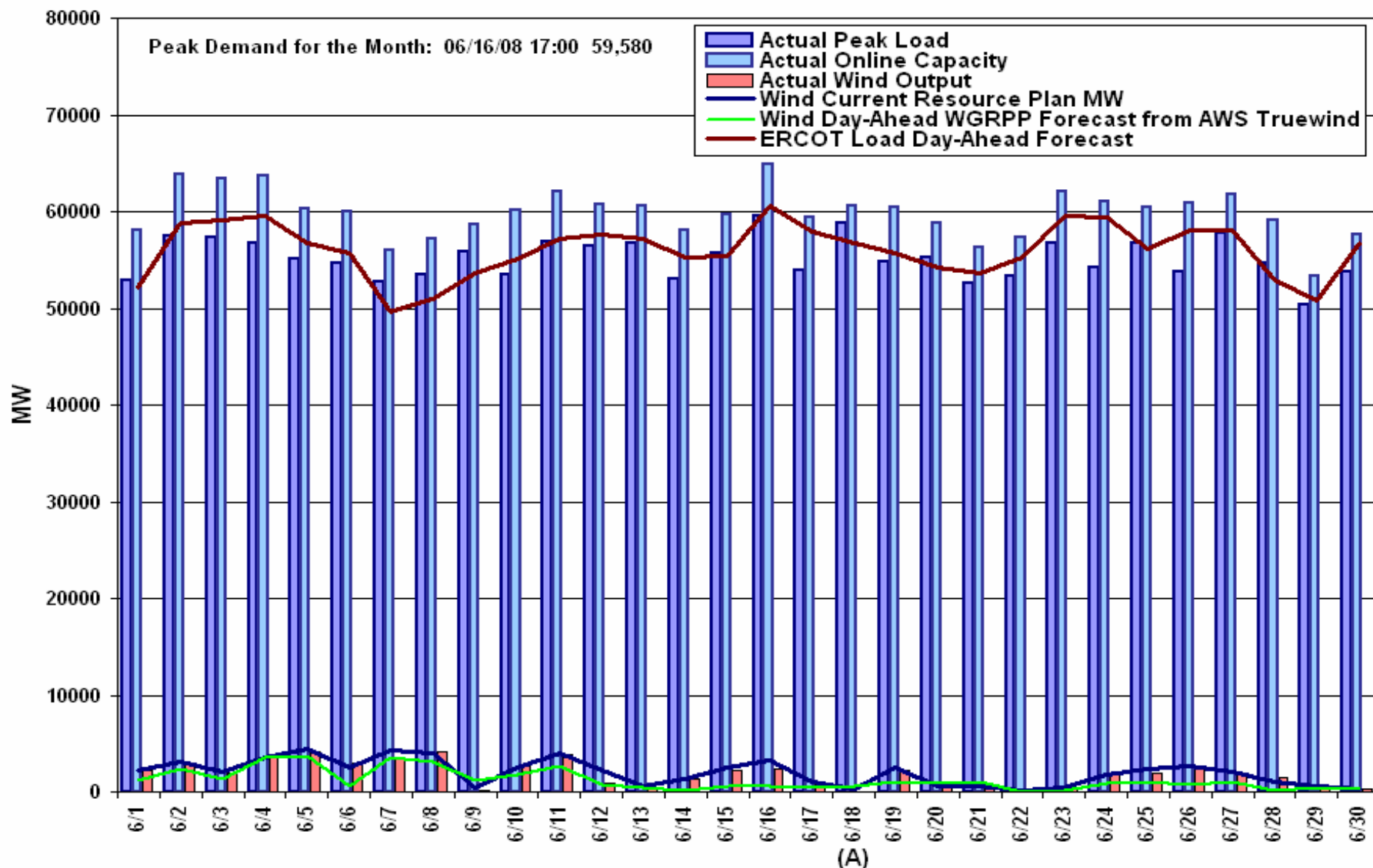
Vice President – System Operations

- **Summary**
- **Peak Demand: Actual vs. Forecast**
On-line Resources: Total at Peak and Wind
- **Day-Ahead Load Forecast Performance**
- **Out of Merit Capacity Order (OOMC) &
Reliability Must Run (RMR) Purchases**
- **Zonal Congestion**
- **Significant System Incidents**
- **Advisories, Alerts and EECs**
- **Other Items**
- **PRR 762 Impact**
- **ERCOT Reliability Assessment Tool**

- The peak demand of 59,508 MW exceeded the June 2007 peak, but was below the all-time actual peak of 62,339 MW and forecast 2008 peak of 63,702 MW
- Day-ahead load forecast error for June was below 3%
- Zonal transmission congestion increased from June 2007 due mainly to higher load and North-South congestion
- Storms in West caused a number of transmission outages and some load temporarily transferred to SPP
- ERCOT implemented EECF Step 1 on June 18th
- No “excused” periods for SCE performance in July due to implementation of PRR 762
- ERCOT is developing an operational Reliability Assessment Tool with expected implementation by the end of 2008

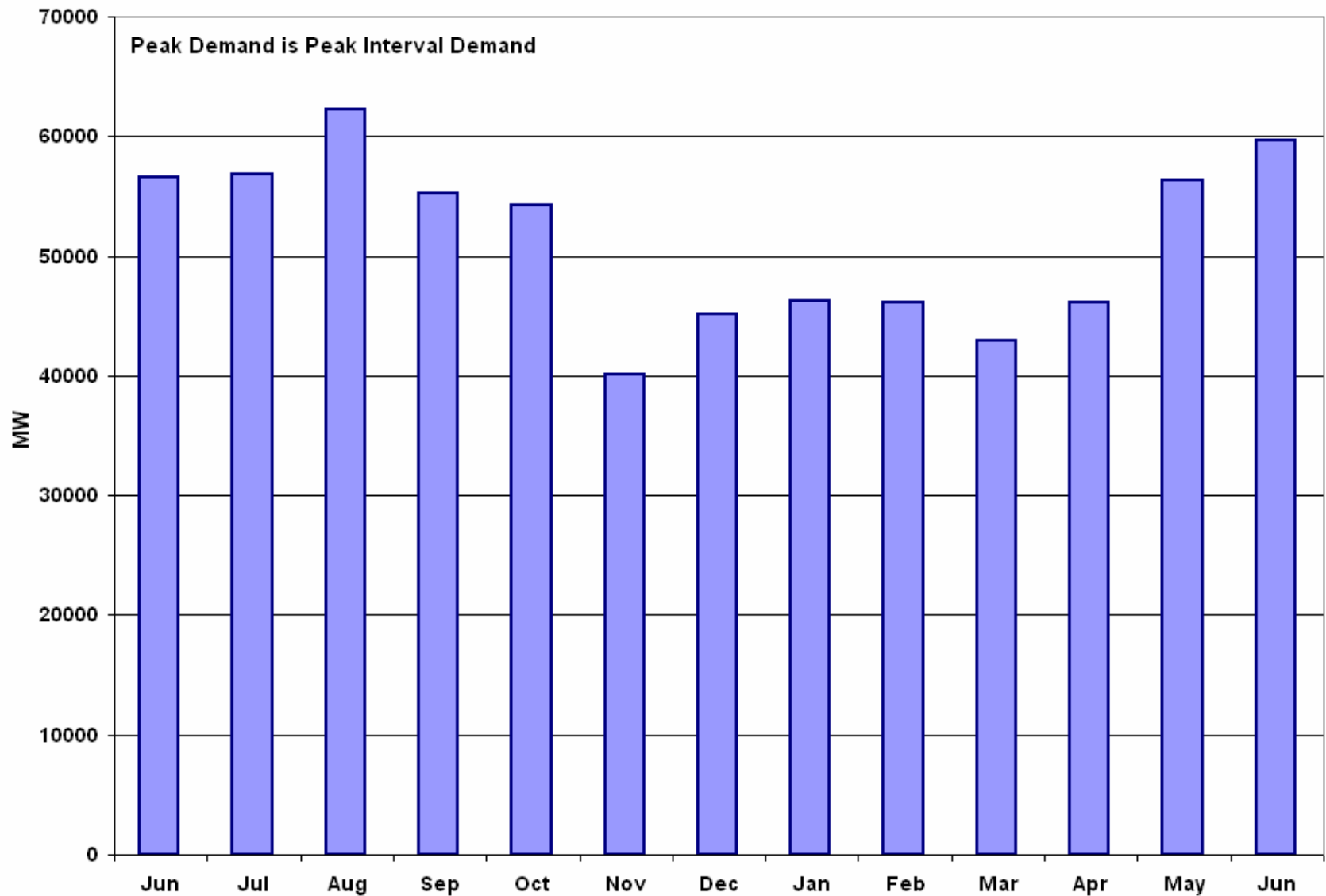
Daily Peak Demand: Hourly Average Actual vs Forecast

Resource Plan: On-line Capacity at Peak



Note: All data are hourly averages during the peak load hour obtained from Resource Plans, EMMS, and AWS Truewind Wind Forecast.

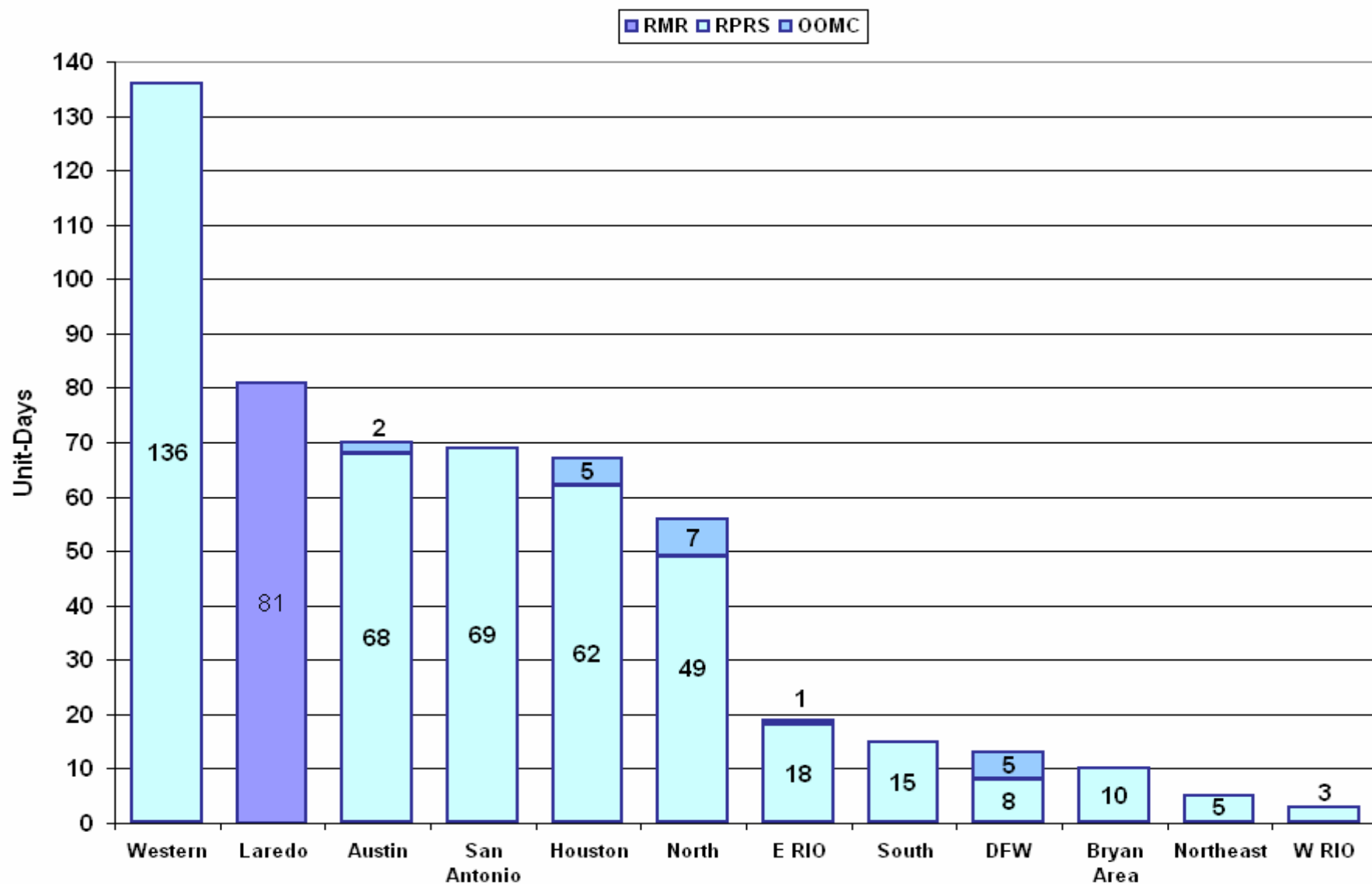
Monthly Peak Demand: Actual



Day-Ahead Load Forecast Performance in June 2008

	Mean Absolute Percent Error (MAPE) for ERCOT Mid-Term Load Forecast (MTLF) Run at 16:00 Day Ahead				
	2005 MAPE	2006 MAPE	2007 MAPE	2008 MAPE (YTD)	June 2008 MAPE
Average Annual MAPE	4.56	3.79	3.55	3.08	2.81

Capacity Purchases of RMR, OOMC & RPRS to Manage Local Congestion in June 2008



Zonal Congestion

CSC	June 08 Days	June 07 Days	Last 12 Months Total Days
North – Houston	1 June – 1	11	99
North – West	0	4	58
West – North	12 June – 1-5,7-9,15,16,24,27	0	143
South – North	0	2	40
North - South	26 June – 1-11,13-20,23-29	N/A	95

Significant System Incidents in June 2008

- **June 11th**
 - A Transmission Operator lost the SCADA primary and backup control computer and ICCP link with ERCOT between 08:16 to 09:30 due to a corrupted database and needed to refresh the system.
- **June 18th**
 - Simultaneous loss of several wind farms (7), a total of 9 wind farms within 3 minutes totaling approximately 540 MW. Severe weather active in the area.

Advisories and Alerts in June 2008

- **Advisories issued for Adjusted Responsive Reserve (ARR) below 3000 MW.**
 - Issued on 7 Days.
- **Alerts issued for ARR below 2500 MW.**
 - One issued on June 18th.
- **Transmission Emergency (operation above single contingency limits):**
 - 6/6th–11th Emergency for Lake Pauline Area due to weather related forced outages. Some ERCOT load transferred to SPP.
 - 6/13 Emergency for Killeen Ft Hood West – Killeen Clark 138 kV violation over normal rating, relieved with generation.
 - 6/16th–17th Emergency for West Childress Area due to weather related forced outages.
 - 6/18 Alert for China Grove Area due to storm damage.
 - 6/2nd-3rd & 27th Alert and Emergency for Laredo due to forced RMR unit outage.
- **EECP Implementation:**
 - June 18th: 16:25 – 18:15.
 - Load 2100 MW higher than the Day-Ahead Load forecast due to temperature predictions being lower than actual.

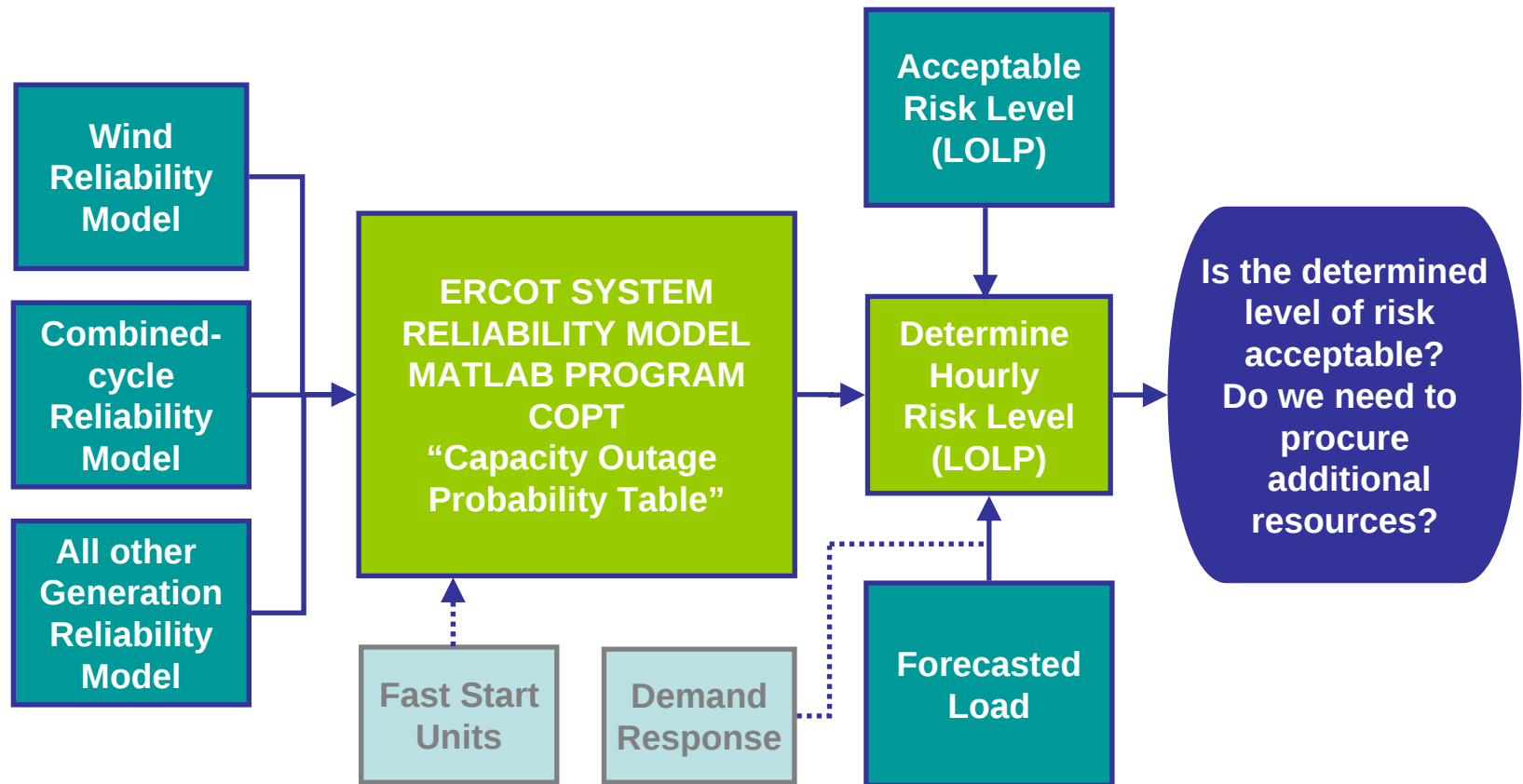
- **June 2nd**
 - Held IE 04:00 due to input error in offset calculation.
- **June 3rd**
 - Held 22:45 interval due to issues with a Market Participant not being able to submit energy schedules .

- **No impact of PRR 762 through the month of July.**
 - PRR approved at June Board meeting to exclude from consideration performance periods where Qualified Scheduling Entities (QSEs) operating controllable units in the West Congestion Zone are called upon to deploy and recall Balancing Energy in response to high wind production and Congestion in the area.
 - No second Dispatch Instructions (VDIs or OOMEs) were sent in that would allow a QSE to be released of their SCE for the times of the instruction under this PRR.

ERCOT Reliability Assessment Tool

- **Objective:**
 - Develop an operational reliability assessment tool that evaluates the loss-of-load risk.
- **ERCOT Reliability Assessment Tool utilizes four reliability model inputs:**
 - Wind Forecast Accuracy
 - Based on GE analyses done for CREZ report
 - Combined-cycle plant outage rates
 - Based on surveyed dispatch patterns and NERC Generating Availability Data System (GADS)
 - All other Conventional Units outage rates
 - Based on GADS
 - Load Forecast Accuracy
 - Based on ~5 years ERCOT historical data
- **Status:**
 - Development in MATLAB (a statistical program) completed
 - Currently testing and tuning tool using historical ERCOT data

ERCOT Reliability Assessment Tool Architecture



Future Tasks

- Fine tune wind reliability model
 - Continue to collect actual and forecasted hourly wind plant power output
 - GE provided data for the 5000 MW, 10000MW and 150000 MW scenarios
 - ERCOT's hourly wind forecast will be used to enhance the GE forecast accuracy distribution to consider the error in the next day forecast
- Determine acceptable risk criteria
- Target implementation by EOY 2008

Questions ?