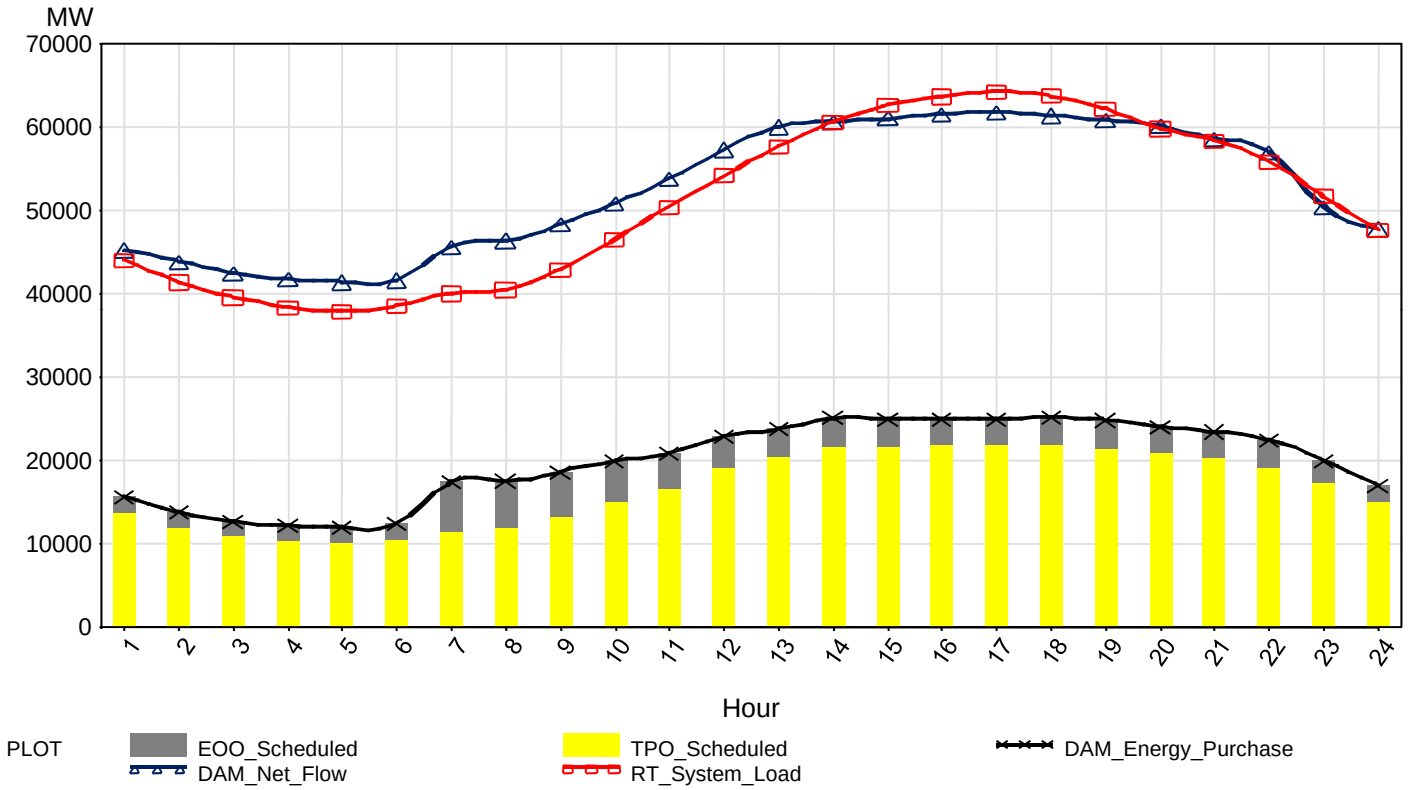
Wholesale Market Operations Update

John Dumas
Director Wholesale Market Operations

Board of Directors Meeting
September 20, 2011

Day-Ahead Schedule

- **On average the DAM net transmission flow (defined below) was less than the real-time system load during peak hours from Hour 15 to 19 during the month of August.**

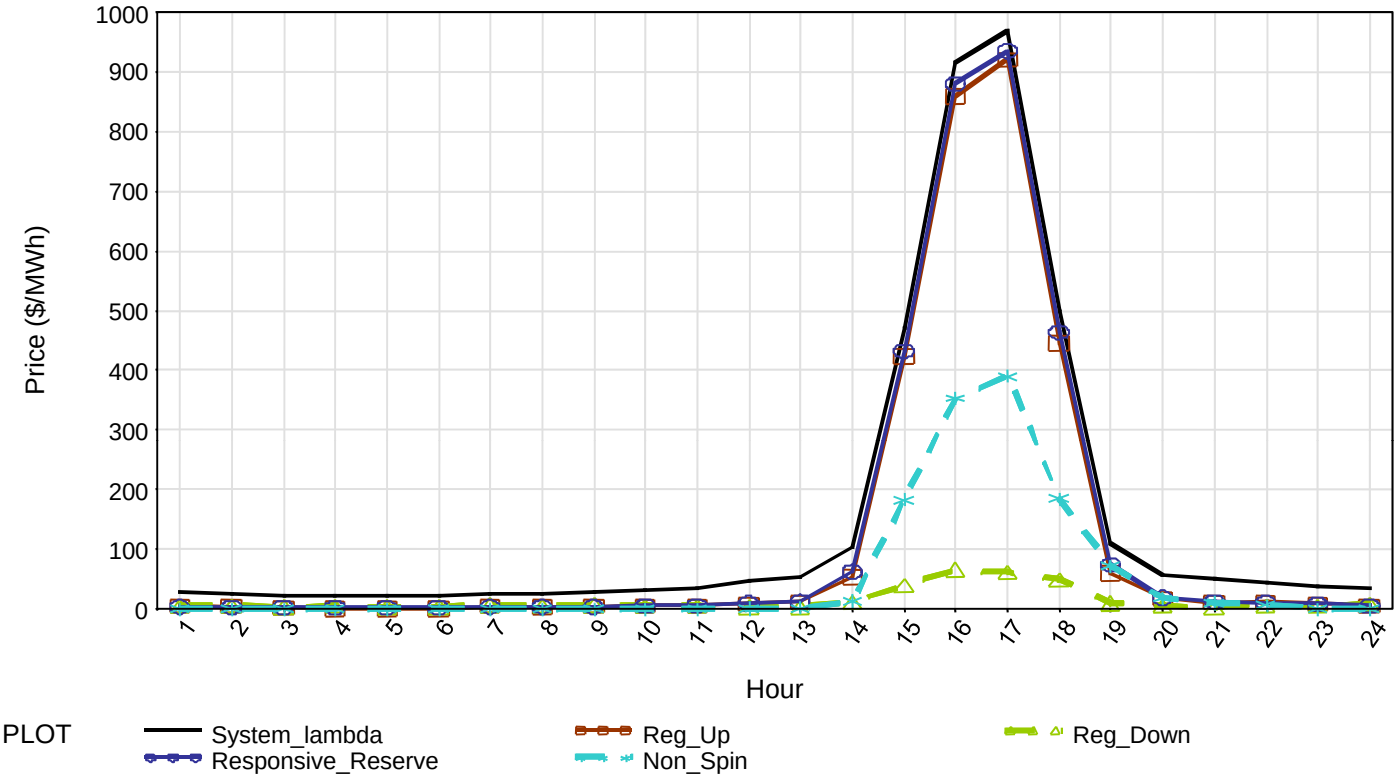


Average DAM Schedule

01AUG2011-31AUG2011

Acronym : TPO - Three Part Offer; EOO – Energy Only Offer;
DAM_Net_Flow = Combined market transmission flow of Energy purchased/sold in Day-Ahead Market plus Point-to-Point Obligations and NOIE CRR Options carried forward to real-time.

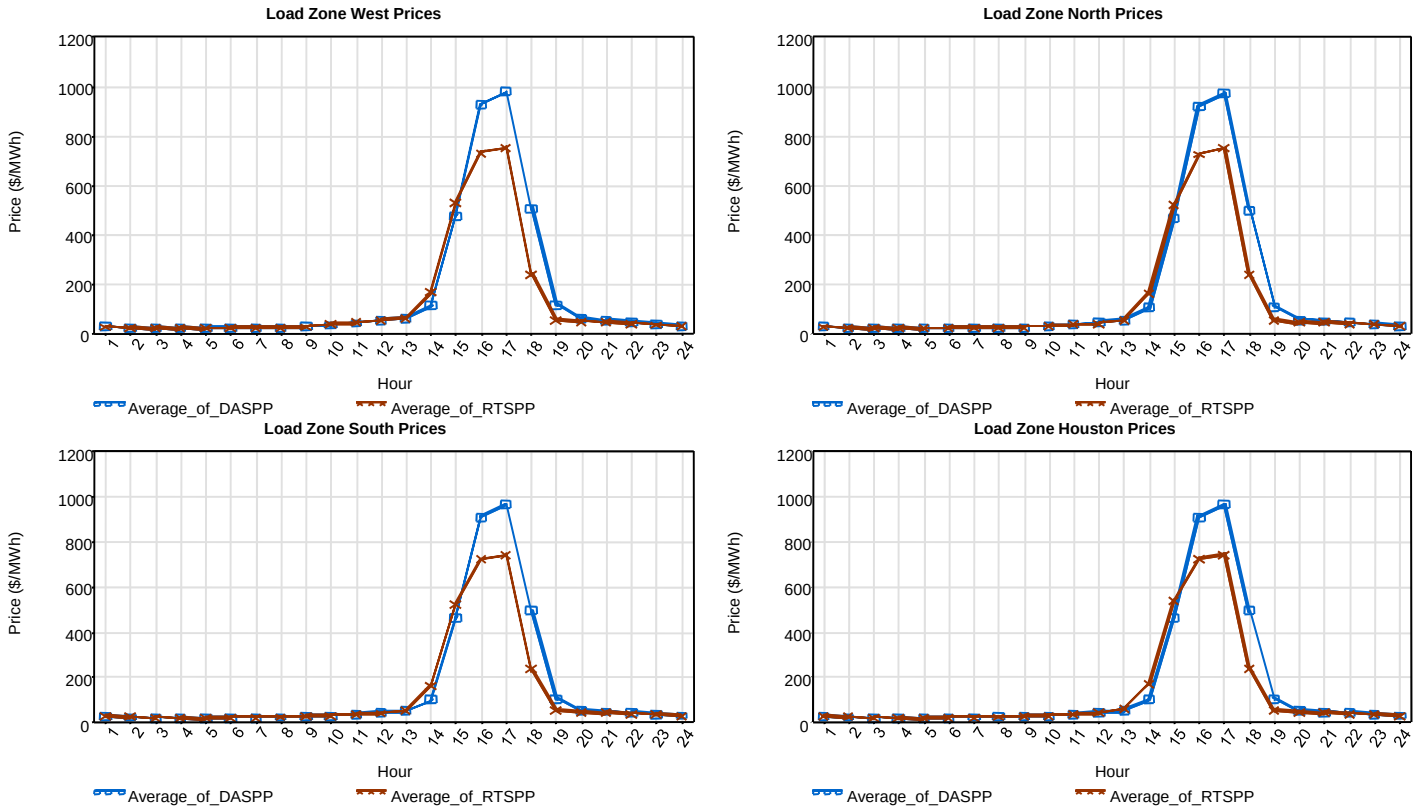
Day-Ahead Electricity And Ancillary Service Hourly Average Prices



Day-Ahead Electricity and Ancillary Service Hourly Average Prices 01AUG2011-31AUG2011

- **August saw dramatically higher prices for energy and A/S across peak hours**
  - **Average DAM energy for HE17 was $970/MWh, compared to $166/MWh-July, $93/MWh-June.**
  - **Average A/S prices (except Reg_Down) for HE 17 were above $400/MW, compared to $100/MW July and $53/MW-June.**
  - **High correlation/co-optimization of prices for Energy, RegUp, and Responsive across peak.**

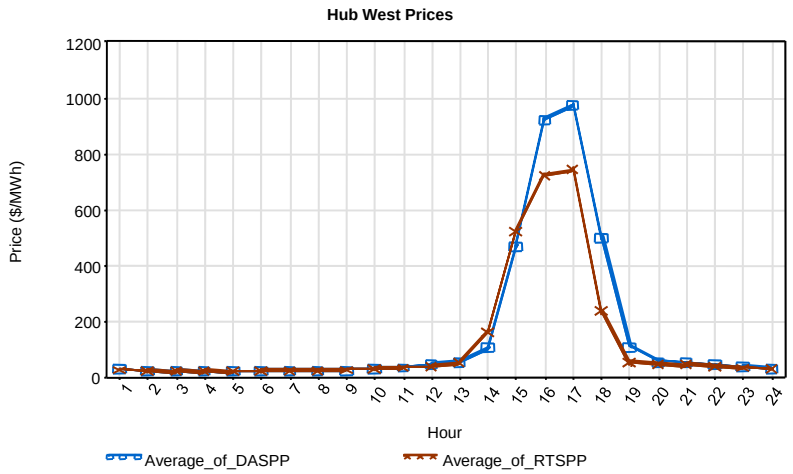
Day-Ahead Vs Real-Time Load Zone SPP (Hourly Average)

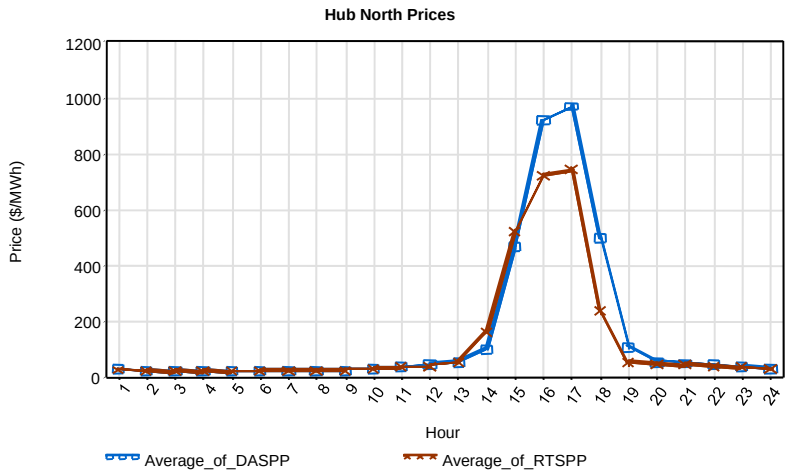


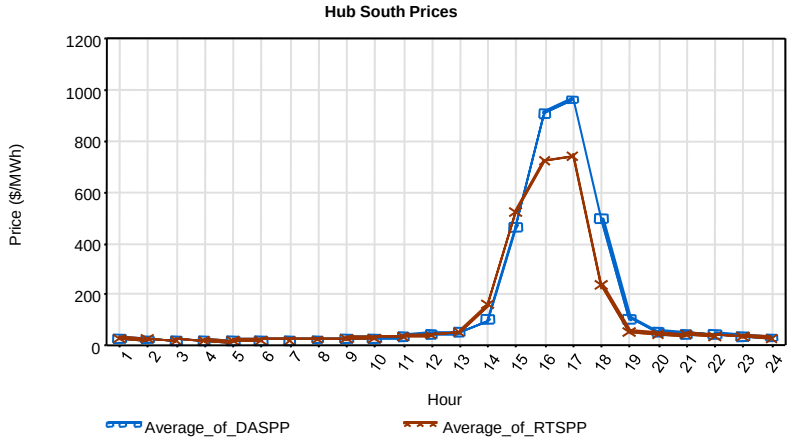
Day-Ahead Vs Real-Time Hourly Average SPP Load Zone Summary 01AUG2011-31AUG2011

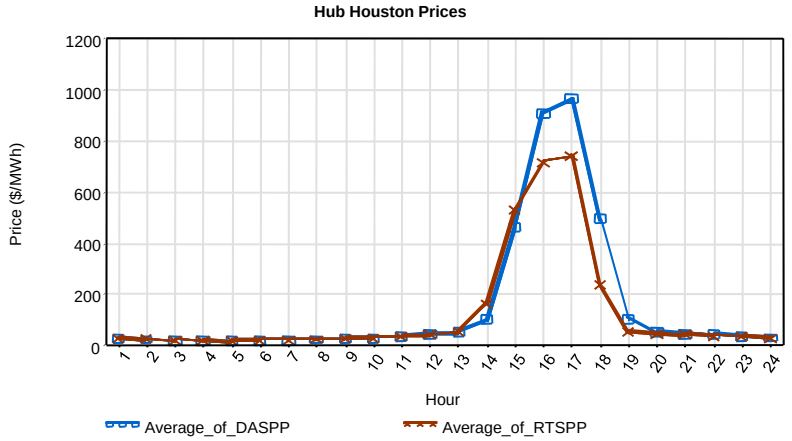
- **Day Ahead load zone SPP were higher than Real Time load zone SPP during peak hours.**
- **The highest average Day-Ahead load zone SPP over the month was close to $1,000/MWh**
  - **Compared to $140~180/MWh in July and around $90/MWh in June.**
- **The highest average Real Time load zone SPP over the month was around $750/MWh**
  - **Compared to $80~120/MWh in July and $130~150/MWh in June.**

Day-Ahead vs Real-Time HUB SPP (Hourly Average)





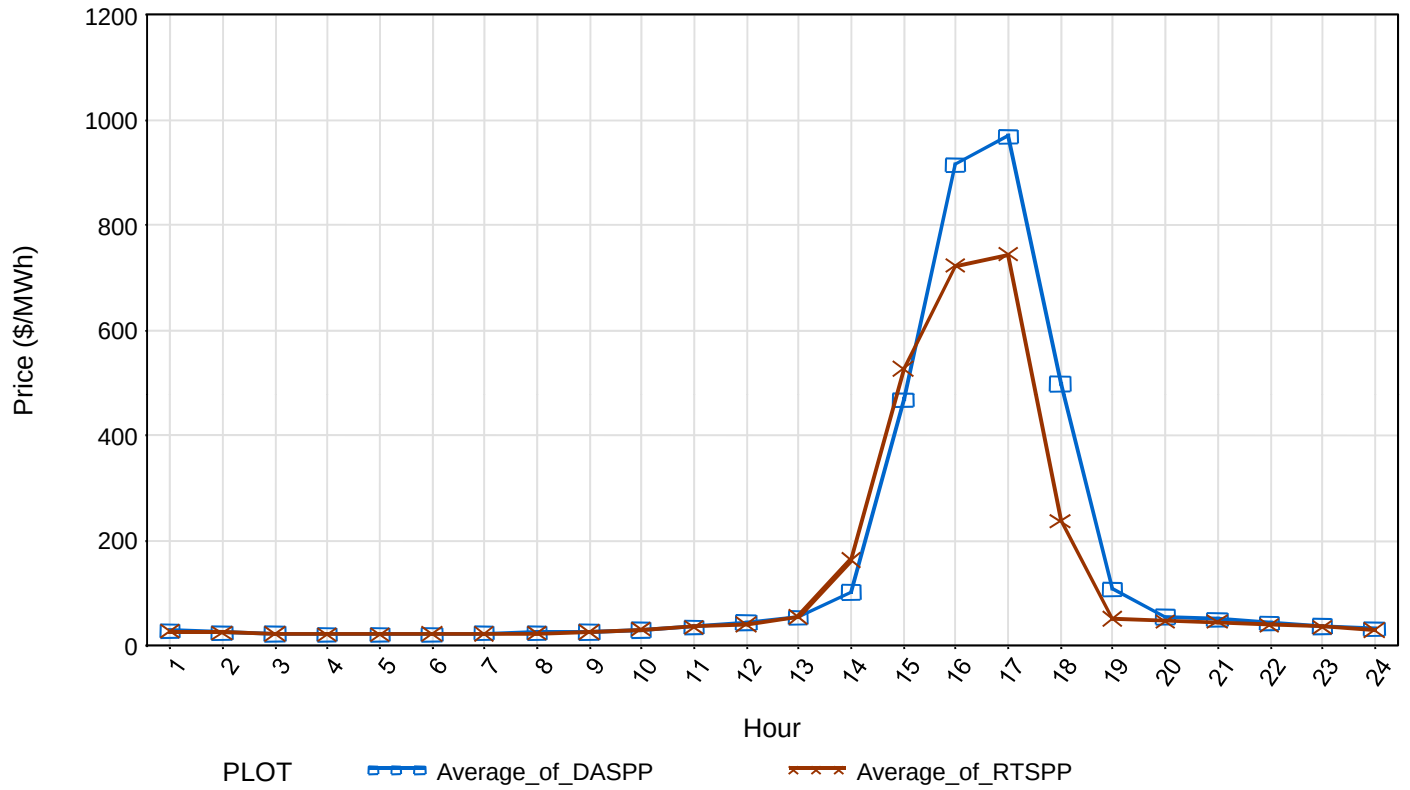




Day-Ahead Vs Real-Time Hourly Average SPP Hub Summary

01AUG2011-31AUG2011

Day-Ahead Vs Real-Time Hub Average SPP (Hourly Average)

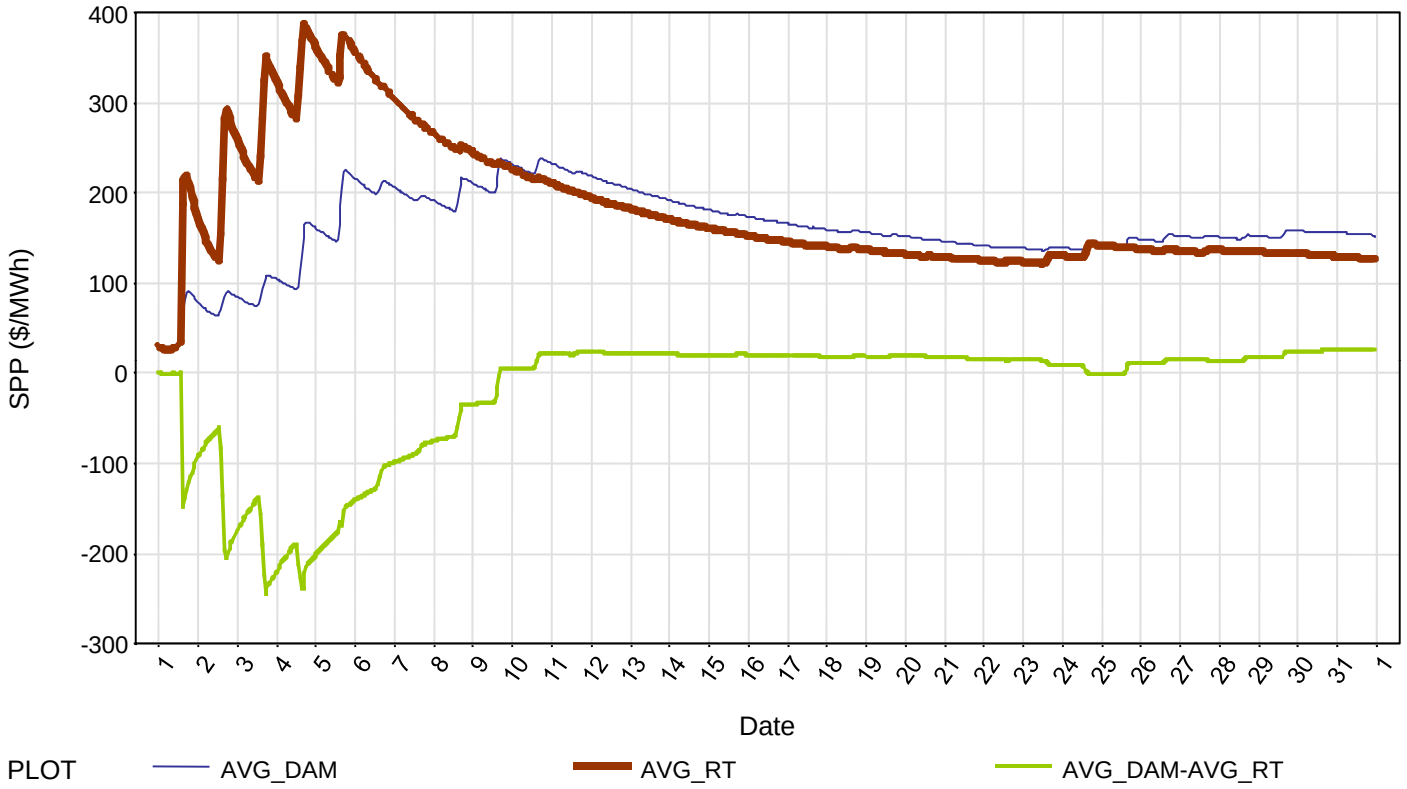


Day-Ahead Vs Real-Time Hourly Average SPP of Hub Hub-Average Prices

01AUG2011-31AUG2011

- **Day Ahead prices were on average higher than real-time prices, especially during peak hours.**
- **Real-Time prices were very close to Day Ahead prices at off-peak hours.**

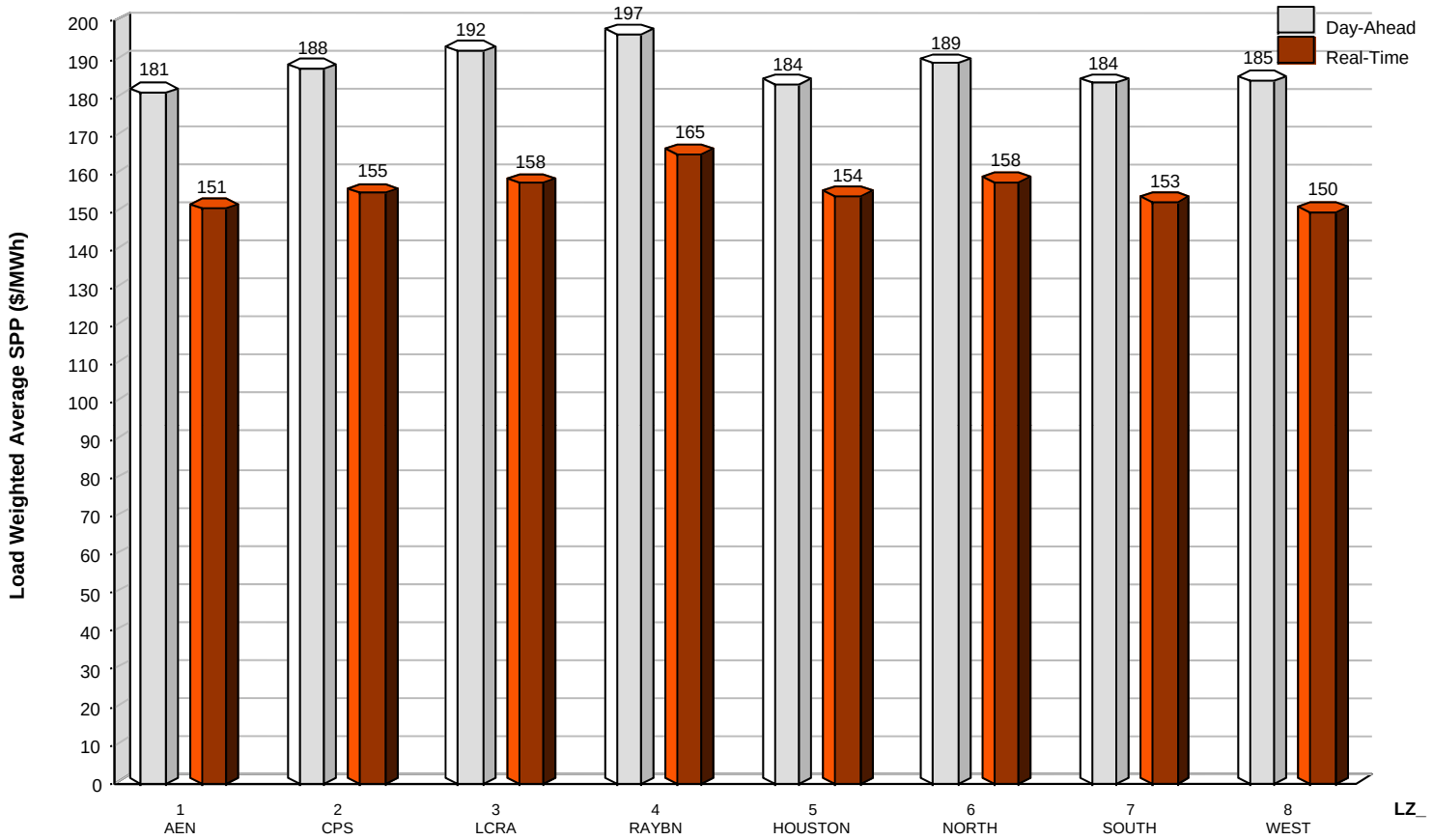
Day-Ahead Vs Real-Time Cumulative Average SPP



Day-Ahead Vs Real-Time Cumulative Average SPP for Simple Average Prices 01AUG2011-31AUG2011

- **The Real Time prices were higher than the Day-Ahead in first week of August. After first week the cumulative Day Ahead prices were typically higher than the Real Time prices.**

Load Weighted Average SPP



Load Weighted Average SPP for Each Zone

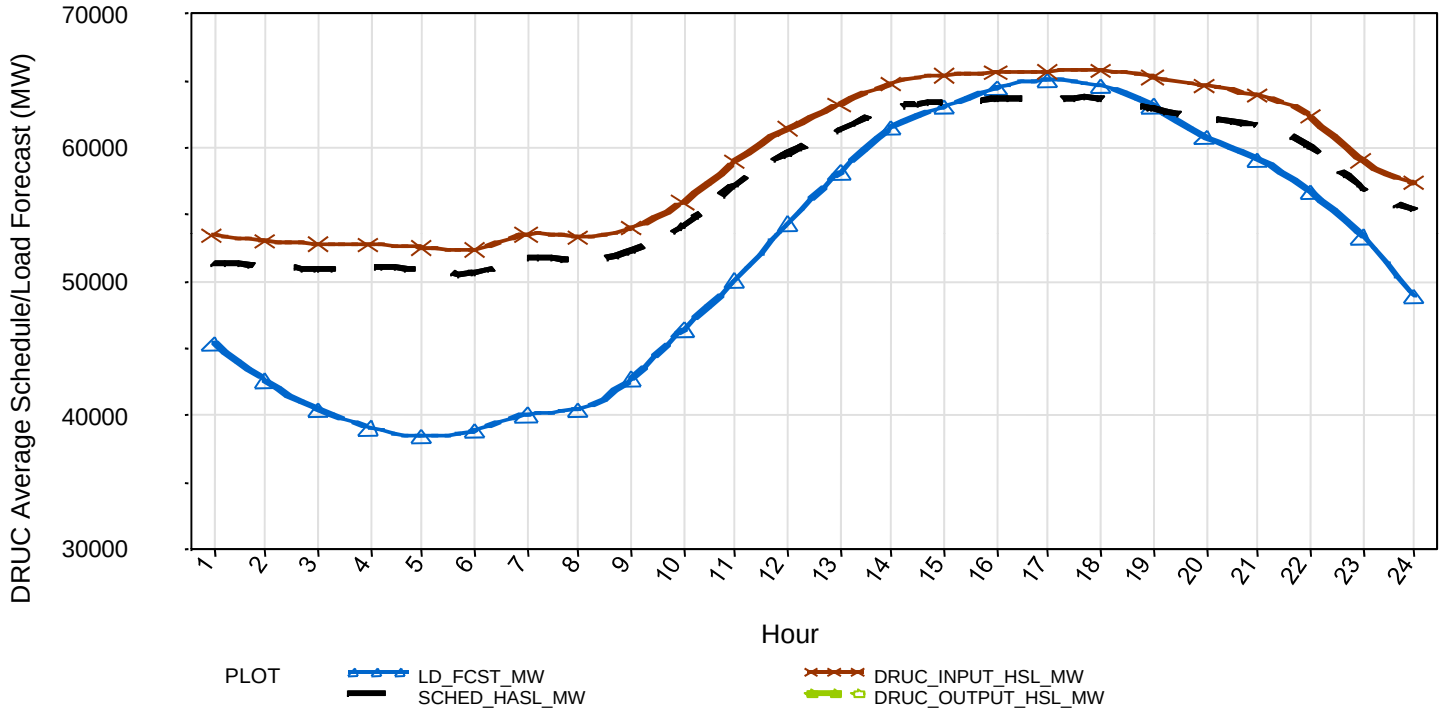
01AUG2011-31AUG2011

- **The load weighted average RT SPPs were lower than the load weighted average DAM SPPs. The difference of DAM SPPs and RT SPPs in current month was greater than in previous month.**

DRUC Monthly Summary

31 Executions (0 Missed)
0 Published after 1600

19.6-Min Average Execution Time
0 MWh Committed (0 Resources for 0 Hours)

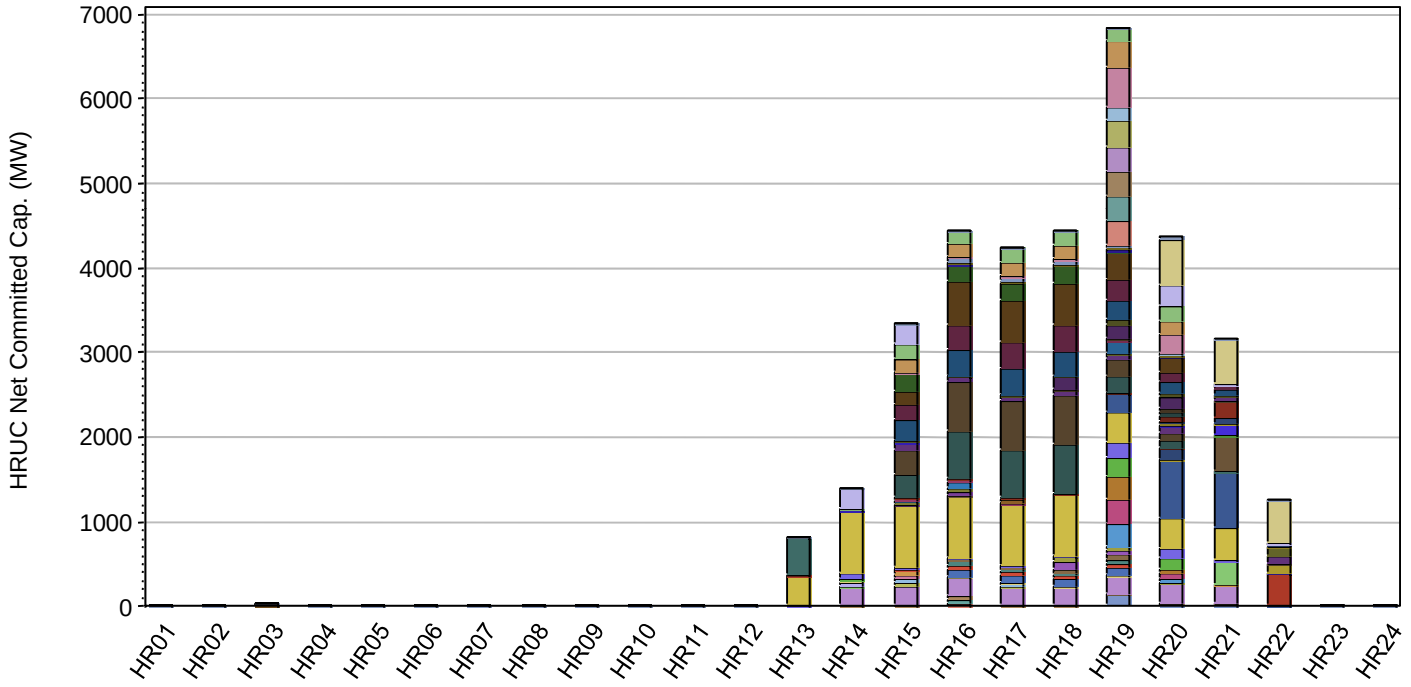


DRUC Average QSE Scheduled Capacity/Load Forecast

01AUG2011-31AUG2011

HRUC Monthly Summary

742 Executions (2 Missed)
16.0-Min Average Execution Time
Note: Colors Indicate Individual Resources

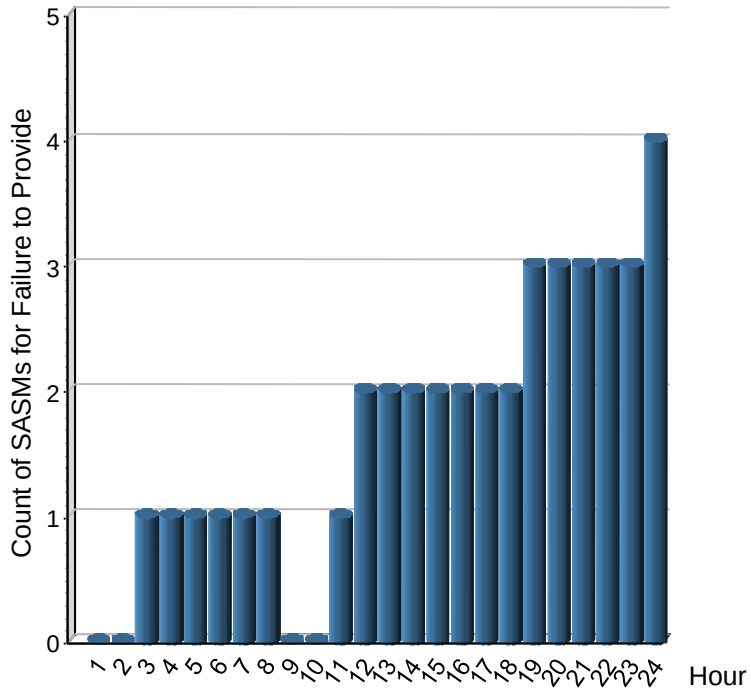


Net Committed Capacity in HRUC

01AUG2011-31AUG2011

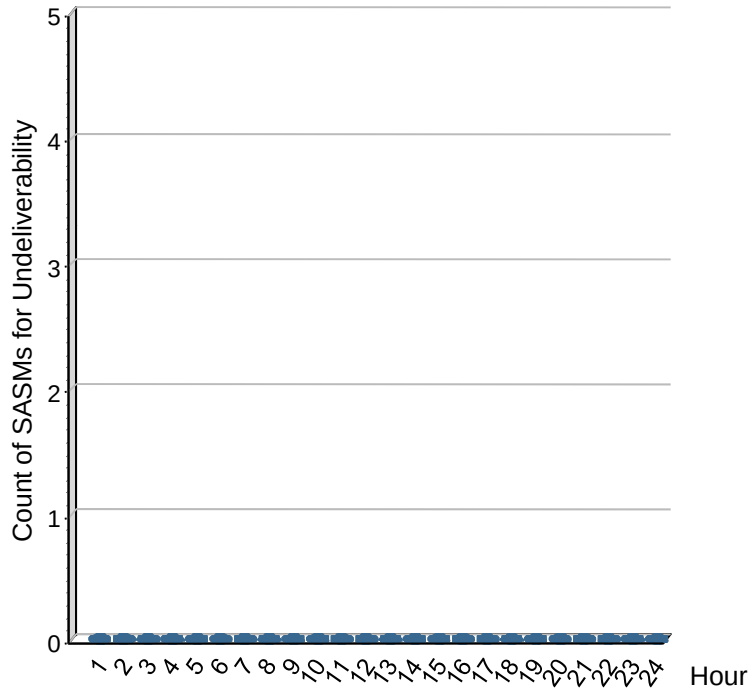
Supplemental Ancillary Service Market (SASM) Summary

6 SASMs in 01AUG2011-31AUG2011
For AS Failure to Provide



Count of SASMs for Failure to Provide by Hour

0 SASMs in 01AUG2011-31AUG2011
For AS Undeliverability



Count of SASMs for Undeliverability by Hour

CRR Auction for Operating Month September 2011

- **136,212 Bids/Offers**
- **13,743 Auction Awards**
  - **154,868.0 MW**
    - **57,059.3 Peak WD**
    - **49,130.4 Peak WE**
    - **48,678.3 Off-peak**
- **Total Auction/Allocation Revenue = $ 14.518 M**

CRR Price Convergence

	July 2011	June 2011	May 2011	April 2011	March 2011	February 2011	January 2011
Net Amount Paid for CRRs (Cost)	$60.0M	$31.7M	$31.4M	$20.4M	$20.2M	$15.0M	$16.4M
Net Amount Paid to Account Holders for CRRs (Value)	$35.8M	$59.2M	$41.5M	$24.8M	$19.6M	$80.2M	$17.8M
Convergence (Value/Cost)	59.6%	186.7%	132.1%	121.5%	96.8%	534%	109%

RMR Operational Summary

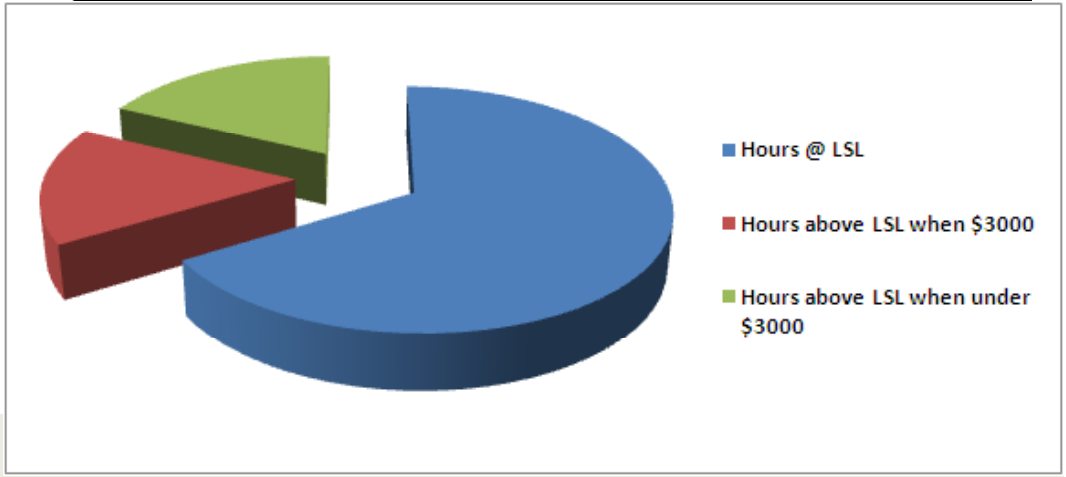
- **Summary of RMR Operations in August 2011**
  - **Spencer 5 available Aug 22 (Operating range 20-61 MW)**
  - **Spencer 4 available Aug 23 (Operating range 20-61 MW)**
  - **SR Bertron 2 available Aug 26 (Operating range 23-174 MW)**
  - **SR Bertron 1 was not available due to operational issues**

- **ERCOT RUC Operators commit units for capacity when no market solution exists**

- **For RUC-committed hours, ERCOT enters Output Schedule to hold RMR at Low Sustainable Limit and only dispatched higher if:**
  - **Real-time system prices at $3,000**
  - **Local congestion while online**

- **Summary of dispatch to date (as of Sept 12)**
  - **Aug 23 - Spencer 4/5**
  - **Aug 24 - Spencer 4/5**
  - **Aug 28 - Spencer 4/5 & SRBert2**
  - **Aug 29 - Spencer 4/5 & SRBert2**
  - **Aug 31 - Spencer 4/5 & SRBert2**

RMR Unit	Days RUC Commited	Total Hours RUC	Hours @ LSL	Hours above LSL	Hours when $3000
Spencer 4	5	26.6	18.0	8.6	4.8
Spencer 5	5	25.3	15.8	9.5	5.3
SRB Unit 2	3	14.3	10.1	4.2	0.4
TOTAL	5	66.2	43.9	22.3	10.5



Market Enhancements Under Consideration

- **Evaluating Non-Spinning Reserve Pricing Proposals**
  - ERCOT performed a back-cast analysis of the stakeholder pricing proposals
  - ERCOT will continue to work with the IMM and stakeholders to evaluate the impacts of the proposals
- **EILS Proposed Rule Enhancements**
  - Option to renew contract after deployment obligations are met early in a contract period
  - Enhancements to encourage additional participation
- **Evaluating feasibility of implementing Energy Storage Pilot**
- **Look-Ahead SCED functions framed for market consideration**
  - ERCOT will be working with stakeholders/IMM/PUC Staff to incorporate key design functions
    - Loads in SCED (integrate whitepaper concept currently at WMS)
    - A/S Co-Optimization
    - Dispatch of Energy Storage
    - Quick Start commitments and dispatch
    - Settlements
  - Develop Protocols and identify potential PUC rule changes