



Wholesale Market Operations Update

John Dumas

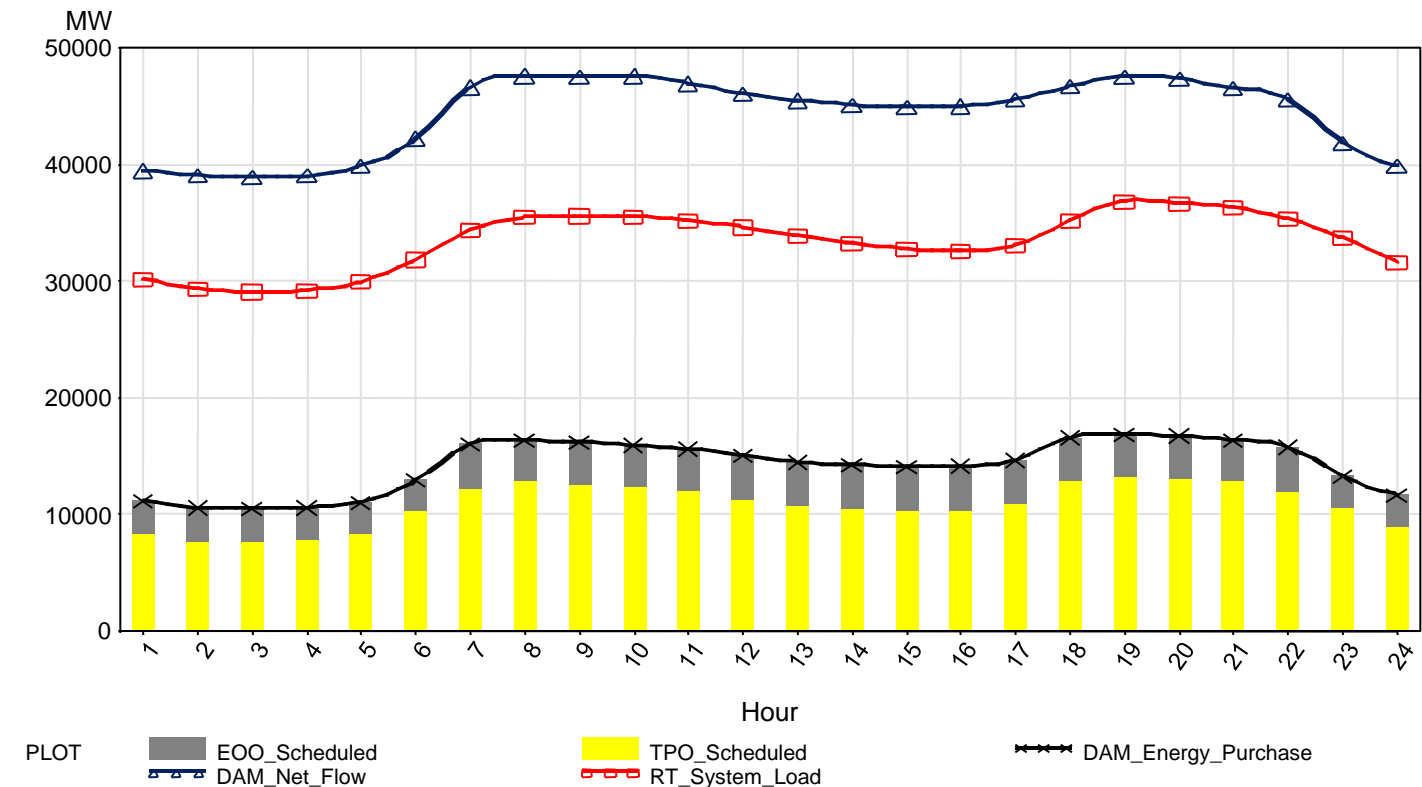
Director Wholesale Market Operations

Board of Directors Meeting

January 17, 2012

Day-Ahead Schedule

- On average the Day-Ahead Market (DAM) net transmission flow (defined below) was greater than the real-time system load for all 24 hours

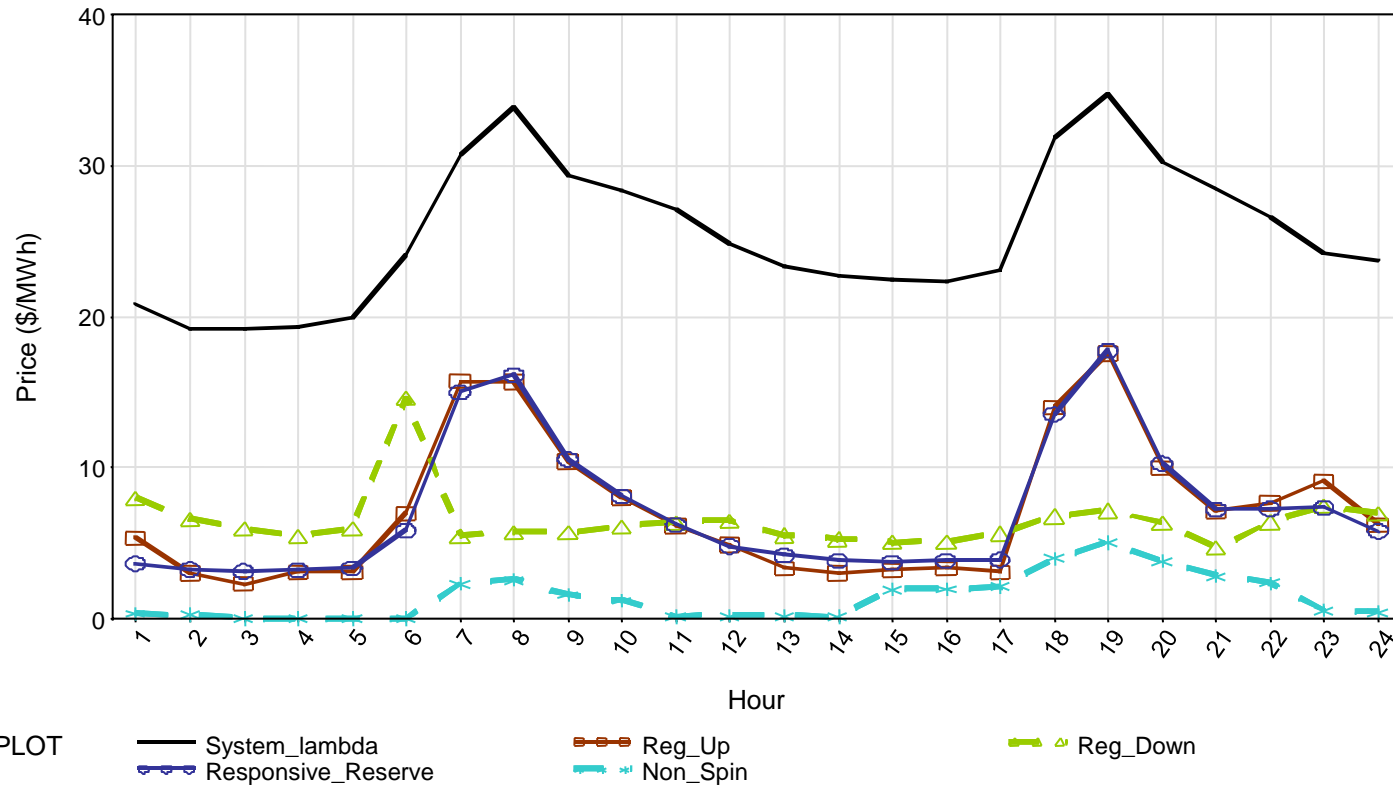


Average DAM Schedule

01DEC2011-31DEC2011

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 Non-Opt-In Entity Congestion Revenue Right Options carried forward to real-time.

Day-Ahead Electricity And Ancillary Service Hourly Average Prices

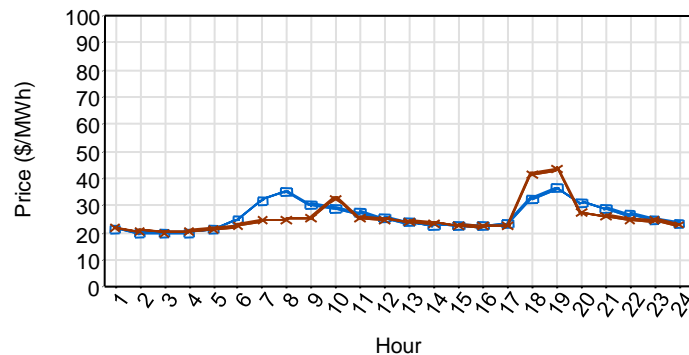
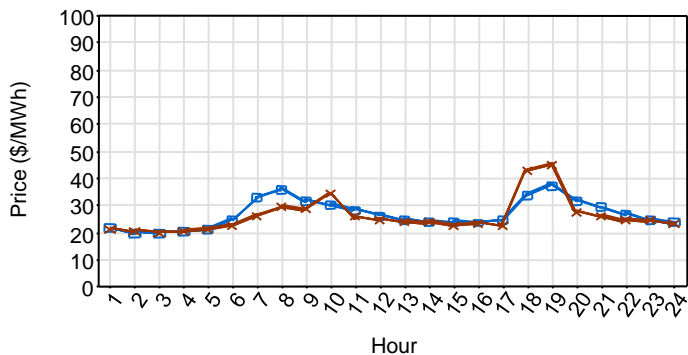
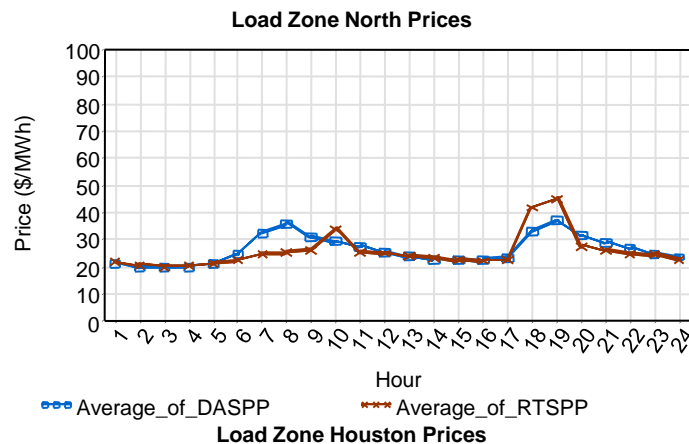
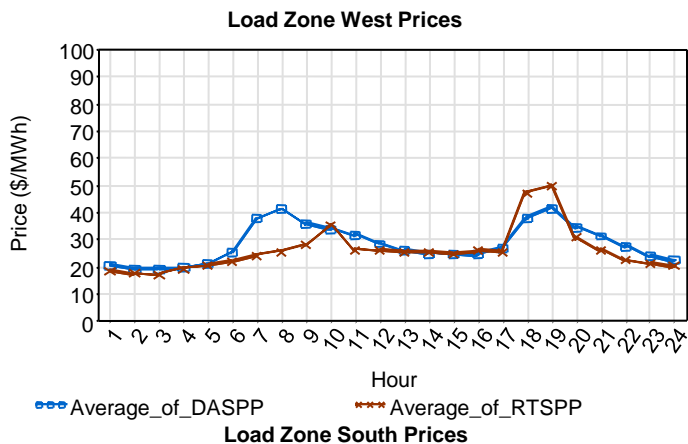


Day-Ahead Electricity and Ancillary Service Hourly Average Prices

01DEC2011-31DEC2011

- Both Energy and Ancillary Service (AS) prices followed the trend of load profile on average.
- In all hours, Responsive Reserve prices were close to Regulation Up prices.

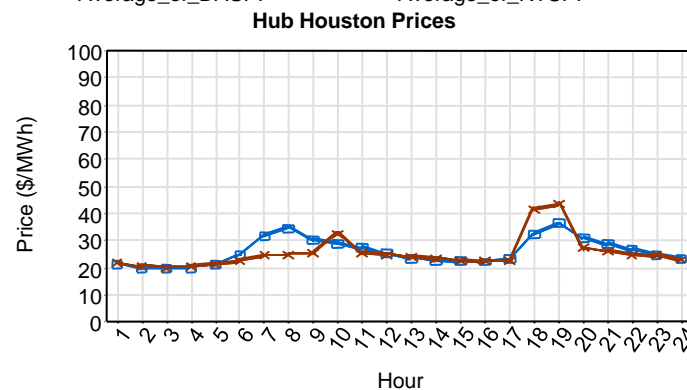
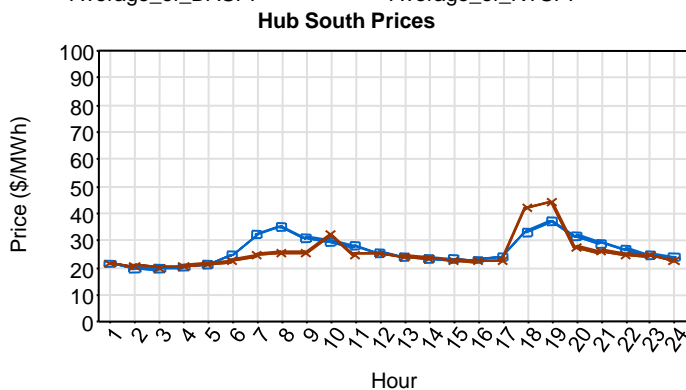
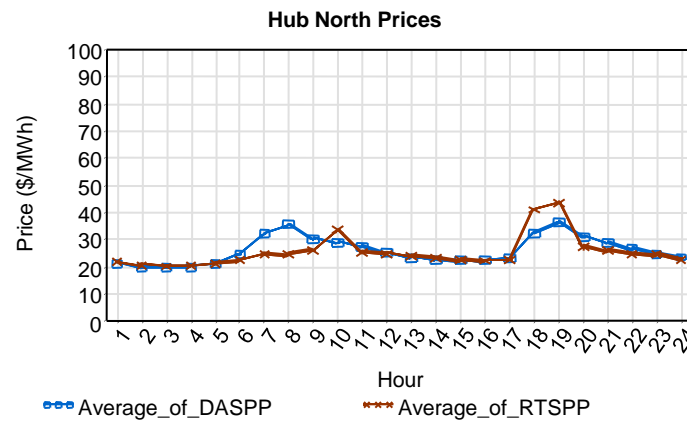
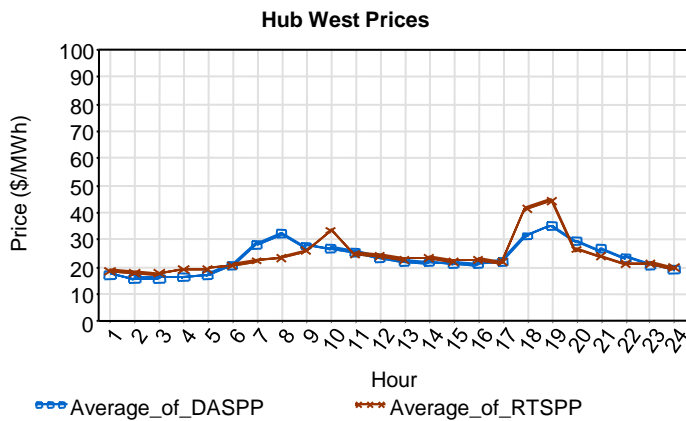
Day-Ahead Vs Real-Time Load Zone Settlement Point Price (SPP) (calculated as Hourly Average)



DA Vs RT Hourly Average SPP Load Zone Summary

01DEC2011-31DEC2011

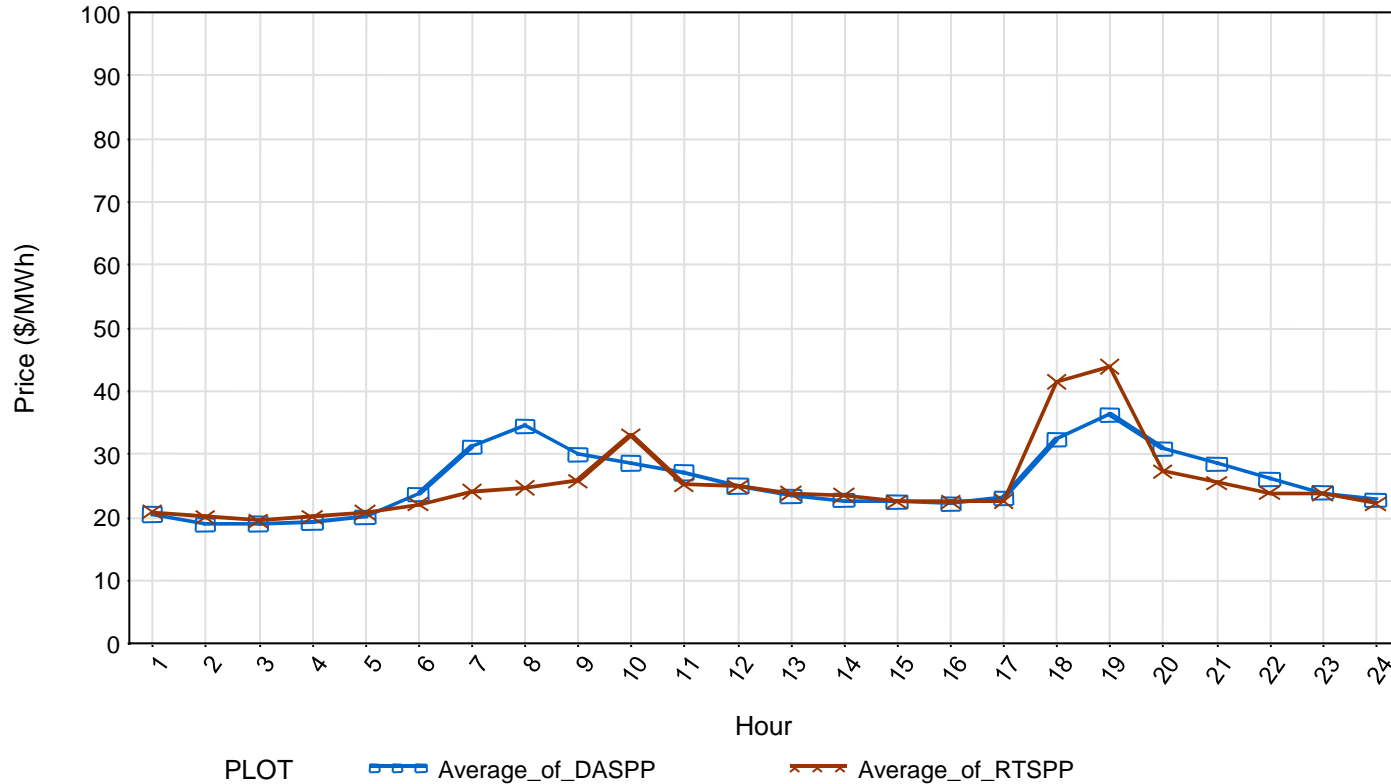
Day-Ahead vs Real-Time Trading Hub Settlement Point Price (SPP) (calculated as Hourly Average)



DA Vs RT Hourly Average SPP Hub Summary

01DEC2011-31DEC2011

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

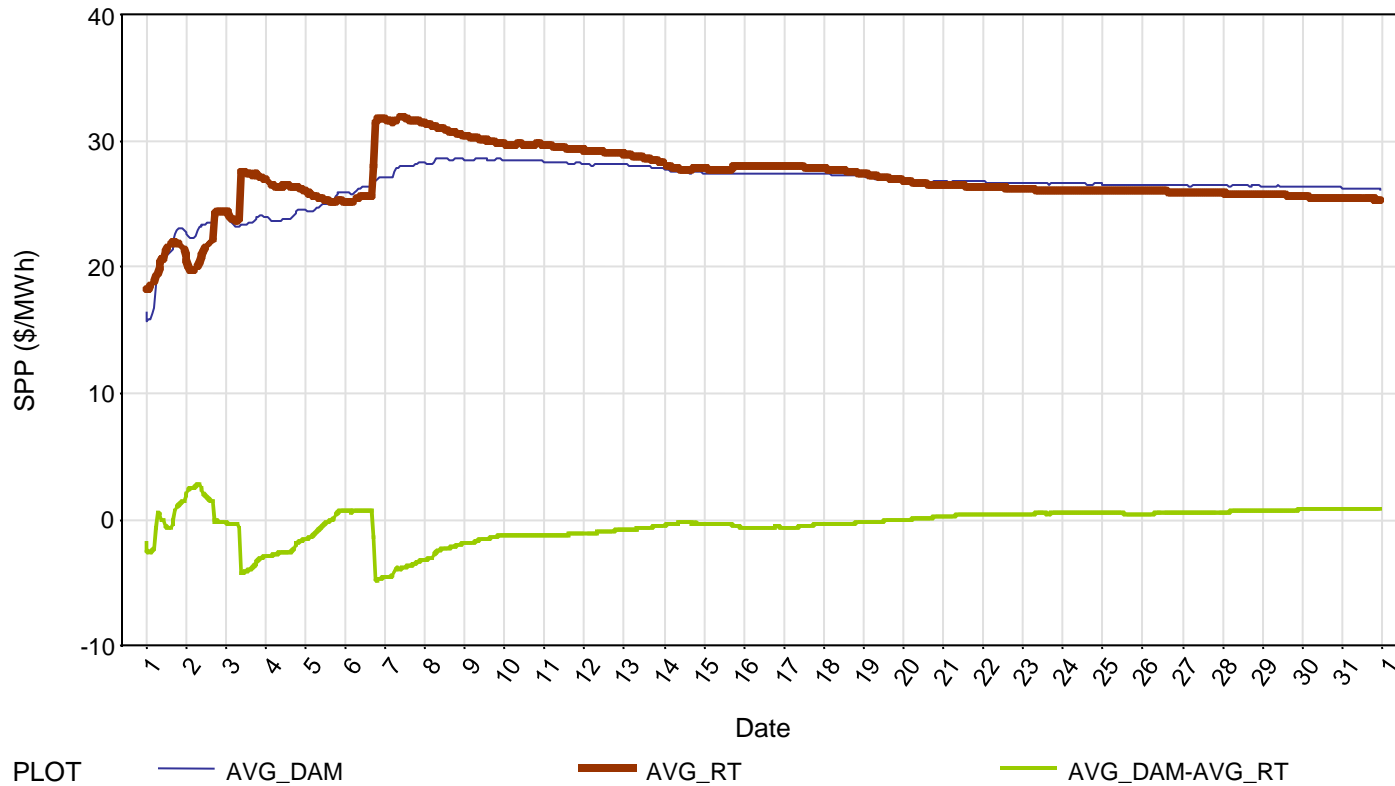


Day-Ahead Vs Real-Time Hourly Average SPP of Hub Hub-Average Prices

01DEC2011-31DEC2011

- Day Ahead prices were close to Real-Time prices, especially during off-peak hours.
- Day Ahead prices were on average higher than Real-Time prices for peak hours 7-9.
- Real-Time prices were on average higher than Day-Ahead prices for peak hours 18-19.

Day-Ahead Vs Real-Time Cumulative Average SPP

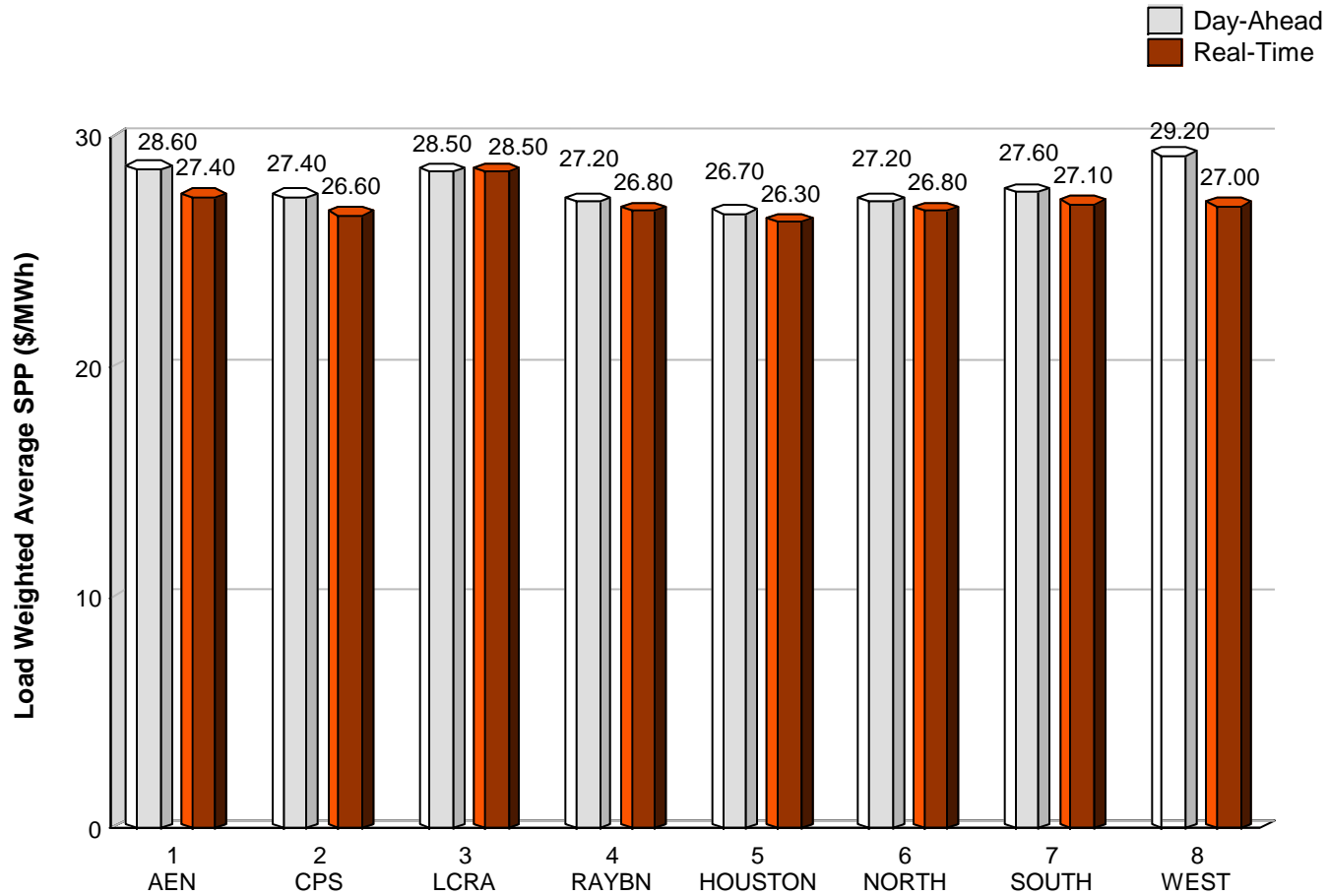


Day-Ahead Vs Real-Time Cumulative Average SPP for Simple Average Prices

01DEC2011-31DEC2011

- **The cumulative Real Time prices were typically more volatile than the Day-Ahead prices but the difference was decreasing over the month**

Load Weighted Average SPP



Load Weighted Average SPP for Each Zone

01DEC2011-31DEC2011

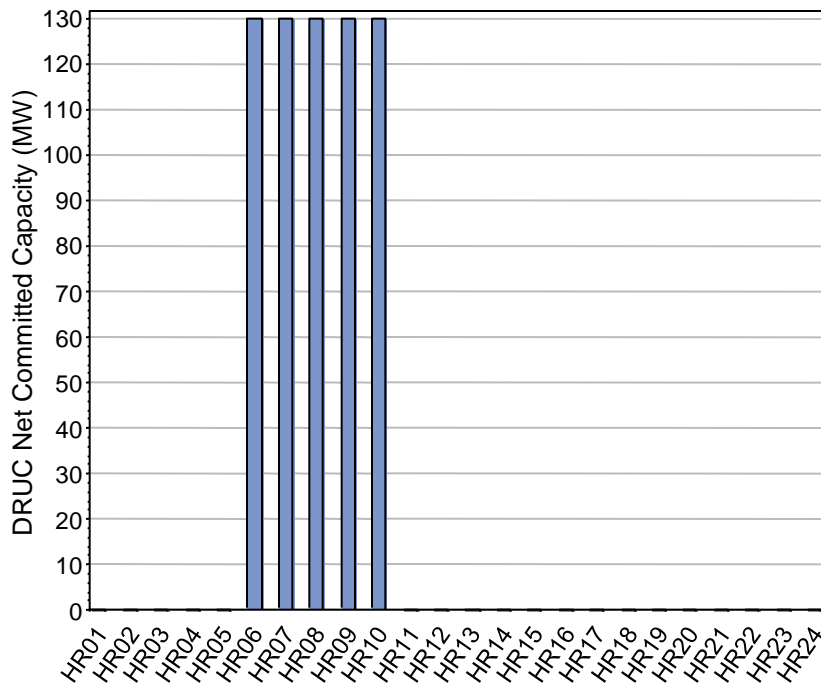
- The load weighted average Real-Time SPPs were lower than or equal to the load weighted average DAM SPPs in all 8 load zones.

Daily Reliability Unit Commitment (DRUC) Monthly Summary

31 Executions (0 Missed)

0 Published after 1600; 0 Published after 1800

Note: Colors Indicate Individual Resources

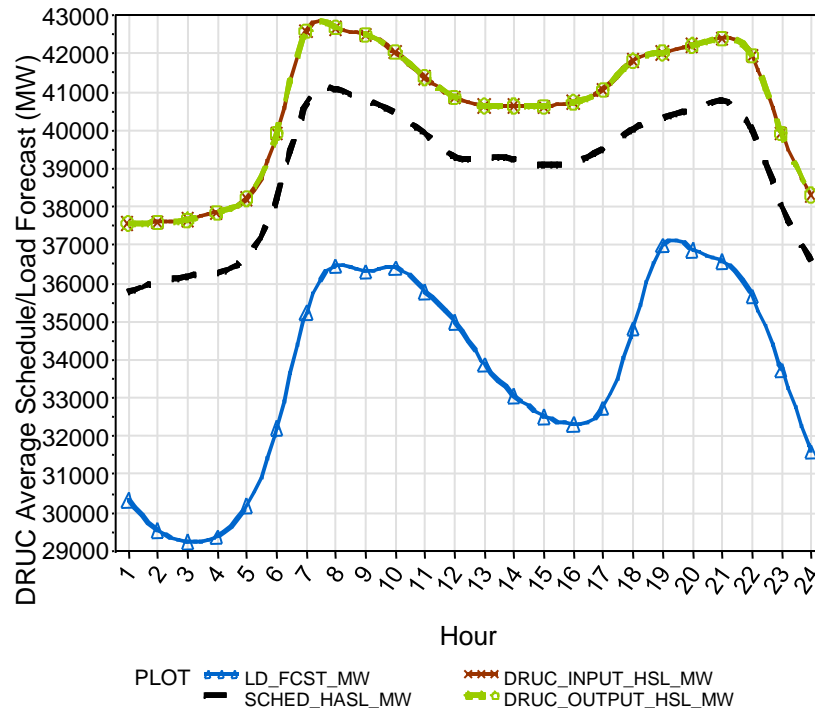


Net Committed Capacity in DRUC

01DEC2011-31DEC2011

7.40-Min Average Execution Time

650 MWh Committed (1 Resource for 5 Hours)

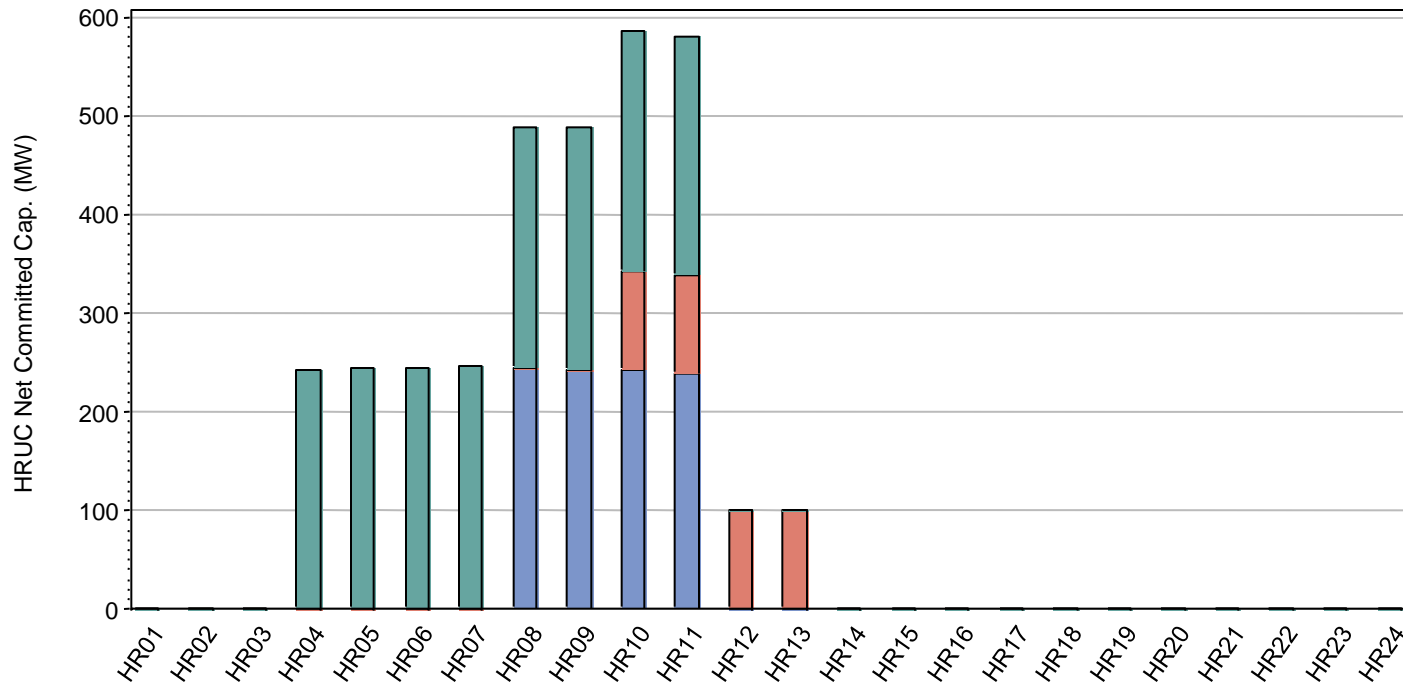


DRUC Average QSE Scheduled Capacity/Load Forecast

01DEC2011-31DEC2011

Hourly Reliability Unit Commitment (HRUC) Monthly Summary

743 Executions (1 Missed)
5.70-Min Average Execution Time
Note: Colors Indicate Individual Resources

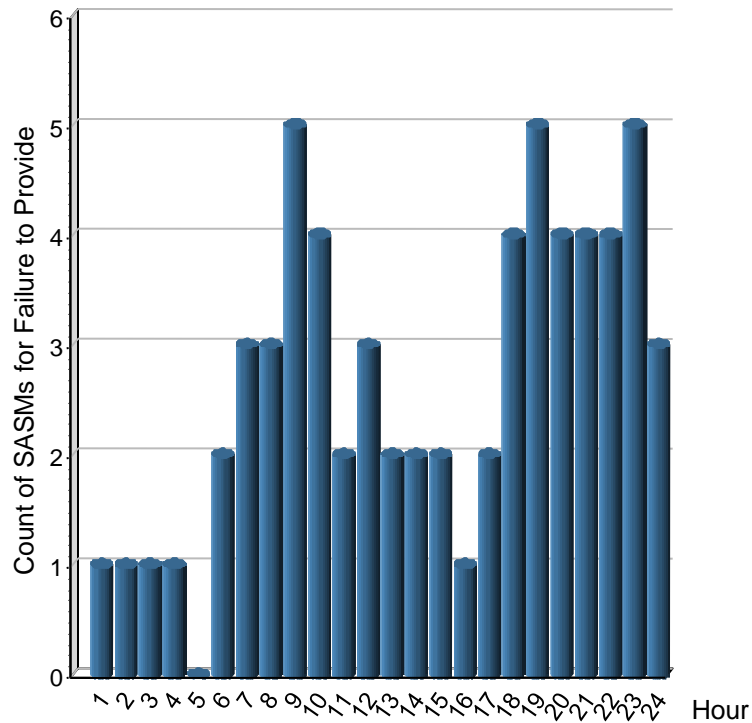


Net Committed Capacity in HRUC

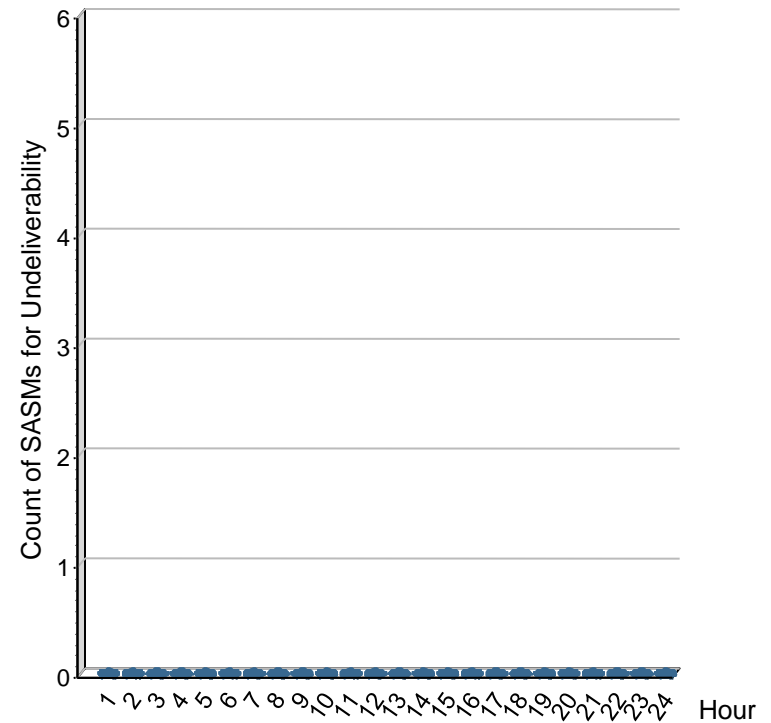
01DEC2011-31DEC2011

Supplemental Ancillary Service Market (SASM) Summary

**12 SASMs in 01DEC2011-31DEC2011
For AS Failure to Provide**



**0 SASMs in 01DEC2011-31DEC2011
For AS Undeliverability**



Non-Spinning Reserve Service Deployment

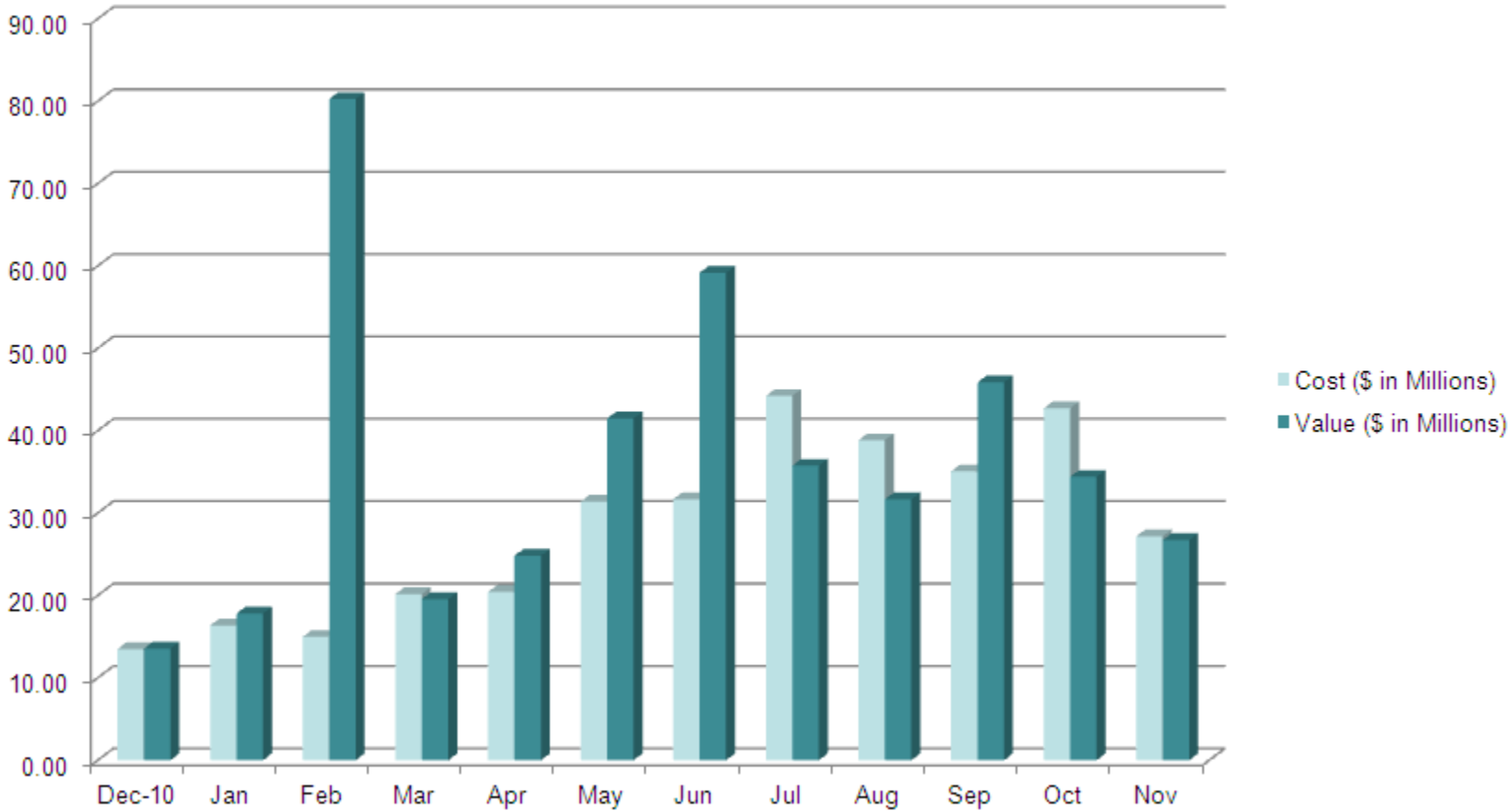
Deployment Start	Deployment End	Deployment Duration Hours	Max Deployment MW	Reason
12/2/2011 9:56	12/2/2011 20:59	11.04	810	Capacity
12/6/2011 19:32	12/6/2011 21:59	2.45	215	Congestion

Congestion Revenue Rights (CRR) Auction for Operating Month January 2012

- **141,171 Bids/Offers**
- **16,811 Auction Awards**
 - **143,480 MW**
 - **49,281 Peak WeekDay hours**
 - **48,891 Peak WeekEnd hours**
 - **45,308 Off-peak hours**
- **Total Auction/Allocation Revenue = \$ 11.410 Million**

Congestion Revenue Rights (CRR) Price Convergence

Update expected to include Dec 2011 values prior to Board based on Settlement values when available.



Graphic to compare purchase cost of CRRs in auctions to CRR revenue collected and paid out to CRR Account Holders

Market Enhancements Under Consideration

- **Evaluating market design improvement proposals**
 - 0- LSL (Low Sustained Limit) of RUC committed Resources and Off-Line Non-Spin Resources
 - Changing Power Balance penalty cost.
- **Evaluating feasibility of implementing Pilots for**
 - Fast response regulation service
 - 30 min Emergency Interruptible Load Service (EILS)
 - Active deployment of Load Resources participating in Non-Spin based on forecasted price
- **Demand Response**
 - Emergency Interruptible Load Service Proposed Rule Enhancements
 - Option to renew contract after deployment obligations are met early in a contract period
 - Adding Distributed Generation could potentially add an additional 50 – 100MW by summer
 - 30 minute EILS response could potentially add an additional 80 – 100 MW by summer
- **Look-Ahead SCED (Security-Constrained Economic Dispatch) functions framed for market consideration**
 - NPRR351 - Phase I of Implementation (indicative future prices and ramping) is scheduled to be implemented by this summer
 - Working with Market Participants on a task force to draft scope for future stages of Look-Ahead SCED