



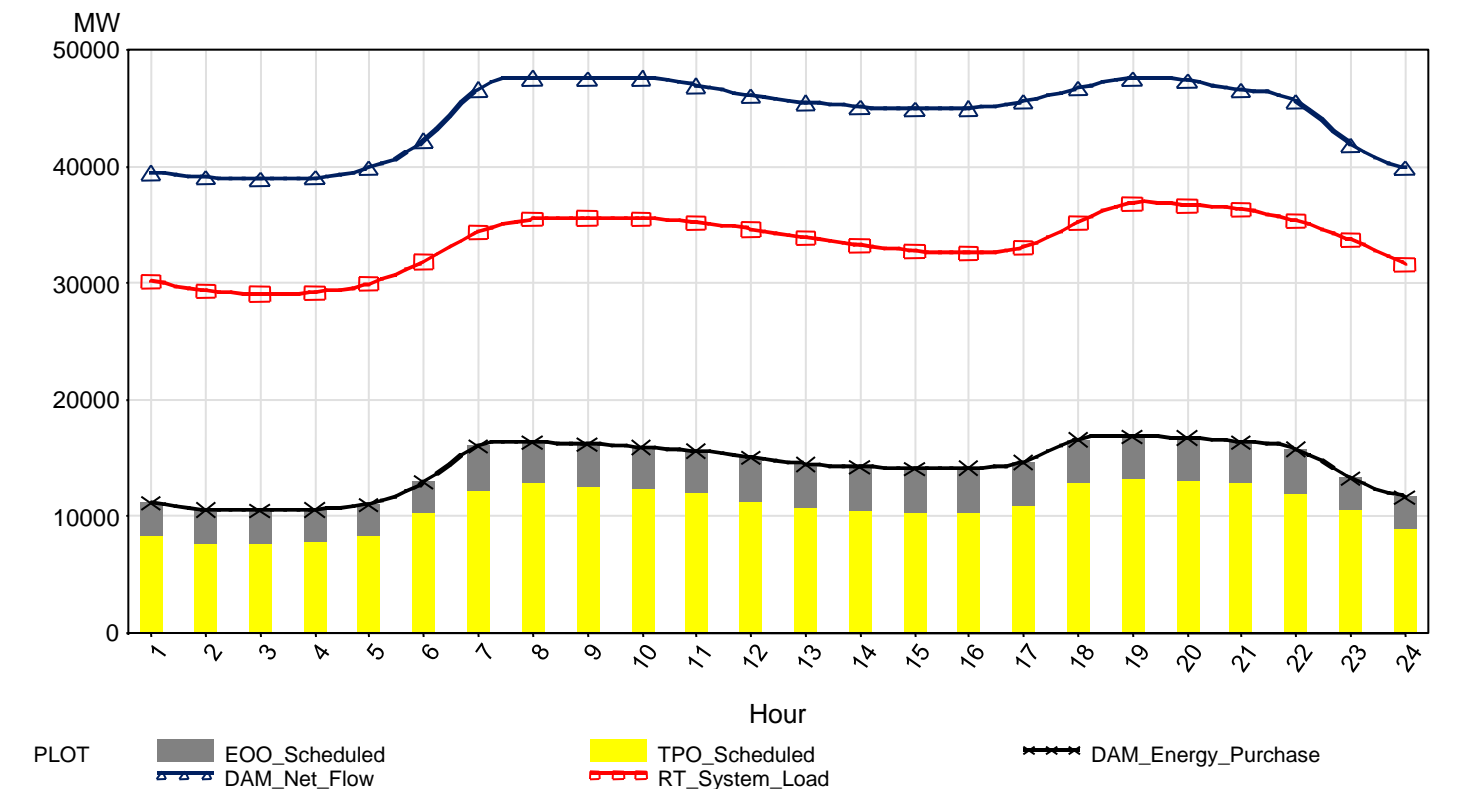
# Wholesale Market Operations Update Updated as of 01.12.2012

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

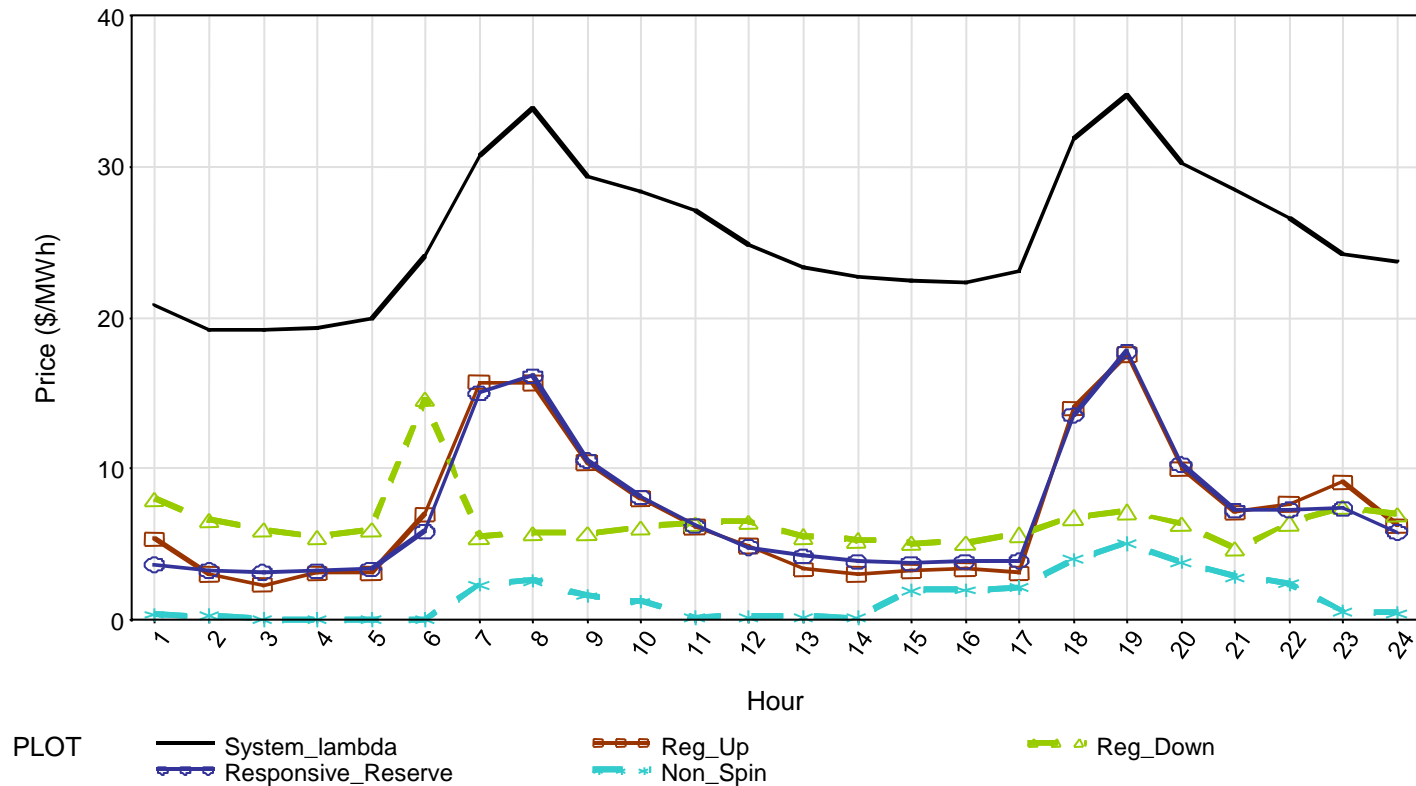


Average DAM Schedule

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

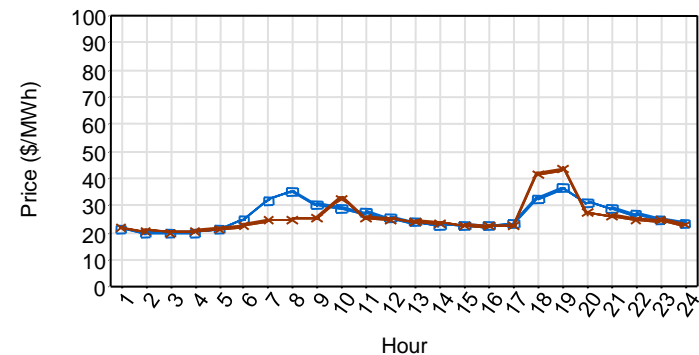
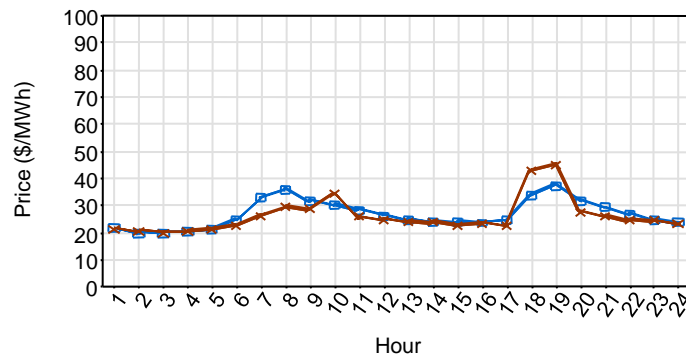
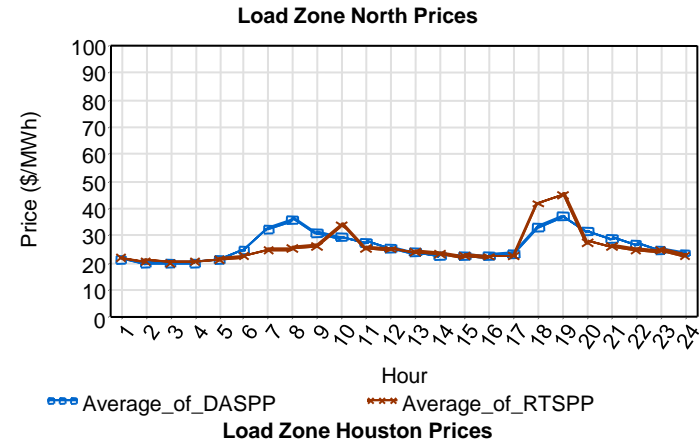
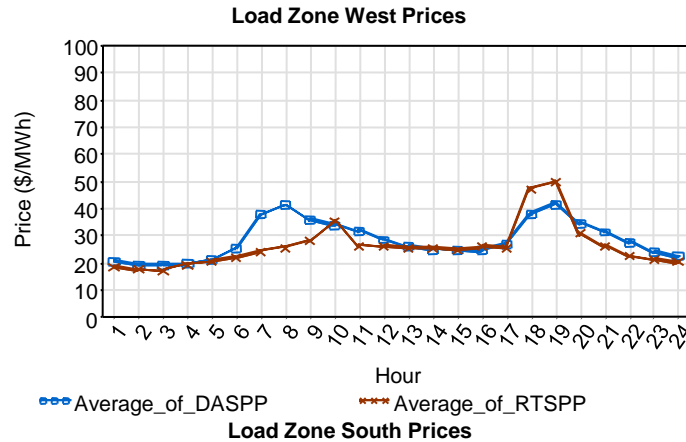


Day-Ahead Electricity and Ancillary Service Hourly Average Prices

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.

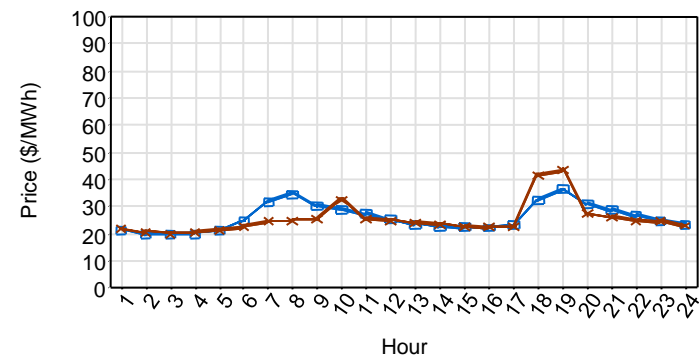
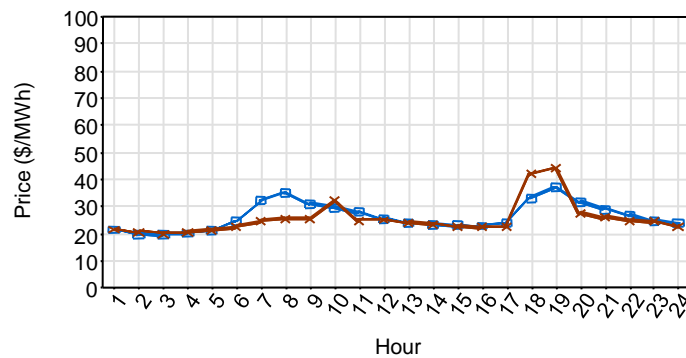
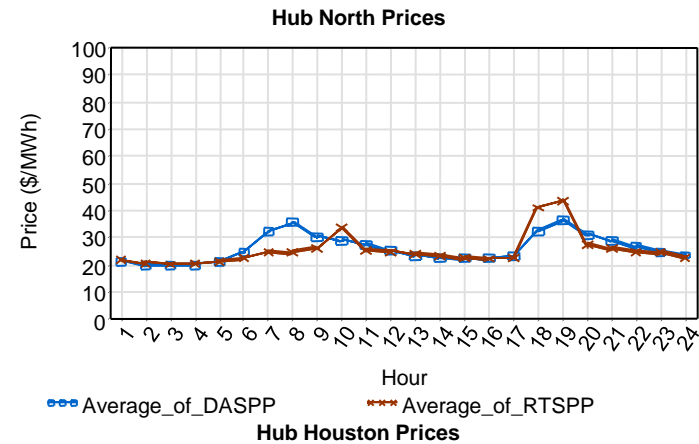
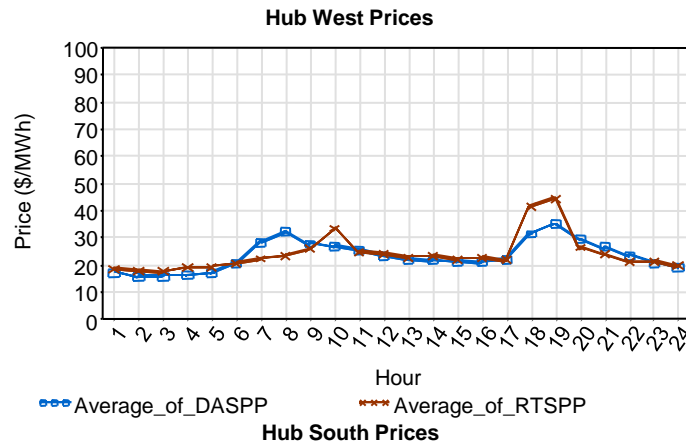
# Day-Ahead Vs Real-Time Load Zone Settlement Point Price (SPP) (calculated as Hourly Average)



DA Vs RT Hourly Average SPP Load Zone Summary

01DEC2011-31DEC2011

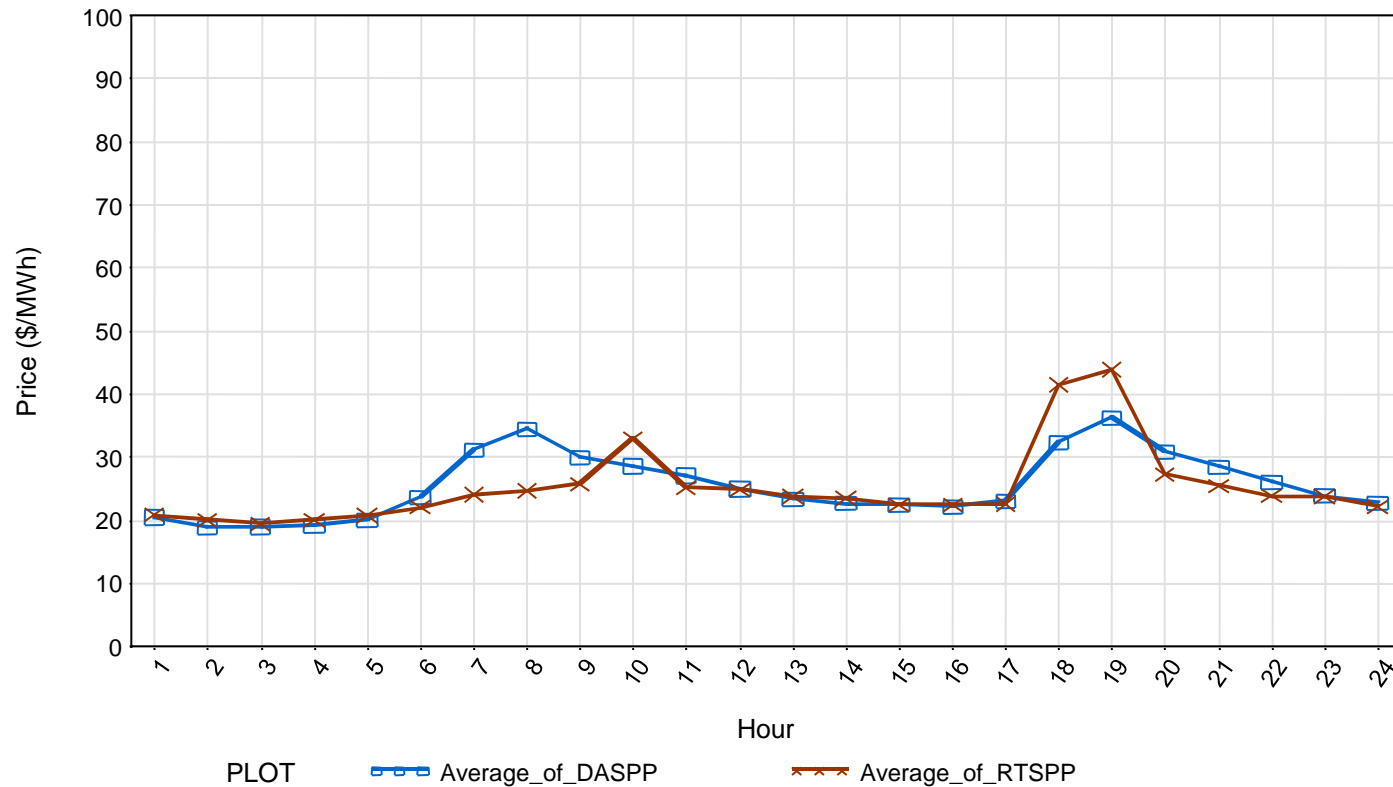
# Day-Ahead vs Real-Time Trading Hub Settlement Point Price (SPP) (calculated as Hourly Average)



DA Vs RT Hourly Average SPP Hub Summary

01DEC2011-31DEC2011

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

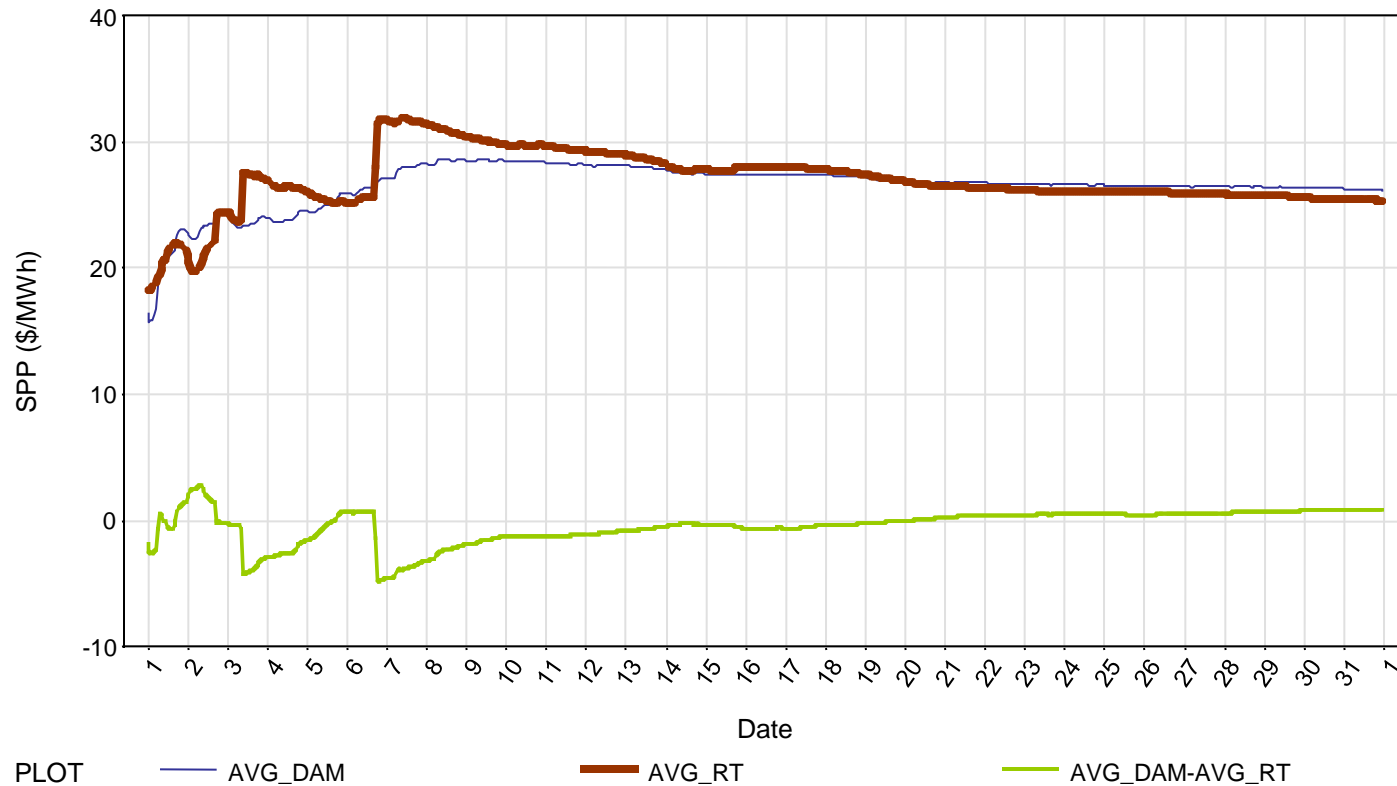


Day-Ahead Vs Real-Time Hourly Average SPP of Hub Hub-Average Prices

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

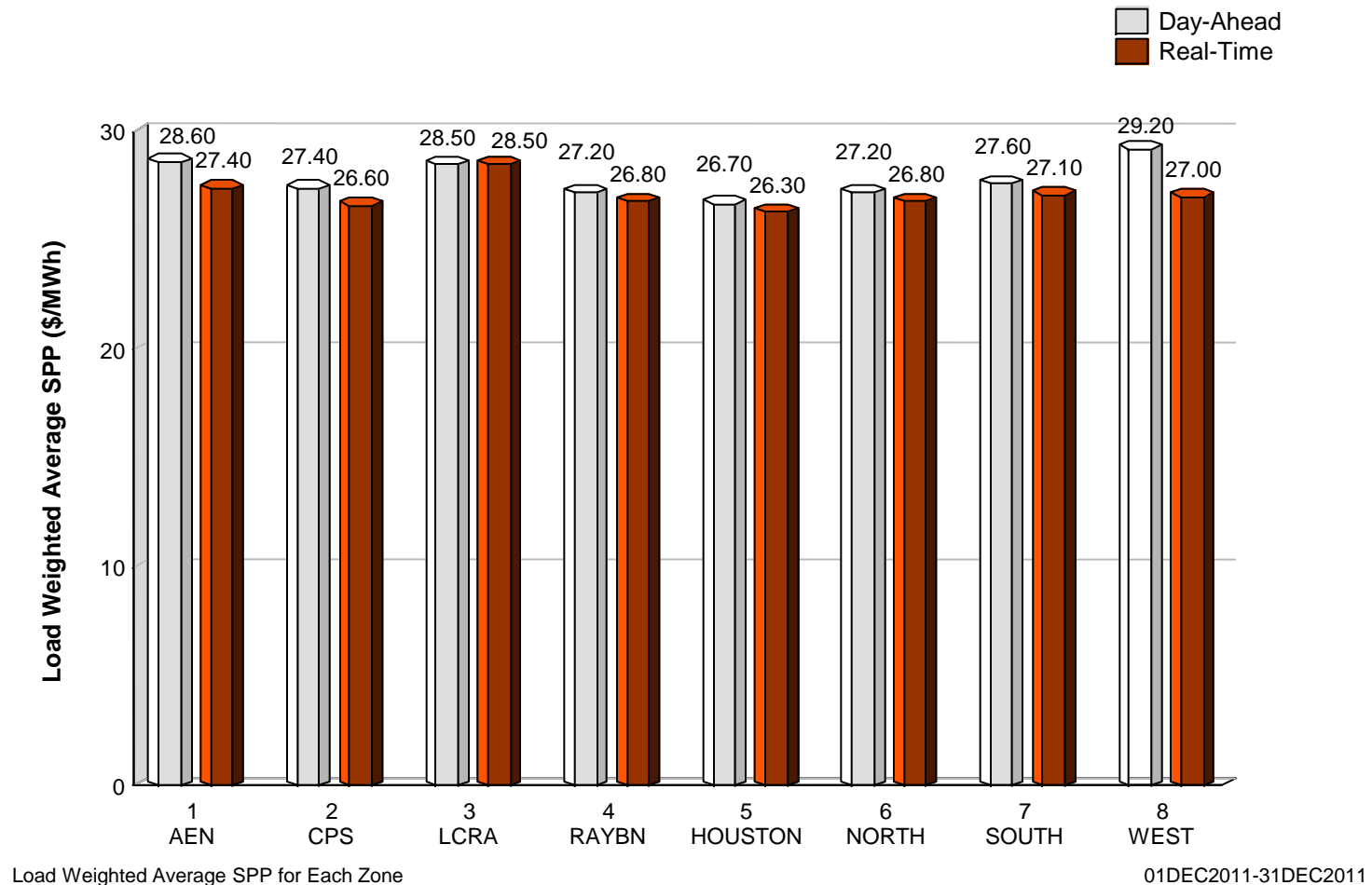


Day-Ahead Vs Real-Time Cumulative Average SPP for Simple Average Prices

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



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

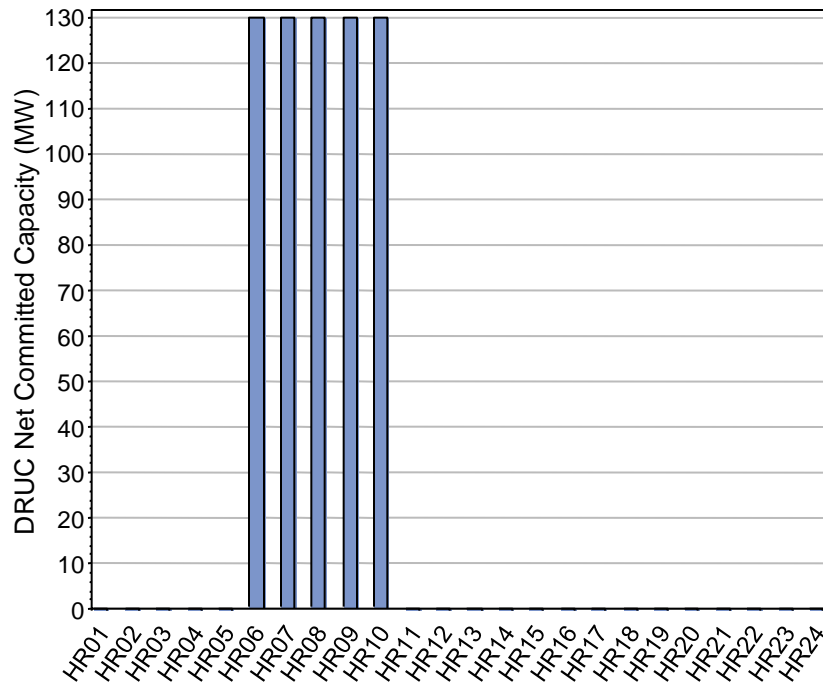


# Daily Reliability Unit Commitment (DRUC) Monthly Summary

**31 Executions (0 Missed)**

**0 Published after 1600; 0 Published after 1800**

Note: Colors Indicate Individual Resources

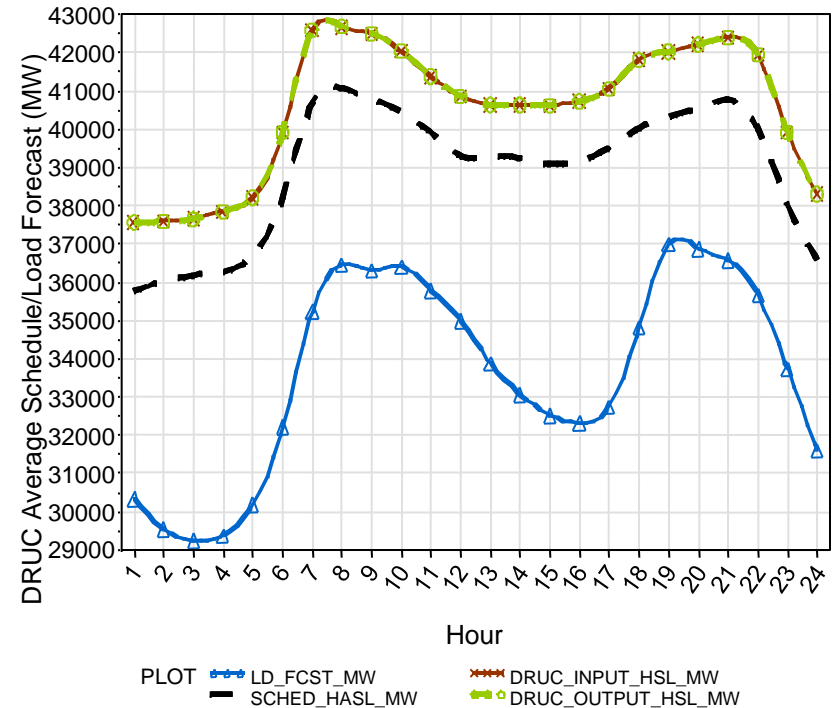


Net Committed Capacity in DRUC

01DEC2011-31DEC2011

**7.40-Min Average Execution Time**

**650 MWh Committed (1 Resource for 5 Hours)**



DRUC Average QSE Scheduled Capacity/Load Forecast

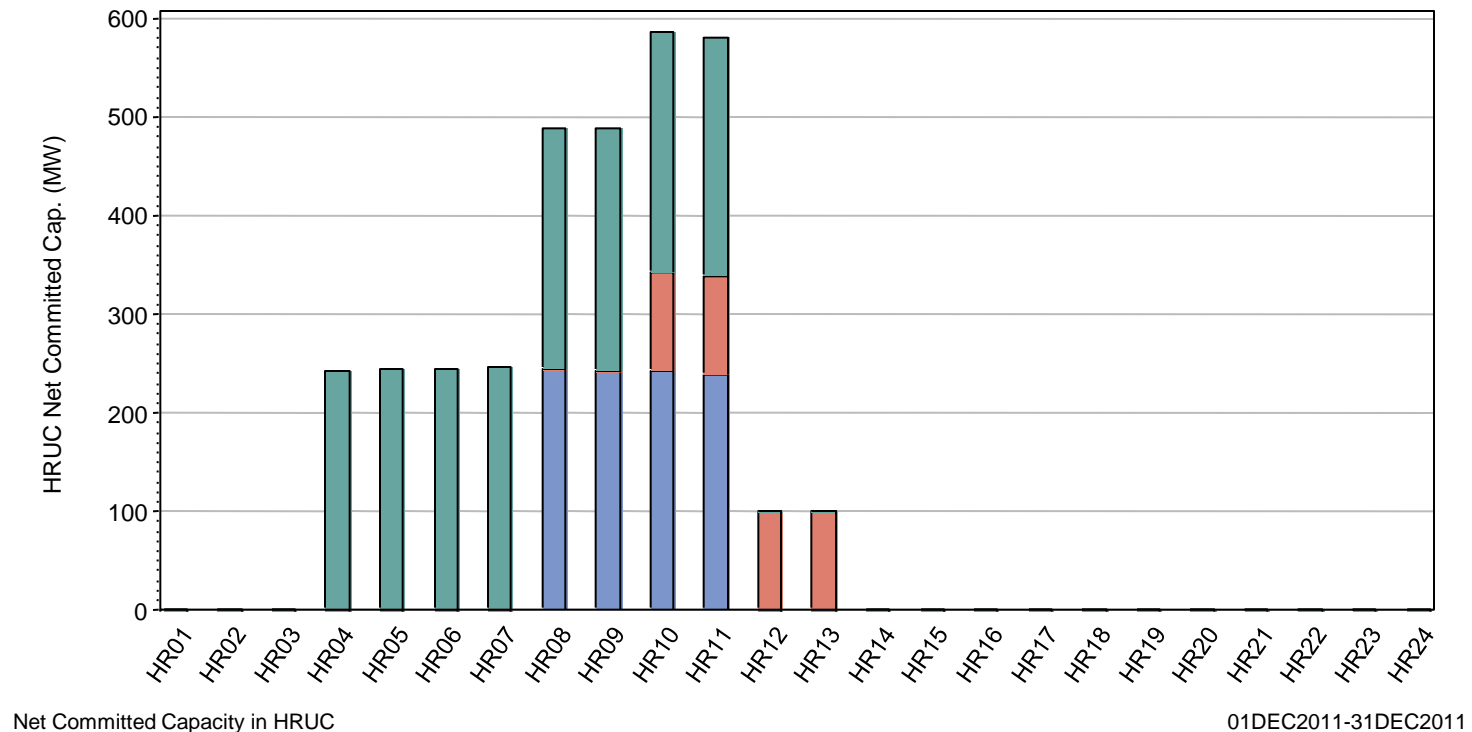
01DEC2011-31DEC2011

# Hourly Reliability Unit Commitment (HRUC) Monthly Summary

**743 Executions (1 Missed)**

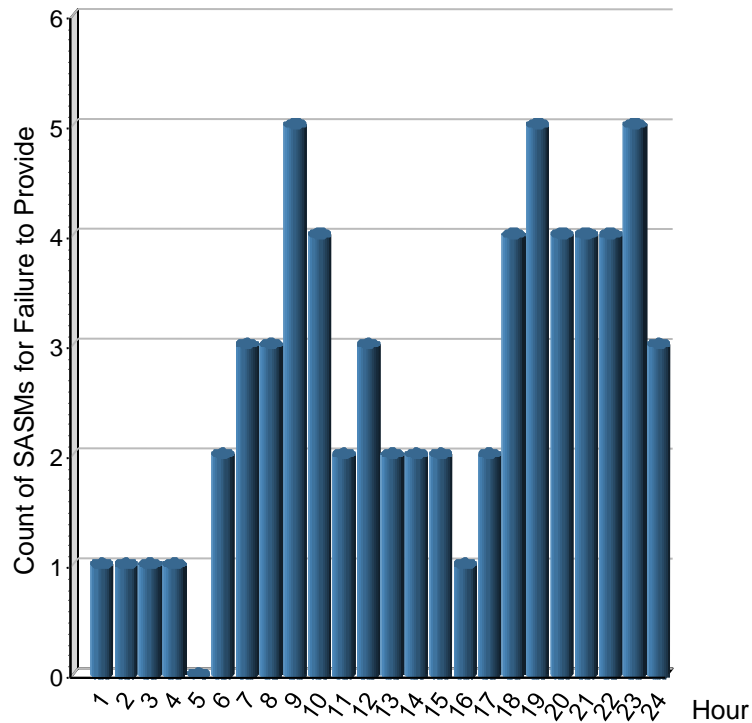
**5.70-Min Average Execution Time**

**Note: Colors Indicate Individual Resources**

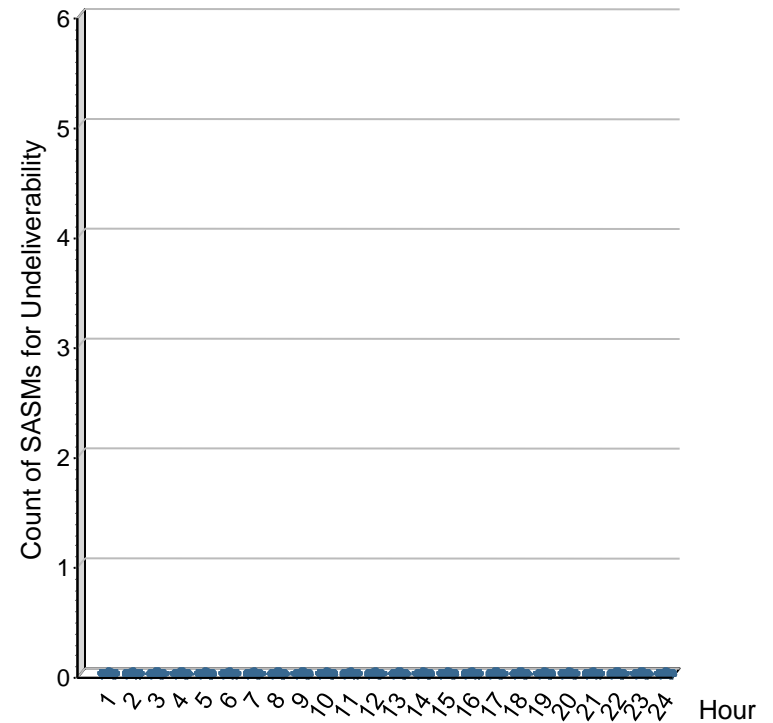


# Supplemental Ancillary Service Market (SASM) Summary

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



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



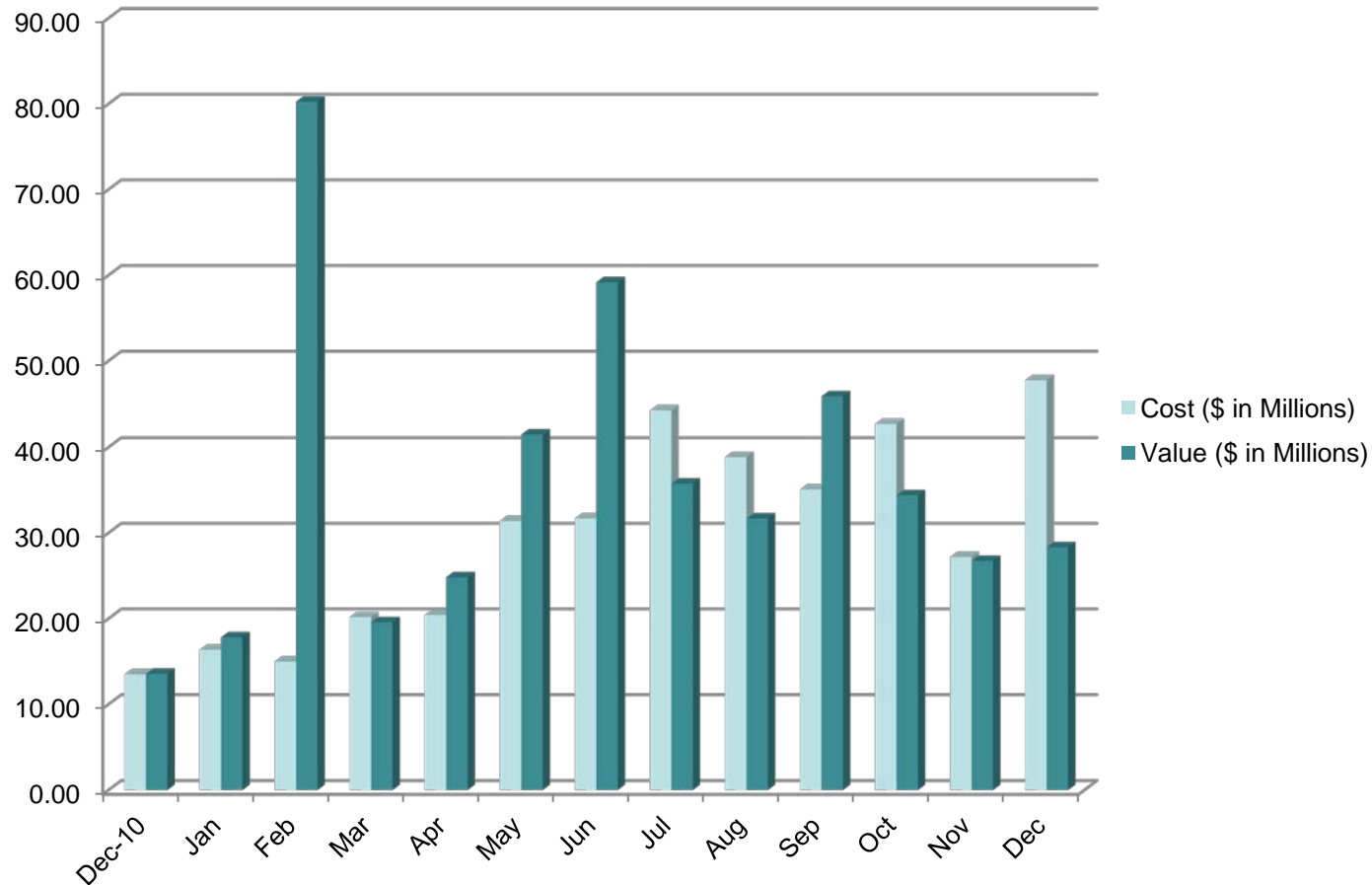
# Non-Spinning Reserve Service Deployment

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



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