



Wholesale Market Operations Update

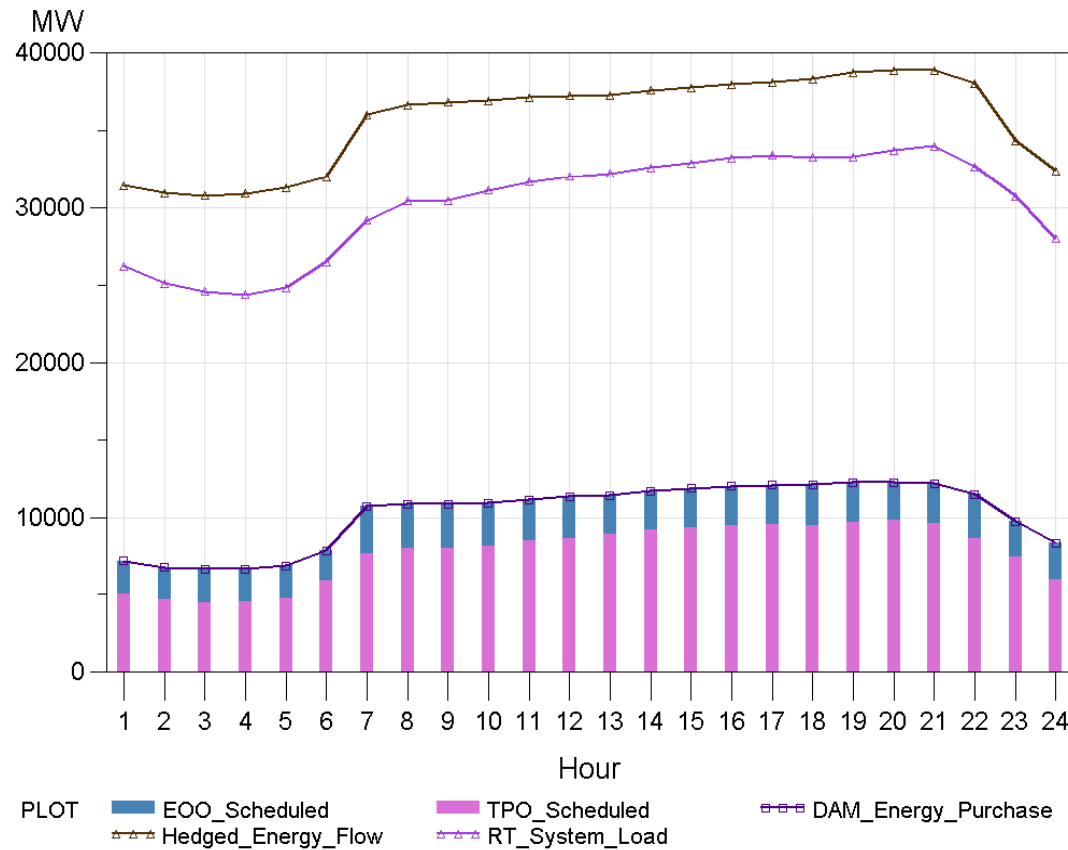
John Dumas
Director Wholesale Market Operations

ERCOT Board Meeting

Apr 19, 2011

Day-Ahead Schedule

March 2011



Average DAM Schedule

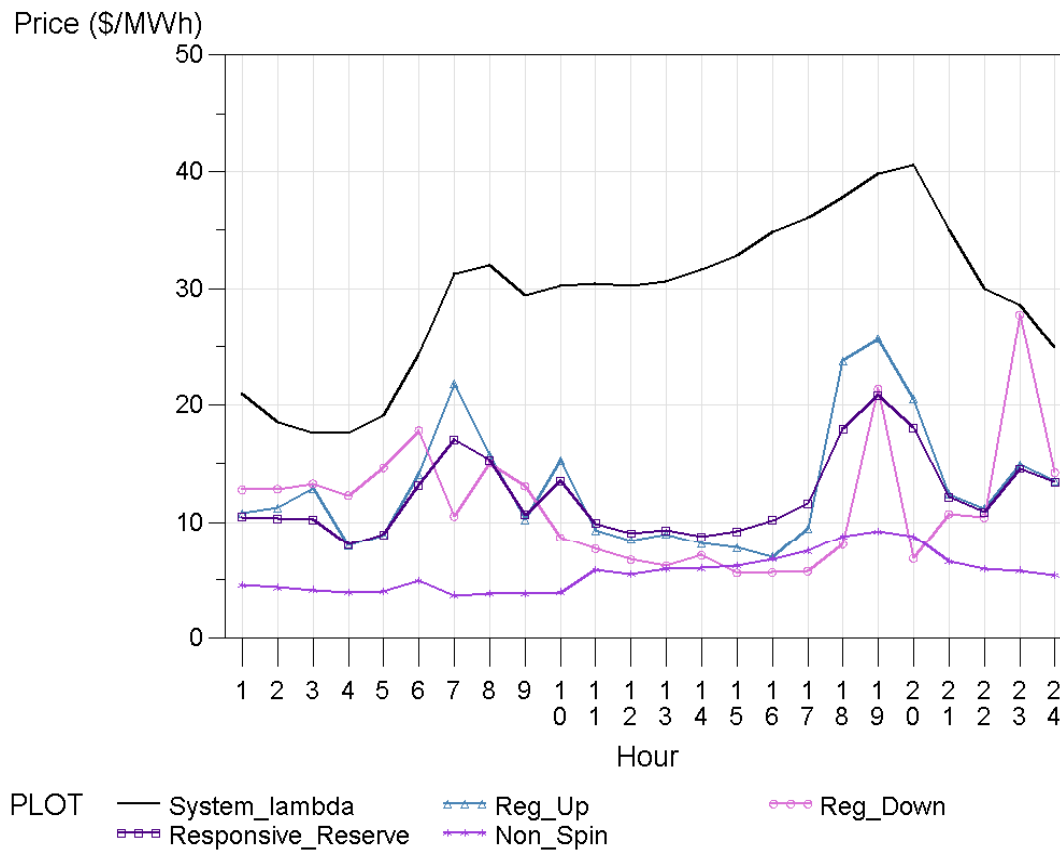
March 2011

- Hedged Energy exceeded the day ahead load forecast on average for all 24 hours
- Indicating a conservative approach

Acronym : TPO - Three Part Offer; EOO – Energy Only Offer;
Hedged Energy = Energy purchased /sold in Day-Ahead Market plus Point –to-Point Obligations and Options carried forward to real-time.

Day-Ahead Electricity And Ancillary Service Hourly Average Prices

March 2011

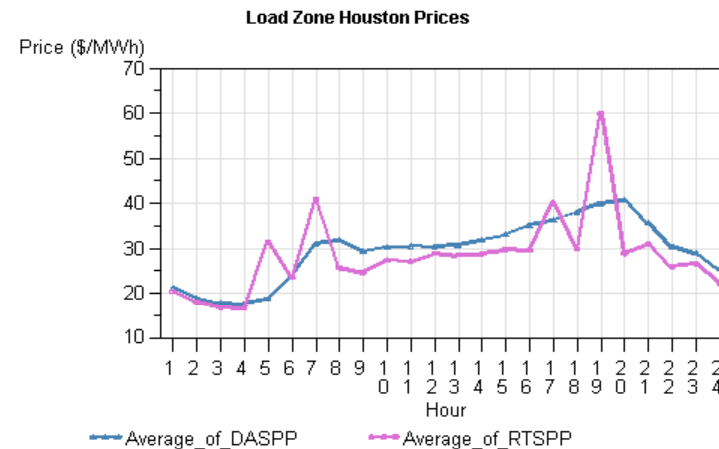
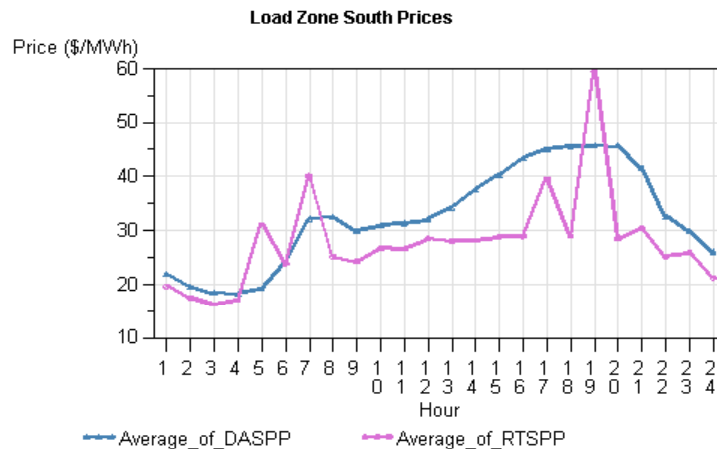
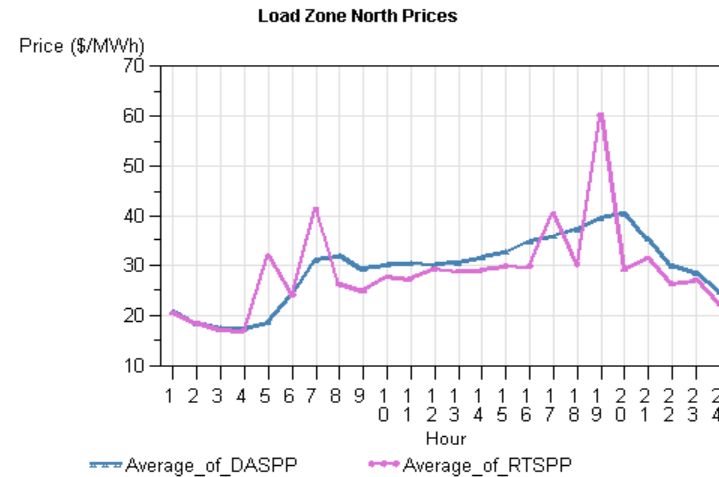
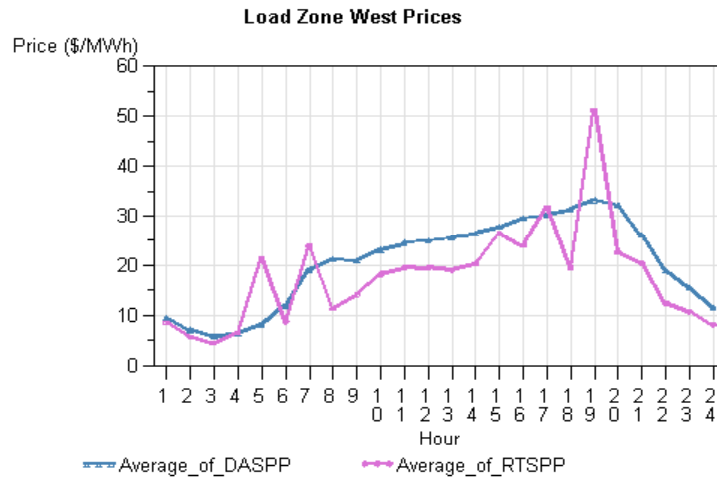


Day-Ahead Electricity and Ancillary Service Hourly Average Prices

March 2011

- Both Energy and AS prices followed the trend of load profile on average.

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

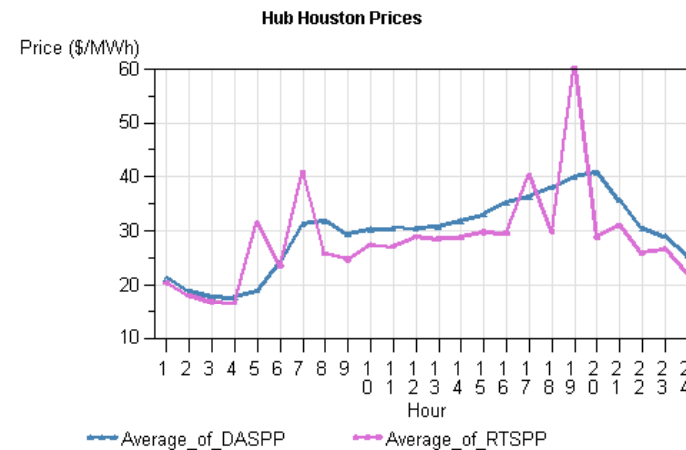
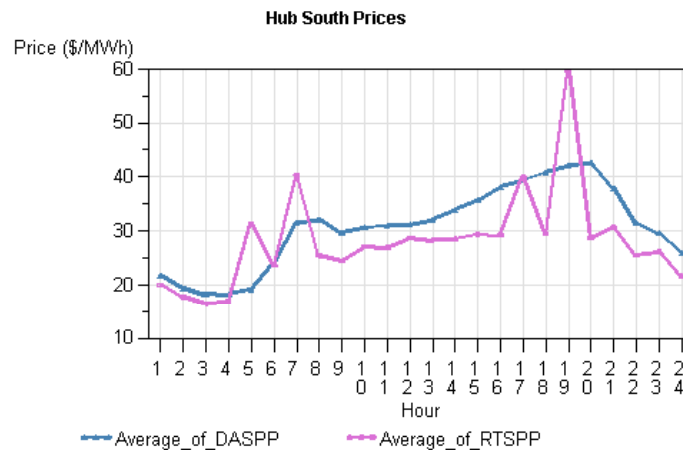
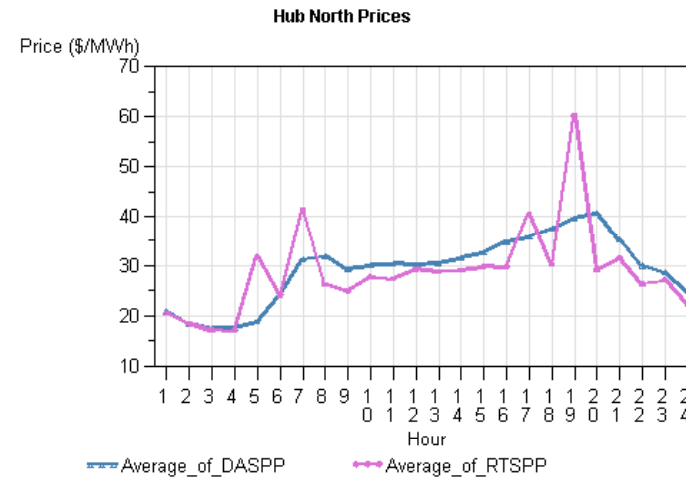
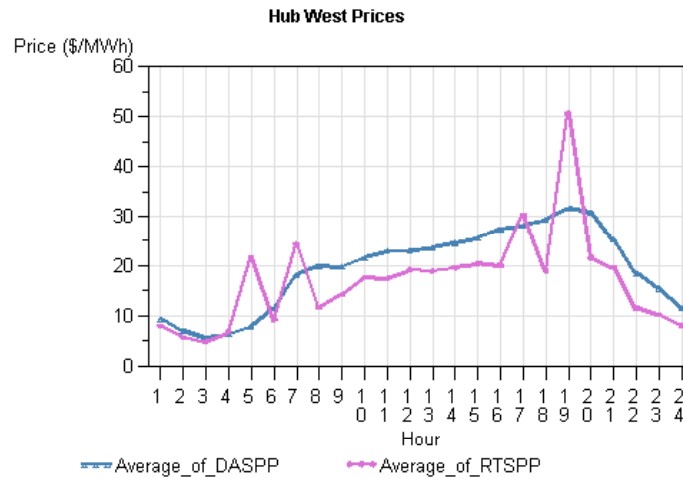


Day-Ahead Market Price Vs Real-Time Price Hourly Average SPP

March 2011

- SPPs in all four zones were very close, with SPPs in West Load Zone slightly lower and SPPs in South Load Zone slightly higher, indicating another mild month for load.

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

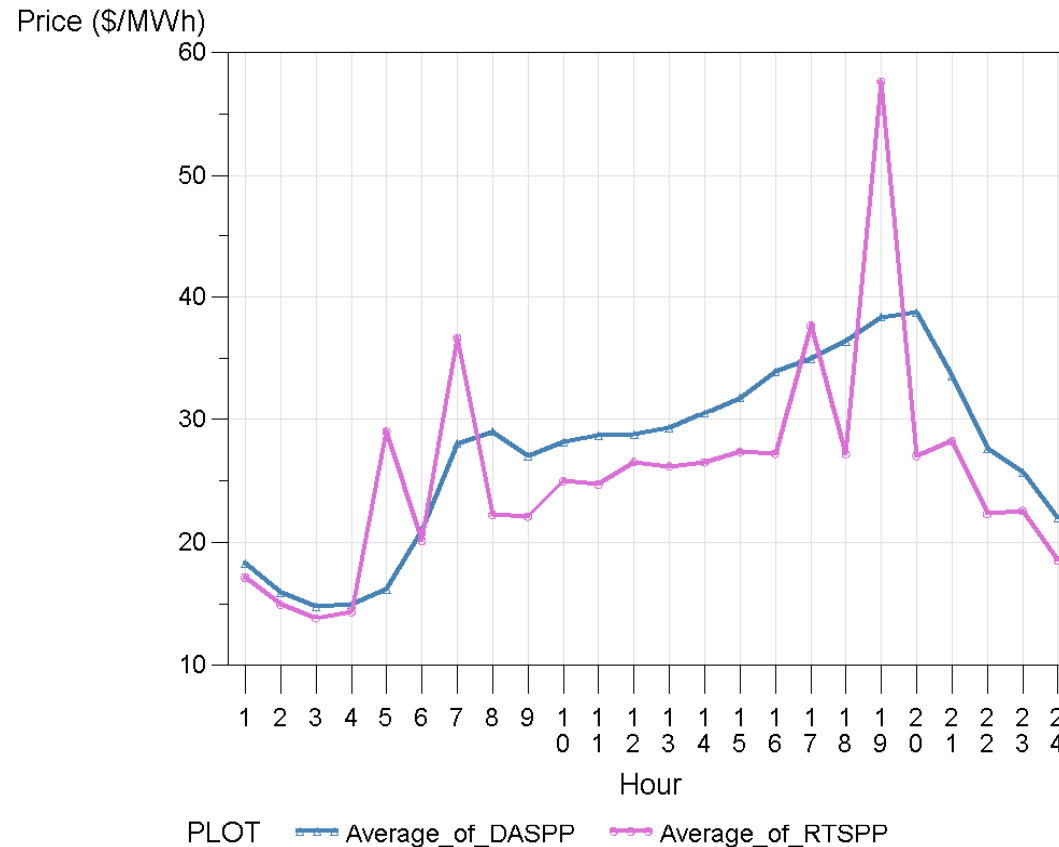


Day-Ahead Market Price Vs Real-Time Price Hourly Average HUB SPP

Hub Summary During March 2011

- HUB SPPs in all four hubs were very close, with SPPs in Hub West slightly lower

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

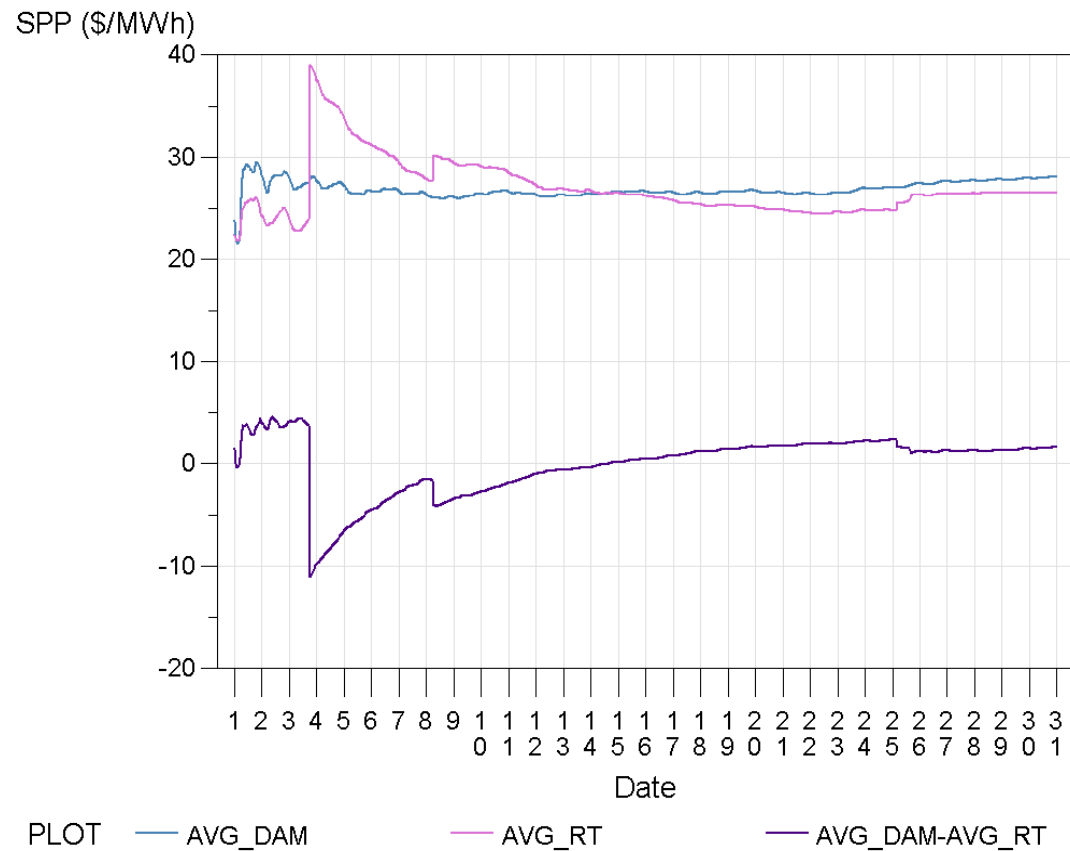


Day-Ahead Market Price Vs Real-Time Price Hourly Hub Average SPP

Hub Hub-Average Prices During March 2011

- Day Ahead prices follow the hourly load profile more closely than real-time prices
- Real-Time prices are dependent on real-time ramp rate capability

Day-Ahead Vs Real-Time Cumulative Average SPP

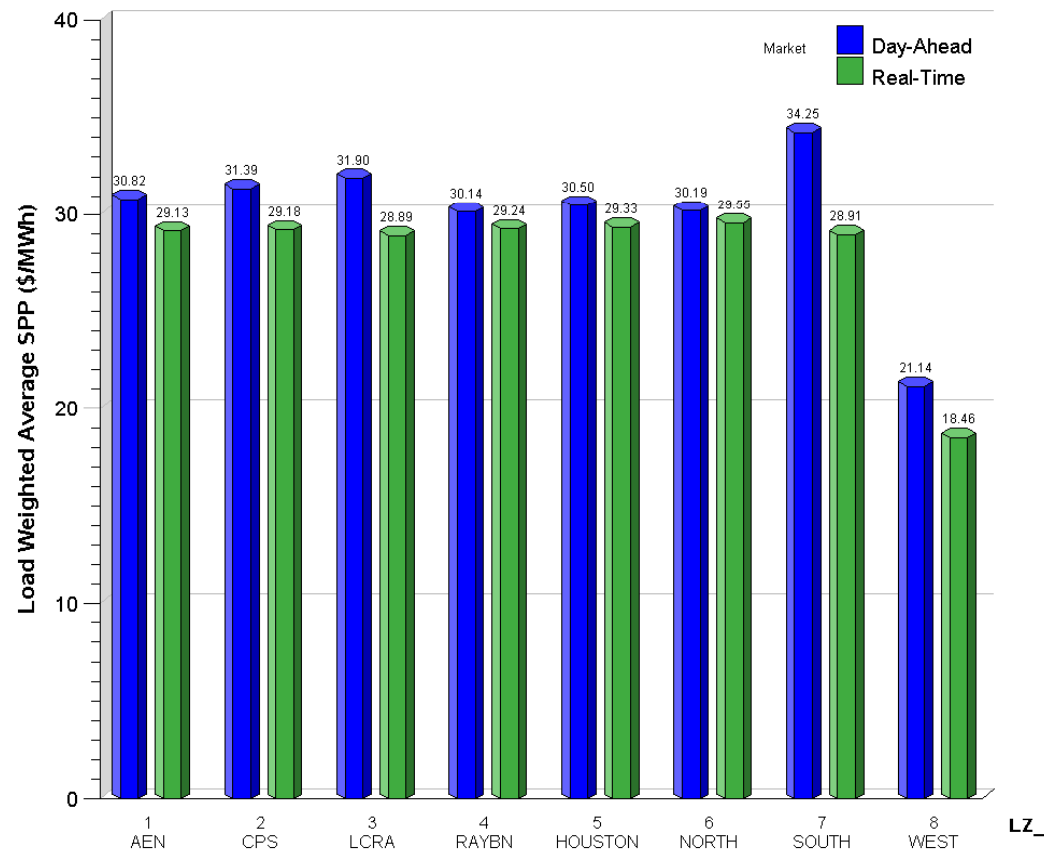


Day-Ahead Market Price Vs Real-Time Price Cumulative Average SPP

Simple Average Prices During March 2011

- An under generation situation on March 3rd caused the cumulative average SPP spike in early March.

Load Weighted Average SPP



Load Weighted Average SPP for Each Zone

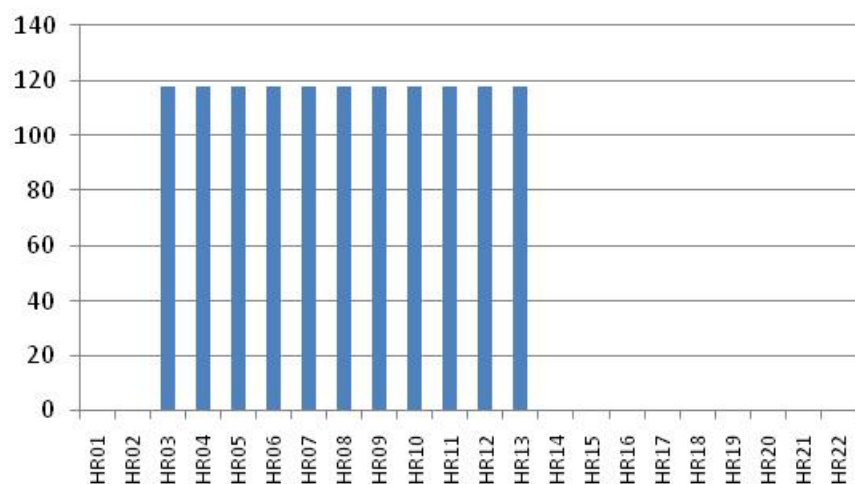
March 2011

- The load weighted average RT SPPs were slightly lower than the load weighted average DAM SPPs, which indicates a conservative approach.

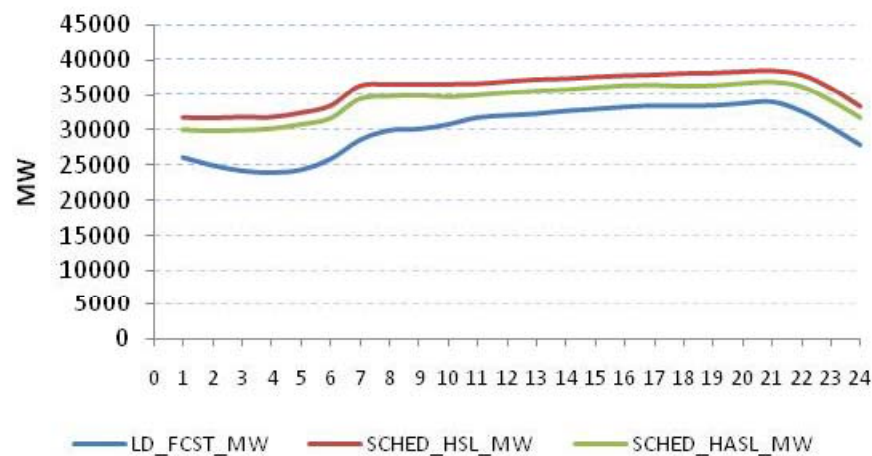
DRUC

- **31 executions (none missed, 2 published after 1600; 0 published after 1800)**
- **7.5 min average execution time**
- **Resource commit/de-commit**
 - 1298 MWh committed (1 resource for 11 hours)
 - no DRUC de-commitment

Net committed capacity in DRUC (Mar 2011)

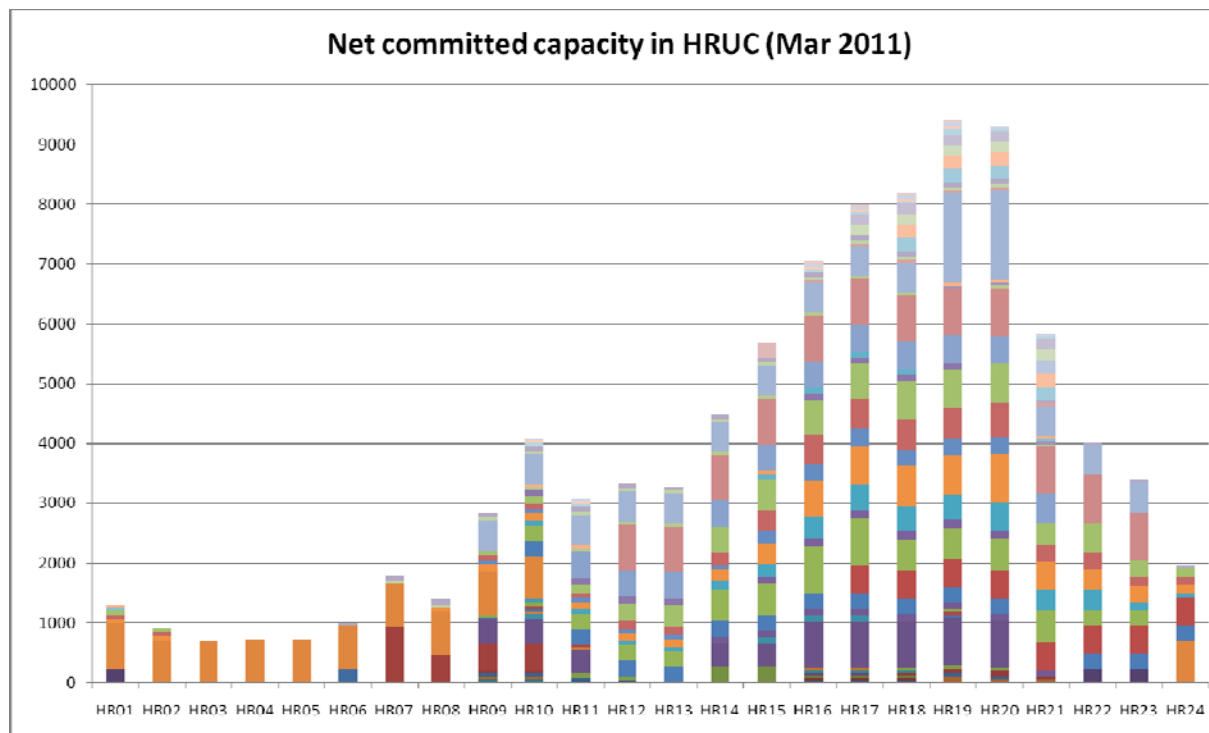


DRUC Average QSE scheduled capacity/load forecast (Mar 2011)



HRUC

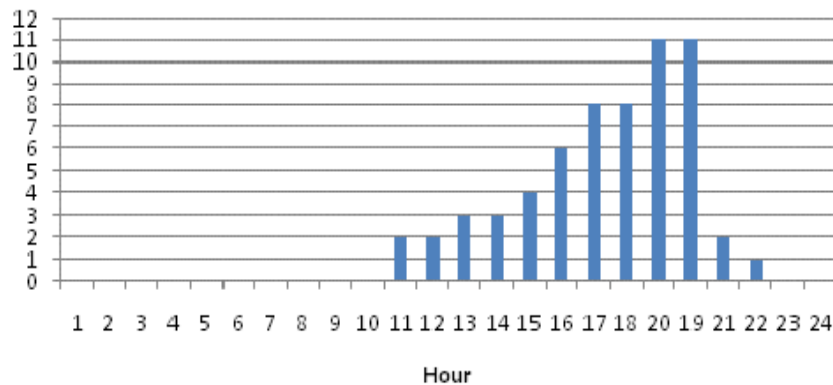
- **741 executions (3 missed)**
- **9.3 min average execution time**
- **Resource commit/decommit**
 - no HRUC de-commitment



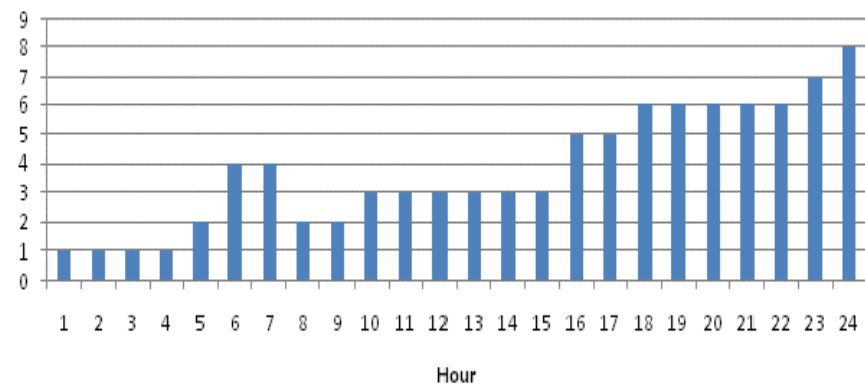
Supplemental Ancillary Service Market (SASM)

- 24 SASMs were run in March, 2011
 - 13 for undeliverable AS
 - 11 for AS failure to provide

Count of SASMs for Undeliverability
by Hour in Mar 2011



Count of SASMs for Failure to Provide by Hour
in Mar 2011



CRR Auction for Operating Month March 2011

- **158,620 Bids/Offers**
- **18,287 Auction Awards**
 - **339,279.3 MW**
 - **119,122.4 Peak WD**
 - **112,436.4 Peak WE**
 - **107,720.5 Off-peak**
- **Total Auction/Allocation Revenue = \$ 20.2M**

CRR Auction for Operating Month April 2011

- **151,891 Bids/Offers**
- **17,850 Auction Awards**
 - **383,194.9 MW**
 - **132,408.5 Peak WD**
 - **124,329.8 Peak WE**
 - **126,456.6 Off-peak**
- **Total Auction/Allocation Revenue = \$ 20.4M**

CRR Auction for Operating Month May 2011

- **147,008 Bids/Offers**
- **19,911 Auction Awards**
 - **422,149.2 MW**
 - **158,425.2 Peak WD**
 - **130,416.7 Peak WE**
 - **133,306.7 Off-peak**
- **Total Auction/Allocation Revenue = \$ 31.4M**

CRR Price Convergence

	March 2011	February 2011	January 2011
Net Amount Paid for CRRs (Cost)	\$20.2M	\$15.0M	\$16.4M
Net Amount Paid to Account Holders for TCRs/CRRs (Value)	\$19.6M	\$80.2M	\$17.8M
Convergence (Value/Cost)	96.8%	534%	109%

Nodal Market Challenges after Four Months of Operation

- **Pricing of De-energized Resource Nodes**
 - Inconsistent pricing between DAM and Real-Time due to de-energized Resource Nodes getting assigned System Lambda in Real-Time
 - Addressed on January 31st by adding 609 Electrical Buses to 140 stations.
 - Submitting recommendation to correct prices
 - Inconsistent pricing between DAM and Real-Time due to split bus station and de-energized Resource Nodes getting assigned average LMP at same kV in station
 - Addressing through short term (NPRR339) and long term approach.
- **Oscillation of West to North Constraint**
 - Logic for setting the HSLs by WGRs after being released from curtailment resulting in oscillation
 - Holding a special MP meeting to discuss the issue and present a draft NPRR that addresses the issue
- **Settlement Points may be incorrect related to certain PTP scenarios**
 - Under certain scenarios the post processing of some Settlement Points may be incorrect. The scenario is related to a single PTP between an energized and a de-energized Settlement Point and there is no other PTP at the energized Settlement Point then the energized Settlement Point may have a wrong price.
 - DAM MW awards are correct
 - Implementing and testing a fix
 - Implemented price correction before the prices are final until fix is migrated to production
 - Investigating the extend of the impact and potential need for price correction

Oscillation of West to North Constraint

- There is a flaw in the logic that QSEs are using to determine the telemetered HSL in real-time
 - This primarily causes an issue for the period following a release from curtailment
- After a release from curtailment, a WGR's output is still affected by the curtailment instruction
- Setting the HSL equal to output immediately following a release in curtailment can result in a significant underestimation of the WGR output potential

