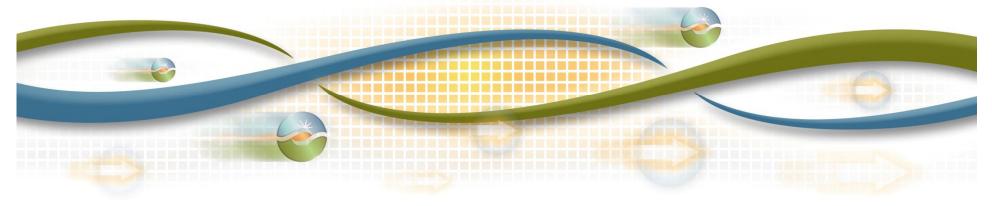


#### **Convergence Bidding Update**

Eric Hildebrandt, PhD Director, Market Monitoring

Market Surveillance Committee Meeting General Session March 18, 2011

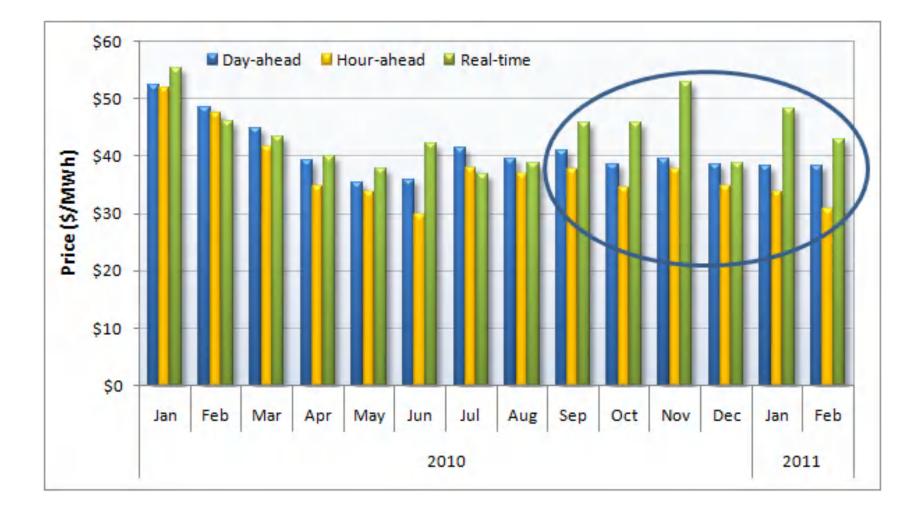


#### Overview

- Real-time prices continue to be systematically higher than hour-ahead prices but prices convergence is improving.
- Main reason for improved convergence is improved manual adjustment of load forecast in HASP.
- Price trends make both virtual imports and virtual demand in ISO profitable.
- After the first week of virtual bidding, net profits have ranged from \$1 to \$2 million per week.
- Total real-time energy imbalance costs due to the divergence of HASP and real-time prices continues to exceed \$10 million per month.



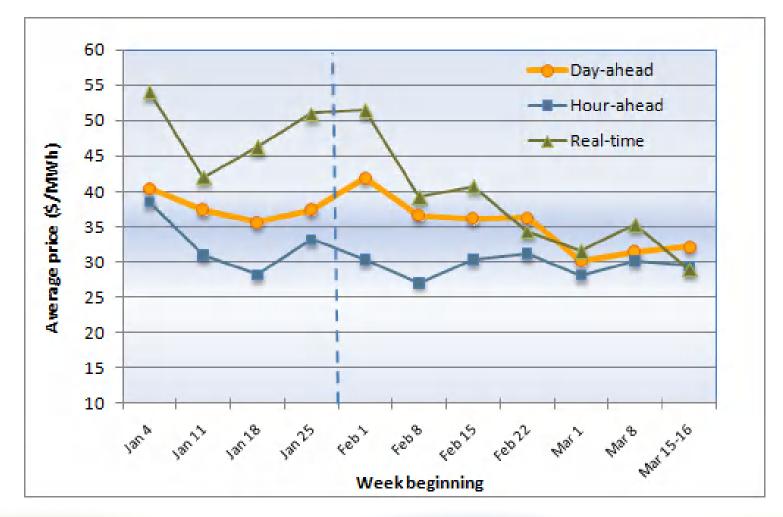
#### Overall price convergence since fall 2010 has been poor.



California ISO Shaping a Renewed Future

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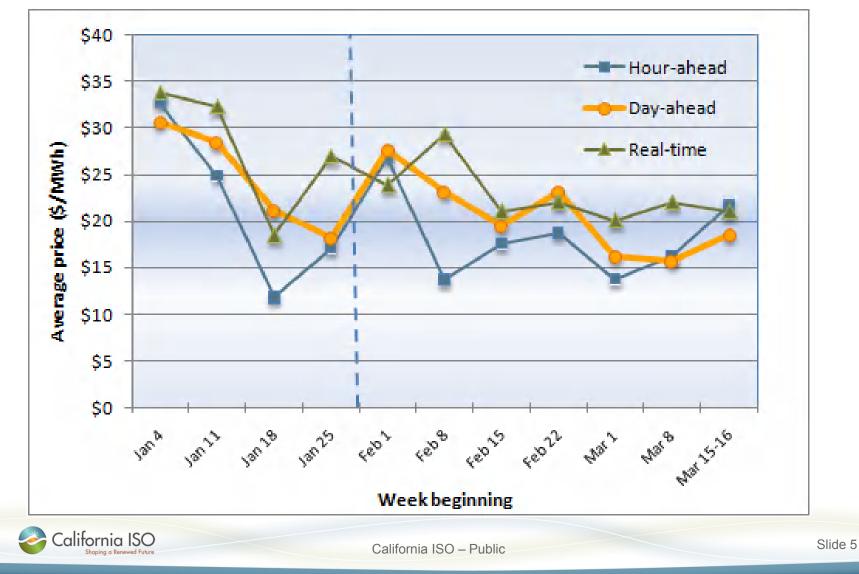
## Convergence of prices during peak hours is starting to improve.



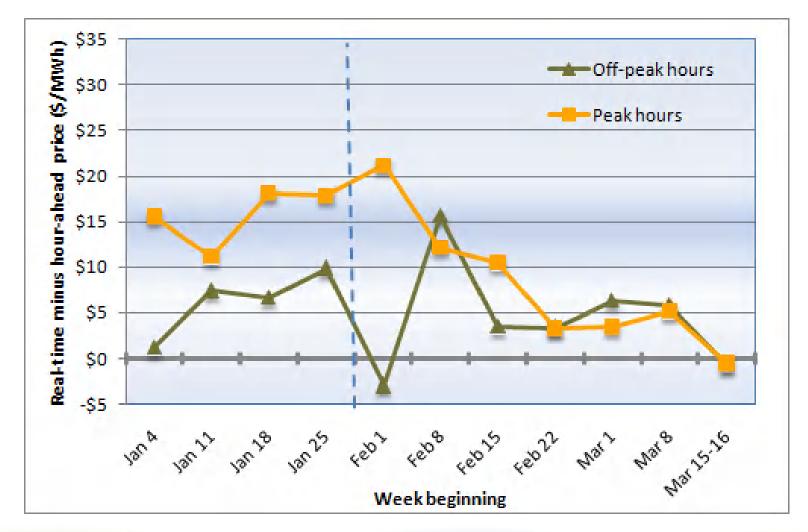


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## Convergence of prices during off-peak hours also shows signs of improvement.



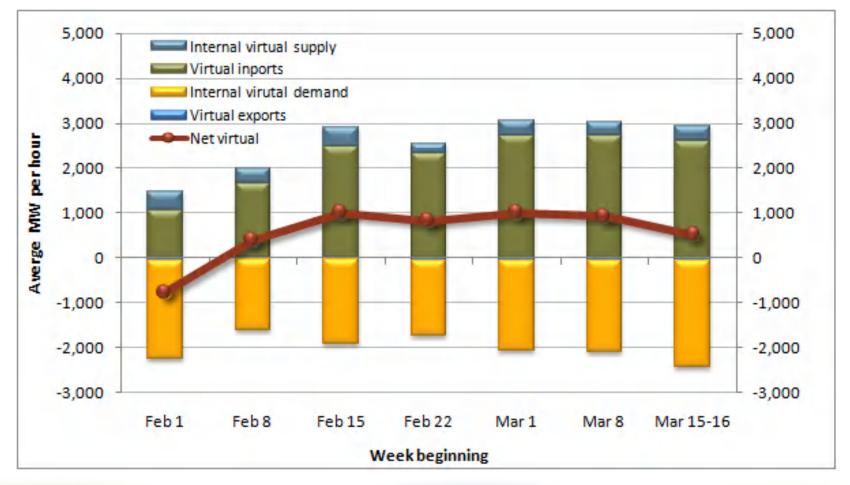
5-minute real-time prices are still systematically higher than hour-ahead prices used to settle imports/exports.





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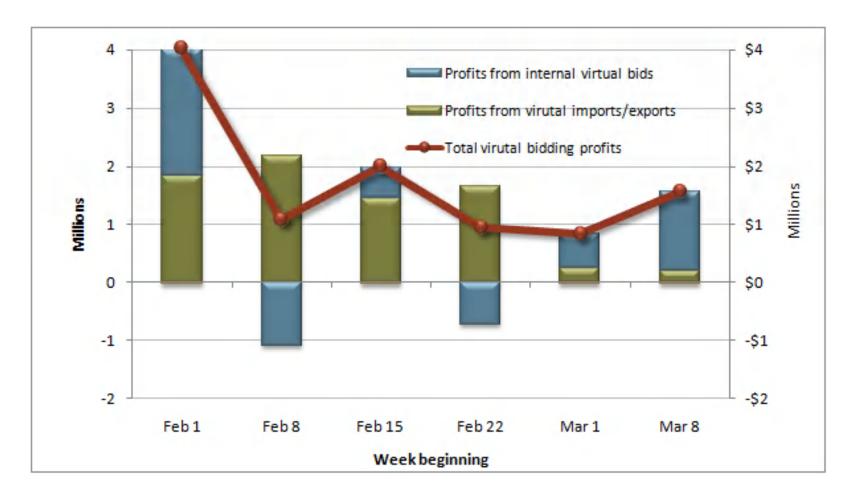
### This price trend makes virtual imports and virtual demand within ISO profitable.



California ISO Shoping a Renewed Future

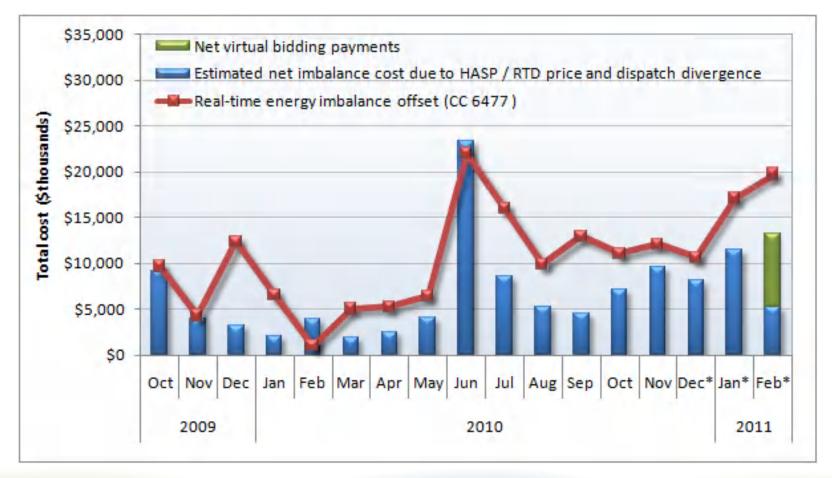
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After the first week of virtual bidding, net profits have ranged from \$1 to \$2 million per week.





# Total real-time energy imbalance costs due to the divergence of HASP and real-time prices continues to exceed \$10 million per month.



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