Pricing Short-term Gas Availability in Power Markets

Seabron Adamson
Research Associate, Tulane Energy Institute

Richard Tabors
Director, MITei Utility of the Future Project

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Growing Concerns, Possible Solutions:
The Interdependency of Natural Gas and Electricity Systems
Algonquin basis versus pipeline capacity utilization

Daily spread between spot prices for the Algonquin Citygate and Henry Hub trading points, January 1, 2012 - December 31, 2012
dollars per million British thermal units

Capacity utilization at Algonquin Gas Transmission’s Cromwell Compressor Station expressed as percent

Source: EIA
Stylized operation of a SMD power market

**Longer-term**
- Transmission planning
- Interconnection
- Forward capacity markets

**Day-ahead**
- Outage scheduling
- Day-ahead security-constrained unit commitment and DA LMP
- Resource adequacy assessment and supplemental commitment

**Real-time**
- Security-constrained economic dispatch and RT LMP
Example SMD power market and gas market timelines
Timing of next day Algonquin Citygates transactions

PERCENTAGE OF TRANSACTIONS
by half hour block Jan 2010 to Jan 2013

Jan 2010 to Jan 2013
Example SMD power market versus when the next day market trades
Changes from one day to the next in Algonquin Citygates prices

New England Natural Gas Prices
Prior Day Next Day Price vs Next Day Price
Excluding holiday buys

Jan 2010 to Jan 2013
Key messages

• Potential for some market failure in operations
  – Gas constraints not fully in SCUC and LMPs?
  – Imperfect information and stale regional/pipeline prices?

• Don’t just look at nomination timelines – but when markets are actually liquid and transparent

• If RTOs can price gas constraints, can schedule reserves and pay for them