



Electric-Gas Coordination Perspectives

NYISO Electric-Gas Coordination Work Group

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Agenda

- Overview of Dynegy in the Northeast
- Perspectives - Planning Horizon
- Perspectives - Operations Horizon
- Recommendations

Overview of Dynegy in the Northeast

- Casco Bay
 - Bangor, ME
 - 500 MW Combined Cycle Natural Gas-Fired
- Independence
 - Oswego, NY
 - 1,000 MW Combined Cycle Natural Gas-Fired
- Roseton
 - Newburgh, NY
 - 1,200 MW Dual Fuel - Oil & Natural Gas
- Danskammer
 - Newburgh, NY
 - 500 MW Dual Fuel - Coal & Natural Gas

Dynergy Perspectives – Planning Horizon

- Growing dependence on a single fuel and lack of diversity is a concern
 - Gas system has historically been reliable and accommodated growing reliance and dependence on it
 - Increased dependence will make gas-fired generation even more critical
 - Increased dependence without appropriate market design may lead to:
 - Inefficient prices signals (and not the lowest cost for consumers)
 - Rate shock
 - Political overreaction claiming markets are not functioning properly

Dynegy Perspectives – Planning Horizon (con't)

- Gas transmission and distribution systems not designed and constructed to carry the demand of a mostly gas-fired electric system
 - Exacerbated at times when peak electric and gas demand is coincident
 - Gas pressure and volume restrictions at one of our facilities precludes us from firing 100% on gas, and may even limit site to 50% certain days
 - Yet, in parallel:
 - Environmental regulations forcing facility to run on gas
 - Tighter pipeline regulations warranting further reducing gas pressures
 - Facility has been recently identified in a court proceeding that its needed for electric reliability

Dynegy Perspectives – Planning Horizon (con't)

- Firm contracts not practical without holistic and systemic changes in the gas and electric markets
 - Firm does not guarantee deliverability, so not an answer to the electric reliability concerns
 - No means for generator owners to recover the cost of a firm contract in the energy markets
 - Firm contracts not even available or allowed in all areas

Dynegy Perspectives – Operations Horizon

- Gas-Electric Day mis-match presents obvious challenges
 - Start of gas day in middle of electric day can cause nomination problems
- Weekend Gas is procured in a weekend package
 - Inability to procure gas during weekend due to market illiquidity
 - Presents challenge if electric schedule changes
- Tight OBAs limit ability of generators to be flexible and accommodate changes in the electric system
 - Small changes in electric schedule due to reliability needs cause violation of OBA
 - No means for generator to recover gas penalties other than bid up unit to hedge against penalties
 - Exacerbated by mis-match in gas-electric day

- Gas nominations are by volume on a daily basis; electric commitments are hourly
 - Some pipelines enforce a “ratable take” which is 1/24th of the gas day nomination; ratable take does not correlate to electric schedule
 - Changes in electric demand in real time can lead to a scramble to procure gas
- Increased integration of intermittent generation will require greater flexibility
- Reference level process for dual-fuel units cumbersome and inflexible
- Gas and electric coordination between generators and pipelines has worked well
 - But shrinking outage windows making it more difficult to coordinate gas and electric outages

Recommendations

- ISOs
 - Build upon NYISO electric system and market flexibility
 - Multi-hour bid curve, increasing bids in Real Time, OOM calls as early as possible
 - Multi-day weekend (baseload) electric commitments in lieu of single-day commitments
 - Appropriate market design to value varying levels of reliability, such as dual fuel capability, firm contracts, etc.
 - Improvement of electric market energy Reference Level processes
- ISOs and Gas Industry
 - Alignment of Gas-Electric Day (or at least make the electric offer window as early in the day as possible)