

Natural Gas / Electric Reliability Update

2013 INGAA Investment Analyst Program
INGAA Foundation

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Issues

- Power grid has become more dependent upon natural gas



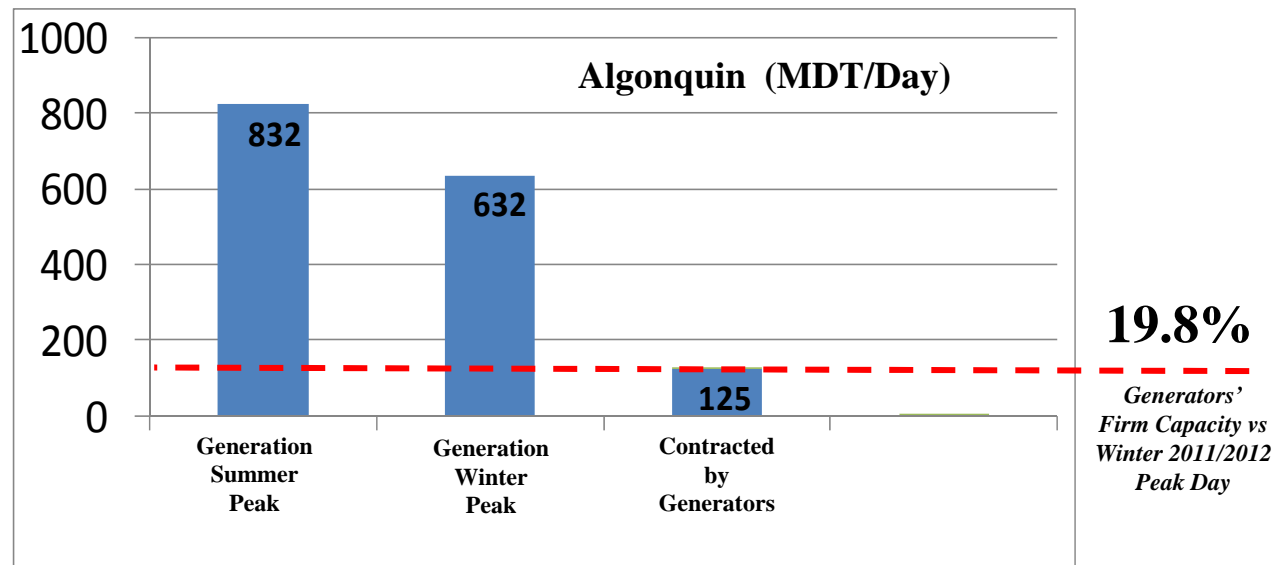
- Is there adequate pipeline capacity available to reliably deliver gas supply to the natural gas generators?
- Do natural gas generators hold the appropriate contractual arrangements to ensure reliable delivery of gas supply to their plants?
- Gas Day and Electric Day are not common
- Electric industry needs greater understanding of and communication from the natural gas pipeline industry

Stakeholder Events

- FERC regional technical conferences
- FERC technical conference on communications
- FERC technical conference on scheduling
- RTO and ISO meetings
- Various conferences
- EEI

INGAA Message

- Natural gas pipeline industry is excited to serve the power generation market
 - Willing to work with generators to reliably serve their plants and offer needed services
- Issues serving the generation market are specific to each region
 - New England ISO most exposed now



INGAA Message

- Most merchant generators using natural gas as fuel do not hold primary firm transportation
 - Acting rationally
 - Short-term commitments from the power market
 - Economically dispatched
 - ❖ Minimize cost by utilizing transportation capacity not being used by other markets
 - » Interruptible and secondary firm transportation
 - » Worked fairly well historically, but past may not be accurate indication of future
- If primary firm transportation is needed must plan ahead
 - Requires long-term contracts with pipelines
 - Takes two to three years to build

Current Views

Subcommittee on Energy and Power

- Philip Moeller – FERC Commissioner
 - “Absent major restrictions on...new technologies, we appear to be facing a sustained period of abundant supplies of natural gas in North America.”
 - “My fear is that the warmer weather has masked system vulnerabilities that will be exposed when more normal colder weather patterns occur. My goal...is to have additional confidence that natural gas and electric system operators in each region have widely disseminated and understood communication protocols in the event of extreme weather.”
 - “Next we need to address the differences in the gas and electric scheduling and trading days and whether changes would result in greater efficiency and increased reliability.”
 - “And finally, longer term we will need to consider whether the correct market rules, investment signals and environmental policies are in place to assure that adequate natural gas infrastructure exists to meet this growing demand.”



Current Views

Subcommittee on Energy and Power

- Cheryl LaFleur – FERC Commissioner
 - “The first issue is ensuring adequate pipeline capacity to support both gas-fired electric generation and other gas customers. This is not a supply issue but a pipeline infrastructure issue.... This is already an issue in New England and may be an emerging issue in other regions...”
 - “The second issue is improving the coordinated operation of the gas and electric networks to optimize the use of the pipelines we have in place.”
 - “Gas-electric interdependence is not a reason to panic, but it is definitely a reason to plan.”

Current Views

Subcommittee on Energy and Power

- Gordon Van Welie – President and CEO of ISO New England
 - “Wholesale prices are driven by natural gas generators, but the wholesale electricity markets do not provide adequate incentives for generators to provide electrical energy when called upon by the ISO during stressed system conditions, and in particular for gas generators who have not made adequate and reliable arrangements for fuel supply.”
 - “The market based solution to this problem is to strengthen the economic incentives in the wholesale markets to cause generators to make adequate and reliable fuel arrangements, so that they are ready to respond... when needed.”

Industry Views

- Nick Akins – CEO of AEP
 - Restructured electricity markets should offer longer term commitments because the current three-to-six year commitments do not provide adequate incentive for generators to invest in new power plants.
 - Reliability issues are looming if this is not fixed.

FERC Technical Conference on Gas – Electric Scheduling Day Issues

- FERC technical conference on April 25
 - Whether to offer additional pipeline scheduling flexibility and services,
 - Whether to modify the capacity release rules,
 - Whether additional nomination opportunities would result in more efficient utilization of pipeline capacity,
 - Whether to eliminate or modify the no-bump rule, and
 - Whether to move to a single gas-electric energy day.



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