

Natural Gas and Electric Market Coordination

The decrease in natural gas pipeline flexibility has created greater misalignment between the natural gas and electric markets. Natural gas-fired generators are vital resources to the reliable operation of the electric system. Coordination between RTOs and the natural gas pipelines is necessary to maintain reliability of the bulk electric system. Restrictions imposed by the natural gas pipelines have an impact on the natural gas-fired resources' ability to operate and provide regulation and reserves during events in which they are critical to electric system reliability. The need of greater flexibility from gas-fired resources will increase with the continued growth of intermittent resources.

Issue Source

Dominion Energy

Key Work Activities

It is recommended that the MRC complete the following key work activities:

- 1) Provide education on topics, but not limited to:
 - a) Outline history of regulatory efforts to address misalignment between gas and electric markets.
 - b) Educate stakeholders on natural gas pipeline tariffs, products and procurement. Provide details of imbalance charges and penalties.
 - c) Provide an overview of recent events in other ISOs and RTOs, including gas and electric coordination failures.
 - d) Provide education on gas pipeline constraints and fuel procurement that is in the planning and economic dispatch models.
 - e) Analyze impacts on natural gas usage with continued increase in intermittent generation on the PJM Region bulk electric system.
 - 2) Discuss improvements to the PJM wholesale electric markets to mitigate impacts of misalignment between gas and electric markets
 - a) Establish areas of common understanding (e.g. market solution is ideal, reliability event avoidance, equitable)
 - b) Examine possible improvements to coordination and emergency procedures between PJM and natural gas pipelines to ensure reliable operation of the bulk electric system in the PJM Region.
 - c) Examine PJM situational awareness of market sellers' fuel supply.
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Issue Charge

- d) Examine possible improvements to PJM's Economic Dispatch model that accounts for fuel limitations.
- e) Examine possible improvements to the assumptions of pipeline flexibility used in PJM reliability planning.
- f) Examine potential market solutions to improve fuel procurement flexibility, modeling and optimization of gas and electric market alignment.
- g) Identify potential market power and/or manipulation risks.

Expected Deliverables

Recommendations to the MRC on proposed market and operational rules that would:

- 1) Account for natural gas transportation, gas procurement, and oil reserves in its economic dispatch signal and reserve calculations, as necessary.
- 2) Enhance the dispatch rules and energy offers for dual fuel generation resources with alternative fuel (e.g. oil, LNG) back-up under extreme weather events and constrained pipelines, as necessary.
- 3) Develop PJM market rules that can address challenges of procuring gas over non-peak hours, weekends and holidays, as necessary.
- 4) Enhance emergency procedures and increase coordination between PJM and natural gas pipelines, as necessary.
- 5) Develop any additional PJM market rules to address the natural gas and electric coordination, as necessary.

Decision-Making Method

Tier 2 decision-making will be used.

Stakeholder Group Assignment

This issue will be assigned to a new senior task force reporting to the MRC.

Expected Duration of Work Timeline

Work will be completed in 12 months. Time will be revised as necessary.

Start Date	Priority Level	Timing	Meeting Frequency
10/1/2021	<input checked="" type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input checked="" type="checkbox"/> Immediate <input type="checkbox"/> Near Term <input type="checkbox"/> Far Term	<input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Quarterly

Charter

(check one box)

<input checked="" type="checkbox"/>	This document will serve as the Charter for a new group created by its approval.
<input type="checkbox"/>	This work will be handled in an existing group with its own Charter (and applicable amendments).

More detail available in M34; Section 6
