

Gas and Energy System Resiliency

Resilience is the characteristic by which the natural gas delivery system is able to prevent, withstand, adapt to and quickly recover from damage or disruption. This is a crucial component of a dependable natural gas and electrical infrastructure.

Study Overview

The study examines:

- Opportunities within the regulatory framework to support gas resilience investments.
- Infrastructure improvements necessary to support broader electric and natural gas system resilience.
- How future investments in the natural gas system that support the resilience of other parts of the energy system can also support a low-carbon future and the increased integration of renewables in both the gas and electric grids.

The study identifies some of the barriers embedded in current regulatory frameworks.



Inadequate political and regulatory support for resilience in the gas system



Few regulatory initiatives specifically address gas system resilience at the state level



Resilience is often indirectly referenced and embedded within reliability and safety standards



Lack of regulatory mechanisms to compensate participants for resilience investments

High-Level Recommendations



State Commission Analysis into Value of Gas Infrastructure for the Entire Energy System

Commissions should explore methodologies that look beyond used and useful analysis to understand the true value gas infrastructure provides to the resilience of the entire energy system.



Emphasize Safety and Renewable Integration When Seeking Regulatory Approval

Gas companies should emphasize the investment's value to ensure safety and the future integration of renewables in both the gas and electric systems.



Focus on Enabling Mechanisms Emphasizing Resiliency and a Low-Carbon Future

Regulatory and financial supportive mechanisms should be considered that emphasize the gas system's long-term role in a low-carbon energy system.

Methods to Increase Gas System Resilience

Upstream Investments

- Increase investments in well-head, gathering and processing systems gas transmission networks and storage facility weatherization to ensure proper preparation for extreme weather events.
- Continue modernizing aging pipelines and interconnections that support broader energy system resilience.
- Design systems to accommodate low-carbon fuels so system operations provide resilience benefits and support emission reduction goals.

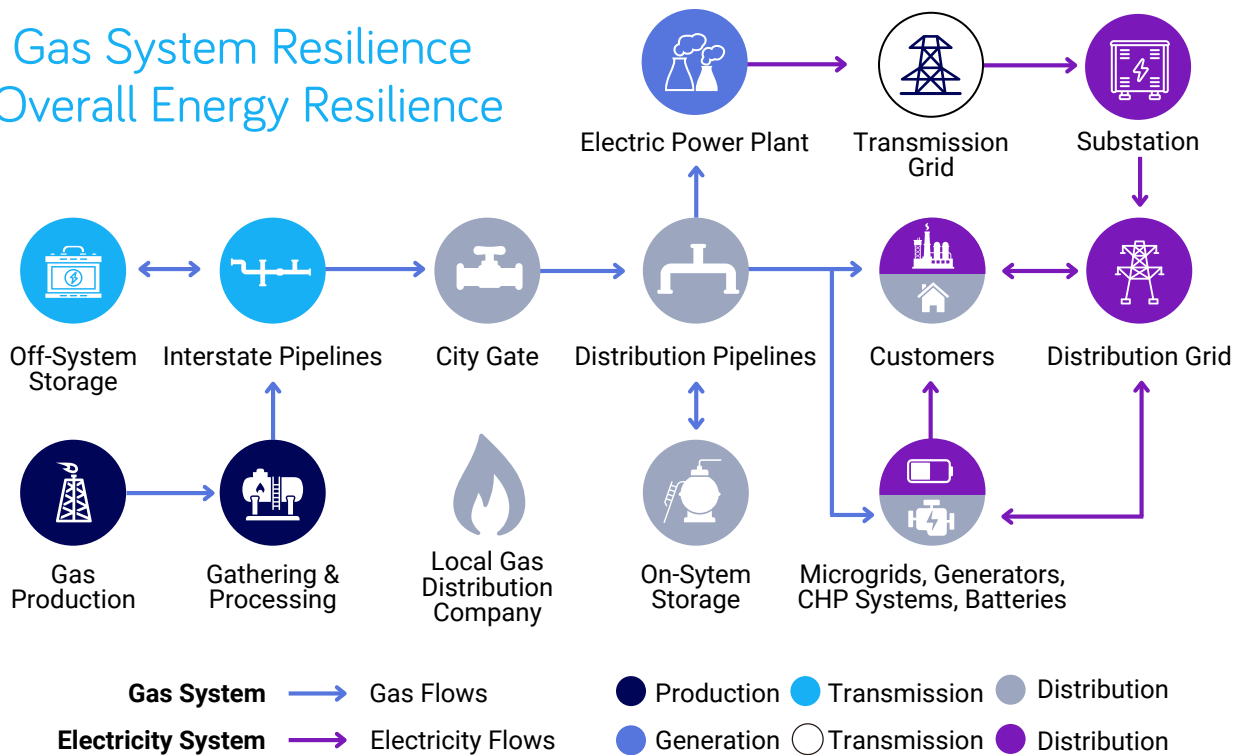
Downstream Investments

- Increase infrastructure weatherization investments for pipeline and distribution.
- Continue improving downstream city gate pipeline interconnections.
- Further develop gas system storage facilities to enhance overall resiliency.
- Expand integration of alternative fuels (e.g., hydrogen, RNG) or LNG produced and stored behind the city gate.
- Continue modernizing infrastructure to lower emissions and enhance safety, reliability, resiliency and affordability.

Federal & State Recommendations

- Federal and state intervention and approval to implement resilience measures.
- Implement resilience regulatory requirements.
- Enable federal and state funding support for resilience investments for all energy sources.
- Improve the interdependencies and coordination between the electric and natural gas industries.

Natural Gas System Resilience Drives Overall Energy Resilience



Natural gas infrastructure is critical to supporting gas-powered electric generation systems – this is central to ensuring resiliency of the overall energy system.

Natural gas pipeline and storage infrastructure are critical in supporting energy grid resilience by reliably delivering natural gas, even during short and long-term duration needs (e.g., including extreme weather).

Natural gas and other low-carbon fuels will remain a core element of the US energy system for decades to come, and natural gas electric generation is critical to scaling the integration of renewables.