

WINTERIZATION OF NATURAL GAS FACILITIES

What is meant by ‘Winterization’ of natural gas facilities?

Winterization encompasses a variety of measures undertaken by operators of natural gas facilities to prevent freezing and minimize the risk of damage to facilities due to extreme cold temperatures. These facilities range from upstream (production of natural gas at a well pad), to midstream and transmission (processing and transporting natural gas from the point of production to the point of use) and downstream (using natural gas directly for heat, or to generate electricity at a power plant).

Because more than 50% of all electricity produced in Pennsylvania is generated from natural gas and half of Pennsylvania homes heat with natural gas, it is vitally important that facilities which produce, transport and ultimately use natural gas are protected during times of extreme cold.

What are examples of winterization measures undertaken by operators?

All operators across the spectrum of the natural gas industry undertake proactive measures both on an annual basis and in anticipation of forecasted extreme cold weather. In addition, many operators utilize sophisticated data and software programs to help identify and prioritize addressing potential freeze points within the facilities they operate. Companies also develop their own facility-specific winterization plans, conduct tabletop reviews and often expand their listing of available contractors on stand-by should the need develop during a specific extreme cold weather event.

Additionally, effective and timely communication – within the company, with customers, and with regulators – is a critical factor in allowing operators to ensure that their facilities are properly prepared and ready to meet demand during times of extreme cold and increased heating and electric use demand.

The following are select examples of proactive measures undertaken by operators:

- Installing heat wraps, pipe and other vessel insulations.
- Electric and glycol heat traces on pipes and vessels.
- Glycol dehydration to remove water from the gas stream.
- Injection of methanol to reduce the freeze point of natural gas.
- Securing and deploying ground-level portable heating systems.
- Stockpiling salt and snow-removal equipment to allow access to facilities for maintenance and monitoring and install additional capacity for water storage in case the site is inaccessible.
- Stockpiling other critical supplies, including tarps, batteries, facility shelters, and other supplies likely to be needed during an extreme cold weather event.



Credit: National Fuel Gas Midstream Company

Why it matters: How electricity is delivered to Pennsylvania consumers.

Pennsylvania is situated within a regional transmission organization called PJM, which oversees the electric markets of all or parts of thirteen states and the District of Columbia and stretches from New Jersey to Illinois. PJM works daily to ensure that enough electricity is generated by power plants to meet the forecasted demand load of consumers, including homes, businesses, schools, hospitals, factories and a host of other entities that rely upon a dependable power supply.

PJM operates a capacity market which ensures the long-term reliability of the electric grid by providing for the sale of electric capacity several years into the future, based on anticipated consumer demand. As a result, consumers are assured of a predictable and reliable supply of electricity, while electric power generators that successfully compete in an annual capacity auction are assured of guaranteed revenue. Importantly, PJM maintains a capacity margin as well to make sure that more electricity than forecast is available to account for unanticipated outages or peak demand during extreme weather events.



PJM also evaluates proposed electric transmission infrastructure projects so that sufficient capacity is in place to move electricity throughout the market and meet anticipated demand. However, the capacity marketplace is dependent upon the existence of a favorable market that encourages the construction of new generation to replace retiring facilities and meet growing consumer demand.

How do consumers benefit from producing natural gas here in Pennsylvania?

In 2008, Pennsylvania produced only 25% of its own natural gas demand. As a result, consumers were dependent upon imports of natural gas from producers in Texas and along the Gulf Coast. Today, Pennsylvania produces 20% of the nation's natural gas and has vastly diversified its electric generation portfolio.

By being able to rely upon Pennsylvania-produced natural gas, health care facilities, homes, businesses, and other consumers benefit by having locally produced natural gas available to meet both the state's heating and electric generation needs. As a result, Pennsylvania consumers are insulated from events that may impact producers in regions of the country that they historically relied upon for their energy resources.

Where can I learn more?

To learn more on a variety of issues related to natural gas development in Pennsylvania, please visit the Marcellus Shale Coalition's [Resources](#) website.