



Planning for Energy Reliability

What Ontario's Winter Performance Tells Us About Year-Round System Performance

Ontario's energy system is tested most clearly during periods of extreme seasonal weather. While 2025/2026 winter demand has passed, system performance during cold weather events continues to provide important insights for municipalities as they plan for long-term growth, reliability and community resilience.

Reliability Requires Planning

Ontario's ability to keep homes, businesses, and critical public services operating during extreme cold is the result of long-term infrastructure planning and system design, not short-term market response. The natural gas system is built specifically to perform under peak winter conditions, supported by:

- Underground natural gas pipeline and storage facilities
- Redundant supply pathways
- Planning that anticipates sustained, multi-day demand — not average conditions

This approach ensures energy is available when it is needed most, particularly during weather-driven demand spikes.

Energy Reliability is a Public Safety Consideration

Extreme weather events underscore a core reality for municipalities: energy reliability during periods of peak demand is a public safety obligation. Reliable energy supports:

- Emergency services and first responders
- Hospitals, long-term care facilities, and community shelters
- Water, wastewater, transit, and communications infrastructure

Distribution System Performance

- **During Enbridge Gas's peak hour on January 25, 2026, the system delivered the equivalent of nearly 90,000 MW of electricity to Ontario homes and businesses – meaning peak gas delivery exceeded Ontario's nuclear capacity by more than six times.**
- **Natural gas storage withdrawals reached 6.4 Bcf, the highest ever recorded, supporting heating needs and electricity production.**

Energy Reliability Is Not a Winter-Only Concern

- **The Dawn Hub functions like an 88 TWh energy reserve. That's enough energy to:**
 - **Power every home in Ontario for about a year, or**
 - **Power the City of Toronto for roughly 5–6 years**
- **On January 25, natural gas storage withdrawals hit a new all-time record at 6.4 Bcf.**
- **During the peak hour on January 24, the system facilitated the withdrawal and delivery of the equivalent of 85,304 MW of energy, demonstrating unmatched scalability and response capability.**

Ontario's experience during extreme summer heat events shows that natural gas plays a critical role in maintaining system stability when electricity demand surges and other resources are constrained.

During a July 2025 heatwave, as Ontario experienced soaring temperatures and record electricity demand, natural gas-fired generation was essential to keeping the power system stable. When demand peaked and renewable sources such as wind and solar were limited, natural gas generation stepped in to meet system needs and prevent outages.

According to the Independent Electricity System Operator (IESO), natural gas power generators produced 7,634 MW of electricity at peak demand during this event. Behind that output was 13,846 MW

equivalent of natural gas energy delivered directly to those generators – fueling Ontario's ability to meet demand when it mattered most.

When systems are under the greatest stress, the consequences of insufficient energy supply can be immediate and widespread.

Protecting Communities from Price Volatility

Ontario's energy system is designed to perform under extreme conditions while largely protecting communities from sudden price shocks seen in other jurisdictions.

A significant portion of natural gas supply is planned and secured well in advance, including through large-scale underground storage at the Dawn Hub in southwestern Ontario, one of the largest energy storage facilities in North America. This approach allows the system to:

- Respond instantly and continuously during extreme weather events
- Deliver very large volumes of energy over sustained periods
- Reduce reliance on real-time emergency supply during system stress

As a result, customers and municipalities are largely shielded from volatile spot-market pricing during cold weather events, contributing to predictable and stable energy costs for homes, businesses, and public services.

This combination of advance planning, significant storage capacity, and high-throughput delivery infrastructure provides a level of resilience and flexibility that is difficult to replicate and plays a critical role in maintaining reliable service when demand is highest.

Looking Ahead: Planning for Extremes, Not Averages

As municipalities explore long-term energy plannings, the lessons from peak events remain relevant year-round.

Key considerations include:

- Planning for multi-day stress events, not just average seasonal demand
- Ensuring reliability during periods when electrification demand may also peak
- Maintaining layered, diverse energy systems that can adapt as needs evolve

Ontario's experience demonstrates that systems designed for extremes are better positioned to support safe, resilient, and affordable communities – today and into the future.