

Bridging the Divide: Aligning the Natural Gas and Electric Power Systems

The National Petroleum Council (NPC) examined the growing misalignment between the natural gas and electric power markets at the request of Energy Secretary Wright earlier this year. The report finds that as the electric grid becomes more dependent on natural gas for dispatchable generation, and gas infrastructure relies on electricity for operations, the two systems have become deeply interdependent—yet remain governed by divergent regulatory, commercial, and operational frameworks. This structural mismatch now poses an escalating threat to U.S. energy reliability, affordability, and national security.

NPC analyzed rising natural gas and electricity demand, evaluated the reliability risks these strains pose, and recommended actionable strategies to reduce misalignment and strengthen the resilience of both systems.

The Misalignment Problem

Natural gas and electricity markets evolved separately, resulting in fundamental differences that now challenge reliability:

Different timelines: The natural gas day runs 9 a.m.–9 a.m. CT, while the electric power day runs midnight–midnight, forcing generators to commit fuel without knowing if they will be dispatched.

Contrasting incentives: Natural gas infrastructure depends on long-term firm contracts, while electric markets operate on short-term, real-time dispatch signals.

Limited coordination: Fragmented federal jurisdiction—split among FERC, NERC, state regulators, ISOs, and pipelines—creates accountability gaps.

Inadequate flexibility: Pipelines were built for steady loads, not the variable intraday flows required to support intermittent renewables.

Key Findings: Four Categories of Challenges

NPC identifies four interrelated categories of challenges that define the reliability gap between gas and power systems:

Operational inefficiencies and misalignments: Out-of-sync schedules, limited intraday gas flexibility, and fragmented outage coordination undermine reliability.

Market design and fuel assurance gaps: Power markets undervalue firm fuel commitments, offering little incentive for generators to secure reliable gas supply.

Commercial and contracting barriers: Pipelines and storage services were designed for predictable loads, not rapid, variable power generation needs.

Fragmented governance and accountability: No single authority oversees gas-electric reliability, leaving critical reforms unenforced and inconsistently applied.

NPC Recommendations: Ten Actions for System Reliability

The report outlines ten recommendations for policymakers, regulators, and industry leaders to achieve a durable, coordinated energy framework:

1. **Comprehensive Long-Term Planning.** Require RTOs/ISOs to integrate fuel assurance and resource adequacy into 10-year regional planning processes.
2. **Permitting Reform.** Streamline federal and state permitting to accelerate fit-for-purpose energy infrastructure.
3. **Construct New Infrastructure.** Build tailored pipelines, storage, and flexible capacity to meet shifting load patterns and demand peaks.
4. **Enhance Existing Assets.** Upgrade current infrastructure (compression, looping, storage) to relieve near-term constraints.
5. **Reform Market Compensation Models.** Adjust pricing to reward generators for fuel assurance and readiness during stress periods.
6. **Implement Accountability Frameworks.** Require generators to maintain operational plans or base gas supply contracts to ensure performance.
7. **Expand Pipeline Service Offerings.** Develop flexible, hourly, or nonratable gas products aligned with power generation needs.
8. **Clarify Jurisdictional Responsibilities.** Publish a transparent framework for state and federal jurisdiction over reliability, resource adequacy, and fuel assurance.
9. **Leverage Existing Entities.** Use NARUC's Natural Gas Readiness Forum to compile best practices across sectors.
10. **Enhance Performance Metrics.** Expand FERC's RTO/ISO performance reports to include state-level fuel assurance and resource adequacy indicators.

The Path Forward

The NPC concludes that gas-electric coordination is now a national reliability issue requiring immediate, concurrent action. The study urges regulators and market participants to move beyond incremental reforms toward structural alignment that balances reliability, market efficiency, and consumer affordability. Coordinated planning, modernized infrastructure, and shared accountability are essential to safeguard America's energy future.

A reliable, affordable, and resilient U.S. energy system depends on aligning gas and electric markets—ensuring both sectors can operate with shared awareness, synchronized incentives, and durable infrastructure.

Request a Briefing

To learn more about the NPC's analysis, please contact the NPC at outreach@npc.org.