



# Regulatory Framework for Natural Gas Storage in New York State

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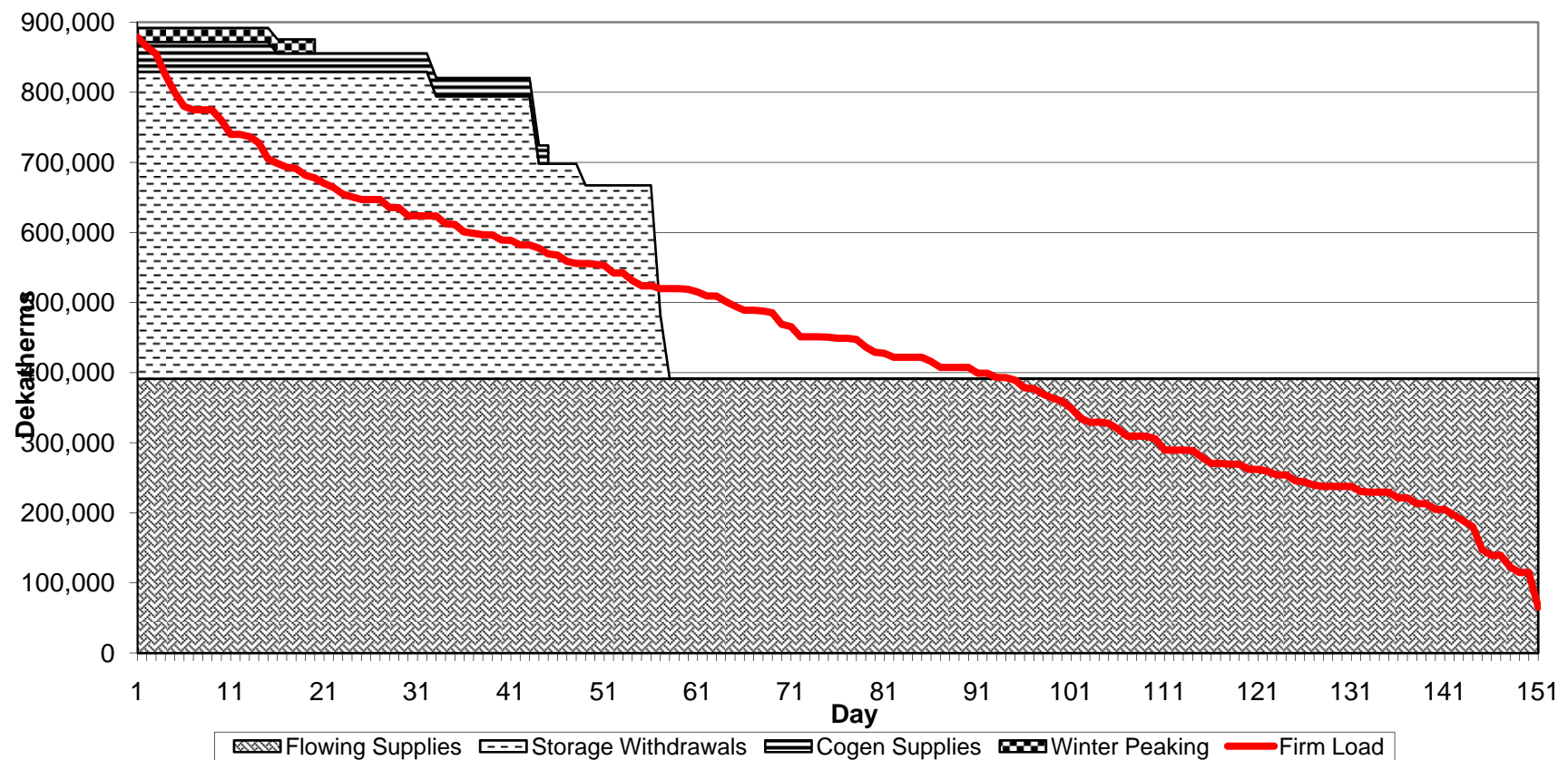
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# Seasonal Natural Gas Load

## 2009-10 Design Winter Load Duration Curve





# Natural Gas Storage

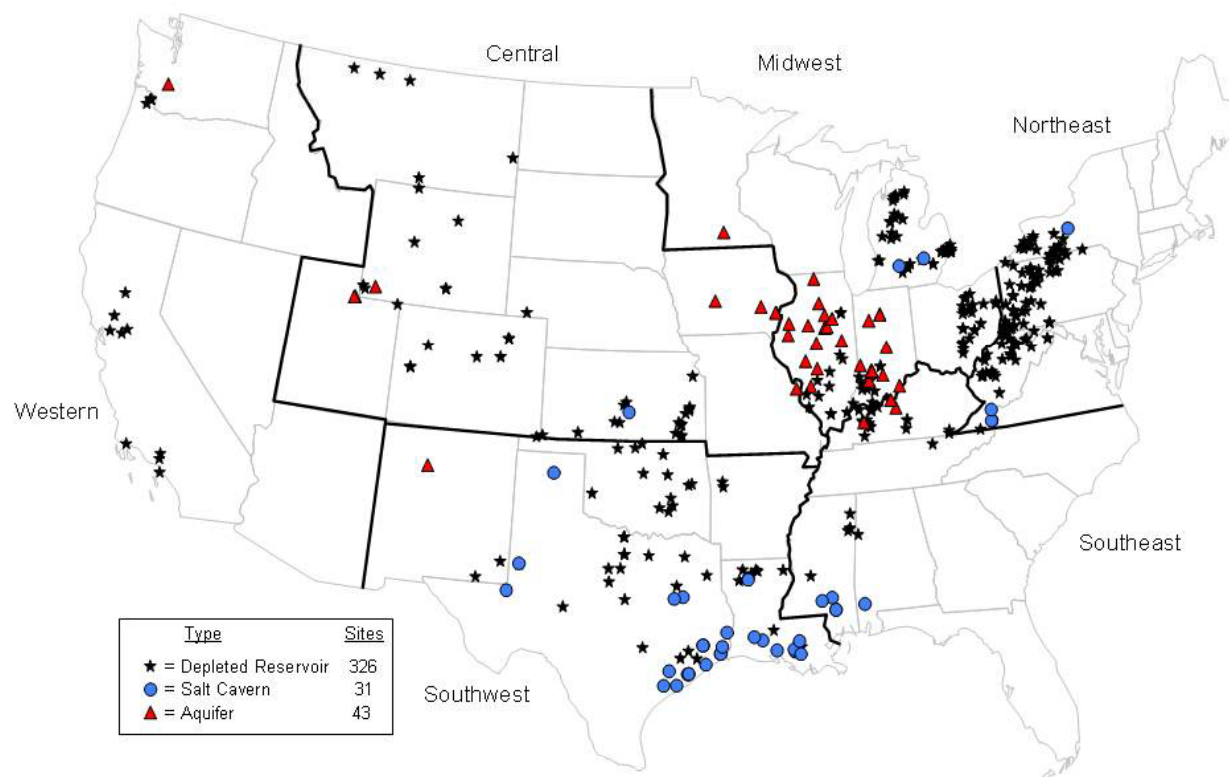
- In the winter, more natural gas is needed than the interstate pipelines can carry on a daily basis
- To meet the needs of customers, gas is stored in large underground storage systems, such as depleted oil and gas wells or caverns formed in salt beds
- New York State has several LNG storage sites, used by LDCs to help meet peak day loads – natural gas delivered by pipelines is liquefied during off-peak periods, stored, and vaporized when needed to boost system pressures
- When chilled to -260 degrees Fahrenheit, natural gas changes into a liquid (LNG) and can be loaded onto tankers and moved all around the world – New York State does not have any LNG import terminals



# Legislation and Regulatory Framework

- Construction/Siting – Under state authority for environmental issues, FERC has siting authority
- Rates – Nearly all storage is built by interstate companies and services they deliver as well as the rates they charge are regulated by FERC

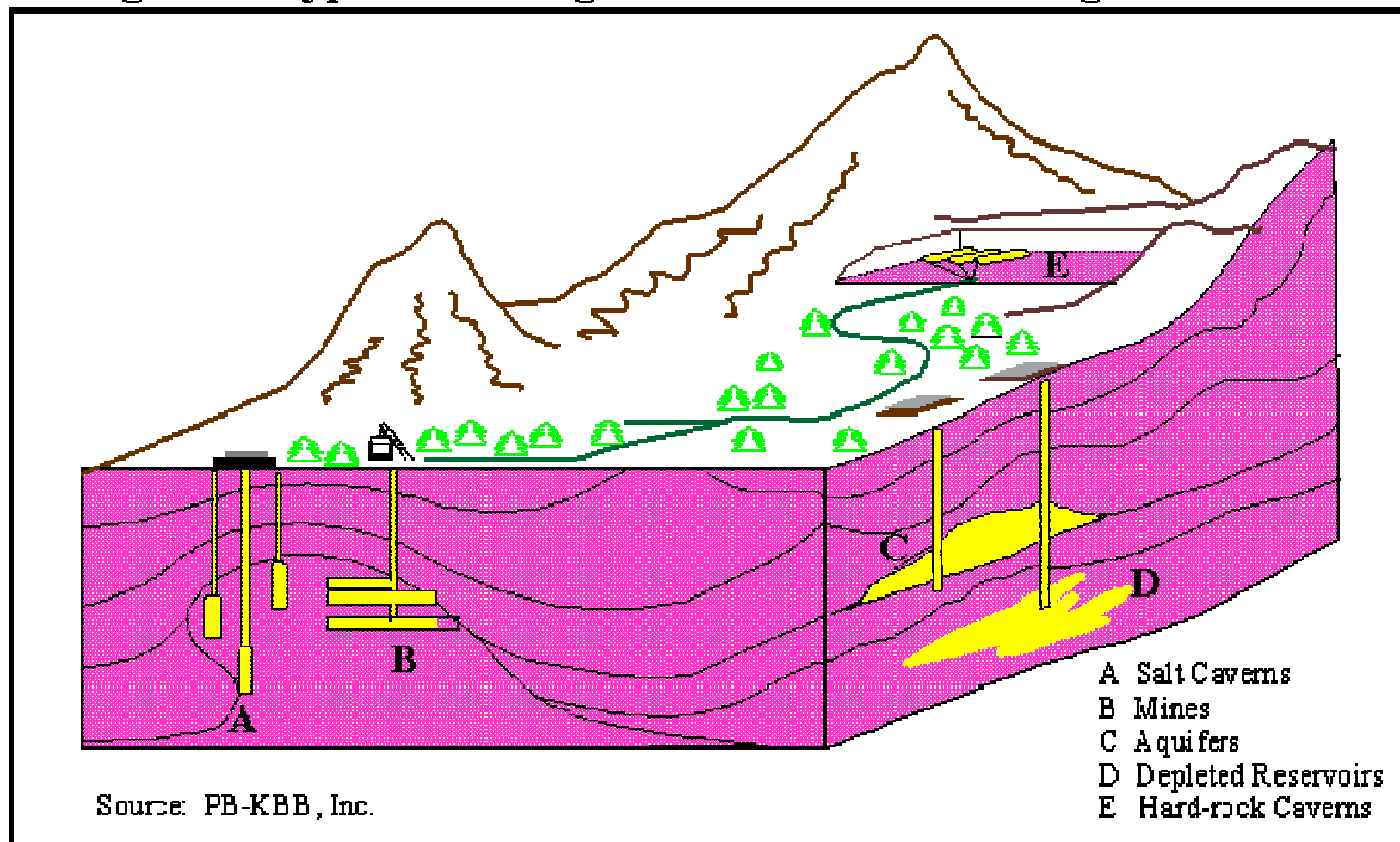
# US Underground Natural Gas Storage Facilities



Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division Gas, Gas Transportation Information System, December 2008.

# Types of Storage Facilities

**Figure 1. Types of Underground Natural Gas Storage Facilities**





# Storage Regulation

- Prior to 1994, interstate pipeline companies owned all of the gas flowing through their systems, including gas held in storage, and sold a bundled product (i.e., gas delivered to citygate, often under “full requirements” contracts)
- FERC Order 636 required pipelines to operate their storage facilities on an open-access basis – the major portion of working gas capacity must be made available to third parties on a non-discriminatory basis
  - This change shifted responsibility for acquiring all of the necessary assets for providing reliable service from pipelines to LDCs



## Storage Ownership

- Storage facilities are owned and operated by interstate pipelines, independent operators, and large LDCs
- Storage not only provides supplemental seasonal supplies, it can also provide arbitrage opportunities and be paired with financial instruments (options, swaps, etc.)





## Storage Operations

- Regular storage – injections ratably from April 1 through October 31 and withdrawn throughout the winter season, with some minimum storage level required by March 31
- High deliverability storage (e.g., salt caverns) – can completely withdraw and refill working gas several times during the winter, and feature higher withdrawal rates than regular storage



## Storage Facilities

- Market Area Storage – Used for balancing and meeting peak loads
- Production Area Storage – Used for arbitrage and for replacing supplies interrupted by hurricane, well freeze-offs, etc.