



Structure of Natural Gas Market Sector in U.S.

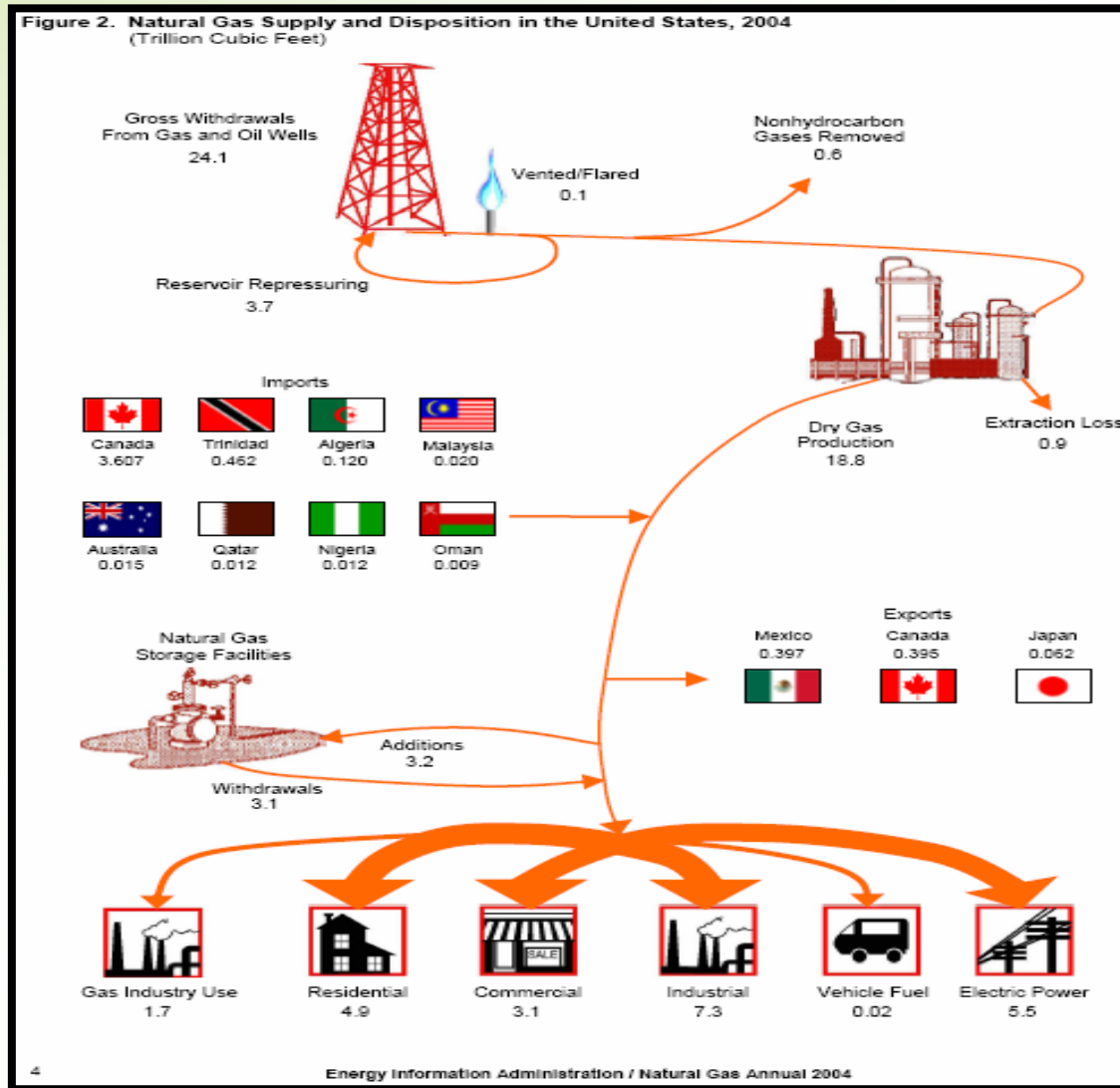
*CERA – NYS PSC Partnership
Zagreb, Croatia
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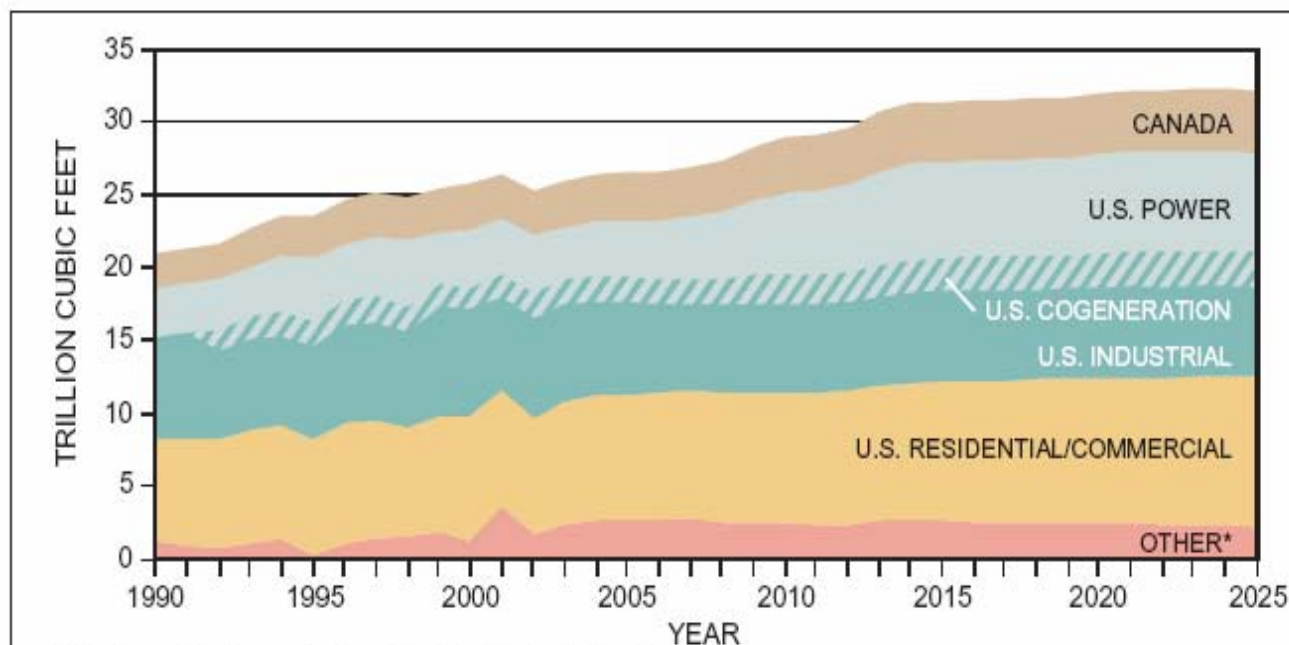


U.S. Natural Gas Supply and Demand





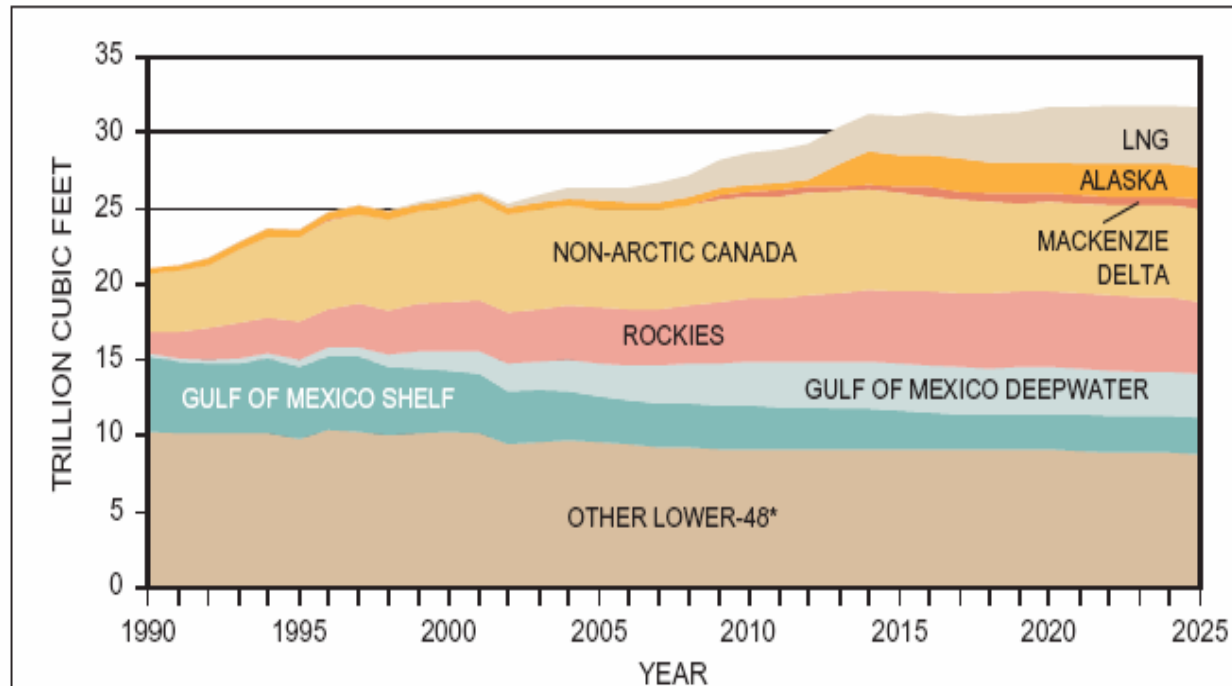
North America Natural Gas Demand



*Includes net Mexico exports, lease/plant/pipeline fuel, and net storage.

- Natural gas demand for power generation increases, reflecting future utilization of recent, significant additions of natural gas-fired generation.
- Natural gas use in the industrial sector erodes, illustrating projected losses in industrial capacity in the most gas-intensive industries.

North America Natural Gas Supply

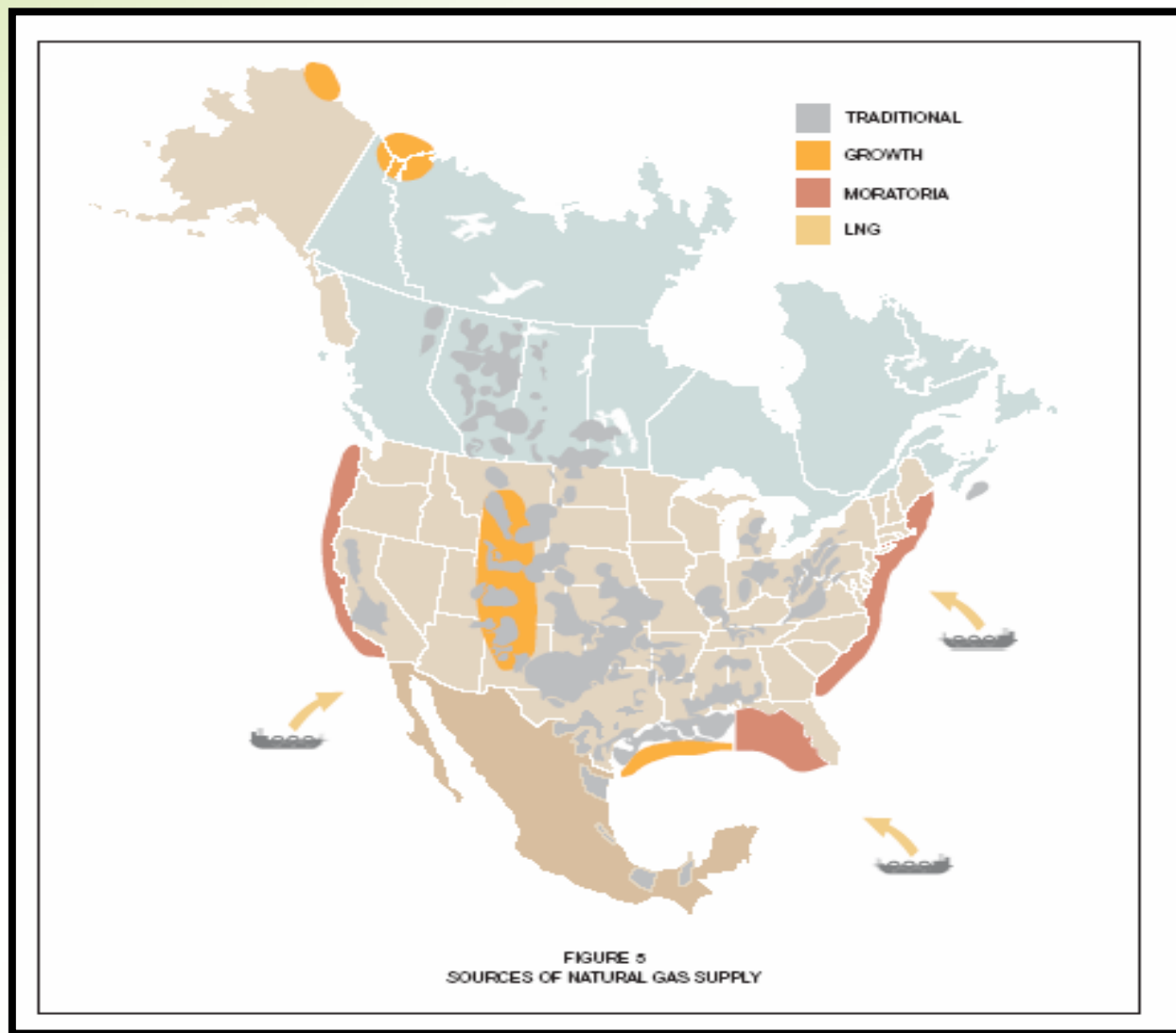


* Includes lower-48 production, ethane rejection, and supplemental gas.

- Production from traditional basins remains strong but has plateaued; Rockies and deepwater Gulf of Mexico offset declines in other areas.
- Growth is driven by LNG imports and Arctic supply.

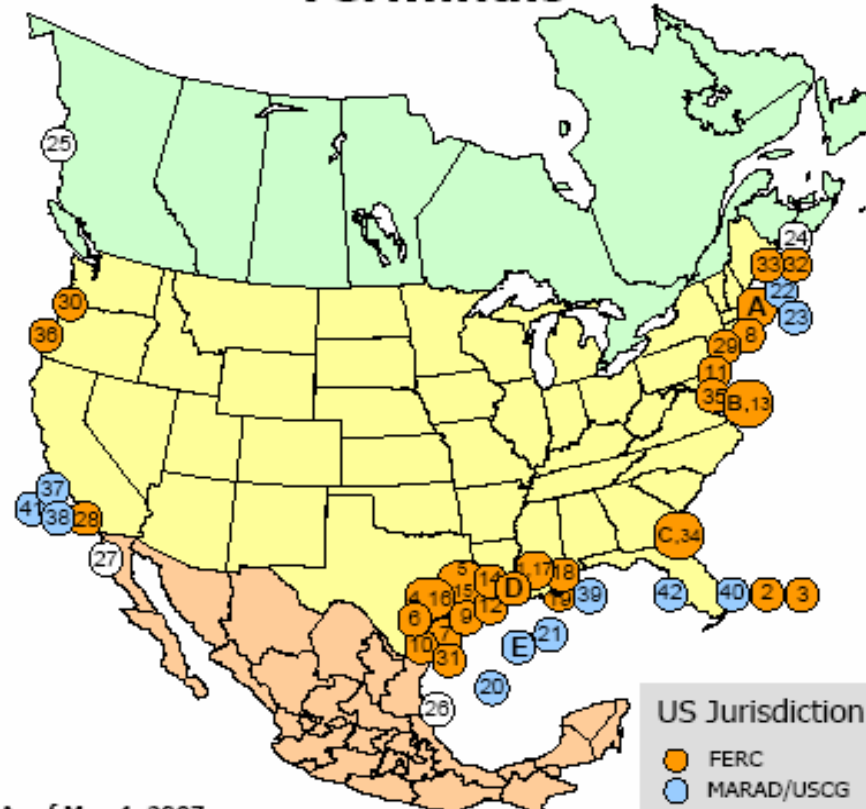


Sources of Natural Gas Supply



FERC

Existing and Proposed North American LNG Terminals



As of May 4, 2007

* US pipeline approved; LNG terminal pending in Bahamas

** Construction suspended

Office of Energy Projects

CONSTRUCTED

- A. Everett, MA : 1.035 Bcfd (DOMAC - SUEZ LNG)
- B. Cove Point, MD : 1.0 Bcfd (Dominion - Cove Point LNG)
- C. Elba Island, GA : 1.2 Bcfd (El Paso - Southern LNG)
- D. Lake Charles, LA : 2.1 Bcfd (Southern Union - Trunkline LNG)
- E. Gulf of Mexico: 0.5 Bcfd (Gulf Gateway Energy Bridge - Exxcelerate Energy)

APPROVED BY FERC

- 1. Hackberry, LA : 1.5 Bcfd (Cameron LNG - Sempra Energy)
- 2. Bahamas : 0.84 Bcfd (AES Ocean Express)*
- 3. Bahamas : 0.83 Bcfd (Calypso Tradebel)*
- 4. Freeport, TX : 1.5 Bcfd (Cheniere/Freeport LNG Dev.)
- 5. Sabine, LA : 2.6 Bcfd (Sabine Pass Cheniere LNG)
- 6. Corpus Christi, TX : 2.6 Bcfd (Cheniere LNG)
- 7. Corpus Christi, TX : 1.1 Bcfd (Vista Del Sol - ExxonMobil)
- 8. Fall River, MA : 0.8 Bcfd (Weaver's Cove Energy/Hess LNG)
- 9. Sabine, TX : 2.0 Bcfd (Golden Pass - ExxonMobil)
- 10. Corpus Christi, TX : 1.0 Bcfd (Ingleside Energy - Occidental Energy Ventures)**
- 11. Logan Township, NJ : 1.2 Bcfd (Crown Landing LNG - BP)
- 12. Port Arthur, TX : 3.0 Bcfd (Sempra Energy)
- 13. Cove Point, MD : 0.8 Bcfd (Dominion)
- 14. Cameron, LA : 3.3 Bcfd (Creole Trail LNG - Cheniere LNG)
- 15. Sabine, LA : 1.4 Bcfd (Sabine Pass Cheniere LNG - Expansion)
- 16. Freeport, TX : 2.5 Bcfd (Cheniere/Freeport LNG Dev. - Expansion)
- 17. Hackberry, LA : 1.15 Bcfd (Cameron LNG - Sempra Energy - Expansion)
- 18. Pascagoula, MS : 1.5 Bcfd (Gulf LNG Energy LLC)
- 19. Pascagoula, MS : 1.3 Bcfd (Bayou Casotte Energy LLC - ChevronTexaco)

APPROVED BY MARAD/COAST GUARD

- 20. Port Pelican: 1.6 Bcfd (Chevron Texaco)
- 21. Offshore Louisiana : 1.0 Bcfd (Main Pass McMoran Exp.)
- 22. Offshore Boston : 0.4 Bcfd (Neptune LNG - SUEZ LNG)
- 23. Offshore Boston : 0.8 Bcfd (Northeast Gateway - Exxcelerate Energy)

CANADIAN APPROVED TERMINALS

- 24. St. John, NB : 1.0 Bcfd (Canaport - Irving Oil/Repsol)
- 25. Kitimat, BC : 1.0 Bcfd (Kitimat LNG - Galveston LNG)

MEXICAN APPROVED TERMINALS

- 26. Altamira, Tamulipas : 0.7 Bcfd (Shell/Total/Mitsui)
- 27. Baja California, MX : 1.0 Bcfd (Energia Costa Azul - Sempra Energy)

PROPOSED TO FERC

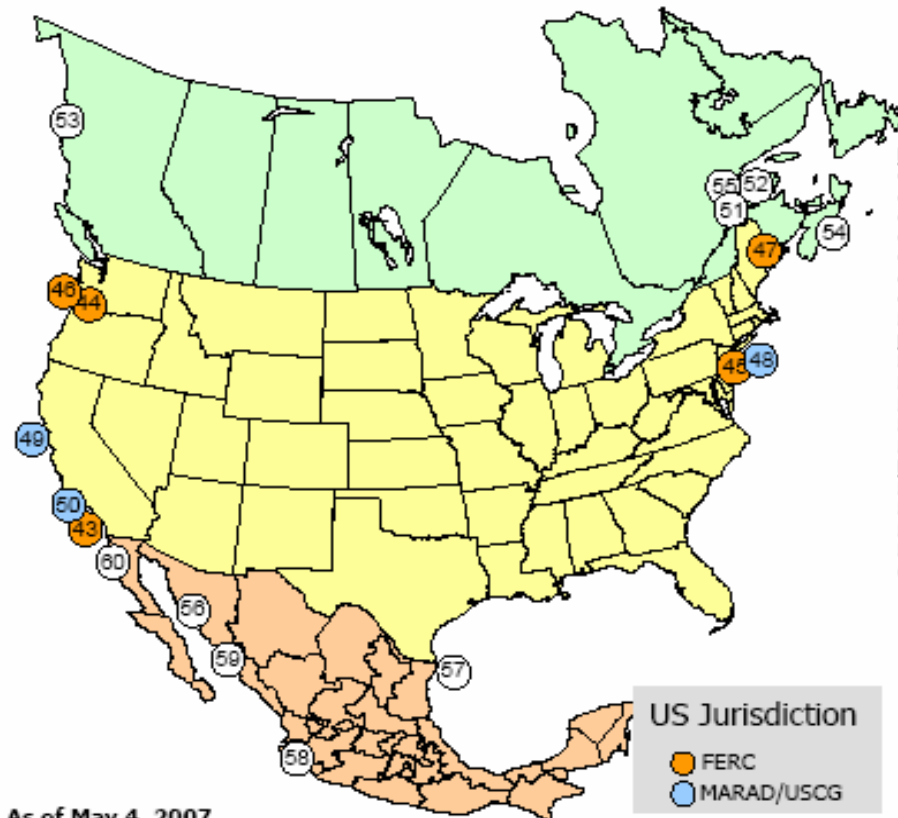
- 28. Long Beach, CA : 0.7 Bcfd, (Mitsubishi/ConocoPhillips - Sound Energy Solutions)
- 29. LI Sound, NY : 1.0 Bcfd (Broadwater Energy - TransCanada/Shell)
- 30. Bradwood, OR : 1.0 Bcfd (Northern Star LNG - Northern Star Natural Gas LLC)
- 31. Port Lavaca, TX : 1.0 Bcfd (Calhoun LNG - Gulf Coast LNG Partners)
- 32. Pleasant Point, ME : 2.0 Bcfd (Quoddy Bay, LLC)
- 33. Robinson, ME : 0.5 Bcfd (Downeast LNG - Kestrel Energy)
- 34. Elba Island, GA : 0.9 Bcfd (El Paso - Southern LNG)
- 35. Baltimore, MD : 1.5 Bcfd (AES Sparrows Point - AES Corp.)
- 36. Coos Bay, OR : 1.0 Bcfd (Jordan Cove Energy Project)

PROPOSED TO MARAD/COAST GUARD

- 37. Offshore California : 1.5 Bcfd (Cabrillo Port - BHP Billiton)
- 38. Offshore California : 0.5 Bcfd, (Clearwater Port LLC - NorthernStar NG LLC)
- 39. Gulf of Mexico: 1.4 Bcfd (Blenville Offshore Energy Terminal - TORP)
- 40. Offshore Florida: 1.9 Bcfd (SUEZ Calypso - SUEZ LNG)
- 41. Offshore California: 1.2 Bcfd (OceanWay - Woodside Natural Gas)
- 42. Offshore Florida: 1.2 Bcfd (Hoegh LNG - Port Dolphin Energy)

FERC

Potential North American LNG Terminals



As of May 4, 2007

POTENTIAL U.S. SITES IDENTIFIED BY PROJECT SPONSORS

- 43. Offshore California: 0.75 Bcfd, (Chevron Texaco)
- 44. St. Helens, OR: 0.7 Bcfd (Port Westward LNG LLC)
- 45. Philadelphia, PA: 0.6 Bcfd (Freedom Energy Center - PGW)
- 46. Astoria, OR: 1.5 Bcfd (Oregon LNG)
- 47. Calais, ME: ? Bcfd (BP Consulting LLC)
- 48. Offshore New York: 2.0 Bcfd (Safe Harbor Energy - ASIC, LLC)
- 49. Offshore California: 0.6 Bcfd (Pacific Gateway - Excelerate Energy)
- 50. Offshore California: ? Bcfd (Esperanza Energy - Tidelands)

POTENTIAL CANADIAN SITES IDENTIFIED BY PROJECT SPONSORS

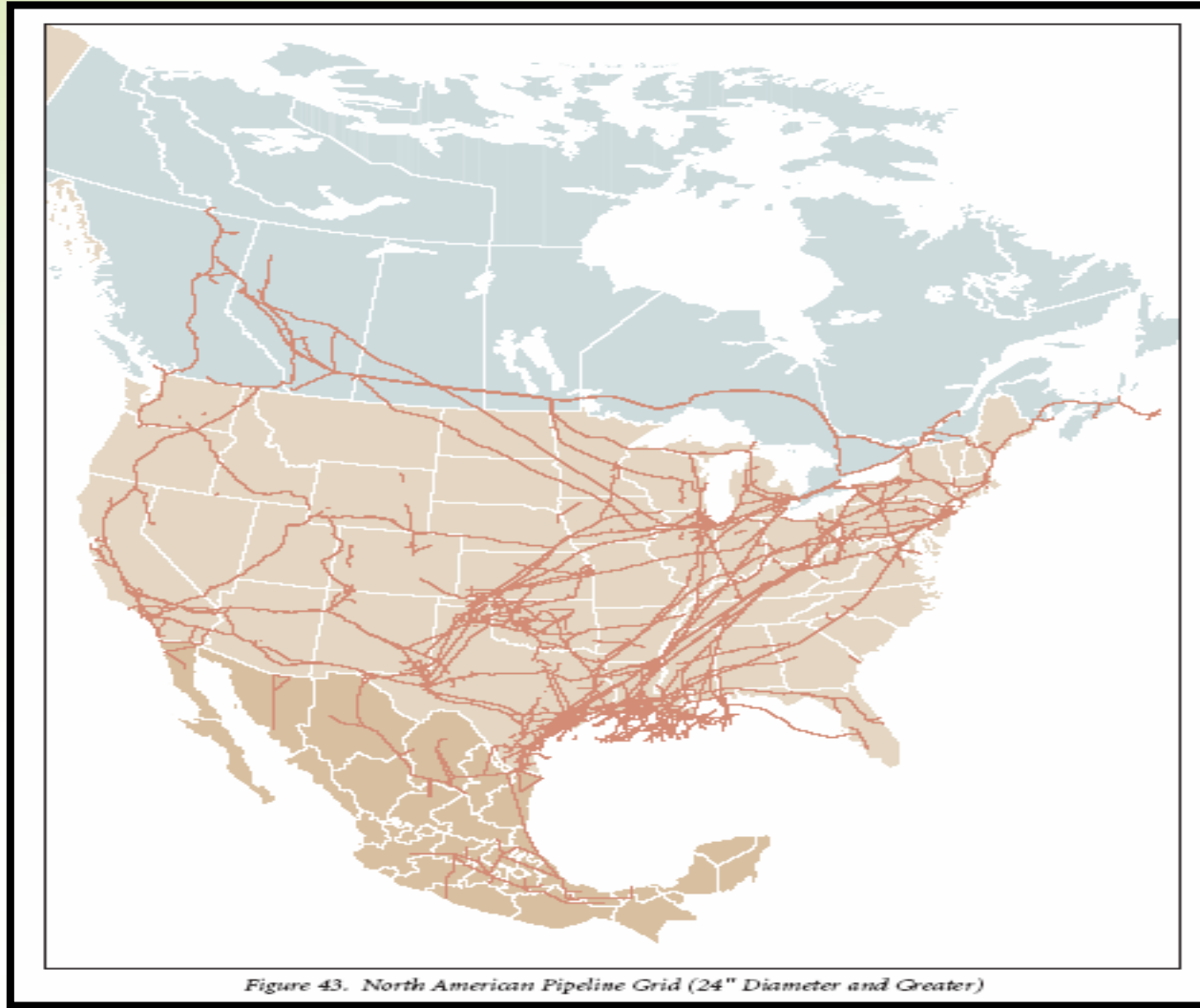
- 51. Quebec City, QC: 0.5 Bcfd (Project Rabaska - Enbridge /Gaz Met/Gaz de France)
- 52. Rivière-du-Loup, QC: 0.5 Bcfd (Cacouna Energy - TransCanada/PetroCanada)
- 53. Prince Rupert, BC: 0.30 Bcfd (WestPac Terminals)
- 54. Goldboro, NS: 1.0 Bcfd (Keltic Petrochemicals)
- 55. Énergie Grande-Anse QC: 1.0 Bcfd

POTENTIAL MEXICAN SITES IDENTIFIED BY PROJECT SPONSORS

- 56. Puerto Libertad, MX: 1.3 Bcfd (Sonora Pacific LNG)
- 57. Offshore Gulf, MX: 1.0 Bcfd (Dorado - Tidelands)
- 58. Manzanillo, MX: 0.5 Bcfd
- 59. Topolobampo, MX: 0.5 Bcfd
- 60. Baja California, MX: 1.5 Bcfd (Energy Costa Azul - Sempra Energy - Expansion)

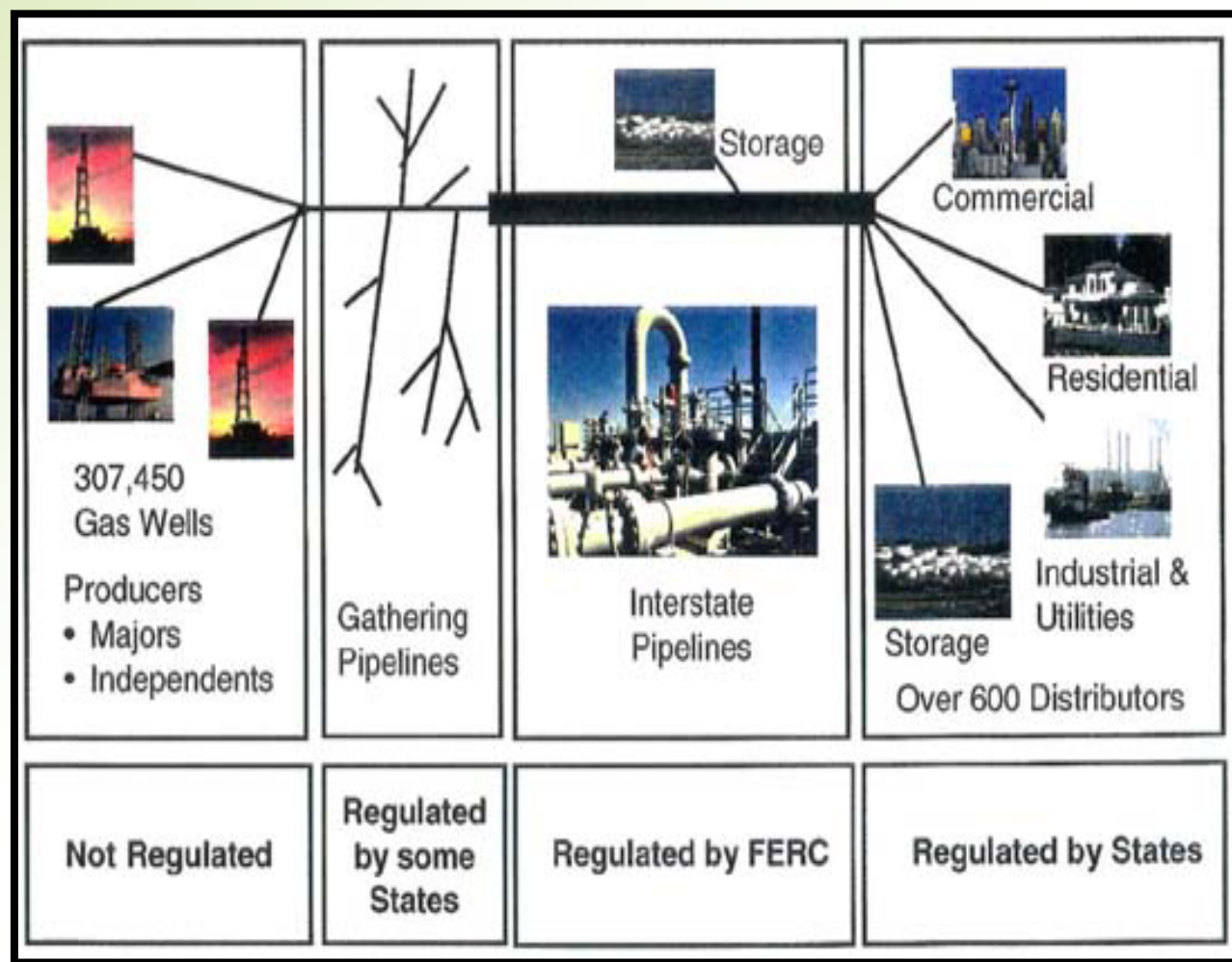
Office of Energy Projects

North American Pipeline Grid





The Natural Gas Industry



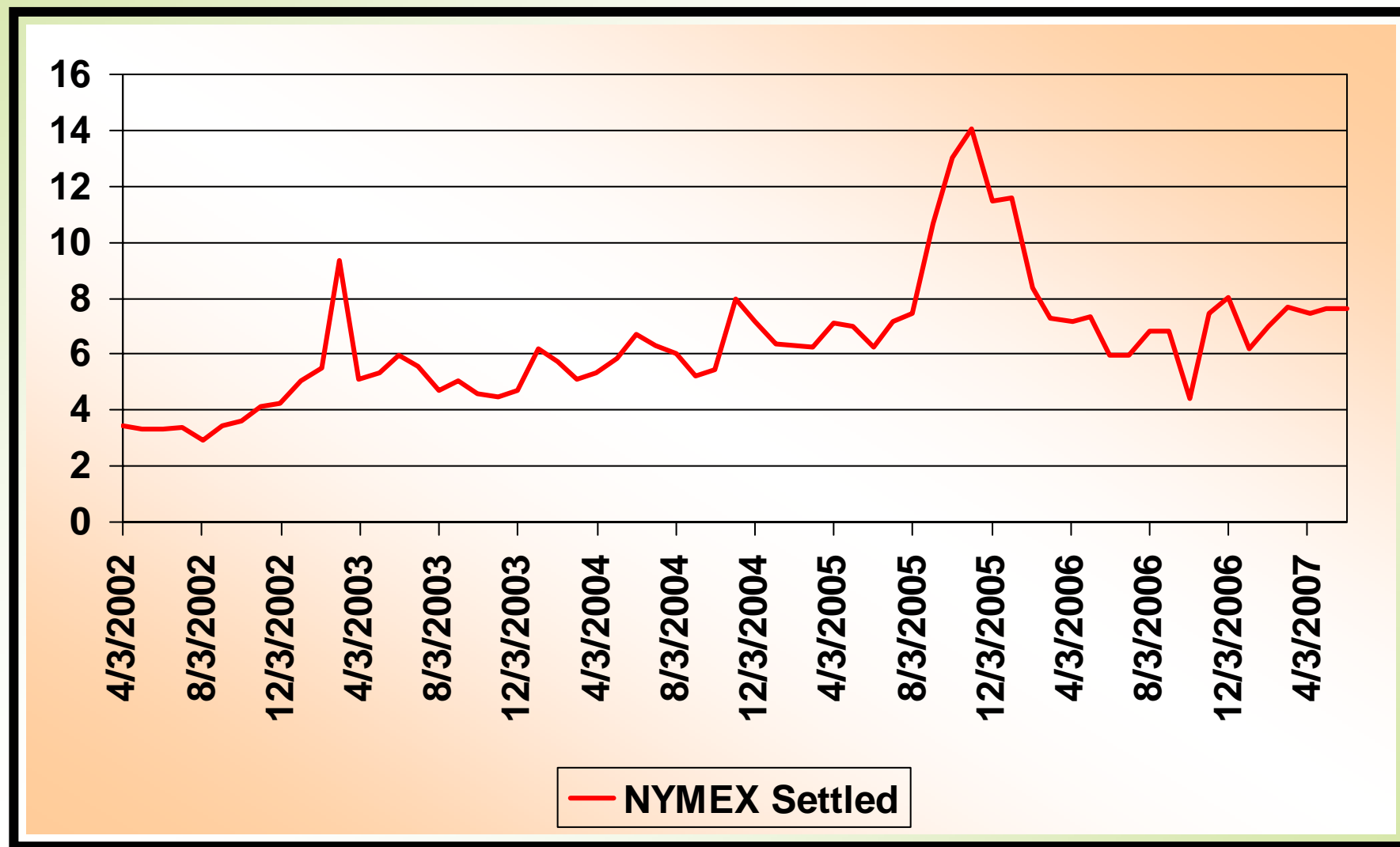


Natural Gas Supply Pricing

- Most gas contracts between a producer and utility for gas supply reference an index price in some manner
- New York Mercantile Exchange Natural Gas Futures Basically Financial Hedging Transactions
 - *Prices cited are at Henry Hub, La., considered a liquid trading location*
 - *Prices are published daily in financial papers and trade publications*
 - *Commitments to buy are in 10,000 Dt units at a future date (next day, next month, strip of months, etc.)*
 - *A counter party agrees to supply the gas*
- Regulation of trading and price reporting
 - *FERC*
 - *Commodity Futures Trading Commission*



NYMEX GAS FUTURES PRICES (\$/DT)



NYMEX prices as of June 1, 2007

Federal Energy Regulatory Commission



- Natural Gas Act (NGA) was enacted in 1938 to regulate the interstate pipeline transportation and sales of natural gas
 - *Provides for the exportation or importation of natural gas*
 - *Provides for pipelines to file for rate increases*
 - *Provides for complaints to be filed on pipelines' rates or practices*
- The Federal Energy Regulatory Commission (FERC)¹ regulates both the certification of interstate natural gas pipelines and the transportation of natural gas in interstate commerce
- Companies wishing to build interstate pipeline facilities or operate pipelines first must obtain a Certificate of Public Convenience and Necessity (Certificate) from FERC
- In regulating the transportation of natural gas in interstate commerce, FERC sets rates, terms and conditions for operation of the services

¹ FERC is a five-member Federal Commission in the Department of Energy. Each member is nominated by the President and confirmed by the U.S. Senate.



Natural Gas Act

- Natural Gas Act (NGA) was enacted in 1938 to regulate the interstate pipeline transportation and sales of natural gas
 - *Section 3*
 - Provides for the exportation or importation of natural gas
 - *Section 4*
 - Provides for pipeline companies to file for rate increases
 - *Section 5*
 - Provides for complaints to be filed on pipeline companies' rates or practices



FERC Rate Cases

- Section 4
 - *Pipeline company files a rate increase request*
 - *5 month suspension period*
 - *Rate increase goes into effect, subject to refund*
 - *No statutory period in which FERC must act*
 - *Cases, or litigated issues, can take years to be resolved*
 - *Rate cases can be “pancaked” (i.e., if the pipeline company files for 2nd, or even 3rd case before the first one is decided by FERC)*
 - *Timing (no statutory period) that the proposed rates go into effect creates a huge incentive on the parties (other than the pipeline company) to settle cases*



FERC Rate Cases....cont'd

- Section 5
 - *Complaint can be filed by a party that a pipeline company is over-earning*
 - *Any decrease found to be warranted is only prospective from the time of the FERC determination*
 - *No statutory period – creates an incentive for the pipeline company to extend the process*



FERC Rate Cases....cont'd

- Issues in FERC rate cases are similar to the issues the states address in gas distribution utility rate cases
 - *Cost allocation and rate design – straight fixed variable (SFV)*
 - *Return on equity*
 - *Cost of service – depreciation, O&M, allocations to/from affiliates*
- In the past pipeline rate cases had been the major portion of the Federal intervention work
- Multi year stay-outs have dramatically decreased rate cases being filed



Pipeline Certification Proceedings

- Application filed
 - *Notice issued in Federal Register*
 - *Interventions, comments, protests due usually about a month after filing is made*
- Need and rate review
 - *Do not usually have testimony and hearings – paper proceedings*
 - *Analysis of need, rate issues are done through data requests*
 - *There is no specific provision for additional comments, but generally comments may be submitted at any time, with a request to allow the comments to be included in the proceeding*



Pipeline Certification Proceedings....cont'd

- Environmental Review
 - *Also a paper proceeding, not usually done through hearings*
 - *FERC requests parties to identify environmental/routing issues*
 - *Data requests, meetings to address identified issues*
 - *Draft Environmental Impact Statement (DEIS) issued*
 - *Comments on DEIS usually due 45 days after issuance*
 - *Environmental Impact Statement (EIS) issued*
- Issuance of Certificate
 - *After EIS is issued, FERC makes a determination as to issuance of a certificate*
 - *Certificate may be subject to various conditions*



Pipeline Certification Proceedings....cont'd

- Issues reviewed in certificate proceedings
 - *Need (New and Expansion Projects)*
 - Pipeline companies must show the need for additional pipeline infrastructure
 - Significantly increasing electric generation demand
 - Core gas load growth
 - Pipeline companies assume financial risk for any unsubscribed capacity. Pipeline companies will not build facilities until they have sufficient contracts in place to support the project.
 - *Rate Impacts*
 - Incremental (applied only to customers served by the new facilities) or rolled-in (applied to all customers system-wide) rates
 - Initial rates – projects must support themselves without subsidization from existing ratepayers
 - A pipeline company must rely on new customers or its own funds
 - *Routing issues*
 - Can be the most contentious issues
 - “Not in my back yard” (NIMBY) issues can cause years of delay in getting a line certificated and built

Conditions for Operation of Services Examples



- Open Access
 - *Historically, prior to 1985, customers bought gas supply and transportation services together as a bundled service from the pipeline companies*
 - *Interstate pipeline companies now provide open access transportation and storage services only.*
 - Customers buy gas directly from producers or other energy service companies.
 - Pipeline companies maintain information systems available to customers for gas flows scheduling, release of capacity and informational postings
- Affiliate Codes of Conduct
 - *Pipeline companies and their affiliates are restricted from specific activities in order that a “level playing field” exist for all market participants*
 - *This also impacts distribution companies that are affiliates of interstate pipeline companies*
- Gas Quality and Pipeline Pressures
 - *Minimum/ maximum energy (BTU) content of gas*
 - *Gas Quality Specifications (moisture content, contaminants, etc.)*
 - *Minimum/Maximum pipeline pressures*



New York Public Service Commission

Mission Statement

- To ensure safe, secure, and reliable access to energy, telecommunications, and water services for New York State's citizens and businesses.
- To seek to maximize customer choice and value for these services by stimulating innovation, strategic infrastructure investment, and the use of resources in an efficient and environmentally responsible manner.
- To judiciously ensure high-quality service and rates that are just and reasonable.

New York State Gas Industry *Rate Cases*



- Process
 - Company files a rate case (direct testimony and exhibits) with tariff changes
 - Requests suspended until Commission action (11 month litigated proceeding)
 - Field Investigation, Data Requests, Interrogatory Requests
 - Public Hearing
 - Cross-examination of Company
 - Direct Testimony of Staff and Intervenors
 - Cross-examination of Staff and Intervenors
 - Settlement meetings may occur to reach agreement on issues and avoid litigation. Multi-year agreements can be reached through the settlement process.

New York State Gas Industry

Rate Casescont'd



- Issues in state rate cases are similar to the issues the FERC address in gas distribution utility rate cases
 - *Cost allocation and rate design*
 - *Return on equity*
 - *Cost of service – depreciation, O&M, allocations to/from affiliates*
- In the past rate cases had been a major portion of the state regulation
- Multi year stay-outs have dramatically decreased rate case activity and settlement negotiations have decreased the level of litigated cases.

New York State Gas Industry

Major Components of Natural Gas Tariffs



- *Delivery Charge (Set by the Commission)*
 - Reflects the costs of moving the gas from the citygate (interconnection with interstate pipeline company) to customer's meter
- *Gas Supply Charge*
 - Adjusted monthly and reconciled annually
 - Reflects the costs of gas supplies (commodity and capacity) purchased on interstate pipelines or from local production
 - Commodity price is set by the marketplace; utilities use hedging instruments to moderate price volatility;
 - Capacity price is set by FERC

New York State Gas Industry

Major Components of Natural Gas Tariffscont'd



- Other Rate Components
 - *Weather Normalization Clause* - lower bills during colder than normal weather periods and raises bills during warmer than normal weather; tends to smooth customer bills and revenue stream to LDC
 - *Storage Service* - allows for gas injections during the summer when prices are presumably low, and withdrawals in winter during peak demand and high prices
 - *Standby Service* - back-up commodity supply service provided to transportation customers is needed.

New York State Gas Industry

Major Customer Groups



- Sales Customers
 - *Purchase both delivery and gas supply service from the local distribution company (LDC)*
 - *Generally residential and small commercial customers*
- Transportation Customers
 - *Purchase delivery service from the LDC*
 - *Purchase gas supply from a third party and have it delivered to the citygate for re-delivery by the LDC to the customer*
 - *Large commercial and industrial customers have taken transportation service since 1985*
 - *Smaller commercial and residential loads can be aggregated by gas marketers into groups large enough to purchase delivery service, since 1996*

New York State Gas Industry

Types of Gas Service



- Gas Supply and Delivery Service provided by Utilities:
 - *Firm*
 - Customers full requirements provided at all times
 - Residential, Commercial and Industrial
 - *Interruptible*
 - Discounted rates where service can be halted based on the need of the utility to use the supply for firm customers needs
 - *Temperature Controlled*
 - Gas supply is automatically interrupted based on ambient temperatures generally 15°F or 20°F

What is Being Unbundled in the Natural Gas Business?



- Services Competitively Available Now
 - *Commodity*
 - *Capacity*
 - *Balancing*
 - *Billing*
- Potential Competitive Services
 - *Metering*
 - *Information Services*

New York Program Overview

Deregulation and Competition in Gas Supply



- Large Customer Transportation has been available since 1983-84
 - *This accounts for approximately 35% of LDCs throughput*
- Small Customer Aggregated Transportation commenced in 1996
- Available to all customers
 - *As of January 2006, 23.6% of small customers throughput associated with 400,500 customers (8.7%) have migrated to transportation service.*

Gas Safety Program

Statutory Authority



- United States Code Title 49 Chapter 601
 - *...to provide adequate protection against risks to life and property posed by pipeline transportation and pipeline facilities...*
 - *Delegates responsibility for intrastate transportation to the states as long as the state is certified annually by the US Secretary of Transportation. This certification shows that a state is satisfactorily ensuring compliance with applicable federal safety standards*
- New York State Public Service Law
 - *Article 4, Section 65(1) states... "Every gas corporation...shall furnish and provide such service...and facilities as shall be safe and adequate and in all respects just and reasonable."*
 - *Article 4, Section 66(2) states that the Commission... "Shall investigate the methods employed by corporations distributing and supplying gas, have power to order reasonable improvements, and protect the public."*

Gas Safety Program

State/Federal Partnership



- Agent Agreement with U.S. Department of Transportation's Office of Pipeline Safety (OPS)
- Apply New York State regulations to intrastate pipeline operators
- Inspect interstate pipeline operators for compliance with federal regulations and report results to OPS

Gas Safety Program

Current Activities



- Record & Field Inspections for Code Compliance
- Construction Inspections
- Incident and Safety Complaint Investigation
- Operation and Maintenance Procedure Review
- Facility Design & Specification Review
- Damage Prevention
- Code Changes and Waivers
- Performance Measure monitoring

Gas Safety Program

New York Pipeline Facilities Inspected



- 1180 miles - gas transmission pipelines
- 46,000 miles - gas distribution pipeline
- 3 million gas service lines
- 90 miles - steam pipelines
- 3400 miles – gas transmission pipelines
- 1250 miles – liquid products pipelines