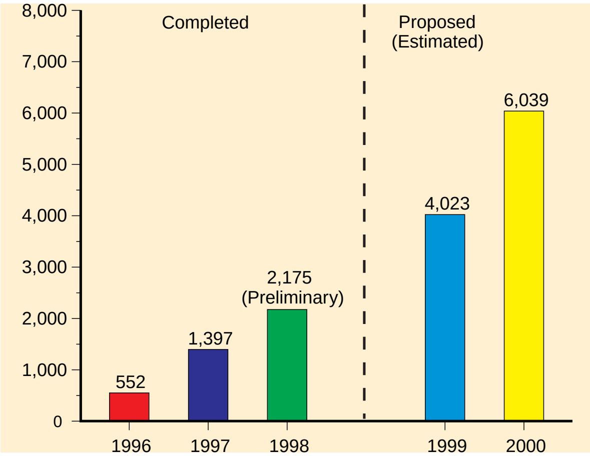
- As much as $10 billion could be spent on pipeline expansions during 1999-2000. More than 75 pipeline projects (20.1 Bcf per day) have been proposed for development in the Lower 48 States during these 2 years.

Annual pipeline in estment could reac illion in



- Much of the new development is to increase access to Canadian natural gas. U.S. access to Canadian supplies, as measured by crossborder pipeline capacity, has increased by nearly 90 percent since 1990 to 12.3 Bcf per day at the end of 1998.

- ith the additional 3.7 Bcf per day of crossborder capacity currently planned for completion by 2000, import capacity from Canada could be as much as 42 percent of the capacity from the U.S. Southwest, the major U.S. producing region.

Regulatory reform has altered markets at both the interstate and state levels

Many of the firm service contracts for transporting natural gas along interstate pipelines have been in place for several years and may no longer reflect current market conditions. Consequently, some shippers are choosing not to renew these contracts when they expire and instead are turning back some or all of the capacity to the pipeline companies.

- An estimated 19 percent (excluding a turnback of 1.2 trillion Btu (TBtu) per day to El Paso Natural Gas Company in 1997) of firm service capacity under long-term contracts was turned back between April 1, 1996, and March 31, 1998. Some of this capacity has been remarketed but generally at much lower rates.

- Between 1998 and 2003, about 8.0 TBtu per day, or 8 percent of currently committed capacity, is likely to be turned back to interstate pipeline companies. Some or all of this capacity may be remarketed, but potentially at lower rates which could lead to reduced revenues for pipeline companies.

State unbundling of services continued in 1998 although at a relatively slow pace. As of uly 1998, five states had implemented complete unbundling programs for some of its residential customers. However, only 2 percent of the eligible customers are participating.

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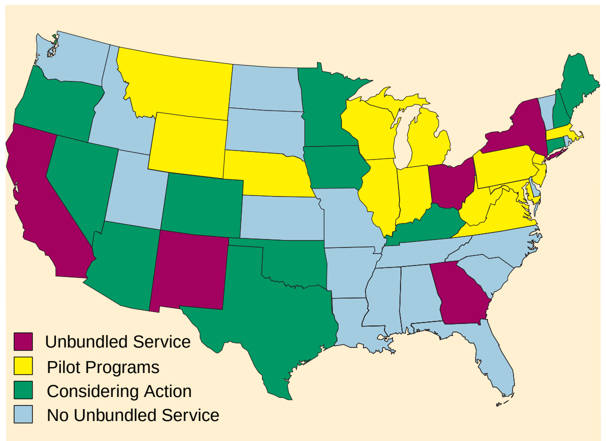

Corporate combinations are reaching all-time highs as companies look for opportunities in both gas and electricity

- Mergers and acquisitions among companies in the natural gas industry have increased nearly four-fold since 1990, totaling $39 billion in 1997.

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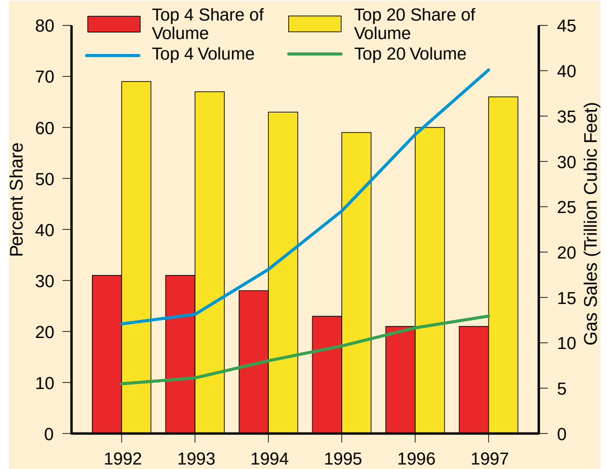

- Still, the growth in gas industry corporate combinations has not meant a decrease in competition.

- Many of the corporate combinations share the goal of expanding beyond a single commodity or a single function in order to become a one-stop energy center.

- Corporate combinations remain under close scrutiny by both Federal and state agencies, particularly as to whether or not the resulting entities would exert undue market power.

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NATURAL GAS 1998: Issues and Trends

An overview of the current natural gas industry

Includes information on:

- Natural gas and the environment
- Natural gas hydrates
- Offshore development and production
- National natural gas pipeline network
- Pipeline transportation contracts
- Mergers and acquisitions

www.eia.doe.gov
Energy Information Administration

Highlights of the 1998 Natural Gas Market

Relatively mild winters the past 2 years led to reduced seasonal demand and lower prices

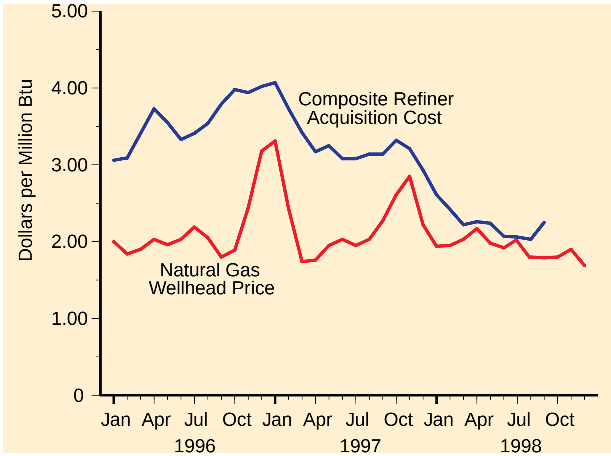
End users consumed an estimated 19.3 trillion cubic feet (Tcf) of natural gas in 1998, 4 percent below the all-time highs in 1996 and 1997 of just over 20.0 Tcf.

- The largest decline (10 percent) occurred in the residential sector as warmer temperatures reduced space-heating demand
- Only the electric utility sector showed strong growth in gas consumption in 1998. Natural gas consumption by electric utilities for the first 11 months of 1998 was 11 percent higher than during the same period in 1997.

Natural gas prices in all segments of the industry were lower in 1998 than in 1997, as lower consumption along with abundant foreign supplies and even larger decreases in oil prices resulted in a significant drop in prices.

- The average wellhead price in 1998 was $1.92 per million Btu, 15 percent less than in 1997.
- Residential and commercial users paid an estimated $6.91 and $5.50 per thousand cubic feet (Mcf), respectively, through the first 11 months of 1998, 1 and 5 percent less than in 1997, while industrial consumers paid $3.10, or 12 percent less than in 1997.
- The average price paid by the electric utility sector through October 1998 was $2.38 per Mcf, or 13 percent less than in 1997.
- The New York Mercantile Exchange near-month futures price for delivery at the Henry Hub collapsed in the final 2 months of 1998, ending the year at $1.945 per million Btu, nearly one-third less than its April high of $2.689.

A decline in petroleum prices put downward pressure on natural gas prices



Abundant gas supplies placed additional downward pressure on prices

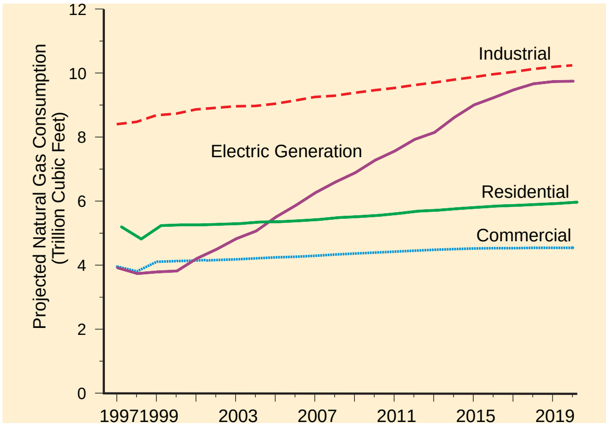
- Natural gas production in 1998 is estimated to have been 19.0 Tcf, essentially the same as in 1997, despite lower overall demand. The 1998 level is the highest since 1981 when 19.2 Tcf was produced.
- Production of natural gas in the Federal offshore gained more than 400 billion cubic feet (Bcf) between 1993 and 1997 to 514 Bcf as technology has developed to facilitate and reduce costs associated with drilling in offshore water deeper than 1,000 feet.
- Natural gas imports from Canada reached a record 3.0 Tcf in 1998, representing 14 percent of U.S. consumption.
- By the start of the 1998-99 heating season, storage stocks were 3,172 Bcf, the highest level since 1992 and only the third time this decade that inventories were above the 3,100 mark.

The URL for Natural Gas Issues and Trends:
www.eia.doe.gov/oil_ gas/natural_ gas/ analysis_publications/ natural_gas_1998_issues_ and_ trends/it98.html

Electricity growth and environmental concerns are key to gas industry expansion after 2000

Natural gas consumption is expected to grow steadily into the next century, with demand projected to reach 32 trillion cubic feet (Tcf) by 2020, about 50 percent more than current levels.

- Most of the growth is expected to be closely tied to electricity generation.



- Nearly all future electric utility capacity additions are expected to be fueled by natural gas, primarily because of the lower capital costs and shorter construction lead times of advanced combined-cycle plants in comparison with those of conventional coal-fired plants.

Natural gas use could move as high as 35 Tcf by 2020 if the United States adopts the Kyoto Protocol's requirement to reduce U.S. carbon emissions 7 percent below 1990 levels between 2008 and 2012.

- Natural gas when burned emits lower quantities of greenhouse gases and other air pollutants per unit of energy produced than do other fossil fuels.
- Implementation of the Kyoto Protocol, or its recommendations as working parts of an accepted global effort, remains uncertain. However, it seems certain that natural gas will be a key factor in efforts to improve overall global environmental conditions.

Gas resources are substantial but continued supply growth is uncertain without price recovery

- The Nation has a technically recoverable natural gas resource base of 1,156 Tcf remaining to be tapped, exclusive of proved reserves and Alaskan gas.
- Earth's vast deposits of natural gas hydrates would provide a significant new source of natural gas if it could be recovered. Recovery of only 1 percent of the hydrate resource would more than double the domestic gas resource base.
- Proved reserves moved 0.4 percent higher in 1997 to 167.2 Tcf. From 1994 through 1997, reserve additions replaced nearly 107 percent of production, arresting a long-term decline in total proved reserves.
- The majority (52 percent, or 80.9 Tcf) of proved reserves in the Lower 48 States are in the onshore and offshore Gulf Coast region. Recoverable gas resources in the Gulf are estimated to be 96 Tcf in undiscovered fields with an additional 37 Tcf to be proven in already known fields.

Current low prices could have a longer-term effect on natural gas exploration, development, and production

- Relatively low oil and gas prices for much of 1998 have resulted in reduced drilling in the shallow waters of the Gulf, where historically most production occurs.
- The economics of deep water projects has improved to the point that operators have continued with project development despite the recent downturn in prices. However, potential development cannot proceed unconstrained without an upturn in prices.

Significant pipeline expansion and investment will be needed to support the projected 32 Tcf market

- Interstate pipeline capacity has increased by more than 16 percent on an interregional basis since 1990. Between 1990 and 1998, at least 17 new interstate pipelines and hundreds of expansion projects were constructed, adding more than 40 Bcf per day of new capacity to the national network.