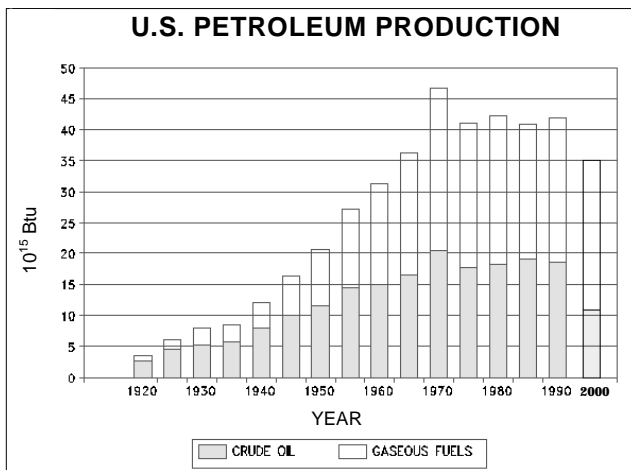


# OVERVIEW OF AN INDUSTRY

Since the beginning of the oil industry in 1859, natural gas and gas liquids have supplied about one-half of total petroleum energy production in the United States. They currently account for some 60% of total U.S. petroleum energy production and an estimated 40% of the world's petroleum energy production.

It is obvious, therefore, that the light hydrocarbons industry plays a vital role in meeting the tremendous energy needs of this industrialized age. In filling the role, it also performs equally

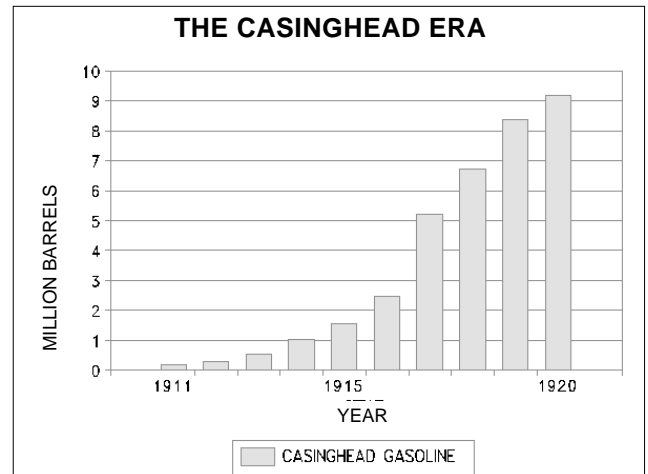


important functions in the efficient production of crude oil, conservation of resources, and efficient utilization of natural gas.

Remaining reserves of petroleum energy in the U.S. are about 65% natural gas and gas liquids. World reserves are estimated to be 48% natural gas. It is equally obvious, then, that the light hydrocarbons-natural gas and gas liquids will become even more important in the years to come, for the simple reason, that more than half of U.S. petroleum energy, and a large part of world petroleum energy, is in the gaseous form.

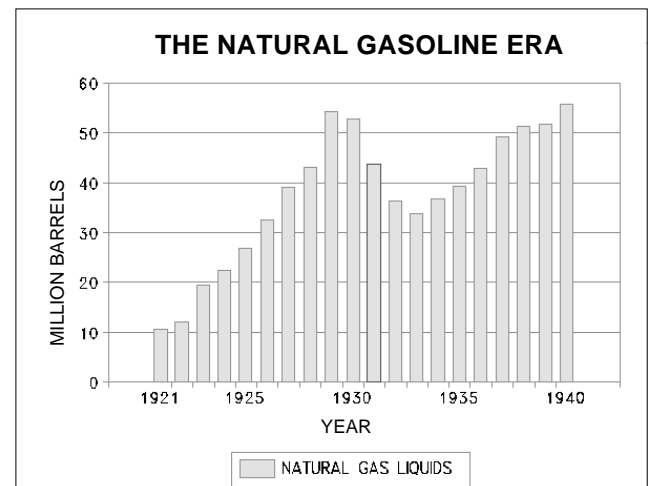
From its beginning as a commercial proposition in the oil fields of Appalachia, the U.S. gas processing industry has experienced four distinct historical eras, each associated with the technology and utilization of a particular product.

**The Casinghead Era, 1900-1920**, lasted from first commercial production in West Virginia through a chaotic twenty years when motor fuel demand consistently outstripped production.

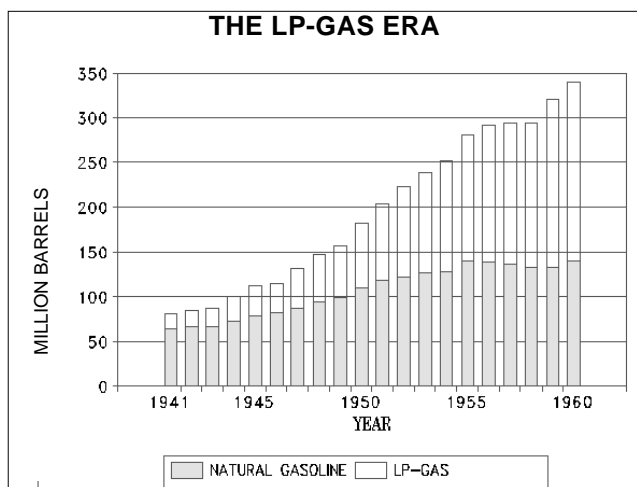


During this period, the industry spread into the new oil fields of the Mid-Continent and California, and over a thousand small compression plants were built.

The industry's only product, casinghead gasoline, grew from nothing to the then prodigious figure of 9 million bbl/yr, or about 25,000 bbl/day. Virtually all of this production was extracted from some 1.3 billion cfd of casinghead gas produced with crude oil. Gas was largely flared, used as lease fuel, or piped to limited nearby markets.



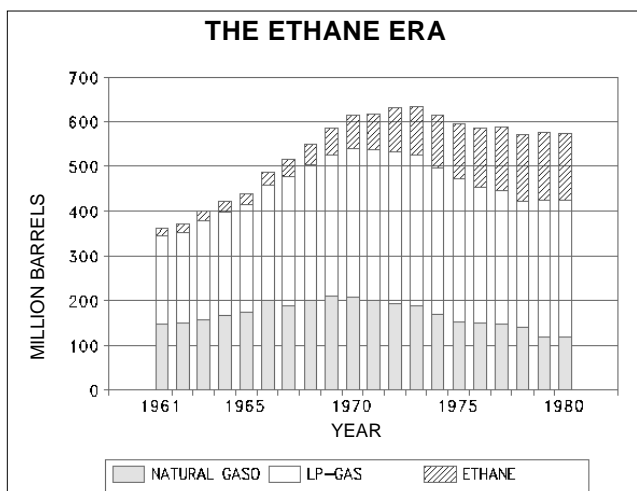
**The Natural Gasoline Era, 1920-1940**, occupied the years from the beginning of a recognizable industry through its establishment as an integral part of the petroleum industry. During this period, rational and effective conservation



mechanics evolved, which established the gas processing function as an essential operation in the production of both crude oil and natural gas. Also, during this era, the transcontinental high-pressure gas pipe line became a reality and the modern gas transmission industry was born, which provided large and growing feedstocks for gas processing.

From this point, gas processing became increasingly identified with, and indispensable to, the production, conservation, and utilization of natural gas. Consumption of both liquids and gas increased by five times during this period, but the industry's growth had just begun. Absorption and fractionation were introduced early in the era to become the principal tools of gas processing technology.

**The LP-Gas Era, 1940-1960**, began as a result of enormous postwar increases in natural



gas production, which provided apparently boundless volumes of propane and butanes for recovery. Efficient production, transportation, storage, and marketing of LP-gases became the industry's principal concerns.

During this memorable period, natural gas consumption increased nearly six times, production of natural gas liquids increased by more than ten times, and LP-gas production exceeded that of natural gasoline. Refrigerated absorption became the standard process route to deeper extraction of propane from natural gas.

**The Ethane Era, 1960-1980**, was spawned by the confluence of two factors: a rocketing demand for ethane as a preferred feedstock for ethylene manufacture, and the advent of the large capacity pipeline plant that made possible the economic recovery of ethane from lean gases. Deep refrigeration and cryogenic processes have increased ethane recovery to as high as 80%, and have, in the process, brought about virtually total extraction of propane and heavier components from natural gas.

Total production of natural gas liquids during the ethane era peaked at about 2 million bbl/day. Roughly 85% of this total was produced in gas processing plants, with the remainder supplied by field separation and lease condensate. Natural gas production of 22.6 trillion cu ft in 1973 was accompanied by total gas liquids production of 746 million bbl/yr, including lease condensate.

Declining U.S. natural gas production since 1973 has resulted in a similar decline in gas liquids. Nevertheless, total NGL production, including lease condensate, remains at nearly 686 million bbl/yr, or about 23% of total U.S. liquid hydrocarbon production.

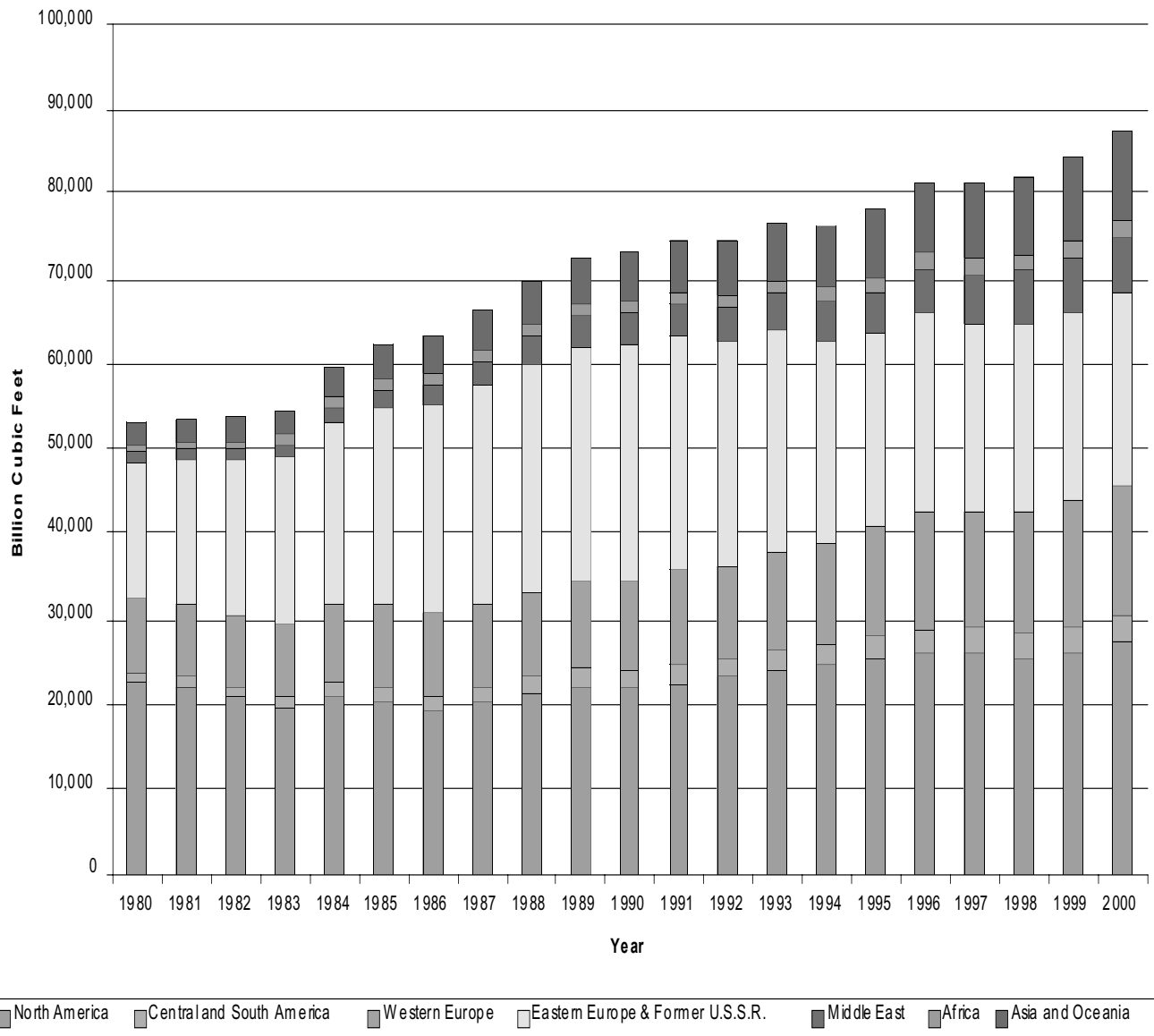
## THE INTERNATIONAL ERA, 1980 & BEYOND

The severe energy price shocks of 1973 and 1979 precipitated a drastic reduction in world petroleum energy demand as consumers and consuming nations responded with unprecedented measures to conserve energy and otherwise reduce energy consumption a momentum that is far from spent. The resulting reversal in energy demand growth culminated in the disastrous price collapse of 1986 and a traumatic restructuring of virtually the entire petroleum industry.

As disruptive as these events may have been to the petroleum industry in general, they focussed attention on the latent value of gaseous fuels to both exporters and importers of petroleum energy.

Current world production of dry natural gas is estimated at about 84 trillion cubic feet per year (2378 x 10<sup>9</sup> cubic meters) - an increase of about

**World Dry Natural Gas Consumption, 1980-2000**



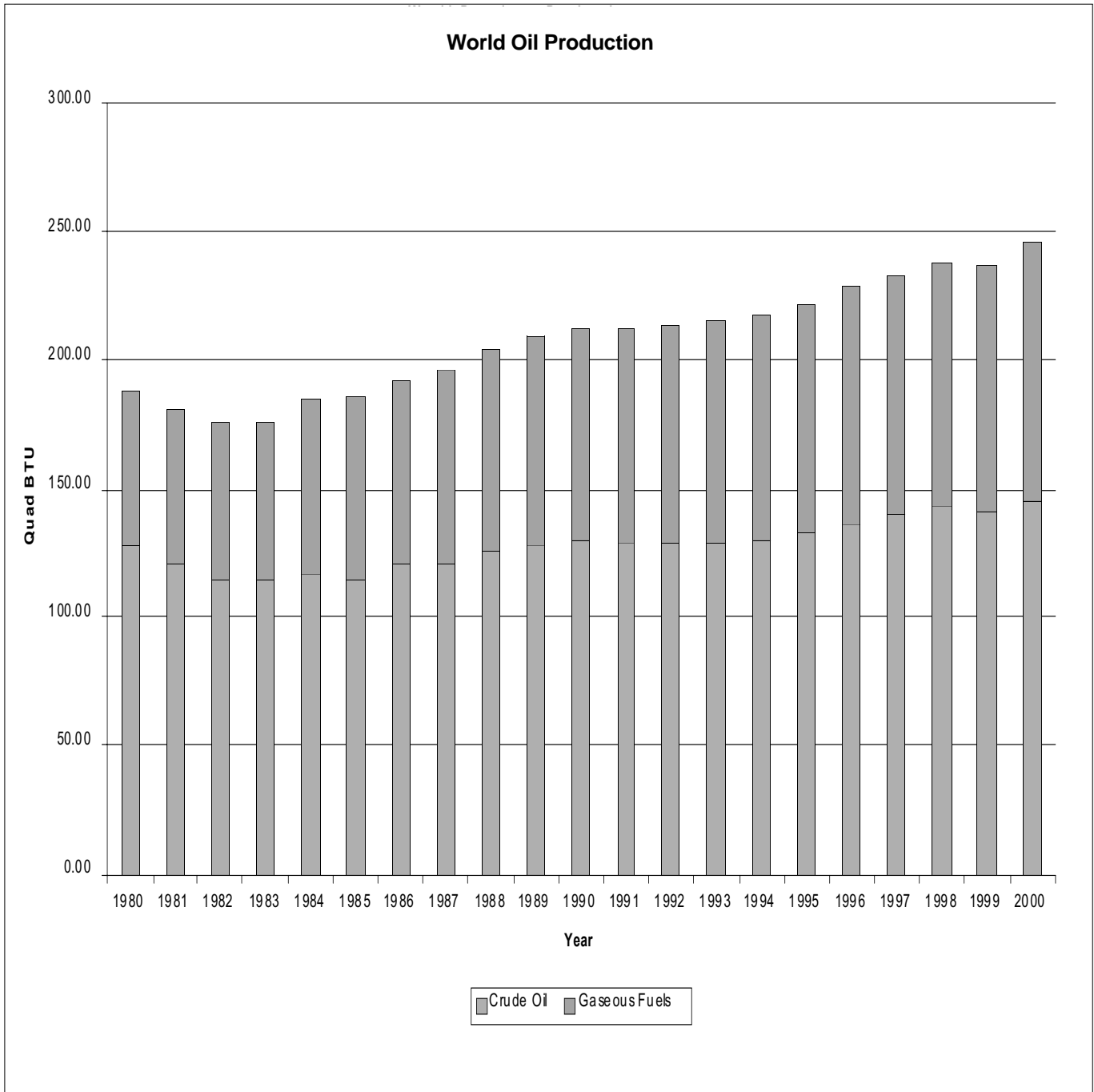
75% since 1977. World-wide gas plant liquids production is currently estimated at about 5.8 million barrels per day, up about 87% over 1977 production. Combined natural gas and gas liquids provide total gaseous fuels representing about 40% of world petroleum production.

In recent years, many oil exporting countries have concentrated on utilizing their natural gas resources internally to free crude oil for more profitable export markets. Natural gas utilization and the accompanying gas processing function is expected to increase significantly in the years ahead as oil producing nations further develop indigenous gas reserves for internal consumption.

Total world reserves of natural gas are esti-

mated at about 5,278 trillion cubic feet, which represents nearly one-half of total world petroleum reserves. Clearly, the age of gaseous energy lies ahead.

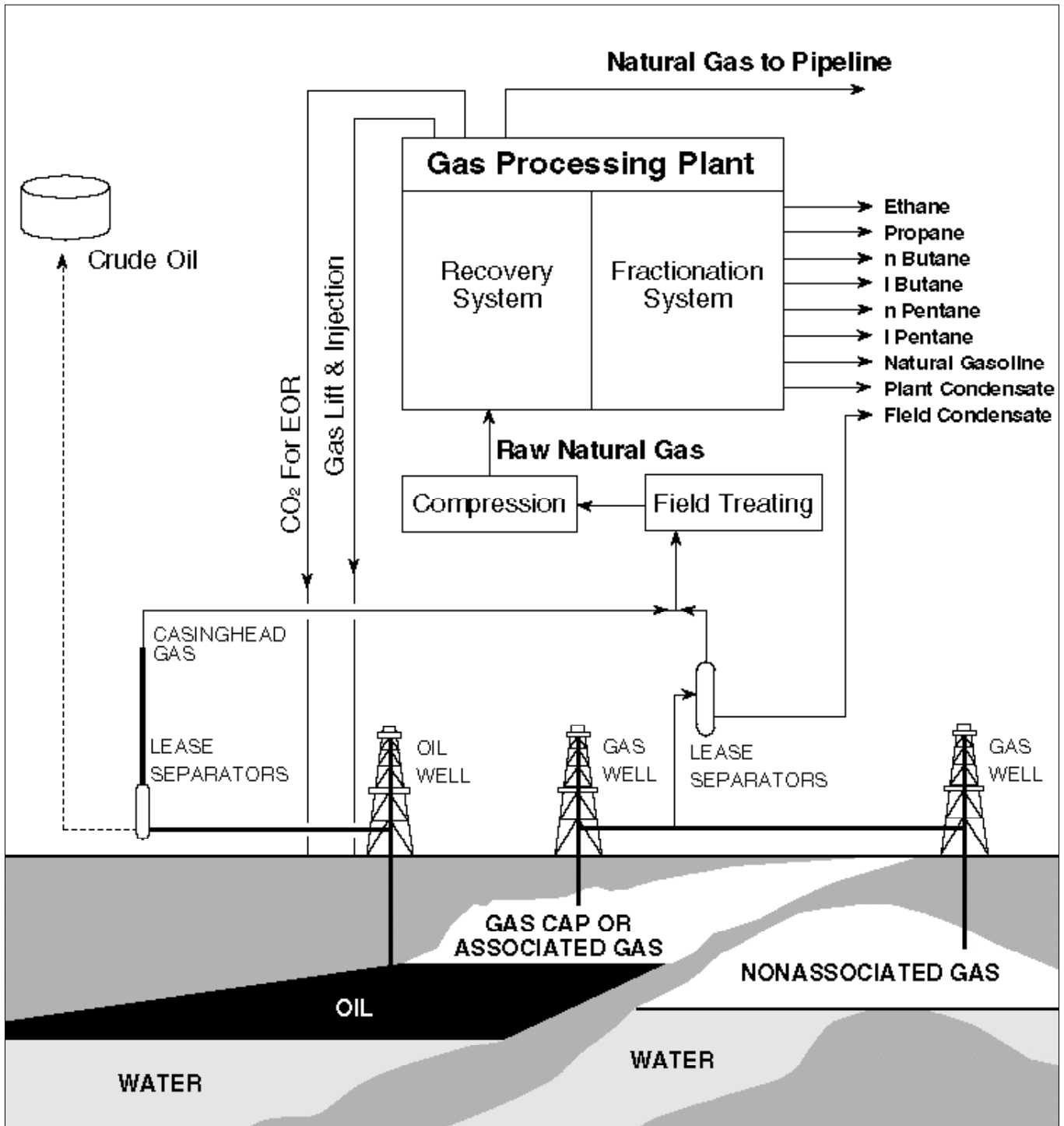
**GPA Role.** The role of the Gas Processors Association in the current era is the same as that of the previous 82 years: to serve the needs of its member companies and their personnel. These needs include the development and maintenance of industry standards, the generation and dissemination of technical knowledge, careful monitoring and action on legislative and regulatory issues that affect the industry, and to provide a forum for the interchange of technology and developments in the gas and gas processing industry.



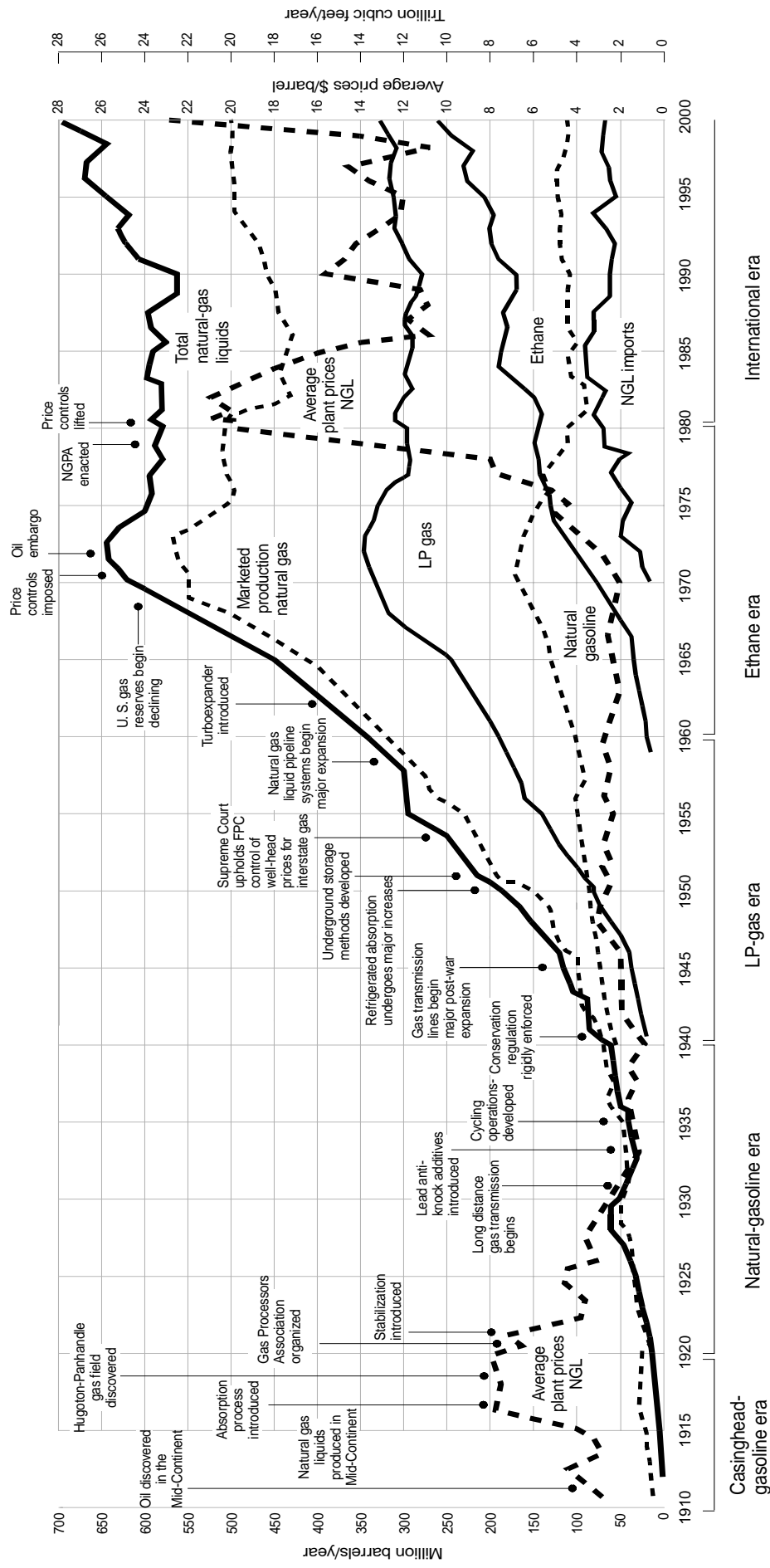
Currently, the GPA membership includes 16 companies that are based outside the United States. Another dozen or so U.S.-based companies are large internationals with historical international interests and growing world-wide natural gas and gas processing operations. As a result,

international companies now comprise about 15% of the total GPA membership.

GPA activities specific to the needs of the gas processing industry in the coming International Era can be seen in the following sections on activities and committee responsibilities.



# U. S. gas-processing history



# THE ASSOCIATIONS - A UNIQUE PARTNERSHIP

Central to the growth and technological progress of the light hydrocarbons industry have been the Gas Processors Association (GPA) and the affiliated supply company organization, the Gas Processors Suppliers Association (GPSA). The organizations and the people who steer their activities will contribute significantly to the orderly future progress of the gas energy industry.

As the names imply, GPA is an organization of operating and producing companies engaged in the processing of natural gas, while GPSA is an

organization of companies catering to the supply and service needs of the industry. The relationship between the two groups has grown into one that is truly unique in business history, a relationship made possible by an atmosphere of mutual respect and a long history of cooperation in industry and association affairs.

This brochure is intended to explain in detail the functions, operations, and relationship of the two associations and their significant contributions to the industry they jointly serve.

## GPA - HISTORICAL BACKGROUND

The Gas Processors Association had its beginning in 1921, just following the close of the chaotic Casinghead Era. At that time, the industry was disorganized, lacking in standards of any kind, and without direction or leadership. For example, there were over 100 different specifications for natural gasoline and no meaningful tests for product quality or characteristics.

Simple commerce in the industry's single product natural gasoline was chaotic. Railroads refused to accept the product for transportation because of numerous tragic accidents. Refiners shunned the product because of its wild and unpredictable behavior.

In the midst of this confusion a small group of plant operators formed the Association of Natural Gasoline Manufacturers. The organization immediately set about putting its industry house in order, which included, among other things, the adoption of standard specifications for natural gasoline.

In addition, the fledgling organization soon developed and promulgated simple, reproducible test methods for liquids content of casinghead gas, specific gravity determination, gasoline vapor pressure, and other tests to define the industry's raw materials and products.

After a short time, the name was changed to the Natural Gasoline Association of America (NGAA), a name that endured until 1961 when a second name change became effective: Natural

Gas Processors Association (NGPA). The new name was adopted because of the industry's growing association with the production and processing of natural gas, as contrasted with casinghead gas.

In 1974, a third name change to Gas Processors Association (GPA) was adopted to accommodate the new dimensions of the new gas processing industry and to meet the organizational needs of its member companies.

Throughout its history, under any name, the GPA has had the same organizational structure and identical objectives as a stabilizing influence in the industry it serves. It has become the focal point of progress and the clearing-house of problems of the gas processing industry.

Today GPA is an incorporated, non-profit trade association made up of about 105 corporate members, all of whom are engaged in the processing of natural gas into a merchantable pipeline gas, volume movement, or further processing of liquid products from natural gas. The active membership as a group accounts for approximately 90% of all natural gas liquids produced in the United States. The active membership also includes a number of Canadian and foreign companies that produce natural gas liquids on a global scale.

In addition, nearly all major gas transmission companies are either active or associate members, depending on whether or not they actually produce gas liquids.

## Presidents of the Gas Processors Association

W. M. Welch Tidal Ref. Co.	1921-1923	Frank M. Perry Cities Service Oil Co.	1953-1955	E. W. Kilgren Amoco Production Co.	1973-1974	Wayne King Valero Energy Corp.	1988-1989
D. E. Buchanan Chestnut & Smith Corp.	1923-1925	Albert H. Weil United Gas Pipeline Co.	1955-1957	E. C. Joullian III Mustang Fuel Corp.	1974-1975	W. J. Cepica Union Texas Petroleum	1989-1990
E. L. Peck Empire Gaso. Co.	1925-1927	George T. Tension Shell Oil Co.	1957-1959	LeRoy Culbertson Phillips Petroleum Co.	1975-1976	Oscar N. Barron Exxon, USA	1990-1991
H. A. Trower Phillips Petroleum Co.	1927-1929	Charles E. Webber Sun Oil Co.	1959-1961	Henry J. Haas HNG Petrochemicals, Inc.	1976-1977	Allen Tarbutton Mitchell Energy & Development Corp.	1991-1992
E. R. Lederer Texas Pacific Coal & Oil Co.	1929-1931	Max R. Lents The Reef Corp.	1961-1962	John A. Sutherland Union Texas Petroleum	1977-1978	W. A. Haliburton, Jr. Trident NGL, Inc.	1992-1993
S. S. Smith Shell Petroleum Corp.	1931-1933	John M. Kindle Lone Star Producing Co.	1962-1963	Harold R. Galloway Exxon Company USA	1978-1979	Mauricio Salazar Texaco USA	1993-1994
D. C. Williams Continental Oil Co.	1933-1935	G. W. McCullough Phillips Petroleum Co.	1963-1964	James A. Ford Dorchester Gas Producing Co.	1979-1980	John Ehlers Valero Hydrocarbons L.P.	1994-1995
T. R. Goebel Skelly Oil Co.	1935-1937	Henry H. Beeson Mobil Oil Co.	1964-1965	Sam F. Segnar InterNorth, Inc.	1980-1981	Don Dunlap Chevron/Warren	1995-1996
J. A. LaFortune Warren Petroleum Co.	1937-1939	R. A. Worley The Parade Co.	1965-1966	E. C. Lindenberg Gulf Oil Services, Inc.	1981-1982	Joe Becraft Valero Natural Gas Co.	1996-1997
Geo. P. Bunn Phillips Petroleum Co.	1939-1941	A. L. Vaughan Northern Natural Gas Co.	1966-1967	C. F. Gee Getty Oil Co.	1982-1983	Tom Goth Western Gas Resources	1997-1998
Ray E. Miller Hanlon-Buchanan, Inc.	1941-1943	C. W. Miller Warren Petroleum Corp.	1967-1968	Bruce Withers Mitchell Energy & Development Corp.	1983-1984	Jim Mogg Duke Energy Field Services	1998-1999
James W. Vaiden Skelly Oil Co.	1943-1945	Albert Taylor Amerada Hess Corp.	1968-1969	James S. Brown Union Oil Company of California	1984-1985	Pat Meyer Conoco	1999-2000
J. H. Dunn The Shamrock Oil & Gas Corp.	1945-1947	T. S. Zajac Shell Oil Co.	1969-1970	Bob L. Galloway OXY Cities Service NGL Inc.	1985-1986	Steve Furbacher Dynege	2000-2001
C. R. Williams The Chicago Corp.	1947-1949	Joe R. Wright Anchor Gasoline Corp.	1970-1971	James R. Moore Enserch Processing, Inc.	1986-1987	Sam McVay ONEOK	2001-2002
James E. Pew Sun Oil Co.	1949-1951	R. C. Hartman Atlantic Richfield Co.	1971-1972	Earl Kirk, Jr. CSX Oil & Gas Corporation	1987-1988	Mike Lattal BP	2002-2003
John F. Lynch La Gloria Corp.	1951-1953	Millard Hipple Coastal States Gas Prod. Co.	1972-1973				