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The Natural Gas Industry Evaluation, Structure, and Economics

Why has the natural gas industry swung from chronic shortage to acute surplus in only a few years; why did the consumer prices for gas continue to rise despite the surplus; and what is the role of gas in America's energy future? These and other perplexing questions are answered by authors Arlon R. Tussing and Connie C. Barlow in a book released this spring by Ballinger Publishing Company of Cambridge, Massachusetts.

Entitled *The Natural Gas Industry—Evolution, Structure, and Economics*, the book's preparation was funded in part by the Ford Foundation through the University of Alaska's Institute of Social and Economic Research. Intended as a basic text for the layman or a reference source for the professional, the book charts the evolution of the gas distribution and transmission companies from their roots in the 1800s to the growth and layout of the long-distance pipeline network of today. The eight substantive chapters (plus introduction) can be read successively for the full story or individually for an understanding of specific areas and issues. These chapters provide the following coverage:

Chapter Two: Coal Gasification in the Nineteenth Century explores roots of gas producing and distribution companies and the chaos of early attempts by state and municipal governments to regulate their activities. Most readers will be surprised to learn that coal gasification (via the city gas works) remained the primary source of domestic gas in the United States through World War II.

Chapter Three: Transition from Manufactured to Natural Gas. As an unavoidable coproduct of oil production, natural gas was burned (flared) at the well site or sold to onsite lamp-black industries. It was not until the second quarter of this century that high pressure pipelines became a practical means for moving gas to urban markets. Technological advances, particularly during World War II, in pipe rolling, metallurgy, and welding swept aside the physical barriers between eager customers and overstocked,

gas producers. The end of the war saw a frenzy of pipeline construction in the United States that lasted until the mid-sixties. By 1966, natural gas was available to cities in all 48 coterminous states. Today, our national pipeline network is so well developed that virtually any gas seller can send it to any gas purchaser, regardless of location.

Chapter Four: Gas Shortages of the 1970s. Through wellhead-price regulation, the federal regulators inadvertently stimulated demand and diminished exploration incentives. By the 1970s, interstate transmission companies could no longer satisfy their customers' needs. Pipeline profits also were threatened because rate-making practices made it difficult for utilities to maintain earning levels in a low-growth environment. The gas shortages, coupled with the specter of a "vanishing rate base," prompted gas utilities to invest in a host of nontraditional methods for securing gas: they promoted liquefied natural gas ventures; sophisticated forms of coal gasification plants; and arctic gas pipelines. The book examines each of these multi-billion-dollar investments and tells why the projects were economically doomed—how regulation brought about their birth and gas deregulation prompted their demise.

Chapter Five: The Growth of Government Involvement surveys historical growth of government regulation in the industry. This chapter introduces the reader to the regulatory framework which has so profoundly affected motives for exploration and development of gas resources in the United States.

Chapter Six: A Waning Resource? challenges the prevailing view of the 1970s that natural gas is nearing depletion. It begins with a short course in petroleum geology, then surveys gas production throughout North America. The authors also examine the role of conservation in our nation's energy future and the outlook for gas imports.

Chapter Seven: Gas Demand and Marketing Principles takes a wide-ranging look at the value of natural gas as an energy commodity. Because energy markets are becoming increasingly competitive, the

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book details the pricing principles and practices in the crude-oil business as well.

Chapter Eight: Structural Evolution of the Gas Industry. Since its birth in the 1820s, the gas industry has cycled through various phases of integration and disintegration among its three component enterprises—production, transmission, and distribution. Today, structural integration between these three sectors is notably weak. The book examines the genesis of this fractured industry and notes the role that institutional features play in today's market turmoils.

Chapter Nine: Outlook—The Rise and Fall of Regulation in the Natural Gas Industry. This chapter pulls together the salient features of the other eight chapters and predicts how the industry will (and ought to) change. The chapter concludes with a forecast that the unravelling of the "regulatory web" in the years to come is inevitable, and that the maturation of institutions and infrastructure means that competitive forces can take the place of govern-

mental rules and decisions in fostering a healthy industry.

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In conclusion, this book provides the composite historical, economic, and technical background necessary for understanding the debate over U.S. natural gas policy. Alaskans concerned about their state's (as well as their nation's) natural gas resources will find the book invaluable.

The Natural Gas Industry—Evaluation, Structure, and Economics (Ballinger Publishing Company, 1984) 210 pp., was written by Arlon R. Tussing and Connie C. Barlow. Preparation was funded in part by the Ford Foundation through the University of Alaska's Institute of Social and Economic Research. The book may be ordered through local book stores or directly from Ballinger Publishing Company (subsidiary of Harper and Row, Publishers, Inc.), 54 Church Street., Harvard Square, Cambridge, MA 02138. Price \$27.50.

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