

*U.S. Natural Gas Availability: Conventional
Gas Supply Through the Year 2000*

September 1983

NTIS order #PB84-114909

**U.S. NATURAL GAS
AVAILABILITY**

**CONVENTIONAL GAS SUPPLY
THROUGH THE YEAR 2000**

A TECHNICAL MEMORANDUM

SEPTEMBER 1983



Office of Technology Assessment
U.S. Department of Energy

Recommended Citation:

U.S. Natural Gas Availability: Conventional Gas Supply Through the Year 2000-A Technical Memorandum (Washington, D. C.: U.S. Congress, Office of Technology Assessment, OTA-TM-E-12, September **1983**).

Library of Congress Catalog Card Number 83-600584

For sale by the Superintendent of Documents,
U.S. Government Printing Office, Washington, D.C. 20402

Foreword

This technical memorandum is an interim product of OTA's assessment of "U.S. Natural Gas Availability." The assessment is examining the future potential for production of all forms of natural gas in the U.S. Lower 48 States, emphasizing the time frame 1990-2000. Gas production in this period will depend primarily on gas that will be made available from the growth of already-discovered fields, from new discoveries of conventional gas, and from the exploitation of those "unconventional" gas sources that today are close to commercial feasibility. The House Committee on Energy and Commerce and its Subcommittee on Fossil and Synthetic Fuels requested the assessment, and the request was endorsed by the Subcommittee on Energy Research and Development of the Senate Committee on Energy and Natural Resources.

This technical memorandum discusses the future availability of conventional gas—gas that can be produced at prices and with technology that are relatively close to today's. We first examine the efficacy of different generic resource assessment methods, review specific estimates (including those of the U.S. Geological Survey and the Potential Gas Committee), present alternative arguments concerning specific areas of uncertainty such as the amount of gas to be found in small fields, and describe OTA's conclusions about a plausible range for the size of the conventional gas resource. Next, we discuss trends in reserve additions and production, leading up to a projection of production potential to the year 2000. Finally, we review the potential from gas sources other than domestic production.

The material in this technical memorandum is being released at this time to assist Congress during the current debate over natural gas. The material will also be incorporated, along with OTA's analysis of unconventional gas sources, in a final assessment report to be published at the conclusion of the U.S. Natural Gas Availability study.

OTA is grateful for the assistance of its assessment advisory panel, its contractors, its colleague; at the Congressional Research Service and U.S. Geological Survey, and the many others who provided advice and information. However, OTA assumes full responsibility for this technical memorandum, which does not necessarily represent the views of individual members of the advisory panel.



JOHN H. GIBBONS
Director

U.S. Natural Gas Availability Advisory Panel

William Vogely, *Chairman*
Department of Mineral Economics, Pennsylvania State University

Marc Cooper
Research Director
Consumer Energy Council of America

Lloyd Elkins
Petroleum Consultant
Tulsa, Okla.

Ed Erickson
Professor of Economics and Business
North Carolina State University

Daniel Grubb
Vice President of Gas Supply
Natural Gas Pipeline Company of America

John Haun
Professor of Geology
Colorado School of Mines

Donald Kash
George Lynn Cross Research Professor of
Political Science, and Research Fellow
Science and Public Policy Program
University of Oklahoma

Harry C. Kent
Director
Potential Gas Agency

Lawrence Moss
Independent Consultant
Estes Park, Calif.

Roy E. Roadifer
Chief Geologist
Mobil Oil Corp.

Benjamin Schlesinger
Principal
Booz, Allen & Hamilton, Inc.

John C. Sharer
Assistant Director
Unconventional Natural Gas
Gas Research Institute

John Weyant
Deputy Director
Energy Modeling Forum
Stanford University

John Schanz
Senior Specialist in Energy Resource Policy
Congressional Research Service

ACKNOWLEDGMENTS

Many people contributed to this technical memorandum by providing information, advice, and substantive reviews of draft materials. We would like to acknowledge the valuable contributions of the following individuals:

- Lawrence Drew, David Root, John Houghton, Richard Meyer, U.S. Geological Survey, Reston, Va.
- Dudley Rice, Gordon Dolton, U.S. Geological Survey, Denver, Colo.
- Richard O'Neill, Energy Information Administration, U.S. Department of Energy
- Thomas Woods, Gas Research Institute
- Paul Ching, Shell Oil Company
- Wallace Howes, Natural Gas Pipeline Company of America
- Robert Kalisch, Michael German, Jeffrey Wingenroth, American Gas Association
- John Scheunemayer, University of Delaware
- J. N. Sommerfrucht, David White, Bill James, Robert Megill, Warren Strickland, W. R. Finger, Exxon Company, U.S.A.
- William Fisher, University of Texas at Austin
- Scott Farrow, Carnegie Mellon University
- Gary Pagliano, Congressional Research Service

OTA U.S. Natural Gas Availability Project Staff

Lionel S. Johns, *Assistant Director, OTA
Energy, Materials, and International Security Division*

Richard E. Rowberg, *Energy and Materials Program Manager*

Steven E. Plotkin, *Project Director*

Julia C. Crowley, *Unconventional Gas Sources*

Vykie G. Smoyer, *Natural Gas Basics, Other Sources*

David Strom, *Computer Supply Models*

Administrative Staff

Lillian Quigg Edna Saunders

Other Contributors

Joseph Riva, *Congressional Research Service*

Kathryn White, *Independent consultant: editor*

Contractors and Consultants

Richard Nehring, Pacific Palisades, Calif.

Jensen Associates, Inc., Fairfax, Va.

OTA Publishing Staff

John C. Holmes, *Publishing Officer*

John Bergling Kathie S. Boss Debra M. Datcher Joe Henson
Glenda Lawing Linda A. Leahy Cheryl Manning