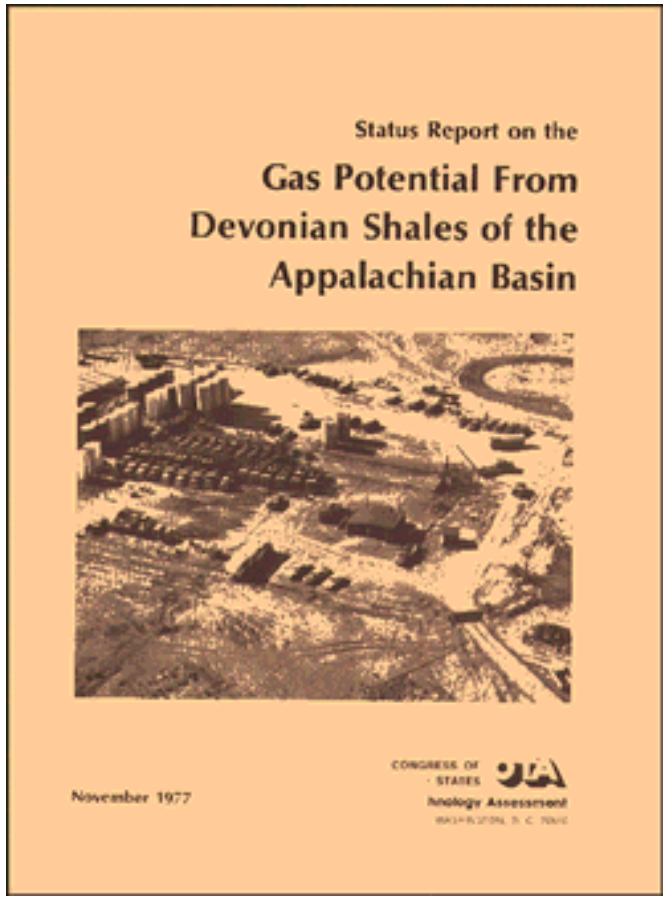
Status Report on the Gas Potential From Devonian Shales of the Appalachian Basin

November 1977

NTIS order #PB-274856



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Congress of the United States
OFFICE OF TECHNOLOGY ASSESSMENT
WASHINGTON, D.C. 20510

DANIEL DE SIMONE
ACTING DIRECTOR

November 23, 1977

The Honorable Ted Stevens
Technology Assessment Board
Off ice of Technology Assessment
United States Senate
Washington, D.C. 20510

Dear Senator Stevens:

On behalf of the Board of the Office of Technology Assessment. I am pleased to forward the results of the assessment you requested of the potential of enhanced recovery of oil and Devonian gas in the United States.

This report, A Status Report on the Potential for Gas Production From the Devonian Shales of the Appalachian Basin, is the first to be completed. Work on the enhanced oil recovery report will be completed soon.

These assessments will provide additional perspective on future U.S. energy supplies and we hope that they will be helpful as the Congress continues its review of national energy policy.

Sincerely,

Edward M Kennedy

EDWARD M. KENNEDY
Chairman

Sincerely,

Larry Winn Jr.

LARRY WINN, JR.
Vice Chairman

Enclosure

III

Foreword

This report is an analysis by the Office of Technology Assessment of the potential for producing gas from the Devonian shales of the Appalachian Basin. It was prepared in response to a request from Senator Ted Stevens, a member of the Technology Assessment Board.

Few data are now available on the distribution and physical and chemical characteristics of the Devonian shales of the Appalachian Basin. A comprehensive assessment must therefore await the results of extensive drilling throughout the region. In the meantime, however, this report, which is based on plausible economic, geologic, and technological assumptions, provides reasonable estimates of the recoverable gas in the Basin.

The Devonian Brown shales of the Appalachian Basin, so-called because they accumulated during the Devonian age, have the potential of contributing significantly to the U.S. natural gas supply. It can reasonably be assumed that these shales contain as much as 15 to 25 trillion cubic feet of readily recoverable reserves that could be produced economically over a 20-year period at prices of $2.00 to $3.00 per thousand cubic feet. These reserves could ultimately support a production rate of about 1 trillion cubic feet of natural gas per year, which is about 5 percent of the current level of domestic gas production. Such a production rate is likely to require extensive drilling (on the order of 69,000 wells), a considerable expansion of the gas pipeline collecting network and, therefore, up to 20 years to achieve. These estimates are less optimistic than some that have been reported by the Energy Research and Development Administration and others, but they are generally consistent with current work at the U.S. Geological Survey.

This report is another in the series of energy assessments that are being provided to the Congress for its consideration in the development of national energy policy.

DANIEL DeSIMONE
Acting Director
Office of Technology Assessment

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NOTE: The Advisory Panel provided advice, critique, and assistance throughout this assessment, for which the OTA staff is deeply grateful. The Advisory Panel, however, does not necessarily approve, disapprove, or endorse all aspects of this report. OTA assumes full responsibility for the report and the accuracy of its content.

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