Enhanced Oil Recovery Potential in the United States

January 1978

NTIS order #PB-276594
January 6, 1978

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

Dear Senator Stevens:

On behalf of the Board of the Office of Technology Assessment, we are 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, Enhanced Recovery of Oil coincides with the recently released Status Report on the Potential for Gas Production From the Devonian Shales of the Appalachian Basin.

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  
Chairman

Larry Winn, Jr.  
Vice Chairman

Enclosure
Foreword

It is estimated that about 300 billion barrels of discovered oil remain in the United States. However, conventional techniques of extraction can deliver only 10 percent of that oil economically, or about 30 billion barrels. What about the remaining 270 billion barrels?

This report assesses the potential of enhanced recovery techniques for freeing more of this oil from the sandstone and limestone formations in which it is trapped. The methods for doing this include injecting steam, chemicals, or carbon dioxide to either break the oil loose and push it up or make it easier to flow. The question is at what price?

At current world oil prices, enhanced oil recovery methods could yield from 11 to 29 billion additional barrels of that trapped oil. And at oil prices comparable to those required to produce synthetic oil from coal, enhanced recovery methods could increase the yield to as much as 42 billion extra barrels of oil. At the utmost, about 51 billion barrels might be recoverable, assuming the most favorable economic factors and technologies that can now be foreseen.

This report discusses the uncertainties in these estimates and assesses policy options available to Congress for recovering more of America’s oil resources.

This assessment is another in the series of energy policy projects that the Office of Technology Assessment is conducting for the Congress.

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