

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Science serves its readers as a forum for the presentation and discussion of important issues related to the advancement of science, including the presentation of minority or conflicting points of view, rather than by publishing only material on which a consensus has been reached. Accordingly, all articles published in *Science*—including editorials, news and comment, and book reviews—are signed and reflect the individual views of the authors and not official points of view adopted by the AAAS or the institutions with which the authors are affiliated.

Editorial Board 1975

H. S. GUTOWSKY	DONALD LINDSLEY
N. BRUCE HANNAY	RUTH PATRICK
DONALD KENNEDY	RAYMOND H. THOMPSON
DANIEL E. KOSHLAND, JR.	

1976

ALFRED E. BROWN	FRANK PRESS
JAMES F. CROW	FRANK W. PUTNAM
HANS LANDSBERG	MAXINE SINGER
EDWARD NEY	ARTHUR M. SQUIRES

Editorial Staff

Editor

PHILIP H. ABELSON

Publisher

WILLIAM D. CAREY

Business Manager

HANS NUSSBAUM

Managing Editor: ROBERT V. ORMES

Assistant Editors: ELLEN E. MURPHY, JOHN E. RINGLE

Assistant to the Editors: PATRICIA ROWE

News and Comment: JOHN WALSH, LUTHER J. CARTER, DEBORAH SHAPLEY, ROBERT GILLETTE, NICHOLAS WADE, CONSTANCE HOLDEN, BARBARA J. CULLITON, SCHERRAINE MACK

Research News: ALLEN L. HAMMOND, WILLIAM D. METZ, THOMAS H. MAUGH II, JEAN L. MARX, ARTHUR L. ROBINSON, GINA BARI KOLATA, FANNIE GROOM

Book Reviews: KATHERINE LIVINGSTON, LYNN MANFIELD, JANET KEGG

Cover Editor: GRAYCE FINGER

Editorial Assistants: MARGARET ALLEN, ISABELLA BOULDIN, ELEANORE BUTZ, MARY DORFMAN, SYLVIA EBERHART, JUDITH GIVELBER, CORRINE HARRIS, NANCY HARTNAGEL, OLIVER HEATWOLE, CHRISTINE KARLIK, MARGARET LLOYD, ERIC POGGENPOHL, JEAN ROCKWOOD, LEAH RYAN, LOIS SCHMITT, RICHARD SEMIKLOSE, YA LI SWIGART, ELEANOR WARNER

Guide to Scientific Instruments: RICHARD SOMMER

Membership Recruitment: GWENDOLYN HUDDLE;
Subscription Records and Member Records: ANN RAGLAND

Advertising Staff

Director

EARL J. SCHERAGO

Production Manager

MARGARET STERLING

Advertising Sales Manager: RICHARD L. CHARLES

Sales: NEW YORK, N.Y. 10036: Herbert L. Burkland, 11 W. 42 St. (212-PE-6-1858); SCOTCH PLAINS, N.J. 07076: C. Richard Callis, 12 Unami Lane (201-889-4873); CHICAGO, ILL. 60611: Jack Ryan, Room 2107, 919 N. Michigan Ave. (312-DE-7-4973); BEVERLY HILLS, CALIF. 90211: Winn Nance, 111 N. La Cienega Blvd. (213-657-2772); DORSET, VT. 05251: Fred W. Dieffenbach, Kent Hill Rd. (802-867-5581)

EDITORIAL CORRESPONDENCE: 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Phones: (Area code 202) Central Office: 467-4350; Book Reviews: 467-4367; Business Office: 467-4411; Circulation: 467-4417; Guide to Scientific Instruments: 467-4480; News and Comment: 467-4430; Reprints and Permissions: 467-4483; Research News: 467-4321; Reviewing: 467-4440. Cable: Advancesci. Washington. Copies of "Instructions for Contributors" can be obtained from the editorial office. See also page xv, *Science*, 28 June 1974. **ADVERTISING CORRESPONDENCE:** Room 1740, 11 W. 42 St., New York, N.Y. 10036. Phone: 212-PE-6-1858.

President Ford's Energy Initiatives

In his State of the Union message President Ford devoted considerable attention to energy. Critics will continue to find controversial aspects of the proposals. However, in the speech and especially in a White House-issued Fact Sheet accompanying the speech, the Administration indicates good comprehension of the complex details and interactions of the many aspects of the problem. This is in contrast to the material that emanated from the White House during the last year and a half of the Nixon Administration. Moreover, President Ford has seized the initiative in energy matters. He looks good in comparison to members of Congress, who have taken piecemeal initiatives but have presented no comprehensive program. They have now merely responded negatively.

There is a substantial probability that Congress will make a big thing out of expanding the inflationary tax-cutting program while emasculating the Administration's energy proposals. There is also likely to be a big divisive fight about whether to tax or to ration shortages. Despite all the rhetoric, energy will be scarce and costly and delays will only exacerbate the problems. Moreover, this country continues a drift toward greatly enhanced vulnerability to a new embargo and possible nuclear confrontation. Domestic production is down. Imports of oil and its products have been at an all-time high. Total inventories exceed those of a year ago during the embargo by less than 4 days' consumption.

Instead of dragging its feet in a way that will win it no lasting respect, Congress should take the stance that the Administration does not advocate going far enough fast enough. The White House has proposed accumulating an insurance inventory of oil. However, the indicated pace of implementation is slow. The Administration has estimated that by 1985 this country should be producing 1 million barrels a day of synthetic oil (less than 6 percent of present consumption). In no facet of the President's program is there an inspiring, challenging goal to capture the public's attention and admiration. This nation has shown that when its intellectual and material resources are effectively employed it can perform wonders.

This country can do better than hunkering down, vulnerable to embargos, morosely awaiting the passage of 10 years for a promised but unlikely energy independence. This country can do better than creating leaf-raking jobs for the unemployed or giving them small hand-outs while there is much important work that should be done.

In the end, in order to achieve energy independence this country will find it necessary to engage in vast construction programs. These will include additions to existing plants to permit use of coal as a substitute for oil or natural gas. Other major items needed will be installations that produce liquid hydrocarbons from coal and shale, methane from coal, and electricity from nuclear and fossil fuel sources. To get these tasks done the federal government will have to provide some funds and some guarantees of price floors on products.

The risks and the amounts of capital needed to move toward energy independence are tremendous. Because of high interest rates, long construction times, and substantial costs, the projected price of clean liquid fuels is in the neighborhood of \$10 or more a barrel. This could easily be undercut by foreign suppliers. However, once the original investments were amortized the cost of producing liquid fuels would drop to half the initial price or less.

To move expeditiously toward energy independence, it will be necessary to remove bottlenecks in supplies through a system of priorities. It will also be necessary to find better ways of balancing legitimate environmental concerns against energy requirements.—PHILIP H. ABELSON