

# 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

1977: WARD GOODENOUGH, CLIFFORD GROBSTEIN, H. S. GUTOWSKY, N. BRUCE HANNAY, DONALD KENNEDY, NEAL E. MILLER, RAYMOND H. THOMPSON  
1978: RICHARD E. BALZHISER, JAMES F. CROW, HANS LANDSBERG, EDWARD NEY, FRANK W. PUTNAM, MAXINE SINGER, PAUL E. WAGGONER, F. KARL WILLENBROCK

## Publisher

WILLIAM D. CAREY

## Editor

PHILIP H. ABELSON

## Editorial Staff

<i>Managing Editor</i> ROBERT V. ORMES	<i>Business Manager</i> HANS NUSSBAUM
<i>Assistant Managing Editor</i> JOHN E. RINGLE	<i>Production Editor</i> ELLEN E. MURPHY

*News and Comment:* BARBARA J. CULLITON, *Editor*; LUTHER J. CARTER, CONSTANCE HOLDEN, DEBORAH SHAPLEY, R. JEFFREY SMITH, NICHOLAS WADE, JOHN WALSH, *Editorial Assistant*, SCHERRAINE MACK

*Research News:* ALLEN L. HAMMOND, *Editor*; RICHARD A. KERR, GINA BARI KOLATA, JEAN L. MARX, THOMAS H. MAUGH II, WILLIAM D. METZ, ARTHUR L. ROBINSON, *Editorial Assistant*, FANNIE GROOM

*Associate Editors:* ELEANORE BUTZ, MARY DORFMAN, SYLVIA EBERHART, JUDITH GOTTLIEB

*Assistant Editors:* CAITILIN GORDON, RUTH KULSTAD, LOIS SCHMITT

*Book Reviews:* KATHERINE LIVINGSTON, *Editor*; LINDA HEISERMAN, JANET KEGG

*Letters:* CHRISTINE KARLIK

*Copy Editors:* ISABELLA BOULDIN, OLIVER HEATWOLE

*Production:* NANCY HARTNAGEL, JOHN BAKER; YA LI SWIGART, ELEANOR WARNER; JEAN ROCKWOOD, LEAH RYAN, SHARON RYAN

*Covers, Reprints, and Permissions:* GRAYCE FINGER, *Editor*; CORRINE HARRIS, MARGARET LLOYD

*Guide to Scientific Instruments:* RICHARD SOMMER

*Assistant to the Editors:* RICHARD SEMIKLOSE

*Membership Recruitment:* GWENDOLYN HUDDLE

*Member and Subscription Records:* ANN RAGLAND  
EDITORIAL CORRESPONDENCE: 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Area code 202. General Editorial Office, 467-4350; Book Reviews, 467-4367; Guide to Scientific Instruments, 467-4480; News and Comment, 467-4430; Reprints and Permissions, 467-4483; Research News, 467-4321; Cable: *Advances*, Washington. For "Instructions for Contributors," write the editorial office or see page xv, *Science*, 30 September 1977.

BUSINESS CORRESPONDENCE: Area Code 202. Business Office, 467-4411; Circulation, 467-4417.

## Advertising Representatives

*Director:* EARL J. SCHERAGO

*Production Manager:* MARGARET STERLING

*Advertising Sales Manager:* RICHARD L. CHARLES

Sales: NEW YORK, N.Y. 10036: Herbert L. Burklund, 1515 Broadway (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)

ADVERTISING CORRESPONDENCE: Tenth floor, 1515 Broadway, New York, N.Y. 10036. Phone: 212-PE-6-1858.

## Conservation: The Minnesota Plan\*

Energy conservation is a broad, vague, high-minded notion. Virtually everyone is for it. Yet our commitment to conservation remains shallow. When opposed by an entrenched special interest group, conservation proposals usually come off second best. This is because we have not given conservation the hard, analytical thought necessary to establish it as a high-priority, public-priority objective.

The State of Minnesota considers energy policies and programs a *major state responsibility* calling for a strong, focused state response. In the wake of the 1973 OPEC oil embargo, the Minnesota legislature, with the support of then-Governor Wendell R. Anderson, created the Minnesota Energy Agency. The Agency has broad responsibility for conservation, information, education, and outreach programs, data gathering, supply and demand forecasting, policy development, research, and emergency management and the regulatory responsibility to determine the need for large new energy facilities. The state has provided adequate personnel and funds for these activities. The Agency has a staff of 70 persons, some 50 of them at the professional level, and a budget of \$2.6 million, 80 percent from state funds.

As a result, Minnesota has a strong, comprehensive, and coordinated state energy program, of which conservation efforts are a product. There are six energy goals: (i) to obtain adequate and secure supplies of petroleum; (ii) to seek our share of the available natural gas and help direct it to the highest-priority users; (iii) to develop a coal use plan that balances energy, environmental, and economic considerations; (iv) to promote alternative energy sources; (v) to obtain adequate supplies of electricity and achieve the greatest possible efficiency in the generation, transmission, and end-use of electricity; and (vi) to implement a comprehensive conservation plan.

Many of the Agency's programs are aimed at achieving immediate savings—establishment of air-conditioning standards, a ban on decorative gas lamps as well as on pilot lights on new stoves, in new forced-air furnaces, and in new dryers, a prohibition against new heated commercial garages. The Agency this year is undertaking 119 different conservation projects, some of the most interesting of which involve longer-term horizons.

A popular program has been infrared flyovers. Last winter, 27 Minnesota cities were flown. Thermograph pictures show the heat loss through the roofs of individual buildings and homes. Viewing centers have been opened in these cities where homeowners can see the amount of heat and money going through their roofs. The centers also provide weatherproofing information and facts about various loan programs for home insulation.

The growing interest in energy conservation in Minnesota was apparent earlier this month when the Agency, in cooperation with Northern States Power and Minnegasco, sponsored a 4-day Energy Savers Show in the Minneapolis Auditorium. The show featured exhibits, training films, and demonstrations of residential energy-saving measures. Admission was \$2 for adults. More than 35,000 attended the show.

Energy conservation is of the utmost importance. Man has survived and flourished because he has been able to adapt to vastly different environments. Our environment is again changing—far more rapidly than many of us recognize. We are changing from an energy-affluent people to an energy-deficient people. Energy permeates virtually everything we do. The implications of this change are monumental.

But we know that change offers opportunities as well as dangers. The greatest danger we face is that we will not recognize change fast enough and will not know what to do about it. The greatest opportunity will be realized if with foresight and understanding we recognize a need for adjustments in man's relationship to his environment and to his fellow man.—JOHN P. MILLHON, *Director, Minnesota Energy Agency, St. Paul 55101*

\*Adapted from an address presented at the fifth annual Illinois Energy Conference, Chicago, 28 September 1977.