AGAINST THE DYING OF THE LIGHT

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Books on energy continue to roll off the presses, posing a series of nagging questions for the would-be well-informed reader or the librarian with a limited budget: How do I recognize the good books? Are there any that are *really* important? Do the authors actually know more than I do?

Of course there is no easy way of measuring the value of books on energy, but the ones below do suggest some criteria to use. For example:

- *Balance:* Energy is a complex subject, involving politics, economics, technology, and other disciplines. A book that advocates a simple or one-sided solution to a major energy problem is likely to be incomplete.
- *Global context:* Energy is an indivisible subject in the sense that what happens in one part of the world inevitably affects what happens everywhere else. Not every book has to be about the total world energy situation, but no book on the U.S. energy scene, for example, can afford to treat it in isolation from events elsewhere. And books on other countries' energy problems are more relevant to us if they make clear how these problems relate to our own.
- *Timeliness:* Because the energy picture is changing rapidly, many books on the subject are outdated by press time. Obviously an element of luck is involved here, but a well-researched book is the one most likely to stand the test of time.
- *Clarity:* Energy topics can be highly technical. But as an old professor once remarked, "There is a difference between expression of obscurity and obscurity of expression. The first is sometimes necessary. The second never is."

ENERGY IN A FINITE WORLD: PATHS TO A SUSTAINABLE FUTURE, by the International Institute for Applied Systems Analysis, Laxenburg, Austria (Ballinger Publishing Co.; 296 pp.; $14.95)
This book boils down the conclusions of a highly technical 800-page study by a team of economists, physicists, engineers, psychologists, and others at the Institute. Balanced, global, timely, and a model of clarity both in the way its conclusions are presented and in the explanations of technical concepts it provides for the general reader, it meets all of our criteria handily.

One guarantee of the book's honesty is the fact that it does *not* reach the overall conclusion that the research team evidently expected when it began work in 1973. Projecting its study fifty years into the future, the team had the opportunity to conclude that by 2030 the world economy would be based on renewable, environmentally benign energy sources. But after surveying the possible futures of oil, natural gas, coal, nuclear power, solar, and other energy sources, the researchers found that though the next fifty years will indeed see an energy transition, it will be from present *clean* fossil fuels (oil and natural gas) to *dirtier* fossil fuels (heavy oils and coal). Any major switch to clean, renewable fuels on a global basis will come later.

A sobering conclusion, to say the least. But it is reached after full discussion of the technical and social constraints that are likely to prevent new, renewable energy sources from being deployed rapidly, and as such is worth serious attention.

ENERGY AND SECURITY, edited by David A. Deese and Joseph S. Nye (Ballinger Publishing Co.; 320 pp.; $14.50)
This volume too meets our criteria. Based on studies by energy and foreign policy experts at Harvard University, it zeros in on the international role of oil, taking a look at the positions of the United States, Western Europe, Japan, the Communist nations, and the oil-exporting countries. No new conclusions are reached, but the basic options and problems are spelled out clearly: the fact that the West remains dependent on Persian Gulf oil supplies, the constant danger that these supplies may be interrupted, and the financial pressures on oil-importing countries, particularly the less-developed countries with no oil of their own.

It suggests many ways in which the Western allies can minimize their supply problems. Some, like the recommendation that the U.S. fill its Strategic Petroleum Reserves, are already in hand. Others, like the call for the United States to build up a rapid deployment force in or near the Mideast, may be extremely difficult to implement. But for the general reader who wants an overview of the world oil situation and what can be done to minimize its dangers in the near term, this is a valuable summary.

ENERGY AND THE NATIONAL DEFENSE, by Howard Bucknell III (University Press of Kentucky; 235 pp.; $19.50)
Bucknell covers some of the same ground in discussing U.S. vulnerability to a cut-off of oil supplies. Interpreting the concept of national defense to include not only military defense but also complete U.S. energy self-sufficiency, the book offers a workmanlike explanation of U.S. energy problems in the past decade. However, its thesis reflects the basic thinking of the Carter administration that energy salvation could be achieved by a massive buildup of government-subsidized synthetic fuel plants and by government-mandated conservation measures. This view, highly popular a year ago, has lost ground as the problems of synthetic fuels have become more apparent and as high energy prices have caused more widespread conservation than economists thought possible. Should the author have taken a closer look at these issues? Perhaps, but this is more apparent in hindsight. Meanwhile, the book is to some extent outdated.

OUR ENERGY: REGAINING CONTROL, by Marc H. Ross and Robert H. Williams (McGraw Hill; 354 pp.; $16.95)
This more technical/scientific work states a basic theme: that the U.S. must pursue a policy of energy conservation rather than exploitation, relying on a free market plus taxes on energy to promote energy conservation. The authors urge the government to stay out of the synthetic fuels business and believe that high energy prices and energy taxes will result in progress toward more economical space heating, the sixty-miles-to-the-gallon car, the greater use of industrial cogeneration (producing electricity as a byproduct of steam used in manufacturing)—in short, a new spirit of innovation that will enable America to use less energy while maintaining its standard of living.

The book will tell the general reader a lot of interesting things about energy physics; and of course devices that make more efficient use of energy are highly desirable. But the book does have a basic "balance" problem, at least if its title is to be taken seriously. The fact is that we simply do not know the degree to which energy efficiency can be improved by 2010, the authors' target date. Even if economics spurs all

kinds of innovation, it takes time for new inventions to be brought into commercial production. Surely the U.S. must devote attention to improving energy supply as well as conservation, especially when, as now, a third of its oil is imported—the global context. Also, the authors' proposal to place taxes on energy use, with the highest taxes on fuels they do not like (coal and nuclear power) and the lowest on those they do (mainly natural gas) could well cause serious supply problems.

ENERGY/WAR: BREAKING THE NUCLEAR LINK, by Amory B. Lovins and L. Hunter Lovins. (Harper & Row; 164 pp.; $3.95 [paper])
This book and the one below address the problems dramatized by the Israeli raid on Iraq's nuclear plant: What are the dangers of the spread of such plants? Will they enable still more countries to make nuclear bombs? What can be done about the situation?

Amory Lovins would probably agree that his book is not "balanced" as we are using the word. On the contrary, it is an impassioned plea for phasing out nuclear plants everywhere before disaster strikes. The book builds on his often-stated view that the world should follow a "soft energy" path that dispenses with large, centralized power sources of all kinds. The authors suggest that it is time to get rid of nuclear power in particular because it is not only dangerous but too expensive.

Anyone not swept away by the Lovins's rhetoric finds obvious problems here. Whatever one's own views on nuclear power, the fact is that the developing countries appear to view nuclear reactors as an aid to economic development; 37 are now operating in the developing world and there are 28 more abuilding. And of course many nations can make bombs, or will soon be able to make them, whether they have nuclear plants or not.

INTERNATIONAL COOPERATION IN NUCLEAR ENERGY, by Joseph A. Yager, with the assistance of Ralph T. Mabry, Jr. (The Brookings Institution; 226 pp.; $17.95/$7.95)
This is a thoughtful attempt to see what can be done to limit the capability for nuclear weapons production. The author suggests the time is not ripe for a comprehensive policy but that gradual steps can be taken. These include a consultative forum for discussing problems in nuclear industries, a plutonium storage system, provision of additional storage capacity for spent fuel, and multinational processing facilities. All who are worried about the spread of nuclear weapons—which *means everybody*—must be disappointed to read that no more than this can be attempted right now. But in a world with limited international controls on technology, surely realism is to be preferred to emotion.

SOVIET ENERGY TECHNOLOGIES, by Robert W. Campbell (Indiana University Press; 268 pp.; $22.50)
Campbell's book is a valuable scholarly work that makes no concessions in terms of clarity to the general reader. But for anyone willing to wade through it, it offers some fascinating insights into the way the Soviet energy system works—a subject in which all Americans have a stake. The author describes a hierarchical administration that lacks an "energy czar." Decisions are made and issues resolved by bureaucratic struggle—an inflexible top-to-bottom decision-making process that cannot take account of the need to adapt technologies to particular circumstances.

THE POLITICS OF MEXICAN OIL, by George W. Grayson (University of Pittsburgh Press; 283 pp.; $21.95/$6.95)
Here is that rare thing—the scholarly account that is also enjoyable to read. Grayson traces the development of Mexico's oil industry, including the formation of a national oil company, the growth of a powerful oil workers union, and the recent discovery of large oil and gas reserves. He also puts Mexico's potential as a major oil exporter into perspective: the political impossibility of massive exports to the U.S., owing to anti-U.S. sentiment and pressures from the union; and the economic impossibility as well, for Mexico's economy cannot absorb such an influx of dollars.

In a challenging final chapter the author discusses the needs of the U.S.-Mexican relationship. He argues that the United States should restrict the flow of illegal aliens across the border, refusing to accept greater oil imports as compensation for the raising of immigration quotas. Grayson's reasoning is that such a restriction will signal to Mexican industrialists and others the need to develop employment opportunities inside Mexico, using "appropriate" intermediate technologies that can employ greater numbers of workers than high-technology North America.

ENERGY POLICY IN PERSPECTIVE, edited by Craufurd D. Goodwin (The Brookings Institution; 728 pp.; $29.95/$14.95)
Specialists in U.S. energy policy will find it convenient to have in one volume a narrative of all major energy issues and decisions from the Truman administration through that of Jimmy Carter. The book shows politicians, generally with the best of intentions, battling over energy questions for nearly half a century. And as they battle, the U.S. slips from a position of energy surplus to one of energy shortage. Their political solutions not only fail to keep pace with reality but actually become obstacles to coping with it.

AMERICA'S ENERGY: REPORTS FROM *THE NATION*, edited by Robert Engler (Pantheon; 443 pp.; $17.95/$7.95)
A collection of articles on energy (coal, electric power, oil, nuclear and alternate sources) that have appeared in *The Nation* over the past sixty years, this book contributes to energy history valuable examples of the populist journalism that has been a continuous feature of American life. Unfortunately Robert Engler's introductions to the various sections fail to indicate clearly that the articles usually represent one viewpoint among many on a variety of complex issues.

OIL CRISIS MANAGEMENT, by Edward N. Krapels (Johns Hopkins University Press; 192 pp.; $15.00)
This is a solid, rather technical work that explains the industrialized nations' present arrangements for sharing supplies in an oil crisis and reviews these nations' stockpiling programs. The book concludes that when the U.S., German, and Japanese programs are completed, the Western world will be fairly well protected in a crisis.

THE ENERGY FACTBOOK, by Richard C. Dorf (McGraw Hill; 227 pp.; $16.95/$7.95)
A good idea that didn't work out. It would certainly be useful to have a book that brings together a lot of numbers of the sort that enable people to get a better grasp of energy problems. Alas, much of the information here is many years out of date, presumably because the author used whatever figures were readily available, and some of the tables offer little indication of their source. The chance to do a good "energy numbers book" is still there for anyone qualified to tackle it.