

# Energy in Nature and Society: General Energetics of Complex Systems

Vaclav Smil

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Cogent analysis by a keen mind ★★★★★(Rating 5 of 5)

» Brian H. Fiedler

A scholarly work relatively free of advocacy, except for advocating sticking to the facts. You will find more pages meticulously diagnosing the history of the energetics of agriculture, transportation and steel making than you will pages forecasting what future energy trends will be, or should be. The author reviews the history of some of these forecast attempts. Here is a sample from page 358: "Reasons for the large number of wrong forecasts can be found in the herdlike behavior of forecasters smitten by prevailing moods". "The U.S. Atomic Energy commission's 1974 forecast had 260 GW installed in the United States by 1985, and 1.2 TW in 2000. The actual 2000 number was 81.5 GW, and there were no clear prospects for fusion." "The same adjectives used to extol nuclear generation - inexhaustible, cheap, nonpolluting - reappeared in glowing descriptions of renewable energetics published during the 1970s as the advocates of small-scale, decentralized energy production promised a new, morally superior millennium devoid of nuclear and fossil fuel sins." And on page 362: "...by the year 2000...new renewables contributed just 3.2 EJ, only one-tenth of Lovins's forecast." The author wants to avoid falling into Lovins's and the AEC's trap. Nevertheless, scientifically sound constraints on future activity are offered without hesitation, for example: the potential for hydroelectric development, the limits of photosynthesis and geothermal fluxes. But on page 384, the author perhaps becomes polemical: "The ultimate makeup of a new global energy system that may dominate in the second half of the twenty-first century will not resemble currently fashionable scenarios." Notice the choice of words: "will not" rather than "may not". Later on page 382: "I strongly believe that the key to managing future global energy needs is to break with the current expectation of unrestrained energy use in affluent societies." Whose expectation? I live in an affluent society and my energy use is not unrestrained and I don't expect it to be. I presume the sentence applies to other guys, who need to be broken. Well, let's not nitpick over that sentence. There is no scientific principle more productive than the principle of conservation of energy (my advocacy). There is no analysis of "how stuff works" with greater predictive power than that provided by a monitoring of the energy conversions. This book is a masterpiece by a honest scientist with enormous skill in organizing knowledge of energy. See MIT Press for a detailed preview inside the book

A Preliminary Review ★★★★★(Rating 5 of 5)

» Hans Nicolaisen

This is an important book for anyone wishing to gain a better understanding of energy in all its forms and in all environments. Perhaps I can best express my thoughts at this early stage of reading the book by quoting from an email I sent the author, [Vaclav Smil](#), earlier today. "Today I received your latest book, [Energy in Nature and Society](#), in paperback. After initially looking through it, I've now read the preface and the first eight pages and, after reading only that little, just placed an order for a hardcover copy - even though I can barely afford such extravagance. In this volume you have published a remarkable piece of work, and I hope it will be widely read by those who truly wish to gain a better understanding of energy in its totality." This truly is a book for those who wish to gain a deeper understanding of energy and is the best writing to date on the subject