


Renewable Energy: Sources for Fuels and Electricity


Renewable Energy: Sources for Fuels and Electricity was commissioned by the United Nations in 1990 with the aim of providing significant input to the United Nations Conference on Environment and Development (UNCED) held in Rio in June 1992. A basic premise of the book is that the oft stated conference goal of sustainable development requires a structural change in the world's energy system. This book outlines a plan for such change.

Renewable Energy is not easy reading at over 1100 pages. Rather, it should be considered a reference book for renewable technologies. Fortunately, the first chapter, written by the editors, four experts in the renewable energy field, outlines the basic plan for a renewable energy future. This analysis relies on the detailed technical information contained in the subsequent 22 chapters, which cover the range of renewable energy technologies, including wind, hydro, biomass gasifiers, and hydrogen to chapters discussing implementation strategies, such as moving utilities toward renewables. The individual chapters do vary in quality, but this is expected in any compilation volume, and it is unlikely that any reader will want to read every chapter.

The plan outlined in this book envisions a far different world in the future where renewables provide three-fifths of the world's electricity market by 2050. This is despite a 265% increase in electricity demand during this period and an eight-fold increase in world economic product. A key result of implementing this renewable energy future would be to reduce carbon dioxide emissions by 25% of their 1985 levels. Note that the Intergovernmental Panel on Climate Change estimates that stabilizing atmospheric concentrations of carbon dioxide, a goal of the Framework Convention on Climate Change (completed at the Rio Summit), will require reducing emissions by at least 60%. The analysis presented in this book indicates the magnitude of the task ahead for those who wish to seriously confront the risks of climate change.

To create this scenario, the world is divided into 11 economic regions with custom regional plans for achieving the aggregate target. This allows each region to rely on those technologies that best match its need and given resources. For example, for the USA, the plan calls for an immediate move away from reliance on coal and oil resources toward biomass, wind, and solar resources. This is contrasted with China, which is assumed to base much of its near term development on the use of its vast coal resources.

Many will undoubtedly think the renewable energy scenario presented is fairly unrealistic. The authors themselves would probably agree with this criticism and provide ample comments on the changes that would have to occur for such a scenario to happen, from technological and economic breakthroughs for several of the key technologies, to the active participation of governments in crafting policies that foster this renewable energy future.

Considering the size and comprehensiveness of the material covered, this book is a bargain at just $45.00 for the paperback version, making it a must buy for those interested in energy resources, from fields ranging from engineering, economics, and public policy. This low price is possible because the publisher, Island Press, is a nonprofit publisher that receives substantial foundation support to bring books dealing with the conservation of our natural resources to the market.—THOMAS E. DRENnen, Department of Agricultural, Resource, and Managerial Economics, Cornell University, Ithaca, NY 14853.

Farm Land Erosion: In Temperate Plains

Environment and Hills


Land erosion has, until recently, been a moderate concern for many European countries. However, changes in agricultural production have resulted in larger fields, larger land areas devoted to single crop production, and, as a consequence, larger areas exposed to serious productivity loss through soil erosion. In recognition of these changes, 47 papers presented at the International Symposium on Farm Land Erosion held at St. Cloud, France, 25–29 May 1992, are published in this collection. The book is politically sensitive and includes contributions from 16 European countries, Canada, Taiwan, Brazil, and the USA.

Although the conference was held in France, only three papers are written in French; the rest are given in English. Most contain a summary written in the alternative language. As the title indicates, most of the chapters are apparently reserved for form; Wicherek's introductory editorial gives a correct (and sensible) title as: Farm Land Erosion in Temperate Plain and Hill Environments. Lack of review or editorial oversight has resulted in the occasional English sentence with a French word order, a distracting large number of typographical errors, and, using the rules of English language, some interesting new words previously unrecognized in any variants of the English dictionaries.

The text is divided into five general categories each containing 5 to 11 papers. Each paper contains its own list of references. The first section is devoted to field and plot erosion studies and the second to watershed and larger scale regional erosion. Methods of measuring erosion are discussed in the third section, which includes observations based on use of 137Cs measurements, remote sensing, and use of GIS and modeling approaches. It is disturbing that only Bernard and Laverdiere...