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Descrizione fisica	1 online resource (XII, 174 p. 67 illus., 52 illus. in color.)
Collana	Lecture Notes in Energy, , 2195-1284 ; ; 36
Disciplina	333.79
Soggetti	Energy policy Thermodynamics Economic development Climatic changes Biotic communities Energy Policy, Economics and Management Economic Growth Climate Change Management and Policy Ecosystems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Energy as the master resource -- The ecological theatre and the evolutionary play -- Energy Return on Investment as master driver -- Calculating Energy costs and gains in plant and animal populations -- Calculating Energy costs and gains in human societies -- Maximum Power -- The future in a lower EROI world.
Sommario/riassunto	This authoritative but highly accessible book presents the reader with a powerful framework for understanding the critical role of the energy return on investment (EROI) in the survival and well-being of individuals, ecosystems, businesses, economies and nations. Growth and development are fundamental and ubiquitous processes at all scales, from individuals to food crops to national economies. While we are all familiar with the concepts of economic growth and living standards as measured by gross domestic product (GDP), we often take for granted the energy use that underpins GDP and our expectations

for year-on-year growth. In this book, you will learn how these measures of “progress” are completely dependent on the balance that can be achieved between energy costs (inputs) and gains. Nothing is made or moved without an energy surplus, and it is the EROI of available energy sources more than any other single factor that determines the shape of civilization. Nearly all politics and economics assume that policy and market forces are the levers upon which future outcomes will hinge. However, this book presents many examples of historical and current events that can be explained much more clearly from an energetic perspective. In addition, a future scenario is developed that gives a central place to EROI in assessing the potential of governmental and private initiatives to substitute so-called renewable energy sources for diminishing stocks of fossil fuels. When cheap fossil fuels are no longer available in the abundance needed to mask economic problems and power business as usual, it will be EROI more than the plethora of “green” technologies that creates the boundary conditions for a sustainable future.
