1. Record Nr. UNINA9910822093403321

Autore	Deutscher Guy
Titolo	The entropy crisis / / Guy Deutscher
Pubbl/distr/stampa	New Jersey, : World Scientific, c2008
ISBN	981-277-970-1
Edizione	[1st ed.]
Descrizione fisica	1 online resource (184 p.)
Disciplina	333.79
Soggetti	Energy development Power resources Entropy Environmental protection Climatic changes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Contents; Introduction; Chapter 1. Dealing with Entropy on a Daily Basis; 1.1. Entropy in the household; 1.2. An example of an entropy crisis at home; 1.3. Where does all the disorder go?; 1.4. Disorder and pollution; 1.5. Entropy and the second law of thermodynamics; 1.5.1. Water desalination; 1.5.2. Heat transfer; 1.5.3. Entropy and the states of matter; 1.6. From the household to the biosphere; Chapter 2. A Short History of the Biosphere; 2.1. The billion year time scale; 2.1.1. The apparition of life; 2.1.2. Photosynthesis; 2.1.2.1. Photosynthesis and entropy reduction 2.1.2.2. Photosynthesis and the green color of plants2.1.3. The ozone layer and the spread of life; 2.2. The biosphere on the 100 million year time scale; 2.2.1. Carbon dioxide atmospheric content and temperature: the greenhouse effect; 2.2.1.1. The infrared radiation; 2.2.1.2. Greenhouse gases; 2.2.2. Climate evolution and carbon storage; 2.3. Carbon storage: carbonates and fossil fuels; 2.3.1. Carbon storage in carbonates on the billion year time scale; 2.3.2. Carbon storage as fossil fuels on the 100 million year time scale; 2.3.3. Formation of coal deposits: the carboniferous age 2.3.4. Oil and gas deposits2.4. Ice ages; 2.5. The last 10 million years; Chapter 3. How Much Energy do We Need?; 3.1. Different forms of

energy and power; 3.2. Energy conversion; 3.3. Energy use and entropy release; 3.3.1. Heat rejection; 3.3.2. Entropy release; 3.4. Energy needs and costs; 3.4.1. Food energy; 3.4.2. Food versus other energy needs; 3.4.3. A family's energy needs; 3.4.4. A family's energy costs; 3.4.4.1. Food energy costs; 3.4.4.2. The different energy costs; 3.4.5. Energy needs at the society level and the entropy problem
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5.3.2.3. Consequences of further temperature rise: ice melting

Sommario/riassunto

This book aims to prove that the so-called "energy crisis" is really an entropy crisis. Since energy is conserved, it is clear that a different concept is necessary to discuss meaningfully the problems posed by energy supplies and environmental protection. This book makes this concept, entropy, accessible to a broad, nonspecialized audience. Examples taken from daily experiences are used to introduce the concept of entropy in an intuitive manner, before it is defined in a more formal way. It is shown that the entropy increase due to irreversible transformations (or "unrecoverable" energy) simul