1. Record Nr. UNINA9910878973703321

Autore	Stan Cornel
Titolo	Energy Scenarios for the Future : Ways to Climate-friendly Mobility, Heating and Industry / / by Cornel Stan
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2024
ISBN	9783662696873 9783662696866
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (224 pages)
Disciplina	333.794
Soggetti	Thermodynamics Heat engineering Heat transfer Mass transfer Renewable energy sources Transportation engineering Traffic engineering Engineering Thermodynamics, Heat and Mass Transfer Renewable Energy Transportation Technology and Traffic Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Current Energy Scenarios: Decarbonization -- Battery-powered electric cars versus combustion engines with climate-friendly fuels: complete better than delete -- Heat pumps: Heat transport against nature requires work -- Photovoltaics for electrical energy and climate-friendly fuels -- Wind turbines for electricity and mobility -- Hydropower and hydroelectric plants -- Nuclear energy for heat and electrical energy: Climate-friendly, sufficient, adequate, but questionable -- Jet engine flow instead of nuclear reaction: energy for heat and electricity -- Heat and electrical energy from waste and biomass to reduce greenhouse gas emissions -- Alternative fuels for environmentally friendly heating and working machines.

Sommario/riassunto

Global economy, principles of prosperity such as home heating and mobility are increasingly and often radically sacrificed on the altar of climate salvation in politics and media. Ignoring physics, thermodynamics, and technical diversity, monopolistic, universal solutions are decreed: automobile drives exclusively electric, reverse-running, air-sucking "household refrigerators" as heaters, electricity for the large and small, highly diverse industry solely from wind turbines and solar panels, even though their contribution has remained nearly negligible for decades. This book demystifies such dangerous climate myths based on understandable principles from physics and thermodynamics. Wind and sun are good, but by far not enough. The book describes diverse, climate-friendly fuels from plant residues, algae, used oils, and fats. It discusses "green" hydrogen as a storage or intermediate storage medium. It also describes surprising, unexpected energy scenarios that arise from the interconnection of conventional thermal machines: a jet engine combined with a steam power plant, a tank with a diesel engine as a mobile heating and power plant? The author Professor Cornel Stan studied aerospace engineering. He teaches in many Universities worldwide on energy conversion and application in technical systems, as well as on alternative propulsion systems for automobiles. His research areas include thermodynamic processes, combustion, alternative propulsion, biofuels, energy management. Cornel Stan is the author of numerous books and scientific papers, published in several languages. Professor Stan is Fellow of the Society of Automotive Engineers (SAE International).