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Nota di contenuto	Part I: Geothermal Power Stations -- Engineered Geothermal Systems, Development and Sustainability of -- Geothermal Energy Utilization -- Geothermal Energy, Nature, Use, and Expectations -- Geothermal Energy, Geology and Hydrology of -- Geothermal Field and Reservoir Monitoring -- Geothermal Power Capacity, Sustainability and Renewability of -- Geothermal Power Conversion Technology -- Geothermal Power Economics -- Geothermal Power Stations, Introduction to -- Geothermal Resources Worldwide, Direct Heat Utilization of -- Geothermal Resources, Drilling for -- Geothermal Resources, Environmental Aspects of -- Hydrothermal Systems, Geochemistry of -- Reservoir Engineering in Geothermal Fields -- Part II: Ocean Energy -- Marine and Hydrokinetic Energy Environmental Challenges -- Ocean Energy, Introduction -- Ocean Thermal Energy Conversion -- Offshore Wind Energy Technology Trends, Challenges, and Risks -- Tidal Energy -- Part III: Renewable Energy from Biomass -- Algae, a New Biomass Resource -- Biodiesel -- Bioethanol from Celluloses -- Bioethanol from Starch -- Bioethanol from Sugar: the

Brazilian Experience -- Biofuels: A Technical, Economic and Environmental Comparison -- Biofuels: Upgraded New Solids -- Biogas for Electricity Generation, Hi-tech Applications -- Biogas Production and Energy crops -- Biogas Production Developing Countries -- Biogas Substrates from Municipalities and Industries -- Biomass as Renewable Source of Energy, Possible Conversion Routes -- Biomass Combustion for Electricity Generation -- Biomass Energy Heat Provision for Cooking and Heating in Developing Countries -- Biomass Energy Heat Provision in Modern Large-Scale Systems -- Biomass Energy Heat Provision in Modern Small-Scale Systems -- Biomass Energy Small-Scale Combined Heat and Power Systems -- Biomass Gasification for Electricity and Fuels, Large Scale -- Biomass Gasification for Rural Electrification, Small Scale -- Biomass Production -- Biomass Provision and Use, Sustainability Aspects -- Biomass Pyrolysis -- Biomass Resources, Worldwide -- Biomass to Liquid (BtL), Concepts and Their Assessment -- Biomass Use on a Global Scale -- Biomethane from Anaerobic Processes -- Biosynthetic Natural Gas -- Co-combustion of wood in Coal-Fired Large-Scale Power Plants -- Hydrogen from Biomass -- Lignocellulosic Energy Crops, Production and Provision -- Plant Oil Fuels Combined Heat and Power (CHP) -- Renewable Energy from Biomass, Introduction -- Solid Biofuels, Fuels and Their Characteristics -- Part IV: Waste to Energy -- Gasification and Liquefaction Alternatives to Incineration in Japan -- Greenhouse Gas Emission Reduction by Waste-to-Energy -- Hitachi Zosen Inova Technology -- Incinerator Grate Combustion Phenomena -- Life Cycle Comparison of Waste-to-Energy to Sanitary Landfill -- Martin Waste-to-Energy Technology -- Plasma-Assisted Waste-to-Energy Processes -- Thermal Treatment of Waste: Key Element for Sustainable Waste Management -- Waste Management for Sustainable Society -- Waste-to Energy: Decreasing the Entropy of Solid Wastes and Increasing Metal Recovery -- Waste-to-Energy Ash Management in Europe -- Waste-to-Energy Ash Management in the United States -- Waste-to-Energy Facilities as Power Plants -- Waste-to-Energy for District Heating -- Waste-to-Energy Using Refuse-Derived Fuel -- Waste-to-Energy, Introduction -- Waste-to-Energy: Energy Resource in Solid Wastes -- Waste-to-Energy: Fluidized Bed Technology -- Part V: Wind Power -- Electricity Generation with Small Wind Turbines -- Global Wind Power Installations -- Meteorology and Wind Power -- Offshore Wind Power -- Wind Power Balancing -- Wind Power Generator Systems and Local Power System Interconnection -- Wind Power Grid Integration: Transmission Planning -- Wind Power, Aerodynamics and Blade Technology -- Wind Power, Introduction -- Wind Power: Basic Challenge Concerning Social Acceptance -- Wind Power: Economy, Market, Subsidies, Payment Mechanisms, and Capacity Credit -- Wind Turbine Noise Emissions.

Sommario/riassunto

Humanity is facing a steadily diminishing supply of fossil fuels, causing researchers, policy makers, and the population as a whole to turn increasingly to alternative and especially renewable sources of energy to make up this deficit. Gathering over 80 peer-reviewed entries from the Encyclopedia of Sustainability Science and Technologies, Renewable Energy Systems provides an authoritative introduction to a wide variety of renewable energy sources. State-of-the-art coverage includes geothermal power stations, ocean energy, renewable energy from biomass, waste to energy, and wind power. This comprehensive, two-volume work provides an excellent introduction for those entering these fields, as well as new insights for advanced researchers, industry experts, and decision makers.
