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Collana	Encyclopedia of Sustainability Science and Technology Series
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Lingua di pubblicazione	Inglese
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Note generali	"With 345 figures and 34 tables."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction to Geothermal Power Stations -- Geothermal Energy Utilization -- Geology and Hydrology of Geothermal Energy -- Nature, Use, and Expectations of Geothermal Energy -- Sustainability and Renewability of Geothermal Power Capacity -- Geochemistry of Hydrothermal Systems -- Drilling for Geothermal Resources -- Geothermal Field and Reservoir Monitoring -- Environmental Aspects of Geothermal Resources -- Geothermal Power Conversion Technology -- Geothermal Power Economics -- Development and Sustainability of Engineered Geothermal Systems -- Direct Heat Utilization of Geothermal Resources Worldwide -- Reservoir Engineering in Geothermal Fields -- Solar Pond Power System -- Power Generation from Low Grade Heat Streams -- Introduction to Ocean Energy -- Marine and Hydrokinetic Energy Environmental Challenges -- Offshore Wind Energy Technology Trends, Challenges, and Risks -- Tidal Energy -- Ocean Thermal Energy Conversion -- Osmotic Power Generation --

Power Generation from Dry Air.

Sommario/riassunto

This volume covers the utilization of geothermal and related energy resources that exploit variations in temperature, chemistry, etc. and require different plant designs and technologies for each location. Extending beyond power plants using geothermal and ocean energy, coverage includes hot dry rock systems, geothermal conditioning, solar ponds, osmotic power, dry air, and potential future deep sea hydrothermal sources. Some technologies have reached the prototype stage, some not even that, but where much work has been invested, it is important to provide a complete picture if only to prevent others from following a dead-end path. For geothermal power plants, the greatest challenge remains the geothermal resource itself. Power conversion is the least uncertain part of a geothermal project, as it consists of a straightforward engineering design with work executed by experienced manufacturers, engineering firms, and contractors. The issues associated with integrating large amounts of ocean energy into the overall supply are also explored. Collecting more than 20 new articles and updated entries, all peer reviewed, this volume in the Encyclopedia of Sustainability Science and Technology, Second Edition, provides an authoritative introduction from exploration techniques to conversion systems for a wide range of locally available energy sources. This comprehensive reference is suitable for those just entering these fields, but also offers new insights for advanced researchers, industry experts, and decision makers.
