



## METADATA

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**Authors:** Karamanis. D., Professor, UPATRAS

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### Abstract

In contrast to the high environmental impact of conventional fossil fuels and mineral nuclear fuels, the Renewable Energy Sources analyzed in this textbook are related to the most clean and environmentally friendly sources that can support the 100% energy transition to zero-emission technologies, such as solar thermal for heat, solar photovoltaic for power plants and buildings, onshore and offshore wind energy, concentrated solar, hydropower energy and small hydroelectric projects, geothermal electricity and heat. The potential and the energy conversion systems of solar, wind and water energy to electricity

and heat are analyzed in detail in the respective chapters of the textbook. In addition, an introduction on energy utilization of biomass and the storage of RES intermittent electricity are also presented. Due to the increase of RES share in the energy mix and the current energy transition, special emphasis is given to the understanding of the utilization of RES energy systems with energy but also environmental indicators, in contributing to the environmental sustainability and the mitigation of climate crisis. Therefore, the textbook concludes with an environmental assessment of RES systems.

