

Lecture by

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Title of Presentation: **Renewable Energy Systems: Current Status in the World and Prospects**

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The purpose of this paper is to present the worldwide status of the various renewable energy systems (RES). This is presented in terms of the total installed capacity of the various types of RES by the end of 2020 and is based on the reports of various international agencies and organizations. The paper initially examines the effects on climate that the use of human activities has and a review of the status of the existing conventional fossil fuels and their expected depletion based on the existing resources and the current rates of consumption. The types of RES examined include the main and most important, in terms of capacity, i.e., solar thermal, solar photovoltaics, hydro systems, wind energy systems and biomass, biogas and biodiesel. Other forms of renewables like ocean energy systems, geothermal and hydrogen and fuel cells are just mentioned. In each type of RES examined in addition to the total installed capacity the status of the technology is given as well as the outlook in terms of prospects and the current research areas. It can be concluded that although the total installed capacity of RES is small, relatively to the total conventional annual fuel consumption, this constitutes an important environmentally friendly solution to protect the planet with very good prospects of expansion in the coming years.



About the author

Professor Soteris Kalogirou is at the Department of Mechanical Engineering and Materials Sciences and Engineering of the Cyprus University of Technology, Limassol, Cyprus. He is currently the Dean of the School of Engineering and Technology. In addition to his Ph.D., he holds the title of D.Sc. He is a Fellow of the European Academy of Sciences and Founding Member of the Cyprus Academy of Sciences, Letters and Arts. For more than 35 years, he is actively involved in research in the area of solar energy and particularly in flat plate and concentrating collectors, solar water heating, solar steam generating systems, desalination, photovoltaics, geothermal energy and absorption cooling. He has a large number of publications in books, book chapters, international scientific journals and refereed conference proceedings. He is Editor-in-Chief of *Renewable Energy* and Deputy Editor-in-Chief of *Energy*, and Editorial Board Member of another twenty journals. He is the editor of the book *Artificial Intelligence in Energy and Renewable Energy Systems*, published by Nova Science Inc., co-editor of the book *Soft Computing in Green and Renewable Energy Systems*, published by Springer, editor of the book *McEvoy's Handbook of Photovoltaics*, published by Academic Press of Elsevier and author of the books *Solar Energy Engineering: Processes and Systems*, and *Thermal Solar Desalination: Methods and Systems*, published by Academic Press of Elsevier.