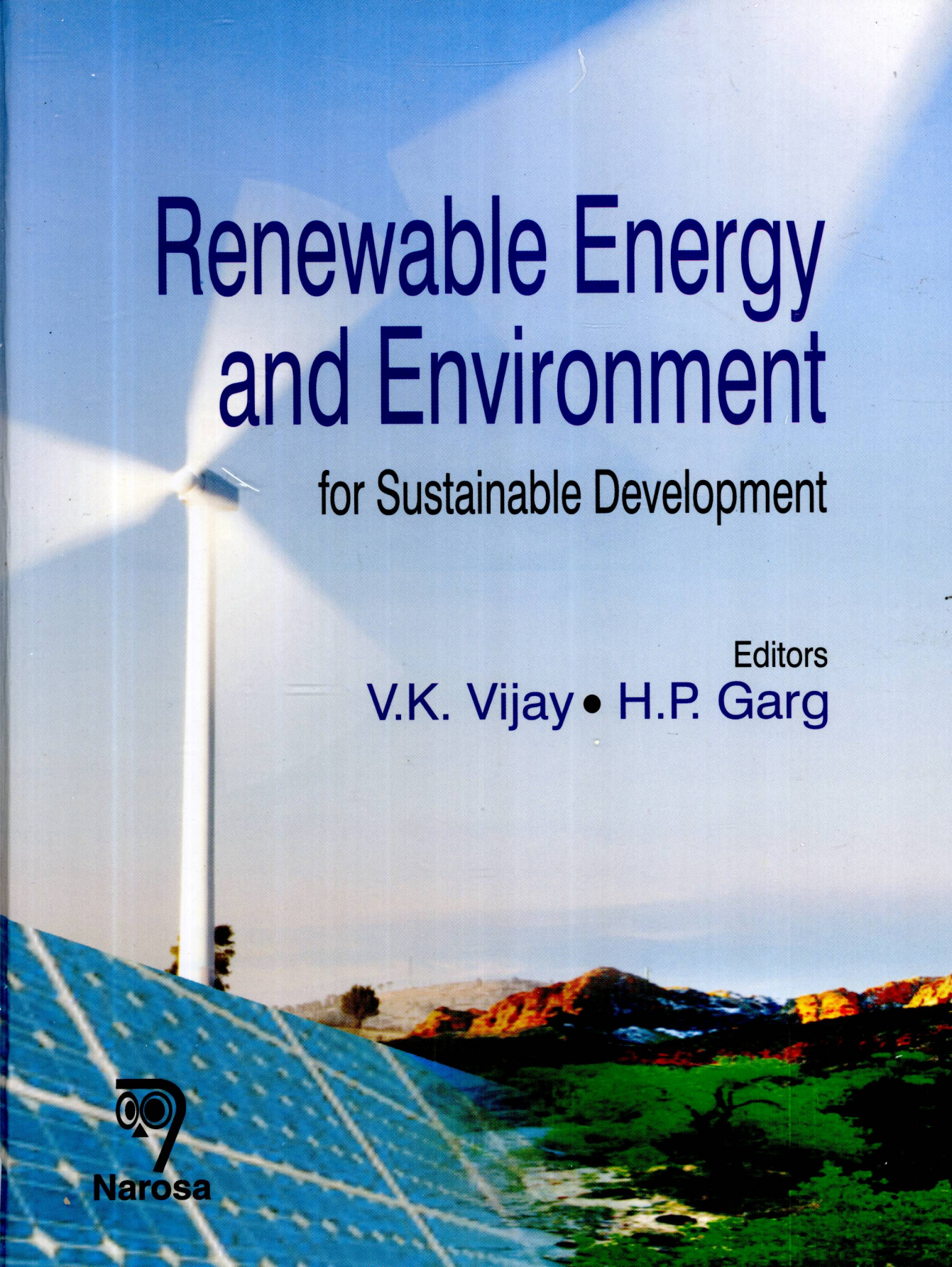
Renewable Energy and Environment

for Sustainable Development

Editors
V.K. Vijay • H.P. Garg



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Preface

In the present era of high energy consumption in every sphere of life, renewable energy sources are emerging as alternatives to conventional fuels for energy security, mitigating green house gas emission and climate change. In Asian region, renewable energy sources are abundantly available and can provide energy security to most of its areas. Solar, biomass, wind, biogas, small hydro etc therefore are better choice and have a promising future in Asia due to the tropical location and availability. In South and East Asia, many countries are energy importers, and also several institutes are working on R&D of renewable energy.

In view of the above, there is both need and possibilities to strengthen renewable energy programme in an effective manner in Asia and to make a new framework for the future. In this context, "Renewable Energy Asia 2008 – An International Conference & 4th Sustainable Energy and Environment Forum Meeting" is organized at IIT Delhi during 11-13 December 2008 to discuss latest developments in renewable energy technologies and mitigation of green house gases.

This volume as a proceeding of the conference provides an insight into the recent advances of research and development in renewable energy technologies and brings together opinion of researchers and academia of Asian countries. It describes the research related to renewable energy and environment for sustainable development in broader perspective. It includes economical, environmental, education and social issues of renewable energy, renewable energy policy framework, solar thermal, photovoltaic, wind energy technologies, biofuels, biomass and biogas energy related research and development, clean development mechanism, global warming issues and other new renewable energy sources.

It is hoped that this book will serve as a reference material for researchers, engineers, professionals, planners and policy makers to study and plan for sustainable development on the earth.

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Acknowledgements

It is indeed need of the hour to work together to save the earth from climate change which is taking place very fast in the recent years. Sustainable Energy and Environment Forum for Asian region is working in this direction. We are thankful to SEE forum to provide this opportunity to organize 4th SEE forum meeting along with Renewable Energy Asia 2008 – An International Conference at IIT Delhi. We are grateful to Prof. Surendra Prasad, Director, IIT Delhi; Prof. P.L. Dhar, Head, Centre for Rural Development & Technology and Prof. S.C. Kaushik, Head, Centre for Energy Studies, IIT Delhi for their constant encouragement and advise for organizing this conference. This publication "Renewable Energy and Environment for Sustainable Development" is an edited compilation of the papers presented in the conference under this theme.

We are extremely thankful to Prof. Susumu Yoshikawa, Chairman, International Advisory Committee, Dr. Taro Sonobe and other members of International Advisory Committee and Mr. Deepak Gupta, Chairman, National Advisory Committee and other members of National Advisory Committee for their support and making this event successful. We also acknowledge sincere thanks to Mr. V. Subramaniam, Ex-secretary, MNRE. We are thankful to the Chairman, Local Organizing Committee and members of Local Organizing Committee for their constant help and cooperation in organization this conference. We are grateful to members of Technical Committee and specially Prof. R.R. Gaur for their continuous support and cooperation. We are also thankful to the faculty members of various Departments and Centers of IIT Delhi who directly or indirectly helped in organization of this conference.

We would like to extend our gratitude to the Ministry of New and Renewable Energy Sources, Govt. of India for whole hearted support in this conference. We also thank All India Council for Technical Education, Department of Science and Technology, Council for Scientific and Industrial Research, Indian National Science Academy, Foundation for Innovation and Technology Transfer IIT Delhi, Global Centre of Excellence, Kyoto University and other organizations who sponsored this conference.

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V.K. Vijay
H.P. Garg

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