To receive a 20% discount when ordering online at www.earthscan.co.uk enter the voucher code AF20

The Pellet Handbook
The Production and Thermal Utilisation of Biomass Pellets
By Ingwald Obernberger and Gerold Thek

CONTENTS

1. Introduction
2. Definitions and Standards
3. Physico-chemical Characterisation of Raw Materials and Pellets
4. Pellet Production and Logistics
5. Safety Considerations and Health Concerns for Pellets During Storage, Handling and Transportation
6. Wood Pellet Combustion Technologies
7. Cost Analysis of Pellet Production
8. Cost Analysis of Pellet Utilisation in the Residential Heating Sector
9. Environmental Evaluation when using Pellets for Residential Heating Compared to other Energy Carriers
10. Current International Market Overview and Projections
11. Case Studies for the use of Pellets for Energy Generation
12. Research and Development

‘The Pellet Handbook is undoubtedly the most comprehensive work ever produced on this subject and I highly recommend it to industry professionals who are engaged in the production, marketing, transportation, or consumption of wood pellets, as well as regulatory authorities, educators, and students. Well illustrated and easy to read, the book will surely become the essential reference for our industry.’
Gordon Murray, Executive Director, Wood Pellet Association of Canada

‘A renowned group of experts have gathered to make this book a success by compiling today’s knowledge on the subject available in research institutions and industry as well as in international networks. The Pellet Handbook is both a comprehensive text for teaching requirements and a reference for practitioners in pellet production and use.’
Josef Spitzer, Chairman, Executive Committee, IEA Bioenergy

Extensively illustrated and packed with practical knowledge, this is the ultimate reference for anyone involved in or affected by this burgeoning industry. It addresses all the players of the pellet market, ranging from raw material producers or suppliers, pellet producers and traders, manufacturers of pellet furnaces and pelletisation systems, installers, engineering companies, energy consultants up to the end users and hopes to contribute to a further increase of pellet utilisation within the energy sector by appropriate distribution of information.

Prof. Univ.-Doz. Dipl.-Ing Dr. Ingwald Obernberger is the founder and also general manager of BIOS BIOENERGIESYSTEME GmbH, a company active in R&D and engineering in the field of bioenergy. Since 1994 he is head of the research group “Energetic Biomass Utilisation” at the Institute for Process and Particle Engineering, Graz University of Technology; since 1998 Austrian representative in the IEA, Bioenergy Agreement, TASK 32 “Biomass Combustion and Cofiring”; since 1998 member of the Editorial Board of the international scientific journal Biomass and Bioenergy; since 2003 Key Researcher at the Bioenergy Competence Centre “BIOENERGY 2020+” in Graz responsible for the areas “Biomass Combustion and Energy Utilisation” as well as “Modelling and Simulation”; coordinator of a number of national and international R&D projects in the field of bioenergy. He has already published 6 books dealing with thermal biomass utilisation as well as more than 200 national and international publications and reports.

Dipl.-Ing. Gerold Thek, born in 1969, works at BIOS BIOENERGIESYSTEME GmbH since 2000 and since 2006 he is project manager for national and international R&D projects in the field of bioenergy. His working areas and research activities mainly focus on the production and thermal utilisation of pellets, which resulted in several publications in this field and formed a relevant basis for this book.
Handbook of Bioenergy Crops is a unique reference and guide, with extensive coverage of more than 80 of the main bioenergy crop species. For each it gives a brief description, outlines the ecological requirements, methods of propagation, crop management, rotation and production, harvesting, handling and storage, processing and utilization, then finishes with selected references. This is accompanied by detailed guides to biomass accumulation, harvesting, transportation and storage, as well as conversion technologies for biofuels and an examination of the environmental impact and economic and social dimensions, including prospects for renewable energy.

Biochar is the carbon-rich product when biomass (such as wood, manure or crop residues) is heated in a closed container with little or no available air. It can be used to improve agriculture and the environment in several ways, and its stability in soil and superior nutrient-retention properties make it an ideal soil amendment to increase crop yields. Biochar for Environmental Management is the first to synthesize the expanding research literature on this topic. The book's interdisciplinary approach, which covers engineering, environmental sciences, agricultural sciences, economics and policy, is a vital tool at this stage of biochar technology development. This comprehensive overview of current knowledge will be of interest to advanced students, researchers and professionals in a wide range of disciplines.