

Preface

This Handbook for Ocean Wave Energy aims at providing a guide into the field of ocean wave energy utilization. The handbook offers a concise yet comprehensive overview of the main aspects and disciplines involved in the development of wave energy converters (WECs). The idea for the book has been shaped by the development, research, and teaching that we have carried out at the Wave Energy Research Group at Aalborg University over the past decades. It is our belief and experience that it would be useful writing and compiling such a handbook in order to enhance the understanding of the sector for a wide variety of potential readers, from investors and developers to students and academics.

At the Wave Energy Research Group, we have a wide range of wave energy related activities ranging from teaching at master and Ph.D. level, undertaking generic research projects and participating in specific research and development projects together with WEC developers and other stakeholders. All these activities have created a solid background in terms of theoretical knowledge, experimental and numerical modeling skills as well as a scientific network, which is why we found that the idea of putting this book together seemed realistic. With this as a starting point, we gathered a group of authors, each an expert within their specific research topic. It was clear from the beginning that the ambition was to make a high-quality publication but still ensuring that it would have a high level of accessibility. Therefore, we wanted the book to be freely available in digital form. To make this happen, we sought and received funding from the Danish EUDP program (project no. 64015-0013), for which we are extremely thankful.

The ten chapters of the handbook present a broad range of relevant rules of thumb and topics, such as the technical and economic development of a WEC, wave energy resource, wave energy economics, WEC hydrodynamics, power take-off systems, mooring systems as well as the experimental and numerical simulation of WECs. It covers the topic of wave energy conversion from different perspectives, providing the readers, who are experts in one particular topic, with a clear overview of the key aspects in other relevant topics in which they might be less specialized.

We would especially like to thank our co-authors, who have contributed enthusiastically to the content and without whom we would never have been able to realize this handbook. We would also like to thank our colleagues at the Department of Civil Engineering for supporting us, especially Kim Nielsen who patiently helped us getting all the small final details in place as well as reading through all the chapters for final corrections and comments, and Vivi Søndergaard who gave the final touch to the English language.

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