

Preface

This book is based on the work done by the authors that began in the mid-1970s on the topics of solar thermal power plants, long-distance power transmission, and solar hydrogen – in particular, on a study for the European Association for Renewable Energy (Eurosolar) carried out in 1996–1998. In the face of considerable resistance from the scientific and especially from the political communities, the authors have attempted since the early 1980s to introduce the concept – of importing solar-thermally generated electrical energy from sunny regions – into the public debate on energy. Over many years, this concept, in spite of support from well-known public figures, including Professor Werner Buckel (former president of the German Physical Society) and Hermann Scheer (president of Eurosol, Member of the German Parliament), has been almost completely ignored. A gradual change in the political perception (initially in Germany) began to make itself felt when in the year 1995, the German Physical Society took up the topic of “Solar thermal power plants and imported electric power” in an energy memorandum and continued to publicize it with increasing emphasis in the following years. At the beginning of the new millennium, the German Federal Ministry for the Environment then recognized the significance of solar thermal power plants and also of the concept of importing solar thermal power; in the year 2003, this concept was taken up by the Club of Rome in cooperation with the German Aerospace Center (DLR) (under the new appellations “TREC” or “Desertec”). This then opened the way to a broader political acceptance worldwide and also to the initiation of concrete projects. In this phase, it seemed expedient to us to describe the whole topic of solar thermal power plants and a future world energy supply based largely on them in a comprehensive and thorough manner. In particular, it is our aim to present to a broad spectrum of readers the enormous but still underestimated potential of solar thermal power generation for the general energy supply, as well as the developments required to make this vision a reality.