
Preface

Hydrogen is expected to be the energy carrier of the future, having applications both in stationary power systems and the transport sector. Hydrogen produced from renewable energy sources is absolutely emission free and can be produced locally, thus increasing security of power supply and contributing to energy independence of communities.

The transition towards a hydrogen economy will be gradual and long. In this process, it is highly important that niche markets for hydrogen energy applications are created. The creation of respective market segments for hydrogen energy will play a significant role in developing commercial products, reduce current high equipment costs and increase public awareness on hydrogen as an energy carrier as well.

Almost all publicly available national and international roadmaps on the implementation and deployment strategy for hydrogen energy technologies agree that one of the first niche markets for hydrogen applications will be that of autonomous power systems. The introduction of hydrogen in existing autonomous power systems will be a thrilling challenge, but in the short to medium term can be economically viable provided that appropriate subsidies are offered to the owners and/or operators of such power systems. Moreover, the development of hydrogen-based autonomous power systems will contribute significantly to the enhancement of local air quality and reduce noise levels and carbon emissions as well.

This book, entitled “Hydrogen-based Autonomous Power Systems: Techno-economic Analysis of the Integration of Hydrogen in Autonomous Power Systems”, aims to present the most important technical and economic aspects of the integration of hydrogen energy technologies in renewable energy sources-based autonomous power systems, which is expected to be one of the first significant niche markets for hydrogen energy systems. The book also contains a detailed roadmap towards commercialization of hydrogen-based autonomous power systems, including an extensive list of recommendations for energy policy makers to facilitate the introduction of hydrogen energy technologies in existing autonomous power systems.

Hydrogen-based Autonomous Power Systems
Techno-economic Analysis of the Integration of
Hydrogen in Autonomous Power Systems

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