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Sommario/riassunto	This open access book provides a totally new perspective on the rapidly developing sector of electrochemical energy storage, putting a spotlight on its sustainability under consideration of the latest developments and emerging future technologies. A number of selected, high-level authors from different disciplines discuss the potential contribution of batteries to a cleaner society, the need for new battery concepts, necessary new chemistries and their sustainability. These include not only analyses of the most relevant technological

developments in the field, but also the latest state of knowledge in terms of their future roles in transport and stationary applications within the clean energy transition, their potential environmental impacts, resource demands and social impacts, and the corresponding methodological advances. All these aspects are analyzed on micro-level (i.e., for the specific technology), but also on macro-scale (i.e., from a systemic perspective), providing a glimpse on how emerging battery systems might cover future energy storage demand. By taking a prospective and interdisciplinary viewpoint, this book will be of interest for a broad field of readers interested in electrochemistry, engineering with particular focus on electric grids, and on-board systems and energy system analysis, but also those worried about the sustainability and societal challenges related with the energy transition(s). Open access, providing free and unlimited access to all interested readers; Covering the entire battery technology value chain, from raw material extraction to manufacturing, use and recycling; Merging circular economy, technology advancements, environment and society into a broad sustainability picture; Linking key aspects for battery development with the imperatives of a clean energy transition and a circular economy.