This comprehensive book discusses the needs of the world’s future energy and climate change policies, covering the various types of renewable energy storage in one all-encompassing volume that allows readers to conveniently compare the different technologies and find the best process that suits their particular needs.

**KEY FEATURES**
- Includes a chapter on policy of storage allowing readers to understand challenges facing implementing technologies in their research
- Each chapter is written by a world expert in the field providing the latest development in this fast moving and vital subject
- Covers the social, political, economic, environmental, and cultural issues, as well as the technical issues when considering how energy is stored and utilized

**DESCRIPTION**
*Energy Storage* discusses the needs of the world’s future energy and climate change policies, covering the various types of renewable energy storage in one comprehensive volume that allows readers to conveniently compare the different technologies and find the best process that suits their particularly needs.

Each chapter is written by an expert working in the field and includes copious references for those wishing to study the subject further. Various systems are discussed, including mechanical/kinetic, thermal, electrochemical and other chemical, as well as other emerging technologies. Incorporating the advancements in storing energy as described in this book will help the people of the world further overcome the problems related to future energy and climate change.
TABLE OF CONTENTS

1. The role of energy storage in low-carbon energy systems
2. Pumped Hydro-electricity
3. Novel Hydroelectric Storage Concepts
4. Advance Rail Energy Storage (ARES)
5. Compressed Air Energy Storage (CAES)
6. Compressed Air Energy Storage (CAES) with Underground Storage
7. Underwater Compressed Air Energy Storage (CAES)
8. Pumped Hydro Combined with Compressed Air
9. Liquid Air Energy Storage: (LAES)
10. Flywheels
11. Rechargeable Batteries
12. The Vanadium Redox Flow Batteries
13. Phase Changes
15. Sensible Thermal Energy Storage: Diurnal and Seasonal
16. Hydrogen from Water Electrolysis
17. Chemical Reactions (zeolites/water/ inorganic oxides)
18. Power-to-Gas
19. Traditional Energy Storage: natural gas, oil and coal
20. Large Scale Hydrogen Storage
21. Network Integration and Smart Grids
22. Off-Grid Energy Storage
23. Energy Storage Worldwide
24. Energy Storage in China