1. Record Nr. UNINA9910800112003321

Autore	Sayigh A. A. M. <1939->
Titolo	Reducing the Effects of Climate Change Using Building-Integrated and Building-Applied Photovoltaics in the Power Supply / / edited by Ali Sayigh
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	3-031-42584-7
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (430 pages)
Collana	Innovative Renewable Energy, , 2522-8935
Disciplina	621.31244
Soggetti	Photovoltaic power generation Renewable energy sources Sustainable architecture Energy policy Solar energy Photovoltaics Renewable Energy Sustainable Architecture/Green Buildings Energy Policy, Economics and Management Solar Thermal Energy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Photovoltaics and the Built Environment in Brazil -- Built Integrated Photovoltaic Application (BIPV): The Dutch Situation -- Building-attached and Building-integrated Photovoltaic Systems in Austria -- Photovoltaic Systems: A Challenge or an Opportunity for the Polish Energy Sector During Its Transformation -- Wind Tunnel Tests for BAPV Installations in Patagonia, Argentina -- Building Applied Photovoltaic Systems in Iran: Opportunities and Challenges -- Massive Growth of PV Capacity as a Major Cornerstone of Germany’s Energy Security and Climate Policies -- Building Integrated Photovoltaic – Thermal System (BIPV) Performance Under the Tropical Climate Conditions -- Design Considerations for BIPV Systems in Oman -- Renewable Energy Options and Built Environment in the Gulf Cooperation Countries Adapting to

Combat Climate Change -- Solar Energy Scenario in India -- A Review of Policies, Energy Resources Towards a More Sustainable Economy: A Study on Renewable Energy in India -- High-transparency Clear Glass Windows and Agrivoltaics With Large PV Energy Outputs -- Modelling and Energy Analysis of a Solar Cooling System Powered by a Photovoltaic (PV) System for a Net-zero Energy Building (NZEB) Using TRNSYS-PVsyst -- Photovoltaic Applications in the Built Environment in the UK -- Policies and Trends to Mitigate Climate Change Impacts by Integrating Solar Photovoltaics in Buildings and Cities: Emphasis on Egypt's Experience.

Sommario/riassunto

This book looks at the success and continuing potential of photovoltaic (PV) technology in combating climate change by harnessing solar energy through building-integrated (BIPV) and building-applied photovoltaics (BAPV). With PV global capacity soaring from 940 GW in 2021 to 1100 GW in 2022 and projected to reach 1456 GW by the end of 2023, the world is witnessing an unprecedented shift towards renewable energy solutions. Today, no single country exists without some form of PV installation, driven by reduced costs and abundant free sunshine. The book's chapters delve into the advancements in PV technology, exploring its integration as an essential building material by examining 14 countries and regions – Brazil, The Netherlands, Austria, Poland, Argentina, Iran, Germany, Malaysia, Oman, Bahrain, India, Australia, the United Kingdom, and Egypt – and providing a comprehensive overview of their successful adoption of PV for electricity generation. Whether you're an architect, builder, engineer, or climate advocate, this vital resource offers insights, international case studies, and a path to a greener future. Explores how building-integrated (BIPV) and building-applied photovoltaics (BAPV) can mitigate environmental impact; Includes international case studies; Offers invaluable insights into the successful implementation of PV technology.