1. Record Nr. UNINA9910624388403321

Autore	Garay-Martinez Roberto
Titolo	Handbook of Low Temperature District Heating / / edited by Roberto Garay-Martinez, Antonio Garrido-Marijuan
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	3-031-10410-2
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (234 pages)
Collana	Green Energy and Technology, , 1865-3537
Disciplina	333.79 697.54
Soggetti	Sustainable architecture Thermodynamics Heat engineering Heat - Transmission Mass transfer Buildings - Environmental engineering Environmental economics Sustainable Architecture/Green Buildings Engineering Thermodynamics, Heat and Mass Transfer Building Physics, HVAC Environmental Economics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- History of District Heating -- Low Temperature District Heating, Developments 2000-2020 -- Evolution of Energy Markets, Cost of Energy Carriers -- De-Carbonisation of District Heating, Waste Heat Streams -- Solar Systems in District Heating -- Integrated Energy Planning at Regional Level -- System Level Planning of Production Technologies -- Planning of DHs. New Networks -- Conversion of Existing DHs -- District Cooling -- Cool District Heating -- Cooling Over District Heating -- Data Analytics -- Policy Recommendations -- Perspectives 2020-2040.
Sommario/riassunto	This book reviews the history and evolution of district heating

networks, with a focus on current and future issues of the district heating sector. Novel developments in the field of low temperature district heating are studied, limitations for safe operation and avoidance of bacteria are considered, and the associated improved performance of the system with fewer network losses is presented. This book showcases how the evolution of district heating networks is linked to the increased use of renewables and de-carbonized heat sources with specific focus to waste heat streams and solar energy systems. Considering the novelty of these technologies, technological developments and funding schemes for these investments are still immature to some extent. For that reason, a comprehensive review of the main aspects of energy planning as well as district heating economics and financing schemes for large-scale investments in renewable energy systems for district energy systemsis performed. In the light of digitalization, networks are increasingly monitored, allowing for a drastic change in the approach for network operation. This book also explores the increased digitization and monitoring of networks and how this impacts network operation. This book is of interest to engineers, academics and officials interested in energy systems, presenting readers with the key concepts and tools to adapt to the evolution of district heating into an integrated, digitized and higher performing system.