

1. Record Nr.	UNINA9910299609003321
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Titolo	Advances in Carbon Dioxide Compression and Pipeline Transportation Processes // by Andrzej Witkowski, Andrzej Rusin, Mirosław Majkut, Sebastian Rulik, Katarzyna Stolecka
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (141 p.)
Collana	SpringerBriefs in Applied Sciences and Technology, , 2191-530X
Disciplina	621.51
Soggetti	Energy systems Environmental economics Energy Systems Environmental Economics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	General Introduction -- General Physical Properties of CO ₂ in Compression and Transportation Processes -- Compression and Pumping Technology Options -- Reference Options of the CO ₂ Compression Processes Available for Technological Concepts of a 900 MW Pulverized Coal-Fired Power Plant -- The Use of Waste Heat from the CO ₂ Compression Process -- Analysis of Transportation Systems for CO ₂ Sequestration -- Analysis of risk related to carbon dioxide pipeline transport.
Sommario/riassunto	Providing a comprehensive analysis of CO ₂ compression, transportation processes and safety issues for post combustion CO ₂ capture applications for a 900 MW pulverized hard coal-fired power plant, this book assesses techniques for boosting the pressure of CO ₂ to pipeline pressure values with a minimal amount of energy. Four different types of compressors are examined in detail: a conventional multistage centrifugal compressor, integrally geared centrifugal compressor, supersonic shock wave compressor, and pump machines. The study demonstrates that the total compression power is closely related to the thermodynamic process and is not determined by compressor efficiency alone. Another problem addressed is that of CO ₂

pipeline transport from the compressor outlet site to a disposal site under heat transfer conditions. The book also features an analysis of simulations and models that are used to determine the maximum safe pipeline distance to subsequent booster stations as a function of inlet pressure, ambient temperature, thickness of the thermal insulation and ground-level heat flux conditions. This book focuses on compression as well as transportation processes with particular emphasis on the safety risks related to the transport of CO₂. The most important problem in terms of environmental protection is ensuring precise and reliable hazard identification. As hazards can only be managed effectively if they are properly identified, problems involving the discharge and atmospheric dispersion of CO₂ are also discussed.
