Record Nr. UNINA9910583012703321 Hydrogen supply chain: design, deployment and operation / / editd by **Titolo** Catherine Azzaro-Pantel Pubbl/distr/stampa London, United Kingdom:,: Academic Press, an imprint of Elsevier,, [2018] ©2018 **ISBN** 0-12-811198-4 Descrizione fisica 1 online resource (590 pages) Disciplina 665.81 Soggetti Hydrogen Hydrogen as fuel Hydrogen industry - Technological innovations Inglese Lingua di pubblicazione **Formato** Materiale a stampa Livello bibliografico Monografia Design, Deployment and Operation of a Hydrogen Supply Chain Sommario/riassunto introduces current energy system and the challenges that may hinder the large-scale adoption of hydrogen as an energy carrier. It covers the different aspects of a methodological framework for designing a HSC, including production, storage, transportation and infrastructure. Each technology's advantages and drawbacks are evaluated, including their technology readiness level (TRL). The multiple applications of hydrogen for energy are presented, including use in fuel cells, combustion engines, as an alternative to natural gas and power to gas. Through analysis and forecasting, the authors explore deployment scenarios, considering the dynamic aspect of HSCs. In addition, the book proposes methods and tools that can be selected for a multi-criteria optimal design, including performance drivers and economic. environmental and societal metrics. Due to its systems-based approach, this book is ideal for engineering professionals, researchers and graduate students in the field of energy systems, energy supply

and management, process systems and even policymakers.