

1. Record Nr.	UNINA9910805674003321
Autore	Kolsch Lukas
Titolo	Dynamic Incentives for Optimal Control of Competitive Power Systems // Lukas Kolsch
Pubbl/distr/stampa	Karlsruhe : , : KIT Scientific Publishing, , 2022
Descrizione fisica	1 online resource (288 pages)
Collana	Karlsruher Beitrage zur Regelungs- und Steuerungstechnik
Disciplina	338
Soggetti	Electric power systems - Control Electric power distribution - Economic aspects Pricing - Mathematical models Feedback control systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Sommario/riassunto	This work presents a real-time dynamic pricing framework for future electricity markets. Deduced by first-principles analysis of physical, economic, and communication constraints within the power system, the proposed feedback control mechanism ensures both closed-loop system stability and economic efficiency at any given time. The resulting price signals are able to incentivize competitive market participants to eliminate spatio-temporal shortages in power supply quickly and purposively.