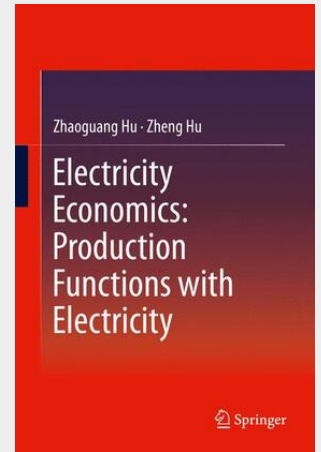


Electricity Economics: Production Functions with Electricity

Electricity Economics: Production Functions with Electricity studies the production output from analyzing patterns of electricity consumption. Since electricity data can be used to measure scenarios of economic performance due to its accuracy and reliability, it could therefore also be used to help scholars explore new research frontiers that directly and indirectly benefits human society. Our research initially explores a similar pattern to substitute the Cobb–Douglas function with the production function with electricity to track and forecast economic activities. The book systematically introduces the theoretical frameworks and mathematical models of economics from the perspective of electricity consumption. The E-GDP functions are presented for case studies of more than 20 developed and developing countries. These functions also demonstrate substantial similarities between human DNA and production functions with electricity in terms of four major characteristics, namely replication, mutation, uniqueness, and evolution. Furthermore, the book includes extensive data and case studies on the U.S., China, Japan, etc. It is intended for scientists, engineers, financial professionals, policy makers, consultants, and anyone else with a desire to study electricity economics as well as related applications. Dr. Zhaoguang Hu is the vice president and chief energy specialist at the State Grid Energy Research Institute, China. Zheng Hu is a PhD candidate at the Center for Energy and Environmental Policy, University of Delaware, USA.

Economics of Electricity Consumption studies the production output from electricity consumption for enterprise, sectors, and industries via EAI (electricity as input) production function, and national economy via E-GDP (national electricity and GDP) function. The theoretical frameworks and models of economy from electricity consumption have been systematically introduced for the first time. In the book, the E-GDP functions for more than 20 countries are introduced, and high similarities of the four major characteristics are found between genes and EAI production functions as replication, mutation, uniqueness, and evolutionary. Our study also initially explores a similar pattern to substitute the Cobb–Douglas function by EAI production function for tracking and forecasting economic activities. Power utility staff and researchers, graduate students in the fields of engineering, economics and MBA can get a comprehensive understanding from the book of the theory of economics of electricity consumption, EAI production functions and typical countries' E-GDP function. The book can also help governments and companies formulate their E-GDP functions, analyze market, and calculate employment, etc. Dr. Zhaoguang Hu is the vice president and chief energy specialist at the State Grid Energy Research Institute, China.



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