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A Real-Option Approach on Energy Security Appraisal

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Abstract

The traditional energy portfolio decision-making depends greatly on the costs of energies. Howev the cost-based view of energy security would incur huge risks when the volatility of energy price dramatically increases. In addition, many scholars have dealt the risk-return problem with CAPM model. The mean-variance model considered the tradeoff between risk and return in energy porti and treated the energy sources such as nuclear and wind power as risk-free. Different from the previous research, in this paper we adopted a real-option approach on energy security appraisal. Beyond the risk-return tradeoff, this research takes time and price factors into consideration and can evaluate the effect of new energy research and development on energy security.