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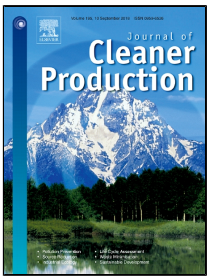

Information linkage, dynamic spillovers in prices and volatility between the carbon and energy markets

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Information linkage, dynamic spillovers in prices and volatility between the carbon and energy markets

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Abstract: The European Union Emissions Trading System (EU ETS) has strengthened the information flow and connection between carbon market and energy markets, which makes the carbon-energy system more complicated. This paper investigates information linkages and dynamic spillover effects between the carbon and energy markets. We adopt a systemic time-series approach to study connectedness in both returns and volatility in the carbon-energy system. Moreover, a rolling-windows method is used to show the dynamic features. Empirical results show that Brent oil prices play an important role in affecting carbon price changes and risks. Feedback exists from the carbon market to other energy markets, and electricity prices are shown to be the biggest information receiver in the system. It is also shown that the level of connectedness in the volatility system is substantially higher than that in the returns system. Our results can provide useful implications for policymakers to design market mechanisms and market investors to manage their portfolios.

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