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Renewable green hydrogen energy: performances amidst global disturbances

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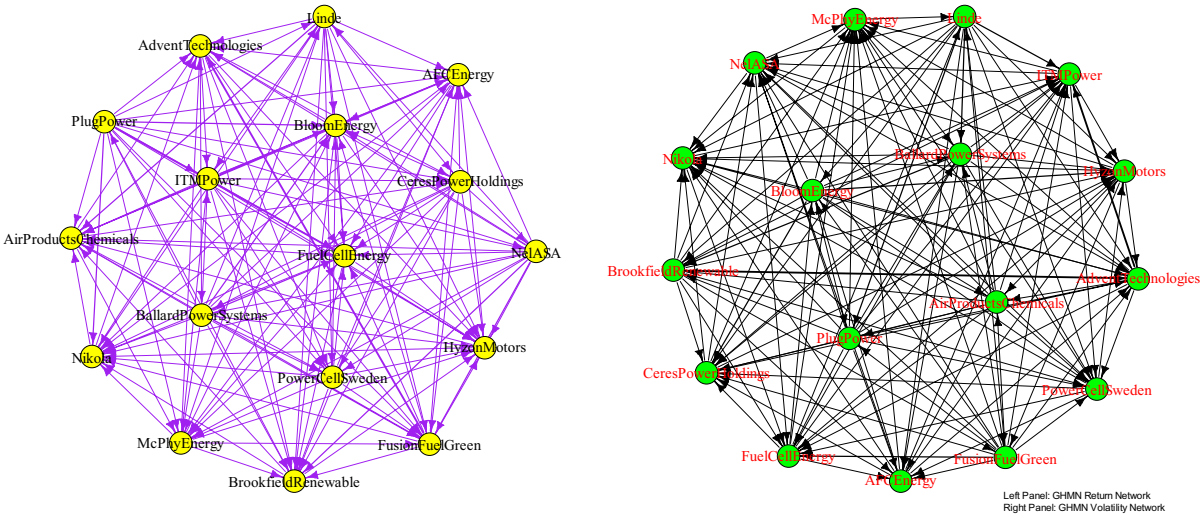
Abstract

Green hydrogen is a promising alternative towards the global target of mitigating greenhouse gas emissions. As such, attention is geared towards green energy hydrogen technologies and markets. Invariably, this also provides investment opportunities for both institutional and private investors. To this end, seventeen green hydrogen markets are studied using network modelling techniques. Among other key findings, Plug Power leads the industry's returns while Bloom Energy leads its volatilities as net transmitters. Intuitively, these markets serve as signals or yardsticks in identifying performances, developments, investment opportunities and prospects in the green hydrogen industry. Conversely, Fuel Cell Energy and Nikola are the leading net return and volatility receivers respectively. Nonetheless, the outbreak of the coronavirus altered the nature of connectedness existing in the renewable green hydrogen industry. This is further confirmed using the Welch (two samples) test. Besides, the outbreak of the COVID-19 pandemic strengthened and improved the industry's overall connectedness. Generally, vital evidence for understanding the green hydrogen industry is presented and discussed. Evidence-based Investment and portfolio management policy implications and recommendations are made.

Graphical abstract



Green Hydrogen Network

Keywords Green hydrogen energy · Renewables · Network modelling · Return · Volatility

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