

Can Brazil become a green hydrogen powerhouse?

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Abstract-

This paper assesses the feasibility of green hydrogen production in Brazil. By green hydrogen, it is meant the hydrogen produced by the electrolysis of water by consuming electricity produced by renewable sources. The country has large areas with high solar irradiation and favorable wind velocities that help to make wind power and solar PV economical alternatives. Other factors include lower investments and lower grid integration cost with respect to global average, because of the large share of hydropower. As known, hydro plants respond well to the short-term variability of renewable production. Local regulations also incentivize renewable energy. For example, it is possible, according to market rules, for a hydrogen producer to sign a financial Power Purchase Agreement (PPA) contract with a producer or trader to secure a firm, renewable energy supply for the electrolysis process. This market-driven factor, and other key factors, such as low price of electricity, are considered in an economic feasibility model. Results from this model suggest that Brazil could become a green hydrogen powerhouse for the internal market and potential exports to Germany and other European countries.

Index Terms- Green Hydrogen, Strategy, Brazil, Export

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