

Thematic Investing | Hydrogen



Overview

Hydrogen production and usage will experience a transformative evolution in the coming decades, becoming a key player in the transition to a sustainable energy landscape. The focus will shift towards "green hydrogen", generated through electrolysis powered by renewable energy sources. Industries will adopt hydrogen to decarbonise operations, and the transportation sector will witness increased deployment of hydrogen fuel cell vehicles and buses.

Hydrogen will also play a vital role in energy storage solutions, enabling grid balancing and efficient use of intermittent renewables. International cooperation will foster the development of hydrogen technologies, leading to the establishment of hydrogen hubs and pipelines for efficient distribution. Advancements in technology and safety measures will further boost confidence in hydrogen as a clean energy carrier. As a result, hydrogen is poised to emerge as a versatile and eco-friendly energy solution, contributing significantly to a greener and more sustainable society.

Benefits

- **Environmentally friendly:** Hydrogen is non-toxic and does not pose any risks to human health.
- Reduced dependency on fossil fuels: Utilising hydrogen energy means lower reliance on fossil fuels. In turn, this could reduce the reliance on market prices of fossil fuels like oil.
- No noise pollution: Compared to wind power, hydrogen fuel cells do not produce noise pollution.
- Energy efficiency: Hydrogen energy is very dense and can provide lots of power, making it energy efficient. It is three times more powerful than fossil fuels, so less hydrogen is needed to carry out the same tasks.

Challenges

- Storage: Hydrogen's energy content by volume is low. This makes storing hydrogen challenging because it needs high pressures, low temperatures, or chemical processes to be stored compactly. Thus, storing hydrogen is more costly than fossil fuels.
- **Costs:** The costs of extraction elevate the total costs of producing hydrogen.
- Flammable: Hydrogen is highly flammable. Unlike gas, hydrogen does not produce any smell, making it hard to detect leakage.
- Infrastructure: There is a lack of infrastructure to support hydrogen fuel cell technology. Compared to cars powered by fossil fuels, the infrastructure for hydrogen filling stations would need to be built.

Shortlist of ETFs to gain exposure to this theme

Ticker	Name	Net Assets (US\$)*	Holdings	Fee*	Link To Factsheet
HTWO LN	L&G Hydrogen Economy UCITS ETF	\$557m	37	0.49%	<u>HTWO</u>
HDRO LN	VanEck Hydrogen Economy UCITS ETF	\$122m	35	0.55%	HDRO GB
HGEN AU	Global X Hydrogen ETF	\$37m	31	0.69%	<u>HGEN AU</u>
HYDR US	Global X Hydrogen ETF	\$53m	29	0.5%	HYDRO US

*Data as at 1 August 2023



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