

# **THE ROLE OF PLATINUM IN RENEWABLE ENERGY**

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Amid Supply Constraints



Platinum group metals (PGMs), particularly platinum, have emerged as an asset in the global transition to renewable energy. Known for their exceptional catalytic and conductive properties, the metals' use stretches across hydrogen production, fuel cells, and emissions reduction technologies. However, declining production levels, geopolitical risks, and increasing demand present potential opportunities and stumbling blocks for investors.

## **PLATINUM'S ROLE IN RENEWABLE ENERGY TECHNOLOGIES**

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### **1. Hydrogen Economy**

- The hydrogen industry has a transformative opportunity for platinum investment, driven by its essential role in green technologies. As a key catalyst in proton-exchange membrane (PEM) electrolyzers, platinum enables the production of green hydrogen, a market valued at \$1.1 billion in 2023 and projected to expand at a 14% compound annual growth rate (CAGR) through 2030, boosted by global decarbonisation initiatives. Platinum also plays a role in hydrogen fuel cells, which produce clean energy with water as the only by-product, supporting the expected 38.1% CAGR of hydrogen fuel cell electric vehicles (FCEVs) from 2023 to 2030. Government targets, such as the European Union's aim to install 40 GW of electrolyzer capacity by 2030, along with similar initiatives in Japan and South Korea, present an increasing demand for platinum and its important role in advancing the hydrogen economy.

### **2. Automotive Applications**

- Platinum remains the foundation of the automotive industry, sustaining demand despite the rise of electric vehicles (EVs). It is indispensable in catalytic converters for internal combustion engines and hybrid vehicles, ensuring its relevance during the ongoing EV transition. The growing advocacy for hydrogen-powered vehicles, particularly fuel cell electric vehicles (FCEVs) led by automakers like Toyota and Hyundai, is increasing the demand for platinum. While battery electric vehicles (BEVs) dominate the market, FCEVs are emerging as a practical solution for long-term and heavy-duty transport, areas where BEVs face operational limitations, further solidifying platinum's role in the evolving automotive environment.

### **3. Energy Storage and Grid Stability**

- Platinum-based catalysts are being explored for large-scale energy storage systems which are important for stabilising renewable energy grids, further diversifying their applications.

## Supply Constraints And Production Hiccups

### 1. Declining Ore Grades and Rising Costs

- South Africa accounts for almost 70% of the global platinum supply which is facing declining ore grades and escalating operational costs. Platinum production dropped 9% in Q3 2024, increasing supply constraints.

### 2. Geopolitical Risks

- The concentration of platinum reserves in politically volatile regions like South Africa and Russia heightens supply risks.

## INVESTMENT OPPORTUNITIES

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### 1. Exchange-Traded Fund (ETF) Opportunities

- **ETFPLT**: This ETF tracks the performance of platinum by holding physical platinum bars, providing direct exposure to platinum prices.
- **NGPLT**: This ETF aims to reflect the performance of platinum prices. It holds physical platinum and provides investors with a cost-effective and convenient way to access the platinum market.
- **STXRES**: The Satrix RESI ETF tracks the performance of the FTSE/JSE Resources 10 Index, which includes companies in the JSE's resources sector. While not exclusively focused on platinum, it provides exposure to major South African mining companies, some of which are involved in platinum mining.

## CONCLUSION

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Platinum's important role in the green energy transition, particularly in hydrogen technologies and renewable energy storage, presents potential investment growth. The widening gap between supply and demand highlights the need for strategic investments and innovations to unlock its full potential. Investors in mining equities, hydrogen infrastructure, or recycling advancements could benefit from this growing market, provided they account for the inherent risks from supply constraints and price volatility.

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