

## Policy certainty is accelerating hydrogen electrolyser approvals and supporting platinum's investment case

Growing government funding alongside clear policy setting is accelerating momentum in the EU's green hydrogen industry. In the past month, four large-scale European electrolyser projects (>100 MW) have passed their final investment decisions (FID). Industry confidence in green hydrogen continues to grow, WPIC forecasts hydrogen-linked platinum demand to grow from c.40 koz in 2023 to 476 koz by 2028f. The hydrogen economy is a substantial new end market for platinum, reinforcing the demand strength of platinum's investment case.

We expect fuel cell electric vehicles (FCEV) to account for the majority of total hydrogen-linked platinum demand by 2028f (Fig. 2). However, we believe FCEV adoption will accelerate on economies of scale in upstream green hydrogen production via electrolysis ([link](#)). Specifically, we expect that scaling green hydrogen production could reduce the levelised cost of hydrogen (LCOH) by 65% between 2022 and 2030 (Fig. 3) which allows HD FCEV to better compete with diesel fleets' total cost of ownership (TCO). We expect lower hydrogen costs to stimulate FCEV demand which already underpins more resilient automotive platinum demand, declining only 1.4% CAGR to 2028f (Fig. 4) despite further, albeit slower, growth in BEV sales.

Prior to recent FID announcements, only c.5% of Europe's prospective 55 GW of electrolyser projects had passed FID (Fig. 5). High costs, infrastructure hurdles and an unclear regulatory environment have been holding back green hydrogen investment. Green hydrogen production accounted for only c.1% of the c.100 Mtpa global hydrogen market in 2023.

Edward Sterck  
Director of Research  
+44 203 696 8786  
[esterck@platinuminvestment.com](mailto:esterck@platinuminvestment.com)

Wade Napier  
Analyst  
[wnapier@platinuminvestment.com](mailto:wnapier@platinuminvestment.com)

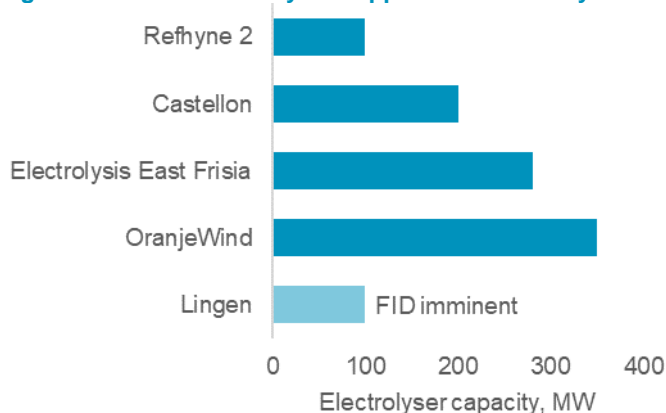
Jacob Hayhurst-Worthington  
Associate Analyst  
[jworthington@platinuminvestment.com](mailto:jworthington@platinuminvestment.com)

Brendan Clifford  
Head of Institutional Distribution  
+44 203 696 8778  
[bclifford@platinuminvestment.com](mailto:bclifford@platinuminvestment.com)

World Platinum Investment Council  
[www.platinuminvestment.com](http://www.platinuminvestment.com)  
166 Piccadilly,  
London, W1J 9EF

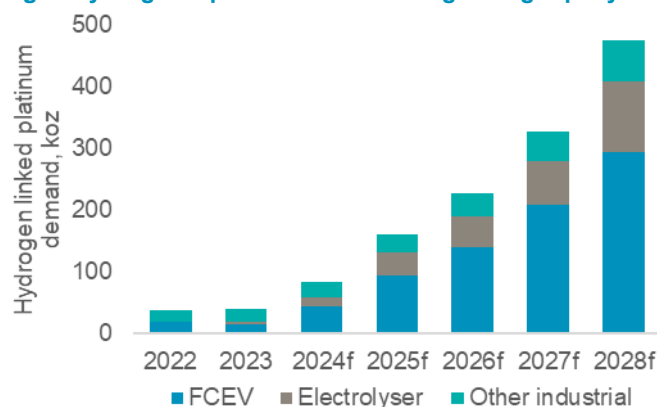
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Fig 1. Several EU electrolysers approved FID in July 2024



Source: Company announcements, WPIC Research

Fig 2. Hydrogen's platinum demand is growing rapidly



Source: IEA, Company data, WPIC research

Over the past two-years, Europe has built out its hydrogen policies, with increased state funding now forthcoming. There has been an almost immediate response from industry to German and Spanish hydrogen funding approvals of €5.0 bn and €1.2 bn respectively. In July 2024 alone, Europe's approved electrolyser pipeline (i.e. FID/construction) increased by 33% as four projects announced FID (930 MW total capacity, Fig. 1) and a fifth project is expecting FID imminently. It is encouraging to see that private sector participants include well established energy and utility groups, including BP, Iberdrola, Shell and TotalEnergies.

Transitioning to FID supports our forecasts for ~22 GW of operational European electrolysis capacity by 2030f (Fig. 6). We expect European operators to generally show a preference for PGM containing Proton Exchange Membrane (PEM) electrolysers (Fig. 7). We forecast that electrolysers will support total European platinum demand of 116 koz by 2028f (Fig. 8) although we reiterate that the real prize from hydrogen lies with platinum's role in FCEV. Thus, with positive momentum for electrolysis investments, we expect a supportive trend in FCEV over the medium term which supports demand growth in platinum's investment case.

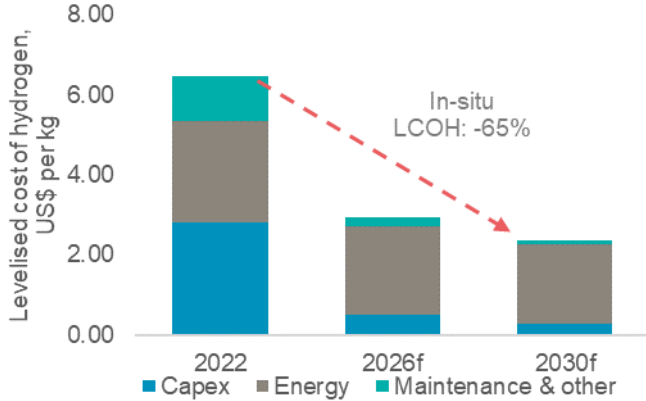
**Regulatory support is enabling confidence to invest in green hydrogen.**

**Hydrogen-linked platinum demand is forecast to reach 476 koz by 2028f, up from c.40 koz in 2023.**

**Platinum's attraction as an investment asset arises from:**

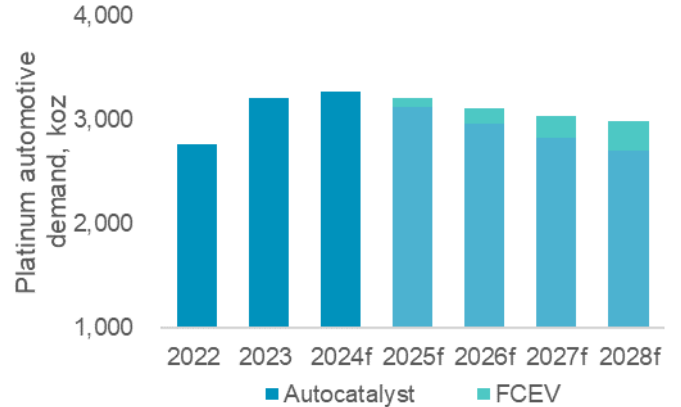
- WPIC research indicates the platinum market entering a period of consecutive supply deficits from 2023
- Platinum supply remains challenged, both from primary mining and secondary recycling
- Automotive platinum demand growth should continue into 2024f due principally to substitution of platinum for palladium in gasoline vehicles
- Platinum is a critical mineral in the global energy transition underpinning a key role in the hydrogen economy
- The platinum price remains historically undervalued and significantly below the price of gold

**Figure 3: As the industry scales, the levelised cost of hydrogen will reduce, with the cost of energy becoming the main determinant**



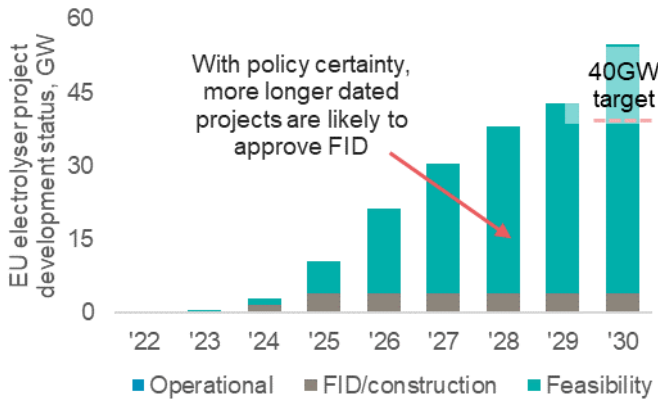
Source: IEA 2023, Energy price US\$46/MWh, WPIC research

**Figure 4: Fuel cell platinum demand will help offset the impact of lower autocatalyst Pt demand due to rising BEV market share**



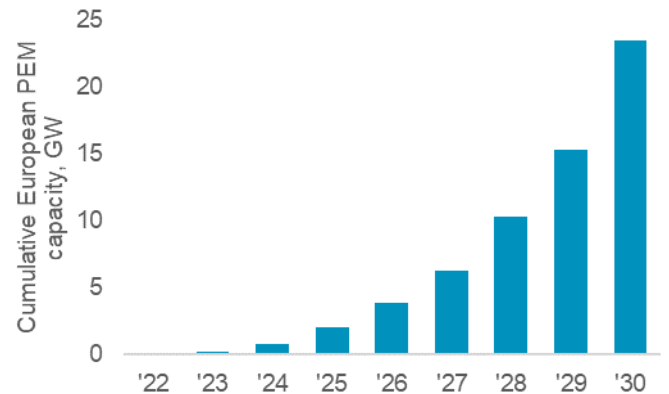
Source: Metals Focus 2022 to 2024f for Pt, WPIC Research thereafter

**Figure 5: Europe's electrolyser projects have been slow to reach final investment decision due to cost, infrastructure and policy hurdles**



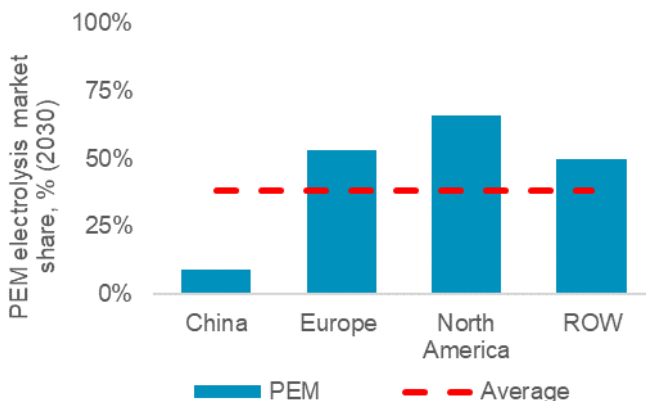
Source: IEA, Hydrogen Council, WPIC Research, \*FID now includes 930 MW of new projects

**Figure 6: WPIC expects 22 GW of PEM electrolyser capacity to be commissioned by 2030 within Europe**



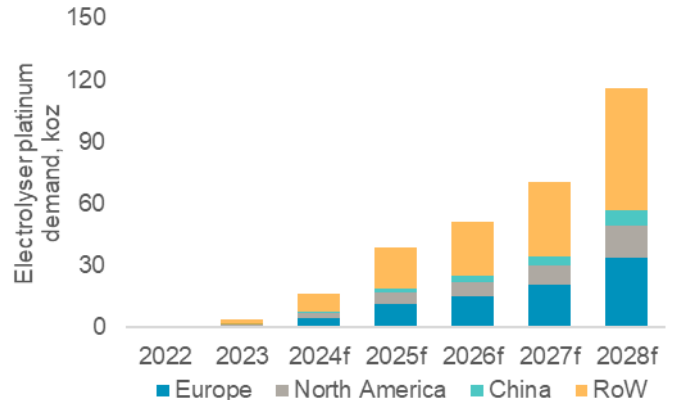
Source: IEA 2023, Hydrogen Council, WPIC research

**Figure 7: Platinum group metal containing PEM technology is expected to achieve a ~35% market share of the electrolyser market globally, but higher in Europe**



Source: IEA, Hydrogen Council, The Orange Group, WPIC research

**Figure 8: Platinum demand from electrolyzers is forecast to increase rapidly as green hydrogen production is commissioned**



Source: IEA, The Orange Group, Company data, WPIC Research

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