

# ELECTRICAL DEMAND

Electrical, currently a small segment of platinum industrial demand, is growing in importance

In 2024, electrical demand for platinum reached an estimated 90 koz and accounted for around 1% of total platinum demand. Historically, electrical demand for platinum has mainly comprised its use in hard disk drives (HDDs).

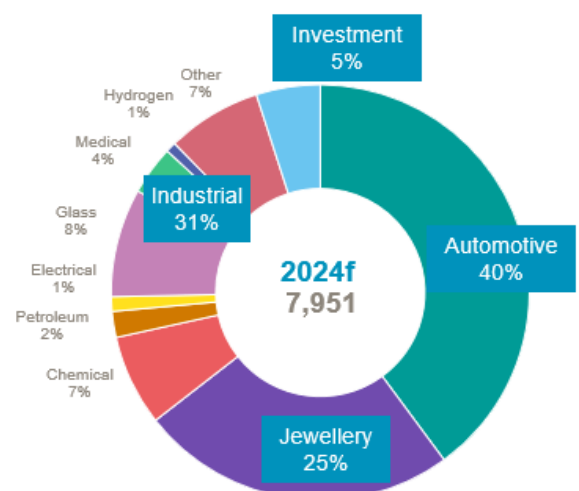
However, platinum is also finding increasing use in the semiconductor and sensor industries. All three applications – HDD, semiconductor and sensor – are growing due to rising demand for Artificial Intelligence (AI), and, in the case of HDDs, the associated need for more data storage capacity. The AI market is projected to grow steeply, growing to around US\$1.3 trillion over the next decade from a market size of US\$40 billion in 2022\*.

This year, electrical demand for platinum is forecast to grow by 2% to 92 koz as the HDD market recovers following a period of weakness between 2019 and 2023 which saw it on a declining trend, due to competition from solid-state drives (SSDs). SSDs use memory chips to store data, typically using a flash memory, whereas HDDs are data storage devices comprised of magnetic platters coated with a platinum alloy media to improve thermal and magnetic stability

Superior speed and increasing cost competitiveness with HDDs were two of the key drivers behind the growth in SSD adoption in recent years, especially in consumer applications such as personal computers

and gaming consoles. Yet HDDs are still lower cost than SSDs on a per gigabyte basis, meaning they remain the preferred option for organisations needing to store vast quantities of data.

What is more, the HDD market has benefited from the introduction of heat-assisted magnetic recording (HAMR) technology, an innovation that has improved storage, or ‘areal’ density; growing storage capacity without increasing HDD size or power requirements. These latter two features are of particular interest to the data storage segment which is deploying a broad range of solutions to better manage energy efficiency and storage capacity to reduce its carbon footprint.



Electrical demand was around 1% of overall platinum demand in 2024. Source: Metals Focus for WPIC

## Strong global demand

The expansion of AI applications is leading to strong global demand for semiconductors. The development of new semiconductor fabrication facilities to accommodate the expansion of advanced process (less than 10 nanometre) semiconductor production capacity is directly benefiting platinum demand as platinum-coated thin-films are used in the semiconductor manufacturing process.

Platinum is also used in sensors for a wide variety of uses, including AI, where models need to be trained with large amounts of data. By combining AI models

with sensors, such as thermal cameras, ultrasonic sensors, photocells, inductive sensors, radar sensors, and motion sensors, the amount of data needed to train a model can be reduced.

Bosch, a pioneer and market leader in sensors, has announced plans to invest three billion euros in its semiconductor business and in sensor development and manufacturing by 2026.

\* 2023 Generative AI Growth Report, Bloomberg Intelligence

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