Silver, the Next Generation Metal: How Solar, EVs and AI Are Reshaping Industrial Demand

Silver is emerging as a pivotal "next generation metal" at the intersection of the green energy transition and the accelerating digital economy, according to the December 2025 report "Silver, The Next Generation Metal" produced by Oxford Economics for The Silver Institute. The study examines how silver's unique combination of highest in class electrical conductivity, strong thermal conductivity and corrosion resistance is embedding the metal ever deeper into three growth industries: solar photovoltaics, automotive and electric vehicles, and data centres/AI.

In solar, the report notes that installed PV capacity has increased more than tenfold over the past decade, with China accounting for just over half of that growth, while silver demand from PVs has tripled over the same period. Although technological "thrifting" has reduced silver use per cell, next generation cell architectures such as TOPCon and SHJ are more silver intensive than today's PERC cells, and by 2030 solar is forecast by the IEA to be the dominant renewable power source globally with around 17% CAGR in added capacity, underpinning robust silver demand. Policy support in regions such as the EU and India, combined with falling levelised costs of solar electricity, offsets some headwinds from US and EU trade actions and subsidy cuts.

In transport, the report highlights silver's growing role as vehicles electrify and become more electronics rich. Battery electric vehicles are estimated to use 67–79% more silver per unit than internal combustion engine cars, reflecting the heavier load of power electronics, battery management and sensor systems, and global EV production is projected to grow at a 13% CAGR between 2025 and 2031. Oxford Economics forecasts that automotive silver demand will rise at a 3.4% CAGR over 2025–2031 to about 94 million ounces, with EVs overtaking ICEs as the main automotive silver consumer by 2027 and reaching 59% of automotive silver use by 2031, augmented by silver used in EV charging infrastructure.

The third pillar is data centres and artificial intelligence, where silver is embedded in connectors, semiconductors, cooling solutions and high reliability contacts. The global stock of data centres has grown around elevenfold since 2000, but total IT power capacity has surged about 53 fold to nearly 50 GW by 2025, indicating a shift toward fewer, much larger facilities packed with silver bearing electronics. With North America, Western Europe and East/Southeast Asia currently hosting 88% of IT power, the report expects future capacity – and thus silver demand – to grow fastest in under served regions as AI, cloud services and latency sensitive applications expand, supported by proactive government policies in the US, EU, UK, China and others to classify data centres as strategic infrastructure.

Overall, the report concludes that while thrifting, substitution and recycling will influence intensity of use, structural growth in solar, EVs and digital infrastructure cements silver's role as a foundational industrial metal in the coming decade.

Source: "Silver, The Next Generation Metal", Oxford Economics for The Silver Institute, December 2025. To read the report in full, please refer directly to the original publication.