

Global EV Market and the Impact on Fastener Demand

全球電動車市及對汽扣需求影響

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Global Electric Vehicle Production and Sales Trends

The electric vehicle (EV) industry has witnessed remarkable growth in the past decade, driven by environmental concerns, supportive government policies, and technological advancements. However, the production and sales of EVs are not immune to economic cycles, supply chain disruptions, or geopolitical tensions. These fluctuations have a ripple effect on ancillary industries, including the demand for automotive fasteners—a critical component in vehicle assembly.

Almost 14 million new electric cars were registered globally in 2023, bringing their total number on roads to 40 million, closely tracking the sales forecast from the 2023 edition of the Global EV Outlook (GEVO-2023). Electric car sales in 2023 were 3.5 million higher than in 2022, a 35% year-on-year increase. This is more than six times higher than in 2018, just 5 years earlier. In 2023, there were over 250 000 new registrations per week, which is more than the annual total in 2013, ten years earlier. Electric cars accounted for around 18% of all cars sold in 2023, up from 14% in 2022 and only 2% in 2018, 5 years earlier. These trends indicate that growth remains robust as electric car markets mature. Battery electric cars accounted for 70% of the electric car stock in 2023.¹

Regional Overview and 2024 Statistics

◆ **Europe:** EV sales remained strong in 2023, growing by 28%, driven by stringent emission regulations and incentives. Countries such as Norway and Germany lead the charge, with Norway's EV penetration reaching 89%.

- 1 **United Kingdom:** In 2023 there were 314,684 electric cars sold, as compared to 267,203 in 2022; a growth of 18%. In 2024 there were 381,970 new fully electric cars sold, which was 19.6% market share of all new cars registered that year.²
- 2 **Germany:** (January to December 2024) Battery-electric car sales in Germany contracted by 27.4% to only 380,609

electric cars for a market share of only 13.5% compared to 18.4% in 2023.³

- 3 **Norway:** A record for EV sales in Norway was set in 2024: 88.9 percent of all new passenger cars sold were fully electric, up from 82.4 percent in 2023. Total EVs sold were 826,000 vehicles in 2024 in comparison with 719,000 vehicles in 2023.⁴

◆ **United States:** Overall, EV sales in the U.S. continue to grow, with more than 2.5 million EVs sold in the past 48 months. In the latest analysis, sales in 2023 were revised upward to 1,212,758 units, a 49% gain from 2022. Sales in 2024 (1,301,411 units) were higher by 7.3% and accounted for 8.1% of total sales, up from 7.8% share in 2023.⁵

¹<https://www.iea.org/reports/global-ev-outlook-2024/trends-in-electric-cars>

²<https://www.euronews.com/business/2025/01/07/uk-drives-forward-as-biggest-european-electric-vehicle-market>

³<https://www.best-selling-cars.com/germany/2024-full-year-germany-best-selling-electric-cars-by-brand-and-model/>

⁴<https://elbil.no/english/norwegian-ev-market/#:~:text=Another%20record%20for%20EV%20sales,from%2082.4%20percent%20in%202023>

⁵<https://www.coxautoinc.com/market-insights/q4-2024-ev-sales/#:~:text=Overall%2C%20EV%20sales%20in%20the,from%207.8%25%20share%20in%202023>

⁶<https://www.asiafinancial.com/one-in-nearly-every-two-cars-sold-in-china-was-electric-in-2024#:~:text=EV%2Dmakers%20sold%20an%20unprecedented,sold%20in%20China%20in%202023>



◆ **China:** EV-makers sold an unprecedented number of about 12.5 million EVs in China in 2024, Car News China reported, citing early sales data from the China Passenger Car Association (CPCA). Those sales meant a whopping 41.6% jump from the 7.75 million EVs sold in China in 2023.⁶

Electric Vehicle Fluctuations in China

According to Bloomberg, there were 500 Chinese electric car manufacturers in China in 2019. After fierce competition, less than 150 manufacturers remained by 2023. According to Wired, as many as 300 manufacturers, both domestic and international, were offering electric vehicles in China in 2023. And just 19 of China's 137 current electric vehicle (EV) brands will be profitable by the end of the decade, leaving the rest to exit the industry, consolidate or battle for a minor market share.⁷

Sales Dynamics and Export Trends

China made big strides last year toward an EV-driven future, as domestic sales of all types of electric vehicles rose by 40% in 2024. Sales of gasoline powered cars tumbled, including foreign imports. In 2024, a total of 31.4 million total vehicles were sold in the world's largest automobile market by sales, according to the China Association of Automobile Manufacturers. That marked a 4.5% rise compared with the previous year.

Impact on Automotive Fasteners Demand

The EV industry's evolution has transformed the demand for fasteners' components due to differences in design, assembly, and materials compared to internal combustion engine (ICE) vehicles.

1. Reduced Fastener Volume

- ▶ EVs require fewer fasteners than ICE vehicles because they have simpler powertrains. For example, EV powertrains have fewer moving parts, eliminating the need for certain fasteners used in engines and transmissions.
- ▶ On average, **an ICE vehicle uses approximately 3,500 fasteners, while an EV requires about 2,800—a reduction of 20%.**

2. Shift in Fastener Materials

- ▶ EVs rely more on lightweight materials such as aluminium and composites to enhance efficiency. This shift drives **demand for specialized fasteners made of corrosion-resistant materials, including titanium and stainless steel.**



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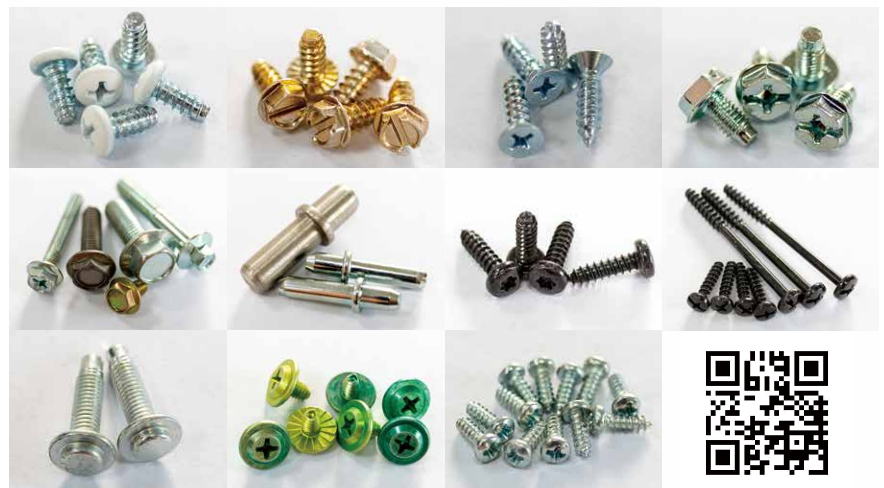
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- ▶ The growth of battery packs in EVs has increased the demand for fasteners capable of withstanding high thermal and mechanical stresses.

3. Production Fluctuations and Fastener Demand

◆ China's EV production has directly impacted fastener manufacturers supplying the industry. CAAM data further showed that **in the first nine months of 2024, China's total EV output and sales reached 8.316 million and 8.32 million units**, up 31.7% and 32.5%, respectively, compared to the same period last year.⁸

Conclusion

The analysis of data trends highlights significant developments in the relationship between electric vehicle (EV) sales and fastener demand, driven by regional and technological dynamics. EV sales growth in Europe and North America has supported steady demand for fasteners, while the remarkable rise in China's EV sales underscores its critical role in shaping global market trends. This growth highlights opportunities for both domestic and export-oriented fastener suppliers. Additionally, the increasing complexity of EVs, particularly with the adoption of advanced battery technologies such as solid-state batteries, has spurred innovation in fastener design to enhance heat dissipation and compact assembly.

Fastener manufacturers are adapting by diversifying their portfolios to include solutions optimized for lightweight materials and high-voltage battery systems, while automation, such as robot-assisted fastener installation, is becoming essential to meet the precision requirements of modern EV assembly lines.

Looking ahead, **the global EV market is expected to reach 38 million units by 2030, with China continuing to play a pivotal role** in driving this growth. Although growth rates are expected to moderate, this underscores the importance of automotive suppliers aligning with evolving trends to remain competitive. The adoption of modular EV platforms will drive the demand for multi-functional fasteners capable of reducing assembly time and costs, while the expansion of charging infrastructure, including fast chargers, will create additional demand for fasteners in associated installations. Furthermore, increasing sustainability pressures and environmental regulations will compel fastener manufacturers to develop recyclable and eco-friendly materials, aligning with the broader sustainability goals of the EV industry.

The future of automotive fasteners lies in specialization, sustainability, and strategic alignment with the evolving needs of the EV sector. By leveraging market insights, embracing technological advancements, and responding to sustainability challenges, the fastener industry can remain resilient and thrive in an era of rapid automotive transformation. □

⁷<https://www.straitstimes.com/business/just-19-of-china-s-137-electric-vehicle-brands-to-be-profitable-by-decade-s-end-report>

⁸<https://www.spglobal.com/commodity-insights/en/news-research/latest-news/metals/101424-chinas-ev-sales-output-hit-fresh-record-in-sep#:~:text=CAAM%20data%20further%20showed%20that,the%20same%20period%20last%20year>



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