

INTERNATIONAL LEAD AND ZINC STUDY GROUP



STUDY ON DEVELOPMENT OF THE GLOBAL E-BIKE INDUSTRY AND IMPLICATIONS FOR LEAD DEMAND

2025

Study on the Development of the Global E-Bike Industry and Implications for Lead Demand



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***This new 70-page in-depth report prepared for the ILZSG
by Shanghai Metals Markets (SMM) examines:***

- **Battery Technologies for E-Bikes**
 - **The Global E-bike Market**
- **Implications for future Lead Demand in the E-Bike Industry**

available in both English and Chinese

EXECUTIVE SUMMARY

Battery Chemistry

- *Currently, lead-acid and Li-ion batteries are the two dominant battery types in the E2W (electric two-wheeler) industry worldwide. China, India, and Southeast Asia prefer lead-acid batteries, whereas Europe and other parts of the world primarily use Li-ion batteries.*
- *The share of battery types in a particular region is influenced by five factors: policies and regulations, industry history, access to raw materials and suppliers, cost and development level, and operating conditions. China and India, as developing countries with a relatively long history of E2W production, have a large proportion of lead-acid batteries.*
- *Emerging batteries such as sodium-ion and solid-state batteries are not likely to gain a significant market share in the coming decade.*

E2W Production

- *Due to the policies issued across China banning motorcycles starting in the 1980s, Chinese people had to find alternative ways to commute, turning to E2Ws. The initiation of the E2W industry in China is thus unique compared to other countries. As the country continued to develop, both the consumption and production of E2Ws increased rapidly over the past 15 years.*
- *Europe, India, and Vietnam are also significant E2W-producing regions. In the upcoming decade, E2W production in India and Southeast Asia is expected to surge.*
- *Following the green transition trend, other regions of the world will also see increases in E2W production.*

Penetration of Lead-Acid Batteries

- *Currently, China, India, and Southeast Asia (especially Vietnam) predominantly use lead-acid batteries. Europe has already transitioned to Li-ion batteries, and new entrants in the E2W production industry also tend to adopt Li-ion batteries directly due to their superior performance. Consequently, the increase in lead demand from the E2W industry will primarily occur in China, India, and certain countries in Southeast Asia, such as Vietnam.*

Impacts

- *Lead smelters and lead-acid recycling plants in India and Southeast Asia will face numerous opportunities in the coming years due to the steady increase in E2W production and lead demand. The demand for lead in China is also expected to increase before 2031.*
- *The production, application, and recycling of lead may contaminate the environment. Given the significant development opportunities, these activities need close monitoring and regulation.*



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