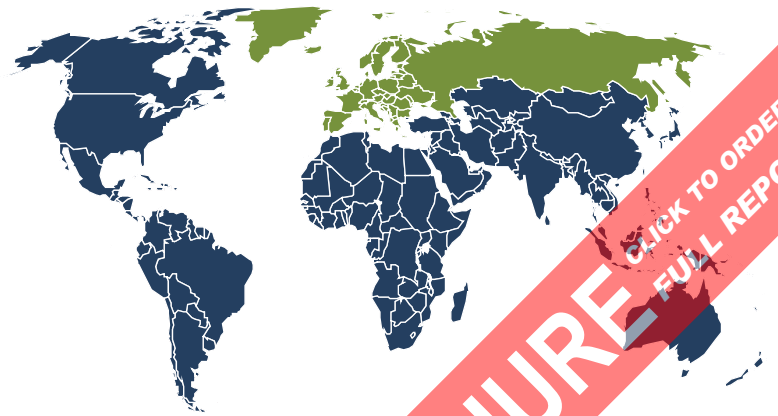




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Batteries: Europe

September 2022



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About This Report

Scope

This report forecasts to 2026 battery demand and shipments in nominal US dollars at the manufacturer level in Europe. Total demand is segmented by product in terms of:

- secondary lead-acid
- secondary lithium-ion
- other secondary batteries such as nickel-based, sodium-sulfur, and sodium-nickel chloride batteries
- primary alkaline
- primary lithium
- primary zinc-carbon
- other primary batteries such as zinc-air, nickel oxyhydroxide, and silver-oxide batteries

Total demand is also segmented by market as follows:

- automotive
- consumer
- other markets such as motive power, uninterruptible power supply systems, and telecom backup systems

Battery shipments are also segmented by product:

- primary
- secondary

To illustrate historical trends, total demand is provided in annual series from 2011 to 2021; shipments and the various segments are reported at five-year intervals for 2011, 2016, and 2021.

Excluded from this report are battery chargers, booster cables (jumper cables), and other ancillary equipment used with batteries.

For any given historical year, US dollar amounts are obtained from values expressed in the applicable local currency. These local currency values are converted to US dollars at the average annual exchange rate for that year. For forecast years, the US dollar amounts assume the same annual exchange rate as that prevailing in 2021.

Key macroeconomic indicators are also provided with quantified trends. Other various topics, including profiles of pertinent leading companies, are covered in this report. A full outline of report items by page is available in the Table of Contents.

For the purposes of this report, Europe encompasses the following countries:

Table 6 | Countries in Western Europe

| | | | |
|-----------------|-------------|---------------|---------------------------|
| Andorra | Germany* | Italy* | Portugal |
| Austria | Gibraltar | Jersey | Saint Pierre and Miquelon |
| Belgium | Greece | Liechtenstein | San Marino |
| Channel Islands | Greenland | Luxembourg | Spain* |
| Denmark | Guernsey | Malta | Sweden |
| Faeroe Islands | Iceland | Monaco | Switzerland |
| Finland | Ireland | Netherlands | United Kingdom* |
| France* | Isle of Man | Norway | Vatican City |

*Major battery markets.

Source: The Freedonia Group

Table 7 | Countries in Eastern Europe

| | | |
|------------------------|------------|----------|
| Albania | Hungary | Romania |
| Belarus | Latvia | Russia* |
| Bosnia and Herzegovina | Lithuania | Serbia |
| Bulgaria | Macedonia | Slovakia |
| Croatia | Moldova | Slovenia |
| Czech Republic | Montenegro | Ukraine |
| Estonia | Poland | |

*Major battery market.

Source: The Freedonia Group

Sources

Batteries: Europe (FE45011) is based on *Global Batteries*, a comprehensive industry study published by The Freedonia Group. Reported findings represent the synthesis and analysis of data from various primary, secondary, macroeconomic, and demographic sources, such as:

- firms participating in the industry, and their suppliers and customers
- government/public agencies
- intergovernmental organizations
- trade associations and their publications
- the business and trade press
- indicator forecasts by The Freedonia Group
- the findings of other reports and studies by The Freedonia Group

Specific sources and additional resources are listed in the Resources section of this publication for reference and to facilitate further research.

Industry Codes

Table 8 | HS Codes Related to Batteries

| HS Code | Definition |
|---------|--|
| 8506.10 | Primary manganese dioxide batteries |
| 8506.30 | Primary mercuric oxide batteries |
| 8506.40 | Primary silver-oxide batteries |
| 8506.50 | Primary lithium batteries |
| 8506.60 | Primary zinc-air batteries |
| 8506.80 | Other primary batteries |
| 8507.10 | Secondary lead-acid vehicle batteries |
| 8507.20 | Other secondary lead-acid batteries |
| 8507.30 | Secondary nickel-cadmium batteries |
| 8507.40 | Secondary nickel-iron batteries |
| 8507.50 | Secondary nickel-metal hydride batteries |
| 8507.60 | Secondary lithium-ion batteries |
| 8507.80 | Other secondary batteries |

Source: United Nations Statistics Division

Table 9 | NACE Codes Related to Batteries

| NACE Code | Definition |
|-----------|---|
| 2720 | Manufacture of batteries and accumulators |

Source: European Commission

Freedonia Methodology

The Freedonia Group, a subsidiary of MarketResearch.com, has been in business for more than 30 years and in that time has developed a comprehensive approach to data analysis that takes into account the variety of industries covered and the evolving needs of our customers.

Every industry presents different challenges in market sizing and forecasting, and this requires flexibility in methodology and approach. Freedonia methodology integrates a variety of quantitative and qualitative techniques to present the best overall picture of a market's current position as well as its future outlook: When published data are available, we make sure they are correct and representative of reality. We understand that published data often have flaws either in scope or quality, and adjustments are made accordingly. Where no data are available, we use various methodologies to develop market sizing (both

top-down and bottom-up) and then triangulate those results to come up with the most accurate data series possible. Regardless of approach, we also talk to industry participants to verify both historical perspective and future growth opportunities.

Methods used in the preparation of Freedonia market research include, but are not limited to, the following activities: comprehensive data mining and evaluation, primary research, consensus forecasting and analysis, ratio analysis using key indicators, regression analysis, end use growth indices and intensity factors, purchase power parity adjustments for global data, consumer and end user surveys, market share and corporate sales analysis, product lifespan analysis, product or market life cycle analysis, graphical data modeling, long-term historical trend analysis, bottom-up and top-down demand modeling, and comparative market size ranking.

Freedonia quantifies trends in various measures of growth and volatility. Growth (or decline) expressed as an average annual growth rate (AAGR) is the least squares growth rate, which takes into account all available datapoints over a period. The volatility of datapoints around a least squares growth trend over time is expressed via the coefficient of determination, or r^2 . The most stable data series relative to the trend carries an r^2 value of 1.0; the most volatile – 0.0. Growth calculated as a compound annual growth rate (CAGR) employs, by definition, only the first and last datapoints over a period. The CAGR is used to describe forecast growth, defined as the expected trend beginning in the base year and ending in the forecast year. Readers are encouraged to consider historical volatility when assessing particular annual values along the forecast trend, including in the forecast year.

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Power Lawn & Garden Equipment

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Hybrid & Electric Vehicles: Europe

Lead: United States

Manufacturing: United States

Motorcycles: Europe

Motor Vehicles: Europe

Power Lawn & Garden Equipment: Europe

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RECHARGE

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