

Li-ion battery: checkmate for the European players?¹

Asia dominates the Li-ion battery supply chain, but Europe is on the rise.

OUTLINE:

- **Market forecasts:**
The global Li-ion² battery market size is estimated to reach US\$105.6 billion by 2026, with a 23% CAGR³₂₀₋₂₆.
The market for Li-ion battery cells in EV⁴ is expected to reach US\$ 86 billion by 2026.
The stationary market is expected to be almost US\$ 3.8 billion by 2026, at a 32% CAGR₂₀₋₂₆.
- **Battery trends:**
Lithium-ion technologies are increasingly employed to electrify transportation and provide stationary energy storage for electrical grids.
On the anode side, silicon has attracted attention for the last few years as it has a theoretical capacity of around ten times more than graphite.
- **Supply chain:**
Li-ion battery has become the technology of choice for many applications: it attracts attention from numerous players.
A major part of the growing cell demand is satisfied by a few leading battery cell suppliers, like LG Energy Solution, CATL, SK Innovation, Panasonic.
Other players, including start-up companies like Northvolt, Farasis and SVOLT have also identified a huge business opportunity in supplying battery cells for e-mobility markets, and are increasing their battery production capacity.
EV makers like Tesla, Volkswagen Group, BMW, General Motors, Ford, etc., are also investing billions of dollars to secure raw materials.

“Global Li-ion battery demand continues its impressive growth and will reach a massive 1156 GWh of yearly demand by 2026.” asserts **Shalu Agarwal, PhD, Technology & Market Analyst, Power Electronics & Materials at Yole Développement (Yole)**. She adds:

¹ Extracted from: [Status of the Rechargeable Li-Ion Battery Industry 2021 report](#), Yole Développement, 2021

² Li-ion: Lithium-ion

³ CAGR: Compound Annual Growth Rate

⁴ EV: Electric Vehicles

“The main reason for this growth is the demand for EVI/HEV⁵ and other e-mobility applications. According to Yole’s analysis, e-mobility alone will represent about 88% of global Li-ion battery demand.”

For Milan Rosina, PhD, Principal Analyst, Power Electronics & Batteries at Yole:

“The tremendous growth in demand for Li-ion batteries is due to various factors. First is the increasing demand for a given application. Second, in some applications, for example power tools, Li-ion battery’s share is increasing via progressive replacement of “older” battery technologies like lead-acid and NiMH⁶ batteries. Third, and yet another factor fueling battery demand, is the new battery applications and a growing share of battery-powered power tools and consumer devices. That explains why Yole investigates disruptive battery technologies and related markets in depth for many years now”.

2020 - 2026 total Li-ion battery cell demand in GWh

(Source: Status of the Rechargeable Li-ion Battery Industry 2021 report, Yole Développement, 2021)



Indeed, the market research and strategy consulting company is publishing numerous battery reports all year long:

- [Solid-State Battery 2021](#)
- [Lithium-ion Battery Recycling Market & Technology Trends 2020](#)
- [Li-ion Battery Packs for Automotive and Stationary Storage Applications 2020](#)

Released today, the [Status of the Rechargeable Li-ion Battery Industry 2021 report](#) offers deep insights into the rechargeable Li-ion battery market, covering the three main application segments: consumer electronics, electric mobility, and stationary energy storage. It also offers a thorough analysis of different Li-ion chemistries and their future applicative potential. Including market trends and forecasts, supply chain, technology trends, technical insights and analysis, take away and outlook, this study also delivers an in-depth understanding of the ecosystem and main players’ strategies.

⁵ EV/HEV: Electric and Hybrid Electric Vehicles

⁶ NiMH: Nickel-Metal Hydride

What are the economic and technological challenges of the Li-ion battery industry? What are the key drivers? Who are the suppliers to watch, and what innovative technologies are they working on?

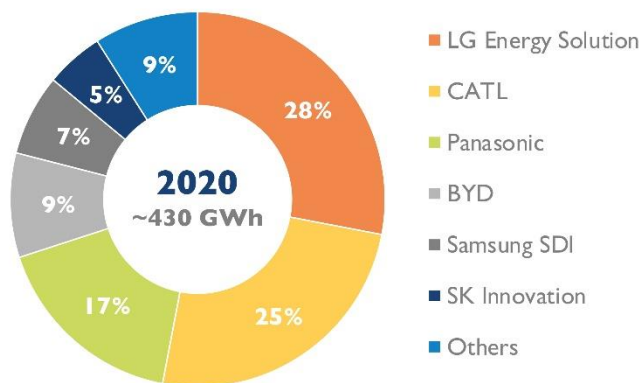
Yole presents today its vision of the status of the rechargeable Li-ion battery industry.

As analyzed by Yole’s team in the new Status of the Rechargeable Li-Ion Battery Industry 2021 report, Li-ion battery has become the technology of choice for many applications. As a result, it attracts numerous players: R&D labs, cell component manufacturers, cell and battery pack manufacturers, and system integrators.

Asia dominates the Li-ion battery supply chain, especially China, where Chinese Li-ion battery manufacturer CATL is the world leader in battery manufacturing. China’s success results from its sizeable domestic battery demand, control of more than 70% of the world’s graphite raw material refining, and massive cell and cell component manufacturing capacity. Korea and Japan rank number two and three in the Li-ion battery supply chain. While both countries are among the leaders in battery and cell component manufacturing (LG Energy Solution, Samsung SDI, SK Innovation, Panasonic), they do not have the same influence in raw materials refining and mining as China.

2020 top battery manufacturers market shares in GWh

(Source: Status of the Rechargeable Li-ion Battery Industry 2021 report, Yole Développement, 2021)



According to **Shalu Agarwal**: “Although Asia dominates the Li-ion battery supply chain, Europe is on the rise. As EV demand grows, there is an increasing need to establish cell manufacturing facilities close to the EV production site. To access the European EV market, Asian battery makers implement their factories in European countries. At the same time, European companies also invest in European battery factories to catch the business associated with domestic battery demand”.

Li-ion batteries for electric vehicles are in high demand, and in the future, battery supply may be an obstruction. Therefore, all carmakers have pursued different strategies to secure cell supplies. For example, many carmakers partner with battery manufacturers (e.g., BMW and

Northvolt); while some carmakers jointly establish a battery manufacturing factory with cell manufacturers (e.g., GM with LG Energy Solution; Renault with Envision AESC and Verkor); other companies are in a race to develop in-house battery production (e.g., BYD, Tesla, Daimler).

As battery demand grows, the need for battery components (anode, cathode, electrolyte, and separators) also increases. To meet this demand, the companies manufacturing battery components (e.g., BTR, Asahi Kasei, SK Innovation) are increasing their production capacity rapidly.

All year long, Yole Développement publishes numerous battery-related reports and monitors. In addition, experts realize various key presentations.

Make sure to be aware of the latest news coming from the industry and get an overview of our activities, including interviews with leading companies and more on i-Micronews. Stay tuned!

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About our analysts

Shalu Agarwal, PhD. is Power Electronics and Materials Analyst at Yole Développement (Yole), within the Power & Wireless division. Based on Seoul, Shalu is engaged in the development of technology & market reports as well as the production of custom consulting studies. Shalu has more than 10 years' experience in Electronic Material Chemistry. Before joining Yole, she worked as a project manager and research professor in the field of electronic materials, batteries and inorganic chemistry. Shalu Agarwal received her master's and Ph.D. degree in Chemistry from the Indian Institute of Technology (IIT) Roorkee (India).

Milan Rosina, PhD, is Principal Analyst, Power Electronics and Batteries, at Yole Développement (Yole), within the Power & Wireless division. He is engaged in the development of the market, technology and strategic analyses dedicated to innovative materials, devices and systems. His main areas of interest are EV/HEV, renewable energy, power electronic packaging and batteries. Milan has 20 years of scientific, industrial and managerial experience involving equipment and process development, due diligence, technology and market surveys in the fields of renewable energies, EV/HEV, energy storage, batteries, power electronics, thermal management, and innovative materials and devices. He received his PhD degree from Grenoble Institute of Technology (Grenoble INP) in France. Milan Rosina previously worked for the Institute of Electrical Engineering in Slovakia, Centrotherm in Germany, Fraunhofer IWS in Germany, CEA LETI in France, and utility company ENGIE in France.

About the report

Status of the Rechargeable Li-Ion Battery Industry 2021

Asia dominates the Li-ion battery supply chain, but Europe is on the rise, with more than 1,000 GWh battery production already announced by 2030. – Performed by Yole Développement

Companies cited:

3M, Ambatovy, Alabama Graphite, Accumotive, Altairnano, Alelion, Automotive Energy Supply Corporation, Akkuser, American Manganese, Advance Lithium Systems Europe, Akasol, ABB, Adstec, Albermarle, Asahi Kasei, ATL, ALL Cell, Ashok Leyland, Amperex Technology, ACC, AES, Aoyu Graphite Group, AMTE, Advano, BASF, Bitrode, Boston Power, Batrec, Brunp Recycling, BMW, BMZ, BAK, Bosch, Benergy Tech, BTR, BYD, Britishvolt, Battery Resourcers, Batrec, Cangzhou Mingzhu, CATL, CALB, Chilwee, Cealtech, Cenate, Capchem, Critical Elements, China Baoan Group, China Molybdenum, DOW, Dowa Eco-system, Duesenfeld, Daikin, Dynapower, Dynanonic, Delvotec, Daimler, DESAY, DNP, Dongguan Shanshan Battery Material, Dinho Technology, Digatron Power Electronics, Dongguan Honbro Li-ion Battery Equipment Technology Co., Ltd., and more...

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Founded in 1998, Yole Développement (Yole) has grown to become a group of companies providing marketing, technology and strategy consulting, media and corporate finance services, reverse engineering and reverse costing services and well as IP and patent analysis. With a strong focus on emerging applications using silicon and/or micro manufacturing, the Yole group of companies has expanded to include more than 80 collaborators worldwide... [More](#)

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