The information and statistics presented in this section and other sections of this document, unless otherwise indicated, were extracted from different official government publications and other publications, and from the industry report prepared by Frost & Sullivan, an independent market research and consulting company that was commissioned by us, in connection with this [**REDACTED**]. *The information from official government sources has not been independently verified by us, the Sponsors,* [**REDACTED**], [**REDACTED**], [**REDACTED**], [**REDACTED**], [**REDACTED**], [**REDACTED**], *any of their respective directors and advisers, or any other persons or parties involved in the* [**REDACTED**], *and no representation is given as to its accuracy.*

SOURCES OF INFORMATION

We engaged Frost & Sullivan, an independent market research consultant, to conduct an analysis of, and to prepare a report on global and China's conductive carbon materials industry for the use in this document, which was commissioned by us for a fee of RMB780,000. In compiling and preparing the F&S Report, Frost & Sullivan adopted the following assumptions: (i) the social, economic and political conditions globally currently discussed will remain stable during the forecast period, (ii) global and China's government policies on conductive carbon materials will remain consistent during the forecast period, (iii) global and China's conductive carbon materials industry will be driven by the factors which are stated in the report in the forecast period. Except as otherwise noted, all of the data and forecasts contained in this section are derived from the F&S Report. The Frost & Sullivan Report has been prepared by Frost & Sullivan independently without any influence from us or other interested parties.

ANALYSIS OF CARBON MATERIALS MARKET

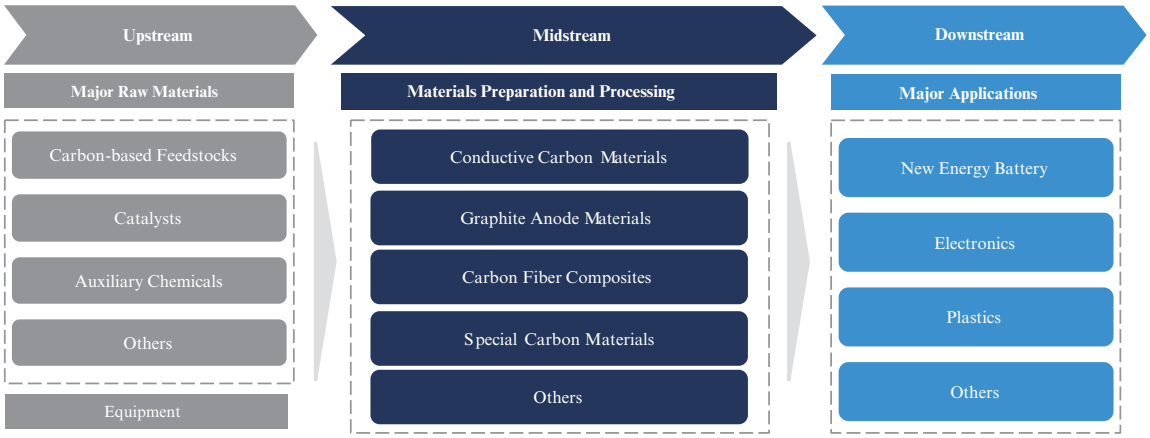
Definition and Classification of Carbon Materials Market

Carbon materials refer to a broad class of materials composed primarily of carbon atoms and are widely used due to their diverse functional properties, including electrical conductivity, thermal conductivity, chemical stability, mechanical strength, and lightweight characteristics. Based on their functional attributes and application scenarios, carbon materials can be broadly classified into conductive carbon materials, graphite anode materials, carbon fiber composites, special carbon materials, and others. They are widely applied in new energy, electronics, coatings, plastics, and other industrial fields, serving as key functional additives or active components.

Value Chain of Carbon Materials Market

The value chain of carbon materials mainly includes: (1) procurement and primary processing of raw materials; (2) preparation and processing of carbon materials; and (3) downstream application scenarios. The upstream segment primarily involves the sourcing of carbon-based feedstocks, catalysts, auxiliary chemicals, and related raw materials. The midstream segment covers the production and processing of various carbon materials, including purification, structural control, and functional modification to achieve targeted performance characteristics. Downstream applications span a wide range of fields such as new energy battery, electronics, chemicals, and advanced manufacturing, depending on the specific functional properties of the carbon materials.

Industry Value Chain of Carbon Materials



Source: Frost & Sullivan

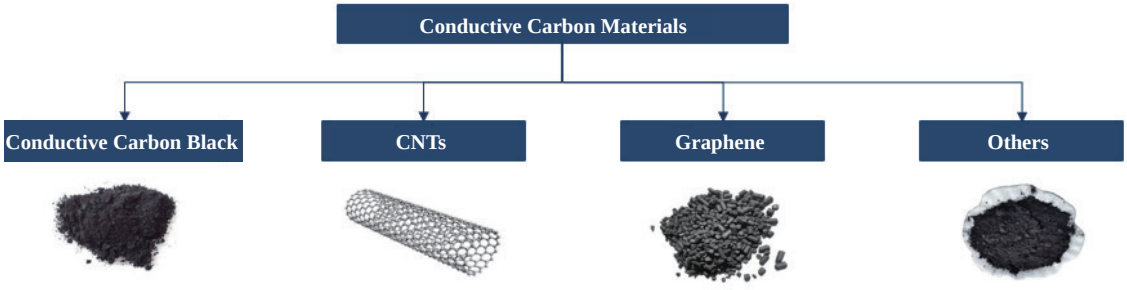
ANALYSIS OF CONDUCTIVE CARBON MATERIALS MARKET

Classification of Conductive Carbon Materials

Conductive carbon materials are commonly used as conductive additives to construct electron transport networks in composite systems, particularly in battery electrodes. Their primary role is to reduce internal resistance and improve electrical conductivity by forming continuous conductive pathways through particle contact, tunneling effects, or π-electron transport mechanisms.

Based on structural characteristics and conduction mechanisms, conductive carbon materials can be categorized into conductive carbon black, CNTs, graphene, and others. Conductive carbon black is the most widely used conventional conductive additive, featuring good dispersibility, stable performance, and cost advantages. CNTs provide one-dimensional conductive networks with high aspect ratios, thereby improving the electrical conductivity and overall performance of materials. Graphene, with its two-dimensional π-electron system, offers ultra-low percolation thresholds and high conductivity for advanced applications. Others mainly include conductive graphite, which delivers stable in-plane electron transport and balanced cost-performance.

Classification of Conductive Carbon Materials



Source: Frost & Sullivan

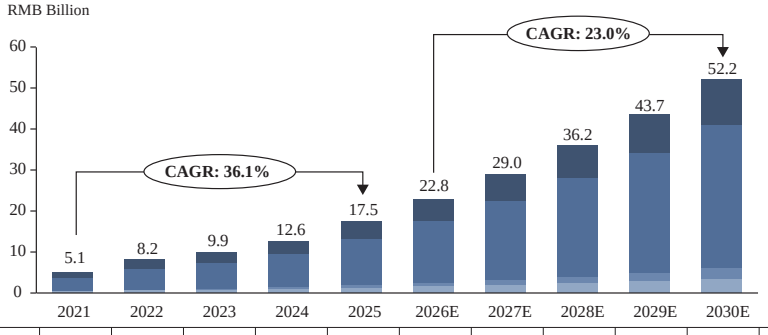
Market Size of New Energy Conductive Carbon Materials Market

Driven by the increasing demand for enhanced electrical conductivity, improved material performance, and greater durability across a wide range of industrial applications, conductive carbon materials have seen expanding adoption in sectors such as new energy, electronics, plastics and others.

Specifically, new energy, as the largest downstream segment of the conductive carbon materials market, accounted for approximately 45% of the global conductive carbon materials market by revenue in 2025. The global new energy conductive carbon materials market expanded from RMB5.1 billion in 2021 to RMB17.5 billion in 2025, reflecting strong growth driven by rising demand from downstream applications. Looking ahead, supported by continued electrification trends, growing demand for high-performance materials, and the expansion of energy storage and electronic devices, the market is expected to further grow to RMB52.2 billion in 2030.

- ***Conductive carbon black.*** The global market size of conductive carbon black in the new energy field increased from RMB1.5 billion in 2021 to RMB4.3 billion in 2025, and is expected to reach RMB11.2 billion in 2030, representing a CAGR of 20.0% from 2026 to 2030, driven by its cost competitiveness and stable conductivity performance.
- ***CNTs.*** Based on slurry revenue, the global market size of CNTs in the new energy field increased from RMB3.1 billion in 2021 to RMB11.4 billion in 2025, and is expected to reach RMB35.0 billion in 2030, representing a CAGR of 23.6% from 2026 to 2030, driven by rapid penetration in new energy battery applications such as silicon-based anodes.
- ***Graphene.*** The global market size of graphene in the new energy field increased from RMB0.1 billion in 2021 to RMB0.6 billion in 2025, and is expected to reach RMB2.7 billion in 2030, representing a CAGR of 31.4% from 2026 to 2030, supported by its exceptional electrical conductivity, mechanical strength, and growing use in fast-charging, high-power, and solid-state battery technologies.
- ***Others.*** Others mainly include conductive graphite. The global market size of other conductive carbon materials in the new energy field is expected to reach RMB3.3 billion in 2030, representing a CAGR of 21.3% from 2026 to 2030. The growth is supported by mature supply chains, stable processing characteristics, and its continued use in high-energy-density cathode and anode formulations, where conductive graphite provides reliable electrical conductivity and structural stability.

Market Size of New Energy Conductive Carbon Materials Market* (revenue breakdown by product type), Global, 2021-2030E



	2021	2022	2023	2024	2025	2026E	2027E	2028E	2029E	2030E	CAGR 21-25	CAGR 26E-30E
Conductive Carbon Black	1.5	2.2	2.6	3.2	4.3	5.4	6.7	8.2	9.6	11.2	30.8%	20.0%
CNT	3.1	5.1	6.3	8.1	11.4	15.0	19.1	24.0	29.1	35.0	38.2%	23.6%
Graphene	0.1	0.2	0.3	0.4	0.6	0.9	1.3	1.7	2.1	2.7	52.8%	31.4%
Others	0.4	0.6	0.7	0.9	1.2	1.5	1.9	2.3	2.8	3.3	31.3%	21.3%

Source: *Frost & Sullivan*

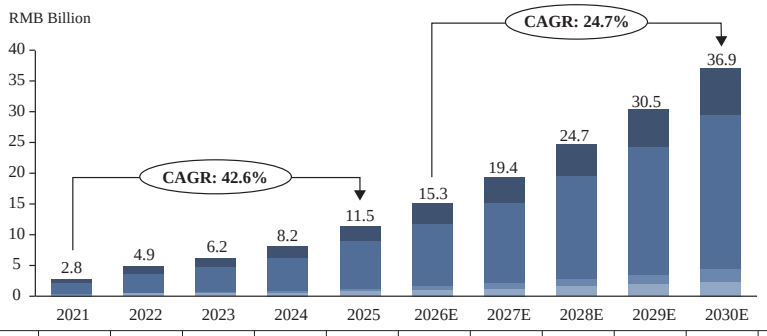
**Notes:*

(1) Market size includes external procurement from materials suppliers and in-house supply of battery companies.

(2) Market size is calculated based on the revenue from final product form sold to downstream clients. For conductive carbon black, graphene and other categories primarily comprising conductive graphite, market size is measured based on powder revenue. For CNTs, market size is measured based on slurry revenue, as CNT products are available in both powder and slurry forms, with slurry being the downstream product of CNT powder and the predominant product form sold to downstream clients.

The market size of the new energy conductive carbon materials market in China also grew from RMB2.8 billion in 2021 to RMB11.5 billion in 2025, and is expected to reach RMB36.9 billion in 2030, supported by the continuous development of battery technologies, new energy vehicles, and other new energy fields.

Market Size of New Energy Conductive Carbon Materials Market* (revenue breakdown by product type), China, 2021-2030E



	2021	2022	2023	2024	2025	2026E	2027E	2028E	2029E	2030E	CAGR 21-25	CAGR 26E-30E
Conductive Carbon Black	0.7	1.3	1.5	1.9	2.6	3.4	4.2	5.2	6.3	7.5	37.4%	21.5%
CNT	1.8	3.1	4.1	5.4	7.7	10.2	13.1	16.7	20.7	25.2	44.3%	25.3%
Graphene	0.1	0.1	0.2	0.3	0.4	0.6	0.9	1.2	1.6	2.0	60.2%	33.1%
Others	0.2	0.4	0.4	0.5	0.8	1.0	1.2	1.6	1.9	2.3	38.1%	23.0%

Source: *Frost & Sullivan*

**Notes:*

(1) Market size includes external procurement from materials suppliers and in-house supply of battery companies.

(2) Market size is calculated based on the revenue from final product form sold to downstream clients. For conductive carbon black, graphene and other categories primarily comprising conductive graphite, market size is measured based on powder revenue. For CNTs, market size is measured based on slurry revenue, as CNT products are available in both powder and slurry forms, with slurry being the downstream product of CNT powder and the predominant product form sold to downstream clients.

Market Drivers of Conductive Carbon Materials Market

- ***Technical Iteration to Support Silicon-based Anode Application.*** Silicon-based anodes greatly boost battery energy density but suffer from large volume expansion and poor intrinsic conductivity, raising stricter standards for conductive carbon materials. During cycling, silicon expansion may break internal conductive networks and accelerate capacity attenuation. In response, leading conductive carbon material suppliers have been developing high-toughness and well-dispersed CNT products to build stable long-distance conductive frameworks, buffer volume changes and maintain smooth electron transmission. As battery firms increase the silicon content in electrodes, suppliers are continuously optimizing high-aspect-ratio CNT formulations to support the mass production requirements of silicon-based anode batteries.
- ***Conductive Carbon Innovation for Solid-state Battery Development.*** Solid-state batteries abandon liquid electrolyte and face prominent interfacial stability issues that conventional conductive carbon materials may not fully address. Solid electrolytes have lower interfacial compatibility with ordinary carbon materials, which may lead to side reactions and higher internal resistance. In response, leading conductive carbon material suppliers have been advancing the development of surface-modified conductive carbon with milder surface activity to reduce interfacial deterioration, as well as composite carbon blends that better conform to solid electrode structures. They

are also carrying out continuous technical upgrades in CNT synthesis and surface passivation to better match the manufacturing processes and performance requirements of solid-state batteries.

- ***Growing Downstream Market Demand.*** Global EV and ESS battery shipments keep expanding rapidly. From 2026 to 2030, global EV battery shipments are projected to climb from 1,969.2 GWh to 4,386.1 GWh, with ESS battery shipments forecast to grow from 770.4 GWh to 1,703.7 GWh. The strong growth of the two sectors is expected to generate sustained market demand for conductive carbon materials. Beyond batteries, CNTs and graphene's outstanding electrical, thermal and mechanical performance opens new frontier market space. They are applied in lightweight vehicle & aerospace composites, sub-3nm semiconductors, high-performance AI chip heat dissipation, and tactile electronic skin for embodied intelligence, bringing considerable incremental opportunities for conductive carbon materials.

Development Trends of Conductive Carbon Materials Market

- ***Increasing Adoption of High-Performance and High-Purity Carbon Materials.*** As battery systems evolve toward higher energy density, faster charging capability, and improved cycling stability, the application of conductive carbon materials is expanding toward higher-performance and higher-purity solutions. Traditional conductive carbon black continues to serve as a foundational conductive additive, while advanced materials such as single-walled and few-walled CNTs, graphene, and hybrid carbon structures are increasingly used in combination to optimize conductive network construction. These materials provide complementary advantages in conductivity enhancement, mechanical reinforcement, and dispersion stability, supporting the performance requirements of next-generation electrodes. Their coordinated use is expected to play an increasingly important role as lithium-ion and emerging solid-state battery technologies progress.
- ***Integration with Advanced Battery Technologies.*** Conductive carbon materials are undergoing continuous technological iteration to better align with the performance requirements of advanced battery chemistries, including solid-state batteries and high-voltage systems. Through material optimization and process improvement, these materials enhance electron transport efficiency, electrode adhesion, and mechanical stability, supporting higher energy density, fast-charging capability, and improved safety performance. In parallel, domestic suppliers are increasingly strengthening R&D capabilities and production consistency, accelerating the localization of high-performance conductive carbon materials. This combination of technological advancement and domestic substitution is reinforcing the role of conductive carbon materials as critical enabling components for next-generation energy storage technologies.
- ***Rising Export Orientation among Domestic Suppliers.*** With improvements in product quality, process stability, and cost competitiveness, domestic conductive carbon material suppliers are accelerating their expansion into overseas markets. More companies are securing supply qualifications with international battery manufacturers and electronics producers, contributing to an increasing share of export shipments. This trend is also supported by global demand growth for high-performance carbon materials and by the strategic shift of multinational battery firms toward diversified supply chains. As a result, exports are becoming an important driver of industry development and capacity deployment.

COMPETITIVE ANALYSIS OF CONDUCTIVE CARBON MATERIALS MARKET

Competitive Landscape of the Conductive Carbon Materials Market

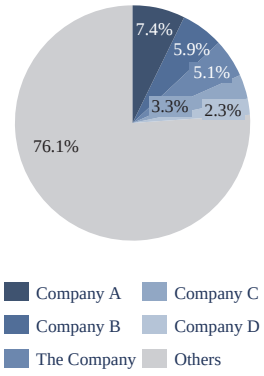
The conductive carbon materials market includes two types of manufacturers, namely, those focused on specific categories of conductive carbon materials and those with business coverage across all major types of conductive carbon materials. Compared to the former ones, the latter ones possess competitive advantages such as technological synergy effects, faster response to market demands, and stronger cost control capabilities.

The Company is one of the few conductive carbon material manufacturers in the global market with business coverage across all major types of conductive carbon materials.

Ranking of New Energy Conductive Carbon Material Manufacturers

With the new energy conductive carbon materials revenue of RMB0.9 billion in the global market in 2025, the Company ranked the 3rd among all manufacturers in the global market, and ranked the 2nd among Chinese manufacturers in the global market with a market share of 5.1%.

Ranking of New Energy Conductive Carbon Materials Manufacturers (by revenue), Global, 2025*



Rank	Company Name	Revenue (Billion RMB)	Market Share
1	Company A	1.3	7.4%
2	Company B	1.0	5.9%
3	**The Company**	**0.9**	**5.1%**
4	Company C	0.7	3.3%
5	Company D	0.4	2.3%
	Others	13.3	76.1%
	Total	**17.5**	**100%**

Source: *Frost & Sullivan*

**Note:* For CNTs included in new energy conductive carbon materials, the market size is measured based on slurry revenue, as slurry is the primary product form sold to downstream clients. The CNT revenue included in each manufacturer's new energy conductive carbon material revenue comprises revenue from both CNT powder and CNT slurry products in the new energy sector.

Company A is a company headquartered in Zhenjiang, China, and listed on the Shanghai Stock Exchange. It was established in 2011 and primarily specializes in R&D and production of carbon nanomaterials for lithium batteries.

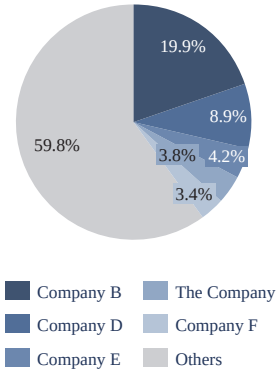
Company B is a company headquartered in Paris, France, and listed on the Euronext Paris. It was established in 1880 and primarily specializes in functional mineral and carbon material manufacturing.

Company C is a company headquartered in Foshan, China, and listed on the Shenzhen Stock Exchange. It was established in 2007 and primarily specializes in new energy and ceramic raw material production.

Company D is a company headquartered in Tokyo, Japan. It was established in 1918 and primarily specializes in daily chemical and personal care goods development.

With the new energy conductive carbon black revenue of RMB0.2 billion in the global market in 2025, the Company ranked the 4th among all manufacturers in the global market, and the first among Chinese manufacturers in the global market, with a market share of 3.8%.

Ranking of New Energy Conductive Carbon Black Manufacturers (by revenue), Global, 2025*



Rank	Company Name	Revenue (Billion RMB)	Market Share
1	Company B	0.9	19.9%
2	Company D	0.4	8.9%
3	Company E	0.2	4.2%
4	**The Company**	**0.2**	**3.8%**
5	Company F	0.1	3.4%
	Others	2.5	59.8%
	Total	**4.3**	**100%**

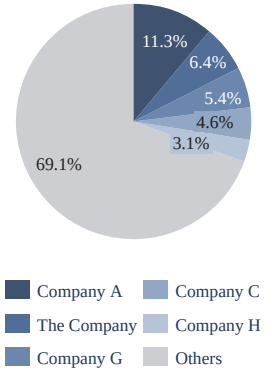
Source: *Frost & Sullivan*

**Note:* Company E is a company headquartered in Luxembourg, and listed on the New York Stock Exchange. It was established in 2011 and primarily specializes in specialty carbon and functional chemical materials.

Company F is a company headquartered in Boston, the U.S., and listed on the New York Stock Exchange. It was established in 1882 and primarily specializes in diversified industrial conductive carbon black production.

With the CNT revenue of RMB0.7 billion in the global market in 2025, the Company ranked the 2nd among all CNT suppliers in the global market with a market share of 6.4%.

Ranking of New Energy CNT Manufacturers (by revenue), Global, 2025*



Rank	Company Name	Revenue (Billion RMB)	Market Share
1	Company A	1.3	11.3%
2	**The Company**	**0.7**	**6.4%**
3	Company G	0.6	5.4%
4	Company C	0.5	4.6%
5	Company H	0.4	3.1%
	Others	7.9	69.1%
	Total	**11.4**	**100%**

Source: *Frost & Sullivan*

**Note:* The market size of new energy CNTs is measured based on the revenue of CNT slurry products. The new energy CNT revenue of each manufacturer includes revenue from both CNT powder and CNT slurry products in the new energy sector.

Company G is a company headquartered in Luxembourg. It was established in 2009 and primarily specializes in the R&D and production of few-walled CNTs and related nanotechnology products.

Company H is a company headquartered in Huizhou, China. It was established in 2014 and primarily specializes in the R&D and production of CNTs, conductive agents and related nanomaterials for lithium-ion batteries.

Entry Barriers

- ***Technology Barrier.*** Conductive carbon materials have high requirements for comprehensive performance such as conductivity and stability. Products often need to maintain long-term reliability in battery operating environments. R&D involves multiple aspects including material structure design, surface treatment, and dispersion processes, which require long-term accumulation. New entrants lacking experience usually struggle to meet the performance standards required by downstream customers in a short period of time, so technological thresholds constitute a significant barrier.
- ***Customer Resource Barrier.*** Downstream sectors such as power batteries have stringent requirements for material safety and consistency. The qualification process is usually lengthy, involving multi-stage verification and mass production evaluation. Existing suppliers maintain stable cooperation with leading battery enterprises, which have low acceptance of companies lacking established brand credibility and shipment records. Even if new entrants meet performance standards, they struggle to secure orders from core customers in the short term.
- ***Supply Chain Barrier.*** Conductive carbon materials must ensure long-term stable supply and consistent quality, while new entrants often struggle to quickly meet such delivery reliability requirements, making it difficult for them to enter core supply chains. In addition, downstream customers tend to prioritize suppliers with mature and resilient supply systems, which further reinforces the market entry barrier.