

INDUSTRY OVERVIEW

This section and elsewhere in this document contain certain information, statistics and data which are derived from various official government publications and other publicly available publications, and a report commissioned by us and prepared by our industry consultant, CIC. We believe that the sources of the information in this section and elsewhere in this document are appropriate sources for such information and have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is false in any material respect or misleading. The information, statistics and data from official government sources have not been independently verified by us, the Sole Sponsor, the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], any of our or their respective directors, officers, employees, advisers or agents or any other party (other than CIC) involved in the [REDACTED], and no representation is given as to their accuracy, reliability or completeness. As such, [REDACTED] are cautioned not to place any undue reliance on the information, including statistics, data and estimates, set out in this section or similar information included elsewhere in this document.

SOURCES AND RELIABILITY OF INFORMATION

CIC was commissioned to conduct an analysis of, and to report on the global robotic pool cleaner market at a fee of approximately RMB1,150,000. The commissioned report was prepared by CIC independent from the influence of the Company and other interested parties. CIC’s services include, among others, industry consulting, commercial due diligence, and strategic consulting. Its consulting team has been tracking the latest market trends in multiple business sectors, including the consumer goods, enterprise services, transportation, internet, entertainment, environment, industry, energy, chemicals, healthcare, agriculture, and finance, and has the relevant and insightful market intelligence in the above industries.

During the preparation of the commissioned report, CIC conducted both primary and secondary research using a variety of resources. The information and data collected by CIC have been analysed, assessed and validated using CIC’s in-house analysis models and techniques.

The market projections in the commissioned report are based on the following key assumptions: (i) the overall social, economic and political environment in China is expected to remain stable during the forecast period; (ii) there is no extreme *force majeure* or unforeseen set of industry regulations in which the market may be affected in either a dramatic or fundamental way; and (iii) relevant key industry drivers including technological advancements, new opportunities in emerging markets, and the popularization of water recreation as mass entertainment are likely to drive the market during the forecast period.

DIRECTORS’ CONFIRMATION

After making reasonable inquiries, our Directors confirm that, to the best of their knowledge, there has been no detrimental change in the market information demonstrated in the CIC Report since the date of the report that may qualify, contradict or have an impact on the information in this document.

OVERVIEW OF THE GLOBAL POOL CLEANING MARKET

Overview

Pool cleaning involves a range of products and services designed to clean pool surface (e.g., bottom, wall, waterline, and water surface) by removing physical debris, organic matter, and contaminants. Pool cleaning can be achieved with a variety of products and services, such as robotic pool cleaners, pool vacuums, chemical products, and manual cleaning products and services. The robotic pool cleaner is an automated pool cleaning equipment, which can automatically walk in the pool to remove sand, dust,

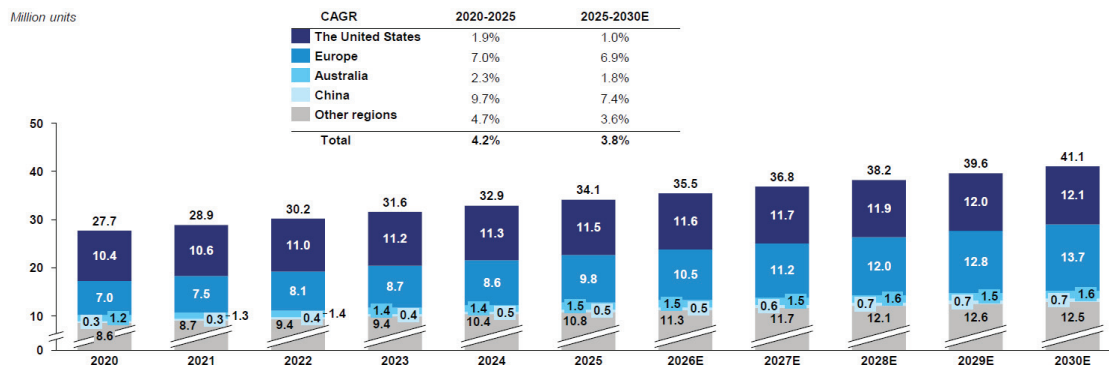
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impurities, dirt, as well as large size debris on the bottom, wall, and surface of the pool. Robotic pool cleaner, with good waterproof performance, equipped with a path navigation system, can achieve underwater autonomous cleaning function. The robotic pool cleaner offers significant advancements in application scenarios, pool coverage, cost-effectiveness, cleaning efficiency, and ease of use, establishing it as a superior alternative to traditional pool cleaning methods.

Market Size

Total number of swimming pools globally, including private and public, amounted to around 34.1 million units in 2025, and is expected to further increase to 41.1 million units by 2030, indicating a CAGR of 3.8% between 2025 and 2030. The increase is mainly driven by increasing urbanization and increased number of residential structure, hotels, schools, and other commercial units globally. The United States and Europe are two largest swimming pool market and accounted for around 33.6% and 28.8%, respectively, of the total number of swimming pools globally in 2025.

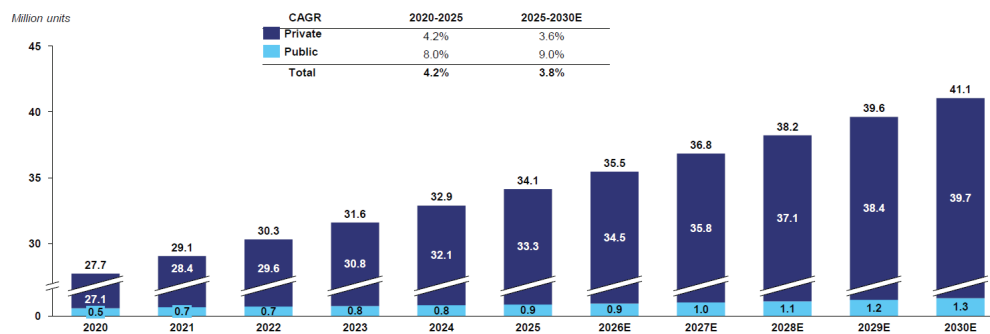
Total number of swimming pools, Global, by country and region, 2020-2030E



Source: National Bureau of Statistics, The European Union of Swimming Pool and Spa Associations (EUSA), Australian Industry and Skills committee, CIC

Swimming pools can be categorized into private swimming pools and public swimming pools. Private swimming pools refer to residential pools owned by individuals while public swimming pools refer to pools built for commercial use and at public facilities. In 2025, there are 33.3 million private swimming pools and 0.9 million public swimming pools globally.

Total number of swimming pools, Global, by pool type, 2020-2030E

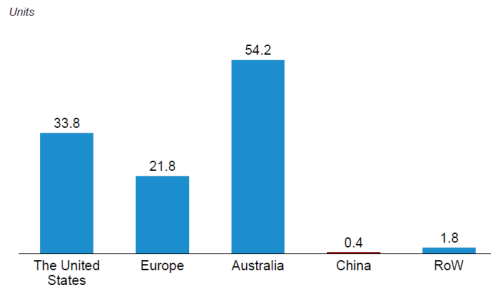


Source: CIC

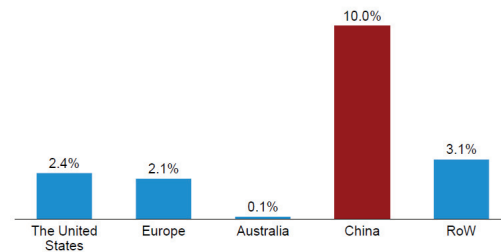
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Pool ownership per thousand people varies widely across countries and regions, influenced by cultural preferences, lifestyle choices, climate, and economic factors. In 2025, the United States, Europe, and Australia exhibit significantly higher rate of pool ownership per thousand people compared to China and other regions. Additionally, proportion of public pools also varies widely. Due to higher population density, cultural and social preferences, and affordability and accessibility of public amenities, China has a much higher proportion of public pools compared to other countries and regions.

Pool ownership per thousand people, by country and region, 2025



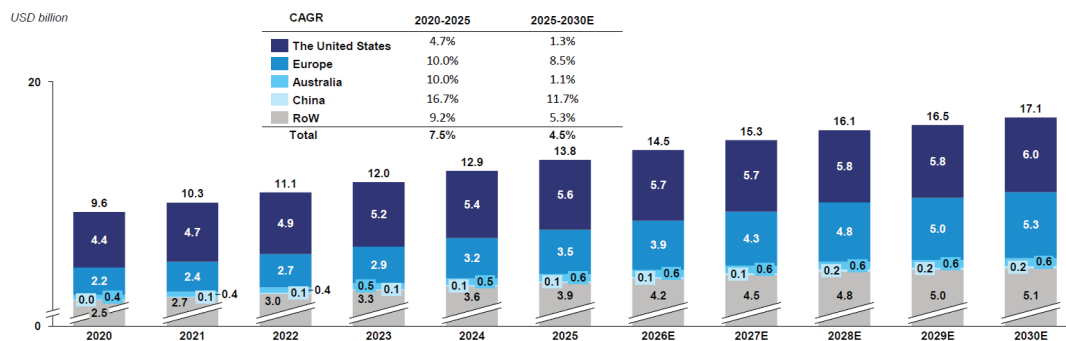
Proportion of public pools, by country and region, 2025



Source: World Bank, CIC

Expenditure on global swimming pool cleaning, which mainly encompasses costs for as robotic pool cleaners, pool vacuums, chemical products, and manual cleaning products and services increased from USD9.6 billion in 2020 to USD13.8 billion in 2025, indicating a CAGR of 7.5% between 2020 and 2025. It is expected to further increase to USD17.1 billion in 2030 with a CAGR of 4.5% between 2025 and 2030 owing to increasing pool ownership, rising standards regarding water quality and safety, economic development, technological advancements, etc.

Expenditure on swimming pool cleaning and maintenance, Global, by country and region, 2020-2030E



Source: CIC

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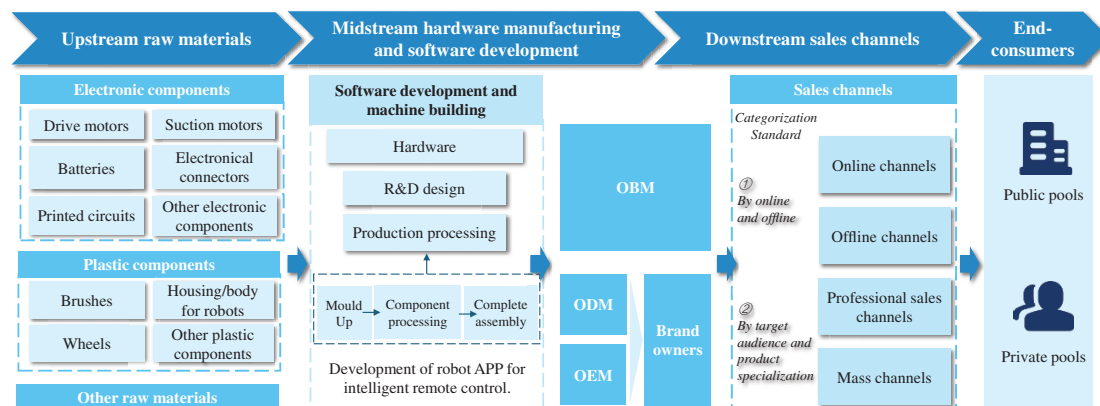
OVERVIEW OF THE GLOBAL ROBOTIC POOL CLEANER MARKET

Overview

Robotic pool cleaners are an important part of both the pool cleaning market and the smart outdoor living market. They revolutionize pool cleaning by offering autonomous cleaning capabilities, reducing the need for manual labour and chemical usage. They can integrate seamlessly with modern home automation systems, allowing remote operation and scheduling via smartphones or smart home devices. Their ability to enhance both cleanliness, convenience, and health makes them a crucial and valued component in these markets.

Robotic pool cleaners are small, wheeled or tracked machines that crawl along the surface of the pool and automatically clean pool bottom, walls, and/or the waterline. Robotic pool cleaners come in various configurations, primarily distinguished by their cable presence. Based on cable presence, they can be categorized into corded robotic pool cleaners and cordless robotic pool cleaners.

Value Chain



Source: CIC

The upstream of the robotic pool cleaner market consists of electronic components, plastic components, and other raw materials, which are generally available and accessible to purchase. The midstream of the robotic pool cleaner market includes both hardware and software development. Manufacturing companies consists of OEMs, ODMs, and OBMs. OEMs manufacture products based on client designs and ODMs handle both design and production, while OBMs manage the entire process from design to sales under their own brand. The downstream segment involves brand owners, sales channels, and end-consumers. Brand owners focus on product promotion and sales under their own brand but generally lack in-house production capabilities. Sales channels are categorized into online vs. offline, and mass vs. professional channels. In the United States and Europe, professional channels, including specialty stores, pool builders, and service providers, account for major sales. Mass channels, on the other hand, target the general public and retail chains that sell end-user products.

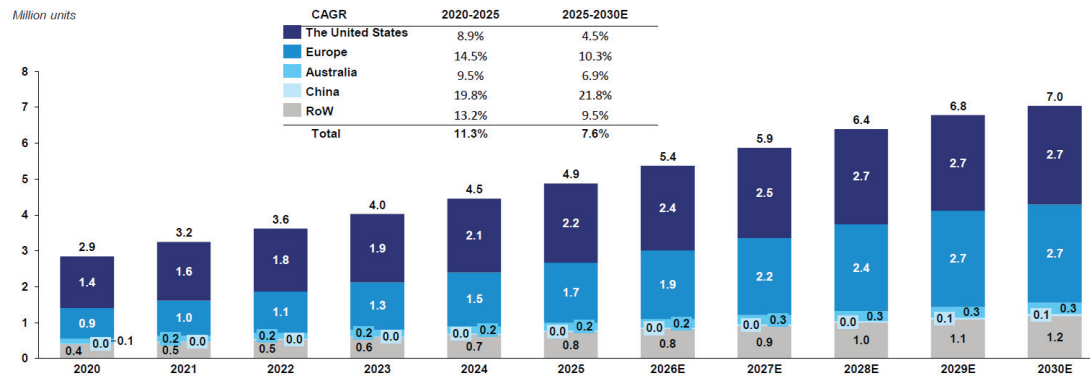
Market Size

The shipment volume of robotic pool cleaners globally surged from 2.9 million units in 2020 to 4.9 million units in 2025, indicating a CAGR of 11.3% between 2020 and 2025. It is expected to further increase to 7.0 million units in 2030 with a CAGR of 7.6% between 2025 and 2030. The United States and Europe dominate the market, accounting for around 45.2% and 34.3%, respectively, of total shipments in

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2025. China’s robotic pool cleaner market has experienced significant growth over the past five years, with its shipment volume increasing with a CAGR of 19.8% between 2020 and 2025, and is anticipated to continue expanding with a CAGR of 21.8% between 2025 and 2030.

Market size of the global robotic pool cleaner market, in terms of shipment volume, by country and region, 2020-2030E

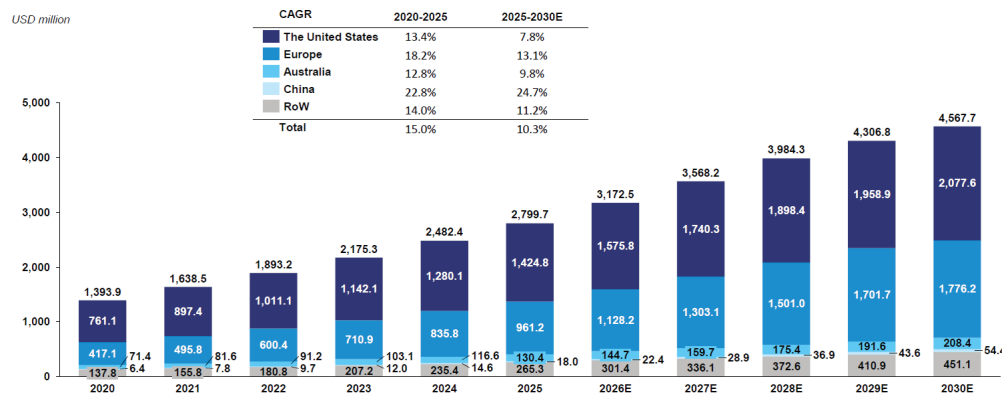


Source: CIC

The global robotic pool cleaner market has outpaced the broader pool cleaning sector, driven by enhanced product reliability and advancing technological capabilities. This has led to a higher penetration rate of robotic pool cleaners and an increase in prices, particularly in the lower to middle-class product segments. The average price of a robotic pool cleaner increased from USD489.0 in 2020 to USD573.8 in 2025. The market size of the global robotic pool cleaner market, in terms of GMV, increased from USD1,393.9 million in 2020 to USD2,799.7 million in 2025, indicating a CAGR of 15.0% between 2020 and 2025. It is expected to further increase to USD4,567.7 million in 2030 with a CAGR of 10.3% between 2025 and 2030.

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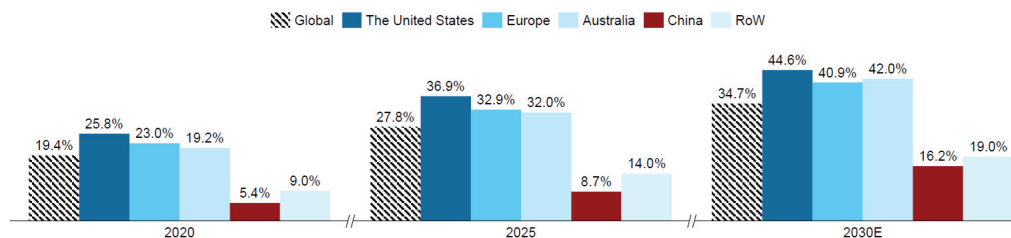
Market size of the global robotic pool cleaner market, in terms of retail value, by country and region, 2020-2030E



Source: CIC

With growing awareness of product reliability and cleaning performance, the adoption rate of the robotic pool cleaner, in terms of number of pools serviced, has witnessed huge growth in the past five years, increasing from 19.4% in 2020 to 27.8% in 2025. The increase primarily comes at the expense of traditional cleaning solutions like pressure and suction equipment, which are generally less efficient and more labor-intensive, and louder operational noise compared to robotic pool cleaners. China has a much lower adoption rate compared to developed countries. In 2025, the adoption rate of the robotic pool cleaner in China stands at approximately 8.7%, in contrast to rates of around 36.9% in the United States, 32.9% in Europe, and 32.0% in Australia. In China, robotic pool cleaners remain relatively expensive compared to manual labor, limiting their economic attractiveness. With economic development and rising health awareness, adoption in China is expected to increase steadily.

Adoption rate of the robotic pool cleaner, in terms of number of pools serviced, by country and region, 2020-2030E



Source: CIC

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Robotic pool cleaners can generally be categorized into corded and cordless models based on their power supply and operation design. Both types are designed for automatic pool cleaning but differ in terms of usage scenario, power supply, technological requirement, energy efficiency, and mobility & operation, as summarized below:

Aspect	Corded robotic pool cleaners	Cordless robotic pool cleaners
Usage scenario	Mainly used for large-sized or commercial pools requiring extended operation time and continuous power.	More suitable for residential, villa or irregularly shaped pools, emphasizing convenience, safety and ease of use.
Power supply	Powered via external power source through long cable and transformer.	Powered by built-in rechargeable lithium battery, independent from external power supply.
Technological requirement	Basic or pre-set cleaning routes; mechanical navigation with limited adaptability to pool environment.	Equipped with advanced sensors (gyroscope, accelerometer, depth and ultrasonic sensors) and AI-based navigation and path planning systems, enabling intelligent mapping, route optimization and obstacle avoidance.
Mobility & operation	Limited by cable length; potential cable tangling during operation; requires manual setup and cable management.	Fully autonomous, free from cable constraints; compact structure allows flexible movement and simple setup.

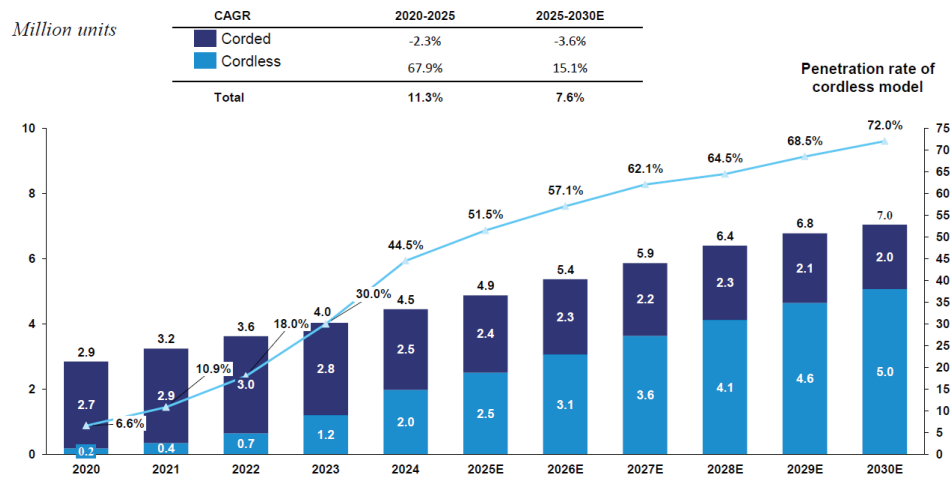
Source: China Insights Consultancy

Technological advancements in battery performance, AI navigation and motor control systems have improved the efficiency and intelligence of cordless robotic pool cleaners. Compared to corded models, cordless models integrate energy-efficient components, smart sensors and adaptive algorithms to reduce redundant movement and optimize cleaning routes, achieving higher overall performance with lower energy consumption. With growing consumer preference for convenience and automation, cordless robotic pool cleaners are increasingly becoming the mainstream innovation direction in the global market and are expected to represent a rising share of global robotic pool cleaner sales.

The market structure of global robotic pool cleaners has undergone a notable shift from corded to cordless models in recent years. The shipment volume of cordless robotic pool cleaners increased rapidly from 0.2 million units in 2020 to 2.5 million units in 2025, representing a CAGR of 67.9%, while that of corded models declined from 2.7 million units to 2.4 million units over the same period, as cordless products continued to replace traditional corded models. The penetration rate of cordless models in total shipments rose from 6.6% in 2020 to 51.5% in 2025, and is expected to exceed 71.0% by 2030, when total shipments are projected to reach 7.0 million units and cordless models are expected to account for approximately 5.0 million units.

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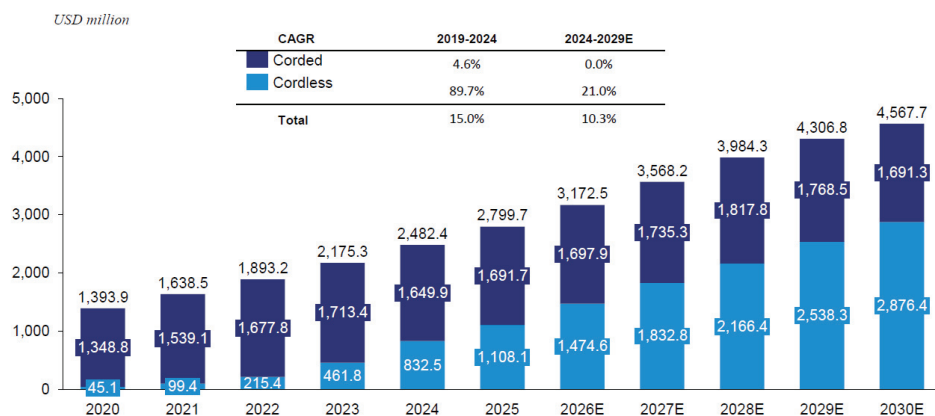
Market size of the global robotic pool cleaner market, in terms of shipment volume, by product type, 2020-2030E



Source: China Insights Consultancy

In terms of GMV, the global market expanded from USD1,393.9 million in 2020 to USD2,799.7 million in 2025, with cordless models contributing most of the incremental growth. GMV of cordless models surged from USD45.1 million in 2020 to USD1,108.1 million in 2025, representing a CAGR of 89.7%. The overall market is expected to further increase to USD4,567.7 in 2030, with cordless models expected to reach USD2,876.4 million, accounting for more than half of total retail sales by then, reflecting the ongoing shift toward intelligent and energy-efficient pool-cleaning solutions.

Market size of the global robotic pool cleaner market, in terms of retail value, by product type, 2020-2030E



Source: China Insights Consultancy

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Key Market Drivers

- ***Technological advancements:*** Over the years, technological advancements have addressed the pain points of robotic pool cleaners at the application level, including but not limited to climbing walls, footholds, and steps, wireless charging and underwater charging, human-free operation, and IoT integration. These technological improvements have made robotic pool cleaners more user-friendly, convenient, and cost-efficient, thereby encouraging more purchases.
- ***New opportunities in emerging markets:*** The United States and Europe collectively dominate the robotic pool cleaner market, comprising approximately 80% of global shipments in 2024, despite accounting for only around 10% of the world’s population. However, emerging markets like China present significant growth potential. As urbanization and disposable incomes rise, demand for leisure amenities and sports facilities, including public swimming pools in Olympic venues, water parks, schools, hotels, and condominiums, is growing. Robotic pool cleaners offer efficient, cost-effective, and safe solutions that meet high hygiene and maintenance standards, making them attractive investments in China’s evolving pool cleaning industry.
- ***The popularization of water recreation as mass entertainment:*** Private pools have now become more accessible and popular among the general public, trending towards mass-market products, due to the increasing interest in outdoor living spaces among different demographics. The pandemic has further heightened the desire for enhanced outdoor spaces as people look for ways to enjoy their homes more fully. Modern pool owners are looking for experiences that promote health, incorporate environmentally friendly products, offer energy efficiency, and include digital features. Consequently, the rising number of swimming pools and the associated demand for maintenance products, like pool cleaning robots, are propelling the market forward.

Future Trends

- ***Surging technology advancement:*** The robotic pool cleaner market continues to advance in intelligent technologies, including (1) underwater AI vision using cameras and sensors to detect dirt and debris; (2) acoustic positioning for precise movement and improved coverage; (3) underwater 3D mapping to optimize cleaning routes and avoid obstacles; (4) underwater communication and remote control for wireless operation; and (5) more convenient and sustainable charging solutions, such as solar charging.
- ***Diversified application scenarios:*** Robotic pool cleaners are expanding beyond swimming pools to SPAs, water parks, and aquariums due to their safety, cost-effectiveness, and efficiency. In aquariums, they reduce the need for divers, lowering both risk and maintenance costs. In SPAs and water parks, they offer convenient cleaning solutions that improve hygiene and water quality while minimizing downtime. This versatility is driving further innovation and adoption across various aquatic environments.
- ***Shifting towards online purchasing channels:*** The purchasing behaviour of consumers is shifting, with an increasing preference for online channels, driven by consumer demand for convenience, better information, and a broader selection of products. Application of E-commerce platforms are growing. Websites such as Amazon, Alibaba, and specialized retailers offer a wide range of products, detailed descriptions, and customer reviews, helping consumers make informed decisions.
- ***Cordless robotic pool cleaners will become mainstream:*** Cordless robotic pool cleaners are gaining popularity due to their greater agility and ease of use compared to traditional models. Free from power cords, they can navigate the entire pool more efficiently, avoiding entanglement and

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improving coverage. Equipped with advanced battery technology, they offer longer operational periods and quicker recharging times. This combination of convenience and efficiency is driving increased demand for cordless models.

COMPETITIVE LANDSCAPE OF THE GLOBAL ROBOTIC POOL CLEANER MARKET

Overview

The global robotic pool cleaner market is highly concentrated, with the top five players with manufacturing capability accounting for around 74.9% of total market share by shipment volume of self-manufactured products in 2024. In terms of GMV, the market concentration remained broadly consistent, with the top five players collectively accounting for approximately 71.2% of total market value.

Our Company ranked as the third-largest manufacturer of robotic pool cleaners globally, with a market share of approximately 9.2% by shipment volume and 5.6% by GMV in 2024, and is the largest robotic pool cleaner manufacturer in China. The lower share by GMV primarily reflected the higher average selling prices of certain premium overseas brands, whereas our Company focuses on delivering cost-efficient, high-performance cordless models to a broader consumer base.

Top five robotic pool cleaner manufacturers, Global, by shipment volume and GMV of self-manufactured products in 2024

Ranking	Company	Market share (by shipment volume)	Market share (by GMV)	Listing status
1	Company A ¹	34.8%	34.6%	Public
2	Company B ²	18.5%	22.8%	Public
3	<i>Our Company</i>	9.2%	5.6%	<i>Private</i>
4	Company C ³	6.7%	4.5%	Public
5	Company D ⁴	5.6%	3.7%	Private
	Subtotal	74.9%	71.2%	
	Total	100%	100%	

- (1) Established in 1983 and based in Israel, Company A is a public company focusing on pool cleaning products for both private and public pools.
- (2) Established in 1969 and based in Spain, Company B is a public company that designs, manufactures, and distributes products and services for the construction, maintenance, refurbishment, and improvement of private and public pools.
- (3) Established in 1997 and based in China, Company C is a public company specializing in designs, manufacturers, and distributes lithium-ion products, with a small business sector also producing electronic products including robotic pool cleaner.
- (4) Established in 2022 and based in China, Company D is a private company that designs, manufacturers, and distributes electronical products including speakers and smart robots.

Source: CIC

The cordless robotic pool cleaner represents the evolution in automated pool cleaning, capable of performing all cleaning tasks autonomously and powered by rechargeable batteries. The leading five companies collectively held 51.5% of the total market share in 2024, measured by shipment volume of self-manufactured products. We ranked first with a market share of 19.7% in 2024 as measured by the

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same metric. Company A and Company B both launched their first cordless robotic pool cleaner models in 2023. As these products were newly introduced, their shipment volumes remained limited and the overall contribution of cordless models to their total robotic pool cleaner sales was still relatively small in 2024.

Top five cordless robotic pool cleaner manufacturers, Global,
by shipment volume of self-manufactured products in 2024

Ranking	Company	Market share	Listing status
1.	<i>Our Company</i>	19.7%	Private
2.	Company C	15.1%	Public
3.	Company D	12.6%	Private
4.	Company E ⁽¹⁾	2.5%	Private
5.	Company F ⁽²⁾	1.5%	Private
	Subtotal	51.5%	
	Total	100.0%	

(1) Established in 2023 and based in China, Company E is a private company that specializing in manufacturing robots including cordless robotic pool cleaners.

(2) Established 2015 and based in China, Company F is a private company that manufacturing sauna, pool, and spa equipment.

Source: CIC

Entry Barriers and Key Success Factors

- **Technological capabilities:** The development of robotic pool cleaners requires advanced technical expertise and industry experience. Products must integrate electronic and mechanical systems to operate effectively underwater and withstand prolonged exposure to pool environments. Ensuring durability and reliability requires extensive testing and continuous optimization to meet quality standards and customer expectations.
- **Presence at the professional market:** Professional sales channels account for most of the robotic pool cleaner sales. New entrants face challenges in accessing these channels due to established relationships, rigorous quality standards, and high expectations for reliability and performance.
- **Established online channels:** The global shifts towards online shopping has greatly impact the market. Online channels offer greater convenience and better price/quality ratio compared to traditional offline channels. Established online channels pose a significant barrier to new entrants in the market due to their strong customer trust, competitive digital marketing landscape, and efficient logistics. New entrants struggle to match the visibility, brand recognition, and logistical capabilities of incumbents.
- **Manufacturing capabilities:** Effective and reliable manufacturing capability ensures superior product quality, consistency, cost efficiency, and streamlined supply chains. A strong manufacturing capability not only supports the production of high-quality robotic pool cleaners but also enables brand owners to innovate, scale, and maintain competitiveness in the market while meeting stringent quality standards and customer expectations.

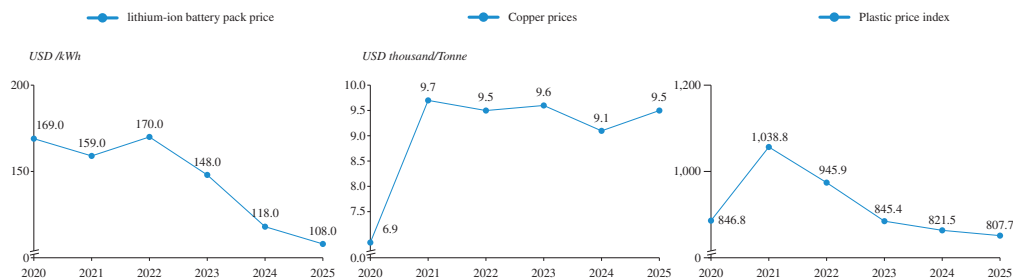
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- **Brand awareness:** Established brands in the robotic pool cleaning market have built strong reputations over years. Their track record in customer satisfaction and effective marketing has earned consumer trust. New entrants must overcome the challenge of building recognition and trust, requirement significant investments in marketing, customer education, and developing loyal customer bases.

COST ANALYSIS

The major raw materials of robotic pool cleaners included lithium-ion battery packs, plastics and copper. In 2025, lithium-ion battery prices declined further to USD108.0 per kWh. Copper prices recorded an overall increase from 2020 and stabilized at the price around USD9,500 per tonne in 2025. The plastic price index was 807.7 in 2025, reflecting a continued downward trend following a peak of 1,038.8 in 2021. The following graphs set forth historical prices of major raw materials and components for the periods indicated:

Prices of major raw materials, 2020-2025



Note: The base year for the plastic price index is 2010 (Index = 1000).

Source: Bloomberg NEF, London Metal Exchange, China Plastic City, CIC