
INDUSTRY OVERVIEW

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SOURCE OF INFORMATION

We have commissioned Frost & Sullivan, an independent market research and consulting company, to conduct an analysis of, and to prepare a report on the curtain wall market in the PRC. We agreed to pay Frost & Sullivan a fee of RMB550,000 which we believe reflects market rates for reports of this type, the payment of such amount was not conditional on our Group’s successful [REDACTED] or on the result of the Industry Report. The Industry Report is prepared independent of our Group’s influence.

Founded in 1961, Frost & Sullivan has 40 offices with more than 2,000 industry consultants, market research analysts, technology analysts and economists globally. Frost & Sullivan’s services include technology research, independent market research, economic research, corporate best practices advising, training, client research, competitive intelligence and corporate strategy.

Frost & Sullivan’s independent research consists of both primary and secondary research obtained from various sources in respect of the curtain wall market in the PRC. Primary research involved in-depth interviews with leading industry participants and industry experts. Secondary research involved reviewing company reports, independent research reports and data based on Frost & Sullivan’s own research database. Projected data were obtained from historical data analysis plotted against macroeconomic data with reference to specific industry-related factors. Except as otherwise noted, all of the data and forecasts contained in this section are derived from the Industry Report, various official government publications and other publications.

In compiling and preparing the research, Frost & Sullivan assumed that the social, economic and political environments in the relevant markets are likely to remain stable in the forecast period, which ensures the steady development of the curtain wall market in the PRC.

OVERVIEW OF CURTAIN WALL MARKET IN THE PRC

Definition of Curtain Wall Work

Curtain wall work encompasses the research and development, design, production, and installation of non-load-bearing exterior wall systems, being building facades typically consisting of a mix of lightweight materials such as aluminum, glass, and steel hung on the structure of a building. These systems are designed to provide a building’s exterior with enhanced aesthetic appeal, improved energy efficiency, and protection from environmental factors such as wind, water, dirt, heat, coldness, noise and light.

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It is common for curtain wall works companies in the PRC to allocate their resources strategically on the processing of curtain wall products and undertake the role of project management and supervision in carrying out the installation works on construction sites. As such, curtain wall works companies in the PRC would generally engage subcontractors to perform the related curtain wall assembly and installation works. Depending on the terms of engagements, contractors in the PRC construction industry may directly settle the wages of the site workers deployed by their subcontractors. It is common for contractors in the PRC construction industry to directly settle the wages of their subcontractors in order to offer better protection and ensure timely settlement of wages to the employees of the subcontractors.

Market Size of Curtain Wall by Revenue Generated in the PRC, Breakdown by Nature of Ownership

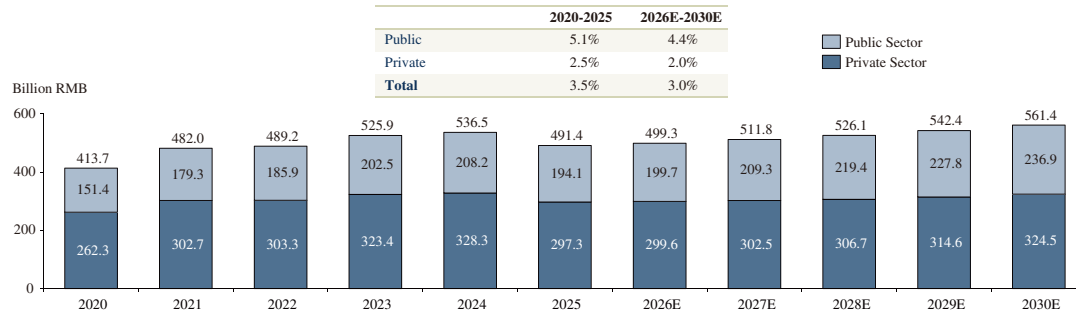
The public sector, which includes curtain wall projects financed by government entities, public institutions, and state-owned enterprises, has experienced a growth rate with a CAGR of 5.1% from 2020 to 2025, primarily driven by the government’s ongoing investment in infrastructure and public facilities development, where modern building façades are essential components of public buildings. Further, the public sector encompasses various specialised facilities such as 5G networks base stations, big data centers, and smart power plants, which require sophisticated curtain wall systems to maintain optimal internal environments and ensure energy efficiency. In recent years, the segment has benefitted from favorable government policies, such as the “Guiding Opinions on Actively and Steadily Promoting the Renovation of Urban Villages in Super-large and Mega Cities” (《關於在超大特大城市積極穩步推進城中村改造的指導意見》) issued by the State Council Office in July 2023, which promote nationwide integrated urban-rural infrastructural development. Furthermore, the Third Plenary Session of the 20th CPC Central Committee (《第20屆三中全會評析》) in July 2024 emphasized the importance of improving mechanisms for modern infrastructure construction, which is expected to further boost demand in this sector. Notable examples of sizeable curtain wall public sector projects under construction include the Guangzhou Smart City Infrastructure Construction and Zhongguancun Artificial Intelligence Innovation Park, where large-scale curtain wall installations are being implemented to achieve both aesthetic excellence and functional performance in terms of thermal insulation, natural lighting, and energy conservation in these development projects. Given these policy supports and the increasing recognition of curtain wall systems as integral components of modern public infrastructure, the public sector is expected to maintain and growth steadily with a forecasted CAGR of 4.4% from 2026 to 2030.

In contrast, the private sector, encompassing curtain wall projects for privately-owned residential, commercial, and industrial buildings, has experienced a slower growth rate with a CAGR of 2.5% from 2020 to 2025. The growth in the private sector is influenced by factors such as economic conditions, real estate market trends, and private investment in construction projects. Despite the slower growth, the private sector still holds a significant share in the curtain wall market, driven by the demand for premium and customized solutions in high-end projects. The ongoing recovery in office construction, rising demand for energy-efficient building envelopes in corporate structures, and the refurbishment of existing commercial buildings are expected to support the private sector’s growth. Large-scale urban renewal projects, such as the Hubei Coordination Urban Renewal Scheme in Shenzhen, exemplify the potential for significant curtain wall applications in the private sector. Going forward, the private sector is projected to grow at a CAGR of 2.0% from 2026 to 2030, supported by initiatives like the Shenzhen Three-Year Action Plan to Promote the Development of Modern Engineering Service Industry (2024–2026) (《深圳市推動現代工程服務業發展三年行動計劃(2024–2026年)》), which propels the development of commercial areas and logistics parks such as the Shenzhen North Railway Station

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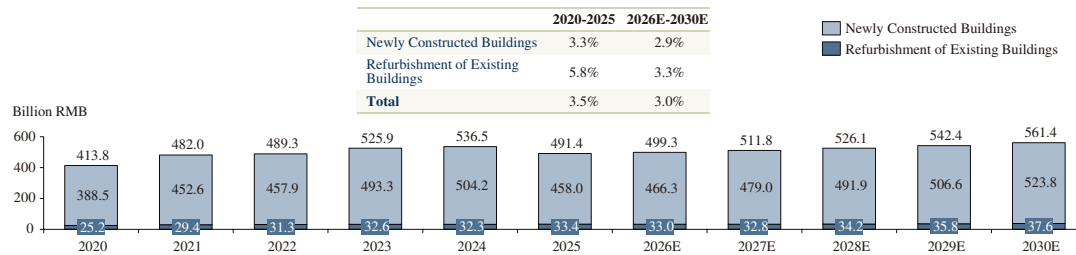
International Business Area and South China Logistics Park. Besides, notable examples of sizeable curtain wall commercial projects under construction include the Rizhao Center, Chengdu Tianfu Center, China Resources Hubei Tower in Shenzhen are driving the continuous demand.

Market Size of Curtain Wall by Revenue Generated, Breakdown by Nature of Ownership (The PRC), 2020-2030E



Source: Annual Reports of Listed Companies, Frost & Sullivan

Market Size of Curtain Wall by Revenue Generated, Breakdown by Newly Constructed Buildings and Refurbishment of Existing Buildings (The PRC), 2020-2030E



Source: Source: Annual Reports of Listed Companies, Frost & Sullivan

The newly constructed buildings segment dominated the curtain wall market, accounting for approximately 93.2% of the total market share in 2025. The comparatively significant market share is attributed to several factors: (i) the extensive scale of new construction projects in China, particularly in developing urban areas; (ii) the lower complexity and cost-effectiveness of installing curtain walls during initial construction compared to retrofitting; and (iii) the widespread adoption of curtain wall systems as a standard feature in modern architectural designs for new buildings. The segment is expected to maintain steady growth with a projected CAGR of 2.9% from 2026 to 2030, reaching RMB523.8 billion by 2030.

The refurbishment of existing buildings segment, representing the remaining 6.8% of the market in 2025, expanded from RMB25.2 billion in 2020 to RMB33.4 billion in 2025, achieving a CAGR of 5.8%. The relatively smaller market share reflects the challenges associated with retrofitting existing buildings, including higher installation complexity, additional structural considerations, and potential disruption to building occupants.

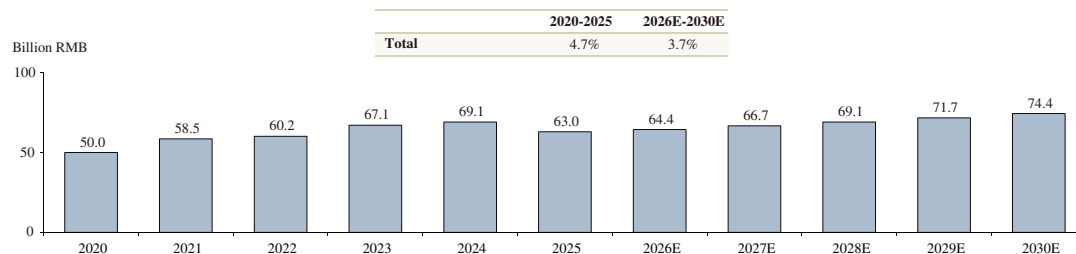
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Market Size of Curtain Wall by Revenue Generated in Guangdong Province

The curtain wall market in Guangdong Province increased from RMB50.0 billion in 2020 to RMB63.0 billion in 2025, representing a CAGR of 4.7%. The robust growth in the curtain wall market in Guangdong Province was mainly driven by the expansion in the market size of the construction industry in Guangdong Province.

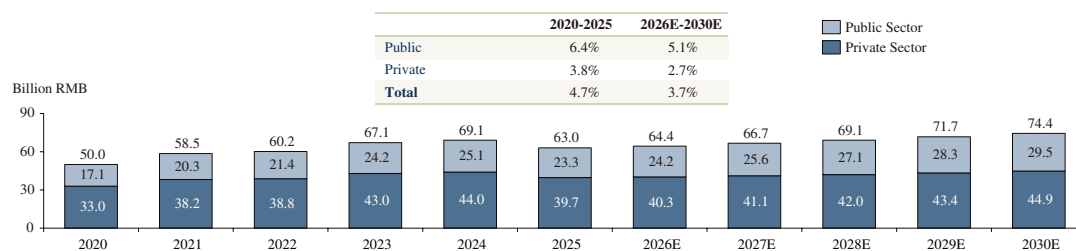
The growth in the curtain wall market in Guangdong Province is expected to persist, with the market projected to expand at a CAGR of 3.7% from 2026 to 2030, reaching RMB74.4 billion by 2030. The Guangdong government has recently released development plans for the five major metropolitan areas in Guangdong Province, namely Shenzhen, Guangzhou, West Bank of Pearl River Estuary, Shantou-Chaozhou-Jieyang, and Zhanjiang-Maoming. The development of these metropolitan areas will involve substantial infrastructure projects, urban upgrades, and the construction of modern, energy-efficient buildings, creating a strong demand for advanced curtain wall solutions.

Market Size of Curtain Wall by Revenue Generated (Guangdong Province), 2020-2030E



Source: Annual Reports of Listed Companies, Frost & Sullivan

Market Size of Curtain Wall by Revenue Generated, Breakdown by Nature of Ownership (Guangdong Province), 2020-2030E



Source: Annual Reports of Listed Companies, Frost & Sullivan

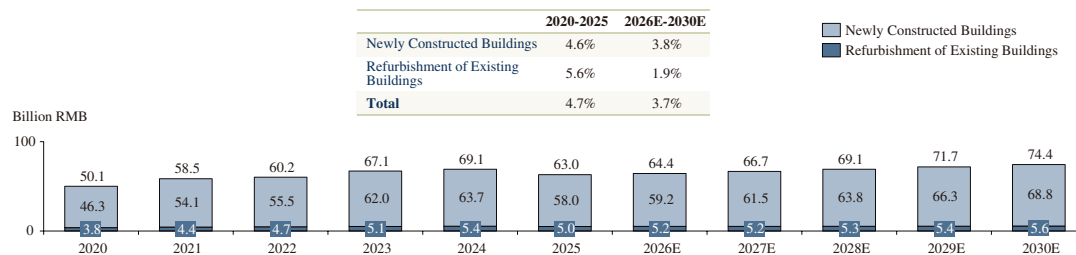
The public sector curtain wall market in Guangdong Province grew from RMB17.1 billion in 2020 to RMB23.3 billion in 2025, representing a CAGR of 6.4%, driven by comprehensive government policies, including the “Guangdong Province Public Building Energy Efficiency Design Standard” (《廣東省公共建築節能設計標準》) and the “Guangdong Province 14th Five-Year Plan for Building Energy Conservation and Green Building Development” (《廣東省建築節能與綠色建築發展“十四五”規劃》) which mandates improved building envelope performance, thereby stimulating demand for high-performance and advanced curtain wall systems. The “Guiding Opinions on Urban Village Development in Guangdong Province” (《廣東省城中村發展指導意見》), have also contributed to

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market growth by requiring modern building façade solutions in renovation projects. The sector is expected to maintain strong growth with a projected CAGR of 5.1% from 2026 to 2030, reaching RMB29.5 billion by 2030, supported by continued infrastructure development initiatives.

The private sector expanded from RMB33.0 billion in 2020 to RMB39.7 billion in 2025, achieving a CAGR of 3.8%, driven by commercial real estate developments in the Greater Bay Area, including skyscrapers such as Guang Shang Center in Guangzhou and China Merchants Bank Global Headquarters Complex in Shenzhen which are under construction stage. The sector is projected to grow at a CAGR of 2.7% from 2026 to 2030, reaching RMB44.9 billion by 2030, supported by ongoing urbanization despite a more regulated real estate environment.

Market Size of Curtain Wall by Revenue Generated, Breakdown by Newly Constructed Buildings and Refurbishment of Existing Buildings (Guangdong Province), 2020-2030E



Source: Annual Reports of Listed Companies, Frost & Sullivan

The newly constructed buildings segment in Guangdong Province dominated with 92.1% of total market share in 2025, growing at a CAGR of 4.6% from 2020 to 2025. The share is slightly lower than the national average of 93.2%, primarily due to Guangdong’s earlier adoption of urban renewal policies and building modernization initiatives, which has created a more established refurbishment market. The segment is projected to grow at a CAGR of 3.8% from 2026 to 2030. The refurbishment of existing buildings segment represented 7.9% of the market, with a CAGR of 5.6% from 2020 to 2025. This share is higher than the national average of 6.8%, reflecting Guangdong’s proactive approach to upgrading existing buildings, particularly in mature urban areas of the Greater Bay Area. The segment is expected to grow at a CAGR of 1.9% from 2026 to 2030, driven by energy efficiency upgrades and urban renewal projects.

Market Drivers

1. Urban development and economic growth

The curtain wall industry in the PRC was mainly driven by commercial and public infrastructure development. According to the National Bureau of Statistics, the construction industry’s gross output value grew from RMB1,842.9 billion to RMB2,396.0 trillion from 2020 to 2025, representing a CAGR of 5.4% in the Guangdong Province. The curtain wall market in the PRC expanded from RMB413.8 billion to RMB491.4 billion during the same period, with a CAGR of 3.5%, while the curtain wall market in the Guangdong Province has outgrown the PRC curtain wall market as a whole with a CAGR of 4.7%. The growth is largely attributed to Guangdong’s urban development plans, as outlined in the Shenzhen’s 14th Five-Year Plan for High-Quality Development of Modern Construction Industry (《深圳市現代建築業高質量發展「十四五」規劃》) in 2022, which emphasises the construction of new urban centers, transportation hubs, and public facilities, driving demand for sophisticated curtain wall systems in commercial complexes, government buildings, and infrastructure projects. As urban centers

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expand, there is a rising demand for modern commercial and residential buildings. This creates opportunities for private developers to invest in high-quality structures that incorporate advanced curtain wall systems. The Guangdong Provincial Department of Housing and Urban-Rural Development Measures to Deepen the Reform of Construction Enterprise Qualification Management and Support the High-Quality Development of Construction Enterprises (《廣東省住房和城鄉建設廳關於深化建設工程企業資質管理改革支持建築業企業高質量發展的若干措施》) in 2023 further supports this trend by encouraging new urban construction, new infrastructure, and comprehensive community building. In particular, by establishing a communication mechanism to provide technical and policy consulting services, the government supports private companies to enhance their capabilities. This leads to more sophisticated projects, including those featuring advanced curtain wall systems in private sector. Driven by the aforementioned policies introduced by the PRC Government, the curtain wall industry in the PRC and Guangdong Province are expected to increase to RMB561.4 billion and RMB74.4 billion by 2030, representing CAGRs of 3.0% and 3.7% respectively from 2026 to 2030, with commercial and public infrastructure segments expected to play a key role in this growth.

2. Emphasis on energy efficiency and sustainability of curtain wall

The emphasis on energy efficiency and sustainability has emerged as a significant market driver in the curtain wall industry in the PRC, as evidenced by the promulgation of the “Work Program on Accelerating the Promotion of Energy Conservation and Carbon Reduction in the Building Sector” (《加快推動建築領域節能降碳工作方案》) by the PRC government in 2024. Such program, jointly issued by the National Development and Reform Commission and the Ministry of Housing and Urban-Rural Development, aims to enhance energy efficiency and reduce carbon emissions in the building sector. It sets specific targets, such as increasing the area of newly constructed ultra-low energy consumption and near-zero energy consumption buildings, and emphasises the development and application of advanced energy-saving and carbon-reduction technologies in the building sector. The national initiative has spurred action at the provincial level as well. For instance, Guangdong’s commitment to sustainable development is evident in its green building initiatives, with new green buildings reaching over 85% of new construction in 2023, often requiring advanced curtain wall solutions. In response, the curtain wall industry is increasingly incorporating high-performance insulation, smart glazing, photovoltaic integration, thermal break technology, and sustainable materials into curtain wall systems, contributing to the creation of more energy-efficient and environmentally friendly buildings in the PRC. This demand can lead private developers to incorporate high-performance curtain walls in their projects to meet stringent energy standards. The promotion of ultra-low energy buildings and the encouragement for public buildings to adhere to these standards create a market for innovative construction techniques. Private property developers will likely adopt curtain walls to achieve these energy efficiency goals, as these systems can significantly reduce energy consumption. The combination of supportive government policies and the curtain wall industry’s proactive response to sustainability has led to a steady and significant growth in the market size of the curtain wall industry in the PRC over the years.

3. Technological advancements in curtain wall materials

The curtain wall industry in the PRC has witnessed significant technological advancements in recent years, focusing on enhancing the performance, functionality, and durability of curtain wall products. The introduction of innovative materials, such as high-performance organic composites offering superior sound insulation, thermal insulation, wear resistance, corrosion resistance, and UV protection, has greatly improved the overall functionality and longevity of curtain walls. Additionally, the development of nano self-cleaning surfaces utilising photocatalytic properties of nanomaterials like titanium dioxide has gained traction, enabling the creation of low-maintenance, aesthetically appealing curtain walls. Furthermore, the integration of smart technologies, including electrochromic glass and photovoltaic cells, has expanded the possibilities for energy efficiency and user comfort in modern

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buildings. These advancements have not only driven innovation and competitiveness of the PRC curtain wall industry, but have also addressed market needs, thereby may further induce the demand for advanced curtain wall solutions. Enhanced energy efficiency aligns with sustainability requirements and cost concerns, appealing to those seeking green certifications and long-term savings. Integrated smart technologies improve both energy performance and occupant comfort, attracting mid-end and high-end projects. Improved durability and low-maintenance features reduce lifecycle costs, appealing to cost-conscious developers. As urbanisation and smart city initiatives grow, demand for these advanced, efficient, and versatile curtain wall solutions is expected to surge, expanding the industry’s growth potential and thereby benefiting companies investing in research and development to capitalise on the growing demand for high-quality, sustainable, and smart curtain wall solutions in this rapidly evolving market.

Market Trends and Opportunities

1. Streamlining production and installation processes

As companies strive to meet the growing demand for curtain walls while dealing with rising labour costs, the streamlining of production and installation processes has become a significant market driver in the curtain wall industry. In the production phase, curtain wall solutions providers are transitioning from traditional fabrication methods to intelligent manufacturing, which involves the integration of advanced technologies, such as automation, robotics, and digital systems, into the fabrication process. Besides, by standardising curtain wall components and implementing digital coding systems, curtain wall solutions providers can effectively identify, track, and implement quality control throughout the production line. Networked sensors and real-time data collection allow for better monitoring and optimisation of equipment performance, leading to improved efficiency and reduced downtime. Besides, the installation phase is also undergoing a transformation, with the adoption of intelligent practices. Curtain wall solutions providers are leveraging digital tools, such as Building Information Modeling (BIM), to streamline the on-site assembly and integration of curtain wall components. The use of prefabricated and modular components, which reduces on-site labour requirements and installation time, is also becoming increasingly common.

2. Provision of comprehensive curtain wall solutions

Driven by the growing complexity of building designs, the need for seamless integration of curtain wall systems with other building components, and the desire to minimise coordination challenges among multiple stakeholders, provision of comprehensive curtain wall solutions has emerged as a significant market trend in the PRC’s curtain wall industry. Curtain wall solutions providers which offer full range of services, from initial design and engineering to manufacturing, installation, and post-installation support, can better manage the entire curtain wall project lifecycle, ensuring consistent quality, optimising resource allocation, and reducing the risk of delays and cost overruns.

Market Challenges and Threats

1. Real estate industry downturn and property cooling measures introduced by the PRC Government

As the curtain wall industry heavily relies on the progress and timely completion of construction projects, delays or slowdowns in these sectors can have a ripple effect on the entire supply chain of the curtain wall industry. The series of macro-control policies issued by the PRC Government which target to hinder the growth in property prices and restrict the total amount of real estate investment may affect the growth of the real estate industry and therefore the demand for curtain wall works. The potential

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cooling of the PRC’s real estate market, along with shifts in policy priorities and budgetary constraints for government-backed infrastructure projects, may lead to impediment of several projects. In spite of the challenges, recent initiatives promulgated by the PRC government in 2024 has aimed to stabilize and stimulate the property sector. For instance, the “white list” of real estate projects approved for loans is expected to double to over RMB4 trillion by the end of 2024, potentially benefiting the construction sector and the curtain wall industry. Additionally, in 2024, various local governments have introduced measures to stimulate housing demand, such as relaxing purchase restrictions, lowering down payment requirements, and offering subsidies. To navigate these challenges, curtain wall companies shall diversify their project portfolios, focusing on various building type segments, and invest in innovative technologies and sustainable practices to enhance their competitive edge and align with the government’s emphasis on green building and energy efficiency.

2. *Volatility in raw material supply and price*

The curtain wall market in the PRC is grappling with a significant challenge posed by the volatility in raw material and labour supply. Fluctuating prices and availability of key raw materials, such as aluminum, glass, and steel, can have a profound impact on the cost structure and profitability of curtain wall manufacturers and contractors. Global supply chain disruptions, trade tensions, and economic uncertainties exacerbate this volatility, making it difficult for companies to maintain stable pricing, accurately estimate project costs, and submit competitive bids.

3. *Shortage of skilled labour*

As the demand for complex and innovative curtain wall systems grows, the industry is grappling with a scarcity of qualified professionals in design, fabrication, installation, and project management. The skill gap which is attributed to factors such as rapid technological advancements, lack of comprehensive training programs, and limited collaboration between industry and educational institutions, can lead to project delays, compromised quality, increased labour costs, and hindered innovation.

COST ANALYSIS

Raw Material Cost

From 2020 to 2025, owing to robust demand for aluminum for various downstream application and controlled aluminum production capacity by the PRC Government, the prices of aluminum grew at a CAGR of 6.5%. The supply-demand imbalance which has put upward pressure on prices of aluminum was primarily attributable to (i) the PRC Government’s strict control over aluminum smelting capacity, as outlined in their Energy Conservation and Carbon Reduction Action Plan (2024 – 2025年節能降碳行動方案), which has constrained the supply side; (ii) in the second half of 2021, power supply became relatively tight due to power rationing policy nationwide, which affected the capacity utilisation of aluminum production. Besides, the power rationing policy involves price reform by removing the upper limit on electricity prices for high energy-consuming enterprises including aluminum production companies, leading to an increase in aluminum production costs; (iii) with the PRC accounting for approximately 88.8% of the import volume of aluminum ore in 2025, the import price of aluminum ore in the PRC increased from RMB304.7 per ton in 2020 to RMB534.8 per ton in 2025, representing a CAGR of approximately 11.9%, exerting upward pressure on the domestic price; (iv) downstream industries such as aerospace, new energy vehicles, photovoltaics, real estate construction, and transportation have exhibited strong demand for aluminum materials, especially after the economic recovery and rebound following the adverse impact brought by the COVID-19; and (v) key projects and

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developments, such as the C919 aircraft’s commercial maiden flight, the rapid growth of new energy vehicles, and record-high photovoltaic installations, have provided long-term benefits to the aluminum industry, contributing to the sustained price increase in historical period and expected future.

Taking into consideration (i) the increasing demand for aluminum from high-end applications in sectors such as new energy vehicles, high-speed rail, shipbuilding, and aviation; (ii) the sustained limitation in production capacity of aluminum; and (iii) increased trade risks which may lead to obstructions in metal circulation, the aluminum industry may continue to experience mismatch in supply and demand and the price index of aluminium is expected to increase at a CAGR of approximately 4.0% during the period from 2026 to 2030.

The price index of glass decreased at a CAGR of approximately -5.8% from 2020 to 2025. While there was a significant price surge in 2021 due to supply shortages resulting from the outbreak of COVID-19, this was subsequently offset by a continuous and sharp moderation from 2022 to 2025, largely driven by the broader slowdown in the real estate and construction sectors. Looking ahead, the price index of glass is expected to continue its downward trend at a CAGR of approximately -2.3% from 2026 to 2030.

The price index of steel declined at a CAGR of approximately 2.5% from 2020 to 2025 a slight slowdown in the real estate sector, which impacted domestic demand for construction steel, combined with persistent industrial abundant capacity that kept supply levels high despite the slightly lowering consumption. The price index is expected to rebound at a CAGR of 0.7% during 2026 to 2030, with an expected rebound of the economy and construction market in the long run.

The price index of granite increased at a CAGR of 0.6% from 2020 to 2025 which was mainly attributable to the stable demand and supply of granite. Driven by the ongoing demand for granite in construction and interior design applications, the price index of granite is projected to grow at a CAGR of 0.6% during 2026 to 2030.

Price index of raw material cost of the Curtain Wall Industry in the PRC, 2020-2030E

Price index (2020 = 100)	2020	2021	2022	2023	2024	2025	2026E	2030E	CAGR (2020- 2025)	CAGR (2026- 2030E)
Aluminum	100	127.9	130.4	122.6	130.5	137.1	157.2	183.9	6.5%	4.0%
Glass	100.0	147.9	107.7	107.2	101.9	74.3	68.5	69.6	-5.8%	-2.3%
Steel	100.0	124.8	116.3	106.9	97.1	88.3	86.2	88.6	-2.5%	0.7%
Stone- Granite	100	102.3	104.0	105.4	106.5	103.2	102.5	104.9	0.6%	0.6%

Source: China Building Materials Federation, China Iron & Steel Association, National Bureau of Statistics, Frost & Sullivan

Note: Aluminum price index refers to “Domestic spot market of aluminum in the PRC”, extracted from the “China Building Materials Industry Economic Operation Report” (《中國建材行業經濟運行報告》), Glass price index refers to future price of glass domestically in the PRC, Steel price index refers to “China Steel Price Index” extracted from CSPI 中國鋼材價格指數, and granite price index was made reference from trade interview with industry experts.

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Labour Cost

The major types of workers engaged in the curtain wall industry mainly include (i) production and construction machinery and equipment operators who are responsible for operating machinery, assembling components, handling materials, and performing on-site installations; (ii) professional technicians who are skilled workers with specialised technical knowledge, responsible for designing curtain wall systems, creating technical drawings, performing engineering calculations, conducting material tests, and ensuring compliance with building codes; and (iii) managerial staff who oversee the overall operations of curtain wall projects, manage project management teams, and handle client relationships.

The average monthly salary of the major types of workers engaged in the curtain wall industry, including production and construction machinery and equipment operator, professional technician and managerial staff increased at a CAGR of approximately 3.1% to 4.9% during 2020 to 2024, reflecting the upward pressure on labour costs due to inflation and shortage of skilled labour.

Going forward, in line with steady projected per capita macroeconomics figures and considering stable economic growth, the average monthly salary of production and construction machinery and equipment operator, professional technician and managerial staff are expected to increase at CAGRs of 3.8%, 3.3% and 1.4% respectively during 2025 to 2029.

Average monthly salary of major types of worker engaged in the curtain wall industry (the PRC), 2020-2029E

RMB	2020	2021	2022	2023	2024	2025E	2029E	CAGR (2020- 2024)	CAGR (2025- 2029E)
Production and construction machinery and equipment operator	4,817	5,111	5,201	5,573	5,767	5,986	6,949	4.6%	3.8%
Professional technician	6,408	6,869	7,056	7,523	7,759	8,015	9,126	4.9%	3.3%
Managerial staff	9,641	10,273	10,494	10,907	10,894	11,047	11,678	3.1%	1.4%

Note: Official labour cost data in 2025 is was not yet released up to the Latest Practicable Date.

COMPETITIVE LANDSCAPE OF CURTAIN WALL INDUSTRY IN THE PRC

In 2025, the curtain wall industry in China is fiercely competitive, with more than more than 8,000 class I qualification for professional contracting of building curtain wall engineering approved by the Ministry of construction. The market is progressively differentiated as the requirement for architectural curtain wall companies in terms of technology, performance, capital, management, and other comprehensive strengths increase in tandem with the growing number and volume of curtain wall projects. However, most of the iconic and crucial curtain wall projects are contracted by leading curtain wall enterprises. In 2025, the top 10 curtain wall works companies in the PRC account for approximately 6.6% of the total market share in terms of total revenue from curtain wall work in the PRC, which indicates the overall curtain wall work market is relatively fragmented. In 2025, the Group has accounted for 0.1% of the total market share in terms of total revenue from curtain wall work in the PRC. As the future of industry concentration and scale continues to deepen, industry leading players that possess the capacity to undertake complex, innovative, and comprehensive projects, as well as expertise, technical know-how, and brand advantages, will emphasize their competitive advantages in the market.

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Ranking of Top 10 Curtain Wall Works Companies by Revenue (The PRC), 2025					
Rank	Market participant	Stock code	Ownership	Revenue (RMB Billion)	Market Share (%)
1	Beijing Jangho Curtain Wall Co., Ltd. (江河創建集團股份有限公司)	601886.SZ	Non-state Owned	8.9	1.8%
2	China State Decoration Group Co., Ltd. (中國建築裝飾集團有限公司)	Private	State-owned	3.4	0.7%
3	Shenzhen Boda Construction Group Co., Ltd. (深圳市博大建設集團有限公司)	Private	Non-state Owned	3.3	0.7%
4	Zhongan Group (浙江中南集團)	Private	Non-state Owned	3.2	0.6%
5	Zhejiang Yasha Decoration Co., Ltd. (浙江亞廈裝飾股份有限公司)	002375.SZ	Non-state Owned	3.1	0.6%
6	Hainan Development Holdings Nanhai Co., Ltd. (海控南海發展股份有限公司)	002163.SZ	State-owned	2.7	0.5%
7	China Construction Fifth Engineering Division Corp., LTD (中國建築第五工程局有限公司)	Private	State-owned	2.7	0.5%
8	CHINA FANGDA GROUP CO., LTD (方大集團股份有限公司)	000055.SZ	Non-state Owned	2.5	0.5%
9	Suzhou Gold Mantis Construction and Decoration Co., Ltd. (蘇州金螳螂建築裝飾股份有限公司)	002081.SZ	Non-state Owned	1.5	0.3%
10	Guangdong Rising Holdings Group Co., Ltd. (廣晟控股集團)	Private	State-owned	1.5	0.3%
Top 10 Sub-total				32.6	6.6%
Total				491.4	100.0%

Source: Annual Reports of Listed Companies, Frost & Sullivan

Note:

- Beijing Jangho Curtain Wall Co., Ltd is a curtain wall system overall solution provider, integrating product development, engineering design, precision manufacturing, installation, consulting services, and product export, with operations in over 20 countries and regions worldwide, including R&D centers and production bases in Beijing, Shanghai, Guangzhou, Chengdu, Wuhan, and others. Its subsidiary, Guangzhou Jianghe Curtain Wall System Engineering Co., Ltd. (廣州江河幕牆系統工程有限公司), mainly provides curtain wall and design business in the Pearl River Delta economic zone. Till the end of 2023, the company has mainly completed curtain wall services for China Resources Building (Spring Bamboo), Tencent Building, Qianhai Shekou Free Trade Zone, etc., in Shenzhen. The company had a total number of approximately 9,483 employees in 2023.
- Zhongan Group mainly operates in the engineering, construction, and cultural industry. Its wholly-owned core subsidiary, Zhejiang Zhongan Curtain Wall Co., Ltd (浙江中南幕牆科技股份有限公司), is primarily responsible for curtain wall engineering contracting and design. Leveraging the company’s strong technical and research capabilities, it boasts a modern curtain wall production and processing base covering 80,000 square meters. In China, the company has completed notable curtain wall engineering projects, such as the Hangzhou Zhijiang Convention Center building curtain wall. The company had a total number of approximately 25,000 employees in 2023.
- Shenzhen Boda Construction Group Co., Ltd is a set of product development, engineering design, curtain wall manufacturing, export of finished products in one of the construction engineering enterprises, mainly providing decoration, curtain wall, MEP engineering and other refined services with business throughout the PRC. In Shenzhen, the company has mainly completed curtain wall projects represented by Coastal City in Nanshan District, the Third People’s Hospital in Pingshan, and Baoneng Deep Business Flow Center. The company had a total number of more than 1,000 employees in 2023.
- Zhejiang Yasha Decoration Co., Ltd. is an integrated enterprise in the architectural decoration industry, with the main business of architectural decoration and renovation engineering, architectural curtain wall engineering, and intelligent system integration. Its subsidiary, Zhejiang Yaxia Curtain Wall Co. (浙江亞廈幕牆有限公司), provides architectural decoration, curtain wall and installation services nationwide. Relying on the company’s leading quality and technology, the company has completed curtain wall projects represented by Tianjin Hongtai Commercial Plaza in China. The company had a total number of approximately 5,006 employees in 2023.
- China State Decoration Group Co., Ltd is subordinate to China State Construction and is one of the largest architectural decoration enterprises in China. The company is mainly engaged in the design, investment and construction of interior decoration, architectural curtain wall, landscape garden, urban renewal, architectural renovation, floodlighting, exhibition display and ancient construction board. The domestic curtain wall business is mainly carried out by its subsidiary, China Construction Shenzhen Decoration Co., Ltd. (中建深圳裝飾有限公司). The company had a total number of approximately 8,000 employees in 2023.
- China Construction Fifth Engineering Division Corp., Ltd is a wholly-owned backbone enterprise of China State Construction, with building construction, infrastructure construction, investment and real estate development as the main business. Its subsidiary, China Construction Buer Curtain Wall Decoration Co., Ltd. (中建不二幕牆裝飾有限公司), commenced its curtain wall business in the PRC. The company had a total number of approximately 28,700 employees in 2023.
- China Fangda Group Co., Ltd is mainly engaged in intelligent curtain wall system and new materials, intelligent shielding door equipment for rail transportation, and new energy sector. Its subsidiary, Shenzhen Fangda Building Technology Group Co., Ltd (深圳市方大建科集團有限公司), mainly provides curtain wall engineering design, contracting, and product sales,

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with business in 120 countries and regions. In Shenzhen, the company mainly completed curtain wall projects, such as the Convention and Exhibition Center, Baoan Airport T3 Terminal, Shenzhen Bay Sports Center. The company had a total number of approximately 3,154 employees in 2023.

8. Hainan Development Holdings Nanhai Co., Ltd emphasizes on the development of curtain wall and interior engineering, photovoltaic glass, and special glass deep processing. The curtain wall and interior engineering industry is primarily conducted by its holding subsidiary, Shenzhen Sanxin Technology Development Co., Ltd. (深圳市三鑫科技發展有限公司), which encompasses curtain wall engineering, decoration, etc., in the PRC, Southeast Asia, Europe, America, the Middle East, West Asia and other countries and regions. Relying on the strong R&D capability of the parent group, the company has completed curtain wall projects in Shenzhen, such as the headquarters building of China Merchants Bank and the International Exchange Center. The company had a total number of approximately 2,564 employees in 2023.
9. Jiangsu Hengshang Energy Conservation Technology Co., Ltd is a total solution provider of curtain wall and aluminum door and window systems, specializing in architectural curtain wall projects, building decoration, and steel structure projects. With a focus on R&D and design of high-performance curtain wall and aluminum doors and windows products, manufacturing and construction, and process improvement and innovation, the company holds 193 authorized patents. Notable projects in China include the Yuanzhong Building in Shanghai, the Agricultural Bank of China Branch in Wuxi, and the LanGuiFang Commercial Center in Wuxi. The company had a total number of approximately 1,108 employees in 2023.
10. Suzhou Gold Mantis Construction and Decoration Co., Ltd is a professional decoration group focusing on the development of interior decoration business, as well as curtain wall, furniture, landscape, artwork, and mechanical and electrical equipment installation. Its subsidiary, Gold Mantis Curtain Wall CO., LTD. (蘇州金螳螂幕牆有限公司), mainly specializing in product R&D, engineering design, precision manufacturing, construction, and photovoltaic curtain walls, and provides one-stop curtain wall system solutions in China. The company has 6 modern production lines and a manufacturing capacity of over 4 million square meters, and it has completed notable projects such as Raffles City in Chongqing and Oriental Gate in Suzhou. The company had a total number of approximately 10,883 employees in 2023.

Entry Barriers

1. Capital requirements

The curtain wall industry demands significant capital investment for technology, equipment, and production facilities. Rising labour and material costs, coupled with tighter credit conditions, pose additional financial challenges. The industry’s long project cycles and slow capital return make financial strength crucial. Curtain wall companies typically face initial net cash outflows due to substantial up-front costs for materials, skilled labour, and subcontractor payments. Large projects often require performance guarantees, usually 10% of the contract sum. Failure to meet payment obligations or provide guarantees can delay projects and damage company credibility. Consequently, new entrants to the curtain wall industry must possess robust financial capabilities to effectively manage these demands and maintain competitiveness in the market.

2. Licensing requirements

Obtaining the necessary qualifications is considered a major entry barrier as the curtain wall industry is strictly regulated by relevant national policies. According to regulations like the “Provisions on the Administration of Qualifications of Enterprises in the Construction Industry” (建築業企業資質管理規定) and the “Notice on Issuance of Qualification Standards of Construction Enterprises” (住房和城鄉建設部關於建築業企業資質標準的通知), companies must apply for curtain wall construction qualifications based on their assets, key personnel, completed projects, and technical equipment. After passing the review and receiving the construction qualification certificate, companies then can engage in construction activities within the permitted scope of their qualifications. Moreover, as part of the tender conditions and for quality assurance, project owners and main contractors would generally prefer to select curtain wall suppliers which possess (i) Building Architectural Curtain Wall Engineering Design (Grade A) (建築幕牆工程設計專項甲級); (ii) Building Decoration Engineering Design (Grade A) (建築裝飾工程設計專項甲級); (iii) Professional Contracting for Architectural Curtain Wall Engineering (Grade I) (建築幕牆工程專業承包一級); and (iv) Professional Contracting for Building

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Renovation and Decoration Engineering (Grade I) (建築裝修裝飾工程專業承包一級) to supply and install the curtain wall in sizeable construction projects. New market entrants may find it difficult to acquire the qualifications.

3. *Proven track records*

Market participants in the curtain wall market in the PRC regard their prior work experience as an invaluable asset. Curtain wall suppliers with proven track record, technical know-how and sufficient capital and financial resources are generally considered favourably by main contractors and project owners during the tender selection process. In particular, public sector projects are generally contracted by way of open tender, and have stringent tender selection requirements, including requisite professional qualifications, proven track record, work safety record and financial conditions. Tenderers with extensive experience and satisfactory performance in prior public sector development projects would be considered favourably by the relevant government-related entities and the main contractors engaged by them, which cannot be achieved in a short time. Thus, it imposes as a key entry barrier for new entrants as their project references are yet to be established.

Factors of Competition

1. *Expertise in diversified specialties*

Professional curtain wall engineering service providers are generally capable of providing curtain wall solutions including the design, production, installation and maintenance of curtain wall, and participate in a diverse array of construction projects, such as commercial office buildings, medical facilities, educational buildings, industrial plants, and residential buildings. Leading market players which are capable of effectively coordinating and managing the design of projects, meeting client's requirements, and collaborating and liaising with a diverse array of subcontractors and material suppliers often benefit from cross-referral opportunities, business synergies, and cost reductions through economies of scale.

2. *Substantial experience and technical know-how*

Curtain wall engineering professionals possess extensive technical knowledge and experience in the design, production, installation, and maintenance of curtain wall. They also possess in-depth knowledge about the installation methods used in different building contexts. Due to labour shortage, participants in the PRC curtain wall market are finding it increasingly difficult to attract experienced specialists. Larger competitors may have competitive advantages in attracting qualified personnel by offering better remuneration packages, career development opportunities and internal trainings to constantly replenish the industry knowledge and technical know-how of their staff.

3. *Established business relationships*

It is essential for service providers in the curtain wall engineering industry to establish solid business connections with a variety of stakeholders, such as suppliers, general contractors, and real estate developers. Successful players' ability to collaborate and manage projects allows them to establish trust with their clients and increase the likelihood of securing new projects, thereby maintaining long-term relationships with customers and stable business growth and development.

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MARKET OUTLOOK OF BIPV CURTAIN WALLS IN THE PRC

Definition

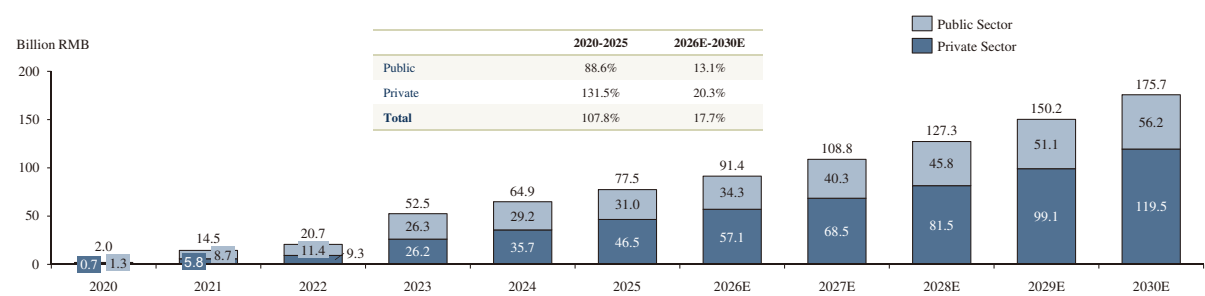
A BIPV (“**B**uilding-**I**ntegrated **P**hotovoltaics”) Curtain Wall is a high-performance building façade system that integrates photovoltaic solar modules directly into curtain wall units, enabling the façade to simultaneously serve as a structural envelope and generate renewable electricity. Unlike traditional curtain walls or add-on solar panels, BIPV curtain walls incorporate solar cells, typically crystalline, thin-film, or perovskite, within double-glazed or specialized panels, providing weatherproofing, thermal insulation, and aesthetic design while producing clean energy on-site. This solution is widely used in sustainable high-rise and commercial architecture in China.

Market Size

From 2021 to 2025, the Building-Integrated Photovoltaics (“**BIPV**”) curtain wall market in China experienced rapid expansion. The market size grew from RMB2.0 billion in 2021 to RMB77.5 billion in 2025 at a CAGR of 107.8%, driven by supportive government policies on green buildings, carbon neutrality targets, and increasing adoption in both new construction and retrofit projects. During this period, the public sector grew from RMB 1.3 billion to RMB 31.0 billion, while the private sector increased more significantly from RMB0.7 billion to RMB46.5 billion, reflecting rising commercial and private developer participation.

Between 2026 and 2030, the market is projected to continue its robust growth trajectory, from RMB91.4 billion in 2026 to RMB175.7 billion in 2030 at a CAGR of 17.7%. The public sector is expected to increase steadily from RMB34.3 billion to RMB56.2 billion, whereas the private sector will drive the majority of growth, expanding from RMB57.1 billion to RMB119.5 billion as commercial demand accelerates. The BIPV curtain wall market in China will be driven by sustained policy support under carbon neutrality targets, stricter building energy codes, and green building mandates. Technological advancements and falling costs of custom BIPV modules will improve economics and aesthetics, while rapid urbanization and a massive existing building stock create substantial new-build and retrofit opportunities. Growing private sector demand, fueled by ESG requirements, corporate net-zero goals, and green financing, will shift the market from public-led projects toward broader commercial adoption. Strong domestic supply chain collaboration between leading PV manufacturers and curtain wall specialists will further accelerate scaling and project delivery.

Market Size of BIPV Curtain Wall by Revenue Generated, Breakdown by Nature of Ownership (The PRC), 2020–2030E



Source: Frost & Sullivan

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In China, BIPV curtain wall projects require stringent qualifications, including Class I Qualification for Professional Contracting of Building Curtain Wall engineering, Grade A Curtain Wall Engineering Design Special Qualification, and Grade 1 Building Construction General Contracting Qualification, along with electrical power contracting credentials and relevant safety/production licenses. Due to these high barriers, while over 8,000 companies hold Grade 1 curtain wall contracting qualifications, only around 800 possess both top-tier contracting and design qualifications. Among them, the number of companies with solid experience and full capability to install sizable BIPV curtain wall systems is estimated at 100.