

INDEPENDENT MARKET RESEARCH FOR GLOBAL AND CHINA AIR CONDITIONER INDUSTRY

Confidential for

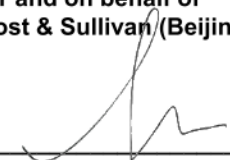
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Frost & Sullivan

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For and on behalf of
Frost & Sullivan (Beijing) Inc., Shanghai Branch Co.


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Scope

■ The project scope is defined as follows:

Research Period	<ul style="list-style-type: none">• Historical Year: 2018-2023• Base Year: 2024• Forecast Year: 2025E-2028E
Geographic Scope	<ul style="list-style-type: none">• China (Refers to, if not specified, Mainland China)• Global
Target Market	<ul style="list-style-type: none">• Air Conditioner Industry Analysis• Household Air Conditioner Industry Analysis• Central Air Conditioner Industry Analysis

Glossary

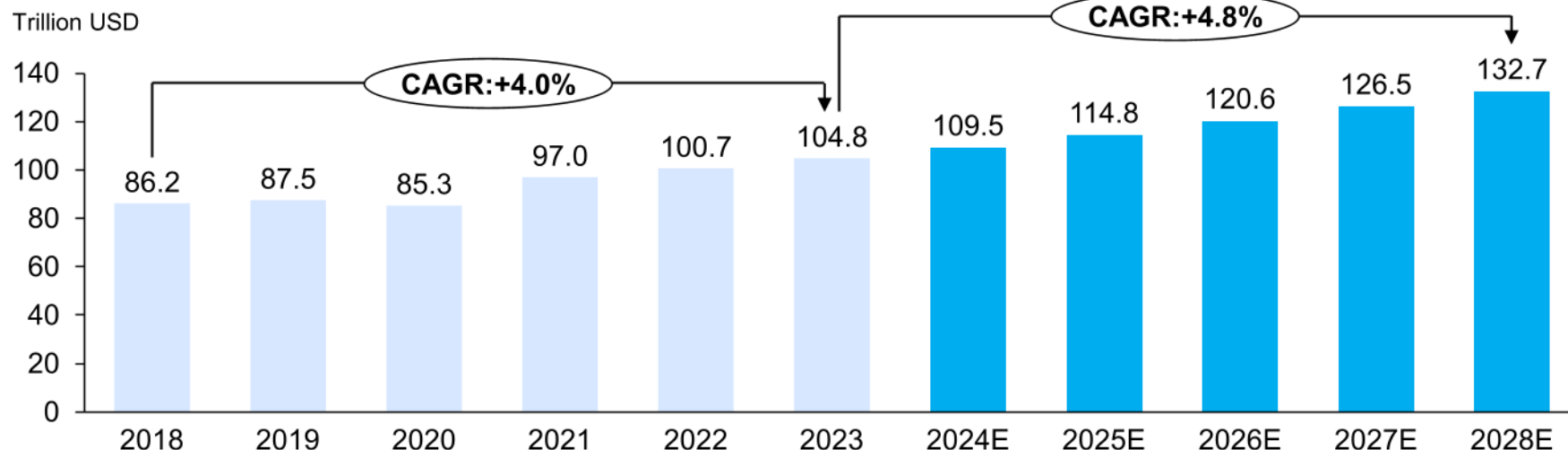
CAGR	Compound Annual Growth Rate
GDP	Gross Domestic Product
RMB	Renminbi, the lawful currency of the PRC
Tier 1 Cities	Beijing, Shanghai, Guangzhou, Shenzhen
New Tier 1 Cities	Chengdu, Chongqing, Hangzhou, Wuhan, Xi'an, Tianjin, Nanjing, Zhengzhou, Changsha, Hefei, Qingdao, Ningbo, Kunming, Suzhou, Dongguan
Tier 2 Cities	Shenyang, Baoding, Fuzhou, Xiamen, Jinan, Dalian, Harbin, Shijiazhuang, Shijiazhuang, Changchun, Nanchang, Guiyang, Taiyuan, Taizhou, Linyi, Foshan, Weifang, Wuxi, Wenzhou, Quanzhou, Jinhua, Changzhou, Huizhou, Jiaxing, Nantong, Xuzhou, Zhuhai, Zhongshan, Shaoxing, Yantai
Tier 3 Cities and Below	Lanzhou, Haikou, Urumqi, Luoyang, Langfang, Shantou, Huzhou, Xianyang, Yancheng, Jinjing, Hohhot, Yangzhou, Ganzhou, Fuyang, Tangshan, Zhenjiang, Handan, Yinchuan, Nanyang, Guilin, Taizhou, Zunyi, Jiangmen, Jieyang, Wuhu, Shangqiu, Lianyungang, Xinxiang, Huai'an, Zibo, Mianyang, Heze, Zhangzhou, Zhoukou, Cangzhou, Xinyang, Hengyang, Zhanjiang, Sanya, Shangrao, Xingtai, Putian, Liuzhou, Suqian, Jiujiang, Xiangyang, Zhumadian, Yichang, Yueyang, Zhaoqing, Chuzhou, Weihai, Dezhou, Tai'an, Anyang, Jingzhou, Huanggang, Anqing, Chaozhou, Qingyuan, Nanchong, Suzhou, Zhuzhou, Bengbu, Changde, Ningde, Liuan, Yichun, Liaocheng, Weinan and Others

Source: Frost & Sullivan Analysis

Overview of Global and China Macro Economy

Nominal GDP Analysis

Nominal GDP (Global), 2018 - 2028E



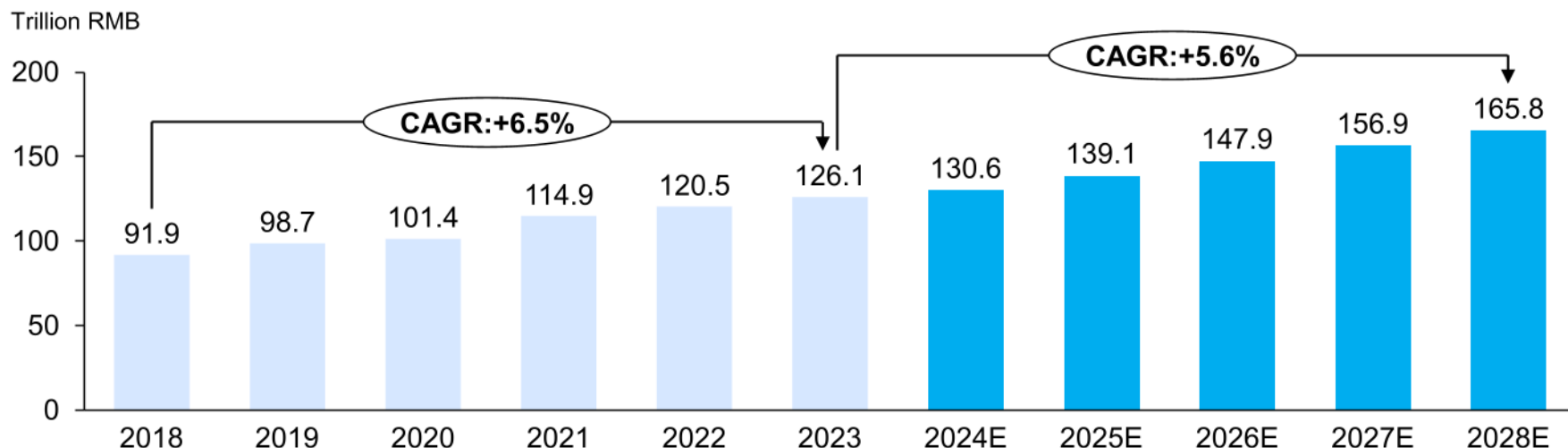
- According to the International Monetary Fund, the world economy grew at a CAGR of 4.0% from 2018 to 2023. As the global economy moves past the downturn cycle, the future of economic growth is expected to gradually stabilize. With the challenges of recent years such as the pandemic, supply chain disruptions, and geopolitical tensions beginning to subside, The global economy is expected to become more stable. According to the International Monetary Fund (IMF), the world economy is forecasted to keep growing at a CAGR of 4.8% from 2023 to 2028.
- Looking forward, the nominal GDP is expected to keep growing and reach USD132.7 trillion in 2028 at a CAGR of 4.0% with a forecasted stable economic environment.

Source: National Bureau of Statistics, Frost & Sullivan Analysis

Overview of Global and China Macro Economy

Nominal GDP Analysis

Nominal GDP (China), 2018 - 2028E



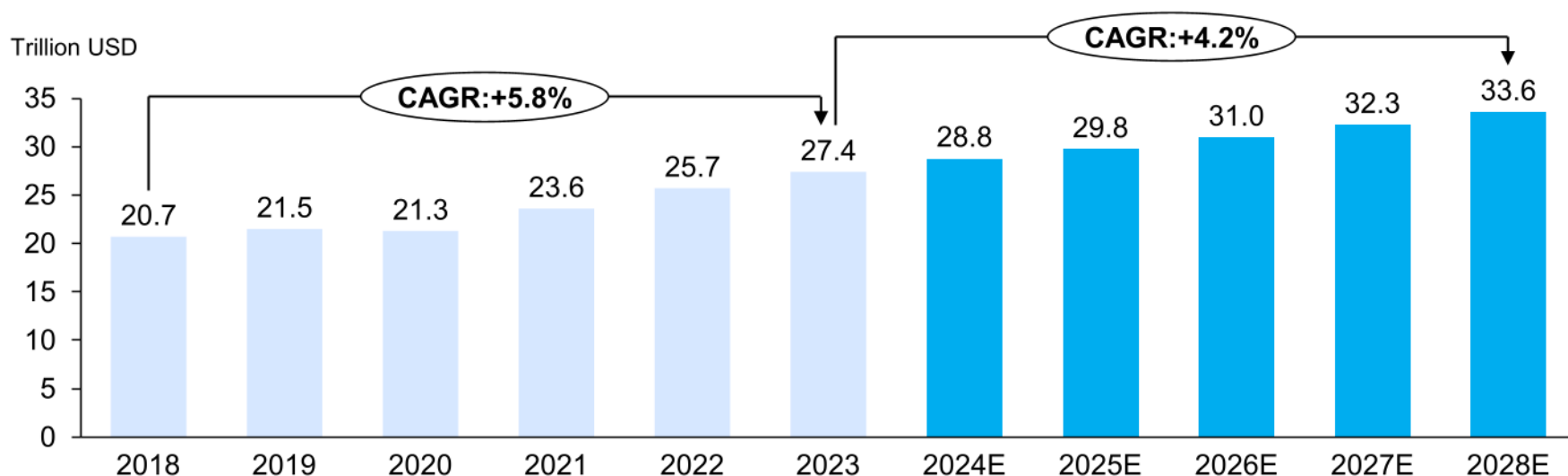
- According to the National Bureau of Statistics of China, the Chinese economy grew at a CAGR of 6.5% from 2018 to 2023. Going forward, the Chinese authorities are likely to maintain the consistency and stability of macroeconomic policies so as to maintain macroeconomic stability. In the meantime, structural adjustment of the economy is predicted to be strongly pushed forward by the Chinese authorities to improve the quality and efficiency of economic development. The Chinese economy is likely to transfer from an investment-driven model to a consumption-driven model with the share of final consumption in GDP picking up. Under this trend, the Chinese economy is likely to maintain a sound and healthy development. According to the International Monetary Fund (IMF), the Chinese economy is forecasted to keep growing at a CAGR of 5.6% from 2023 to 2028.
- Looking forward, the nominal GDP is expected to keep growing and reach RMB165.8 trillion in 2028 at a CAGR of 5.6% with a forecasted stable economic environment.

Source: National Bureau of Statistics, Frost & Sullivan Analysis

Overview of Global and China Macro Economy

Nominal GDP Analysis

Nominal GDP (United States), 2018 - 2028E



- According to the International Monetary Fund, nominal GDP of the United States grew at a CAGR of 5.8% from 2018 to 2023. According to the International Monetary Fund (IMF), the nominal GDP of the United States is forecasted to keep growing at a CAGR of 4.2% from 2023 to 2028.
- Looking forward, the nominal GDP is expected to keep growing and reach USD33.6 trillion in 2028 at a CAGR of 4.2% with a forecasted stable economic environment.

Source: International Monetary Fund, Frost & Sullivan Analysis

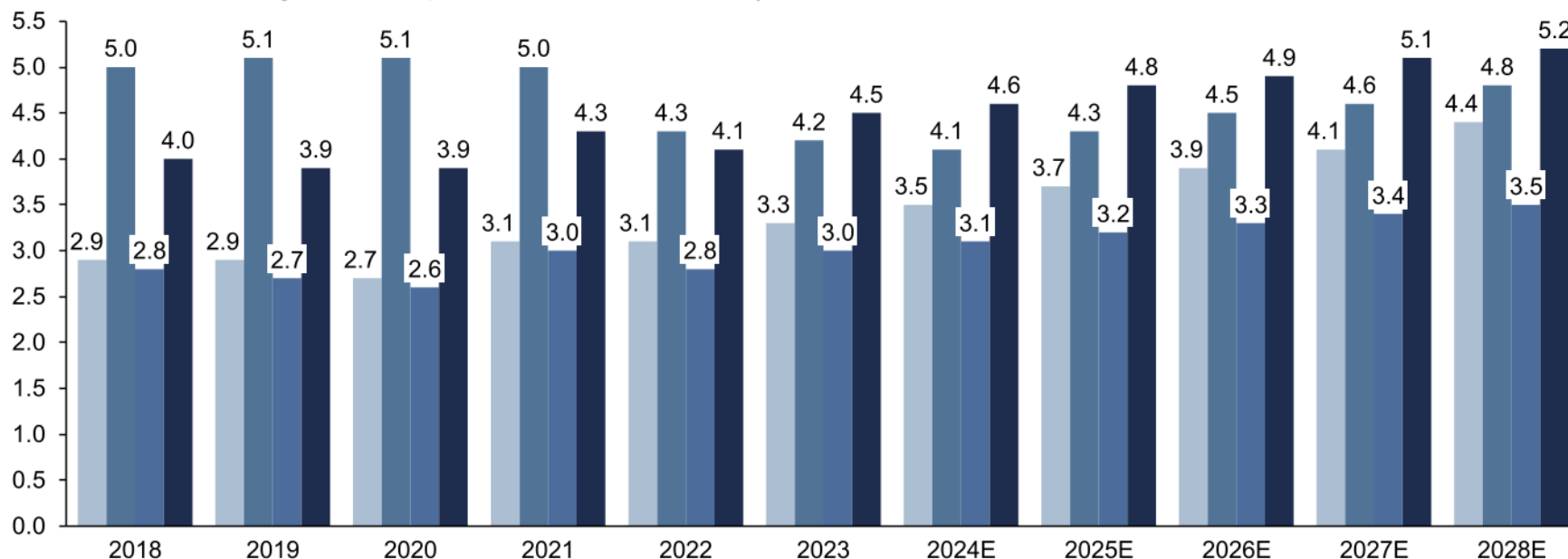
Overview of Global and China Macro Economy

Nominal GDP Analysis

Nominal GDP (Other regions), 2018 - 2028E

CAGR	United Kingdom	Japan	France	Germany
2018-2023	2.6%	-3.4%	1.4%	2.4%
2023-2028E	5.9%	2.7%	3.1%	2.9%

Trillion USD United Kingdom Japan France Germany



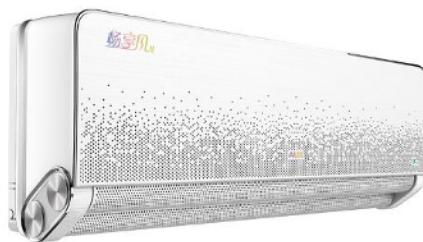
Source: International Monetary Fund, Frost & Sullivan Analysis

Overview of Global and China Air Conditioner Industry

Introduction of Air Conditioner

Air conditioner is a system used to control the humidity, ventilation, and temperature in a housing or commercial unit, mainly to cool the atmosphere in warm conditions, and also offer heating for year-round comfort. Air conditioners are generally categorized into two main types, namely household air conditioners and central air conditioners.

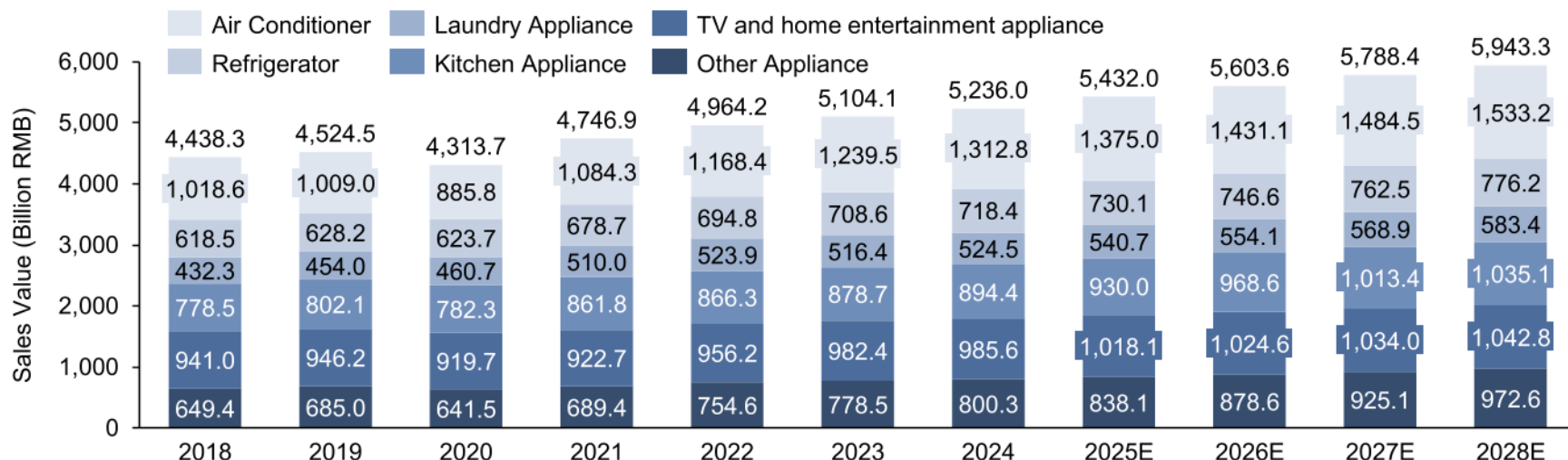
Household air conditioner is a type of air conditioner unit designed for residential use, providing both cooling and heating for individual households. There are several popular types of household air conditioners, including wall-mounted, cabinet-style and mobile units. Central air conditioners comprise VRF systems, packaged units, heat pumps, chillers, screw chiller units, centrifugal chiller units and terminal devices. Central air conditioners come in both residential and commercial types.



Global Home Appliance Industry

Global Market Size by Category in terms of Sales Value

Sales Value of Home Appliance Market by Category (Global), 2018-2028E							
CAGR	Total	Air Conditioner	Refrigerator	Laundry Appliance	Kitchen Appliance	TV and Home Entertainment Appliance	Other Appliance
2018-2024	2.8%	4.3%	2.5%	3.3%	2.3%	0.8%	3.5%
2024-2028E	3.2%	4.0%	2.0%	2.7%	3.7%	1.4%	5.0%



- Home appliances include air conditioners, refrigerators, laundry appliances, kitchen appliances, other appliances such as electric fans and electric kettles , and TV and home entertainment appliances, which encompass TVs, projectors, and home audio products.
- In terms of product category, the sales value of each of air conditioners, laundry appliances, refrigerators, and kitchen and other appliances saw an overall increase from 2018 to 2024 and is expected to grow at a generally faster pace from 2024 to 2028.
- The growth of air conditioners' sales value has demonstrated a notable acceleration, exceeding the average growth rate of the global home appliance market. Sales value of air conditioner grew from RMB1,018.6 billion in 2018 to RMB1,312.8 billion in 2024 with a CAGR of 4.3%. The growth of air conditioner could be driven by the increasing penetration rate in less developed countries or the development of integrated products such as residential central air conditioner.

Source: US Census Bureau, China Household Electrical Appliances Association, Frost & Sullivan Analysis

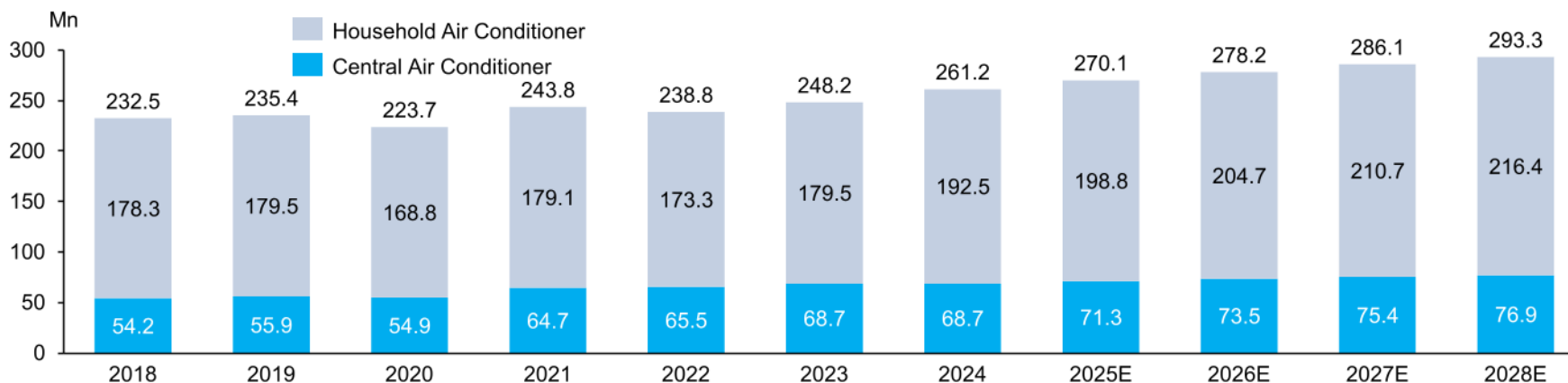
Note: Air conditioner includes both household air conditioner and central air conditioner

Overview of Global and China Air Conditioner Industry

Global Market Size in Terms of Sales Volume

Sales Volume Breakdown of Air Conditioner by Category (Global), 2018-2028E

CAGR	Total	Household Air Conditioner	Central Air Conditioner
2018-2024	2.0%	1.3%	4.0%
2024-2028E	2.9%	3.0%	2.9%



- Overall, the global air conditioner market has experienced steady growth in recent years, sales volume increased from 232.5 million units in 2018 to 261.2 million units in 2024, with a CAGR of 2.0%.
- In terms of categories, household air conditioners still account for a significant portion of the total market, making up 73.7% in 2024. This segment has shown stable performance over the years. Moreover, central air conditioners have experienced more rapid expansion, particularly in emerging markets, with global sales volume achieving a CAGR of 4.0% from 2018 to 2024.
- Looking forward, the global air conditioner market is expected to maintain steady growth. The main drivers will be replacement demand from developed regions and China, along with new demand from emerging markets. By 2028, global air conditioner sales volume is projected to reach 293.3 million units, with a CAGR of 2.9% from 2024. In terms of product categories, central air conditioners are anticipated to continue growing at a faster pace compared to household air conditioners.

Source: Japan Refrigeration and Air Conditioning Industry Association, Frost & Sullivan Analysis

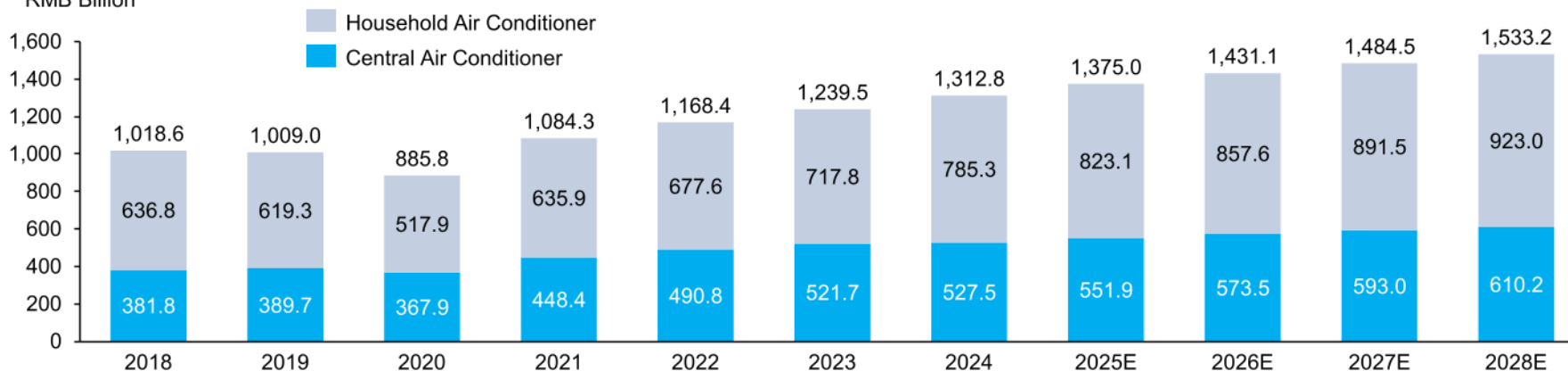
Overview of Global and China Air Conditioner Industry

Global Market Size in Terms of Sales Value

Sales Value Breakdown of Air Conditioner by Category (Global), 2018-2028E

CAGR	Total	Household Air Conditioner	Central Air Conditioner
2018-2024	4.3%	3.6%	5.5%
2024-2028E	4.0%	4.1%	3.7%

RMB Billion



- From the perspective of sales value, the trend in air conditioner sales value aligned with that of sales volume, air conditioner sales have shown consistent growth, driven by various factors such as the expansion of central air conditioners in emerging markets and increasing demand of air conditioner across various regions. Overall, the global sales value of air conditioners increased from RMB1,018.6 billion in 2018 to RMB1,312.8 billion in 2024, reflecting a CAGR of 4.3%. Looking ahead, the market size is projected to reach RMB1,533.2 billion by 2028, with a CAGR of 4.0% starting from 2024.
- By category, the sales value of household air conditioners increased from RMB636.8 billion in 2018 to RMB785.3 billion in 2024, with a CAGR of 3.6% during this period. In contrast, the sales value of central air conditioners grew from RMB381.8 billion to RMB527.5 billion over the same period, reflecting a higher CAGR of 5.5%. Looking ahead, the global sales value of household air conditioners is projected to reach RMB923.0 billion by 2028, with a CAGR of 4.1% from 2024. Meanwhile, the global sales value of central air conditioners is expected to grow to RMB610.2 billion by 2028, with a CAGR of 3.7% over the same period.

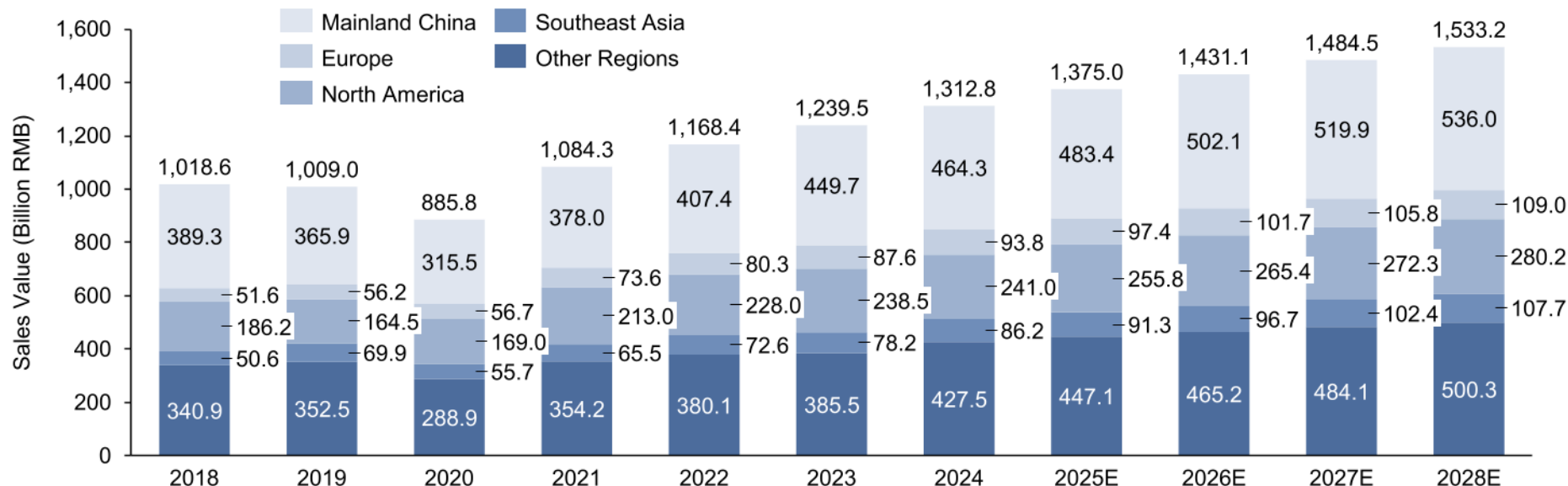
Source: Japan Refrigeration and Air Conditioning Industry Association, Frost & Sullivan Analysis

Overview of Global and China Air Conditioner Industry

Global Market Size of Air Conditioner by Region in terms of Sales Value

Sales Value Breakdown of Air Conditioner by Region (Global), 2018-2028E

CAGR	Global	Mainland China	North America	Europe	Southeast Asia	Other Regions
2018-2024	4.3%	3.0%	4.4%	10.5%	9.3%	3.8%
2024-2028E	4.0%	3.7%	3.8%	3.8%	5.7%	4.0%



- Mainland China, North America, Europe and Southeast Asia are the four largest markets for air conditioner in terms of sales value, together accounting for over 67.4% of the total global sales value in 2024, and are expected to grow at a CAGR of 3.7%, 3.8%, 3.8% and 5.7%, respectively, from 2024 to 2028. In particular, mainland China is the largest air conditioner market, generating sales value of RMB464.3 billion in 2024, accounting for 35.3% of the global market, respectively. Furthermore, the increasing disposable income level and urbanization rate, particularly in emerging markets, are expected to further drive the growth of the global air conditioner market.

Note: Other regions include Middle East, Africa, South America and etc.

Source: US Census Bureau, China Household Electrical Appliances Association, JRAIA, Frost & Sullivan Analysis

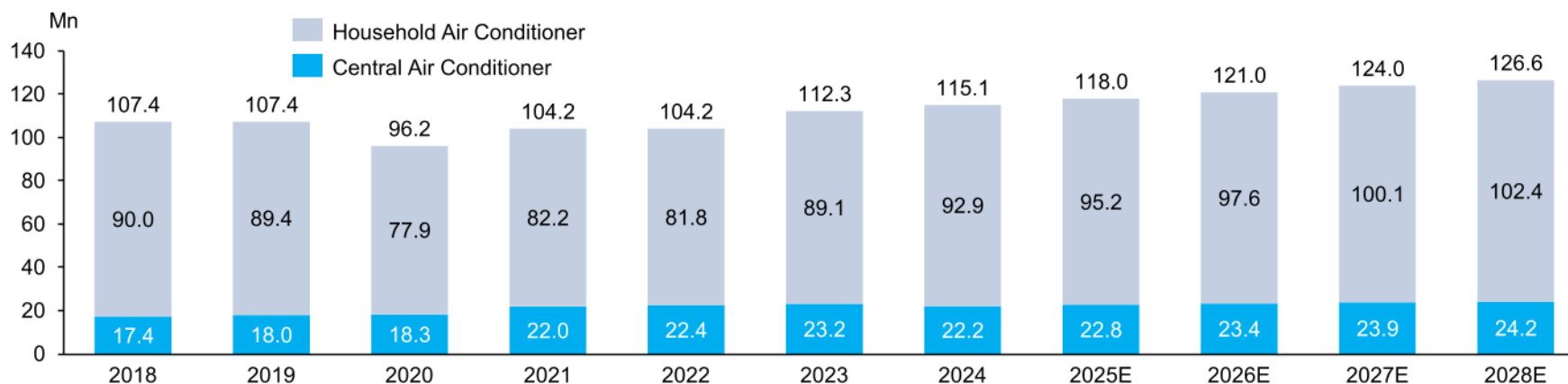
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Overview of Global and China Air Conditioner Industry

China Market Size in Terms of Sales Volume

Sales Volume Breakdown of Air Conditioner by Category (China), 2018-2028E

CAGR	Total	Household Air Conditioner	Central Air Conditioner
2018-2024	1.2%	0.5%	4.1%
2024-2028E	2.4%	2.5%	2.2%



- China's air conditioner market has demonstrated steady growth in recent years. The sales volume of air conditioners in China grew from 107.4 million units in 2018 to 115.1 million units in 2024, representing a CAGR of 1.2%, and is expected to reach 126.6 million units in 2028, representing a CAGR of 2.4% from 2024 to 2028. Air conditioner sales in China are expected to continue growing, driven by factors such as steady replacement demand, increased penetration in lower-tier markets, and government stimulus for appliance upgrades.
- By category, the household air conditioner market in China is relatively mature, with growth primarily driven by replacement demand and increased penetration in lower-tier markets. From 2018 to 2024, sales volume of household air conditioners in China increased from 90.0 million units to 92.9 million units, mostly driven by government subsidies and increasing replacement demand. In the future, driven by factors including government subsidies for air conditioner trade-in, it is projected that the sales volume of household air conditioner will reach 102.4 million units by 2028, with a CAGR of 2.5% from 2024 to 2028. Central air conditioners in China remain in a growth phase, sales volume of central air conditioner in China increased from 17.4 million units in 2018 to 22.2 million units in 2024, and is expected to continue rising, reaching 24.2 million units by 2028, with a CAGR of 2.2% from 2024.

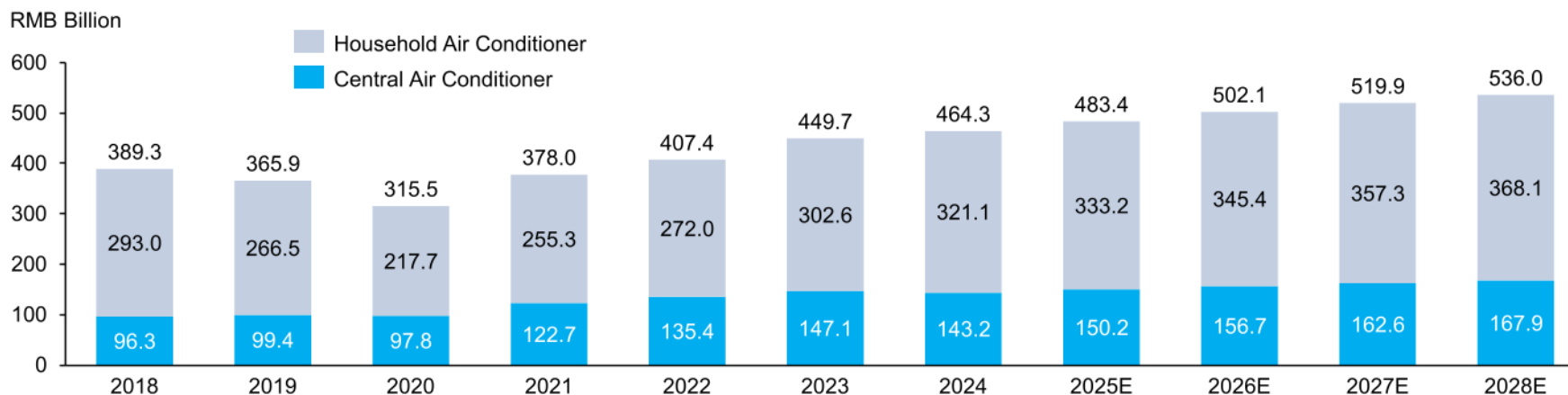
Source: China Household Electrical Appliances Association, Frost & Sullivan Analysis

Overview of Global and China Air Conditioner Industry

China Market Size in Terms of Sales Value

Sales Value Breakdown of Air Conditioner by Category (China), 2018-2028E

CAGR	Total	Household Air Conditioner	Central Air Conditioner
2018-2024	3.0%	1.5%	6.8%
2024-2028E	3.7%	3.5%	4.1%



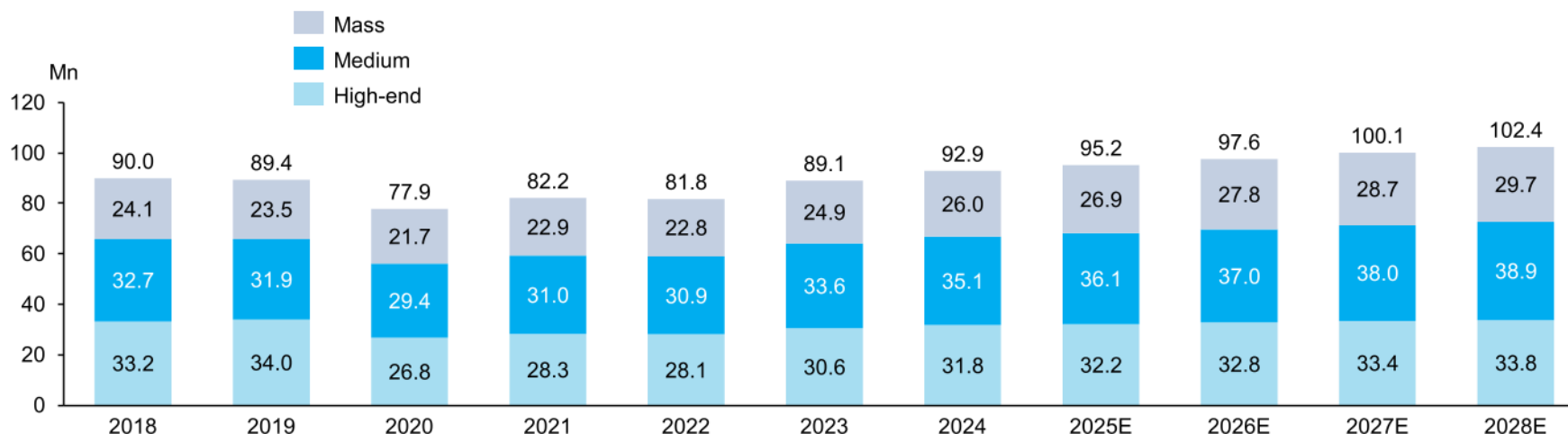
- The sales value of air conditioners in China grew from RMB389.3 billion in 2018 to RMB464.3 billion in 2023, with a CAGR of 3.0%, the growth was driven by steady demand for air conditioners products and the rising adoption of central air conditioners. Looking ahead, the market is expected to continue expanding, reaching RMB536.0 billion by 2028, representing a CAGR of 3.7% since 2024.

Overview of Global and China Air Conditioner Industry

China Market Size in Terms of Sales Volume

Sales Volume Breakdown of Household Air Conditioner (China), by Price, 2018-2028E

CAGR	Total	Mass	Medium	High-end
2018-2024	0.5%	1.3%	1.2%	-0.7%
2024-2028E	2.5%	3.4%	2.6%	1.5%



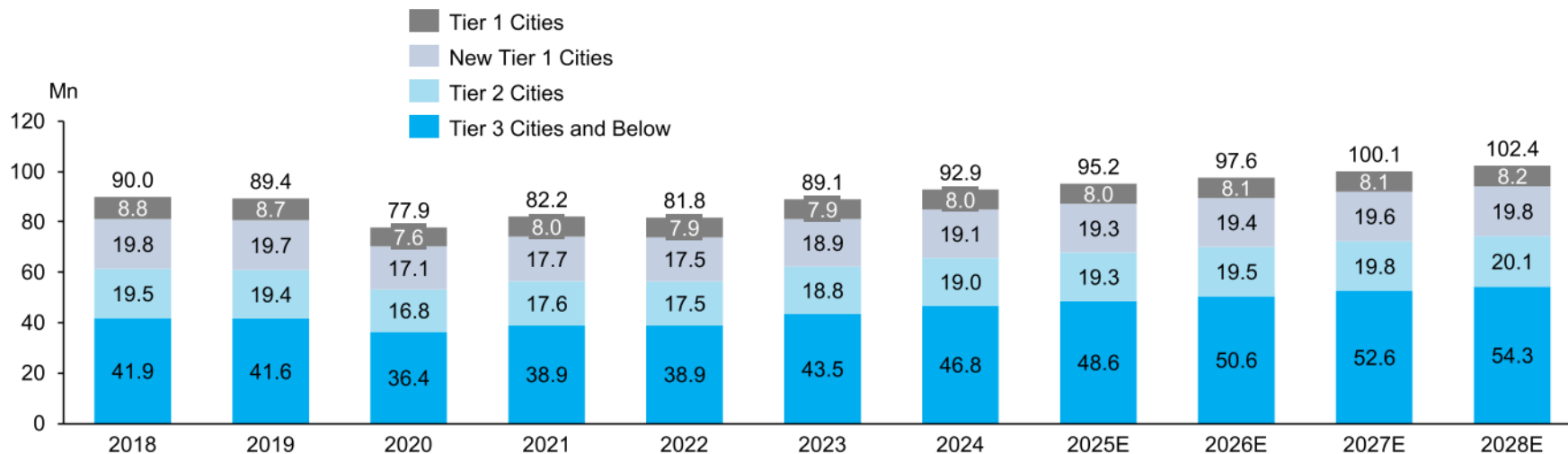
- Household air conditioners in China can be classified into three categories based on retail sales price: units priced below RMB2,500 fall into the mass market segment, those priced greater than or equal to RMB2,500 and less than RMB3,500 per unit are categorized as the medium market, and units priced at RMB3,500 or above are considered part of the high-end market.
- From 2018 to 2024, the sales volume of household air conditioner in mass market increased from 24.1 million units to 26.0 million units at a CAGR of 1.3%. During the same period of time, the sales volume of household air conditioner in medium market increased from 32.7 million units to 35.1 million units, and the sales volume of household air conditioner in high-end market decreased from 33.2 million units to 31.8 million units.
- In the future, it is anticipated that as consumers place greater emphasis on cost-effective products, the sales volume growth of household air conditioners in mass market will outpace the overall industry growth, reaching 29.7 million units by 2028.

Overview of Global and China Air Conditioner Industry

China Market Size in Terms of Sales Volume

Sales Volume Breakdown of Household Air Conditioner, by City Tier (China), 2018-2028E

CAGR	Total	Tier 1 Cities	New Tier 1 Cities	Tier2 Cities	Tier 3 Cities or Below
2018-2024	0.5%	-1.6%	-0.6%	-0.4%	1.9%
2024-2028E	2.5%	0.6%	0.9%	1.4%	3.8%



- Tier 3 cities and below represent the largest market for household air conditioners. With substantial population, tier 3 cities and below significantly drive sales for household air conditioner industry, accounting for 50.4% of total household air conditioner sales in 2024. This is largely due to the relatively low market penetration of homes use air conditioners in these areas, leading to a strong and growing demand. From 2018 to 2024, the CAGR for household air conditioners in tier 3 cities and below was 1.9%, notably higher than the overall industry average of 0.5%.
- Looking ahead, the household air conditioner in tier 3 cities and below market is projected to experience steady growth, supported by replacement and a rising demand for trade-in. By 2028, the sales volume of household air conditioner in tier 3 cities and below is expected to reach 54.3 million units, representing a CAGR of 3.8% since 2024.

Overview of Global and China Air Conditioner Industry

Market Drivers (1/3)

Market Drivers of Global and China Air Conditioner Industry

Major Market Drivers (1/3)

- 1 Population Growth and Improved Living Standards
- 2 Government Policies Supporting Market Expansion



MARKET DRIVERS

Description

1. Population Growth and Improved Living Standards

- The population growth and urbanization has substantially amplified the global demand for air conditioner, as the concentration of people in urban areas drives the need for improved living conditions. As more individuals transition to city life, enhanced living standards and expectations for comfort make air conditioner a vital component of modern living spaces. This trend is especially pronounced in developing regions, where rapid urbanization is coupled with rising disposable incomes, creating an expanding market for air conditioner systems as households prioritize comfort and climate control. Additionally, extreme weather conditions caused by climate change are further fueling this demand, pushing the need for energy-efficient and advanced cooling solutions.

2. Government Policies Supportive

- The National Development and Reform Commission (NDRC) and the Ministry of Finance (MOF) issued the “Several Measures on Strengthening Support for Large-Scale Equipment Renewal and Consumer Goods Trade-in” 《关于加力支持大规模设备更新和消费品以旧换新的若干措施》 in July 2024, which mentioned that a trade-in subsidy is provided to individual consumers for purchasing eight types of household appliances, including air conditioners, that meet Level 2 or higher or Level 1 or higher energy or water efficiency standards. The subsidy rate is 15% or 20% of the sales price for products complying with Level 2 or Level 1 standards, respectively. These initiatives not only make purchasing more accessible through financial incentives but also actively promote the adoption of energy-efficient and eco-friendly products, aligning with broader environmental goals. By encouraging consumers to upgrade to more sustainable options, these policies enhance overall market purchasing power, creating a ripple effect of increased demand. In the air conditioner sector, where energy consumption is a key concern, such policies are particularly impactful, driving both market expansion and the shift toward more environmentally conscious solutions. Internationally, similar initiatives have been introduced to align economic incentives with sustainability goals. For instance, the United Kingdom's Department for Energy Security and Net Zero (DESNZ) has introduced a subsidy program as part of its practical approach to achieving net-zero emissions in October 2023. Under this initiative, households replacing fossil fuel heating systems—such as oil, gas, electric, or LPG systems—are eligible for a grant of £7,500 to install new heat pumps. This pragmatic measure aims to accelerate the transition to cleaner energy solutions while reducing household reliance on traditional boilers.

Overview of Global and China Air Conditioner Industry

Market Drivers (2/3)

Market Drivers of Global and China Air Conditioner Industry

Major Market Drivers (2/3)

- 3 Untapped Growth Potential in Lower-Tier Markets
- 4 Expansion of Commercial Air conditioner Applications
- 5 Growth Potential in Overseas Markets



MARKET DRIVERS

Description

3. Untapped Growth Potential in Lower-Tier Markets

- The penetration rate of air conditioner in rural areas remains considerably lower compared to urban regions. According to the National Bureau of Statistics, the number of air conditioners per 100 households in rural areas is 105.7 units, which is significantly lower than the 171.7 units per 100 households in urban areas. This gap presents substantial growth potential for the market. As rural incomes rise and infrastructure improves, the demand for air conditioner in these areas is beginning to unfold, opening new opportunities for market expansion. This untapped potential in lower-tier rural markets is expected to become a key driver of industry growth in the coming years, fostering more balanced development between urban and rural sectors. As a result, manufacturers and retailers are increasingly focusing on rural areas, recognizing them as an emerging engine for sustained industry growth.

4. Expansion of Commercial Air conditioner Applications

- The application areas for commercial air conditioner are rapidly expanding, driven by increasing demand across various sectors such as automotive, marine, nuclear power, telecommunications base stations, and data centers. These specialized industries require advanced and often customized air conditioner solutions to meet their unique operational needs, which is fostering innovation and pushing the boundaries of traditional market offerings. As these sectors continue to grow and evolve, the need for reliable and efficient cooling solutions becomes even more critical, fueling further demand for commercial air conditioner. This trend is expected to significantly contribute to the overall expansion of the air conditioner market, as businesses seek cutting-edge technologies to support their operations in increasingly complex environments.

5. Growth Potential in Overseas Markets

- In many emerging countries, the penetration of air conditioner remains relatively low, signaling significant growth potential. As these markets undergo economic development and face the impacts of changing climate conditions, the demand for air conditioner is expected to rise substantially. In some developed countries, such as those in Europe, the penetration rate of air conditioning remains relatively low. For instance, only about 3% of homes in Germany and less than 5% of homes in France have air conditioning. In Britain, government estimates suggest that less than 5% of homes in England have air conditioner units installed. However, as climate change intensifies and living standards rise, the demand for air conditioning in these countries is expected to grow in the future. This presents a unique opportunity for Chinese manufacturers, who benefit from cost advantages and large-scale production capabilities, to expand their presence in these overseas markets. With their ability to offer competitive pricing and meet increasing global demand, Chinese companies are well-positioned to capitalize on the untapped potential in these low-penetration regions, further solidifying their influence in the global air conditioner market.

Overview of Global and China Air Conditioner Industry

Market Drivers (3/3)

Market Drivers of Global and China Air Conditioner Industry

Major Market Drivers (3/3)

- 6 Global Warming and Extreme Weather Conditions
- 7 Technological Upgrades Driven by ESG



MARKET DRIVERS

Description

6. Global Warming and Extreme Weather Conditions

- Global warming, marked by the increasing occurrence of heatwaves and drastic temperature fluctuations, has significantly intensified the demand for cooling solutions worldwide. As temperatures soar, particularly in regions that previously enjoyed milder climates, the adoption of air conditioner is growing at an unprecedented rate. This climate-induced surge in demand is anticipated to be a key driver for the ongoing expansion of the air conditioner market. Both residential and commercial sectors are investing in advanced cooling technologies to cope with rising temperatures and create more comfortable, climate-resilient environments. This trend is expected to accelerate as climate change continues to exacerbate temperature extremes, pushing for more energy-efficient and environmentally sustainable air conditioner solutions.

7. Technological Upgrades Driven by ESG

- The global shift towards carbon neutrality and the growing emphasis on Environmental, Social, and Governance (ESG) standards are catalyzing technological advancements in the air conditioner industry. With a heightened focus on energy efficiency, reducing emissions, and incorporating sustainable materials, manufacturers are innovating to meet both regulatory demands and consumer preferences for eco-friendly products. These technological upgrades are not only driven by compliance with stricter environmental regulations but also by the increasing market demand for greener solutions. As sustainability becomes a core priority, this trend is poised to reshape the future of the industry, with cutting-edge technology playing a pivotal role in achieving long-term environmental goals and reducing the industry's carbon footprint.

Overview of Global and China Air Conditioner Industry

Future Trends and Opportunities (1/2)

Future Trends and Opportunities of Global and China Air Conditioner Industry

Major Future Trends and Opportunities (1/2)

- 1 Rapid Growth of Smart Products
- 2 Increased Consumer Demand for Energy Efficiency, Comfort, and Health



Description

1. Rapid Growth of Smart Products

- The rapid growth of smart air conditioners is driven by technological advancements and evolving consumer preferences. Smart features such as voice control and multi-directional airflow are becoming popular, improving energy efficiency and convenience. China's smart air conditioner penetration in 2023 is low, indicating significant untapped potential as smart home integration expands.

2. Increased Consumer Demand for Energy Efficiency, Comfort, and Health

- Consumer demand for energy efficiency, comfort, and health-related features is rapidly increasing, driven by heightened environmental awareness and rising energy costs. As consumers grow increasingly conscious of their energy consumption, the demand for air conditioners offering greater energy efficiency without compromising on performance is rising. Additionally, the desire for enhanced comfort is leading to a growing preference for products with precise temperature control, low noise levels, and improved air quality. Health-related features, such as air purification and humidity control, are also gaining importance as consumers prioritize creating healthier indoor environments. These evolving preferences are shaping the development of the air conditioner market, pushing manufacturers to innovate and offer products that meet both environmental and health-focused demands. In addition, consumers are increasingly prioritizing cost-effective products.

Source: State Council of the PRC, Frost & Sullivan Analysis

Overview of Global and China Air Conditioner Industry

Future Trends and Opportunities (2/2)

Future Trends and Opportunities of Global and China Air Conditioner Industry

Major Future Trends and Opportunities (2/2)

- 3 Increased Market Concentration and Influence of Leading Enterprises
- 4 Air conditioner companies are increasingly expanding upstream in the supply chain



FUTURE TRENDS AND OPPORTUNITIES

Description

3. Increased Market Concentration and Influence of Leading Enterprises

- The air conditioner market is witnessing growing concentration, with leading enterprises increasingly solidifying their dominance within the industry. These top players are expanding their control across the entire supply chain spanning production, supply, and sales by leveraging vertical integration. This approach not only boosts production efficiency but also reduces costs, thereby enhancing their competitiveness in the market. Furthermore, by investing in advanced production equipment and cutting-edge technologies, these leading companies are able to optimize both production costs and technological processes. This focus on efficiency and innovation allows them to maintain a competitive edge, positioning them to further dominate the air conditioner market as they scale operations and improve profit margins.

4. Air conditioner companies are increasingly expanding upstream in the supply chain

- As the industry undergoes technological advancements, air conditioner companies are increasingly expanding upstream in the supply chain, particularly in the strategic areas of core components such as compressors and motors. This approach allows companies to secure essential technological resources, reduce dependency on external suppliers, control costs, and enhance product performance, strengthening their overall competitiveness. In the context of rising demands for global supply chain stability, along with the push for energy conservation and green manufacturing policies, the ability to independently develop and produce core components will be critical for companies to maintain a market edge.

Source: Frost & Sullivan Analysis

Overview of Global and China Air Conditioner Industry Challenges (1/2)

Challenges of Global and China Air conditioner Industry

Major Challenges(1/2)

- 1 Rising Costs and Raw Material Price Fluctuations
- 2 Impact of Slowing Real Estate Growth



Description

1. Rising Costs and Raw Material Price Fluctuations

- One of the primary challenges facing the air conditioner industry is the rising cost and volatility of raw material prices. Essential materials like copper, aluminum, and plastics, which are critical for air conditioner production, are experiencing significant price fluctuations due to shifts in global market supply and demand. These fluctuations directly elevate production costs, creating pressure on companies to implement more robust cost control strategies. In addition to material costs, increasing transportation and labor expenses are further compounding the overall cost pressures. To maintain market competitiveness and protect profit margins, air conditioner companies must adopt effective cost management practices and optimize their supply chains, ensuring more resilient and efficient operations amidst an unpredictable cost environment.

2. Impact of Slowing Real Estate Growth

- The slowdown in the real estate market is having a direct impact on the demand for air conditioner products. With fewer new projects due to the deceleration of the real estate market, the demand for additional air conditioners has decreased. To mitigate the effects of this slowdown, air conditioner companies need to explore alternative growth opportunities. These include capitalizing on the rising demand for smart air conditioner products and expanding their presence in the after-sales market, offering maintenance, repair, and upgrades to extend the product lifecycle. Diversifying into these areas can help air conditioner companies maintain growth and profitability despite the challenges in the real estate sector.

Source: Energy Information Administration, Frost & Sullivan Analysis

Overview of Global and China Air Conditioner Industry Challenges (2/2)

Challenges of Global and China Air conditioner Industry

Major Challenges(2/2)

- 3 Global Economic Uncertainty
- 4 Intensifying Industry Competition



Description

3. Global Economic Uncertainty

- Global economic uncertainty, including changes in international trade policies and geopolitical risks, presents challenges to the air conditioner market. Variations in trade policies, such as tariff adjustments and trade barriers, can affect the export and import costs of air conditioner products. Geopolitical instability may lead to supply chain disruptions or increased market uncertainty, posing risks for companies reliant on global supply chains and export markets. Air conditioner companies need to closely monitor international economic conditions and adjust their strategies flexibly to address potential economic fluctuations and policy changes.

4. Intensifying Industry Competition

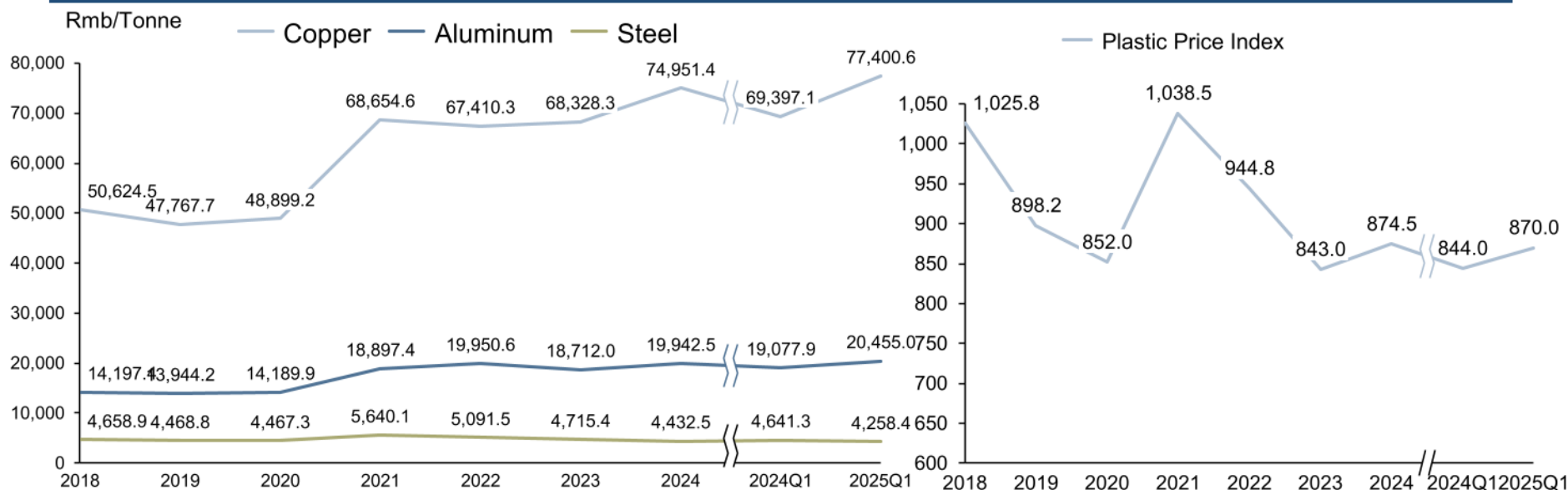
- Competition in the air conditioner market is becoming increasingly fierce, particularly in terms of technological innovation and market share acquisition. Companies are required continuously improve product performance and enhance technological capabilities in order to sustain their competitive advantage. Companies within the industry will compete by leveraging various factors, such as technological innovation, marketing strategies, price competitiveness and product differentiation. These competitive dynamics will in turn drive the industry competition to become even more intense. To navigate this competitive landscape, air conditioner companies need to continually optimize their product lines and enhance brand value.

Source: Frost & Sullivan Analysis

Overview of Global and China Air Conditioner Industry

Cost Analysis

Prices of Raw Materials for Air Conditioner, 2018 – 2025Q1



- The major raw materials used in the production of air conditioner products include copper, aluminum and steel. The price of such raw materials were relatively stable from 2018 to 2020. However, in 2021 the price of raw materials experienced a sharp increase as a result of imbalance of supply and demand. For example, the price of copper increased from RMB48,899.2 per tonne in 2020 to RMB68,654.4 per tonne in 2021, the rebound was mainly associated with the recovery of Mainland China's manufacturing sectors. Similarly, the price of aluminum increased from RMB14,189.9 per tonne in 2020 to RMB18,897.3 per tonne in 2021, and the price of steel increased from RMB5,168 per tonne to RMB6,463 per tonne during the same period. The prices then experienced a slight decline in 2022, except for aluminum, the price of aluminum slightly increased to RMB19,950.6 per tonne in 2022, mainly due to production disruptions caused by power restrictions. The price of copper experienced further increases in 2024, reaching RMB74,951.4 per tonne, driven by factors including global economic recovery and a boost in infrastructure investment.
- Plastic also serves as a crucial material of air conditioner, the plastic price index fluctuated around 1,000 during the past 7 years.
- The increase in raw material costs has posed certain pressures on air conditioner companies. However, leading brands can leverage their superior product structure and operational capabilities to alleviate the impact of raw material price pressure. Furthermore, these leading brands with stronger pricing capabilities are able to offset some of the pressure from rising raw material prices by implementing price adjustments. Therefore, leading brands have competitive advantage over small and medium-sized brands.

Note: The Plastic Price Index is compiled based on the transaction prices of plastic on the Zhejiang Plastic City online trading market and transaction prices of plastic spot goods in China Plastic City.

The base point of the Plastic Price Index is 1,000, based on the prices on November 5, 2006.

Source: London Metal Exchange, China Plastics, Frost & Sullivan Analysis

Global Air Conditioner Industry

Global Competitive Landscape of Air Conditioner

Top 5 Air Conditioner Company
by Sales Volume (Global), 2024

Rank	Company	Identities or Background	Market Share (%) 2024	CAGR (%) 2022-2024
1	Company A	Company A is a public company that mainly offers smart home solutions, commercial and industrial solutions. Company A is one of the Fortune Global 500 companies in 2024, with over 190,000 employees worldwide.	27.5%	~11.0%
2	Company B	Company B is a public home appliance company that mainly produces air conditioners and also produces electric fans, water dispensers, heaters, rice cookers, air purifiers, water kettles, humidifiers and induction cookers, and other products. Company B has over 72,000 employees worldwide.	17.5%	~4.0%
3	Company C	Company C is a public industrial company primarily engaged in the manufacturing and sales of air conditioning systems, including household air conditioners, commercial HVAC systems, and other related products. Company C employed over 90,000 individuals globally.	12.3%	~9.0%
4	Company D	Company D is a public home appliance company that primarily engages in the manufacturing and sales of refrigerators, washing machines, air conditioners, kitchen appliances and small appliances. Company D is one of the Fortune Global 500 companies in 2024, with over 100,000 employees worldwide.	7.5%	~13.0%
5	Our Group	/	7.1%	30.0%

- In 2024, the number of market players in global air conditioner industry is more than 100.
- The Group was 5^h largest air conditioner company in global market in terms of sales volume in 2024, with a market share of 7.1%.

Note: The numbers above including the sales volume of OEM/ODM products.

Source: Frost & Sullivan Analysis

Global Air Conditioner Industry

Global Competitive Landscape of Household Air Conditioner

Top 5 Household Air Conditioner Company by Sales Volume (Global), 2024				
Rank	Company	Identities or Background	Market Share (%) 2024	CAGR (%) 2022-2024
1	Company A	Company A is a public company that mainly offers smart home solutions, commercial and industrial solutions. Company A is one of the Fortune Global 500 companies in 2024, with over 190,000 employees worldwide.	32.9%	~11.0%
2	Company B	Company B is a public home appliance company that mainly produces air conditioners and also produces electric fans, water dispensers, heaters, rice cookers, air purifiers, water kettles, humidifiers and induction cookers, and other products. Company B has over 72,000 employees worldwide.	19.1%	~4.0%
3	Company D	Company D is a public home appliance company that primarily engages in the manufacturing and sales of refrigerators, washing machines, air conditioners, kitchen appliances and small appliances. Company D is one of the Fortune Global 500 companies in 2024, with over 100,000 employees worldwide.	9.0%	~15.0%
4	The Group	/	8.9%	29.5%
5	Company C	Company C is a public industrial company primarily engaged in the manufacturing and sales of air conditioning systems, including household air conditioners, commercial HVAC systems, and other related products. Company C employed over 90,000 individuals globally.	4.8%	~9.0%

- In 2024, the number of market players in global household air conditioner industry is more than 100.
- The Group was 4th largest household air conditioner company in global market in terms of sales volume (including OEM/ODM) in 2024.

Note: The numbers above including the sales volume of OEM/ODM products.

Source: Frost & Sullivan Analysis

Global Air Conditioner Industry

China Competitive Landscape of Air Conditioner

➤ The Group ranked the 4th in China air conditioner market in terms of sales volume in 2024.

Top 5 Air Conditioner Company by Sales Volume (China), 2024

Rank	Company	Background	Market Share (%)	CAGR (%)
			2024	2022-2024
1	Company B	Company B is a public home appliance company that mainly produces air conditioners and also produces electric fans, water dispensers, heaters, rice cookers, air purifiers, water kettles, humidifiers and induction cookers, and other products. Company B has over 72,000 employees worldwide.	31.5%	~1.0%
2	Company A	Company A is a public company that mainly offers smart home solutions, commercial and industrial solutions. Company A is one of the Fortune Global 500 companies in 2024, with over 190,000 employees worldwide.	29.2%	~6.0%
3	Company D	Company D is a public home appliance company that primarily engages in the manufacturing and sales of refrigerators, washing machines, air conditioners, kitchen appliances and small appliances. Company D is one of the Fortune Global 500 companies in 2024, with over 100,000 employees worldwide.	13.1%	~9.0%
4	The Group	/	7.3%	22.9%
5	Company E	Company E is a public home appliance company that mainly offers air conditioners, refrigerators, freezers beverage coolers and other home appliances. Company E has about 49,000 employees worldwide.	7.0%	~4.0%

- In 2024, the number of market players in China air conditioner industry is more than 50.
- The air conditioner market in China is relatively concentrated with top 5 players took 88.1% market in 2024 in terms of sales volume.
- The Group was 4th largest air conditioner company in China in terms of sales volume in 2024, with a market share of 7.3%.
- In terms of the sales volume growth rate, the Group has grown with the highest growth rate among the top five air conditioner companies in China from 2023 to 2024.

Source: Frost & Sullivan Analysis

Global Air Conditioner Industry

China Competitive Landscape of Household Air Conditioner in Mass Market

Top 3 Household Air Conditioner Company in Mass Market
by Sales Volume (China), 2023

Rank	Company	Identities or Background	Market Share (%) 2023
1	The Group	/	22.1%
2	Company A	<i>Company A is a public company that mainly offers smart home solutions, commercial and industrial solutions. Company A is one of the Fortune Global 500 companies in 2023, with over 190,000 employees worldwide.</i>	20.9%
3	Company B	<i>Company B is a public home appliance company that mainly produces air conditioners and also produces electric fans, water dispensers, heaters, rice cookers, air purifiers, water kettles, humidifiers and induction cookers, and other products. Company B has over 72,000 employees worldwide.</i>	18.5%

- In China household air conditioner industry, the mass market experienced the fastest growth. This growth is driven by consumers placing greater emphasis on value for money products, as more consumers seek budget-friendly while reliable air conditioning solutions, the mass market is expected to continue its strong upward trajectory, further expanding the overall market.
- The Group ranked first among household air conditioner companies in mass market in China in terms of sales volume in 2023, with a market share of 22.1%.

Source: Frost & Sullivan Analysis

Global Air Conditioner Industry

Entry Barrier

Capital Barriers

Capital barriers are critical in the air conditioning industry. Particularly in the context of full industrial chain integration, companies must make substantial initial investments in manufacturing facilities, research and development, and distribution networks. Additionally, during the process of flattening distribution channels, manufacturers take on the inventory and cash flow responsibilities of former distributors, further increasing the need for working capital. Leading companies, leveraging their capital advantage, secure pricing power in the upstream supply chain and achieve superior cost control, making it difficult for other enterprises to scale operations and gain market share. Companies lacking sufficient capital face significant barriers to entry and expansion.

Brand Barriers

Brand recognition and loyalty are key barriers to entry in the air conditioning market. Once a brand has established a solid position in consumers' minds, it fosters long-term loyalty and strengthens customer retention. Well-known brands, through years of accumulation, have built strong reputations for reliability, performance, and after-sales service. These advantages allow them to not only maintain and increase market share in the medium to long term but also command pricing power through brand premiums. This pricing power leads to profitability levels that significantly exceed those of second- and third-tier brands.

Technology R&D and Technical Personnel Barriers

The air conditioning industry is highly dependent on technology R&D and technical personnel. Developing efficient, eco-friendly, and smart air conditioning requires cutting-edge technology and expertise in fields such as thermodynamics, electrical engineering, and software development. Leading companies, through long-term accumulation, have mastered core technologies and relevant technical personnel, especially in areas like variable frequency control, energy-saving designs, and intelligent system integration, giving them a significant advantage. While the overall entry barriers to the industry may not be extremely high, core technologies and advanced innovations remain in the hands of a few industry leaders. New entrants face significant challenges in achieving independent research and development, due to both technological hurdles and a shortage of relevant technical personnel.

Source: Frost & Sullivan

Global Air Conditioner Industry

Entry Barrier

Distribution and Sales Network Barriers

In recent years, the rapid rise of e-commerce in China has further increased entry barriers for new companies. In online sales, there are no sales representatives to provide personalized recommendations to customers, so consumers primarily make purchasing decisions based on brand and price. New companies not only lack the customer loyalty that leading brands enjoy but also struggle to match the well-established logistics, installation, and after-sales service systems of established firms, making it difficult for them to gain a foothold in the market.

Manufacturing Barriers

Establishing manufacturing facilities capable of mass-producing air conditioners requires substantial investments in state-of-the-art machinery and technology. Leading air conditioning companies often have vertical integration upstream, with the ability to produce core components and parts in-house. Additionally, industry leaders benefit from production bases that form industrial clusters, further improving operational efficiency. This allows them to achieve better cost control during the manufacturing process. Moreover, self-production of key components ensures consistent product quality and reduces reliance on external suppliers. This manufacturing capability not only enhances profitability but also provides greater flexibility in managing supply chain fluctuations.

Supply Chain System Barriers

The Chinese air conditioning industry relies on a highly integrated and efficient supply chain, with leading companies establishing long-term partnerships with key component suppliers to ensure stability and cost advantages. Through vertical integration, these companies control the entire industrial chain from component production to final product assembly, further enhancing production efficiency and flexibility. For new entrants, replicating such a supply chain system would be time-consuming, capital-intensive, and pose significant barriers to entry.

Source: Frost & Sullivan

Methodologies

- Frost & Sullivan is an independent global consulting firm, which was founded in 1961 in New York, United States of America. It offers industry research and market strategies and provides growth consulting and corporate training. Its industry coverage in China includes automotive and transportation, chemicals, materials and food, commercial aviation, consumer products, energy and power systems, environment and building technologies, healthcare, industrial automation and electronics, industrial and machinery, and technology, media and telecom.
- In compiling the F&S Report, Frost & Sullivan has (a) conducted detailed primary research which involve discussing the status of the market with leading industry participants and industry experts and (b) conducted secondary research which involve reviewing company reports, independent research reports and data based on Frost & Sullivan's own database.
- Projected total market size was obtained from historical data analysis plotted against macroeconomic data as well as specific related industry drivers.
- Frost & Sullivan's report was compiled based on the below assumptions at the time of compiling this report:
 - China's and global economy is likely to maintain steady growth in the next decade;
 - China's and global social, economic, and political environment is likely to remain stable from 2023 to 2027 ("Forecast Period");

Source: Frost & Sullivan Analysis

Thank You!

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