The PRC Environmental Cleaning and Maintenance Service Market Study

Independent Market Research Report

The industry report is solely for the proposed listing, addressed to the Company, the Sole Sponsor, the Sole Overall Coordinator and the Joint Global Coordinators (for themselves and on behalf of the Public Offer Underwriters).

(As defined in the prospectus dated 27 November 2023)

Date : 27 November 2023

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

Name: Charles Lau
Title: Executive Director

Frost & Sullivan

November, 2023

Agenda

1 **Introduction of the Research**

2 Macro Economic Overview in the PRC

3 Environmental Cleaning and Maintenance Service Market Analysis in the PRC

4 Competitive Landscape of Environmental Cleaning and Maintenance Service Market in the PRC

5 Appendix

Scope

■ **The project scope is defined as follows:**

Research Period	• **Historical Year: 2018-2022** • **Base Year: 2022** • **Forecast Year: 2023E-2027E**
Geographic Scope	• **The PRC**
Industry Scope	• **Environmental Cleaning and Maintenance Service Market**

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Limitations

Source of Information

- Interviews with industry experts and competitors will be conducted on a best-effort basis to collect information in aiding in-depth analysis for this report.
- Frost & Sullivan will not be responsible for any information gaps where Interviewees have refused to disclose confidential data or figures.

Official Statistical sources

Market indicators for modeling

Industry Expert Interview

- The study took 2021 as the base year for analysis and 2022-2026 for forecast. However, as the point of this study being 2020, some of the figures of 2019 may not be available at the moment from public statistical sources. Frost & Sullivan will use the latest information available (e.g. 2019) or make projections based on historical trends.
- Under circumstances where information is not available, Frost & Sullivan in-house analysis will be leveraged using appropriate models and indicators to arrive at an estimate.
- Sources of information and data will be clearly stated in the bottom right hand corner on each slide for reference.

Methodology

Methodologies and Assumptions

- Frost & Sullivan is an independent global consulting firm, which was founded in 1961 in New York. It offers industry research and market strategies and provides growth consulting and corporate training. Its industry coverage 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.
- Frost & Sullivan has conducted detailed primary research which involved discussing the status of the industry with certain leading industry participants. Frost & Sullivan has also conducted secondary research which involved reviewing company reports, independent research reports and data based on its own research database. Frost & Sullivan has obtained the figures for the estimated total market size from historical data analysis plotted against macroeconomic data as well as considered industry key drivers.
- Frost & Sullivan's Market Engineering Forecasting Methodology integrates several forecasting techniques with the Market Engineering Measurement-based System. It relies on the expertise of the analyst team in integrating the critical market elements investigated during the research phase of the project. These elements include:
  - ✓Expert-opinion forecasting methodology
  - ✓Integration of market drivers and restraints
  - ✓Integration with the market challenges
  - ✓Integration of the Market Engineering Measurement trends
  - ✓Integration of econometric variables
- In compiling and preparing the research, Frost & Sullivan assumed that the social, economic and political environment in the globe and the PRC is likely to remain stable during the forecast period from 2021 to 2024. As the spread of COVID-19 pandemic is expected to be controlled with increasingly effective public health responses in 2020, this ensures the normalcy of the PRC’s environmental cleaning and maintenance service market and related industries. In addition, in the forecast period, the PRC’s environmental cleaning and maintenance service market is expected to grow based on the macro assumptions of the social, economic and political environments.

Glossary

CAGR: compound annual growth rate

First-tier Cities: Comprised of (i) four first tier cities in the PRC, including Beijing, Shanghai, Guangzhou and Shenzhen and (ii) 15 new first-tier cities in the PRC including Chengdu, Chongqing, Hangzhou, Wuhan, Xi'an, Tianjin, Suzhou, Nanjing, Zhengzhou, Changsha, Dongguan, Shenyang, Qingdao, Hefei and Foshan, according to China Index Academy with reference to China Business Network

GDP: gross domestic product

IMF: International Monetary Fund

PRC: People's Republic of China

Property: In this report, property refers to a building or buildings and the land belonging to it or them.

RMB: Ren Min Bi (Currency of People's Republic of China)

SAC： Standardization Administration of the People's Republic of China

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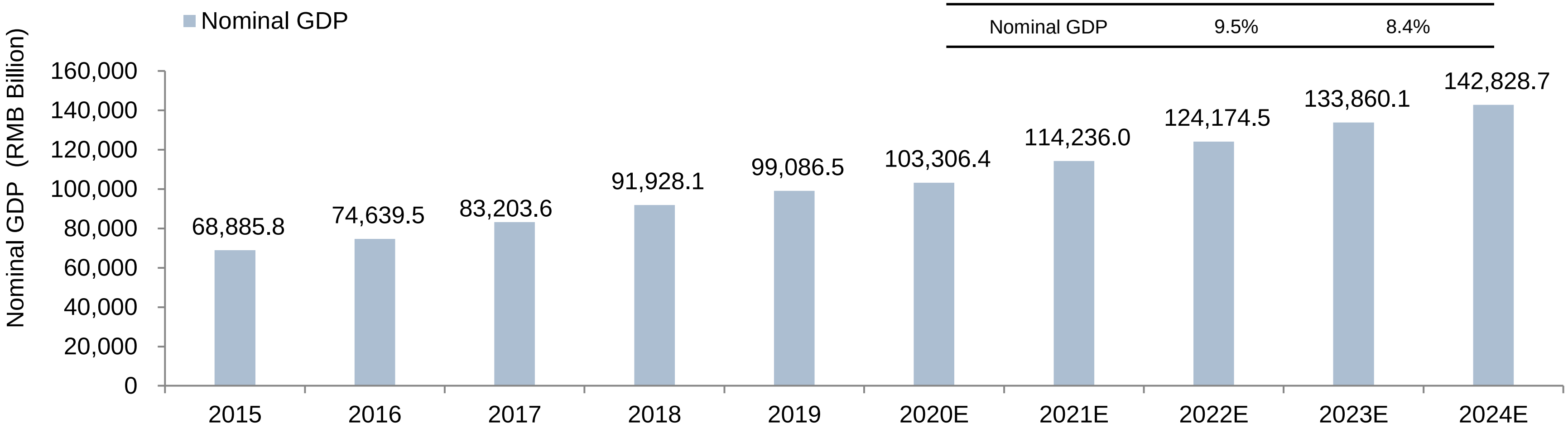
Macro Economy Overview in the PRC

The PRC's Nominal GDP

- The PRC's economy has gone through a period of fast growth in the last several years benefiting from favorable situations such as growth in national investment and export. From 2015 to 2019, the nominal GDP increased from RMB 68,885.8 billion to RMB 99,086.5billion, representing a CAGR of 9.5%. The PRC's real GDP growth rate declined from 6.8% in 2017 to 6.6% in 2018 and further decreased to 6.1% in 2019.
- Although the PRC has experienced an economy slowdown in 2020 due to the impact of COVID-19, and as a result, the annual growth rate of nominal GDP in 2020 has declined to 3.8% from that of 7.4% in 2019. However, driven by the strong growth potential of domestic consumption, government stimulus policies and continuous investment in fixed assets. The nominal GDP is still expected to experience a stable growth with a CAGR of 8.4%, and reach to RMB 142,828.7 billion in the forecast period of 2020 to 2024.

The PRC's Nominal GDP (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
Nominal GDP	9.5%	8.4%



Source: National Bureau of Statistics of the PRC, IMF, Frost & Sullivan

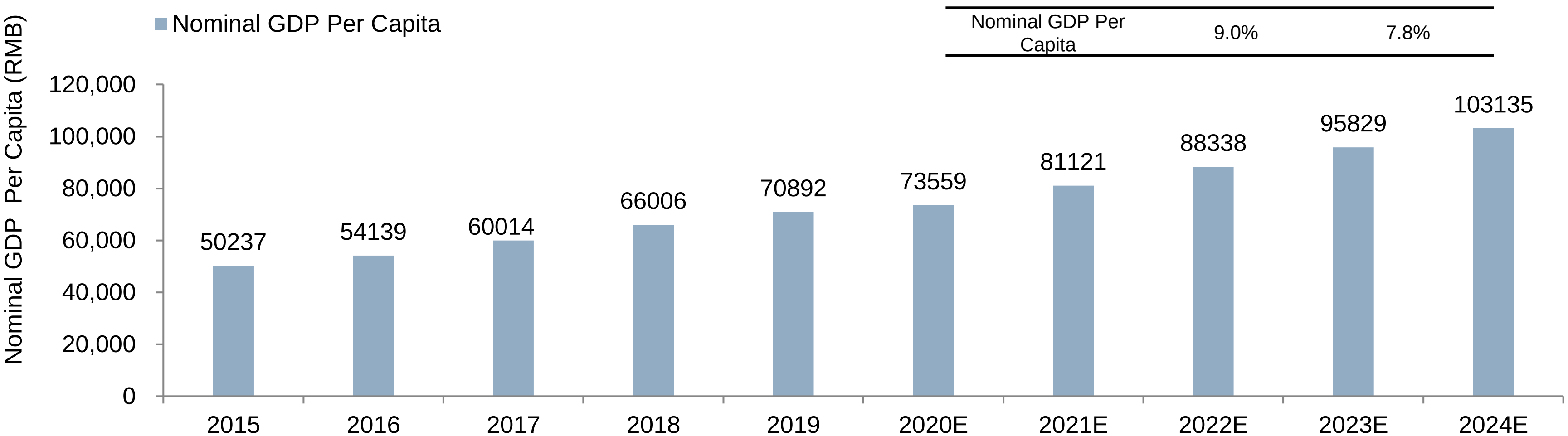
Macro Economy Overview in the PRC

The PRC's Nominal GDP Per Capita

- Influenced by the developing economy and increasing number of population, the nominal GDP per capita in the PRC increased from RMB 50,237 in 2015 to RMB 70,892 in 2019, representing a CAGR of 9.0%.
- Driven by the strong potential of domestic consumption, government stimulus policies and continuous investment in fixed assets, nominal GDP per capita is expected to increase along with national nominal GDP. In the future, the number is expected to reach RMB 103,135 in 2024, representing a CAGR of 7.8%.

The PRC's Nominal GDP Per Capita (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
Nominal GDP Per Capita	9.0%	7.8%



Source: National Bureau of Statistics of the PRC, IMF, Frost & Sullivan

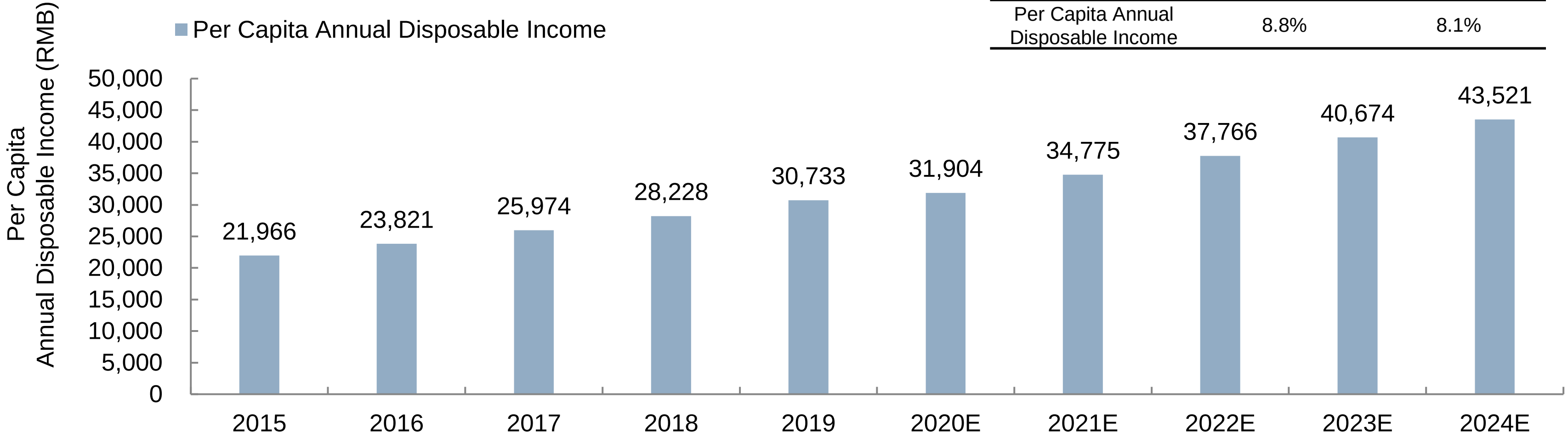
Macro Economy Overview in the PRC

The PRC's Per Capita Annual Disposable Income

- Along with the rapid development of economy in the PRC, per capita annual disposable income also increased continuously, from RMB 21,966 in 2015 to RMB 30,733 in 2019 representing a CAGR of 8.8%. The increasing per capita annual disposable income indicates higher life standards and stronger purchasing power of residents in the PRC.
- Going forward, the drivers are expected to take effect continuously. Thus, the per capita annual disposable income in the PRC is estimated to grow at a CAGR of 8.1% from 2020 to 2024, and reach RMB 43,521 in 2024.

The PRC's Per Capita Annual Disposable Income (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
Per Capita Annual Disposable Income	8.8%	8.1%



Source: National Bureau of Statistics of the PRC, Frost & Sullivan

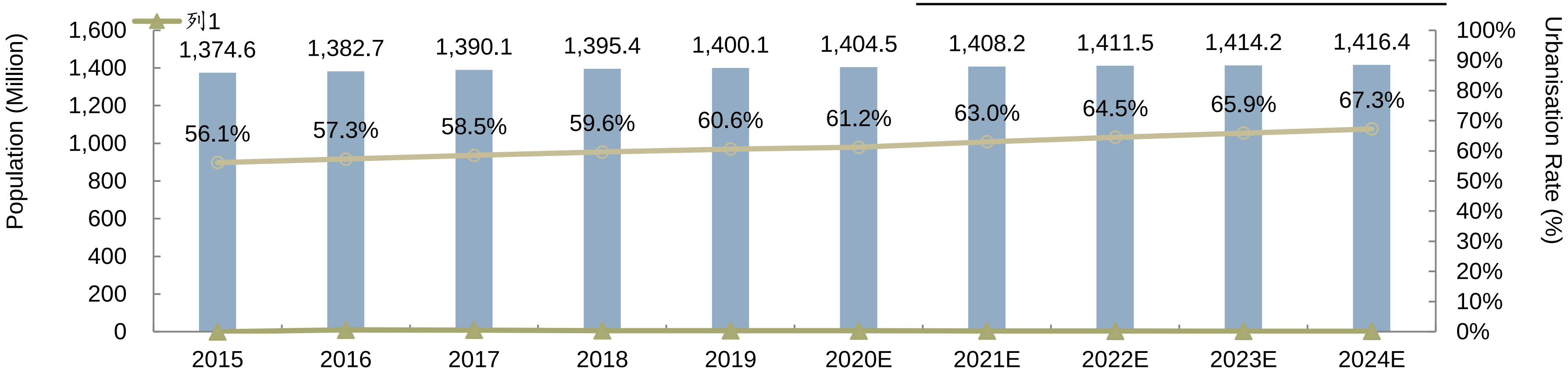
Macro Economy Overview in the PRC

The PRC Population and Urbanisation Rate

- The PRC has the largest population in the world. The population in the PRC grew from 1,374.6 million in 2015 to 1,400,1 million in 2019 at a CAGR of 0.5%, and the large population base reflects great potential in market performance.
- With the continuous growth in macro economy and the acceleration in the process of Urbanisation in the PRC, the Urbanisation rate has kept increasing from 56.1% to 60.6% during the period from 2015 to 2019. It is expected that this ratio would maintain the tendency of growing to reach 1,416.4 million in the year of 2024.

The PRC Population and Urbanisation Rate (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
Population	0.5%	0.2%



Source: National Bureau of Statistics of the PRC, IMF, Frost & Sullivan

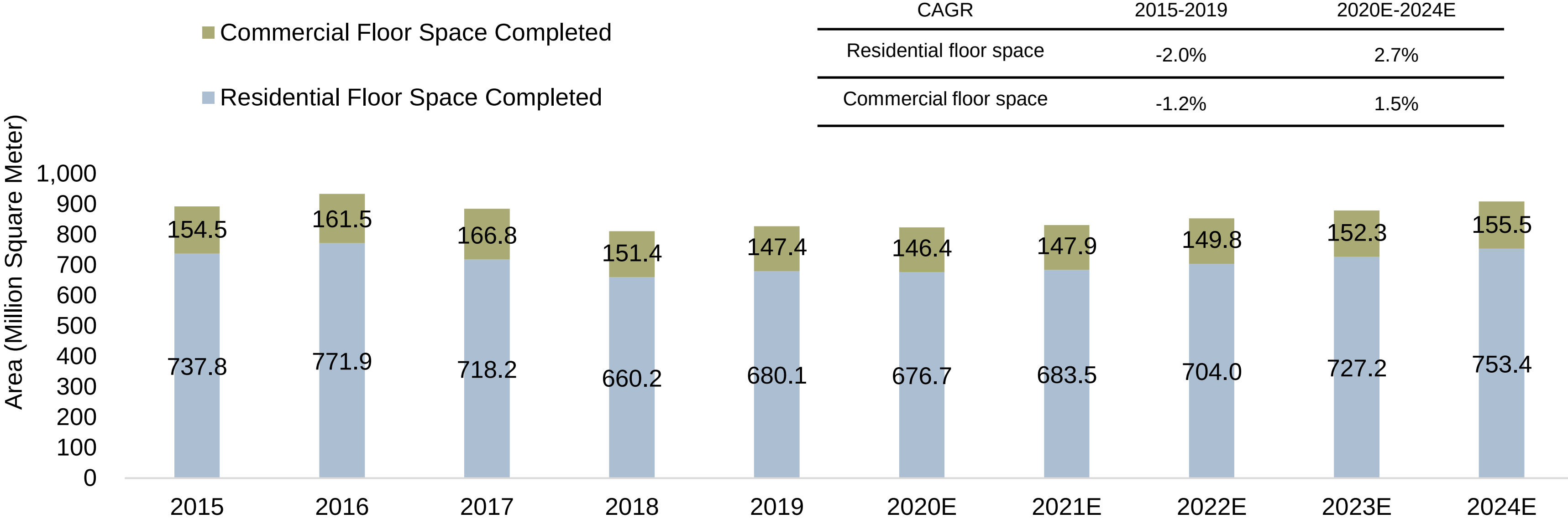
Macro Economy Overview in the PRC

Floor Space Completed in the PRC by Building Types

- The floor space completed of residential buildings fell from 737.8 to 680.1 million square meters with a CAGR of -2.0% while the floor space completed of commercial buildings dropped from 154.5 to 147.4 million square meters with a CAGR of -1.2%. The negative growth rate is due to the oversupply of unsold completed properties in the real estate market, discouraging the construction groups from completing the buildings in time.
- As the real estate market going through the active destocking under government's regulations, the mismatch between demand and supply will improve. Therefore, future growth of the floor space completed for both building types is expected to be stable. The residential sector is forecasted to increase from 676.7 to 753.4 million square meters from 2020 to 2024, representing a CAGR of 2.7%. The floor space completed of commercial buildings is estimated to rise from 146.4 million square meters in 2020 to 155.5 million square meters in 2024 with a CAGR of 1.5%.

Floor Space Completed in the PRC by Building Types (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
Residential floor space	-2.0%	2.7%
Commercial floor space	-1.2%	1.5%



Source: National Bureau of Statistics of the PRC, Frost & Sullivan

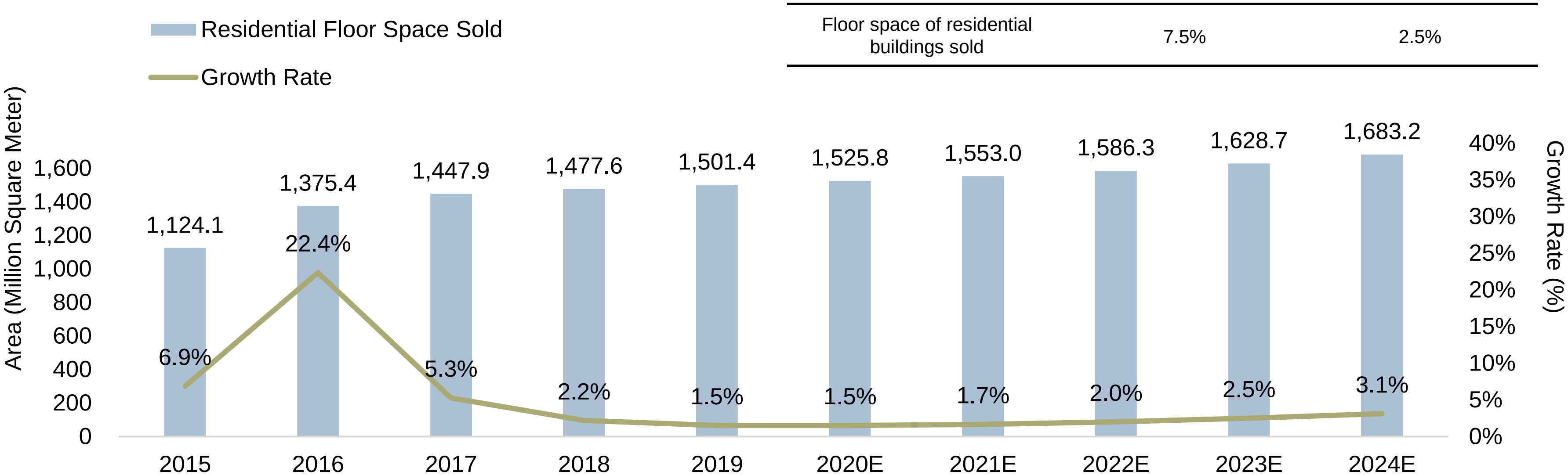
Macro Economy Overview in the PRC

Floor Space of Residential Buildings Sold in the PRC

- Due to the debt-fueled speculative buying, the growth rate of residential floor space sold surged to 22.4% in 2016. However, the market was immediately regulated and stabilized by the PRC's policymakers in order to prevent any price crash from an overheated real estate market. As the PRC's banking and insurance regulators started restricting the bank loans that flow into the property market, the growth rate was immediately regulated and stabilized. From 2015 to 2019, the CAGR of residential floor space sold was kept at 7.5%, rising from 1,124.1 to 1,501.4 million square meters.
- As the PRC's overall economy gradually recovers from the COVID-19, the residential housing market is not expected to suffer any significant drawbacks in 2020, achieving an estimate of 1524.0 million square meters with a steady growth rate of 1.5%. With the tightening control of the PRC's policymakers continues, this market is likely to grow without huge volatilities in the future. Therefore, the floor space of residential buildings sold is forecasted to achieve 1,683.5 million square meters by 2024 with a CAGR of 2.5%.

Floor Space of Residential Buildings Sold in the PRC (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
Floor space of residential buildings sold	7.5%	2.5%



Source: National Bureau of Statistics of the PRC, Frost & Sullivan

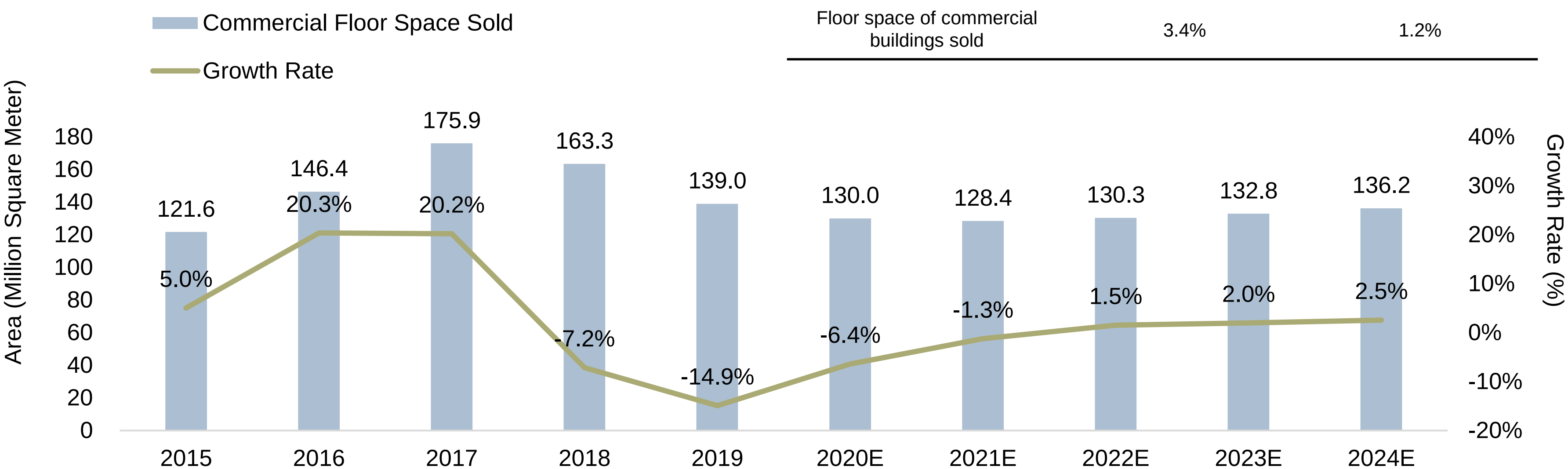
Macro Economy Overview in the PRC

Floor Space of Commercial Buildings Sold in the PRC

- The floor space of commercial buildings sold in the PRC increased from 121.6 to 139.0 million square meters at a CAGR of 3.4%. Similar to the development cycle of residential housing market, the growth rate of commercial floor space sold jumps to 20.3% in 2016 due to the speculative buying in the overheated real estate market. The growth for the commercial floor space sold had a rapid decline at -7.2% and -14.9% in 2018 and 2019 respectively because of the tightening regulations on bank loans.
- As the fastest growing industries in the PRC, the technology, financial, and healthcare sectors are quickly recovering from the COVID-19 pandemic, continuously generating significant demand for commercial space. With the rebounding demand on the market, the growth rate of commercial floor space sold will improve in the future. It is forecasted to reach a moderate CAGR of 1.2% from 2020 to 2024, reaching 136.2 million square meters by 2024.

Floor Space of Commercial Buildings Sold in the PRC (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
Floor space of commercial buildings sold	3.4%	1.2%



Source: National Bureau of Statistics of the PRC, Frost & Sullivan

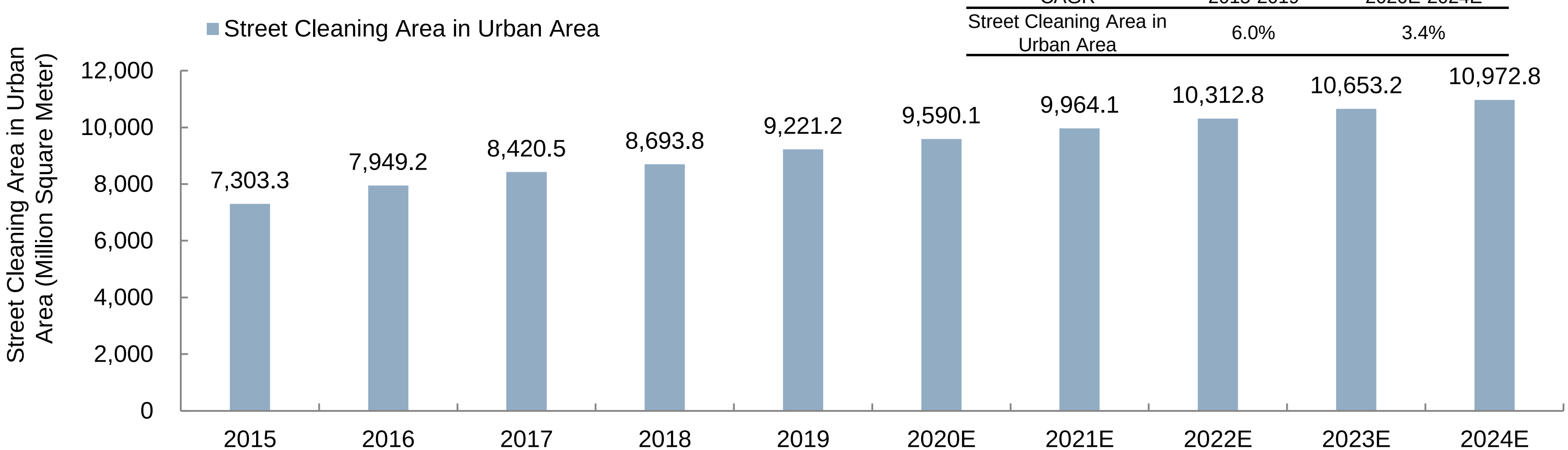
Macro Economy Overview in the PRC

Street Cleaning Area in Urban Area in the PRC

- Due to the increasing Urbanisation rate, the street cleaning area in urban area has been increasing. From 2015 to 2019, the total area of street cleaning in urban area has increased form 7,303.3 to 9,221.2 million square meters, representing a CAGR of 6.0%. Due to the rising Urbanisation rate, the total street area in urban area has been increasing rapidly.
- It is anticipated that the street area will continue to increase at a smaller rate, as national Urbanisation will be continuously increasing at a descending rate. At the end of 2024, street cleaning area in urban area in the PRC is expected to increase from 9590.1 million square meters in 2020 to 10972.8 million square meters at a CAGR of 3.4%.

Street Cleaning Area in Urban Area in the PRC (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
Street Cleaning Area in Urban Area	6.0%	3.4%



Source: National Bureau of Statistics of the PRC, Frost & Sullivan

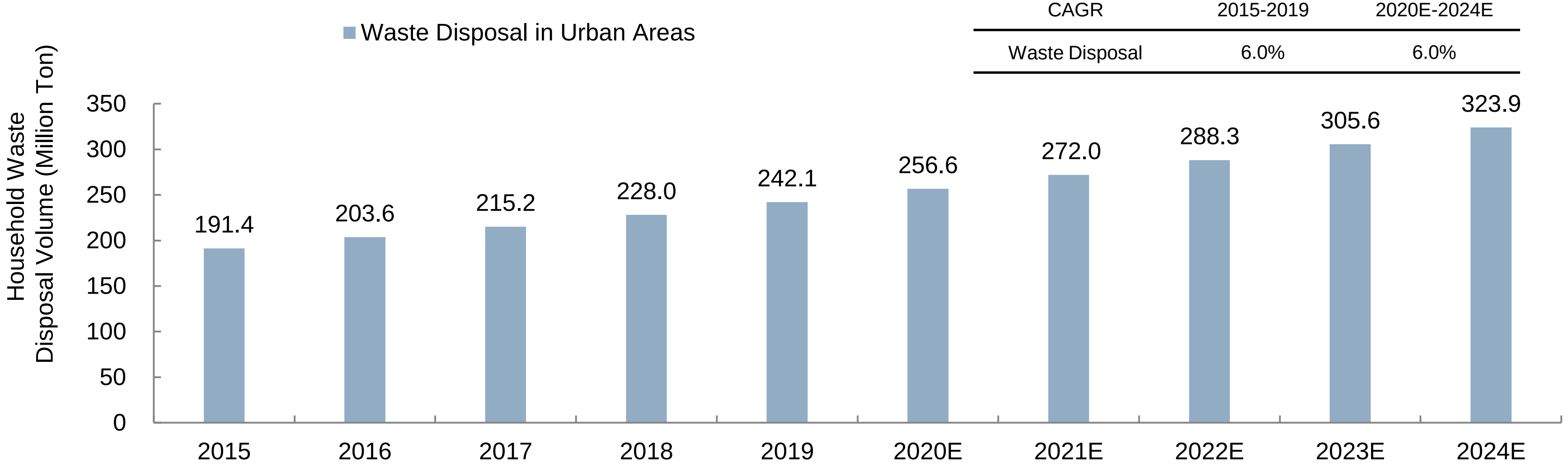
Macro Economy Overview in the PRC

The Volume of Household Waste Disposal in Urban Area in the PRC

- Predominantly driven by the growing population in urban area, the amount of good purchasing has increased, which further caused the increasing amount of domestic waste generated in urban area in the country. As a result, the volume of household waste disposal in urban areas in recent years has been increasing at a relatively stable annual rate of approximately 6.0%.
- The total volume of household waste disposal has increased from 191.4 million ton in 2015 to 242.1 million ton in 2019, reflecting a CAGR of 6.0%. This volume is anticipated to increase at the same annual growth rate to 323.9 million ton in 2024.

The Volume of Household Waste Disposal in Urban Areas (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
Waste Disposal	6.0%	6.0%



Source: National Bureau of Statistics of the PRC, Frost & Sullivan

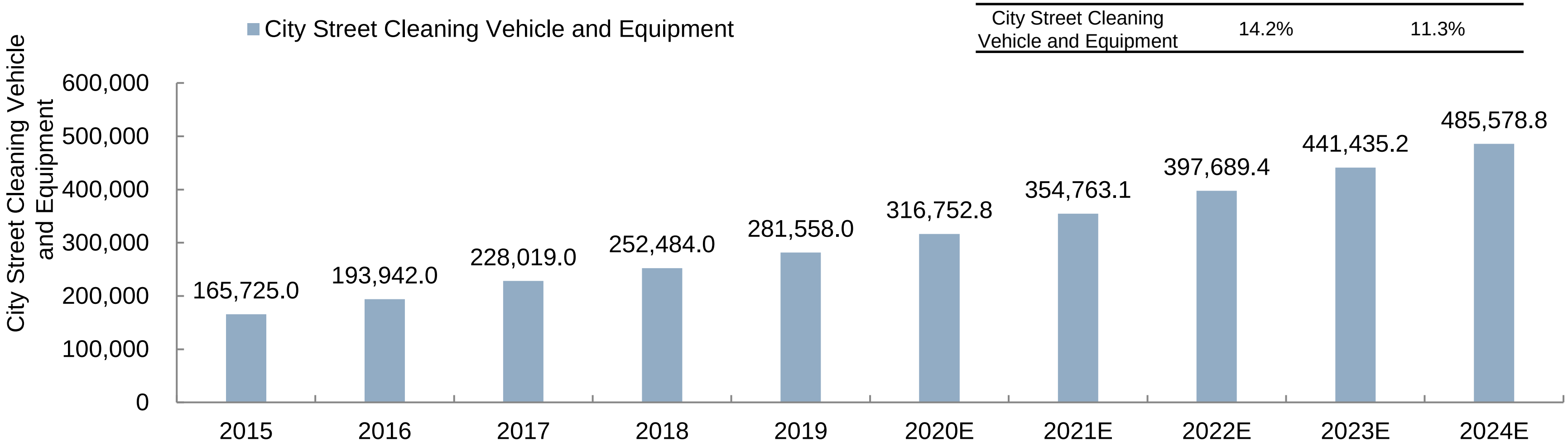
Macro Economy Overview in the PRC

The Volume of City Street Cleaning Vehicle and Equipment in the PRC

- Along with the increase in city street cleaning area in the PRC, the number of street cleaning vehicle and equipment has increased from 165,725.0 in 2015 to 281,558.0 at the end of 2019, representing a CAGR of 14.2%.
- From 2015 to 2017, the volume of street cleaning vehicle and equipment has increased at a larger annual growth rate of approximately 17%, due to vehicle and equipment renewal and increasing demand for street cleaning and sweeping. The number of vehicle and equipment is predictable to increase from 316,752.8 in 2020 to 485,578.8 in 2024 at a much smaller CAGR of 11.3%, considering the growth rate of street cleaning area in urban cities to be increasing at a descending rate.

The Volume of City Street Cleaning Vehicle and Equipment in the PRC (2015 - 2024E)

CAGR	2015-2019	2020E-2024E
City Street Cleaning Vehicle and Equipment	14.2%	11.3%



Source: National Bureau of Statistics of the PRC, Frost & Sullivan

Macro Economy Overview in the PRC

Policies and Regulations

Name (EN)	Name (CN)	Issue Year	Issue Dept.	Descriptions
Guiding Opinions on Deepening the Reform of the Administrative Management System of Economically Developed Towns	关于深入推进经济发达镇行政管理体制改革的指导意见	2016/12	The General Office of the CPC Central Committee and the General Office of the State Council	The regulation is released to strengthen the guidance for the reform of the administrative management system of economically developed towns. For towns with large populations and strong economic power, the deployment requirements for accelerating the promotion of new Urbanisation can be given to towns with large populations and strong economic strength.
Further Stimulating the Vitality of Effective Private Investment Guiding Opinions on Promoting Sustainable and Healthy Economic Development	办公厅关于进一步激发民间有效投资活力促进经济持续健康发展的指导意见	2017/09	The State Council of China	The regulation is established to improve the business environment, increase market openness in monopoly industries, further stimulate effective private investment vitality, and promote sustained and healthy economic development.
Promotion of Innovation, National Economic and Technological Development Zones Opinions on Creating a New Highland for Reform and Opening Up	关于推进国家级经济技术开发区创新提升打造改革开放新高地的意见	2019/05	The State Council of China	The regulation is established with a focus on building a new system for open development of national-level economic and technological development zones. It aims to develop a higher-level open economy, accelerate the formation of new international competitive advantages, industrial and institutional advantages, and drive regional economies development.
Opinions on Accelerating the Improvement of the Socialist Market Economic System in the New Era	关于新时代加快完善社会主义市场经济体制的意见	2020/05	Central Committee of the Communist Party of China	The regulation is released to promote economic system reformation and other system reformation at a higher starting point, higher level, and higher goals, and build a more systematic, complete, mature and stereotyped high-level socialist market economic system.

Source: National People's Congress Standing Committee, The State Council of China, Ministry of Housing and Urban-Rural Development of China, Frost & Sullivan

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3 **Environmental Cleaning and Maintenance Service Market Analysis in the PRC**

4 Competitive Landscape of Environmental Cleaning and Maintenance Service Market in the PRC

5 Appendix

Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Definition and Classification

- **Environmental Cleaning and Maintenance Service** is a type of service that encompasses effective cleaning, sanitation, and maintenance through the use of water, detergent, equipment, and any other resources to improve the overall hygiene level of the environment. In this report, environmental cleaning and maintenance service represents cleaning and maintenance in various commercial, domestic, and environmental contexts, and it can be categorized into three major types based on working scenario, namely property cleaning, public space cleaning and other cleaning. The public space cleaning category mainly includes public hygienic cleaning service, which is referred as “environmental hygiene service” in some other industry reports. Each working scenario contains three types or fields of service, which are general cleaning, waste management, and other services. General cleaning is referred to cleaning and maintenance of area or surface; waste management represents waste collection, disposal and transportation; other service represents any extended service that is exclusive from the previous two types. Service provided by the Group include general cleaning and waste management of property and public space, and other cleaning service such as pest control. With the capability of providing more than one type of service in each working scenario, the Group is qualified to offer comprehensive service solution.

Types of Services by Scenario

Property Cleaning | **Public Space Cleaning** | **Other Cleaning**

Property Cleaning is usually referred as cleaning service performed in building and any other areas, such as parking lot, garden and public areas, belonging to the facilities. Property refers to integrated property categories including residential, commercial, industrial, government-related property, shopping malls, schools, hospitals, airports, and others. Service provided to residential properties excludes household cleaning, as they are usually supplied by individuals or third-party labour providers. Typical types of cleaning services provided include:

- General cleaning and sanitation (cleaning of floor and carpet, escalator and staircase, window exterior wall, parking lot and other open area, etc.,)
- Waste management (waste collected and disposed in property area)
- Other services (landscaping service, one-off post-construction cleaning services, car parking cleaning, etc.,)

Public Space Cleaning represents cleaning of any urban and rural area except for property that is accessible by the public, such as street, public squares, parks and beaches. In this scenario, typical types of services include:

- General Cleaning and sanitation (street sweeping and watering, cleaning of public area and parks, maintenance and cleaning of cleaning and maintenance facilities such as public toilets, garbage bins)
- Waste disposal and transportation (waste collection and disposal in public space, cleaning of garbage transfer stations)
- Other services (landscaping service, unused poster removal, car parking cleaning)

Other Cleaning includes cleaning services provided in area excluding property or public space.

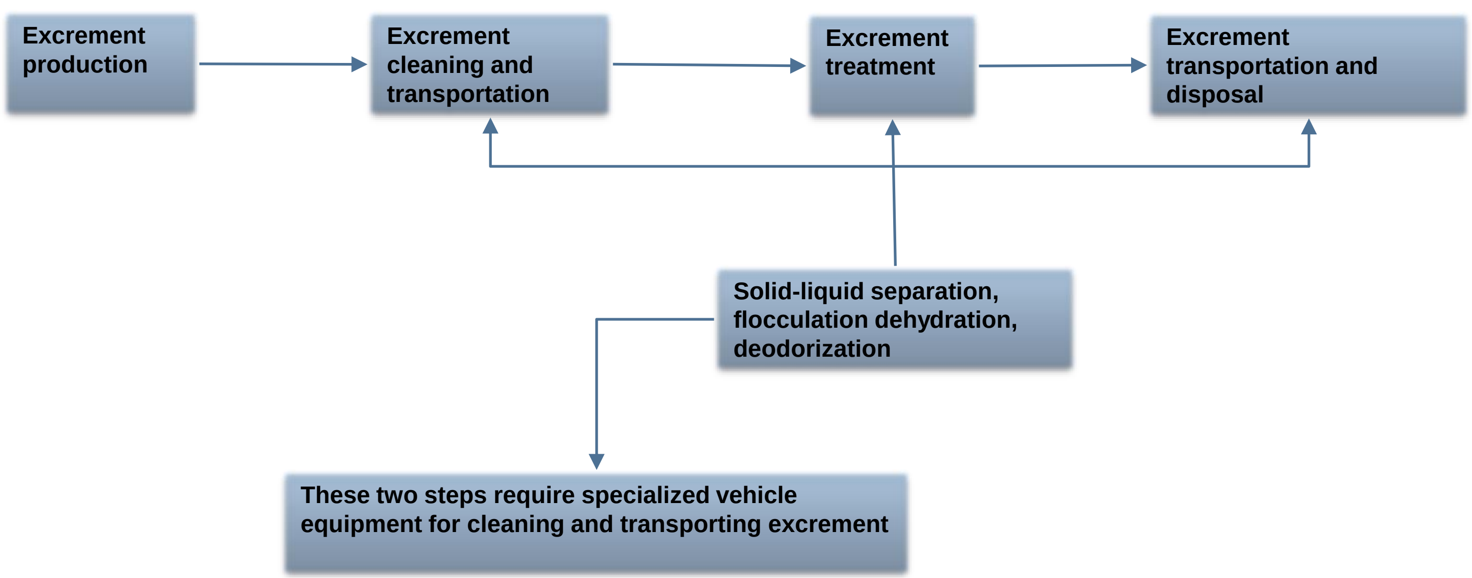
- General cleaning and sanitation (Cleaning and maintenance of public facility and utility that is not accessible for the public, water cleaning and management service such as rivers, surface cleaning, confined space cleaning)
- Waste collection and transportation (constructional waste cleaning, waste incineration)
- Value-added and extended service (municipal pipes cleaning, one-off road construction and maintenance, properties’ cistern cleaning, and construction cleaning, and properties’ cistern cleaning)
- Other service (animal corpse disposal, pest control and fumigation)

Source: Frost & Sullivan

Excrement Treatment Process

- Excrement cleaning and transportation is categorized as a type of extended services provided in addition to public space cleaning service. The process of excrement treatment is as follows: solid-liquid separation, flocculation dehydration, deodorization. The first step is solid-liquid separation. After this step, a large number of solids are removed, which are packaged and sent to the landfill or incineration treatment. Then the rest is the fecal liquid after solid-liquid separation. The fecal liquid still contains some solids. After flocculation dehydration, the solids are further separated, and the dehydrated fecal residue is sent to the landfill or purchased by organic fertilizer manufacturers. Finally, the remaining filtrate is combined with urban domestic sewage and discharged after reaching the standard.

Excrement treatment process

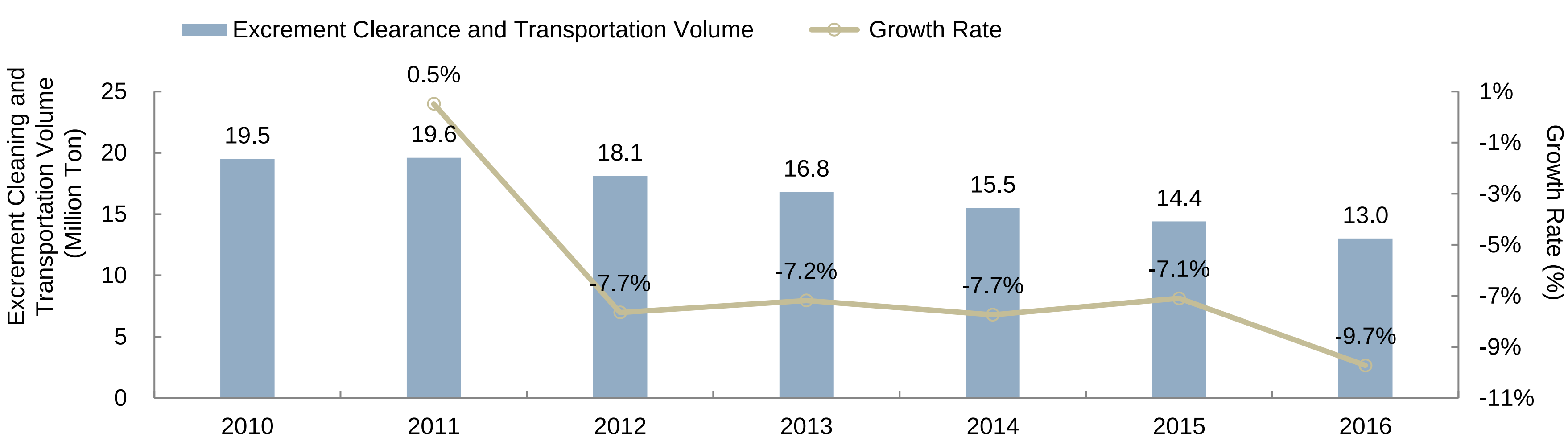


Source: Frost & Sullivan

Excrement Cleaning and Transportation Volume

- In recent years, with the improvement of urban pipe network, the amount of excrement cleaning and transportation is decreasing year by year. At present, the main way to deal with excrement in China is to combine septic tank with sewage treatment plant, which is also known as secondary treatment process.
- Specialized vehicle equipment is required before and after the excrement treatment process. Vehicles used for excrement cleaning and transportation is procured as part of the public space cleaning vehicles, along with all other types of vehicle, such as waste disposal vehicle and street cleaning vehicles. For many third party service providers, they tend to procure vehicles necessarily required for performing public space cleaning service instead of leasing, in order to gain advantage when undergoing tender process of PPP projects released by government agencies. Whether or not a service provider has obtained the capability of providing high quality service can somewhat be reflected through procurement of vehicles. At the current stage, public space vehicle costs account for a range of approximately 5%- 20% of total costs. For instance, EIT group, one of the key participants in the PRC's environmental cleaning and maintenance service market, has allocated 11.74% of fixed expenses to the usage of public space vehicles, providing that labour expenses still serves as the predominant cost.

The PRC Excrement Cleaning and Transportation Volume



Source: State Statistical Bureau, *Frost & Sullivan*

Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Value Chain Analysis

Upstream	Midstream	Downstream
 **Labours, Equipment and Machinery Suppliers**	 **Environmental Cleaning and Maintenance Service Provider**	 **End Users Inquiring Environmental Cleaning and Maintenance Services**
• In the upstream market, equipment, machinery and labour suppliers are key participants who provide resources to the service provider in the midstream market. The equipment, machinery, and labour used account for a significant proportion of service costs. The most commonly used vehicles in the cleaning of public facilities such as streets, lanes, parks, common areas, public toilet cleaning and sanitizing include garbage collection vehicles and waste suction vehicles. It is common market practice that labours are supplied to midstream service providers by subcontractors providing human resource management solution or directly from qualified workers in labour market.	• Environmental cleaning and maintenance service providers are mainly responsible for providing cleaning services as third-party provider to parties in the downstream market. Service providers can choose to employ staff through directly hiring from labour market, obtaining subcontractors from agencies, or outsourcing labour dispatch from the upstream market. It is common practice to outsource from labour dispatch companies given labour shortage and reduction in cost. With the equipment and machinery from upstream suppliers, they will train staff to properly perform cleaning tasks to meet downstream market requirements.	• The downstream market mainly includes end-users inquiring for environmental cleaning and maintenance service, including governmental department, and owners, operators, and management groups of residential and commercial properties. It is common application for customers with the need to outsource environmental cleaning and maintenance service to third party service-providing companies with working expertise, labour, equipment and other resources.

Source: Frost & Sullivan

Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Business Model

Description of Business Model

- The target customers of environmental cleaning and maintenance service are government institutions, owner, tenant, and property management groups who demand for service. They choose to outsource service to third-party service providers for reduced operational cost, professional service, and experienced worker with various service expertise.
- Large-scale projects of property cleaning or public cleaning service is defined as those that are inquired by local government agencies in the PRC often go through tender or quotation process. They demand for general cleaning service, waste management service or other extended service of property and public space cleaning. Other customers, such as property owners, tenants, or property management groups, may seek for environmental cleaning and maintenance service project of smaller scale from service providers through referral, third-party agency website or company website. For these customers, service provided usually includes general cleaning of property building, garden or parking lot, waste management (including waste collection and disposal within property area), and other types of service.
- For large scale projects inquired through tender or quotation process, companies may also provide customized and value-added components upon client's requirements, such as cleaning of waste disposal and transportation center in addition to regular waste management service. A bundle price is eventually determined with cost-based approach. Bundle price is the more commonly applied in environmental cleaning and maintenance service market than commission-based price when providing comprehensive service upon greatly customized requirements. It satisfies the need for ease of operational management, cost reduction, and fair and transparent pricing.
- With the cost-based approach, most companies adjust the price of specific service by considering a variety factors including (i) pricing of previous project and market price of similar projects; ii) cost, allocation and usage of resources, such as manpower, equipment, vehicles; iii) local government policies, such as minimum wage; iv) the number of customized components for a given project; v) project scope, schedule and timeline; vi) associated risk and mitigation plan; vii) government taxation; vii) people's standard of living in different geographical location. As a result, revenues are generated from the difference between service prices addressed on contract and procurement prices of different resources, such as products, equipment and labour, along with other fixed costs.

Business Process of Participation in Tender/ Quotation

Receipt of tender/ quotation invitation or participation in open tender → **Assessment of tender requirement and preparation of quotation** → **Submission of required documents and quotation** → **Evaluation and releasement of tender result** → **Service project Initiation** → **Delivery of service**

Source: Frost & Sullivan

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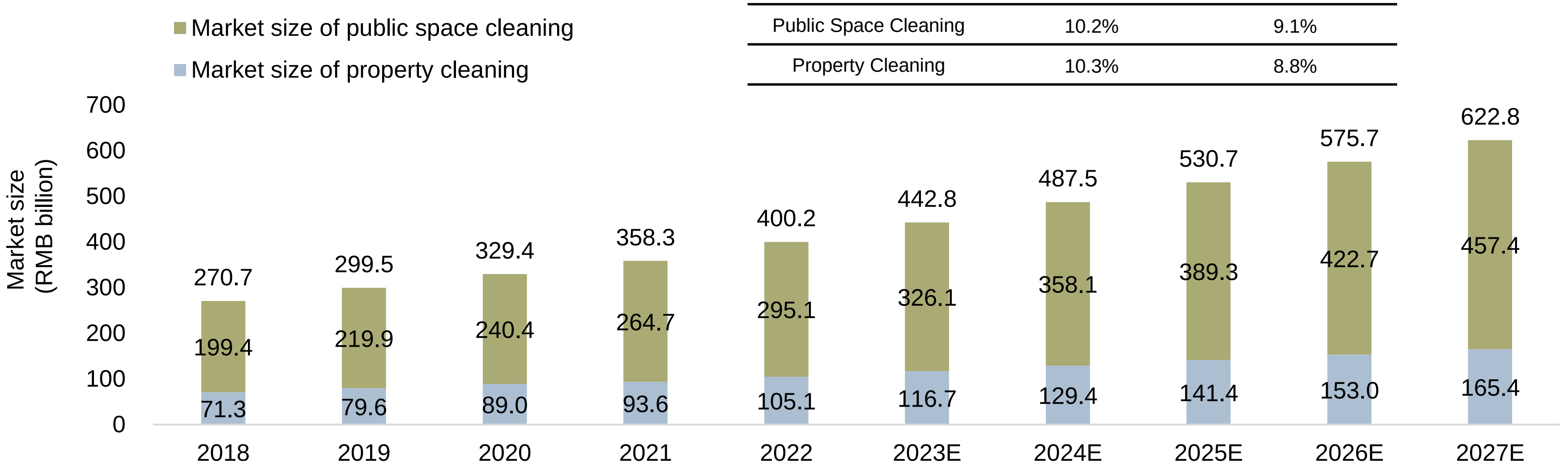
Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Market Size of Property and Public Space Cleaning Combined

- Companies operate within the aforementioned market sector property cleaning, but also providing service of public space cleaning and other types of services. Strong past performance has been observed in both markets and the future growth is showing great promise.
- The environmental cleaning and maintenance market in the PRC mainly comprise and is largely dominated by property cleaning and public space cleaning sectors. The market size of these two sectors combined is expected to reach from RMB 270.7 billion in 2018 to RMB 622.8 billion by 2027. The market size of property cleaning is expected to increase significantly from RMB 71.3 billion from 2018 to RMB 165.4 billion in 2027.
- The CAGR of the market size of property cleaning from 2018 to 2022 is 10.3%, indicating an overall stable growth, and the growth is expected to sustain with a CAGR from 2023 to 2027 to be 8.8%. The CAGR of the combined market size from 2018 to 2022 is 10.3%, with a CAGR from 2023 to 2027 of 8.9% in the predicted period.

Market Size of Property and Public Space Cleaning Combined (2018 – 2027E)

CAGR	2018-2022	2023E-2027E
Total market size	10.3%	8.9%
Public Space Cleaning	10.2%	9.1%
Property Cleaning	10.3%	8.8%



Note: The market size of the other cleaning sector, including services such as river and water surface cleaning, animal corpse disposal, pest control and fumigation, one-off post construction cleaning, and etc., is excluded for being relatively small in size.

Source: Frost & Sullivan

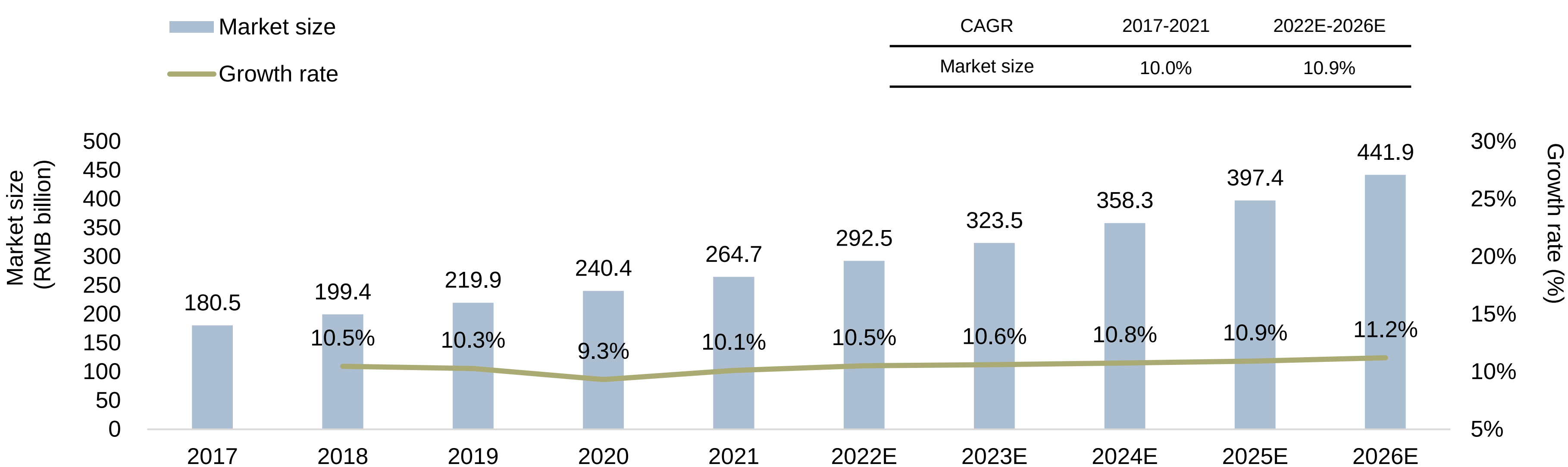
Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Market Size of Public Space Cleaning

- The market demand for public space cleaning in PRC is predominantly driven by the need of public services and increasing consciousness toward public health. After the Third Plenary Session of the 18th CPC Central Committee, procurement of public services is widely encouraged, and public-private partnership models have been primarily promoted in more aspects of public product and public service fields, which includes the public space cleaning services. The size of the public space cleaning sector recorded an increase with a CAGR of 10.0% from RMB 180.5 billion in 2017 to RMB 264.7 billion in 2021.
- The PRC's government is continuously endorsing the development of public-private partnership model, helping the market growth of public space cleaning sector over the long term. The COVID-19 outbreak has also presented the PRC government with challenges in public health, consequently leading to the need to enhance the current suppliers' capabilities to ensure public health and safety. The market size of public cleaning sector in the PRC is forecasted to reach RMB 441.9 billion in 2026, representing a CAGR of 10.9% from 2022 to 2026. In the future, although there will be less capital investment in new property constructions, the increasing industrial standard toward property cleaning service quality driven by growing public health awareness will continuously contribute to the growth in property cleaning sector.

Market Size of Public Space Cleaning (2017 – 2026E)

CAGR	2017-2021	2022E-2026E
Market size	10.0%	10.9%



Note: Estimation includes primary service categories such as street cleaning, public toilet cleaning, waste collection and disposal.

Source: Frost & Sullivan

Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Market Size of Property Cleaning

- Due to the increasingly complicated cleaning requirements, property management groups, tenants, and owners will outsource the cleaning service to the professional cleaning services providers in order to reduce their overall operation costs. Although there were mild fluctuations in the real estate market over the last five years, the volume of floor space completed per annual construction of property building in the PRC remains robust. This serves as a strong market drive for the development and growth of property cleaning sector, and the market size of property cleaning sector soared from RMB 63.7 billion in 2017 to RMB 93.6 billion in 2021, at a CAGR of 10.1%.
- With the increasing financial support from the PRC's government, the growth of real estate market, including both residential and commercial market will be slowing down in terms of investment, sales, and new constructions. It is industrial phenomenon that commercial property cleaning is a predominant sector in PRC's property cleaning market; other sub-sectors are categorized as non-commercial property cleaning, including residential, constructional and other properties. Following the outbreak of COVID-19, however, the rising public awareness will not only boost the demand for cleaning service, but also requiring higher standards and quality from the environmental cleaning and maintenance service providers, offsetting negative impact from a slowing property market. The size of the property cleaning sector services market in the PRC is projected to grow at a CAGR of 6.9% from 2022 to 2026, reaching RMB 137.5 billion by 2026.

Market Size of Property Cleaning (2017 – 2026E)

CAGR	2017-2021	2022E-2026E
Total market size	10.1%	6.9%
Commercial Property Cleaning	3.6%	8.0%
Non-commercial Property Cleaning	16.8%	6.0%

Note: Estimation includes primary service categories such as general cleaning of residential, commercial, and industrial properties

Source: Frost & Sullivan

UPDATED

Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Market Size of Property and Public Space Cleaning Combined in Guangdong Province

- The market size of property and public space cleaning sectors in Guangdong province increased from RMB 32.2 billion in 2018 to RMB 53.5 billion in 2022, representing a CAGR of 13.6%. The surge in the property cleaning sector was primarily caused by the robust growth in real estate market in Guangdong province, which was driven by the fast-growing local economy, generating enormous demand for related cleaning services.
- Growth of the combined market size is expected to keep its momentum in the future, arising from RMB 60.1 billion in 2023 to RMB 95.6 billion with a CAGR of 12.3%. The market size of public space cleaning sector will still take the majority of the market share, as the expenditure on the public service procurement by Guangdong's government stays high. In comparison, the property cleaning sector in Guangdong province has experienced a more significant growth from 2018 to 2022 with a CAGR of 10.7%, which is anticipated to sustain its growth momentum at a CAGR of 12.8% from 2023 to 2027, which is predicted to experience growth at a increasing speed.

Market Size of Property and Public Space Cleaning Combined in Guangdong Province (2018 – 2027E)

CAGR	2018-2022	2023E-2027E
Total market size	13.6%	12.3%
Public Space Cleaning	14.2%	12.2%
Property Cleaning	10.7%	12.8%

Source: Frost & Sullivan

Environmental Cleaning and Maintenance Service Market Analysis in the PRC

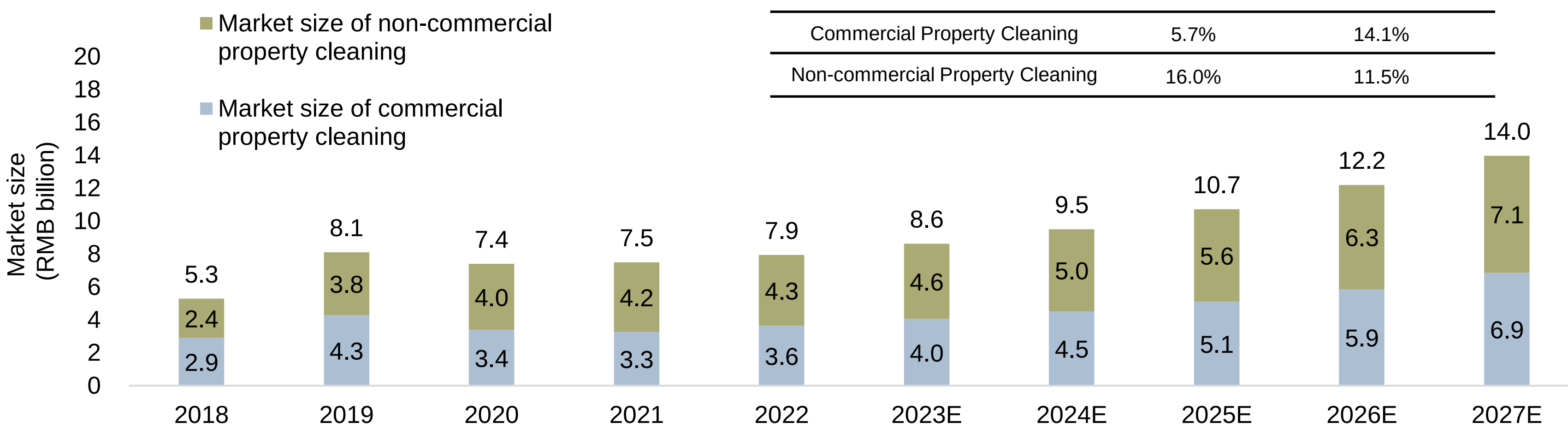
Market Size of Property Cleaning in Guangdong Province

- Being one of the most prosperous area in the PRC, Guangdong province has cemented its position as the country's largest provincial economy. The positive economic atmosphere in Guangdong is helping the fast development of the real estate market, hence continuously boosting the market size of property cleaning sector. The market experienced an increase from RMB 5.3 billion to RMB 7.9 billion from 2018 to 2022, representing a CAGR of 10.7%.

- The growth of the real estate markets in major cities in Guangdong is expected to be stable in the future due to the PRC government's financial regulation. As the PRC's banking and insurance regulators started restricting the bank loans that flow into the property market, the growth rate was immediately regulated and stabilized. The overall steady growth in real estate market continuously creates demand for property cleaning services. The market size of property cleaning sector in Guangdong province is expected to rise from RMB 8.6 to RMB 14.0 billion with a CAGR of 12.8% from 2023 to 2027, due to the rapid growth of floor space of commercial buildings sold in Guangdong province. The market size of commercial property cleaning is predicted to increase from RMB 4.0 billion in 2023 to RMB 6.9 billion in 2027, with a CAGR of 14.1%.

Market Size of Property Cleaning in Guangdong Province (2018 – 2027E)

CAGR	2018-2022	2023E-2027E
Total market size	10.7%	12.8%
Commercial Property Cleaning	5.7%	14.1%
Non-commercial Property Cleaning	16.0%	11.5%



Note: Estimation includes primary service categories such as general cleaning of residential, commercial, and industrial properties

Source: Frost & Sullivan

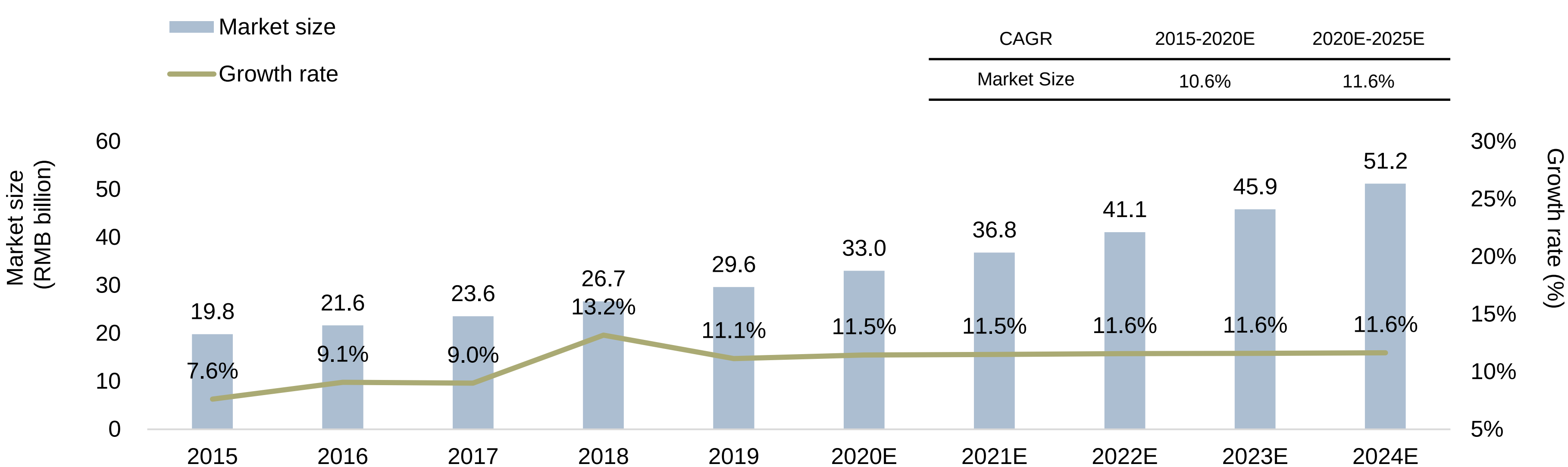
Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Market Size of Public Space Cleaning in Guangdong Province

- Driven by the rapidly growing Urbanisation rate and standards of living in Guangdong province, the market size of public space cleaning in Guangdong has seen strong growth from 2015 to 2019. It increased from RMB 19.8 billion in 2015 to RMB 29.6 billion in 2019, representing a CAGR of 10.6%.
- Considering a stable economic growth is recorded in this area, the demand for the public cleaning services is projected to increase in the future. The major driving factors include the local government’s continuous efforts on the PPP development as the rising Urbanisation rate increasing the complexity for such services. The market size is forecasted to increase with a CAGR of 11.6% from RMB 33.0 billion in 2020 to RMB 51.2 billion in 2024.

Market Size of Public Space Cleaning in Guangdong Province (2015 – 2024E)

CAGR	2015-2020E	2020E-2025E
Market Size	10.6%	11.6%



Note: Estimation includes primary service categories including street cleaning, public toilet cleaning, waste collection and disposal.

Source: Frost & Sullivan

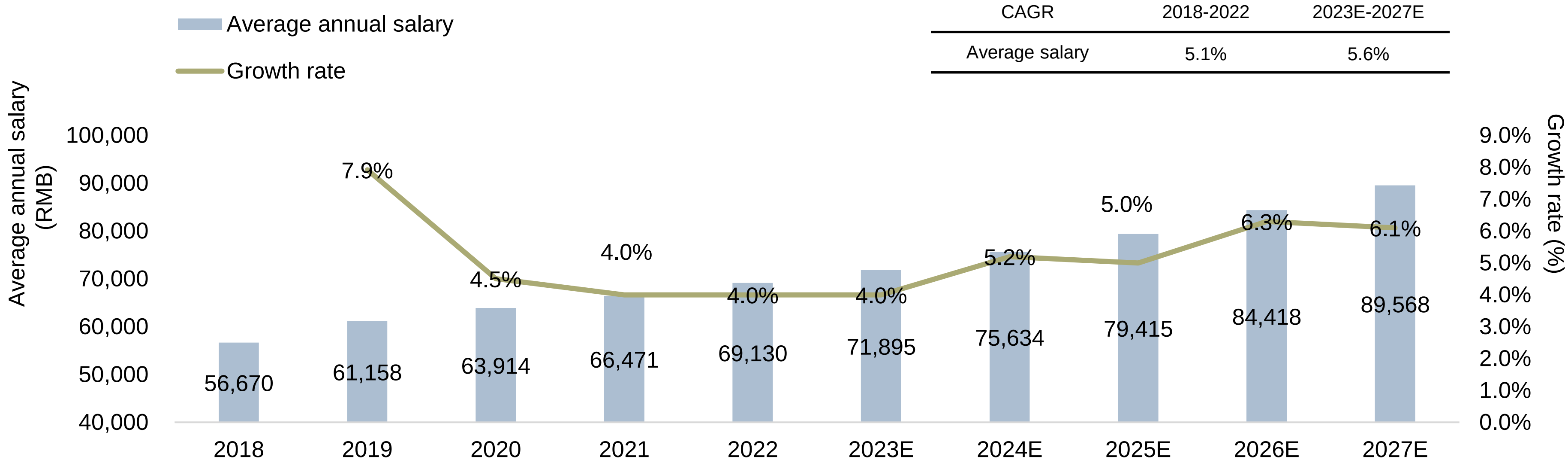
Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Average Annual Salary in Environmental Cleaning and Maintenance Industry in the PRC

- Since the environmental cleaning and maintenance services in the PRC are characterised by low-technology and labour-intensive in nature, the labour cost constitutes the major portion of the overall cost. The average annual salary stays at a consistent level for labours working in various environmental cleaning and maintenance scenarios. As a result of steady economic growth and increasing standards of living, the average annual salary for workers in the PRC's environment cleaning and maintenance service market increased from RMB 56,670 in 2018 to RMB 69,130 in 2022 at a CAGR of 5.1% from 2018 to 2022. The identical reduction in average salary in 2019 is mainly caused by the declining demand of the downstream market, which is greatly affected by the performance of real estate market.
- The growth rate of the PRC's economy has shown quick recovery after the COVID-19 pandemic. As economy rebounds, the average annual salary is expected to reach RMB 89,568 in 2027 at a CAGR of 5.6%.

Average Annual Salary in Environmental Cleaning and Maintenance Industry (2018 – 2027E)

CAGR	2018-2022	2023E-2027E
Average salary	5.1%	5.6%



Note: Data is acquired under "Water conservancy, environment and public facilities management industry" category, which includes the workers from the environmental cleaning and maintenance industry

Source: National Bureau of Statistics of the PRC, Frost & Sullivan

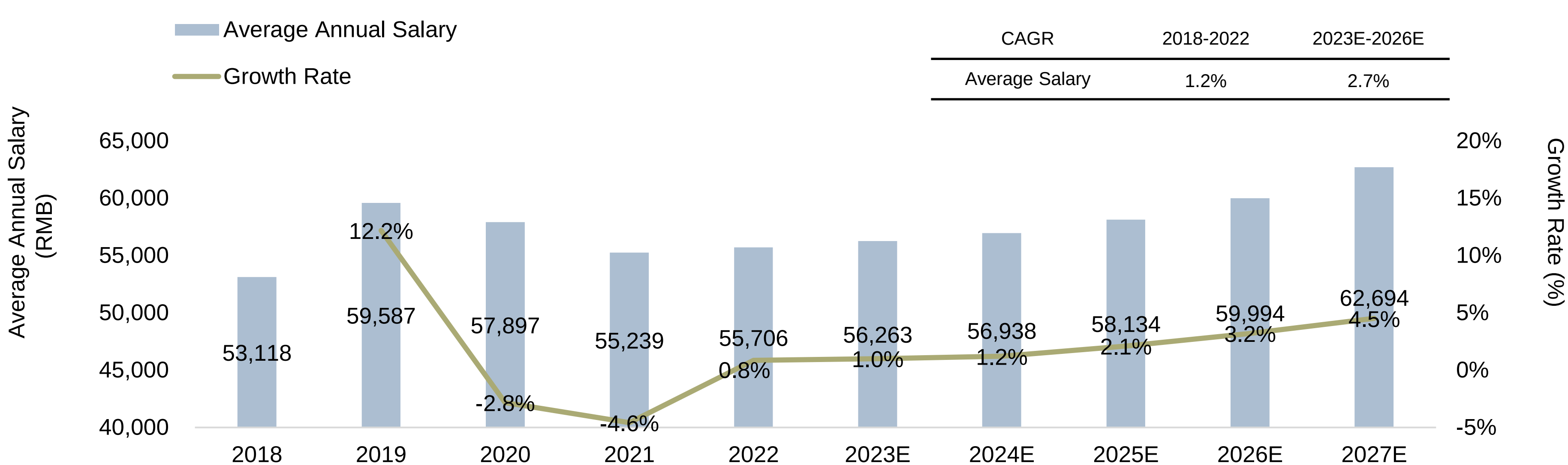
UPDATED

Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Average Annual Salary in Environmental Cleaning and Maintenance Industry in Guangdong Province

- Compared to other areas, the cost structure for environmental cleaning and maintenance industry stays the same as the labour cost still being the major part of the overall operation cost in Guangdong Province. Along with the Guangdong's rapidly growing economy, the average annual salary has recorded an increase from RMB 53,118 to RMB 55,706 with a CAGR of 1.2% from 2018 to 2022. It is noteworthy that the average annual salary in Guangdong Province experienced a huge increase in 2017 since Guangdong government deepened the supply-side structural reform and boosted the performance of service industry significantly. As Chinese government tightened the bank loan for the real estate market in 2018, which was a major portion of Guangdong's economy, the salary of related workers was negatively affected.
- In the future, Guangdong's economic development is expected to keep its momentum. The average annual salary is forecasted to continue increasing at a CAGR of 2.7%, increasing from RMB 56,263 in 2022 to RMB 62,694 by 2027. Environmental cleaning and maintenance service providers in Guangdong province will also need to increase the mechanization rate in order to offset the rising labour costs.

Average Annual Salary in Environmental Cleaning and Maintenance Industry in Guangdong Province (2018 – 2027E)



CAGR	2018-2022	2023E-2026E
Average Salary	1.2%	2.7%

Note: data is acquired under "Water conservancy, environment and public facilities management industry" category, which includes the workers from the environmental cleaning and maintenance industry

Source: National Bureau of Statistics of the PRC, Frost & Sullivan

Market Drivers

➢ Urbanisation Enabling Market Growth

With the gradual improvement of national urbanisation level, the corresponding area of urban development is increasing rapidly in recent years. As a result, urbanisation construction, infrastructure, and urban network construction are gradually enhanced, and have further released a greater amount of residential and commercial property cleaning, city street cleaning, waste transportation and management, public facility and utility cleaning, as well as other urban area demanding for environmental cleaning and maintenance service. To meet the growing demand, a wide variety of service expertise and Specialisation is required to perform all types of environmental cleaning and maintenance work. Thus, majority of property owners and government agencies choose to outsource cleaning services to companies with a well-established industrial chain and worker expertise, which further lead to the demand for growth of environmental cleaning and maintenance service providers.

➢ Growing Demand for Environmental Cleaning and Maintenance Services in the Society

Environmental cleaning and maintenance service serves an essential part of public health and cleaning and maintenance condition. As the number of residential, commercial and all other type of properties have been growing in recent years, service receivers including large property management groups and government agencies in China have released numerous environmental cleaning and maintenance projects. As those projects usually hold a high standard in working expertise and service quality, large property management groups and the PRC government agencies will choose to outsource service to third party companies, who are capable of completing those projects with greater efficiency at economical cost. In the government sector, the role of government agency is not only service receiver during the process of service inquiry, but also serves the purpose of supervision. The increasing demand for environmental cleaning and maintenance service from the society has been contributing to the growth of environmental cleaning and maintenance service market as well as business process standardization of service provided.

➢ Rising Complexity and Requirements for Cleaning Service

With the increasing standard of living and growing property market, people are holding higher expectation for environmental cleaning and maintenance. Since most of them inquire environmental cleaning and maintenance service from third party service providers, the increasing requirement leads to the growth of environmental cleaning and maintenance industry. Environmental cleaning and maintenance service providers continue to enhance their service coverage and quality in order to provide clients with more value-added services. As customers often require more than one type of the environmental cleaning and maintenance services, the types and coverage of cleaning services will extend in the market. For instance, surface cleaning and unused advertising posters removal service can be delivered as an extension of street sweeping, as identical tasks are performed under the same working scenario with the occupation of different equipment. Moreover, the ability in offering a comprehensive range of environmental cleaning and maintenance services could save customers' time and cost from engaging different services providers.

Source: Frost & Sullivan

Market Trend

Increasing Awareness toward Environmental Cleaning and Maintenance

- Along with the increasing per capita annual disposable income nationwide, many people has experienced a higher standard of living. As people are seeking for a healthier lifestyle due to the rising affordability, they obtain greater awareness toward the overall level of environmental cleaning and maintenance in cities, towns, communities, and households. Additionally, it is an industry norm for the PRC's society to outsource service to third-party service provider for general cleaning, waste management and other types of service. The overall demand for environmental cleaning and maintenance service will increase along with the rising awareness and affordability. Meanwhile, criteria such as service providers' branding, reputation and tracking record will become more essential for clients to choose environmental cleaning and maintenance service providers.

Gradual Mechanization and Digitalisation of Environmental Cleaning and Maintenance Service Market

- Majority of environmental cleaning and maintenance service tasks are performed by human labour. Numerous cleaning works are simple and highly repetitive, whereas some tasks are associated with high risk, such as interior wall and window cleaning of residential and commercial buildings. Therefore, mechanisation in the environmental cleaning and maintenance service industry is imperative while more technologically advanced equipment and street cleaning vehicles are introduced to the marketplace. As a supplement to human workers, cleaning robots will be adapted to a larger scale, as in the next five years, they eliminate partial need for workers to perform tasks such as exterior wall and window cleaning. Furthermore, information system is developed and implemented to obtain real-time data of machine and vehicle to improve operational efficiency and service quality. The adaption of related technology application has enabled the gradual market trend of digitalization.

Integration of Service Solution

- It is common application in the environmental cleaning and maintenance service industry for customers to outsource service to a third party service provider. This has lead to rising standard as well as intensive market competition among service-providing companies. In order to gain competitive advantage, a growing number of companies are developing and working to provide integrated environmental cleaning and maintenance service solution. According to individual client cases, service providers will provide a comprehensive and optimal cleaning solution, including the most efficient and optimal bundle of cleaning tools and equipment based on floor materials, area sizes, and cleaning standards. Furthermore, some value-added services are additionally supplied, such as one-off road construction and maintenance, which helps service providers to spread out their power of influence in the current supply chain.

Source: Frost & Sullivan

Opportunities

- **Trend in Technological Advancement**

As the overall level of technological advancement is improving in today's society, numerous applications of information system are applied to improve efficiency and achieve business process automation across industries. This trend serves an opportunity for the informatisation and intelligence of the environmental cleaning and maintenance service. Informatisation and intelligence of environmental cleaning and maintenance will take place with the use of information technology including network, communication and control technologies. They can be used to manage daily operation, such as tracking attendance and working hours of staff, along with fleet management system to monitor activities of cleaning vehicles.

- **Rising Standard of Environmental Cleaning and Maintenance Service**

The increase in overall standard of living in recent years has contributed to greater public awareness toward hygienic environment. As a result, the rising standard for community's environmental cleaning and maintenance level has lead to growing amount of cleaning and maintenance projects. This is mainly due to the lack of professional experience, expertise and capability for individual property management companies and government agencies to meet the rising hygienic standard. For instance, street cleaning in urban area, along with cleaning activity and waste reduction is conducted on a more frequent basis in crowded places such as property buildings, shopping mall, airports, schools, etc. Further, it also serves as an opportunity for large companies primarily providing property cleaning services to capture the increasing demand in public space cleaning, through purchasing cleaning vehicles to initially meet the standardized tendering requirements released by government agencies.

- **Continuous Promotion of Waste Management**

According to related government policy, cities at prefecture-level and above nationwide will implement a domestic waste sorting and processing system by 2025. The government agencies release most of the waste management projects to third party environmental cleaning and maintenance service company, along with street cleaning and public utility management. As a result, the waste disposal, transportation, and management sector under public cleaning of environmental cleaning and maintenance service industry will be facing an opportunity of future growth, and the market will develop a mature industry chain for waste disposal management.

Source: Frost & Sullivan

Challenges

➢ **Labour Shortage**

Environmental cleaning and maintenance service industry in China is highly labour intensive, and labour costs account for a greater proportion of expenses apart from the cost of equipment and machinery. Meanwhile, environmental cleaning and maintenance workers are aging rapidly with an average age of more than 40 years old. However, the employee turnover rate is relatively high in the industry due to long working hours and low hourly wages. Due to factors such as repetitive and heavy workload, long working hours and lower pay associated with environmental cleaning and maintenance tasks, it is difficult for the industry to attract new entrants. At the current stage, technological advancement is not sufficient to overcome the shortage in labour supply. As a result, although the environmental cleaning and maintenance market is rapidly growing with increasing number of demands from end users, the overall supply of labour does not meet the growing demand. Furthermore, the high turnover rate creates challenge to the retaining and training of workers. Labour shortage will continue to be a problem faced by the industry, unless technologically advanced application is adapted to a greater extent as supplement to human labour, or if there are increasing amount of labour supply. Given the labour shortage, it is common practice to outsource the hiring process to human resource management agencies and to hire retired workers with working experience and expertise, which will reduce cost at the same time.

➢ **Increasing Operating Costs**

Apart from labour costs, other indirect costs such as management and administration cost, have increased in environmental cleaning and maintenance services China, due to the nature of the industry. Given the fact that projects undertaken by large scale market players are typically sizable which involves substantial labour force and physical cleaning work, occurrence of bodily injury and accidental damages are not uncommon in the industry. With the rising number of occupational accidents, increasing insurance premium is seen in the industry. Such costs may continue to increase due to pressures faced by services providers to implement safety, environmental and health enhancements to maintain a safe work environment, to keep accident rate low, and to improve welfare requirements of workers. The rising indirect costs also come as a challenge to the environmental cleaning and maintenance services industry in China. With abundant financial resources and economy of scale and more standardized operational measures, the large-scale service providers are likely to outperform the small-scale peer, capture the growth and expand the market shares.

Source: Frost & Sullivan

Impact of COVID-19

- **Impact of COVID-19**

The outbreak of COVID-19 in 2020 has a gradual and continuous impact on the environmental cleaning and maintenance service market. Due to the outbreak of COVID-19, the PRC government has established related national policies to reinforce and standardize large-scale cleaning and sanitizing activities to improve cleaning and maintenance condition at community level. Providing a clean and hygienic living environment has become an essential part in pandemic control. This will result in society's rising awareness for public and residential cleaning and maintenance condition.

It is provided with greater risk at indoor locations with greater population density, such as elevators, surfaces and toilets in large property buildings, airports, train station, recreational center, etc. Thus, cleaning, sanitation, and maintenance services are performed on a more frequent basis. Furthermore, higher standard will be applied to evaluating and monitoring cleaning activities. Without strong capability and expertise for carrying out professional service to meet the rising hygiene standard, there will be a growing demand for government agencies and property management groups to further outsource related services. Therefore, despite the adverse impact of COVID-19 pandemic on China's economy, the environmental cleaning and maintenance service providers are beneficiaries of this trend. The increasing demand for service from the downstream market will serve as an opportunity for the environmental cleaning and maintenance service industry.

The growing demand is anticipated to sustain even at the post-pandemic stage, since most service receivers are lack of professional workers, service expertise and relative resources. Providing with the society's hygienic need for both personal space within every household as well as for public space, this will further contribute to market growth of environmental cleaning and service.

Source: Frost & Sullivan

Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Policies and Regulations (1/2)

Name (EN)	Name (CN)	Issue Time	Issue Dept.	Descriptions
Regulations on the Implementation of the Government Procurement Law of the People's Republic of China	《中华人民共和国政府采购法实施条例》	2015/01	The State Council of China	The law establishes standard for government procurement to implement source management and result management
Guiding Opinions on Promoting Government and Social Capital Cooperation Models in the Public Service Field	《关于在公共服务领域推广政府和社会资本合作模式的指导意见》	2015/05	Ministry of Finance, Development and Reform Commission, People's Bank of China	The regulations are designed to gradually increase the proportion of the adaption of government and social capital cooperation models, to newly-built public service projects,
Outline of the 13th Five-Year Plan for Housing and Urban-Rural Development	《住房城乡建设事业"十三五"规划纲要》	2016/08	Ministry of Housing and Urban-Rural Development	The regulation comprehensively promotes the treatment of rural domestic garbage, vigorously carry out village environmental improvement, and improve village cleaning system. It encourages waste sorting to be carried out in a comprehensive way according to local conditions, and to improving the statistical indicator system of domestic waste. The regulation also promotes the effective connection between the classification and recycling of domestic waste and the recycling system of renewable resources, and increase the recycling rate.
Implementation Plan for Domestic Waste Classification System	《生活垃圾分类制度实施方案》	2017/03	Development and Reform Commission, Ministry of Housing and Urban-Rural Development	The regulation addresses the establishing of a system of laws, regulations and standards related to garbage classification, and form a reproducible and extendable domestic waste classification model by the end of 2020. In cities where the mandatory classification of domestic waste is implemented, the recycling rate of domestic waste will reach more than 35%.

Source: Frost & Sullivan

Environmental Cleaning and Maintenance Service Market Analysis in the PRC

Policies and Regulations (2/2)

Name (EN)	Name (CN)	Issue Time	Issue Dept.	Descriptions
Notice on Accelerating the Classification of Domestic Waste in Some Key Cities	《关于加快推进部分重点城市生活垃圾分类工作的通知》	2018/01	Ministry of Housing and Urban-Rural Development	The regulation requires 46 key cities to complete the domestic waste classification and treatment system prior to the end of 2020. Before entering the incineration and landfill facilities, the total recycling rate of recyclables and perishable waste will reach more than 35%. Before 2035, 46 key cities will be able to establish a comprehensive municipal solid waste classification system, and waste classification will reach the international advanced level.
Notice on Comprehensively Carrying out Domestic Waste Classification in Cities at Prefecture Level and Above	《关于在全国地级及以上城市全面开展生活垃圾分类工作的通知》	2019/06	Ministry of Housing and Urban-Rural Development	The regulations are designed to officially initiate the classification of domestic waste in cities at prefecture level and above from 2019 on the basis of pilot trials in 46 key cities
Notice on Further Improve on Urban Environmental Sanitation	《关于进一步做好城市环境卫生工作的通知》	2020/03	Ministry of Housing and Urban-Rural Development	The policy encourages the associated departments to perform high quality work in cleaning, disinfection and sterilization, strictly manage the collection and transportation of domestic waste, and steadily promote the classification of domestic waste.

Source: Frost & Sullivan

Agenda

1 Introduction of the Research

2 Macro Economic Overview in the PRC

3 Environmental Cleaning and Maintenance Service Market Analysis in the PRC

4 **Competitive Landscape of Environmental Cleaning and Maintenance Service Market in the PRC**

5 Appendix

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Competition Overview

- For the public space cleaning sector, most of the cleaning services cover large areas of streets and other public areas, making the average contract sum extremely high. It is also an industry norm that the local governments, which are the main clients in this sector, prefer large-scale service providers with good industry recognition. Consequentially, the large-scale environmental service providers could dominate this market and obtained high value contracts, resulting an increasing market concentration rate. Hence the top five market participants, accounting for an aggregated market share of 9.3% and have reached a total revenue of RMB 28,901.6 million, are all primarily working in the public space cleaning sector.
- Compare to the public space cleaning sector, the market of property cleaning sector is much more labour intensive. For that reason, the newcomers of this market are not required to invest heavily in fixed assets, reducing the entry barriers of this market. The small and medium-scale businesses are still able to acquire the contracts with relatively lower rates and higher flexibility compare to large-scale service providers.

Ranking and Market Share of Leading Companies by Revenue in Environmental Cleaning and Maintenance Services (2022)

Rank	Market participant	Estimated revenue in 2022 (RMB million)	Estimated market share in 2022 (%)
1	Beijing Environmental Sanitation Engineering Group Co., Ltd.	12,698.0	4.1
2	EIT Environmental Development Group Co., Ltd.	5,389.9	1.7
3	QiaoYin City Management Co., Ltd.	3,938.1	1.3
4	Fujian Longma Environmental Sanitation Equipment Co., Ltd.	3,546.3	1.1
5	Tus Environmental Science And Technology Development Co., Ltd.	3,329.3	1.1
	Top five market participants	28,901.6	9.3
	Others	281,298.4	90.7
	The Group	594.2	0.1
	Total	358,300	100.0%

Note: (1) The total market size is based on the sum of property cleaning and public space cleaning. (2) Estimated revenue of each company only accounts for the revenue generated from property cleaning and public space cleaning. (3) Others include the Group.

Source: Frost & Sullivan

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Competition Overview for Property Cleaning Sector in Guangdong Province

- The property cleaning sector in the Guangdong province undergoes a stable development phrase, along with intense market competitions. Comparing to the nationwide environmental cleaning and maintenance service market, Guangdong province is considered as an essential geographical region for industrial development, with a predominantly rapid growth in the property cleaning sector. There are numeral key players in market specialising in property cleaning, though aiming to provide national wide services as independent third-party service providers.
- Top 5 industry participants accounted for 15.7% of the total market size in this sector. Among the top 5 market participants, the group achieved first place ranking with an estimated revenue of RMB 447.2 million, representing a market share of 5.7%. The participants can be classified into two types: large-scale businesses as well as small and medium-scale businesses. The large-scale businesses are able to secure contracts with high-end properties as they have a well-known industry reputation and related professional experiences. The small and medium-scale businesses, which have more flexibility, are able to acquire smaller contracts with typically cheaper pricing and closer relationships with local clients.
- Comparing to the public cleaning sector, the market of property cleaning sector is much more labour intensive, thus the newcomers are not required to invest heavily on fixed assets, reducing the entry barrier of this market. Therefore, this market sector has more competition compare to the public sector.

Ranking and Market Share of Leading Companies by Revenue in Property Cleaning Sector (2022)

Rank	Market participant	Estimated revenue in 2022 (RMB million)	Estimated market share in 2022 (%)
1	The Group	447.2	5.7
2	Dijian Yangguang Development (Shenzhen) Co., Ltd.	351.1	4.4
3	SYS Group	175.2	2.2
4	EIT Environmental Development Group Co., Ltd.	140.1	1.8
5	Shenzhen Yuhuang Cleaning Service Co.,Ltd.	123.2	1.6
	Top five market participants	1,236.8	15.7
	Others	6,663.2	84.3
	Total	7900	100.0%

Source: Frost & Sullivan

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Competition Overview for Property Cleaning Sector in Guangdong Province

- The property cleaning sector in the Guangdong province undergoes a stable development phrase, along with intense market competitions. Comparing to the nationwide environmental cleaning and maintenance service market, Guangdong province is considered as an essential geographical region for industrial development, with a predominantly rapid growth in the property cleaning sector. There are numeral key players in market specialising in property cleaning, though aiming to provide national wide services as independent third-party service providers.
- Top 5 industry participants accounted for 21.3% of the total market size in this sector. Among the top 5 market participants, the group achieved second place ranking with an estimated revenue of RMB 372.2 million, representing a market share of 5.0%. The participants can be classified into two types: large-scale businesses as well as small and medium-scale businesses. The large-scale businesses are able to secure contracts with high-end properties as they have a well-known industry reputation and related professional experiences. The small and medium-scale businesses, which have more flexibility, are able to acquire smaller contracts with typically cheaper pricing and closer relationships with local clients.
- Comparing to the public cleaning sector, the market of property cleaning sector is much more labour intensive, thus the newcomers are not required to invest heavily on fixed assets, reducing the entry barrier of this market. Therefore, this market sector has more competition compare to the public sector.

Ranking and Market Share of Leading Companies by Revenue in Property Cleaning Sector (2020)

Rank	Market participant	Estimated revenue in 2020 (RMB million)	Estimated market share in 2020 (%)
1	EIT Environmental Development Group Co., Ltd.	563.9	7.6%
2	The Group	372.2	5.0%
3	QiaoYin City Management Co., Ltd.	255.8	3.5%
4	Shenzhen Minghaoda Cleaning service Co.,Ltd.	204.7	2.8%
5	Guangzhou Xincheng Environmental Protection Technology Co.,Ltd.	180.3	2.4%
	Top five market participants	1576.9	21.3%
	Others	5823.1	78.7%
	Total	7400	100.0%

Source: Frost & Sullivan

UPDATED

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Competition Overview for Property Cleaning Sector in Guangdong Province

- The property cleaning sector in the Guangdong province undergoes a stable development phrase, along with intense market competitions. Comparing to the nationwide environmental cleaning and maintenance service market, Guangdong province is considered as an essential geographical region for industrial development, with a predominantly rapid growth in the property cleaning sector. There are numeral key players in market specialising in property cleaning, though aiming to provide national wide services as independent third-party service providers.
- Top 5 industry participants accounted for 23.1% of the total market size in this sector. Among the top 5 market participants, the group achieved second place ranking with an estimated revenue of RMB 1,731.9 million, representing a market share of 5.0%. The participants can be classified into two types: large-scale businesses as well as small and medium-scale businesses. The large-scale businesses are able to secure contracts with high-end properties as they have a well-known industry reputation and related professional experiences. The small and medium-scale businesses, which have more flexibility, are able to acquire smaller contracts with typically cheaper pricing and closer relationships with local clients.
- Comparing to the public cleaning sector, the market of property cleaning sector is much more labour intensive, thus the newcomers are not required to invest heavily on fixed assets, reducing the entry barrier of this market. Therefore, this market sector has more competition compare to the public sector.

Ranking and Market Share of Leading Companies by Revenue in Property Cleaning Sector (2021)

Rank	Market participant	Estimated revenue in 2021 (RMB million)	Estimated market share in 2021 (%)
1	The Group	439.1	5.9
2	EIT Environmental Development Group Co., Ltd.	385.4	5.1
3	Shenzhen Yuhuang Cleaning Service Co.,Ltd.	303.8	4.1
4	SYS Group	282.3	3.8
5	Dijian Yangguang Development (Shenzhen) Co., Ltd.	161.3	2.2
	Top five market participants	1,731.9	23.1
	Others	5,768.1	76.9
	Total	7,500	100.0%

Source: Frost & Sullivan

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Competition Overview for Commercial Property Cleaning Sector in Guangdong Province

- The commercial property cleaning sector in the Guangdong province is a highly fragmented market with intense competition, similar to that of Guangdong province's property cleaning market. Most market participants operate in the property cleaning sector with a critical focus on providing commercial property service to clients, aligning with the visible growth potential of commercial property segment. Commercial property cleaning serves as a rapidly growing and predominant sector of property cleaning market in Guangdong province. When it comes to the performance of key players in the sector, their overall ranking in terms of sales revenue breakdown in commercial property cleaning sector stays consistent with that of the property cleaning sector.
- The market concentration rate is relatively lower as top 5 industry participants accounted for only 19.3% of the total market size in this sector. Among the top 5 market participants, the company achieved first place ranking with an estimated revenue of RMB 291.3 million, representing a market share of 7.3%. In contrast to the property cleaning sector in Guangdong province, commercial property cleaning service providers in Guangdong province has witnessed significant growth along with development of the overall regional market. However, they have experienced lower concentration rate with other local service providers.

Ranking and Market Share of Leading Companies by Revenue in Commercial Property Cleaning Sector (2022)

Rank	Market participant	Estimated revenue in 2022 (RMB million)	Estimated market share in 2022 (%)
1	The Group	291.3	7.3
2	Dijian Yangguang Development (Shenzhen) Co., Ltd.	210.7	5.3
3	SYS Group	105.1	2.6
4	EIT Environmental Development Group Co., Ltd.	91.1	2.3
5	Shenzhen Yuhuang Cleaning Service Co.,Ltd.	73.9	1.8
	Top five market participants	772.1	19.3
	Others	3,227.9	80.7
	Total	4000	100.0%

Source: Frost & Sullivan

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Entry Barriers

Capital Investment and Human Resource Management

- Environmental cleaning and maintenance service market in the PRC is highly labour-intensive. As one of the essential resources for providing environmental cleaning and maintenance service, sufficient amount of labour with working expertise and experience determines the quality of service delivered. This requires companies to obtain qualified staff through well-established screening and recruiting process. As the industry is undergoing high staff turnover level due to heavy workload and low wage, effective practices of employment retention are necessary for retaining current staff to further maintain service quality and to reduce training expense. Sufficient amount of machinery, equipment and vehicles are necessary, such as garbage collection vehicles and waste suction vehicles. Moreover, it is essential to implement management strategies to achieve effective labour allocation, increase the overall operational productivity, and eventually to deliver high-quality service efficiently.

Capital Requirement

- Labour, tools, equipment and public space cleaning vehicles are major resources that are necessary for companies to carry out environmental cleaning and maintenance service. Prior to performing demanded service, substantial cash outlays at this initial stage for inquiring resources, such as labour recruitment and training, wage payment, raw material and equipment procurement. Sufficient fund and cash flow is required to cover those upfront expenses, regardless of the variation in company size. As a result, capital capacity serves as a critical requirement and potentially a barrier for new companies to enter into environmental cleaning and maintenance service market.

Client Relationship and Reputation

- In environmental service industry, existing companies have well-established, stable and long-term relationship with major clients in the PRC, mainly property management groups and government agencies. Additionally, they have already earned outstanding reputation and track record with strong expertise in providing high quality service. Thus, clients are likely to have greater intention to inquire service from these companies, which has become an entry barrier for new entrants.

Source: Frost & Sullivan

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Key Success Factors

Effective Operational Management

- With a substantial amount of labour, equipment and vehicles being used in each environmental cleaning and maintenance project, effective management of these resources becomes essential in daily operation. Therefore, the overall level of effectiveness in managing these resources is critical for environmental cleaning and maintenance service companies to grow and sustain its market size in the long-run. This requires companies to establish service performance benchmark, provide staff training on a regular basis, and allocate resources at an optimal level.

Professional and Comprehensive Service Solution

- Companies with greater capability of providing professional and comprehensive service will succeed in meeting market demand and capture increasingly larger market share. Many more environmental cleaning and maintenance projects inquire comprehensive service across the service fields of cleaning, waste management and other value-adding services performed in properties and public space. To meet the growing demand, companies need a wide variety of professional expertise and Specialisation that are capable of delivering service value upon client's requirement. In the long-run, with the strength to effectively address market demand, this will eventually result in an increase in the company's market share. Furthermore, with local subsidiaries and branches will increase companies' competitive advantage and gain greater success in tendering process.

Application of Technologies

- For companies to gain market success, the application of technological advanced products is the key for them to deliver service more effectively or with fewer inputs or defects than rivals. For instance, information system can be implemented to track staff performance, monitor vehicle condition and fuel usage, collect real-time operational data, remotely manage and allocate resources, according to individual project specification. As such, company will manage to achieve greater operational effectiveness, which further contributes to companies' success.

Source: Frost & Sullivan

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Competitive Advantage of the Group

➢ Proved Track Record with Strong Capability for Undertaking Projects and Outstanding Brand Recognition

The Group has proved strong Track Record in compliance with environmental and safety law in the PRC. As recognition of the Group's management capabilities, working experience and reputation in the environmental service industry, numerous projects are undertaken during the Track Record period. During regular tender process, an approved and strong track record contributes greatly to final consideration of government agencies and large property management groups. It is also provided with a key qualification that Group has managed to obtain outstanding brand recognition in the environmental cleaning and maintenance service industry, especially in Guangdong Province. It is common practice for most government agencies and large property management groups to inquire services from service provider with outstanding brand recognition and reputation.

➢ Wide Range of Professional Expertise and Capability in Providing Comprehensive Services

With substantial resources to be utilized at optimal level, the Group has earned strong advantage in competing in the environmental cleaning and maintenance service market in the PRC. In recent years, the Group has been working on recruiting and training staff with a wide variety of expertise, in order for them to reach benchmark performance level in specialised field of services. With effective management practices, high quality labour is then utilized as input to achieve greater operational efficiency. Thus, comprehensive projects can be customized based on client' need and requirement, and the optimal combination of staff, equipment and vehicles is assigned and allocated. Furthermore, the scale of individual projects became significantly larger, especially for public space cleaning service, as the cleaning area of city's street is growing significantly in recent years in the PRC. The Group has proven its ability of sustaining its growth and meeting drastically changing market demand of environmental cleaning and maintenance service by providing comprehensive service solution.

➢ Strong Capability of Providing Service to *Large* Property and Maintenance of Long-term Stable Client Relationship

The Group has proven its strong capability of developing and maintaining stable client relationship in the long-run. According to individual client cases in the past, the Group has proven a strong capability in meeting clients' requirements and delivering satisfying service. This has been demonstrated in the Group's strong financial capability in procuring resources at project initiation, strong background and industrial experience, etc. Moreover, the group tends to obtain contract for a period of 8-10 years on average with clients, which is significantly longer than that of most other companies in the industry. The Group has its focus on managing existing client relationship and establish long-term cooperation . As such, it serves as a competitive strength which differentiate the Group from other existing companies and new entrants, and will help to achieve market success in the long-run.

Source: Frost & Sullivan

UPDATED

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Company Profile

Company	Year of Establishment	Descriptions
Beijing Environmental Sanitation Engineering Group Co., Ltd.	2001	Founded in Beijing, BESE Group has over 80,000 employees. It mainly provides rural and urban environmental cleaning and maintenance services in the public sector and its total asset is over RMB 15 billion. BESE has covered more than 20 provinces primarily including Guizhou, Hainan, Sichuan, Guangdong, Jiangsu, Anhui, Xinjiang, Gansu, Shanxi, Hebei, Liaoning, Heilongjiang, etc. It is the largest market participant in terms of revenue.
Tus Environmental Science And Technology Development Co., Ltd.	1993	It is a listed company and offers solid wastes disposal and utilization, environment ecological rehabilitation, renewable resource recycling, and other related services with over 96,000 total employees across all of its locations. It is positioned as a high-tech enterprise by integrating technologies into the industrial chain. It operates in 26 provinces, municipalities and autonomous regions.
EIT Environmental Development Group Co., Ltd.	2010	It is a listed company provide municipal sanitation operation services. The company offers road leaning, domestic garbage collection, sanitation facility maintenance and operation, and other services with over 60,000 employees. The company also provides integrated property management services.
QiaoYin City Management Co., Ltd.	2001	It is a listed company based in Guangzhou. Its main businesses are sanitation integrated management services, waste collection and recycle, sanitation infrastructure investment and construction, biomass treatment, etc. It has over 43,000 employees national wide and operates in 18 provinces.
Fujian Longma Environmental Sanitation Equipment Co., Ltd.	2007	It is a listed company based in Longyan, Fujian with over 34,000 employees. Its core businesses include production and sales of sanitation-specialised vehicles and waste transfer equipment as well as environmental cleaning and maintenance services focusing on public cleaning sector. It primarily operates in Hainan, Fujian, Zhejiang, Tianjin, Guangdong, Guangxi, Jiangxi, Jiangsu, Henan, Guizhou, Liaoning, Anhui provinces.

UPDATED

Competitive Landscape of Environmental Cleaning and Maintenance Service Market

Company Profile (2/2)

Company	Year of Establishment	Descriptions
SYS Group		Founded in Shenzhen and mainly providing environmental cleaning and maintenance with a strong focus in property cleaning sector
Shenzhen Yuhuang Cleaning Service Co.,Ltd.		founded in Shenzhen, it is a comprehensive cleaning company integrating specialisation and diversification
Dijian Yangguang Development (Shenzhen) Co., Ltd.		based in Shenzhen and focusing on property cleaning services for large-scale high-end landmark buildings in cities

Thank You!

Agenda

1 Introduction of the Research

2 Macro Economic Overview in the PRC

3 Environmental Cleaning and Maintenance Service Market Analysis in the PRC

4 Competitive Landscape of Environmental Cleaning and Maintenance Service Market in the PRC

5 **Appendix**

UPDATED

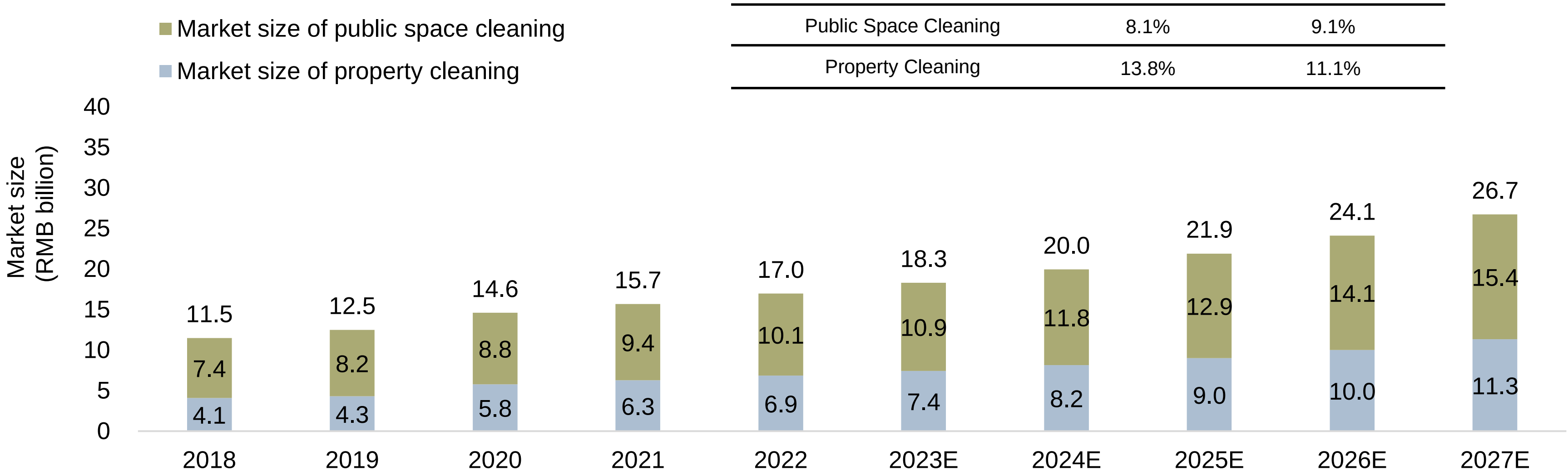
Appendix

Market Size of Property and Public Space Cleaning Combined in Beijing

- The environmental cleaning and maintenance market in Beijing is similar to that of the PRC, which is largely dominated by property cleaning and public space cleaning sectors. The market size of these two sectors combined is expected to reach RMB 26.7 billion by 2027. The market size of property cleaning is expected to increase significantly from RMB 4.1 billion from 2018 to RMB 11.3 billion in 2027.
- The CAGR of the market size of property cleaning from 2018 to 2022 is 13.8%, indicating an overall stable growth, and the growth is expected to sustain with a CAGR from 2023 to 2027 to be 11.1%. The CAGR of the combined market size from 2018 to 2022 is 10.2%, with a CAGR from 2023 to 2027 of 9.9%. In the next five years, the environmental cleaning and maintenance service market will release substantial market demand.

Market Size of Property and Public Space Cleaning Combined in Beijing(2018 – 2027E)

CAGR	2018-2022	2023E-2027E
Total market size	10.2%	9.9%
Public Space Cleaning	8.1%	9.1%
Property Cleaning	13.8%	11.1%



Source: Frost & Sullivan

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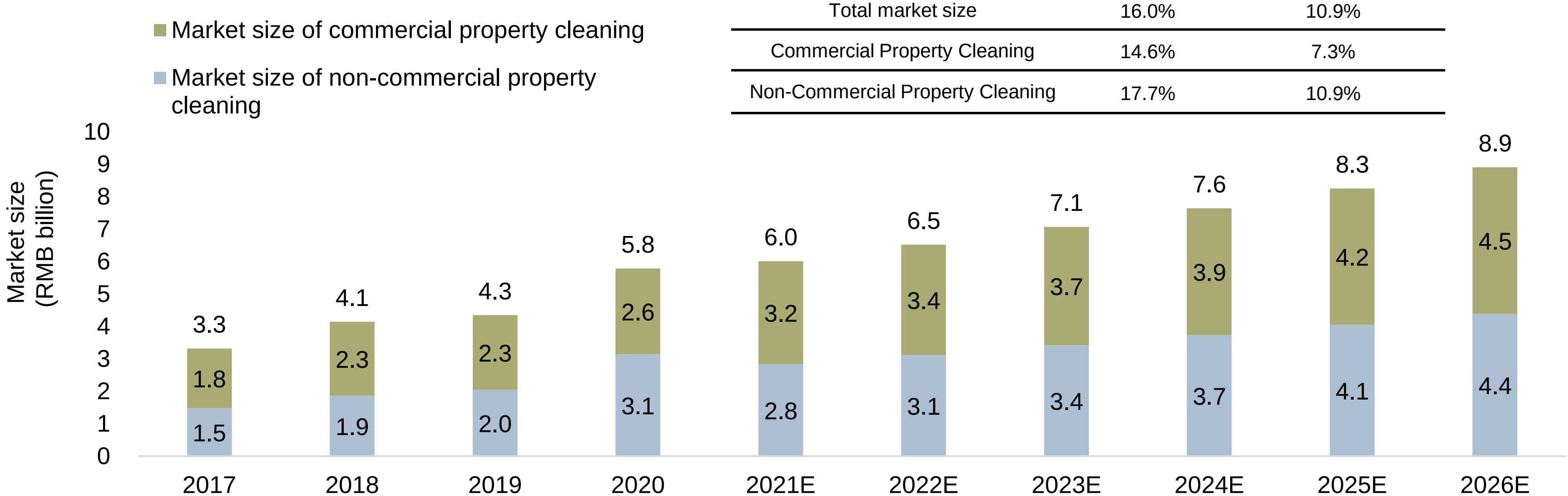
Appendix

Market Size of Commercial and Non-commercial Property Cleaning Combined in Beijing

- Being one of the most prosperous area as well as the capital city of the PRC, Beijing has cemented its position as one of the city with leading performance in its regional economy. The positive economic atmosphere and the city's population density in Beijing is in support of its rapid development of the real estate market, hence continuously boosting the market size of property cleaning sector. The property cleaning market has experienced an increase from RMB 3.3 billion to RMB 6.0 billion from 2017 to 2021, representing a CAGR of 16.0%.
- The overall increase along with a decreasing growth rate in real estate market creates demand for property cleaning services. The market size of property cleaning sector in Beijing is expected to rise from RMB 6.5 to RMB 8.9 billion with a CAGR of 10.9% from 2022 to 2026, due to floor space of commercial buildings sold in Beijing even at a descending speed. The market size of commercial property cleaning is predicted to increase from RMB 3.4 billion in 2022 to RMB 4.5 billion in 2026, with a CAGR of 7.3%, and the proportion of commercial building in all property cleaning is anticipated to further increase.

Market Size of Commercial and Non-commercial Property Cleaning in Beijing (2017 – 2026E)

CAGR	2017-2021E	2022E-2026E
Total market size	16.0%	10.9%
Commercial Property Cleaning	14.6%	7.3%
Non-Commercial Property Cleaning	17.7%	10.9%



Source: Frost & Sullivan

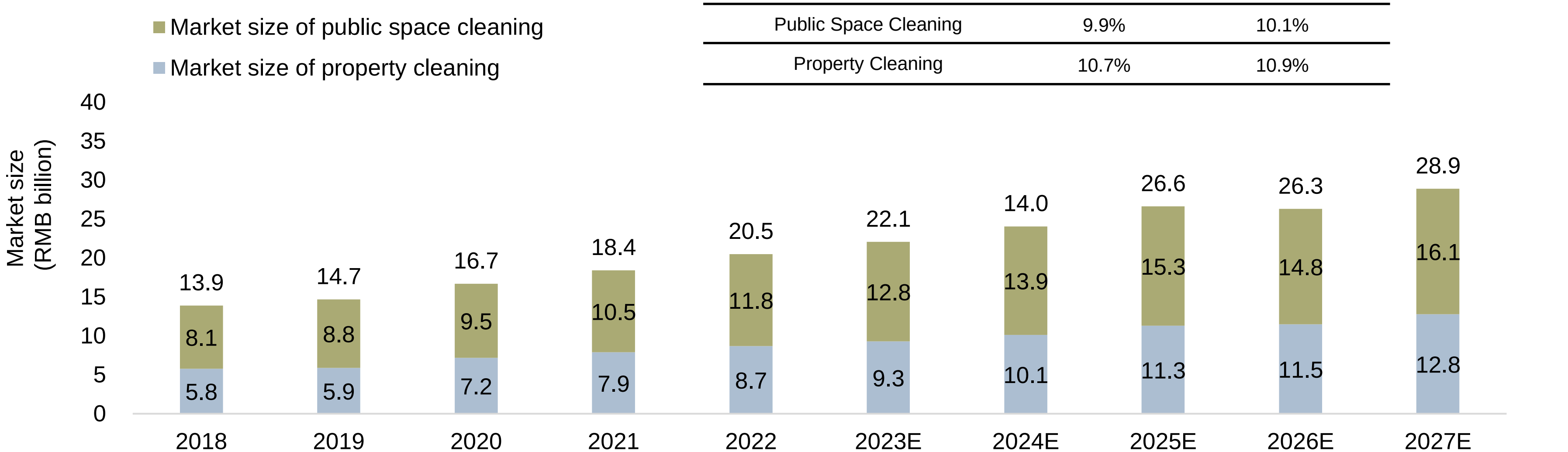
Appendix

Market Size of Property and Public Space Cleaning Combined in Shanghai

- The market size of property and public space cleaning sectors in Shanghai increased from RMB 13.9 billion in 2018 to RMB 20.5 billion in 2022, representing a CAGR of 10.2%. The market share of the property cleaning sector increased from 41.7% in 2018 to 42.4% in 2022, and the proportion is anticipated to further grow to 44.3% in 2027. The overall development of the property cleaning sector is primarily affected by the growth in real estate market in Shanghai in the past five years, which is expected to sustain from 2023 to 2027. As such , the overall growth will generate enormous market demand for environmental cleaning and maintenance market.
- In the next five years, growth of the combined market size is anticipated to keep its momentum, arising from RMB 22.1 billion in 2023 to RMB 28.9 billion with a CAGR of 10.4% in 2027. The market size of public space cleaning sector will continuously account for a majority of the market share, with a higher level of expenditure on the public service procurement from Shanghai government.

Market Size of Property and Public Space Cleaning Combined in Shanghai (2018 – 2027E)

CAGR	2017-2021E	2022E-2026E
Total market size	10.2%	10.4%
Public Space Cleaning	9.9%	10.1%
Property Cleaning	10.7%	10.9%



Source: Frost & Sullivan

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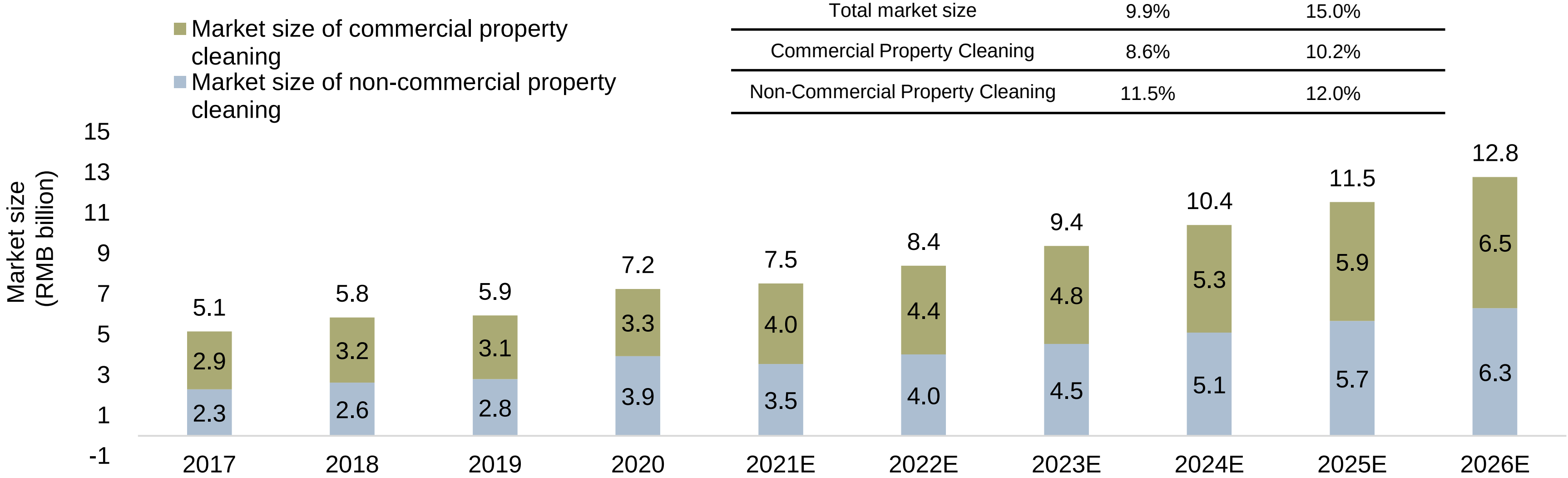
Appendix

Market Size of Commercial and Non-commercial Property Cleaning Combined in Shanghai

- Although there were mild fluctuations in the real estate market over the last five years, the volume of floor space completed per annual construction of property building in Shanghai remains robust. This serves as a strong market drive for the development and growth of property cleaning sector, and the market size of property cleaning sector soared from RMB 5.1 billion in 2017 to RMB 7.5 billion in 2021, at a CAGR of 9.9%. Contributed by the regional economic development in Shanghai, it has also led to increasing market demand for commercial property cleaning, and its sub-categorical market size has increased from RMB 2.9 billion in 2017 to RMB 4.0 billion in 2021.
- Following the outbreak of COVID-19, however, the rising public awareness will not only boost the demand for cleaning service, but also requiring higher standards and quality from the environmental cleaning and maintenance service providers, offsetting negative impact from a slowing property market. The size of the property cleaning sector services market in Shanghai is expected to grow at a CAGR of 15.0% from 2022 to 2026, reaching RMB 12.8 billion by 2026.

Market Size of Commercial and Non-commercial Property Cleaning in Shanghai (2017 – 2026E)

CAGR	2017-2021E	2022E-2026E
Total market size	9.9%	15.0%
Commercial Property Cleaning	8.6%	10.2%
Non-Commercial Property Cleaning	11.5%	12.0%



Source: Frost & Sullivan

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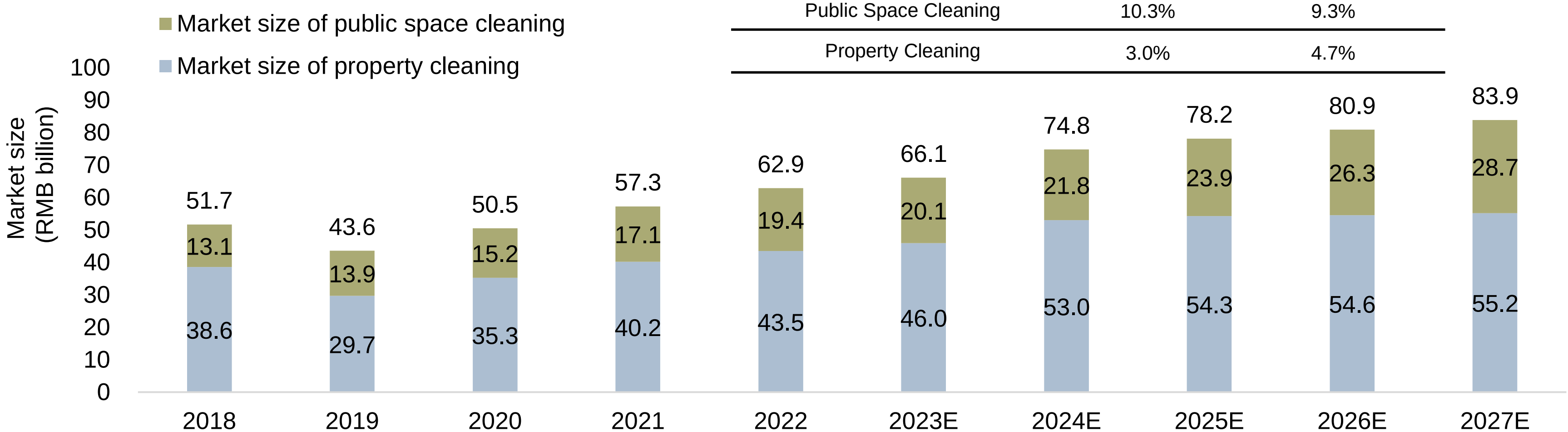
Appendix

Market Size of Property and Public Space Cleaning Combined in Zhejiang Province

- The market size of property and public space cleaning sectors in Zhejiang increased from RMB 51.7 billion in 2018 to a predicted value of RMB 62.9 billion in 2022, representing a CAGR of 5.0%. The overall development and growth of the property cleaning sector is primarily affected by the increasing demand of property cleaning based upon the growth in real estate market in Zhejiang in the past five years, which is expected to sustain from 2023 to 2027.
- The market size of the property cleaning sector will increase by a CAGR of 4.7% from 2023 to 2027. In the next five years, growth of the combined market size is anticipated to keep its momentum, arising from RMB 66.1 billion in 2023 to RMB 83.9 billion in 2027 with a CAGR of 6.1%. In comparison to the market of Beijing and Shanghai, the property and public space cleaning market in Zhejiang will witness a greater growth potential.
- Hangzhou, as the capital city of Zhejiang province, contributes greatly to the economic growth of Zhejiang province. It is also the city which experience rapid growth in recent years with its noticeable process of urbanization. As a result, the demand for property and public space cleaning combined in Hangzhou is continuously increasing.

Market Size of Property and Public Space Cleaning Combined in Zhejiang (2018 – 2027E)

CAGR	2018-2022	2023E-2027E
Total market size	5.0%	6.1%
Public Space Cleaning	10.3%	9.3%
Property Cleaning	3.0%	4.7%



Source: Frost & Sullivan

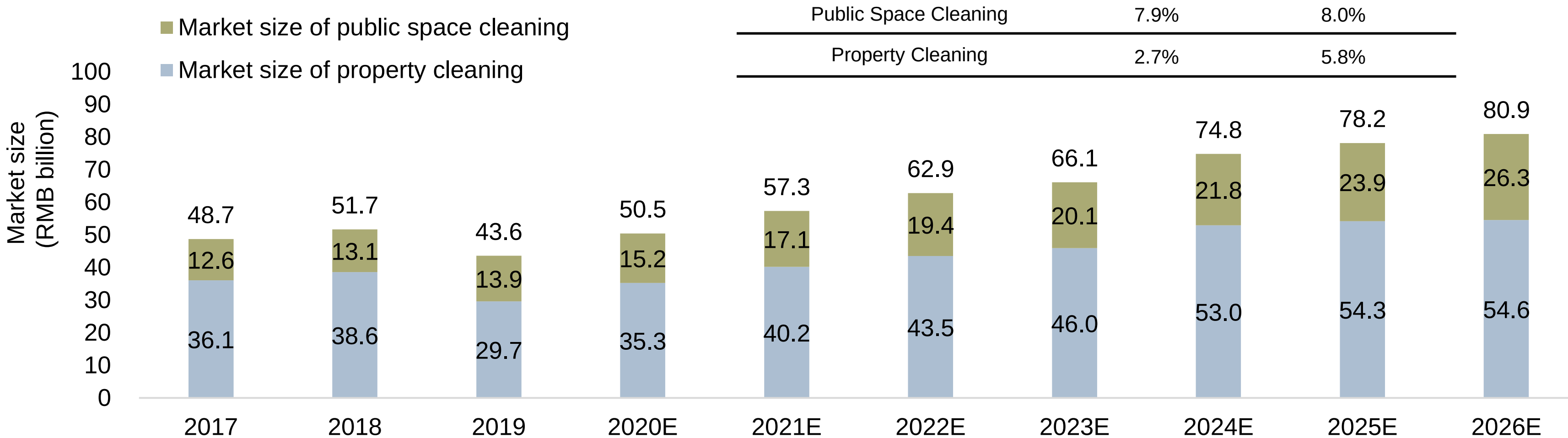
Appendix

Market Size of Property and Public Space Cleaning Combined in Zhejiang Province

- The market size of property and public space cleaning sectors in Zhejiang increased from RMB 48.7 billion in 2017 to a predicted value of RMB 57.3 billion in 2021, representing a CAGR of 4.1%. The overall development and growth of the property cleaning sector is primarily affected by the increasing demand of property cleaning based upon the growth in real estate market in Zhejiang in the past five years, which is expected to sustain from 2022 to 2026.
- The market size of the property cleaning sector will increase by a CAGR of 5.8% from 2022 to 2026. In the next five years, growth of the combined market size is anticipated to keep its momentum, arising from RMB 62.9 billion in 2022 to RMB 80.9 billion with a CAGR of 8.8%. In comparison to the market of Beijing and Shanghai, the property and public space cleaning market in Zhejiang will witness a greater growth potential.
- Hangzhou, as the capital city of Zhejiang province, contributes greatly to the economic growth of Zhejiang province. It is also the city which experience rapid growth in recent years with its noticeable process of urbanization. As a result, the demand for property and public space cleaning combined in Hangzhou is continuously increasing.

Market Size of Property and Public Space Cleaning Combined in Zhejiang (2017 – 2026E)

CAGR	2017-2021E	2022E-2026E
Total market size	4.1%	8.8%
Public Space Cleaning	7.9%	8.0%
Property Cleaning	2.7%	5.8%



Source: Frost & Sullivan

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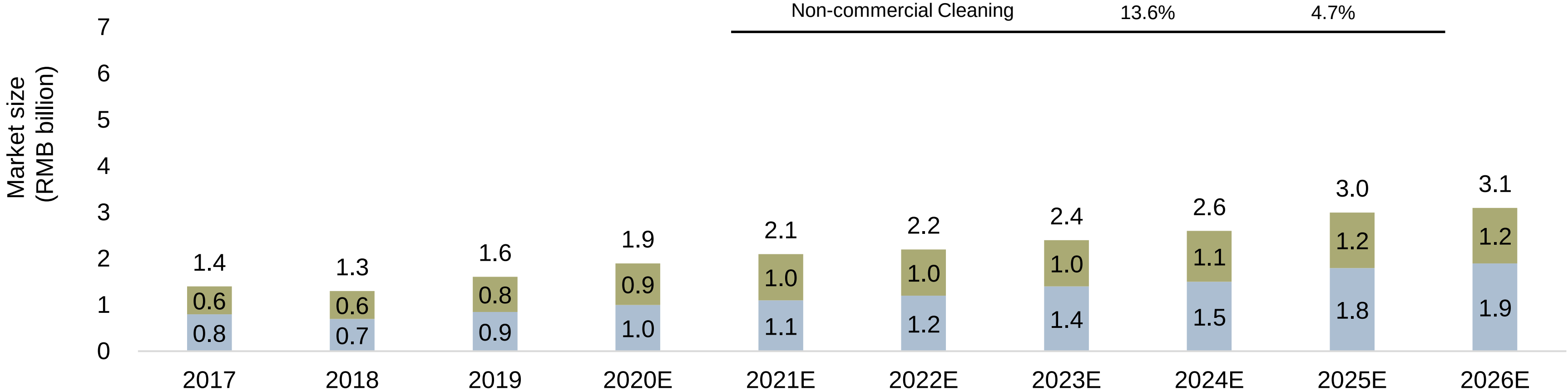
Appendix

Market Size of Commercial and Non-commercial Property Cleaning Combined in Zhejiang Province

- The market size of property cleaning sector in Hangzhou has increased from RMB 48.7 billion in 2017 to a predicted value of RMB 57.3 billion in 2021, representing a CAGR of 4.1%. The overall development and growth of the property cleaning sector is primarily affected by the increasing demand for professional property cleaning services based upon the growth in real estate market in Hangzhou in the past five years, which is expected to sustain from 2022 to 2026.
- The market size of the property cleaning sector will increase by a CAGR of 5.8% from 2022 to 2026. In the next five years, growth of the combined market size is anticipated to keep its momentum, arising from RMB 62.9 billion in 2022 to RMB 80.9 billion with a CAGR of 8.8%. In comparison to the market of Beijing and Shanghai, the property and public space cleaning market in Zhejiang will witness a greater growth potential.
- *Hangzhou, as the capital city of Zhejiang province, contributes greatly to the economic growth of Zhejiang province. It is also the city which experience rapid growth in recent years with its noticeable process of urbanization. As a result, the demand for property and public space cleaning combined in Hangzhou is continuously increasing, and further contributing to the overall growth of Zhejiang province's property cleaning sector.*

Market Size of Commercial and Non-commercial Property Cleaning Combined in Zhejiang (2017 – 2026E)

CAGR	2017-2021E	2022E-2026E
Total market size	10.7%	12.1%
Commercial Cleaning	8.3%	12.2%
Non-commercial Cleaning	13.6%	4.7%



Source: Frost & Sullivan

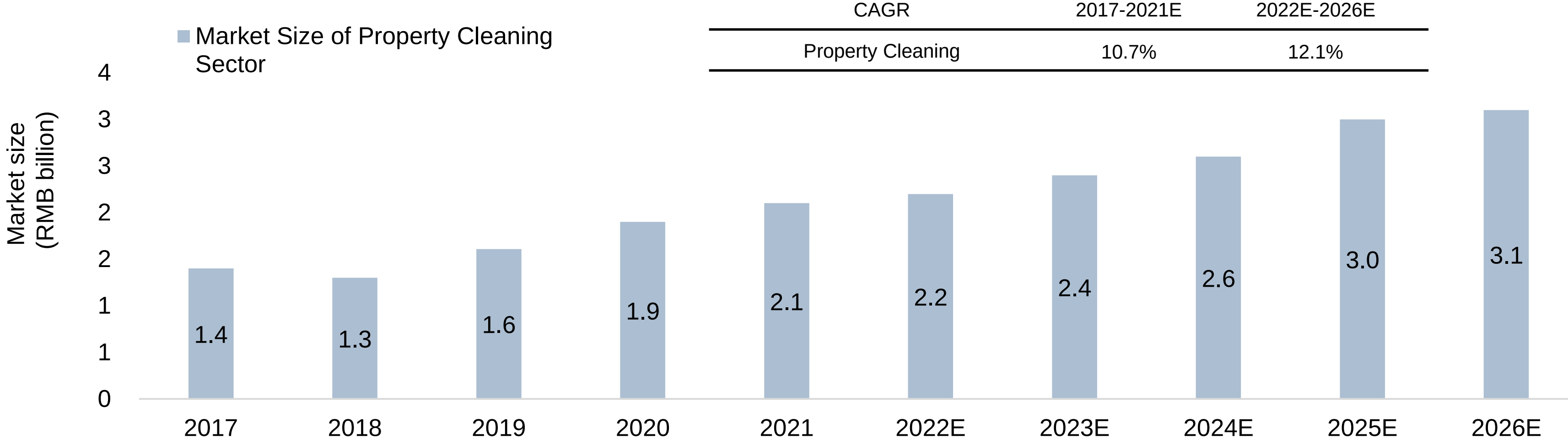
Appendix

Market Size of Commercial and Non-commercial Property Cleaning Combined in Zhejiang Province

- The market size of property cleaning sector in Hangzhou has increased from RMB 1.4 billion in 2017 to a predicted value of RMB 2.1 billion in 2021, representing a CAGR of 10.7%. The overall development and growth of the property cleaning sector is primarily affected by the increasing demand for professional property cleaning services based upon the growth in real estate market in Hangzhou in the past five years, which is expected to sustain from 2022 to 2026.
- The market size of the property cleaning sector will increase by a CAGR of 12.1% from 2022 to 2026. In the next five years, growth of the property cleaning market size is anticipated to keep its momentum, arising from RMB 2.2 billion in 2022 to RMB 3.1 billion in 2026. In comparison to the market of Beijing and Shanghai at a higher level of maturity demonstrated by a more steady growth potential, the property cleaning market in Hangzhou will witness a more rapid growth rate in the next few years.

Market Size of Commercial and Non-commercial Property Cleaning Combined in Zhejiang (2017 – 2026E)

CAGR	2017-2021E	2022E-2026E
Property Cleaning	10.7%	12.1%



Source: Frost & Sullivan

- The environmental cleaning and maintenance market of Beijing and Shanghai are relatively mature and well-developed, driven by the overall development of city's economics and level of urbanization. In both Beijing and Shanghai, there are some existing market participants. Comparing to these two Tier 1 cities, Hangzhou is currently at its developing stage, which has brought more room to grow for the city's environmental cleaning and maintenance market. Hangzhou's economics growth and urban development has released substantial amount of cleaning and maintenance needs from city street, public facilities, and different types of properties, including residential and commercial properties.
- To enter into the market of Beijing, Shanghai, and Hangzhou, companies may face barriers of entry, such as proved and outstanding track record, reputation, expertise and industrial experience. These factors serve as critical barrier for most entrants to enter into regional markets. Meanwhile, it also demonstrates a corporate's capability to provide related environmental cleaning and maintenance services, providing greater feasibility of market entry. Companies with competitive advantages in these fields outcompete other companies and obtain environmental cleaning and maintenance projects. Moreover, listed companies potentially hold more competitive advantages in the tendering process.
- In these three regional markets, similar to that of the PRC and Guangdong province, most key market participants gain property cleaning and public space cleaning projects by leveraging their outstanding track record and local recognition. With a strong and well-established customer base, the Group has gained its key competitive advantage of proved track record, and may choose to further leverage its customer base and to expand its businesses in other regions with substantial market demand.
- With a greater amount of capital and other resources obtained, listed companies in the industry will be capable of building a well-established, national-wide service network in the PRC. This can be achieved through expanding its business scope and coverage to sub-regional markets withholding strong market demand. Along with expertise and experience in providing environmental cleaning and maintenance service, the Group will be able to leverage its resources and customer base to the next level in the near future.
- Some companies in the industry also choose to achieve greater coverage in regional market thorough effective merge and acquisition of local businesses, especially those with long-term cooperation with local clients and working experience in providing inquired services. It serves as an critical factor in helping them to gain competitive advantages in inquiring local customers and during tendering process.

Source: Frost & Sullivan

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Appendix

Competitive Landscape

- In relation to the public space cleaning sector, it is an industry norm that the local governments, which are the main clients in this sector, prefer large-scale service providers equipped with sufficient amount of machinery, equipment and vehicles such as garbage collection vehicles and waste suction vehicles. Specialised vehicles (i.e. garbage collection vehicles and waste suction vehicles) are the core fixed assets investments for providing public space cleaning. With the gradual increase in the level of mechanisation of public space cleaning industry, there is an increase demand for the specialised vehicles.
- Referring to the “2022 National Civil Transport Airport Production Statical Bulletin” released by China’s Civil Aviation Administration, Chongqing Jiangbei International Airport, Guangzhou Baiyun International Airport and Sanya Phoenix International Airport ranked 2nd, 1st, and 21st out of 254 airports in the PRC in terms of annual passenger throughput in 2022.
- Referring to the “2021 National Civil Transport Airport Production Statical Bulletin” released by China’s Civil Aviation Administration, Chongqing Jiangbei International Airport, Guangzhou Baiyun International Airport and Sanya Phoenix International Airport ranked 4th
- In the property cleaning market in Beijing and Shanghai, it is common industry practice for large property management companies to outsource property cleaning service from third-party service providers. It is also provided that third-party property cleaning providers who have well-established cooperation and long-term relationship with property management companies could gain more competitive advantage in gaining new projects. Furthermore, service providers could potentially obtain projects, provided with previous cooperation and recognisable capability even if high-quality service has been delivered within their regional coverage and location of business operation.

Source: Frost & Sullivan

Appendix

Competitive Landscape

- According to the National Bureau of Statistics of China, the GBA (Greater Bay Area) economy, as measured by growth in nominal GDP, registered a CAGR of 4.6% from 2018 to 2022, and expected to grow at a CAGR of 5.2% from 2023 to 2027.
- Up to September 2nd 2022, there are currently 31 provinces affected by COVID-19 with 439 local cases and a total of 225,44 accumulated cases since initial outbreak. Due to provincial policy toward pandemic control, some regional market would be affected as domestic transit across region would be somehow restricted. This will further impose an impact on regular service delivery across provinces in the environmental and maintenance service industry. For instance, *PRC cities such as Shanghai are subjected to lockdown from time to time, which led to the decrease of staff mobility to provide services across different provinces. To further mitigate the risk and impact of COVID-19 on service delivery outside province, an increasing number of corporates choose to seek for local workers residing at the same city of tender offerors to increase the overall competitiveness in securing tenders so as to mitigate the potential risk imposed by COVID-19 pandemic. Therefore, in the future, it is essential for companies (coming along with a growing demand) to set up local offices and have local staff present in different provinces.*
- According to the risk delineation standards toward pandemic control released by the State Council in 2020, "Guiding Opinions on Scientific Prevention and Precise Implementation of COVID-19", different regions are categorized upon risk level associated with the pandemic. Cities and provinces are divided into counties, and the classification is carried out based on the risk level in each county, which is further categorized as low, medium, and high risk area. Thereafter, travelling across regions and provinces is constrained based upon local pandemic control and quarantine requirements. Based on the classification of risk level of each region and individual's travelling record, differentiated quarantine requirement will be applied. As a result, this has somehow limited business operation as well as service delivery across provinces in the environmental cleaning and maintenance industry. On top of it, sometimes regional lockdown is also carried out as an effective practice toward pandemic control. For instance, the lockdown took place in Shanghai has been lasted from April to June in 2022, which has significantly affected economic and social activities in Shanghai as well as to a national-wide level.

Source: Frost & Sullivan

NEW

Appendix

Competitive Landscape

- The following statistics are analyzed based on the number of registered businesses operating with identical business scope in property cleaning sectors..
- In terms of operational scale, it is estimated that 70-85% of market participants in Beijing and Shanghai are similar to or smaller than the Group, whereas there are approximately 80-90% of market participants in Hangzhou of similar or smaller operation scale comparing to the Group, with a slightly lower level of market concentration in Hangzhou's regional market.

Region	Number of Businesses in Property Cleaning Sector	Estimation of Number of Business with Similar Operation Scale as the Group
Beijing	46,427	
Shanghai	10,212	
Zhejiang	10,242	

Source: Frost & Sullivan

Appendix

Competitive Landscape

- The market size of property cleaning sector in Hangzhou has increased from RMB1.6 billion in 2018 to RMB2.2 billion in 2022, representing a CAGR of 8.3%, and it is anticipated to further arise from RMB2.3 in 2023 to RMB 3.2 billion in 2027 with a CAGR of 8.6%.
- In general, projects in public cleaning sector are usually resulted with a higher level of profit margin than that of the property cleaning sector.
- According to the Industry Report, even at the post-pandemic stage, the growing demand in the environmental cleaning and maintenance service market in the PRC is anticipated to continue.
- According to the Industry Report, the environmental cleaning and maintenance industry in the PRC mainly comprises and is largely dominated by two sectors, namely the property cleaning and public space cleaning sectors.
- The increasing demand for cleaning services from the downstream market will serve as an opportunity for the industry and such demand is anticipated to continue in the post-pandemic period according to the Industry Report.
- According to the Industry Report, our wide range of professional expertise and capability in providing comprehensive environmental cleaning and maintenance services form part of our main competitive strengths.
- According to the Industry Report, it is generally the industry norm or the requirement of the customer for cleaning service providers to set up local project company or office for effective management and deployment of labour.
- According to the Industry Report, Chongqing Jiangbei International Airport, Guangzhou Baiyun International Airport and Sanya Phoenix International Airport ranked 2nd, 1st, and 21st out of 254 airports in the PRC in terms of annual passenger throughput in 2022.
- According to Frost & Sullivan, Raffles City is a flagship brand of integrated complex by one of Asia's largest real estate groups listed in Singapore. There are in total 10 Raffles City complex in Asia comprising various skyscrapers including Raffles City Chongqing, the award-winning complex which features a 300-metre-long horizontal skybridge.
- As confirmed by Frost & Sullivan, Zhengzhou Xinzheng International Airport contains Zhengzhou Airport Economy Zone, which is the first and currently the only national-level aerotropolis economic development pioneer area approved by the PRC State Council, with an approved area of 747 square kilometers.

Source: Frost & Sullivan

Appendix

Competitive Landscape

- According to Frost & Sullivan, it is generally the market practice for environmental cleaning and maintenance services providers to set up a local office before or shortly after being awarded a service contract.
- As confirmed by Frost & Sullivan, there is an increasing demand for local presence of workers from tender offerors since the outbreak of COVID-19.
- According to the Industry Report, in the property cleaning market in Beijing, Shanghai, and Zhejiang province, it is common industry practice for large property management companies to outsource property cleaning service from third-party service providers and third-party property cleaning providers who have well-established cooperation and long-term relationship with property management companies or have worked with each other in other regions could gain more competitive advantage in gaining new projects.
- Mechanisation will help alleviate labour shortage problem in the industry and potentially increase operational efficiency at a lower cost according to the Industry Report.
- As confirmed by Frost & Sullivan, it is a common market practise for customers to request ad-hoc services under verbal agreements in the environmental cleaning and maintenance service market.
- According to the Industry Report, it is common market practice to employ subcontractors or other human resource management solutions services providers given the labour shortage in the industry.
- During the Track Record Period, we did not have significant amount of machinery, equipment and vehicles given our focus on property cleaning sector which, according to the Industry Report, is more labour intensive and less reliant on fixed assets unlike the public space cleaning sector.
- According to the Industry Report, the occurrence of accidents resulting in bodily injury and property damages are not uncommon in the industry.
- According to the Industry Report, due to the outbreak of COVID-19, the PRC government has established related national policies to reinforce and standardised large-scale cleaning and sanitising activities to improve cleaning and maintenance condition at community level.

Source: Frost & Sullivan

Appendix

Competitive Landscape

- According to the Industry Report, the environmental cleaning and maintenance industry in the PRC is dominated by certain market players.
- According to the Industry Report, this industry mainly comprises and is largely dominated by two sectors: the property cleaning sector and the public space cleaning sector. The public space cleaning sector mostly involves high contract sum projects with local government customers which prefer large-scale service providers with good industry recognition. In contrast, the property cleaning sector is more competitive and with lower barriers to entry given that it is much more labour intensive with newcomers not required to invest heavily in fixed assets.
- According to Industry Report, due to the increasingly complicated cleaning requirements, property management groups, tenants, and owners will outsource the cleaning service to the professional cleaning services providers in order to reduce their overall operation costs.
- The environmental cleaning and maintenance service industry is highly competitive according to the Industry Report.
- According to the Industry Report, in relation to the public space cleaning sector, it is an industry norm that the local governments, which are the main clients in this sector, prefer large-scale service providers equipped with sufficient amount of machinery, equipment and vehicles such as garbage collection vehicles and waste suction vehicles.
- According to the Industry Report, it is generally the market practice for environmental cleaning and maintenance services providers to set up a local office before or shortly after being awarded a service contract.
- Moreover, as confirmed by Frost & Sullivan, tender offerors usually consider the existence of a branch office as one of the assessment indicators during the tendering process, our Group will hence gain competitive advantage through the establishment of branch office when securing a tender.
- As confirmed by Frost & Sullivan, there is an increasing demand for local presence of workers from tender offerors since the outbreak of the COVID-19 pandemic.
- According to the Industry Report, to enter into such markets in Beijing, Shanghai, and Hangzhou, it is crucial for new market entrants to have a proven and outstanding track record, reputation, expertise and industrial recognition and such factors serve as a barrier to entry for most entrants to enter into such markets.

Source: Frost & Sullivan

Appendix

Competitive Landscape

- In accordance with the Industry Report, the most commonly used vehicles in the cleaning of public facilities such as streets, lanes, parks, common areas, public toilet cleaning and sanitising include garbage collection vehicles and waste suction vehicles.
- According to the Industry Report, the environmental cleaning and maintenance industry in the PRC mainly comprises and is largely dominated by two sectors, namely the property cleaning and public space cleaning sectors.
- Despite our strong position in the commercial property cleaning sector in Guangdong province, our Group has a market share of approximately 0.1% in the overall industry in PRC in terms of revenue in 2020 according to the Industry Report, indicating a huge potential for future growth and expansion in this growing industry particularly in the public space cleaning sector and in provincial-level regions beyond Guangdong province.
- according to the Industry Report, the public space cleaning sector mostly involves high contract sum projects with local government customers which prefer large-scale service providers with good industry recognition and four of the five largest dominant players in the industry identified have listing status.
- labour shortage is a major challenge in our industry according to the Industry Report

Source: Frost & Sullivan