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## INDUSTRY OVERVIEW

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*The information contained in this section and elsewhere in this document have been extracted from various official government publications, available sources from public market research and other sources from independent suppliers, and from the independent research report prepared by Frost & Sullivan. We engaged Frost & Sullivan to prepare an independent industry report in connection with the [REDACTED]. The information from official government sources has not been independently verified by our Company, the Joint Sponsors, the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], any of the [REDACTED] or any of our or their respective directors and advisers, or any other persons or parties (excluding Frost & Sullivan) involved in the [REDACTED], and no representation is given as to its accuracy.*

### SOURCE OF INFORMATION

We have commissioned Frost & Sullivan, an independent market research and consulting company, to conduct an analysis of, and to prepare a report on specialized industrial construction and specialized auxiliary construction market in the PRC. The report prepared by Frost & Sullivan for us is referred to in this [REDACTED] document as Industry Report. We agreed to pay Frost & Sullivan a fee of RMB283,000 which we believe reflects market rates for reports of this type.

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

We have included certain information from the Industry Report in this [REDACTED] document because we believe this information facilitates an understanding of the specialized industrial construction and specialized auxiliary construction market in the PRC for the prospective investors. Frost & Sullivan's independent research consists of both primary and secondary research obtained from various sources in respect of the specialized industrial construction and specialized auxiliary construction market in the PRC. Primary research involved in-depth interviews with leading industry participants and industry experts. Secondary research involved reviewing company reports, independent research reports and data based on Frost & Sullivan's own research database. Projected data were obtained from historical data analysis plotted against macroeconomic data with reference to specific industry-related factors. Except as otherwise noted, all of the data and forecasts contained in this section are derived from the Industry Report, various official government publications and other publications.

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

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### OVERVIEW OF THE SPECIALIZED INDUSTRIAL CONSTRUCTION AND SPECIALIZED AUXILIARY CONSTRUCTION INDUSTRY IN THE PRC AND SHANXI PROVINCE

#### Definition and Classification

- Specialized industrial construction mainly includes power engineering (thermal power generation, new energy wind power generation, new energy photovoltaic power generation, new energy geothermal power generation, hydrogen power generation, power transmission and transformation); petrochemical engineering (oil and gas storage and transportation, petrochemical engineering, chemical engineering, pharmaceutical and chemical engineering); electromechanical installation engineering; metallurgical engineering (glass, coking, cement, non-ferrous metal, ferrous metal smelting, carbon, electrolytic aluminum, electrolytic copper, etc.); water conservancy and hydropower engineering (water conservancy engineering, hydropower engineering, pumped storage); urban rail transit engineering; mine engineering (coal mines, iron ore, aluminum ore, copper ore, etc.). Specialized industrial construction also includes services such as investment and construction, design consulting, construction, operation and maintenance for these specialized industrial construction.
- Specialized auxiliary construction refers to the design, consultation, construction and operation and maintenance services of municipal public works such as urban roads, bridge projects, heat, water supply, gas supply and communication engineering projects. Specialized auxiliary construction projects mainly include standardized workshops, heating, pipeline network, sewage, agriculture and road works.

#### Value Chain

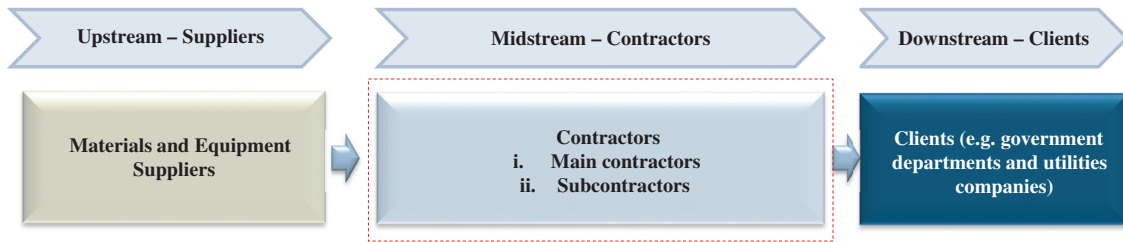
The value chain of specialized industrial construction and specialized auxiliary construction market mainly consists of upstream suppliers, midstream contractors and downstream clients.

In general, downstream clients will initiate construction projects and invite tenders from contractors. For example, as specialized industrial construction refers to construction of facilities of all kinds performed at construction sites. It includes power engineering, petrochemical engineering, electromechanical installation engineering, metallurgical engineering, water conservancy and hydropower engineering, urban rail transit engineering mine engineering and other associated facilities, etc., customers then can be from various industries, for instance, government departments and utilities companies.

Midstream contractors are mainly responsible for providing construction services with necessary machinery, labor and expertise for the projects. The main contractors may also engage sub-contractors to carry out specialized works, such as excavation and boring, for better resources management and extended working capability.

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Both main contractors and subcontractors will be responsible for worker recruitment, procurement of materials and equipment required for the construction projects from suppliers.



The Group undertakes projects in the capacity of both main contractor and subcontractor and is regarded as midstream contractors.

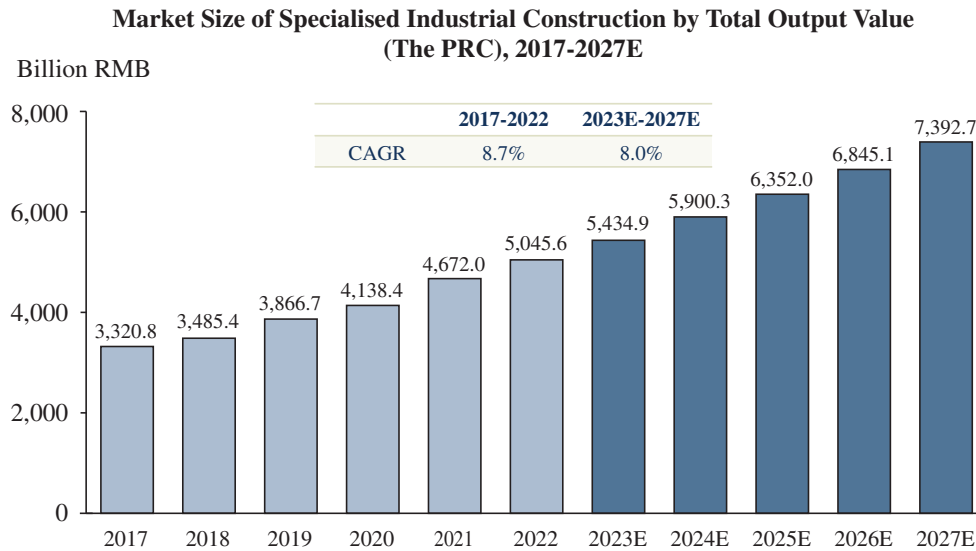
### Total Output Value of Construction Industry in the PRC

During 2017 to 2022, the construction industry in the PRC experienced a solid growth on the basis that (i) the increasing investment in real estate sector; (ii) the continuous expansion of production scale of construction enterprises and (iii) the regular demand for repair and renewal of buildings. Thus, the total output value of construction industry in the PRC increased rapidly from RMB21,394.4 billion in 2017 to RMB31,198.0 billion in 2022, representing a CAGR of 7.8% during the period. Going forward, the expedited infrastructure development in the PRC will be the major impetus driving the growth of output value of construction industry and reaching RMB40,777.6 billion by 2027, representing a CAGR of 5.6% from 2023 to 2027.

### Market Size of Specialized Industrial Construction in the PRC

The specialized industrial construction generally consists of constructions related to new energy, petrochemical, fine chemical, etc. Such related construction works require a high level of expertise to design, execute, procure in order to fulfill relevant requirement. The market of specialized industrial construction by total output value in the PRC experienced solid increase with a CAGR of approximately 8.7% during 2017 to 2022, attributed by (i) substantial growth of new energy industry and (ii) strong demand for related energy associated with significant national economic development. Moving forward, the total output value of specialized industrial construction in the PRC will grow continually with a CAGR of 8.0% during 2023 to 2027. The future growth of output value of specialized industrial construction is primarily due to the focus of green development mentioned in the Outline of the 14th Five-Year Plan. It is stated that the green production and green living are to be widely adopted, with carbon emissions steadily declining after reaching a peak, and fundamental improvements made to the environment. As such, the new energy industry will be promoted, as well as related specialized industrial construction.

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Source: National Bureau of Statistics of China, Frost & Sullivan

### Market Size of Petrochemical Industry Works in the PRC

Outlined in the “China Petroleum and Chemical Industry Economic Operation Report” 《2022年中國石油和化學工業經濟運行報告》, the petrochemical sector in the PRC has developed steadily, with the total production of crude oil increased from 191.51 million tons in 2017 to 205.0 million tons in 2022, representing a CAGR of approximately 1.4%, while the production of natural gas has increased at a CAGR of 7.9% from 14.9 million m<sup>3</sup> in 2017 to 21.8 million m<sup>3</sup> in 2022. Against this backdrop, the demand for associated specialized industrial construction has been propelled, the market size of petrochemical industry works in the PRC has increased from RMB1,433.4 billion in 2017 to RMB2,033.0 billion in 2022 at a CAGR of 7.2%.

Going forward, underpinned consistent Government effort in providing financial assistance and policies direction, as well as maintaining pricing mechanism and supporting industry innovativeness, the petrochemical industry in the PRC is expected to grow towards concepts including eco-friendliness, low carbon emission, digitalization and closer strategic collaboration, where industrial equipment installation shall develop continuously to cater to the evolving trend of the downstream industry. Throughout the recent years, the PRC Government is active in underpinning the petrochemical industry with policy directions sets out in proposals such as the “Petrochemical Industry Planning and Layout Plan” 《石化產業規劃佈局方案》, it is expected the total market size of petrochemical industry works in the PRC would spike RMB2,688.4 billion by 2027, representing a CAGR of 5.9% during 2023 to 2027.

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### Market Size of New Energy Industry Works in the PRC

The PRC’s new energy sector is growing following the transition towards a service-based economic mode which places the emphasis on electricity, natural gas and cleaner, high-efficiency and digital technologies. Market size of new energy industry works by total output value in the PRC increased from RMB1,775.7 billion in 2017 to RMB2,831.9 billion in 2022, at a CAGR of 9.8%.

Benefited from the supportive government policies, namely the New Energy Law of the People’s Republic of China, growing energy needs in the PRC and increasing investment in new energy, market size of new energy industry works by total output value in the PRC is expected to reach RMB4,501.8 billion in 2027, at a CAGR of 9.7%.

**Market Size of Construction Works for New Energy Industry by Total Output Value (The PRC), 2017-2027E**



Source: National Bureau of Statistics of China, Frost & Sullivan

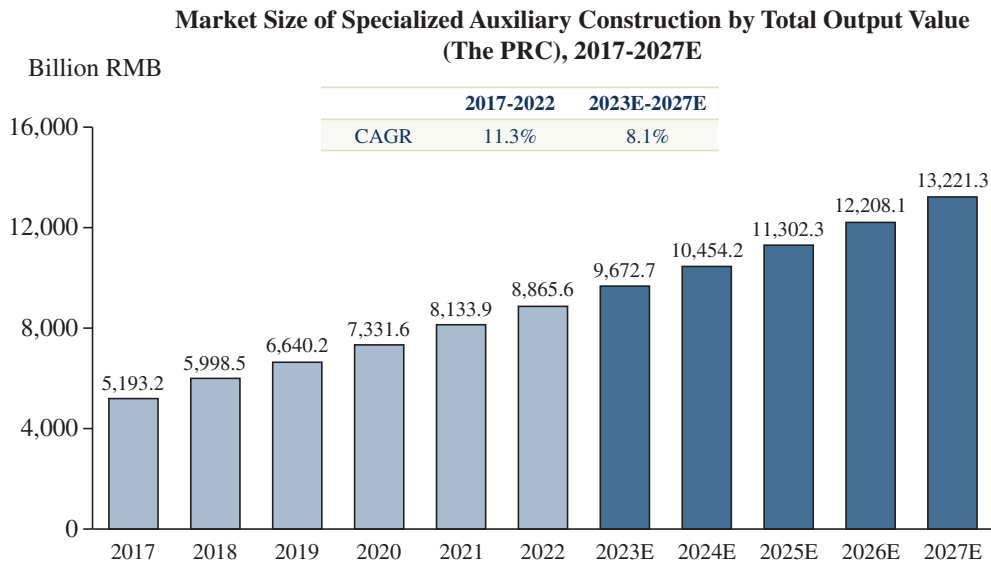
### Market Size of Specialized Auxiliary Construction Industry Works in the PRC

Specialized auxiliary construction mainly includes the urban road, power supply, water supply, as well as transportation infrastructures such as the highways, railways, bridges and other transportation infrastructure.

Specialized auxiliary construction generally plays an important role of the development of infrastructure construction, its construction in various fields including but not limited to rail transit, heating, pipe network, sewage and road. Associated with (i) the rapid progress of the PRC’s urbanization process over the past few years, (ii) the Chinese government’s growing investment in fixed assets of specialized auxiliary construction, the total output value of specialized auxiliary construction in the PRC registered stable growth during 2017 to 2022, increasing from RMB5,193.2 billion to RMB8,865.6 billion with a CAGR of 11.3% and (iii) supportive government policies. As supported by the “Plan for New Urbanization and Integrated Urban-Rural Development in 2021” 《2021年新型城鎮化和城鄉融合發展重點任

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務》 released in April 2021 which further promoted urbanization in the PRC, in particular, the specialized auxiliary construction of new urbanization with the county as an important carrier, the market size of specialized auxiliary construction industry in the PRC is anticipated increase with a CAGR of approximately 8.1% from 2023 to 2027. Moving forward, along with (i) the continuous development of the PRC’s economy and (ii) the substantial promotion of infrastructure construction, the specialized auxiliary construction industry is forecasted to grow steadily in the foreseeable future.



Source: National Bureau of Statistics of China, Frost & Sullivan

### Market Size of Specialized Industrial Construction in Shanxi Province

Aligned with the robust growth of the total output value of specialized industrial construction in the PRC, the total output value of specialized industrial construction in Shanxi Province witnessed exponential increase with a CAGR of 13.0% from 2017 to 2022. Such rapid increase is mainly due to the boom of new energy industry. Looking forward, the total output value of specialized industrial construction in Shanxi Province will maintain its prosperous growth and increase with a CAGR of 11.9%. In 2022, the total output value of specialized industrial construction in Shanxi Province accounted for 3.3% of the overall market in PRC.

### Market Size of New Energy Industry Works in Shanxi Province

Shanxi Province has stepped up the development of new energy over the past five years in a bid to reduce its heavy reliance on coal. The total installed power generating capacity in Shanxi Province had reached 113.4 GW by the end of 2021, up 48.4% from the level at the end of 2016, according to the State Grid Shanxi Electric Power Co. Ltd. Accordingly, the market size of new energy industry works by total output value in Shanxi Province increased from RMB50.7 billion in 2017 to RMB96.6 billion in 2022, at a CAGR of 13.8%.

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Shanxi is the PRC’s first pilot province for comprehensive energy revolution reforms and is in the transition to a low-carbon energy structure, aligning itself with the country’s goal to peak carbon emission by 2030 and reach carbon neutrality by 2060. Going forward, Shanxi will strengthen policy support and make good use of the market to form an advanced industrial chain including hydrogen production, storage, transportation, filling and adaptation. It is expected that hydrogen energy will grow into a pillar industry in Shanxi. With increasing investment in hydrogen, wind and solar energy development, the market size of new energy industry works by total output value in Shanxi Province is expected to reach RMB178.2 billion by 2027, at a CAGR of 13.3% from 2023 to 2027. In 2022, the total output value of New Energy Industry Works in Shanxi Province accounted for 3.4% of the overall market in PRC.

### **Market Size of Specialized Auxiliary Construction Industry in Shanxi Province**

Attributed by (i) the government policy on promoting work of old area renovation, in particular, to upgrade the public utilities such as gas, electricity, drainage, heating and other supporting infrastructures; (ii) the intensive investment on infrastructure development in Shanxi Province and (iii) the mega projects, for instance, South-North Water Transfer Project which costs at around RMB500 billion and passes through six provinces including Shanxi Province, the total output value of specialized auxiliary construction in Shanxi Province witnessed extensive increase during 2017 to 2022, increasing from RMB57.3 billion to RMB99.2 billion with a CAGR of 11.6%. Underpinned by the strong government effort on facilitating urbanization, the demand for related infrastructure will increase accordingly as well as the output value of municipal utilities works. It is expected the output value of specialized auxiliary construction in Shanxi Province will increase with a CAGR of approximately 9.6% from 2023 to 2027. In 2022, the total output value of Specialized Auxiliary Construction in Shanxi Province accounted for 1.1% of the overall market in PRC.

### **Market Size of Petrochemical Industry Works in Shanxi Province**

Owing to the thriving development in recent years attributable to the downstream demand, the market size of petrochemical industry works in the Shanxi Province has increased from RMB36.4 billion to RMB62.3 billion during 2017 to 2022.

Going along with the policies directions outlined by the PRC Government, and according to *Shanxi Province “Fourteen Five” industrial development planning* (《山西省“十四五”產業發展規劃》) and *Implementation Plan for Accelerating the Development of New Materials Industry in Shanxi Province* (《山西省加快推進行新材料產業發展實施方案》) the carbon neutral policy is expected to promote the petrochemical industry in Shanxi to develop towards initiatives including low-carbon emission, green, high-end and differentiated proposition. In view of the policies directions of zero-carbon emission, the development of carbon-based materials for uprising industries such as carbon fiber and graphene serve as an important foothold for the transformation and development of the petrochemical industry in the Shanxi Province. Going forward, propelled by the gradual transformation towards high-end petrochemical production, the market size of petrochemical industry works in the Shanxi

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Province is expected to attain RMB103.1 billion in 2027, representing a CAGR of approximately 10.5%. In 2022, the total output value of Petrochemical Industry Works in Shanxi Province accounted for 3.1% of the overall market in PRC.

### **Key Market Drivers**

#### *Favorable government policies*

The specialized industrial construction market along with construction industry in the PRC has been underpinned by various governmental policies over the recent years. In March 2021, the PRC Government promulgated “Outline of the 14th Five-Year Plan for National Economic and Social Development of the People’s Republic of China and the Long-Range Objectives Through the Year 2035” (《中華人民共和國國民經濟和社會發展第十四個五年規劃和2035年遠景目標綱要》), where it attached importance in the development of traditional and new infrastructure and build energy system, as well as to facilitate a coordinated and characteristic development of large, medium and small cities and small towns by optimizing the use of megalopolises and metropolitan areas to enable more people to enjoy better quality of life in cities. Specialized industrial construction and specialized auxiliary construction serving as the fundament of various industrial facilities, civil engineering structures and public utilities shall be continuously propelled in terms of new construction projects as well as maintenance and renovation of existing facilities and structures. As a result, such favorable policies would provide a positive growth impetus to the specialized industrial construction and specialized auxiliary construction market in the PRC.

#### *Acceleration of urbanization*

According to the National Bureau of Statistic of China, the urbanization rate of the PRC has reached 64.7% in 2022. “The PRC government recently unveiled “Plan for New Urbanization and Integrated Urban-Rural Development in 2021” (《2021年新型城鎮化和城鄉融合發展重點任務》) in April 2021 which outlined the orderly and effective urbanization of migrant populations from rural areas. Accordingly, it is anticipated that the urbanization rate in the PRC is likely to increase stably and would be more than 71% by 2026. With the increasing urban population in the coming years, the demand for infrastructure development, such as new energy power plant, pumping, pipeline and drainage system, petrochemical and other industrial facilities, as well as transport facilities, will increase and hence driving the growth of the specialized industrial construction and specialized auxiliary construction market in the PRC.

#### *Surging demand for electricity*

Due to the rapid pace of manufacturing activities, expedite economic development and climatic instability across the country in recent years, electricity consumption has continuously reached new highs in recent years, which caused a significant increase in electricity loads. In view of the circumstance, the Government has stepped up effort in boosting power transmission across regions to meet the booming demand. Further, in 2020, new energy was



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listed as the energy development priority in the first draft of the Energy law of the People’s Republic of China. In the same year, the PRC Government set out the “Developing High-Quality Energy in the New Era” (《促進新時代新能源高質量發展的若干政策》) in order to propose alternative measures to source electricity such as solar, nuclear and wind power. For instance, the offshore wind power installed in the PRC reach 28.6 GW in 2022. In the long run, the surging electricity consumption, coupled with government initiatives, would boost the investment in traditional and alternative electricity supply facilities, which in turn increase the demand for new energy works in the PRC.

### *Steady development of infrastructure*

Apart from power station and electricity system, in order to cater the rapid development of urban area, the PRC Government has also stressed importance in facilitating the logistics efficiency across the nation, which has also driven the development of various transportation infrastructure such as highway, railway and subway to support the policy. According to National Bureau of Statistics, the aggregated investment amount of infrastructural development projects in 2021 has recorded annual growth rate of 0.4%. Accordingly, the market demand for specialized auxiliary construction in the PRC is spurred continually.

### **Development Trend**

#### *Increasing awareness on green and sustainable building*

The PRC government has issued “the 13th Five-Year Plan for Building Energy Efficiency and Green Building Development” (《建築節能與綠色建築發展“十三五”規劃》) which has outlined the promotion of energy efficient building technologies, as well as the development of green building. During 2020 and 2021, the PRC government has promulgated the Green Building Label Management Measures (《綠色建築標識管理辦法》) and Green Building Initiative Program (《綠色建築創建行動方案》) in implementing the objectives to have 70% of the urban buildings and structures to be categorized into green building. As the design of green and sustainable building is increasingly incorporated in the electrical installation, pipeline and equipment installation in buildings and other crucial facilities such as new energy and power plants, various metrics such as air quality, thermal environment, light environment, and acoustic environment are covered in the planning of construction projects to attain an environment with higher energy and water efficiency, better air quality, sustainability with lower operation cost.

#### *Adoption of building information modeling in construction*

Building Information Modeling (BIM) works as a cutting-edge 3D modeling and visualization tool to efficiently handle conceptual design, design development, rendering, and documentation for underlying electrical and mechanical system, façade, interior of various types of building and infrastructure such as residential buildings, civil engineering structures, public utilities. The time effectiveness, clarity and transparency of the BIM keeps workers, managers, and stakeholders on the same page, which has become a trending technology

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adopted by market players. The specialized industrial construction and specialized auxiliary construction market sees major progress in assimilating the technology into engineering fields of electrical installation as well as pipeline and equipment installation, facilitating the application of building technology in the whole construction project.

### *Development of the EPC model in the PRC*

The EPC model refers to a model that the construction company undertakes the construction project during a whole construction process (including engineering, procurement, construction and commissioning) or its several phases. It is widely accepted that EPC model is capable to optimize the project efficiency through overall coordination and resource allocation of the project. The Chinese Government has been promoting the development of the EPC model for several years. In 2016, the Ministry of Housing and Urban-Rural Development (MOHURD) issued the Opinions on Further Promoting the Development of EPC (關於進一步推進工程總承包發展的若干意見), which proposed that the development organizations should give priority to the EPC model when selecting the contracting model of the construction project. In 2017, the MOHURD also issued the National Standard Code for General Contracting Management of Construction Projects (建設項目工程總承包管理規範國家標準) which has standardized the EPC construction standard to accelerating the promotion process of EPC projects in PRC.

### **Market Opportunities**

#### *Advocacy of prefabricated buildings and increasing technology adoption*

The term “prefabricated building” refers to a building which is constructed by assembling all its prefabricated construction parts at the construction site. The PRC government outlined “the Fourteenth Five-Year Plan” action plan for construction industry” 《“十四五”建築業發展規劃》 in 2022, with an objective to boost the total number of prefabricated to reach at 30% for new buildings. The development of prefabricated buildings serves as an important step for advancing the structural reform of the supply side and the development of new-type urbanization which helps to save resources and energy, reduces the pollution caused by construction activities, improves the labor productivity and the quality safety, promotes the in-depth integration of the construction industry. In addition, the various applications and technologies are widely used to enhance the overall quality of the construction works. As set out in the policy, standardized design, industrialized production, integrated decoration, information-based management and intelligence-based application are embraced to improve the technical level and the project quality. As such, service providers that are able to cater to the growing opportunity, shall garner competitive edge.

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### **Promotion of pumped storage development**

Accelerating the development of pumped storage is crucial for the safety and stability of power systems. Since 2011, supportive policies for the development of pumped storage industry have been released. To reduce carbon emissions, large-scale development of new energy, including pumped storage is proposed in the “14th Five-Year Plan” and the “Outline of Vision 2035”, which targets to construction of pumped storage power plants and the large-scale application of new energy storage technologies. In September 2021, the National Energy Administration issued the “Medium and Long-term Development Plan for Pumped Storage (2021-2035)”, which proposed that, by 2025, the total scale of pumped storage commissioning would double compared to the 13th Five-Year Plan, reaching more than 62 million kilowatts; by By 2030, the total scale of pumped storage commissioning will be doubled compared to the 14th Five-Year Plan, reaching about 120 million kilowatts.

### **Rising trend in integration of investment, construction and operation in the private sector**

The private sector is increasingly adopting an operational model that combines investment, construction, and operation. Private entities are partnering with others in the private sector to invest in and construct privately-owned facilities, aiming to generate profits through their operation. This integrated model has gained popularity, especially for projects requiring significant upfront capital investment, such as new energy ventures. Industry players specializing in different stages of the value chain collaborate to establish joint ventures that hold the project facilities. Through this cooperation and pooling of resources, they leverage synergies to efficiently construct the facilities. For example, companies specializing in construction materials can supply the necessary raw materials, while qualified construction firms can oversee the project’s coordination. Once the facility is complete, the project company can generate revenue by operating it, such as through electricity sales from a wind power farm. Additionally, as equity owners of the project company, enterprises can generate investment income. The integration of investment, construction, and operation enables a streamlined and coordinated approach to project development. By entrusting a single entity or consortium with the entire project lifecycle, better coordination and communication can be achieved across different stages. This, in turn, leads to increased efficiency, fewer delays, and cost savings.

### **Market Challenges**

#### ***Rising operation cost***

Specialized industrial construction market in the PRC is considered to be a labor-intensive industry with certain advanced skill sets and pre-requisite licenses required. In recent year, the wages of construction workers in the PRC have been rising steadily at a CAGR of approximately 7.8% during 2016 to 2021. While the staggering demand for construction project is continuously growing, the number of workers in the construction industry has declined at a CAGR of -4.9% during 2016 to 2021, facing likely a shortage of labor.

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### *Reliance on policies and economic cycles*

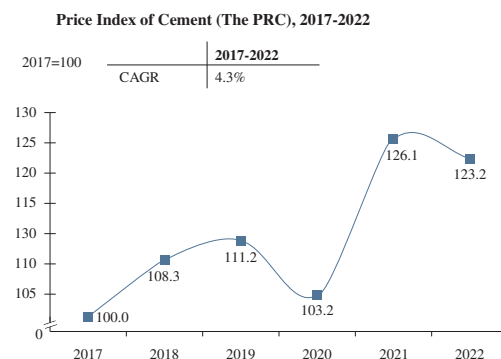
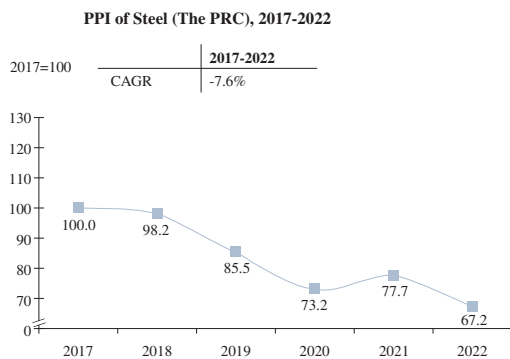
The specialized industrial construction industry is highly correlated to the macro economy environment and implementation of government policies. The demand for specialized industrial construction and specialized auxiliary construction industry is also driven by the planning and budget of various government departments, which encompasses land supply, property development and renovation. The macro economy is another pivotal factor which impacts the general consumption from different sectors during economic cycles. For instance, the outbreak of the COVID-19 has led to temporary closure of construction sites, which adversely impacted the overall growth of the industry.

### COST STRUCTURE ANALYSIS

#### Raw Materials

The principal raw materials used in the construction industry primarily include steel and cement. The price of steel has declined due to the outbreak of COVID-19 and economic instability, which resulted in temporary shrinking growth in the property development market and subsequently a decreased demand and steel price. The price index of steel in the PRC declined at a CAGR -7.6% from 2017 to 2022.

On the other hand, the price of cement has been surged since 2017 with the increasing demand of such products in the market. The price index of cement in the PRC increased at a CAGR 4.3% from 2017 to 2022.



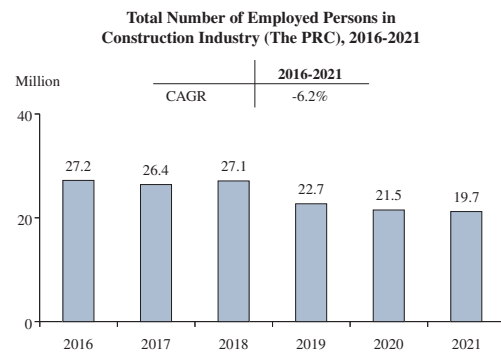
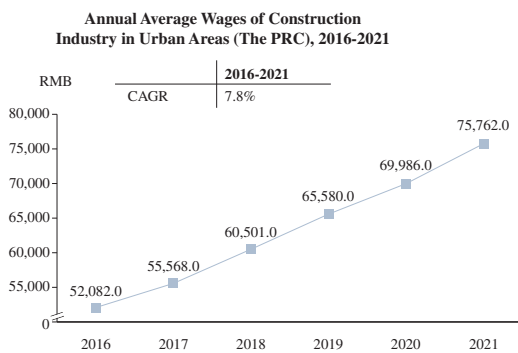
*Source: National Bureau of Statistics of China, Frost & Sullivan*

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### Labor Cost

According to National Bureau of Statistics of China, the annual average wages of construction industry in urban areas of the PRC increased from RMB52,082.0 in 2016 to RMB75,762 in 2021, representing a CAGR of 7.8% during 2016 to 2021.

The total number of employed persons in construction industry in the PRC declined from 27.2 million in 2016 to 19.7 million in 2021, representing a CAGR of approximately (6.2)%. The decline in the number of construction workers in the PRC has intensified the issue of labor-shortage of the construction industry in the PRC which has contributed to the rapid rise of average wages of construction industry in the PRC over the years.



*Source: National Bureau of Statistics of China, Frost & Sullivan*

*Note: 2022 data is not yet available.*

## COMPETITIVE LANDSCAPE OF SPECIALIZED INDUSTRIAL CONSTRUCTION AND SPECIALIZED AUXILIARY CONSTRUCTION MARKET IN THE PRC

### Overview of Competition of Specialized Industrial Construction and Specialized Auxiliary Construction Market in the PRC

The specialized industrial construction and specialized auxiliary construction industry in the PRC is highly fragmented with the top 10 players accounting for approximately 1.6% of the market share in 2022 and there are approximately more than 20,000 industry players in the specialized industrial construction and specialized auxiliary construction industry in the PRC. The industry tender success rate of Specialized Industrial Construction and Specialized Auxiliary Construction in the PRC ranges from 30% to 60% and the industry tender success rate of other construction works in the PRC ranges from 20% to 60%.

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In 2022, the Group is the 10th specialized industrial construction and specialized auxiliary construction contractor in the PRC by revenue with the market share of 0.1%.

Ranking of Top 10 Specialised Industrial Construction & Specialized Auxiliary Construction Contractors by Revenue (The PRC), 2022

Rank	Market participant	Revenue (RMB Million)	Market Share (%)
1	China Railway 12th Bureau Group Co., Ltd (中鐵十二局集團有限公司)	57,801.8	0.4%
2	China Railway 3rd Bureau Group Co., Ltd (中鐵三局集團有限公司)	47,408.1	0.3%
3	China Railway 17th Bureau Group Co., Ltd (中鐵十七局集團有限公司)	26,207.2	0.2%
4	China Construction Industrial & Energy Engineering Group Co., Ltd (中建安裝集團有限公司)	19,487.8	0.1%
5	China National Chemical Engineering Third Construction Co., Ltd (中國化學工程第三建設有限公司)	12,136.8	0.1%
6	China Petroleum Pipeline Engineering Co., Ltd (中國石油管道局工程有限公司)	12,029.7	0.1%
7	The Third Construction Co., Ltd of China Construction Third Engineering Bureau (中建三局第三建設工程有限責任公司)	11,383.5	0.1%
8	Shanxi Fourth Construction Group Co., Ltd (山西四建集團有限公司)	11,210.0	0.1%
9	China Chemical Engineering Second Construction Corporation (中化二建集團有限公司)	11,192.7	0.1%
<b>10</b>	<b>The Group</b>	<b>9,682.2</b>	<b>0.1%</b>
	<i>Sub-total</i>	218,539.7	1.6%
	<b>Total</b>	<b>13,911,200.0</b>	<b>100.0%</b>

Source: State Taxation Administration of China, Frost & Sullivan

Notes:

- China Railway 12th Bureau Group Co., Ltd (中鐵十二局集團有限公司) is a company established in 1948 which is engaged in the construction fields of railroads, highways, bridges, municipalities, urban light rail, subways, electricity, etc. It is a subsidiary of a Chinese construction company which floats in Shanghai and Hong Kong stock exchanges and is a corporate conglomerate engaged in engineering survey, design and construction, industrial equipment manufacturing, real estate development, resources and mining development, financial investment, and other fields.
- China Railway 3rd Bureau Group Co., Ltd (中鐵三局集團有限公司) is a company established in 1952 with principal business of providing comprehensive solutions for construction services. It is a subsidiary of a Chinese construction company which floats in Shanghai and Hong Kong stock exchanges and is a corporate conglomerate engaged in engineering survey, design and construction, industrial equipment manufacturing, real estate development, resources and mining development, financial investment, and other fields.
- China Railway 17th Bureau Group Co., Ltd (中鐵十七局集團有限公司) is a company established in 1952 which is primarily engaged in railroad engineering and highway engineering. It is a subsidiary of a Chinese construction company which floats in Shanghai and Hong Kong stock exchanges and is a corporate conglomerate engaged in engineering survey, design and construction, industrial equipment manufacturing, real estate development, resources and mining development, financial investment, and other fields.
- China Construction Industrial & Energy Engineering Group Co., Ltd (中建安裝集團有限公司) is a company established in 1991 specializing in engineering design, construction, manufacturing, petrochemical and industrial complex, public infrastructures, and etc. It is a subsidiary of a Chinese construction company listed on Shanghai stock exchange and is a vertically integrated construction and investment conglomerate mainly engaged in infrastructure investment, construction projects.
- China National Chemical Engineering Third Construction Co., Ltd (中國化學工程第三建設有限公司) is a company established in 1962 and has become a comprehensive building installation enterprise in the PRC's petrochemical industry. It is a subsidiary of a Chinese company in construction engineering and design and listed on Shanghai stock exchange. The parent company provides general contracting of construction, infrastructure and overseas projects. It also involves in project consulting, prospecting, design, construction, project management environmental treatment, technology research, development and industrialization, installation of pipeline, circuit and complete equipment, import and export business and involves real estate, investment and management of industry plant and infrastructure project.

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6. China Petroleum Pipeline Engineering Co., Ltd (中國石油管道局工程有限公司) is a company established in 1973 specializing in constructing oil and gas storage and transportation infrastructure. It is a subsidiary of a major national oil and gas corporation of China and one of the largest integrated energy groups in the world, which floats in Shanghai and Hong Kong stock exchanges.
7. The Third Construction Co., Ltd of China Construction Third Engineering Bureau (中建三局第三建設工程有限責任公司) is a company established in 1953 focusing on petrochemical construction and municipal public construction works. It is a subsidiary of a Chinese construction company listed on Shanghai stock exchange and is a vertically integrated construction and investment conglomerate mainly engaged in infrastructure investment, construction projects.
8. Shanxi Fourth Construction Group Co., Ltd (山西四建集團有限公司) is a company established in 1950 and is one of the special grade qualified enterprises in the field of national housing construction.
9. China Chemical Engineering Second Construction Corporation (中化二建集團有限公司) is a company established in 1953 and covers various business fields such as general contracting, design, manufacturing, construction, etc. It is a subsidiary of a Chinese company in construction engineering and design and listed on Shanghai stock exchange. The parent company provides general contracting of construction, infrastructure and overseas projects. It also involves in project consulting, prospecting, design, construction, project management environmental treatment, technology research, development and industrialization, installation of pipeline, circuit and complete equipment, import and export business and involves real estate, investment and management of industry plant and infrastructure project.

### Overview of Competition of Specialized Industrial Construction Market

The specialized industrial construction industry in the PRC is highly fragmented with the top 10 players accounting for approximately 1.5% of the market share in 2022 and there are approximately more than 10,000 industry players in the specialized industrial construction industry in the PRC.

In 2022, the Group is the 5th specialized industrial construction contractor in the PRC by revenue with the market share of 0.2%.

Ranking of Top 10 Specialised Industrial Construction Contractors by Revenue (The PRC), 2022

Rank	Market participant	Revenue (RMB Million)	Market Share (%)
1	China Petroleum Pipeline Engineering Co., Ltd (中國石油管道局工程有限公司)	12,029.7	0.2%
2	China National Chemical Engineering Third Construction Co., Ltd (中國化學工程第三建設有限公司)	10,114.0	0.2%
3	China Petroleum First Construction Corporation (中國石油天然氣第一建設有限公司)	9,512.9	0.2%
4	China Chemical Engineering Second Construction Corporation (中化二建集團有限公司)	9,327.2	0.2%
5	<b>The Group</b>	7,591.1	0.2%
6	China Construction Industrial & Energy Engineering Group Co., Ltd (中建安裝集團有限公司)	6,495.9	0.1%
7	Daqing Oilfield Construction Group Co., Ltd (大慶油田建設集團有限責任公司)	6,404.7	0.1%
8	China National Chemical Engineering Sixth Construction Co., Ltd (中國化學工程第六建設有限公司)	5,238.9	0.1%
9	Shanxi Fourth Construction Group Co., Ltd (山西四建集團有限公司)	5,231.3	0.1%
10	Shaanxi Construction Engineering Installation Group Co., Ltd (陝西建工安裝集團有限公司)	5,207.8	0.1%
	Sub-total	77,153.5	1.5%
	Total	5,045,600.0	100%

Source: State Taxation Administration of China, Frost & Sullivan

## INDUSTRY OVERVIEW

*Notes:*

1. China Petroleum First Construction Corporation (中國石油天然氣第一建設有限公司) is a company established in 1954 and has been one of the comprehensive chemical and petroleum construction enterprise in the PRC. It is a subsidiary of a major national oil and gas corporation of China and one of the largest integrated energy groups in the world, which floats in Shanghai and Hong Kong stock exchanges.
2. Daqing Oilfield Construction Group Co., Ltd (大慶油田建設集團有限責任公司) is established in 1985 which is engaging in the businesses of oil and gas exploration and development, engineering services, etc, which floats in Shanghai and Hong Kong stock exchanges.
3. China National Chemical Engineering Sixth Construction Co., Ltd (中國化學工程第六建設有限公司) is a company established in 1965 and is a building installation enterprise in the PRC’s petrochemical industry. It is a subsidiary of a Chinese company in construction engineering and design and listed on Shanghai stock exchange. The parent company provides general contracting of construction, infrastructure and overseas projects. It also involves in project consulting, prospecting, design, construction, project management environmental treatment, technology research, development and industrialization, installation of pipeline, circuit and complete equipment, import and export business and involves real estate, investment and management of industry plant and infrastructure project.
4. Shaanxi Construction Engineering Installation Group Co., Ltd (陝西建工安裝集團有限公司) is a company established in 1955 and engages in various fields including international and domestic engineering contracting, industrial investment, real estate development, operation and maintenance, equipment manufacturing, etc. It is a subsidiary of a listed company which floats in Shanghai stock exchange.

### Overview of Competition of Specialized Auxiliary Construction Market

The specialized auxiliary construction industry in the PRC is highly fragmented with the top 10 players accounting for approximately 1.9% of the market share in 2022 and there are approximately more than 10,000 industry players in the specialized auxiliary construction industry in the PRC.

In 2022, the Group recorded the market share of 0.02% by revenue in the specialized auxiliary construction market in the PRC.

Ranking of Top 10 Specialized Auxiliary Construction Contractors By Revenue (The PRC), 2022

Rank	Market participant	Revenue (RMB Million)	Market Share (%)
1	China Railway 12th Bureau Group Co., Ltd (中鐵十二局集團有限公司)	51,001.6	0.6%
2	China Railway 3rd Bureau Group Co., Ltd (中鐵三局集團有限公司)	43,344.6	0.5%
3	China Railway 17th Bureau Group Co., Ltd (中鐵十七局集團有限公司)	23,824.7	0.3%
4	China Construction Industrial & Energy Engineering Group Co., Ltd (中建安裝集團有限公司)	12,991.8	0.1%
5	The Third Construction Co., Ltd of China Construction Third Engineering Bureau (中建三局第三建設工程有限責任公司)	9,757.3	0.1%
6	Shanxi Fifth Construction Group Co., Ltd (山西五建集團有限公司)	7,157.3	0.1%
7	Shanxi Fourth Construction Group Co., Ltd (山西四建集團有限公司)	5,978.7	0.1%
8	Shaanxi Construction Engineering Installation Group Co., Ltd (陝西建工安裝集團有限公司)	3,719.8	0.0%
9	China National Chemical Engineering Sixth Construction Co., Ltd (中國化學工程第六建設有限公司)	3,274.3	0.0%
10	Shanghai Installation Engineering Group Co., Ltd (上海市安裝工程集團有限公司)	3,194.1	0.0%
	Sub-total	164,244.2	1.9%
	Total	8,865,600.0	100.0%

Source: State Taxation Administration of China, Frost & Sullivan



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*Notes:*

1. Shanxi Fifth Construction Group Co., Ltd (山西五建集團有限公司) is a company established in 1961 specializing in building construction, infrastructure investment and construction operation, real estate development and construction industrialization, etc.
2. Shanghai Installation Engineering Group Co., Ltd (上海市安裝工程集團有限公司) is a company established in 1958 providing installation services related to electromechanical installation projects. It is a subsidiary of a listed company which floats in Shanghai stock exchange.

### Overview of Competition of New Energy Works Market

The new energy works industry in the PRC is highly fragmented with the top 5 players accounting for approximately 0.6% of the market share in 2022 and there are approximately more than 5,000 industry players in the new energy works industry in the PRC.

In 2022, the Group ranked second in new energy works contractor in the PRC by revenue with the market share of 0.1%.

Ranking of Top 5 New Energy Construction Works Contractors by Revenue (The PRC), 2022

Rank	Market participant	Revenue (RMB Million)	Market Share (%)
1	China Railway 12th Bureau Group Co., Ltd (中鐵十二局集團有限公司)	6,800.2	0.2%
2	<b>The Group</b>	3,542.0	0.1%
3	China Railway 3rd Bureau Group Co., Ltd (中鐵三局集團有限公司)	2,709.0	0.1%
4	Shanxi Fourth Construction Group Co., Ltd (山西四建集團有限公司)	2,242.0	0.1%
5	China Railway 17th Bureau Group Co., Ltd (中鐵十七局集團有限公司)	1,588.3	0.1%
	<i>Sub-total</i>	16,881.5	0.6%
	<b>Total</b>	2,831,900.0	100.0%

Source: State Taxation Administration of China, Frost & Sullivan

### Overview of Competition of Specialized Industrial Construction Industry in Shanxi Province

The specialized industrial construction industry in Shanxi Province is relatively fragmented. There were over 500 construction enterprises in Shanxi Province in 2022 engaging in specialized industrial construction. In particular, the Group was one of the two construction enterprises in Shanxi Province that were granted Premium Grade Qualifications of General Contracting for Petrochemical Engineering Construction in 2022; while the number of construction enterprises in Shanxi Province that were granted First Grade Qualifications of General Contracting for Petrochemical Engineering Construction in 2022 was 341. In respect of the First Grade Qualifications of General Contracting for Power Engineering Construction, the Group was one of the 15 construction enterprises in Shanxi Province that has such qualifications in 2022; while the number of construction enterprises in Shanxi Province that were granted Second Grade Qualifications of General Contracting for Power Engineering

## INDUSTRY OVERVIEW

Construction and Third Grade Qualifications of General Contracting for Power Engineering Construction in 2022 was 316 and 450, respectively. In 2022, no construction enterprises in Shanxi Province were granted Premium Grade Qualifications of General Contracting for Power Engineering Construction.

In 2022, the Group was the largest specialized industrial construction contractor in Shanxi Province by revenue with the market share of 3.0%.

Ranking of Top 3 Specialised Industrial Construction Contractors by Revenue (Shanxi Province), 2022

Rank	Market participant	Revenue (RMB Million)	Market Share (%)
1	The Group	4,857.9	3.0%
2	China Chemical Engineering Second Construction Corporation (中化二建集團有限公司)	2,658.5	1.6%
3	Shanxi Fourth Construction Group Co., Ltd (山西四建集團有限公司)	2,145.4	1.3%
	<i>Sub-total</i>	9,661.8	5.9%
	<b>Total</b>	164,500.0	100.0%

Source: State Taxation Administration of China, Frost & Sullivan

### Entry barriers

#### *Capital requirements*

Construction industry, including specialized industrial construction, in the PRC is considered as a capital-intensive industry because a substantial amount of capital is required for initial investment of various construction machineries. In the specialized industrial construction industry, sizeable construction machines such as such as excavator, generator and mobile crane is required. Moreover, a sufficient amount of cash reserve is required for the early stage of construction work as the payment of the construction project is divided into multiple settlements and being paid according to the work progress. As such, market entrants may find it difficult to have sufficient capital to sustain their business.

#### *Licensing requirements*

Licensing is required to conduct various construction works in the PRC, including specialized industrial construction. Depending on different on-site circumstances, industry players shall obtain licenses such as “The construction enterprise qualification certificate” (建築業企業資質證書) accredited by the Ministry of Housing and Urban-Rural Development of People’s Republic of China (MOHURD), “Production License of Special Equipment” (特種設備生產許可證) accredited by State Administration for Market Regulation and Licenses for Undertaking Installation (Repair, Testing) of Electric Power Facilities (承裝(修、試)電力設施許可證) accredited by National Energy Administration, as well as other qualifications and certifications in relation to environmental management, occupational health and safety management and quality management. Market entrants may not be able to meet the requirements and conduct eligible construction works in the PRC.

## INDUSTRY OVERVIEW

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### *Proven track records*

Prior job record is considered as an invaluable asset to the market participants in the specialized industrial construction market in the PRC. In general, clients prefer specialized industrial construction providers with proven track record as to substantiate their capability of the business. The proven track records not only lie in the number of remarkable projects completed during a certain period but are also closely related to the quality of works, the comprehensive abilities in design and project execution and so forth, which cannot be achieved in a short time. Thus, it imposes as a key entry barrier for new entrants as job reference is yet to be established.

### COMPETITIVE STRENGTHS OF OUR GROUP

Please refer to the paragraph headed “Business – Our strengths” in this document for a detailed discussion of competitive strengths of our Group.