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## INDUSTRY OVERVIEW

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*The information and statistics set forth in this section and elsewhere in this document have been derived from the F&S Report, commissioned by us and independently prepared by F&S, in connection with the [REDACTED]. In addition, certain information is based on, or derived or extracted from, among other sources, publications of government authorities and internal organisations, market data providers, communications with various PRC government agencies or other independent third-party sources unless otherwise indicated. We believe that the sources of such information and statistics are appropriate and have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information and statistics are false or misleading in any material respect or that any fact has been omitted that would render such information and statistics false or misleading. Our Directors confirm that, after taking reasonable care, they are not aware of any adverse change in market information since the date of the F&S report which may qualify, contradict or adversely impact the quality of the information in this section. None of our Company, or the Sole Sponsor, the [REDACTED], the [REDACTED] or the [REDACTED], excluding F&S, has independently verified such information and statistics and no representation has been given as to their accuracy. Accordingly, such information should not be unduly relied upon.*

### SOURCE OF INFORMATION

We commissioned F&S, an independent market research and consulting firm, to conduct an analysis of, and to prepare a report on gold mine hazardous waste and mine solid waste treatment markets in China and other economic data for the period from 2015 to 2025. We have agreed to pay a fee of RMB400,000 for the F&S Report, which we believe reflects market rates for reports of this type. F&S is an independent global market research and consulting firm founded in 1961 and based in the United States. It offers industry research and market strategies and provides growth consulting and corporate training.

The F&S Report includes both historical and forecast information on the gold mine hazardous waste and mine solid waste treatment markets in China and other economic data. To prepare the F&S Report, F&S undertook both primary and secondary independent research through various resources within gold mine hazardous waste and mine solid waste treatment markets in China. Primary research includes interviewing industry insiders, competitors, downstream customers and recognised third-party industry associations. Secondary research includes reviewing corporate annual reports, databases of relevant official authorities, independent research reports and publications, as well as the exclusive database established by F&S over the past decades. F&S has adopted the following primary assumptions while compiling and preparing the F&S Report (i) the social, economic and political conditions in China will remain stable during the forecast period, (ii) government policies on gold mine hazardous waste and solid waste treatment markets in China will remain unchanged during the forecast period, and (iii) relevant key drivers are likely to drive the continued growth of China’s gold mine hazardous waste industry throughout the forecast period. F&S has also obtained the figures for the estimated total market size from historical data analysis plotted against the macroeconomic data as well as the industry key drivers. Our Directors confirm that, after making reasonable enquiries, there have not been

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## INDUSTRY OVERVIEW

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any material adverse changes to the market information set out in the F&S Report since the date of such report which may qualify, contradict or have an impact on the information contained in this section.





### OVERVIEW OF MINE SOLID WASTE TREATMENT MARKET IN CHINA

China is the largest producer and consumer of mineral resources, such as coal, gold and various non-ferrous metals. Mining industry is crucial for the development of China’s economy. The investment in mining industry remains at a relatively high level. More importantly, China is actively promoting the development of green mining. The government keeps introducing relevant policies to encourage and guide social capital to invest in ecological restoration of mining areas and actively promoting the revision and improvement of green exploration standards.

#### Definition, Classification and Treatment Methods Analysis of Mine Solid Waste

Mine solid waste refers to the waste rock, tailings, waste residue and hazardous waste which are originated from the process of mining and washing ore. A large amount of accumulated mining solid wastes will pollute the land and cause disasters such as landslides and mudslides. Hazardous wastes, containing harmful elements such as arsenic and cadmium, will cause direct harm to human health if being disposed to the environmental system. In order to eliminate the pollution caused by mine solid waste, the government is promoting the comprehensive utilisation of mine solid waste.

#### Classification of Mine Solid Waste

<b>Tailings</b>		<ul style="list-style-type: none"><li>• In the process of mining and washing ore, those ores with low content of useful components that cannot be used for production are called tailings.</li><li>• At present, the primary task of China’s mining recycling economy is to develop and utilize the existing large number of tailings which have been accumulated for a long time.</li></ul>
<b>Waste Rock</b>		<ul style="list-style-type: none"><li>• Waste rock refers to the surrounding rock and stone that have been mined without ores.</li><li>• In open-pit mining, the stripped overburden, surrounding rock and gangue without industrial value are generally called waste rocks. These waste rocks must be discharged to a certain place in time which is called waste rock yard.</li></ul>
<b>Waste Residue</b>		<ul style="list-style-type: none"><li>• Mining waste residue is the high-volume material that originates from the processes of excavation, dressing and further physical and chemical processing of wide range of metalliferous and non-metalliferous minerals by opencast and deep shaft methods.</li></ul>
<b>Hazardous Waste</b>		<ul style="list-style-type: none"><li>• Hazardous waste is a waste with properties that make it hazardous or capable of having a harmful effect on human health or the environment</li></ul>

Source: China Circular Economy Association, F&S

There are usually three methods of mine solid waste treatment, namely resource utilisation, incineration disposal and landfill disposal.

## INDUSTRY OVERVIEW

### Treatment Methods of Mine Solid Waste

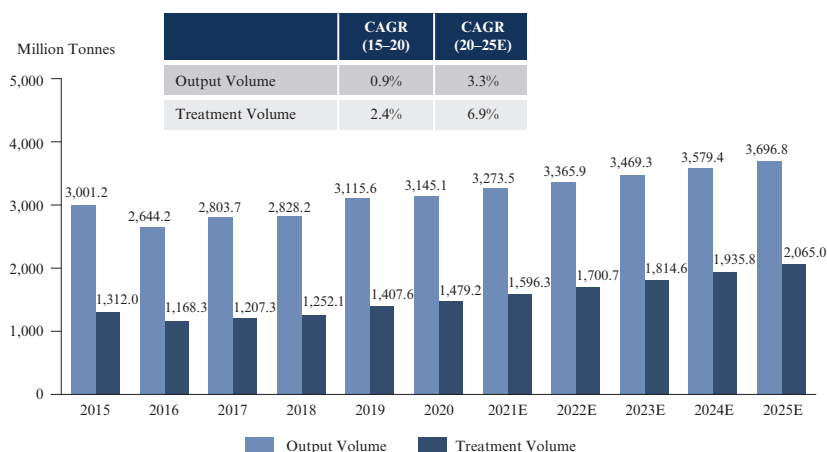
	Resource Utilisation	Incineration Disposal	Landfill Disposal
Application	Mine solid waste which still containing accessible and valuable element	Coal gangue, some hazardous waste and other mine solid waste with high calorific value	Harmless waste rock, tailings and residue, waste without calorific value
Advantages	<ul style="list-style-type: none"> <li>&gt; Raising utilisation value of hazardous waste after harmless treatment</li> <li>&gt; Supply metal, building materials to the market</li> <li>&gt; Maximising the value of waste</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Reduce waste volume largely and efficiently</li> <li>&gt; Eliminate disease agents and pathogens and reduce toxicity efficiently</li> <li>&gt; Save land resources</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Lower cost</li> <li>&gt; Mature technology</li> <li>&gt; Suitable for wide range of waste types</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>&gt; Need for pretreatment or sorting</li> <li>&gt; Need for further treatment on by-products and residual</li> <li>&gt; High cost for maintenance monitoring</li> <li>&gt; High tech requirement</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Production of undesirable by-products, becoming an environment pollution</li> <li>&gt; Endangering the health of surrounding resident</li> <li>&gt; High initial investment on equipment</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Need for pretreatment on waste before landfilling</li> <li>&gt; Need for large space</li> <li>&gt; Possible risk of pollution Need for long-time maintenance</li> <li>&gt; Long-lasting effect on land resources</li> </ul>

Source: F&S

### Output and Treatment Volume of Mine Solid Waste

The total output volume of mine solid waste in China increased from 3,001.2 million tonnes in 2015 to 3,145.1 million tonnes in 2020, representing a CAGR of 0.9% from 2015 to 2020. With the further development and industrial upgrading of mining industry, it is expected to reach 3,696.8 million tonnes in 2025, representing a CAGR of 3.3% from 2020 to 2025. The treatment volume of mine solid waste in China increased from 1,312.0 million tonnes in 2015 to 1,479.2 million tonnes in 2020 with a CAGR of 2.4% from 2015 to 2020. Driven by the strengthening policies, enforcement of environment protection regulations and the efficient utilisation of solid waste resources, the treatment volume of mine solid waste is expected to reach 2,065.0 million tonnes, representing a CAGR of 6.9% from 2020 to 2025, growing faster than the total output volume.

### Output and Treatment Volume of Mine Solid Waste, China, 2015–2025E



Source: China Circular Economy Association, F&S

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## INDUSTRY OVERVIEW

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### ANALYSIS OF GOLD MINE HAZARDOUS WASTE TREATMENT MARKET IN CHINA AND SHANDONG PROVINCE

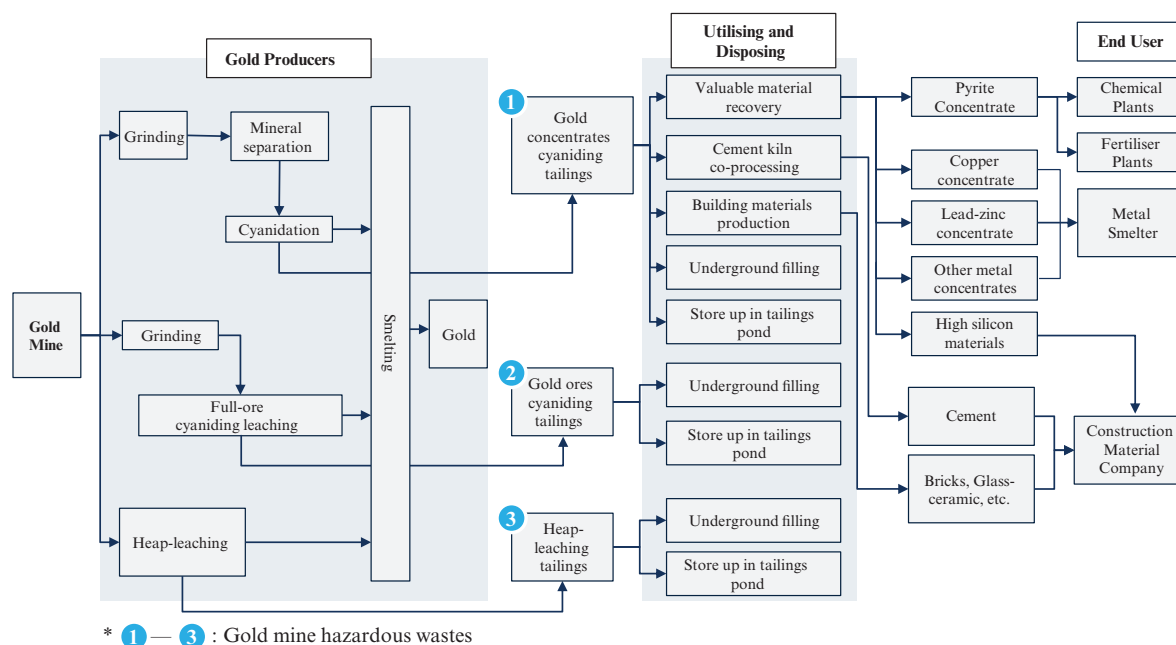
#### Definition, Value Chain and Business Model Analysis of Gold Mine Hazardous Waste

Gold mine solid waste can be mainly categorised into two types, namely gold mine hazardous waste and gold mine general solid waste. Gold mine hazardous waste includes the wastes that have one or more hazardous characteristics like corrosivity, toxicity, ignitability, reactivity and infectivity and those that are likely to be harmful to the environment or human body and need to be treated as hazardous wastes.

According to Directory of National Hazardous Wastes (國家危廢名錄) issued by the Ministry of Ecology and Environment (“MEE”) on 1 August 2016, cyanide leaching residue, including gold concentrates cyanide tailings, gold ores cyanide tailings and heap-leaching tailings, was listed as hazardous waste. As one of the main hazardous wastes in gold production, the treatment of cyanide leaching residue has been paid attention to and the gold mine hazardous waste treatment market has grown significantly in the past few years. The upstream of the value chain are gold producers, which produce gold mine hazardous waste during gold production through different kinds of methods, either dispose the hazardous waste by themselves or pay a certain amount of disposal fee and outsource the disposal to hazardous waste treatment companies. The midstream of the value chain are hazardous waste treatment companies, after receiving the hazardous waste from gold producers, such companies dispose and utilise the hazardous waste and produce different kinds of recycled products including pyrite concentrate, copper concentrate, lead-zinc concentrate, ceramsite, bricks, high silicon materials and sell products to downstream users. Downstream users purchase recycled products from the hazardous waste treatment companies. The downstream users mainly include chemical plants, metal smelters, construction material companies and fertiliser plants.

## INDUSTRY OVERVIEW

### Value Chain of Gold Mine Hazardous Waste Treatment



Source: F&S

There are mainly three types of gold mine hazardous waste, namely gold concentrates cyanide tailings, gold ores cyanide tailings and heap-leaching tailings. According to the Technical Specification for Pollution Control of Cyanide Leaching Residue in Gold Industry (黄金行业氰渣污染控制技术规范) issued by MEE on 1 March 2018, the gold concentrates cyanide tailings, the main gold mine hazardous waste in Shandong province, is suggested to be prioritised for valuable material recovery. The gold producers in Shandong usually pay treatment fee and outsource the disposal of the hazardous waste to hazardous waste treatment companies with qualification. While outside Shandong province, except the business model demonstrated above, a large proportion of the hazardous waste includes gold ores cyanide tailings and heap-leaching tailings, which were mainly stored up in the tailings pond of gold producers and usually will not be further treated afterwards due to the large production volume and relatively low economic value.

After the cyanide leaching residue was listed as hazardous waste in 2016, the treatment fee was approximately RMB50 per tonne, which varies regionally. Due to strict environmental regulation and high treatment demand, the gold hazardous waste treatment fee increased to approximately RMB40 to RMB180 per tonne in 2020. The major influential factors include the unit value of recyclable elements and the client's, which mainly represent the upstream of the value chain, willingness to pay which is related to the profit margin of the gold production business. It is expected that the gold hazardous waste treatment fee will increase at a moderate growth rate with a range from 3% to 5% in the foreseeable, due to the slight increasing gold mine hazardous waste production, decreasing recovery value of the hazardous waste and relatively stable treatment capacity.

## INDUSTRY OVERVIEW

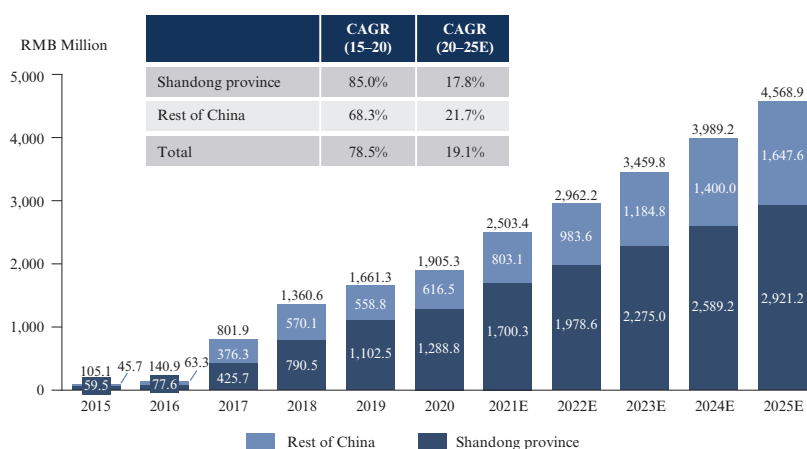
### Market Size of Gold Mine Hazardous Waste Market in China and Shandong province

A large number of gold mines were cyanided directly, instead of mineral separation, in overall China currently, which cause large output of gold ores cyanide tailings and heap-leaching tailings.

Considering that cyanide leaching residue was listed in Directory of National Hazardous Wastes on 1 August 2016, the gold mine hazardous waste treatment market was relatively small due to the lack of attention before 2017. The increasingly strict requirements on environmental protection drive the growth of the market after the implementation of policies, the gold mine hazardous waste treatment market increased from RMB59.5 million and RMB105.1 million in 2015 to RMB1,288.8 million and RMB1,905.4 million in 2020 in Shandong province and overall China, representing a CAGR of 85.0% and 78.5% from 2015 to 2020, respectively.

While in areas except Shandong province, the majority of gold mine hazardous wastes are gold ores cyanide-tailings and heap-leaching tailings due to different processing techniques. These kinds of hazardous wastes were mainly stored in the tailings pond and the proportion of them being treated is very low due to relative low recycle value, resulting that the total revenue of gold mine hazardous waste treatment in Shandong province accounts for a large proportion of whole market in China. Even though driven by the stricter environmental requirement, a certain amount of such hazardous wastes is expected to be disposed through underground filling by the gold production company themselves. In combination with the high utilisation rate of the hazardous waste in Shandong province, the gold mine hazardous waste treatment market in Shandong province accounts for large proportion of the market in overall China. The increasing hazardous waste output volume and stricter environmental requirements is expected to drive the gold mine hazardous waste treatment market further increase to RMB2,921.2 million and RMB4,568.9 million in Shandong province and overall China in 2025, representing a CAGR of 17.8% and 19.1% from 2020 to 2025, respectively.

**Total Revenue of Gold Mine Hazardous Waste Treatment Market\*,  
China and Shandong Province, 2015–2025E**



\* Total revenue includes revenue of hazardous waste treatment and sales revenue of recycled products.

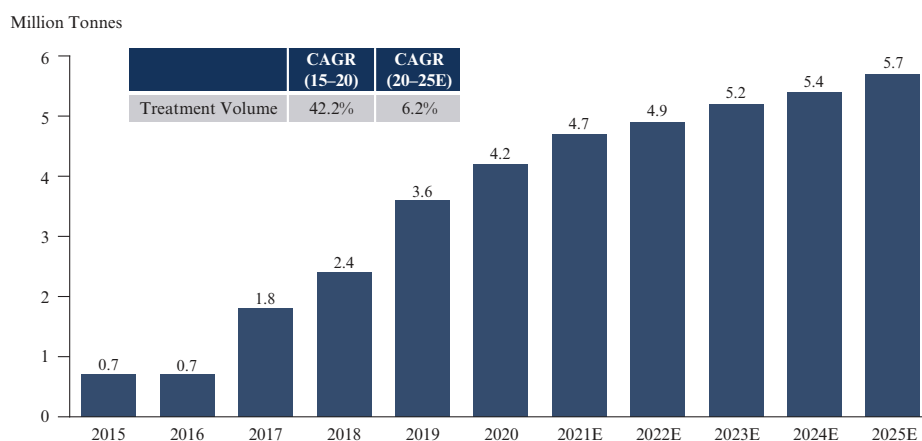
Source: F&S

## INDUSTRY OVERVIEW

Considering the high grade and the nature of the gold ores in Shandong province, majority of gold mines are enriched by mineral separation previously before cyanidation in smelting, which make the output rate of hazardous wastes in Shandong province is lower than that in overall China. The treatment volume of gold mine hazardous waste in Shandong increased significantly in 2017. The total treatment volume in Shandong increased from 0.7 million tonnes in 2015 to 4.2 million tonnes in 2020, representing a CAGR of 42.2%.

Under the stricter environmental requirement, the treatment demand from increasing annual hazardous waste output and accumulated hazardous waste which has not been treated from historical period is expected to drive the treatment volume of gold mine hazardous waste in Shandong province increase continuously to 5.7 million tonnes in 2025, representing a CAGR of 6.2% from 2020 to 2025. The environmental regulations have already been strictly implemented in Shandong province for the past few years, the treatment volume is expected to increase moderately in the forecast period due to the expected relatively stable gold mine and gold mine hazardous waste production in Shandong province.

### Treatment Volume of Gold Mine Hazardous Waste, Shandong Province, 2015–2025E



Source: F&S

### Drivers of Gold Mine Hazardous Waste Market in China

**Stricter Environmental Requirement.** Under the increasingly strict environmental protection policies and encouragement of circular economy, an increasing number of companies are expected to improve their hazardous waste utilisation, which enables the company to further expand its profitability and maximise the value of the gold mine while meeting national environmental protection requirements. Thereby will increase the overall utilisation rate of hazardous waste in the overall industry and gold mine drive hazardous waste treatment market growth. Meanwhile, the treatment demand from accumulated hazardous waste that has not been treated from historical period is also expected to drive the growth of treatment volume.

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## INDUSTRY OVERVIEW

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**Increasing Utilisation Value through Technology Improvement.** Encouraged by national circular economy, the utilisation value of hazardous waste has been emphasised. An increasing number of gold companies and hazardous waste treatment companies are expected to enhance their technology research and development ability on hazardous waste resource utilisation. Such effect is expected to further enhanced the utilisation value of unit hazardous waste, driving the development of the industry.

**More Utilise Channels.** The encouraging attitude on circular economy has promoted more recycling channels, including cement kiln co-processing, construction materials and etc., which is expected to reduce hazardous waste treatment restrictions caused by treatment capacity limitation, thereby promote the growth of the industry.

**Increasing Hazardous Waste Output Rate.** With the continuous mining of the gold mines in China, the grade of the gold ore is decreasing year by year, which is expected to increase the hazardous waste output rate and bring more hazardous waste and solid waste with the same gold production. In the context of expected stable gold production caused by relatively strong gold demand, the increase in the hazardous waste output rate will lead to an increase in the total hazardous waste output volume, which will drive a huge demand on hazardous waste treatment in gold mines in China.

### Entry Barriers of Gold Mine Hazardous Waste Treatment Market in China

**Qualification Barrier.** According to Measures for Management of Hazardous Waste Business License (《危險廢物經營許可證管理辦法》), companies engaged in hazardous waste collection, storage and treatment in China shall obtain hazardous waste business licenses. In order to get the license, a company must own qualified transportation, packaging, storage, and treatment facilities and equipment, as well as establish qualified rules and regulations, pollution prevention and control measures, and accident emergency rescue measures. For new entrants of the hazardous mine solid waste treatment industry, it takes time and efforts to get familiar with the requirements and eventually meet all the required standards.

**Technology Barrier.** Mine solid waste industry is a highly specialised industry, which has a high requirement on the technology capability of companies in the industry. More specifically, since hazardous waste is generally corrosive and toxic, hazardous mine solid waste treatment will cause serious secondary pollution to the environment if the risk control technology and experience of the company is insufficient. For new entrants of the market, it requires years of technology accumulation to formulate a whole set of efficient, energy-saving and environmentally-friendly mine solid waste treatment technology system. Before this process is completed, the technology barrier would be one of the major challenges for them.

**Expert Barrier.** Mine solid waste treatment business requires experts in chemistry, mechanics, environment, engineering design and other industries. More specifically, for hazardous mine solid waste treatment companies, in order to obtain the license, they should have more than three technicians majoring in environmental engineering or relevant fields with professional titles at intermediate levels or above, and with more than three years of solid waste pollution treatment experience. However, high-quality professionals in this field are relatively insufficient in China. Therefore, for new entrants of the market, the lack of professional expertise would be a great challenge in the early stages.



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## INDUSTRY OVERVIEW

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**Capital Barrier.** Solid waste treatment industry requires high equipment and land expenditure. And daily maintenance by technical personnel is also required to ensure the production and environmental protection requirements are met, which also requires a large capital investment. Furthermore, as more companies in the industry have been putting focus on technology and equipment upgrade in recent years, it requires more capital investment from new entrants if they want to keep pace with such trends.

### Trends in Gold Mine Hazardous Waste Treatment Market in China

**Matthew Effect Appears.** Except the consolidation of the gold production industry, the smelting process of the gold tends to be centralised encouraged by the Technical Policy of Pollution Control and In Gold Industry (《黄金工业污染防治技术政策》). The consolidation of the gold mine hazardous waste production is expected to drive the centralisation of the hazardous waste treatment demand correspondingly, which is expected to increase their reliance on hazardous waste treatment companies. Therefore, the leading hazardous waste treatment companies with large treatment capacity are expected to gain more market share.

**Preference on Professional Hazardous Waste Treatment Companies.** The government’s encouragement of 100% utilisation of the hazardous waste is expected to stimulate the hazardous waste treatment companies to expand their product portfolio to maximise resource utilisation, which is expected to raise the barriers of hazardous waste treatment industry. Under the dual pressures of policy and profitability, the advantages of professional third-party hazardous waste treatment companies that can maximise resource utilisation have gradually become prominent.

### Competitive Landscape of Gold Mine Hazardous Waste Market in China and Shandong Province

China’s gold mine hazardous waste treatment companies can be categorised into three types, namely independent hazardous waste treatment company, leading gold producers affiliated hazardous waste treatment company and hazardous waste co-processing companies. At present, the former two type of the companies are dominating the market. Our Company is an independent hazardous waste treatment company. The distribution of hazardous waste treatment company follows the gold producers and has a strong regional characteristic. The gold mine hazardous waste treatment market is concentrated. The leading players obtained large treatment volume from large gold producers, while there are still a large number of small companies in the market. There are approximately 50 gold mine hazardous waste treatment companies, and also hundreds of co-processing companies in China and over 30 co-processing companies in Shandong province with small amount of treatment volume participating in the market. In the future, the market concentration is expected to increase.

The top five players accounted for approximately 67.3% of the total revenue in China in 2020. While there is a great amount of local small companies in the market. The Company was ranked as the third large hazardous waste treatment company by revenue in China, with revenue of RMB190.5 million, accounting for 10.0% of the total revenue in China in 2020. Hazardous waste treatment market is relatively concentrated in Shandong province. The top five players accounted for approximately 64.5% of the total revenue in

## INDUSTRY OVERVIEW

Shandong province in 2020. Our Company was the second largest hazardous waste treatment company by revenue in Shandong province, with revenue of RMB190.5 million, accounting for 14.8% of the total revenue in Shandong province in 2020.

### Top 5 Gold Mine Hazardous Waste Treatment Companies by Revenue, China, 2020

Rank	Company	Revenue* (RMB Million)	Market Share
1	Shandong Guoda (山東國大)	422.6	22.2%
2	Chenzhou Xiongfeng (郴州雄風)	333.0	17.5%
3	<b>Our Company</b>	<b>190.5</b>	<b>10.0%</b>
4	Jiangxi Yiyuan (江西一元)	169.1	8.9%
5	Zhaojin Jinhe (招金金合)	165.7	8.7%
	Others	624.4	32.7%
	<b>Total</b>	<b>1,905.3</b>	<b>100.0%</b>

\* Revenue includes revenue of hazardous waste treatment service and sales of recycled products.

Source: F&S

\* Our Company was ranked as the largest hazardous waste treatment company by volume in China, with treatment volume of 1,083 thousand tonnes, accounting for approximately 17.6% of the total treatment volume in China in 2020.

### Top 5 Gold Mine Hazardous Waste Treatment Companies by Treatment Volume, China, 2020

Rank	Company	Treatment Volume (k tonne)	Market Share
1	<b>Our Company</b>	<b>1,083</b>	<b>17.6%</b>
2	Shandong Guoda (山東國大)	850	13.8%
3	Zhaojin Jinhe (招金金合)	600	9.7%
4	Jiangxi Yiyuan (江西一元)	340	5.7%
5	Chenzhou Xiongfeng (郴州雄風)	204	3.3%
	Others	3,078	49.9%
	<b>Total</b>	<b>6,165</b>	<b>100.0%</b>

## INDUSTRY OVERVIEW

### Top 5 Gold Mine Hazardous Waste Treatment Companies by Treatment Volume, Shandong Province, 2020

Rank	Company	Treatment Volume (k tonne)	Market Share
1	<b>Our Company</b>	<b>1,083</b>	<b>25.8%</b>
2	Shandong Guoda (山東國大)	850	20.3%
3	Zhaojin Jinhe (招金金合)	600	14.3%
4	Zhaoyuan (招遠中環)	100	2.4%
5	Qingdao Gold Lead-Zinc Development (青島黃金鉛鋅開發)	50	1.2%
	Others	1,513	36.0%
	<b>Total</b>	<b>4,196</b>	<b>100.0%</b>

Source: F&S

**Shandong Guoda (山東國大)** is a professional state-owned gold smelting company with hazardous waste treatment business based in Shandong, which provides a wide range of products including gold, silver and sulphuric acid.

**Chenzhou Xiongfeng (郴州雄風)** is a subsidiary of the Chifeng Gold, which is a non-state-owned company. The company is committed to recycling, disposal and utilisation of industrial and hazardous solid waste and other renewable resources.

**Jiangxi Yiyuan (江西一元)** is a non-state-owned company, which is focusing on the comprehensive recovery of nonferrous metals, rare metals and non-metal, as well as utilisation of industrial solid waste and hazardous waste.

**Zhaojin Jinhe (招金金合)** is a subsidiary of Zhaojin Group, which is a state-owned leading gold producer in China. The company is dedicated in gold mine hazardous waste treatment and utilisation, and sulphuric acid production.

**Qingdao Gold Lead-Zinc Development (青島黃金鉛鋅開發)** is a subsidiary of Shandong Gold, which is a state-owned leading gold producer in China. The company is committed in recovery of nonferrous metals from industrial waste residue.

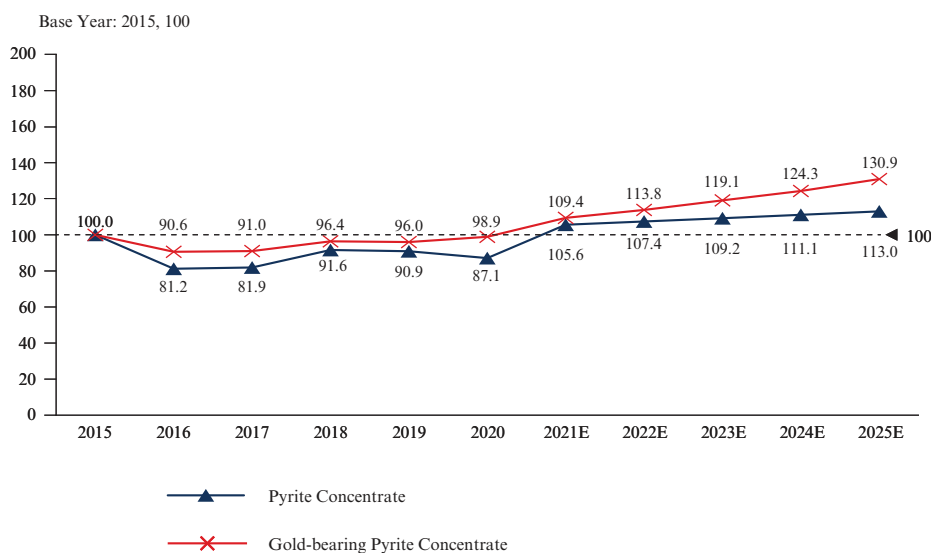
**Zhaoyuan (招遠中環)** is a non-state-owned company based in Zhaoyuan, Shandong province, mainly engaged in hazardous waste treatment, metal concentrates sales and technology consulting.

## INDUSTRY OVERVIEW

### Price Analysis of Pyrite Concentrate and Gold-bearing Pyrite Concentrate in China

Pyrite concentrate, smelting residue, and sulphur are the three main raw materials for producing sulphuric acid in China. Due to the slowdown in the demand for sulphuric acid in China since 2015, as raw material to produce sulphuric acid, the price of pyrite concentrate has fallen slightly. Moreover, it was impacted by COVID-19 in 2020. As the impact wears off, it is expected that the price of pyrite concentrate will increase by approximately 21% in 2021 year over year and grow at a CAGR of around 5.3% during the period from 2020 to 2025. Using pyrite concentrate for sulphuric acid production can generate high value by-products such as iron and niacin which could have a lot of synergy with steel, chemical and other downstream industries to achieve cleaner production and circular economy of mining resources, which is in line with China’s current policy situation and industry development.

**Price Index of Pyrite Concentrate and Gold-bearing Pyrite Concentrate, China, 2015–2025E**



\* The price index of pyrite concentrate and gold-bearing pyrite concentrate sets 2015 as a base year to show the trend of pyrite concentrated in the past five years, respectively.

Source: F&S

## INDUSTRY OVERVIEW

### Major Cost Analysis of Gold Mine Hazardous Waste Market

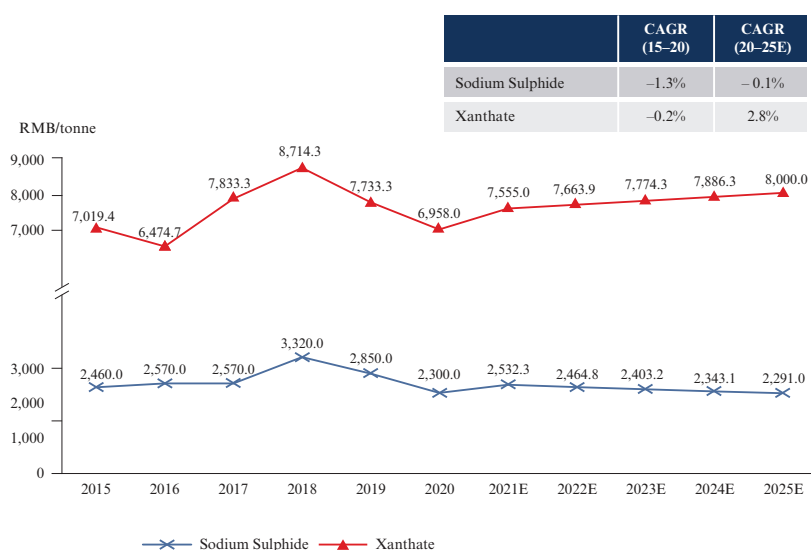
#### Chemical

Sodium sulphide and xanthate are the two major chemicals used in gold mine hazardous waste treatment business.

The average price of sodium sulphide in China experienced an increase from RMB2,460.0 per tonne in 2015 to RMB3,320.0 per tonne in 2018 and then a decrease to RMB2,300.0 per tonne in 2020. Considering that the downstream demand is expected to gradually recover in 2020, there will be a moderate increase in the price of sodium sulphide. In the long term, the price is expected to be at a stable and slightly declining level, reaching approximately RMB2,291.0 per tonne in 2025.

Affected by the fluctuation of price of butanol, the main raw material of xanthate, the average price of xanthate in China experienced an increase from RMB7,019.4 per tonne in 2015 to RMB7,733.3 per tonne in 2019. However, impacted by the COVID-19 outbreak in 2020, downstream demand for xanthate decreased in early 2020, thus the average price of xanthate in China decreased to approximately RMB6,958.0 per tonne in 2020. While the downstream demand is expected to recover as the influence of the COVID-19 outbreak wears off, which is expected to drive the price recover in 2021. Moreover, the expected slight increasing of gold production is expected to drive the demand of xanthate increase slightly, the average price of xanthate in China is expected to reach approximately RMB8.0 thousand per tonne in 2025.

**Price of Sodium Sulphide and Xanthate, China, 2015–2025E**



Source: F&S

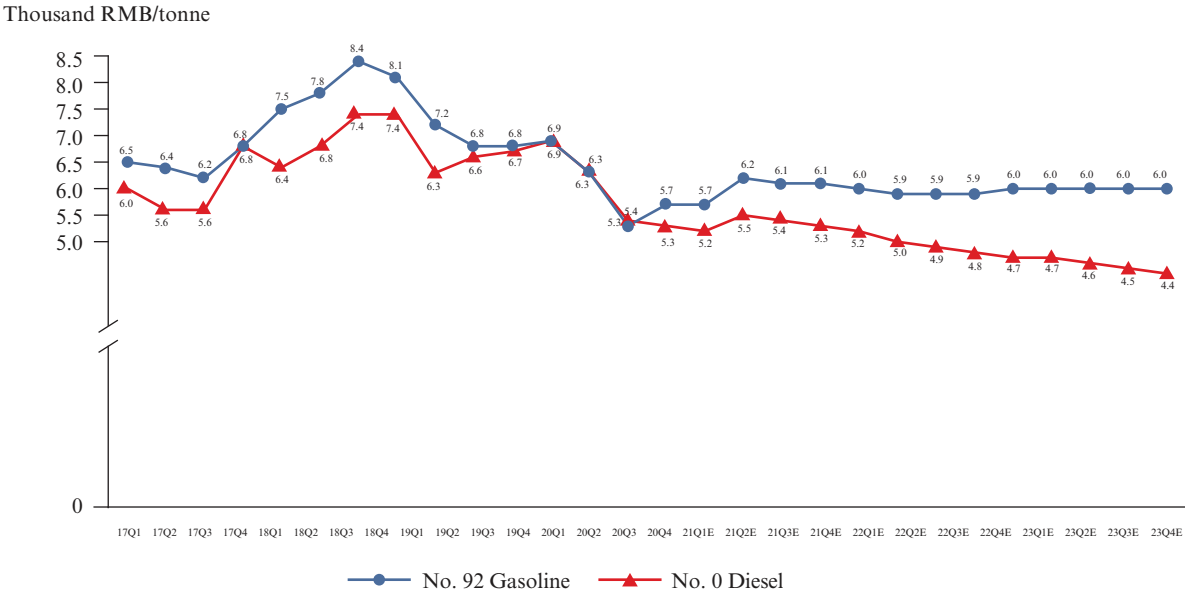
**INDUSTRY OVERVIEW**

The transportation cost is mainly affected by the gasoline and diesel price in China, which is related to the crude oil price in China and affected by global crude oil price. The global crude oil price is further influenced by global oil supply and demand volume, price of alternative energy, international economy and international political relations.

In the past four years, the price of gasoline and diesel in China experienced a process of rise and fall. The price of No. 92 gasoline in China increased from approximately RMB6.5 thousand per tonne in the first quarter of 2017 to RMB8.4 thousand per tonne in the third quarter of 2018, and then decreased to RMB5.7 thousand per tonne in the fourth quarter of 2020. The price of No. 0 diesel in China increased from approximately RMB6.0 thousand per tonne in the first quarter of 2017 to RMB7.4 thousand per tonne in the third quarter of 2018, and then decreased to RMB5.2 thousand per tonne in the fourth quarter of 2020.

The price of gasoline increased in 2020 and is expected to remain at a level of around RMB6.0 thousand per tonne in coming years in China. The price of diesel is expected to encounter an trend of decreasing in coming years.

**Price of Gasoline and Diesel (Quarterly Average), China, 2017–2023E**



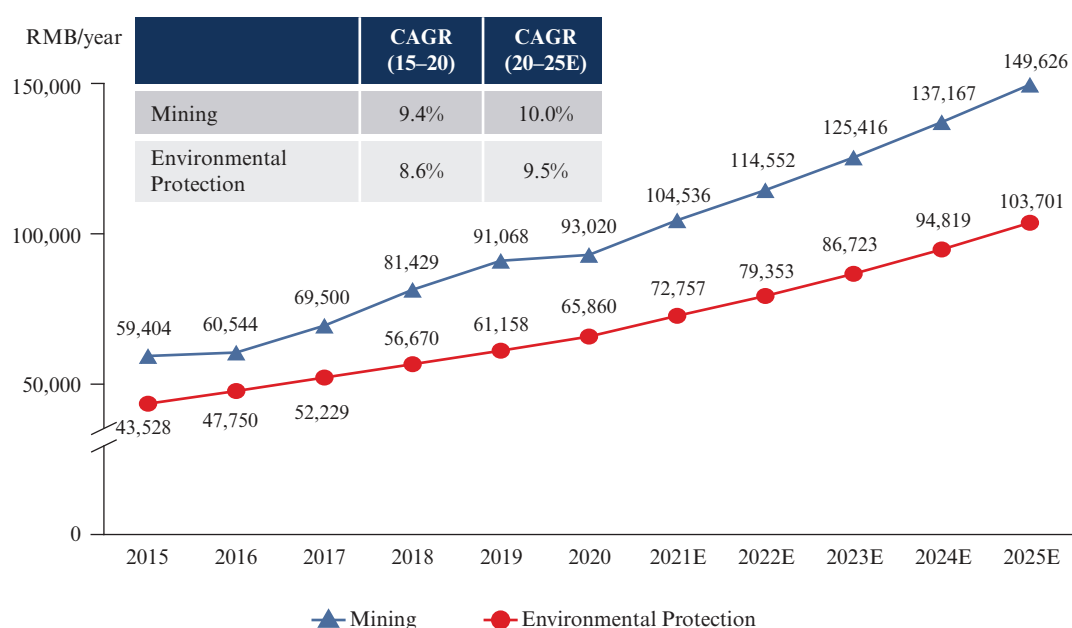
Source: F&S

## INDUSTRY OVERVIEW

### *Wages*

With the rapid growth of China’s economy and the mining industry, the average wage of workers in the mining industry has risen continuously in recent years, increasing from RMB59,404 per year in 2015 to RMB93,020 per year in 2020, and is expected to further grow to RMB149,626 per year in 2025, mainly due to the expected economic recovery from COVID-19. Similarly, due to the increasing public awareness of environmental issues, the growing government investment in environmental protection and the protection enhancement for employees and increasing employers’ liability due to implementation of the PRC Labour Contract Law (《中華人民共和國勞動合同法》), the average wage of employees in the environmental protection industry in China has risen from RMB43,528 per year in 2015 to RMB65,860 per year in 2020, and is expected to further increase to RMB103,701 per year in 2025.

**Average Wages of Employees in Mining and Environmental Protection Industries, China, 2015–2025E**



Source: National Bureau of Statistics, F&S