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ZANGGE MINING

ZANGGE MINING COMPANY LIMITED

DATE: NOV. 12, 2025

TICKER SYMBOL: 000408.SZ
SECTOR: Materials
RECOMMENDATION: BUY
CURRENT PRICE: 58.86
TARGET PRICE: 70

EXECUTIVE SUMMARY

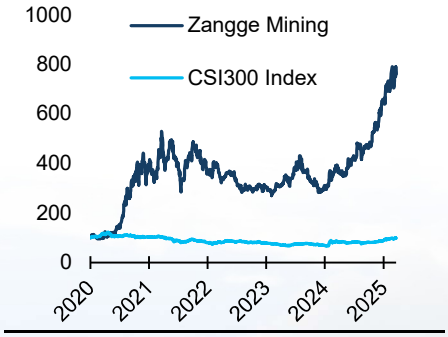
Figure 1: Summary

RECOMMENDATION		BUY
Valuation Date		12/31/25
Target Price	CNY	70
Current Price *	CNY	58.86
Upside	%	19
Shares Outstanding	mn	1570.23
52 Week High	CNY	62.80
52 Week Low	CNY	26.75

Source: Bloomberg, Team Analysis

** Closing price as of 10/31/2025*

Figure 2: Zangge Stock Price Vs CSI300 Index, Rebased to 100 [2020-2025]



Source: Bloomberg, Team Analysis

Figure 3: Key Forecast (mn)

Key Forecast	24A	25E	26E	27E
Rev.	3,251	3,519	3,781	3,930
EBITDA	1,279	1,936	2,053	2,146
Investment Inc.	1,869	1,962	2,551	2,857
Net Inc.	2,569	3,035	3,769	4,132
DPS (CNY)	0.26	1.00	0.72	0.79

Source: Bloomberg, Team Analysis

We initiate coverage on **Zangge Ming** (**000408.SZ**) with a **BUY** recommendation and a **12–month price target of CNY 70**, implying a **19%** upside from the close price of CNY 58.86 as of October 31, 2025. Our target price is primarily derived from DCF valuation, further corroborated by supplementary assessment using a dividend discount model and a sum-of-the-parts valuation.

Zangge Mining has long specialized in salt-lake resource development and, leveraging the Qarhan Salt Lake, has established an integrated potassium – lithium system in which potassium forms the operational base and lithium serves as the primary growth driver. In addition, Zangge's equity stake in Julong Copper provided incremental earning leverage to the copper cycle, strengthening its pro-cyclical growth potential beyond its core operations. Within this framework, **potassium** offers **a stable foundation, lithium** delivers **long-term growth,** and **copper** enhances **external value.**

POTASSIUM: RESILIENT PROFITS, GROWTH POTENTIAL

Potassium chloride prices are underpinned by a globally concentrated and relatively inelastic supply structure, combined with steady long-term demand and shifting regional consumption patterns. As a result, the industry exhibits a "downside-supported, upside-leveraged" cyclical profile. Leveraging the Qarhan Salt Lake, Zangge maintains structurally low production costs through its unique extraction system and high recovery rates, enabling resilient profitability even during industry downturns. Future volume growth is expected to come primarily from Laos, where favorable resource endowment, low factor costs, and a supportive policy environment allow for phased construction and scalable expansion. This large potential capacity provides clear external growth opportunities for Zangge's potassium chloride business.

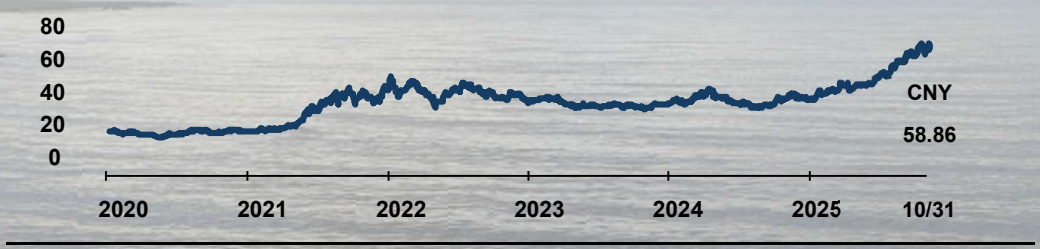
LITHIUM: DRIVEN BY BOTH TECHNOLOGY AND RESOURCES

Zangge's lithium business has been proven over an extended operating cycle and has become a meaningful contributor to revenue. On the technology front, Zangge's brine lithium extraction system and its "one-step" process for producing battery-grade lithium carbonate provide a clear cost advantage. On the resource front, Zangge is actively expanding its footprint in high-quality lithium assets such as Mami Co and Longmu Co, creating substantial room for future resource conversion and capacity expansion. As resource conversion accelerates and scale increases, the lithium segment is poised to become one of Zangge's most dynamic growth drivers.

COPPER: EXTERNAL KEY PERFORMANCE ENGINE

Zangge gains incremental exposure to the copper market through its equity stake in Julong Copper. Julong Copper's resource expansion and capacity ramp-up are progressing as planned, with clear construction timelines and implementation schedules driving significant increases in production capacity and earnings. Copper prices remain structurally supported, with supply - demand elasticity creating a stable "upward-downward" price channel. The dual drivers of volume expansion and price resilience are transforming the copper business from a resource asset into a high-cash-flow, high-visibility growth engine. This, in turn, provides significant support to Zangge's net profit and cash generation.

Figure 4: Zangge Stock Price Performance



Source: Bloomberg, Team Analysis

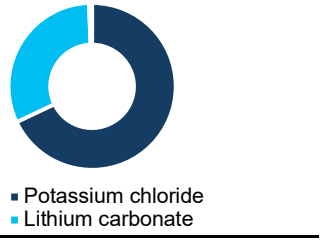
Figure 5: Scenario Analysis

	BULL	BASE	BEAR
25-27 Rev. CAGR	10%	6%	-7%
WACC	6.47%	6.47%	6.47%
Target Price	**78**	**70**	**59**

Source: Team Analysis

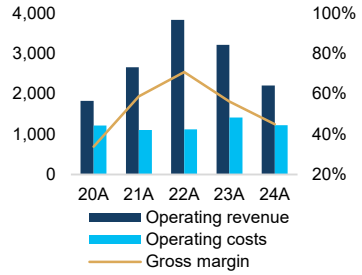
BUSINESS DESCRIPTION

Figure 6: Zangge Business Share in 2024



Source: Bloomberg, Team Analysis

Figure 7: Potassium's Performance



Source: Bloomberg, Team Analysis

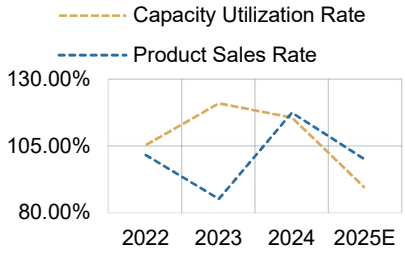
Figure 8: Potassium, RR* Metrics

Indicator (%)	2022	2023	2024
Mining Recovery RR*	85.02	85.07	84.63
Processing RR*	66.27	65.32	62.24
Comprehensive RR*	100	100	100

Source: Company Reports, Team Analysis

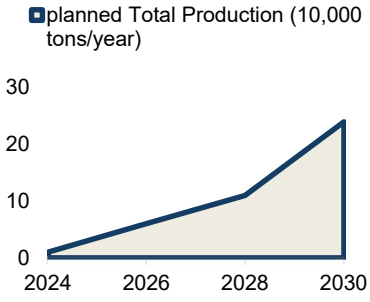
** RR: Recovery Rate*

Figure 9: Lithium, From Production To Sales



Source: Company Reports, Team Analysis

Figure 10: Lithium, Planned Production



Source: Company Reports, Team Analysis

Founded in 2002 with a focus on salt-lake resource development, Zangge Mining has evolved into a leading domestic player with an integrated potassium–lithium business portfolio. Anchored by its potassium chloride operations at the Qarhan Salt Lake and supported by its strategic deployment of lithium resources at the Mami Co Salt Lake, Zangge has established a model in which potash provides stable cash flow while lithium drives incremental growth. As one of China's core potassium chloride producers and a leading salt-lake lithium extractor, Zangge's operations span the full value chain from resource exploration to production and market distribution.

BUSINESS SEGMENT

Potassium: Domestic Strength, Overseas Expansion, and Technology-Driven Cost Leadership. Zangge's potash business combines resource scale, geographic advantage, and clear growth. Domestically, it owns the Qarhan Salt Lake potash magnesium deposits, with 23.1 Mt of KCl resources, 1.2 Mt of KCl and 10,000 tons of lithium carbonate in designed capacity, and rights to extract magnesium salts, lithium, and boron; the Dalangtan, Jianshishan, and Xiaoliangshan–Dafengshan projects are progressing steadily. **(Appendix 2)** Overseas, Zangge entered Laos potash in 2023, covering 398 square kilometers with 984 Mt of 15.5% KCl resources. The planned 2-million-ton capacity (Phase I: 1 Mt) and CNY 9.428 billion investment are expected to deliver CNY 5 billion revenue and CNY 1.3 billion profit at full ramp-up, forming Zangge's key overseas growth engine. Together Qarhan and Laos form a "dual base" supporting global expansion.

Potassium remains the core revenue source, contributing roughly 68% in 2024. **(Figure 6)** Revenue rose from CNY 1.826 billion to CNY 3.835 billion in 2020–2022, with gross margin peaking at 70.9%, before normalizing to CNY 2.210 billion and 44.8% margin in 2023–2024. **(Figure 7)** Overall, Zangge delivers mid-to-upper industry cost and profitability, supported by stable output and cost resilience.

Technologically, Zangge operates a closed-loop "freshwater–brine–tail brine" system integrating solution mining, solar evaporation, and brine recovery, while embedding potassium–lithium co-production to reduce energy and water use. **(Appendix 3)** R&D targets thermal extraction, deep-brine utilization, and process automation. Mining recovery averaged 85%, processing recovery 62%, and overall recovery 100% from 2022–2024, demonstrating mature, scalable technology that also underpins the Laos project's future cost improvement. **(Figure 8)**

Lithium: By-Product to Growth Driver, Supported by Technological Differentiation. Zangge's lithium segment shows accelerating growth. In 2024, lithium carbonate revenue reached CNY 1.022 billion (31.43% of total), with CNY 491 million segment net profit (19.06%). Output was 11,566 tons, sales 13,582 tons, up 31.68%. **(Figure 9)** Average cost was only CNY 41,000 per ton with 45.44% gross margin, far below hard-rock production costs. Zangge holds 1.5593 Mt LCE across Qarhan, Mami Co, Jiezhe Chaka and Longmu Co, with existing 10,000-ton capacity and 50,000 tons under construction; long-term total planned capacity is 280,000 tons, with 64,400 tons attributable. **(Figure 10)**

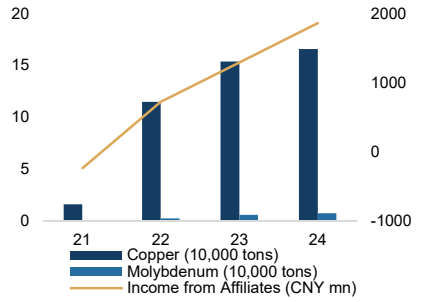
Its patented process for ultra-low-concentration, high-Mg/Li brines integrates adsorption, membrane purification, and electrodialysis, enabling high-efficiency separation and battery-grade lithium carbonate production from brines once considered uneconomic. A one-step process further compresses the full cycle to five hours and relies on digitalized, intelligent control, establishing a strong technological moat in salt-lake lithium extraction. **(Appendix 16)**

Copper: Stable Investment Returns Anchored by Large-Scale Resources. Zangge holds 30.78% of Julong Copper, which contributed CNY 1.928 billion in 2024 investment income (74.72% of net profit). **(Figure 11)** Controlled by Zijin Mining, Julong benefits from Zijin's engineering, construction, and global mining expertise. Its core Qulong–Rongmucuo porphyry deposit is among China's largest open-pit copper mines, with 0.29% copper grade and long-term economic value. Proven resources reached 25.88 Mt in 2024, ranking first nationwide. With advantages in scale, mine life, and by-product synergy, Julong delivers strong and stable profitability and dividends, serving as Zangge's key earnings driver and providing meaningful cyclical leverage to copper prices.

BUSINESS STRATEGY

Zangge emphasizes maximizing resource value and strengthening industrial synergies, consolidating its industry position in both potassium and lithium. While its existing operations progress steadily, Zangge continues to explore additional high-quality salt-lake resources to support future capacity expansion and long-term sustainable development. Zangge is also increasing its R&D investment, advancing technologies for lithium extraction from salt lakes and the recovery of associated minerals, with the goal of further reducing costs and improving production efficiency. Through consistent profit distribution, Zangge provides high cash returns to shareholders, enhancing the loyalty of minority shareholders and reinforcing market confidence by continually creating shareholder value.

Figure 11: Benefits from Julong



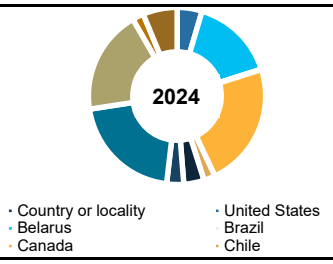
Source: Company Reports, Team Analysis

BUSINESS MODEL

Zangge operates a vertically integrated business model, controlling the full process from resource acquisition to product sales, which strengthens its competitive moat. Zangge holds high-quality mining licenses for the Qarhan and Mami Co salt lakes, securing abundant resource reserves and ensuring long-term production security. In production, Zangge applies its advanced "one-step" salt-lake lithium extraction process, which delivers significant advantages in resource utilization efficiency and leads in extraction purity. Meanwhile, its mature potassium chloride production process, along with technology upgrades and equipment improvements, has driven steady revenue growth and highlighted its cost advantage. Leveraging its long-established agricultural distribution network, Zangge's potash sales connect directly with distributors, enhancing sales efficiency. Its lithium business is supported by strategic partnerships with downstream demand-side enterprises, ensuring stable market channels and sales visibility.

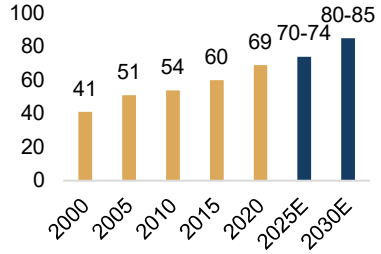
INDUSTRY OVERVIEW

Figure 12: World Potash Reserves



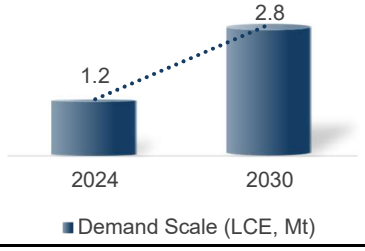
Source: USGS

Figure 13: Global Potash demand (million tons KCl)



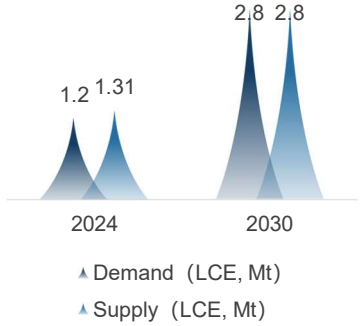
Source: IFA, Agus, CRU, Nutrien

Figure 14: Global Lithium Market Outlook 2030



Source: Bloomberg, IEA, Team Analysis

Figure 15: Global Lithium Supply-Demand outlook



Source: Bloomberg, Team Analysis

POTASSIUM: MARKET STRUCTURE DRIVES CYCLE

Supply: Global potash supply remains structurally constrained due to high resource concentration and slow capacity additions. Canada, Russia, and Belarus together hold over two-thirds of global reserves, forming a stable oligopolistic structure **(Figure 12)**. As of 2024, global capacity stands at 65.2 Mt K_2O and is expected to increase to 76 Mt by 2028, driven primarily by incremental supply from Laos and Russia. Laos, with approximately 1 billion tons of K_2O resources, is emerging as a significant new production base **(Appendix 4)**. In recent years, global supply tightness has been reinforced by Belaruskali operational disruptions, delayed expansions at Uralkali, and U.S. trade measures on Canadian imports, collectively supporting a structurally elevated price environment.

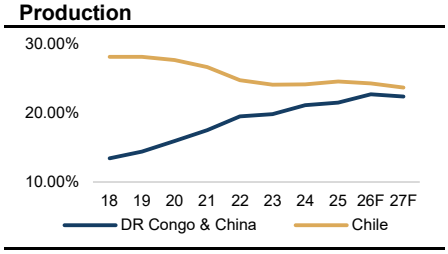
Demand: Potash demand is supported by steady population growth and rising food-security requirements. The global population increased from 7.4 billion in 2016 to 8.1 billion in 2024, underpinning long-term fertilizer consumption. Global KCl demand grew from 41 Mt in 2000 to 69 Mt in 2020, and is projected to reach 80–85 Mt by 2030**(Figure 13)**, according to Nutrien and CRU Despite temporary demand moderation in 2022–2023 due to elevated prices, underlying fundamentals remain resilient, with incremental growth primarily driven by Brazil's agricultural expansion and higher application rates in Asia. By 2024, China (26%) and South America (24%) together accounted for roughly half of global demand, cementing Asia and Latin America as the key structural growth regions **(Appendix 5)**.

LITHIUM: EXCESS SUPPLY CONTRACTED, PRICE REBOUNDING

Supply–Demand Rebalancing: Global lithium supply expanded sharply from about 450 kt LCE in 2020 to roughly 1.25 Mt in 2024, reflecting a CAGR close to 30% **(Appendix 12)**. Growth was driven by new projects in Australia, South America, and China, but the pace is now moderating as ore grades decline, expansions face delays, and high-cost lepidolite operations are suspended. Effective supply is projected to increase 15–18% annually through 2025 before recovering toward 20% with new brine projects in Argentina, Chile, Tibet, and Qinghai. High resource concentration and long investment cycles continue to limit elasticity, leaving the market structurally tight over the cycle even when short windows of surplus emerge. Demand remains dominated by EVs and energy storage. Global EV sales exceeded 17 mn units in 2024 (+21% YoY), generating about 900 kt LCE demand and accounting for more than 70% of total consumption. By 2030, sales are expected to approach 77 mn units, translating into 2.3–2.5 Mt LCE demand **(Appendix 13)**. Simultaneously, renewable expansion is driving large-scale grid storage, with installed capacity forecast to grow at a 35% CAGR and add 450–550 kt of additional demand. These trends anchor long-term consumption growth across both mobility and power sectors **(Figure 14)**.

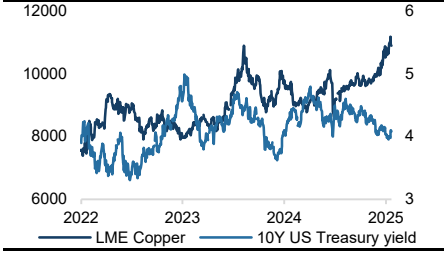
Moderate Recovery Outlook: The market will likely stay in a mild surplus of below 10% over the next two years as new supply gradually ramps up **(Figure 15)**. However, persistently low prices and deferred investment may curb new additions, tightening the balance toward the marginal cost. Toward 2030, sustained EV and storage expansion could restore equilibrium or lead to a moderate deficit, supporting a gradual, multi-year price recovery and reinforcing upstream investment confidence. **(Appendix 14)**

Figure 16: Share of Global Copper Mine Production



Source: Bloomberg, Team Analysis

Figure 17: Copper Vs. USGG10YR



Source: Bloomberg

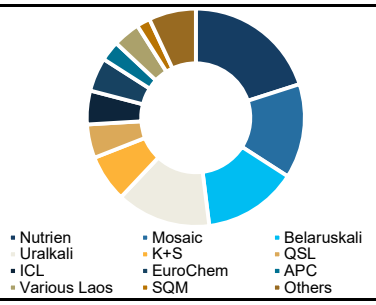
COPPER STRUCTURAL SHIFT AND REPRICING

Supply and Demand: Tightening Supply and Accelerating Secular Demand. Global copper supply is tightening structurally **(Appendix 24)**: South America continues to lose momentum as deeper orebodies, grade deterioration, and stricter environmental rules push maintenance capex higher and limit expansion, while China's smelting growth and rising DRC ore supply are shifting the marginal supply center toward Asia–Africa **(Figure 16)**. Frequent disruptions such as FCX's Grasberg cuts underscore miners' improving bargaining power, and tighter concentrate markets have driven TC/RC lower and pulled the LME curve toward near-term backwardation **(Appendix 25)**, signaling a clear short- to medium-term repricing of scarcity. On the demand side, property weakness is reducing copper's traditional cyclicality, while grid investment, power infrastructure, data-center buildout, and rapid electrification are becoming the dominant and increasingly visible growth engines. Rising global grid capex **(Appendix 22)**, faster EV penetration, and the copper-intensive nature of next-generation data centers—driven by higher AI server density and broader liquid-cooling adoption—are anchoring demand to long-cycle structural trends. As cyclical elasticity fades and structural demand strengthens, copper's price floor continues to move higher, reinforcing a favorable medium-term setup for allocation flows.

Macro: Looser Financial Conditions and Asset Repricing. In 2025, the global economy settles into a low-growth, policy-accommodative environment as major central banks keep liquidity abundant **(Appendix 27)**. Falling nominal and real rates compress discount factors and strengthen the relative bid for risk assets. For copper, the turn in the rate cycle materially lowers carry and funding costs and reanchors its pricing toward liquidity sensitivity rather than pure physical tightness. With real yields moving lower and dollar liquidity improving **(Figure 17)**, cross-asset portfolios are rotating back into real assets, making copper's upside increasingly driven by allocation flows. This shift supports a structurally higher and more durable price floor.

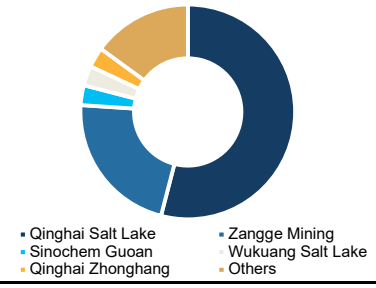
COMPETITIVE OVERVIEW

Figure 18: Global Potash Supply Structure



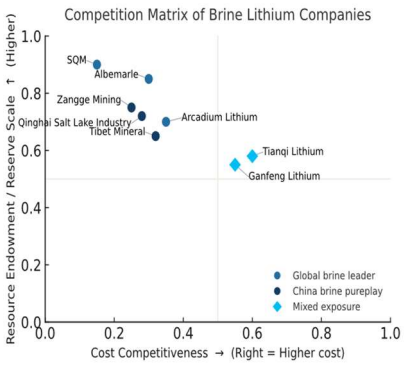
Source: ICL, Team Analysis

Figure 19: Domestic Potash Supply Structure



Source: Zhuo Chuang Information, Team Analysis

Figure 20: Brine Lithium Competitive Landscape Matrix



Source: Bloomberg, Company Reports

POTASSIUM: TIGHT SUPPLY, CHINA GOES GLOBAL

The global potash industry is a classic oligopoly. According to CRU (2024) and ICL, global KCl capacity is about 104 million tons, with the top four producers Nutrien (20%), Mosaic (14%), Belaruskali (14%), and Uralkali (14%) together holding 62% and effectively shaping global prices and trade flows **(Figure 18)**. Highly concentrated resources and long construction cycles create substantial entry barriers, keeping pricing power with producers in North America and Russia–Belarus. In China, Salt Lake Industry and Zangge Mining together command about 76% of the market, forming a stable duopoly, while players such as CITIC Guoan, Minmetals Salt Lake, and Qinghai Zhonghang each hold less than 5% **(Figure: 19)**.

China's resource layout is shifting from domestic salt lakes to accelerated expansion in Laos **(Appendix 11)**. The Vientiane Basin, with high-grade reserves, ample expansion potential, and the China–Laos Railway–Vietnam Vinh Port logistics corridor, has become China's key source of incremental supply. Compared with higher transport costs and geopolitical risks in Canada, Russia, and Belarus, Laos offers shorter distances, policy support, and RCEP tariff benefits, emerging as a China-driven Southeast Asian growth hub that strengthens supply security.

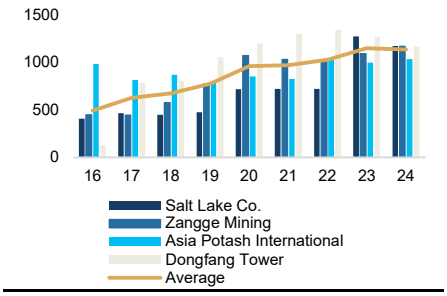
On technology, China's potash production is upgrading from traditional brine evaporation to more efficient, integrated processes. Sinochem uses reverse flotation plus cold crystallization to improve recovery; Salt Lake Industry combines hot-solution and vacuum crystallization with cold-crystallization flotation to utilize low-grade brine; Zangge applies "extraction–transport separation, solid-to-liquid conversion, and thermal-melt potash" to automate and raise purity. Overseas producers such as Asia Potash and Dongfang Tower adopt strip-filling and room-and-pillar mining to balance recovery and environmental protection. Overall, the industry is moving from single-step evaporation to integrated flotation–crystallization–filling systems, significantly improving efficiency and sustainability **(Appendix X)**.

LITHIUM: TWO EXTRACTION PATHS, BRINE AS THE CORE FOCUS

Constrained by both resource attributes and process routes, China's lithium salt industry shows a significant stratified competitive pattern of "salt lake - hard rock" in terms of cost and expansion pace. Zangge's lithium operations are anchored in the Qarhan Salt Lake, benefiting from structurally low marginal costs and synergies with its established potash operations. This positions the company at the core of China's brine-based cost curve, supported by a mature operating system and potash–lithium co-production advantages. That said, production is more exposed to Qinghai's climate and regulatory volatility, making short-term flexibility lower than hard-rock routes.

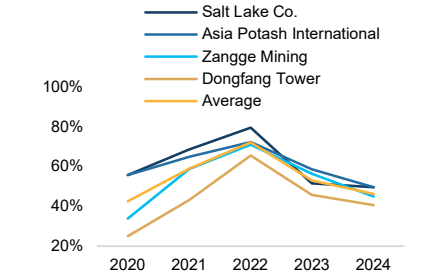
Industrywide, brine producers are reinforcing scale barriers through capacity expansion and process upgrades, while hard-rock players leverage upstream resource control and overseas assets to secure product flexibility and supply stability. In response, Zangge is advancing Mami Co, Jiezhe Chaka, and Longmu Co projects to build a "Qinghai base + Tibet expansion" layout that diversifies regional risk and consolidates its cost leadership. Overall, Zangge's competitiveness lies in scarce brine resources and structural cost advantages, while long-term differentiation will hinge on process iteration, project delivery, and stable performance across the energy-transition cycle **(Figure 20)**.

Figure 21: Peer Comparison of Unit Production Cost



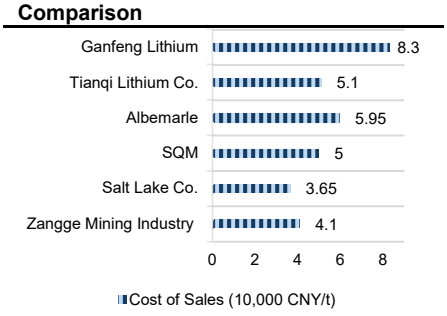
Source: Bloomberg, Team Analysis

Figure 22: Peer Comparison of Gross Profit Margin



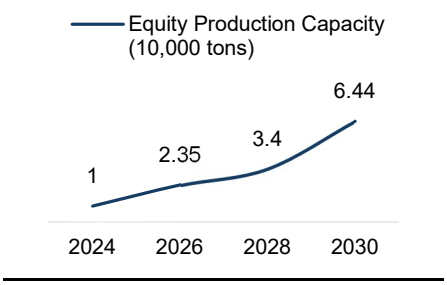
Source: Bloomberg, Team Analysis

Figure 23: Global Lithium Cost Comparison



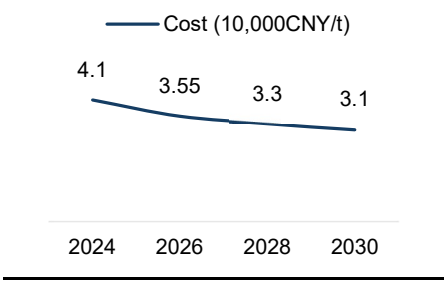
Source: Company Reports

Figure 24: Future Equity Capacity



Source: Company's Report, Team Analysis

Figure 25: Lithium Cost Forecast



Source: Company's Report, Team Analysis

POTASSIUM: COST-DRIVEN MOAT AND GROWTH POTENTIAL

Price Floor Emerging, Limited Supply Elasticity, and Structural Demand Support.

Contract pricing has effectively raised the domestic price floor, with spreads quickly transmitted through inventories and distribution channels, reducing downside momentum **(Appendix 6)**. Meanwhile, globally concentrated and low-elasticity supply lifts the long-term price range and narrows downside risks. On the demand side, demographic growth, food security, and the ongoing shift toward Asia and Latin America provide a structural anchor, giving the market a "floor with upside optionality."

Stable Brine Operations Anchor Low-Cost Advantages.

Leveraging the Qarhan Salt Lake, Zangge has established a dual-base model of stable domestic output and overseas expansion. Its potash cost advantage stems from a mature "solution mining–solar evaporation–tail-brine recycling" system with strong extraction, recovery, and overall utilization rates, placing unit costs at the low end of the industry **(Figure 21)**. Even during the sector downturn, 2024 potash gross margin remained high at 44.8% **(Figure 22)**.

A stable brine system and mature crystallization, grading, and purification processes allow production of high-quality KCl with consistent particle size and controlled impurities. Automation, closed-loop recycling, optimized energy use, and proximity logistics further reduce reagent and energy costs, reinforcing cost leadership.

Laos as a Clear Future Growth Engine.

Laos hosts shallow, thick carnallite layers with grades of 10–12%—lower than the 20–25% KCl grades in Canada, Russia, and Belarus **(Appendix 9)**—but with lower energy needs, simpler construction, and the ability to recover bromine and magnesium as cost-diluting by-products. Laos offers three advantages: low factor costs (power, labor, transport); low resource-access costs with no dedicated mining taxes; and supportive policies with favorable permitting, FX, and tax frameworks that align well with Chinese investment.

Shallow deposits support phased development and rolling expansion with a clear cost-learning curve. Zangge plans 2 Mt per year of capacity (1 million t/y in Phase I). Its development subsidiary has secured resource certificates covering 157.72 km² containing an estimated 984 Mt of KCl at 15.5% grade and 16 Mt of bromine. The Setani exploration report is under review, estimating 1.305 billion tons of KCl at 16.45% grade and 17.02 Mt of bromine.

LITHIUM: SALT LAKE FOCUS FOR LONG-TERM GROWTH

Technological Strength Drives Cost Advantage, with Significant Untapped Resources.

Zangge's ability to extract lithium from post-potash brine and its proprietary one-step process for battery-grade lithium carbonate create a strong cost advantage. By end-2024, Zangge had produced over 43,000 tons of lithium carbonate using this technology, generating nearly CNY 8 billion in revenue. In 1H24, its 10 kt LCE capacity at Qarhan achieved an average cost of roughly CNY 41,500 per ton. As Zangge deploys its technology at higher-grade salt lakes such as Mami Co, Jiezhe Chaka, and Longmu Co, costs are expected to fall to about CNY 35,000 per ton, well below the CNY 60,000–90,000 per ton range for spodumene conversion **(Figure 23)**. Zangge's lithium products operate at full capacity and full sell-through. Through indirect stakes in Mami Co Mining and Guoneng Mining, Zangge holds 622,740 tons of lithium carbonate resources, equivalent to 1.5593 Mt of equity LCE. Current capacity is only 10 kt per year, with utilization above 110%. Long-term plans call for 240 kt per year of capacity, leaving substantial room for resource conversion and growth **(Appendix 15)**.

Long-Term Capacity Ramp, Supported by Rising Prices and Volumes.

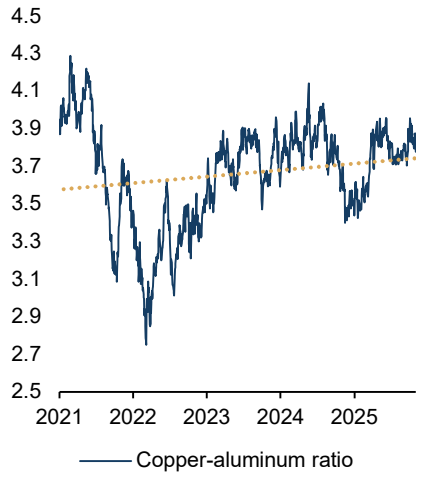
Zangge currently operates only one 10 kt LCE line based on old-brine extraction, even though its equity resources exceed 3 Mt. Once Phase I of the Mami Co project comes online in 2026, total lithium carbonate capacity will reach 60 kt per year, with equity capacity at roughly 23.5 kt. Based on projected lithium prices, this would generate CNY 1.768–1.833 billion in revenue and CNY 928–999 million in gross profit. As scale expands, technology matures, and higher-grade, better Li/Mg-ratio salt lakes are developed, production costs are expected to decline further to about CNY 31,000 per ton **(Figure 24 & 25)**. By 2030, planned capacity reaches 240 kt per year, which combined with a price recovery would deliver CNY 6.44–8.372 billion in equity-adjusted revenue and CNY 4.444–6.376 billion in gross profit. Zangge also holds priority rights to acquire the Mami Co Mining equity currently owned by the Zangqing Fund. After Phase I enters production, Zangge is expected to initiate the acquisition, which would further increase its equity capacity and could grant it control of Mami Co Mining. This would expand Zangge's lithium scale, strengthen cost advantages, and significantly enhance both revenue and gross profit.

Figure 26: Time Line & Capacity of Julong Copper's Expansion

Phase	Timeline	Capacity (p.a., kt)
Phase I	Commissioned in Dec 2021	~154
Phase II	Approved in Feb 2024 Target commissioning by end-2025	300 – 500
Phase III	Planned post-Phase II commissioning	~600

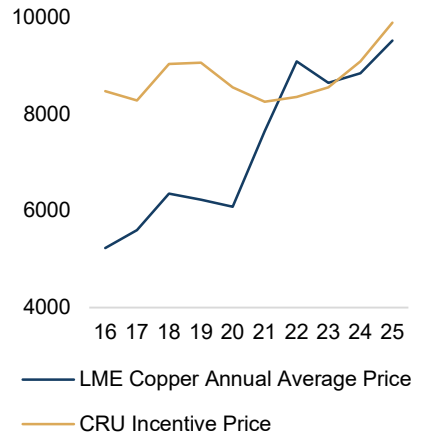
Source: Company Reports, Team Analysis

Figure 27: Copper-Aluminum Ratio



Source: Bloomberg, Team Analysis

Figure 28: CRU Incentive Price



Source: CRU, Team Analysis

COPPER: VOLUME EXPANSION AND PRICE RESILIENCE

Expansion-Led Growth in a Global Context. Julong Copper's growth trajectory is driven by the coordinated release of resource expansion and capacity ramp-up. In 2024, the company launched its Phase II expansion project with a total investment of approximately CNY 17.46 billion, scheduled for completion and commissioning by end-2025. Funding will primarily come from retained earnings and Tibet's uniquely low-interest loans (around 2.65%), allowing the company to proceed without raising additional capital and highlighting its exceptional capital efficiency. Once Phase II reaches full capacity, annual copper output will rise from about 150 kt to 300–350 kt, with plans to expand further to over 600 kt, positioning Julong as one of the largest single-site concentrator projects globally **(Figure 26)**. Compared with global peers with similar resource endowments, Julong enjoys superior expansion visibility and capital returns. Oyu Tolgoi and Resolution are deep, high-grade deposits with long construction cycles and high capital intensity; La Granja and Pebble rely heavily on high copper prices and have progressed slowly; while Collahuasi is mature but has limited upside. In contrast, Julong benefits from Zijin's integrated capabilities and Tibet's low financing costs, giving it a clear lead in construction pace, capital efficiency, and cash conversion. Overall, with steady progress in expansion, a healthy funding structure, and strong synergies, the copper segment is transforming from a resource-based asset into a high-cash-flow, high-certainty growth engine, and is set to become the company's most valuation-supportive business. **(Appendix:20)**

Structural Price Band and Rebalancing Mechanism. Copper's mid-cycle price band is shifting from pure supply-demand dynamics toward structural constraints. The upper bound is anchored by the copper-to-aluminum price ratio. When the copper/aluminum ratio exceeds roughly 4:1 **(Figure 27)**, substitution becomes economically compelling in low-voltage cables, appliance windings, and motor coils, prompting manufacturers to replace copper with aluminum and capping marginal demand. With aluminum prices stable at USD 2,500–2,600 per ton, this implies an upper bound of USD 11,000–11,250 per ton for copper. This threshold has repeatedly served as a medium-term ceiling since 2010 and represents the physical substitution limit. Conversely, the lower bound is determined by investment-return constraints on brownfield projects in South America. Miners in Chile and Peru typically require a post-tax IRR of around 14% to justify expansion. Based on historical data — capex of roughly USD 25,000 per ton of annual capacity and operating costs of about USD 1.50 per pound — the implied breakeven incentive price is around USD 10,000–10,500 per ton **(Figure 28)**. If copper prices fall below this range, capex is deferred and marginal supply contracts, causing the market to tighten again within one to two years and reinforcing the investment-return floor. Under this mechanism, Julong Copper stands to benefit structurally from copper prices oscillating between the "investment-return floor" and the "physical substitution ceiling," supporting resilient and robust long-term returns.

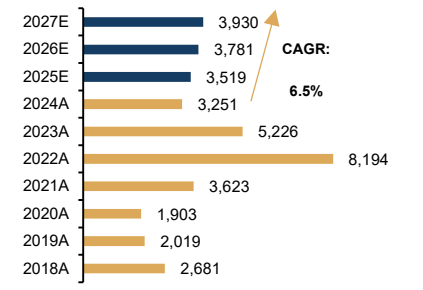
FINANCIAL ANALYSIS

Figure 29: Core Financials

	2023A	2024A	2025E	2026E	2027E		2023A	2024A	2025E	2026E	2027E
DuPont Analysis						**Per Share**					
Gross Margin	65%	45%	57%	58%	60%	DPS	1.6	0.3	1.0	0.7	0.8
EBIT Margin	53%	26%	43%	43%	44%	EPS	2.2	1.6	1.9	2.4	2.6
EBITDA Margin	62%	39%	55%	54%	55%	**Operating**					
Net Margin	65%	79%	86%	100%	105%	Inventory Turnover	3.4x	3.9x	3.9x	4.2x	3.7x
Asset Turnover	0.4x	0.2x	0.2x	0.2x	0.2x	Receivables Turnover	5.2x	7.5x	10.5x	9.1x	9.9x
ROA	24%	17%	18%	20%	19%	Payables Turnover	5.9x	4.6x	4.3x	5.1x	4.2x
Financial Leverage	1.1x	1.1x	1.1x	1.1x	1.1x	**Liquidity**					
ROE	26%	19%	20%	21%	20%	Current Ratio	1.7x	1.0x	1.0x	0.7x	0.7x
ROIC	30%	20%	20%	22%	20%	Quick Ratio	2.8x	1.6x	2.0x	1.6x	1.4x

Source: Bloomberg, Team Analysis

Figure 30: 2018-2027 Revenue (CNY, mn)

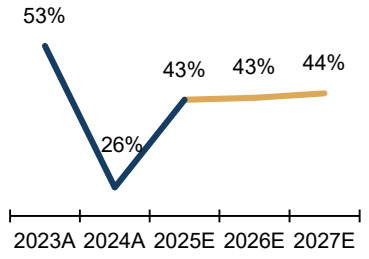


Source: Bloomberg, Team Analysis

POST-CYCLE GROWTH WITH STRUCTURAL DRIVERS

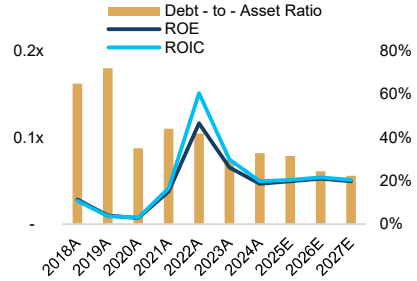
Based on our projections for the next three years, we estimate a 2024–2027 revenue CAGR of roughly 6.5% **(Figure 30)**. Revenue is mainly driven by potassium chloride and lithium carbonate, whose stable production volumes and sell-through rates mean pricing remains the core cyclical driver .**(Appendix 31)** The sharp price surge in 2022–2023 led to exceptional revenue growth, followed by a meaningful decline in 2024 as prices normalized. Given current market conditions, we view the peak years as non-representative. Supported by Zangge's resilience across cycles, revenue should grow steadily from the 2024 base. Additional upside may come from the Laos potash project and Zangge's priority subscription rights for the Mami Co Salt Lake development. Assuming a gradual **price recovery** and **conservative assumption** of the progress of the expansion project, **we forecast revenue of CNY 3.5, 3.8, and 3.9 billion in 2025–2027, representing growth of 8.3%, 7.5%, and 3.9%.**

Figure 31: 2023-2027 EBIT Margin (%)



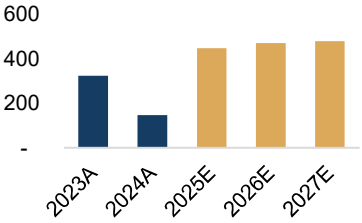
Source: Bloomberg, Team Analysis

Figure 32: Strong Returns with Low Leverage



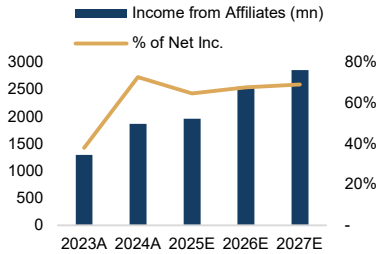
Source: Bloomberg, Team Analysis

Figure 33: CapEx (CNY, mn)



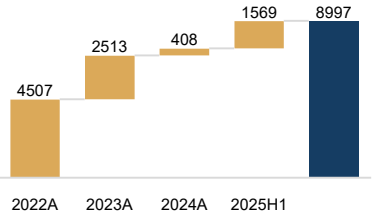
Source: Bloomberg, Team Analysis

Figure 34: Earnings from Julong



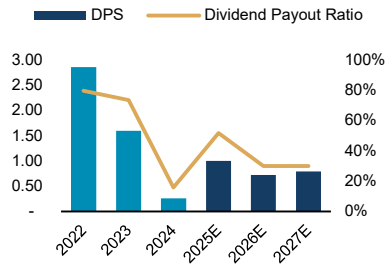
Source: Bloomberg, Team Analysis

Figure 35: Cash Dividends (2022-2025)



Source: Bloomberg, Team Analysis

Figure 36: DPS & Dividend Payout Ratio



Source: Bloomberg, Team Analysis

RESILIENT EARNINGS & WORKING CAPITAL EFFICIENCY

Zangge's profitability and working capital efficiency strengthen its ability to navigate commodity cycles. Supported by resource endowment and extraction technology, Zangge maintains a clear cost advantage, reinforced by flexible production and sales adjustments aimed at cost reduction and efficiency gains. EBIT margins reached 72%, 53% and 26% in 2022-2024 **(Figure 31)**. Although the figures declined significantly in 2024, considering that the product prices were at the bottom range that year, and Zangge achieved a gross profit margin of 45% for both potassium chloride and lithium carbonate, its cost advantage and profitability were highlighted. Since 2020, Zangge's working capital efficiency has been continuously optimized **(Figure 29)**. Under the stable production and sales of the salt lake main business and the management of production and sales rhythm, inventory has been driven by structural reduction and refined production scheduling. On the receivables side, the collection is more cash-oriented and the aging structure has improved. The payables side has tended to be stable under the offset of the moderate extension of the payment period and the decline in the proportion of bills on the cash collection side. Zangge's stable and continuous profitability and the continuously optimized efficiency of working capital have enhanced its adaptability to changes in the industry environment and the stability of its financial performance.

LOW LEVERAGE SUPPORTS EXPANSION

Capital Structure: Zangge has maintained a low-leverage profile in recent years. With its core operations anchored in the mature and stable Qarhan Salt Lake, Zangge's debt levels remain exceptionally low relative to peers, with the asset-liability ratio holding near 0.1x. Despite operating with minimal leverage, Zangge continues to generate strong returns, with ROE and ROIC consistently around or above 20%. This leaves ample capacity to increase leverage without materially raising financial risk, allowing Zangge to support the funding needs associated with infrastructure build-out and capacity ramp-up in Laos. **A healthy capital structure therefore provides critical support for Zangge's next phase of expansion. (Figure 32)**

CapEx: Zangge's upcoming capex will focus on the Laos potash project, as its Qarhan Salt Lake operations are largely mature and require minimal new investment. For ongoing projects such as Julong Copper and Mami Co Salt Lake, prior capital commitments have largely been fulfilled through earlier injections. With exploration at the Laos potash project now completed, Zangge is expected to moderately increase capex to support construction, and we forecast spending of CNY 450 million, 470 million, and 480 million in 2025–2027. Because the project will be funded through a mix of internal cash and project financing, and given Zijin's overseas expertise, **we believe the additional capex will not place material pressure on Zangge's cash flow. (Figure 33)**

INVESTMENT GAINS DRIVE ALPHA

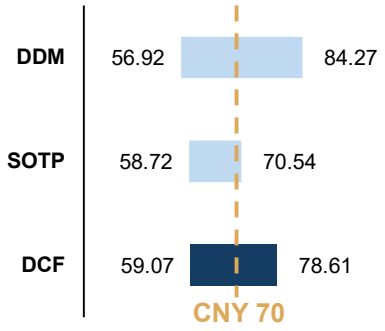
Investment income from projects such as the Julong Copper has become a key driver of Zangge's earnings growth. In recent years, returns from Julong have significantly boosted Zangge's net profit **(Figure 34)** and cash flow, effectively offsetting the Beta risk associated with declining potassium and lithium prices. Zangge received **a cash dividend of 1.539 billion** yuan from Julong in 2025H1. As Julong ramps up capacity and dilutes fixed costs, and as the copper price gradually trends upward, its contribution will continue to expand, adding sustained and sizable cash inflows to Zangge's results. In addition, Zangge's equity positions in high-quality salt-lake assets such as Mami Co and Jiezhe Chaka offer further upside, with investment income expected to scale meaningfully once these projects commence production. This diversified portfolio unlocks incremental profit potential and enhances Zangge's overall growth profile. In our view, the substantial and increasingly recurring investment income forms a clear source of Alpha for Zangge, helping cushion volatility from the core potassium and lithium businesses. **We forecast investment income of CNY 2.0 billion, 2.6 billion, and 2.9 billion over the next three years.**

BEST-IN-CLASS SHAREHOLDER RETURNS

Zangge's **steady profitability**, **limited capital expenditure needs**, and **strong shareholder-return orientation** support continued cash distribution through dividends and share buybacks. From 2022 to 1H25, Zangge delivered multiple rounds of dividends totaling CNY 9 billion **(Figure 35)**, alongside share repurchases of CNY 600 million in 2023 and 2025, underscoring its commitment to shareholder value. With a dividend-friendly capex plan and stable cash inflows from Julong Copper, Zangge is well positioned to sustain high payout levels. In addition, major shareholders, including Zijin and the founding family, maintain a strong preference for cash returns, reinforcing payout visibility. Based on Zangge's net profit and cash-flow profile, we expect Zangge to distribute 30% of annual net income as dividends in 2026–2027. **(Figure 36)** Its strong track record of high shareholder returns stands out within the sector and remains a key attraction for investors.

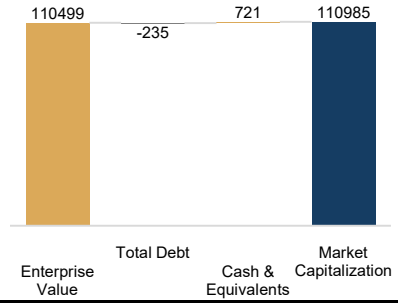
VALUETION

Figure 37: Valuation Football Field



Source: Team Analysis

Figure 38: Enterprise Value to Equity Value Bridge (CNY, mn)



Source: Team Analysis

Figure 39: DCF Results

CNY	Val.	Prob.	Prob-wt Val.
Upside	78.61	10%	7.86
Base	70.68	80%	56.54
Downside	59.07	10%	5.91
DCF Price Target		100%	70.31

Source: Team Analysis

Figure 40: SOTP Results

CNY	Val.	Prob.	Prob-wt Val.
Upside	70.54	10%	7.05
Base	65.20	80%	52.16
Downside	58.72	10%	5.87
SOTP Price Target		100%	65.08

Source: Team Analysis

Figure 41: DDM Results

CNY	Val.	Prob.	Prob-wt Val.
Upside	84.27	10%	8.43
Base	73.71	80%	58.97
Downside	56.92	10%	5.69
DDM Price Target		100%	73.09

Source: Team Analysis

Figure 42: Valuation Results (Base)

CNY	Val.	Prob.	Prob-wt Val.
SOTP	65.08	20%	13.02
DCF	70.31	70%	49.22
DDM	73.09	10%	7.31
Price Target		100%	70

Source: Team Analysis

We initiate coverage on Zangge Mining with a **BUY** rating, supported by a muti-angle valuation framework incorporating **DCF, SOTP** and **DDM** analyses. **(Figure 37)** We place the highest emphasis on the DCF outcome (70% weighting), as it most effectively reflects Zangge's long-term intrinsic value through a granular FCFF forecast that integrates operational drivers and financial assumptions. The SOTP and DDM valuations are assigned 20% and 10% weightings respectively, providing cross-checks from an asset-based perspective and a shareholder-return perspective. Together, these approaches triangulate a robust intrinsic value estimate that underpins our investment recommendation.

VALUATION FRAMEWORK

Our valuation is supported by a fully integrated three-year financial model (2025–2027). Using a bottom-up forecasting framework, we project revenue and costs from key operating drivers rather than headline assumptions. **(Appendix 32)** The model incorporates three scenarios — Upside, Base, and Downside — to test sensitivity under different operating conditions and serves as the foundation for all three valuation methodologies. Each valuation approach applies scenario weights of 80 percent for the Base case and 10 percent for both the Upside and Downside cases, with the weighted results aggregated to derive the final target price.

DCF VALUATION – CNY 70, UPSIDE 19%

Revenue: Driven by production volume, sales volume, and pricing assumptions.

Production & Sales: Our production forecasts adopt a conservative stance, assuming no new projects come online during the forecast period, with all potassium and lithium output sourced solely from the Qarhan Salt Lake asset. Anchored to Qarhan's production capacity, we use **Planned Capacity Utilization** and **Production Completion Rate** to estimate both planned and actual production. For sales, we reference historical patterns and set planned sales equal to planned production, while actual sales are derived using a **Sales Completion Rate** that may exceed 100%, reflecting inventory drawdowns and operational flexibility. **(Appendix 32)**

Price: Based on our analysis and an upward-bias view on price volatility for both potassium and lithium, we expect ASPs (inclusive of tax) to trend higher during 2025–2027. We forecast potassium chloride ASPs of **3,000 / 3,100 / 3,200 CNY per ton**, and lithium carbonate ASPs of **70,000 / 75,000 / 80,000 CNY per ton**, respectively. **(Appendix 32)**

Cost: Our unit cost assumptions are grounded in our assessment of the Zangge's operating conditions and anchored to the latest cost data disclosed in the 2025 interim results. We assume unit costs remain broadly stable over the next three years, with potassium chloride at 1,000 CNY/ton and lithium carbonate at 42,000 CNY/ton. **(Appendix 32)**

Investment Income: Given that investment income from Julong is a kay contributor to Zangge's earnings, we include it in the measurement of FCFF.

WACC

1) Beta: We use a beta of 0.88, derived from a 10-year regression against the 399001.SZ index and adjusted using a 0.33 adjustment factor. **2) ERP**: 5.25%, using the estimation of Damodaran. **3) Cost of Equity**: 6.48%, calculated based on the CAPM. **4) Cost of Debt**: 2.94%, a weighted average of short-term and long-term borrowing rates, using the 1-year LPR for short-term debt and the company's disclosed rate for long-term debt, adjusted for taxes to derive the after-tax cost of debt. **5) WACC**: Estimated at 6.47%, based on an assumed stable capital structure for the future. **(Appendix 33)**

SOTP VALUATION – CNY 65, UPSIDE 11%

Given Zangge's unique business mix, we adopt a hybrid SOTP plus relative valuation approach. We value the company's potassium, lithium, and copper exposure (the latter derived from its stake in Julong Copper) separately using the most relevant peer groups and valuation metrics for each segment. The implied equity value of each business is then aggregated to derive the overall equity value of the company. Specifically, we apply 22.4x EV/EBITDA to the potassium segment, 29x EV/EBITDA to the lithium segment, and 29.2x P/E to the copper segment, all adjusted for appropriate valuation premiums. **(Appendix 35)**

DDM VALUATION – CNY 73, UPSIDE 24%

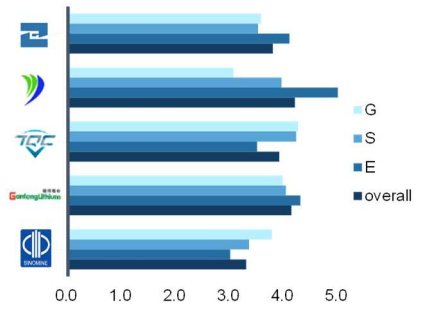
To complement our valuation framework, we also perform a DDM analysis, assuming a 30 percent dividend payout ratio for 2026–2027. Although the reinvestment rate × ROE formula yields a mechanical long-term growth rate of roughly 14 percent, this figure is not economically sustainable for a mature commodity producer and is temporarily inflated by elevated near-term profitability and capital efficiency. We therefore adopt a more prudent long-term growth rate of 5.4 percent, which better reflects industry cyclicality and steady-state fundamentals. Applying a cost of equity of 6.48 percent, the DDM-implied valuation further reinforces our **BUY** recommendation on Zangge Mining. **(Appendix 36)**

Figure 43: ESG Scorecard

	overall	E	S	G
Bloomberg	4.33	3.4	4.7	5.8
MSCI	BB	-	-	-
Team	3.8/5	4.1	3.5	3.6

Source: Bloomberg, MSCI, Team Analysis

Figure 44: Team ESG Scorecard



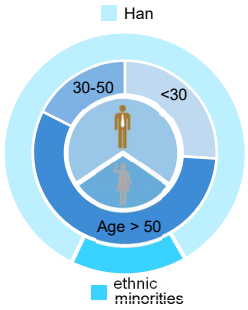
Source: Team Analysis

Figure 45: Employee Satisfaction



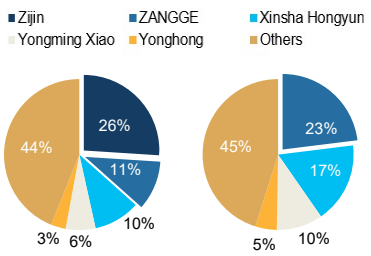
Source: Team Analysis

Figure 46: Employee Structure



Source: Company Reports

Figure 47: Equity Structure Evolution



Source: Company Reports, Team Analysis

Zangge's ESG management system aligns with the mineral industry's "green development" policy. Its 2024 China Securities ESG Rating rose to AA, and its S&P CSA score ranks among the top 25% of global miners **(Figure 43)**. Multi-dimensionally **(Figure 44, Appendix 37)**, Zangge excels in environmental performance, makes steady social progress, and continuously improves governance, advancing with its ESG framework and goals.

ENVIRONMENTAL

Resource Recycling and Utilization: Zangge has established a full circular utilization system led by technological innovation **(Appendix 3)**. Its independent technologies enable low-concentration lithium extraction and boost associated resource recovery. New shareholder Zijin's technical reserves are expected to further enhance its resource extraction precision.

Carbon Emission Management: Zangge reduces carbon emissions through optimizing the energy structure, innovating technology, and developing its carbon management system **(Figure 48)**. By purchasing green energy, Zangge reduced CO_2 emissions by an equivalent of 54,600 tons, while process upgrades boosted energy efficiency. Zangge joined TCFD in 2024, disclosing international standards to build a sound carbon management system.

Ecological Environmental Protection: Rooted in the Qinghai-Tibet Plateau's unique ecology, Zangge integrates protection and development. In 2024, it invested special funds in mining area ecological restoration and partnered with Qinghai University for technical support.

SOCIAL

Employee Rights and Interests Protection: In 2024, Zangge invested CNY 19.27 million in work safety, and it achieved seven years of no major safety accidents and 100% employee health check coverage **(Figure 45)**. Its workforce includes ethnic minorities and senior groups **(Figure 46)**, upholding gender equality and fostering an inclusive workplace.

Community Symbiotic Development: In 2024, Zangge continued the education program for scholarships and facility upgrades, and it also invested in collective economic projects to support rural revitalization. Zangge donated over CNY 5 million each time in the past two earthquakes, showcasing social responsibility.

Supply Chain Responsibility: Zangge issued the "Supplier ESG Management Manual", integrating ESG performance into supplier access and audits, aligned with traditional metrics. Zangge has high domestic supply chain localization, with overseas localization underway. Driven by Laos and salt lake projects expansion and Zijin's synergies, its localization rate is poised to rise.

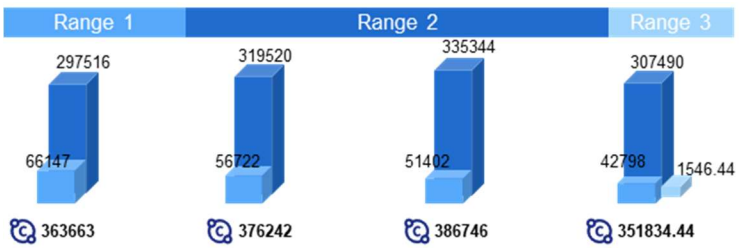
GOVERNANCE

Change in Controllers and Governance Structure: In 2025, Zijin International invested CNY 13.73 billion to become Zangge's controlling shareholder, transferring actual control to the Shanghang County Finance Bureau **(Figure 47)**. Zijin appointed five directors and introduced a global compliance framework certified in 2025 **(Appendix 38)**. The formerly concentrated Xiao family ownership became more diversified, with 36,801 shareholders as of October 2025. A repurchase of 10.21 million shares reduced total capital to 1.57 billion, improving capital efficiency.

Internal Governance System: Zangge's 9-member board guides strategic planning and major investment approval, with specialized committees and 12 functional departments **(Appendix 38)**. Major matters follow a "recusal voting" system, with board review, supervisor oversight, and staff congress input. Senior management compensation comprises 60% basic salary, 40% performance-based salary (including ESG indicators), and excess contribution awards. The 2024 third employee stock ownership plan and strengthened accountability enhance agent supervision efficiency.

Compliance and Transparency: The Compliance Management Manual covers 12 core rules and mandates monthly inspections for key projects. The Miami Cuo project suspension in mid-2025 was resolved without material loss, adding dynamic mineral-rights risk control. Minority shareholders showed 38.5% participation in ESG proposals. Timely disclosure and TCFD-aligned climate reporting reinforce transparency, while a 2025 H1 dividend of CNY 10 per 10 shares (CNY 1.57 billion) reflects solid shareholder returns.

Figure 48: Carbon Emissions of 3 Ranges (t CO_2 e)



Source: Company Reports, Team Analysis

INVESTMENT RISKS

MACRO RISK

[M1] Geopolitical Risk

Rising resource nationalism and policy instability may slow overseas projects. Laos' 2025 Resolution No.182 suspending potash exploration signals tighter oversight.

Mitigation: Operate compliantly and maintain communication with authorities. Zangge's Laos project has key approvals; commissioning is deferred to 2027 in valuation to reflect potential delays.

[M2] Commodity Price Risk

Potash and lithium prices are highly sensitive to market and geopolitical shifts, affecting profitability.

Mitigation: Strengthen R&D and cost control, optimize processes, and adjust production–sales to cushion price swings.

[M3] FX Risk

The Laos project involves foreign-currency transactions; sharp RMB–LAK/USD moves may raise costs and financial pressure.

Mitigation: Monitor FX exposures and plan settlements to limit currency impacts.

[M4] Climate Risk

Heat, drought, and heavy rain in Laos and the Tibetan Plateau may affect evaporation, damage facilities, and delay projects.

Mitigation: Improve flood control, water-cycling, and emergency systems to enhance resilience.

OPERATIONAL RISK

[O1] Cost Pressure

Mining inflation, energy costs, and ESG compliance may raise operating burdens.

Mitigation: Increase self-exploration, advance smart-mining, and reinforce cost discipline.

[O2] Reserve Risk

Actual reserves may fall below estimates due to geological complexity.

Mitigation: Use advanced exploration and regular reserve reviews.

[O3] Technology & Equipment Risk

Failures in key lithium-extraction and brine-mining equipment may reduce output.

Mitigation: Strengthen maintenance, spare-parts planning, and real-time monitoring.

[O4] Investment & Capex Risk

Long cycles and high capex make projects sensitive to financing costs and delays.

Mitigation: Phase investments, optimize capex, and diversify funding.

ESG RISK

[E1] Environmental & Salt-Lake Ecological Risk

Improper tail-brine recycling or wastewater handling may cause ecological damage.

Mitigation: Enhance brine recycling, water-circulation, and ecological monitoring.

[S1] Community Risk

Environmental or livelihood impacts may trigger community concerns and delay projects.

Mitigation: Strengthen communication, disclose data, and support local initiatives.

[G1] Safety Risk

Harsh environments increase accident risks.

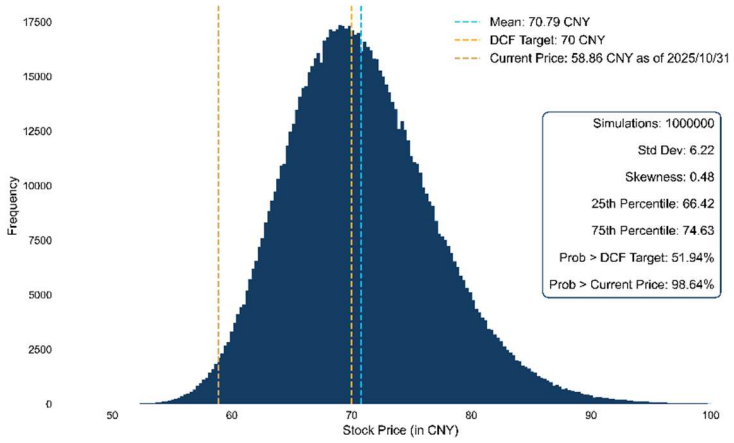
Mitigation: Improve safety systems, training, and equipment checks.

[G2] Permit & Compliance Risk

Expired or non-compliant mining permits may lead to penalties or shutdowns.

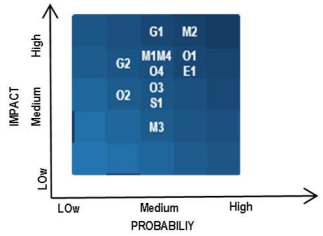
Mitigation: Ensure timely renewals and maintain strict compliance tracking.

Figure 49: Montecarlo Analysis



Source: Team Analysis

Figure 50: Risk Matrix



Source: Team Analysis

Figure 51: Risk IRO Matrix

Category	Code	Name
Material Actual Impacts (I)	E1	Environmental Protection and Salt Lake Ecological Risk
	O1	Cost Pressure Risk
	M2	Commodity Price Risk
	G2	Mining License and Compliance Risk
Material Potential Impacts (I)	M1	Geopolitical Risk
	M4	Climate and Environmental Risk
	O2	Resource Reserves Below Expectations Risk
	O4	Investment and Capital Expenditure Risk
	G1	Occupational Health and Safety Risk
Material Risks ®	M2 / O1 / E1	Price Fluctuations, Cost, and Environmental Risks
	M1 / G2	Policy and Licensing Risk
	M4 / G1	Climate and Safety Risks
Material Opportunities (O)	O-A	Technological Innovation Opportunities
	O-B	Policy Support Opportunities
	O-C	Overseas Project Expansion Opportunities
	O-D	ESG Transformation and Financing Opportunities

Source: Team Analysis

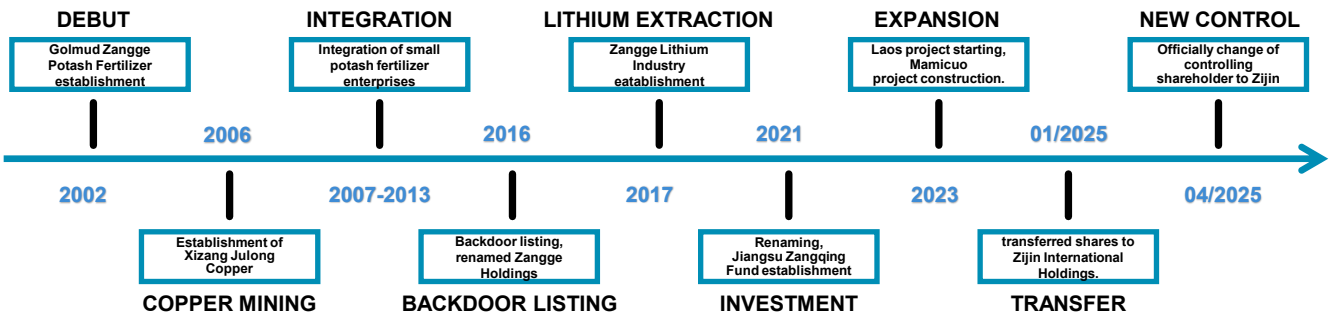
Figure 52: Sensitivity Analysis

Δ Temial Growth \ Δ WACC	70.68	-1.0%	-0.5%	0.0%	0.5%	1.0%
-1.0%	71.35	62.39	55.43	49.87	45.32	
-0.5%	82.93	71.01	62.09	55.16	49.63	
0.0%	99.2	82.54	70.68	61.8	54.91	
0.5%	123.7	98.73	82.15	70.34	61.51	
1.0%	164.85	123.12	98.27	81.76	70.02	

Source: Team Analysis

Appendix 1: Zangge Mining's Historical Evolution

Source: Company's ESG Reports; Company Official Website

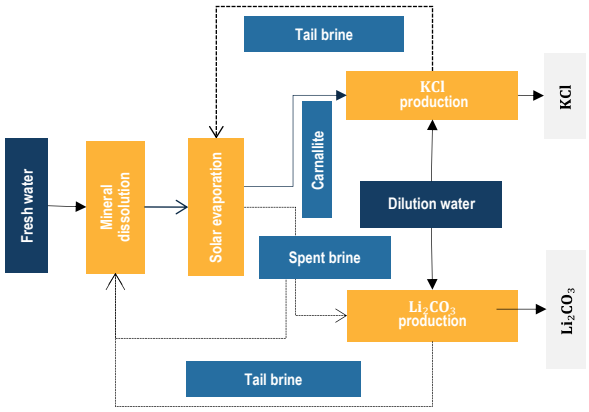


Appendix 2: Zangge Potassium Resource Layout

Region	Project	Progress
Domestic (Qinghai Province)	Chaerhan Salt Lake Potash Mine	Obtained Mining Right Real Estate Certificate and Mining License; on the basis of continued potash extraction, new mining rights have been added for associated minerals including bromine, lithium, and boron.
	Dalongtan–Heibei Potash Mine	Completed shallow-layer detailed exploration and is currently compiling deep-layer exploration results from the first-stage fieldwork.
	Huoshaoshan Potash Mine	The General Survey Report has been completed and submitted for review.
	Xiaoliangshan–Dafengshan Potash Mine	Actively promoting exploration rights approval and transfer work.
Overseas (Laos)	Vientiane–Bolikhamxai Potash Mine	Obtained Resource Reserve Certificate, with total KCl resources of 984 Mt and Li-bearing brine resources of 160 Mt; the Feasibility Study Report has passed the first-round technical review.
	Savannakhet Potash Mine	The Exploration Report has passed review, and the Resource Reserve Certificate is pending issuance.

Source: Company announcements

Appendix 3: Zangge Tail Brine Utilization Process



Source: Company announcements

Appendix 4: World Potash Mine Production and Reserves

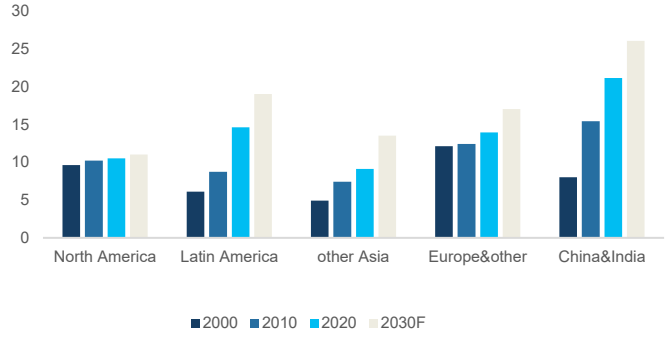
Source: USGS

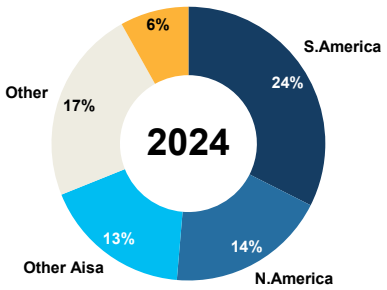
	Mine production		Reserves	
Country or locality	**2023**	**2024e**	**Recoverable ore**	**K_2O equivalent**
United States	390	420	970,000	220,000
Belarus	4,500	7,000	3,300,000	750,000
Brazil	300	360	10,000	2,300
Canada	13,500	15,000	4,500,000	1,100,000
Chile	600	750	NA	100,000
China	6,000	6,300	NA	180,000
Germany	2,700	3,000	NA	150,000
Israel	2,330	2,400	NA	Large
Jordan	1,700	1,800	NA	Large
Laos	1,500	1,500	NA	1,000,000
Russia	9,000	9,000	NA	920,000
Spain	367	400	NA	100,000
Other countries	435	440	1,500,000	300,000
World total (rounded)	**43300**	**48000**	**>10,000,000**	**>4,800,000**

Notes: e = estimated NA = not available.

Appendix 5: Regional Potash Demand Growth by Key Regions

Source: Nutrien



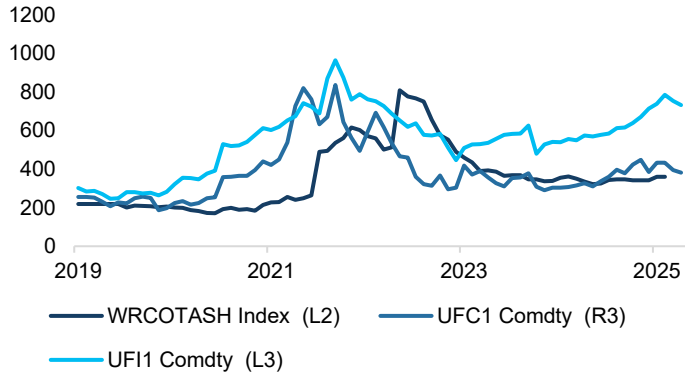


Appendix 6: China and Global Potash Contract Prices

Year	China Contract Date	Domestic Potash Price (RMB/t)	China Contract Price (USD/t)	India Contract Price (USD/t)	Spread (India–China, USD/t)	Brazil Contract Price (USD/t)	Southeast Asia Contract Price (USD/t)
18	Sep 17	2,300	290	290 (signed later by India)	0	290–295	250–260
19	Not signed	2,100	290	280 (signed earlier by India)	10	290–305	278–285
20	Apr 30	1,900	220	230 (signed later by India)	10	210–220	232–255
21	Feb 10	1,950	247	247 / 280 / 445	—	275–290	240–260
22	Feb 15	4,000	590	590 (signed earlier by India)	0	770–800	600–625
23	Jun 6	2,400	307	422 (signed earlier by India)	115	340–370	370–420
24	Jul 9	2,495	273	283	10	305–315	275–305
25	Jun 12	3,150–3,400	346	349	4	365	350

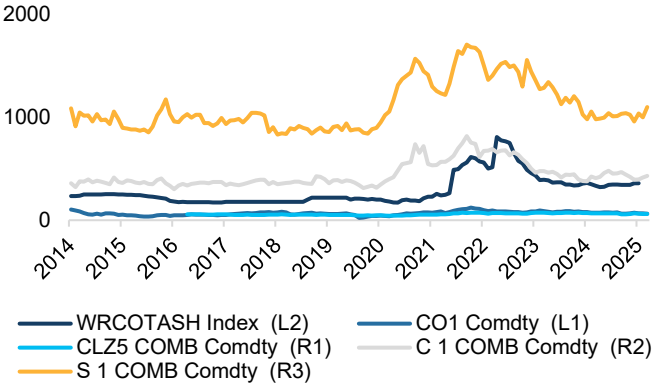
Source: Baiinfo, Wind, China Fertilizer Information Network, Longzhong Information, and own compilation.

Appendix 7: Fertilizer Price Correlations



Source: Bloomberg, IMF

Appendix 8: Potash and Crop Price Correlation



Source: Bloomberg, IMF

Potash prices move with other fertilizers in the short term and with oil and grain cycles in the long term.In 2021–2022, rising energy and crop prices pushed fertilizer costs up, with potash reacting after 1–2 quarters.IFPRI's model$\ln(\text{Price}NPK) = \beta 0 + \beta 1 \ln(Oil\ Price) + \varepsilon, \beta 1 \approx 1.05 \ln(PriceNPK) = \beta 0 + \beta 1 \ln(Oil\ Price) + \varepsilon, \beta 1 \approx 1.05$shows that a 1% rise in oil prices is almost proportionally passed through to fertilizer prices.

Appendix 9: Global Potash Resource Overview

Country	Main Types of Potash Resources	Major Distribution Areas	Average Grade
Canada	Potash (Sylvinite)	Saskatchewan Province	25–30%
Belarus	Potash (Sylvinite)	Minsk Oblast, Pripyat Depression	25–30%
Russia	Potash (Sylvinite), Carnallite	Ural Region, East and West Siberia	15–30%
Laos	Carnallite	Vientiane Basin, Kammouane Basin	15–20%
United States	Potash (Sylvinite)	Paradox Basin, Carlsbad Basin in New Mexico	25–30%
Germany	Potash (Sylvinite)	Northern Saxony Basin, Buchenberg Basin on the Rhine	25–30%
Jordan	Brine Potash	Dead Sea Region	10%
China	Brine Potash, Carnallite	Qarhan Salt Lake in Qinghai, Lop Nur in Xinjiang	10–20%

Source: Zhiyan Consulting, Huajing Intelligence Network, Baichuan Yingfu, China Chemical Information Center

Appendix 10: Comparison of Production Indicators of Domestic Potash Fertilizer Enterprises

Company	(10,000 tons, RMB/ton)	16A	17A	18A	19A	20A	21A	22A	23A	24A
Salt Lake Co.	Production Volume	491.7	471.1	483.4	563.4	551.8	503	580	492.6	496
	Sales Volume	492	455.3	468.8	454.2	644.9	473.7	494.1	560	467.28
	Unit Selling Price	1378	1299.4	1598.2	1454	1164.1	1616.6	2872.8	2610.3	2507
	Unit Cost	403.5	461.1	445.6	472.1	716.6	718.8	720	1270.6	1170
	Gross Profit Margin	70.70%	64.50%	71.90%	71.10%	55.60%	68.50%	79.40%	51.30%	53.34%
Zangge Mining	Production Volume	165.7	185	148.2	108.3	111.5	107.8	130.7	109.4	107.3
	Sales Volume	165.1	183.1	144.7	109.1	113.1	106.8	110.1	129.3	104.49
	Unit Selling Price	1576.9	1622.1	1864.9	1829.5	1614.8	2491.3	3481.8	2845.9	2305.66
	Unit Cost	446.9	443.7	574	773.4	1069.9	1029.6	1012	1088.8	1167.06
	Gross Profit Margin	71.70%	72.60%	69.20%	57.70%	33.70%	58.70%	70.90%	56.20%	44.83%
Asia Potash International	Production Volume	13.8	17.3	22.1	24.7	25.2	33.8	90.9	164.7	181.54
	Sales Volume	13.4	19.1	19.1	24.6	23.5	35.2	91	160.6	174.14
	Unit Selling Price	1547.3	1435	1678.7	1801.7	1527.9	2363.7	3735.8	2422.6	2037
	Unit Cost	981	813.5	867.1	794.6	850.7	821.6	1034.9	995.6	1030
	Gross Profit Margin	36.60%	43.30%	48.30%	55.90%	44.30%	65.20%	72.30%	58.90%	49.54%
Dongfang Tower	Production Volume	—	—	—	46.3	46	45	50.6	89.1	120.22
	Sales Volume	49.2	48.6	55	46.5	45	45.3	47.4	87.27	121.3
	Unit Selling Price	222.2	1623.5	1856.1	1853	1595.1	2272.4	3872.6	2329	1949
	Unit Cost	126.6	777.9	803.7	1050.7	1198.1	1296.1	1339	1267	1162
	Gross Profit Margin	43.10%	52.10%	56.70%	43.30%	24.90%	43.00%	65.40%	45.60%	40.40%
Average	Unit Cost	489.5	623.9	672.7	772.7	958.8	966.5	1026.5	1149.2	1132.265
	Gross Profit Margin	55.50%	58.10%	61.60%	57.00%	39.60%	58.80%	72.00%	53.00%	47.03%

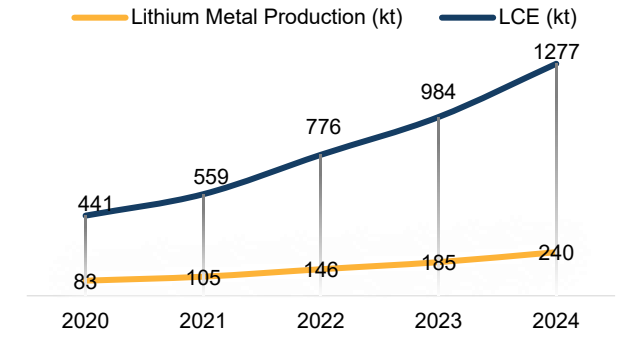
Source: iFind, Company Announcements, Team Analysis

Appendix 11:China's Potash Projects in Laos

Company	Target Area	Capacity(p.a.)	Start Year	Project Overview	Progress
Sinochem Group	Bolaven Basin, 860 km² Potash Deposit	50kt	2004	China's earliest potash developer in Laos. 78 km² mining area, 860 Mt (KCl eq), avg. grade ≈ 30%.	Approved with 5-year concession in 2008; operations delayed due to logistics limits.
CNMC	Bolaven Basin, 580 km² Potash Deposit	120kt	2006	One of the three licensed Lao potash miners, total area ≈ 580 km², annual output ≈ 2 Mt.	Merged with Sinochem in 2013; project paused after 2016.
Dongfang Electric	Attapeu, 194.8 km² Potash Deposit	2000kt	2006	Began production 2010; resumed 2012; new 0.5–1 Mt KCl project under construction.	Current output ≈ 1.5 Mt/yr; full ramp-up expected 2023–2024.
Asia Potash International	Bolaven Basin, 263.3 km² Potash Deposit	5000kt	2006	Largest Chinese-invested potash project in Laos, rich reserves.	Output > 1 Mt/yr as of Mar 2023; targeting steady 1 Mt/yr by end 2023.
Beijing Shengyue	Bolaven Basin, 259.4 km² Potash Deposit	—	—	Located in Bolaven Basin Type-I potash zone.	Exploration and infrastructure underway.
Haixi Industry	174 km² Potash Deposit	—	—	Focused on potash exploration and development in Laos.	Submitted feasibility study.
Sichuan Defang	180 km² Potash Deposit	—	—	Developing Lao potash resources.	Completed exploration report (≈ 1000 Mt resources).
Yunsheng	55 km² Potash Deposit	—	2012	Signed exploration agreement (177 km² total resource area).	Resource-rich area; pre-development stage.
Yuntianhua	Attapeu, 187 km² Potash Deposit	500kt	—	Annual design 0.5 Mt KCl.	Full production expected by 2024.
Zangge Mining	Bolaven Basin, ≈ 400 km² Potash Deposit	500kt	—	Lao Bolaven Basin resource ≈ 9.84 Bt, avg. grade 15.5%.	Phase I 100 kt/yr by 2024; full production by 2026.

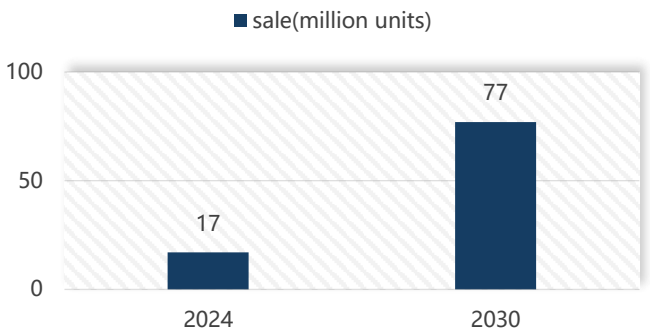
Source: Company announcements

Appendix 12:USGS Global Lithium production



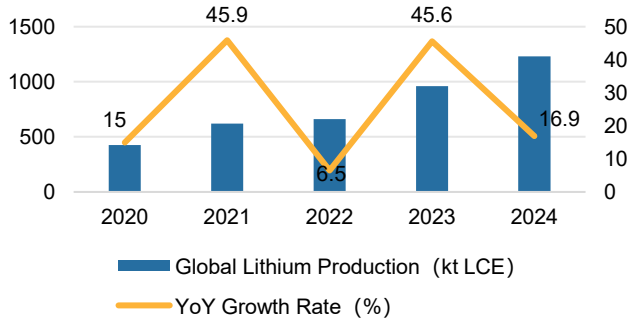
Source: USGS

Appendix 13:Global EV Sales



Source: Bloomberg;IEA

Appendix 14: Short-Term Lithium Supply Growth



Source:Bloomberg

Appendix 15: company's main salt lake reserves

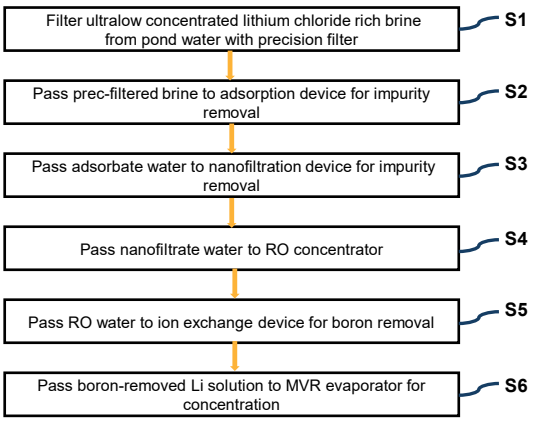
resource location name	LCE (kt)	Company penetration equity ratio	Equity reserves(kt)
Qarhan Salt Lake	150	100%	150
Mamico Salt Lake	2177.4	26.95%	586.81
Jieze Caka / Longmu Co	3900	21.09%	822.51
Total	6227.4	-	1559.32

Source: Ministry of Natural Resources of the People's Republic of China

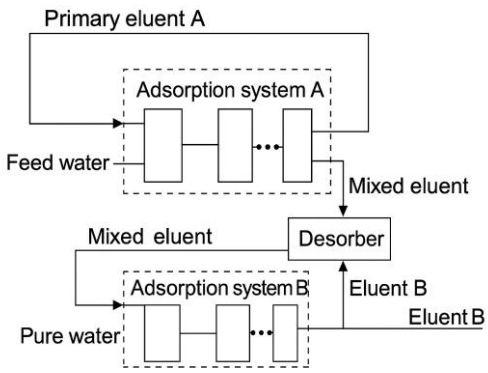
Appendix 16: Lithium extraction technology method

Source:State Intellectual Property Office of China

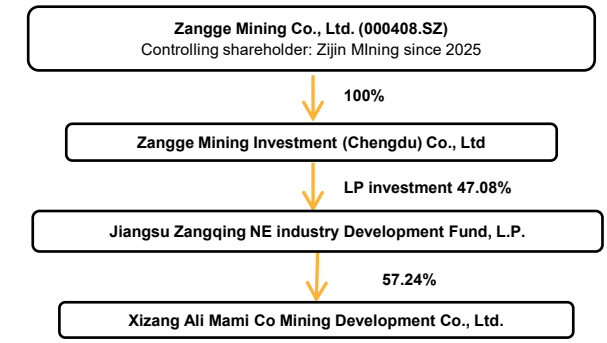
Method I:



Method II:

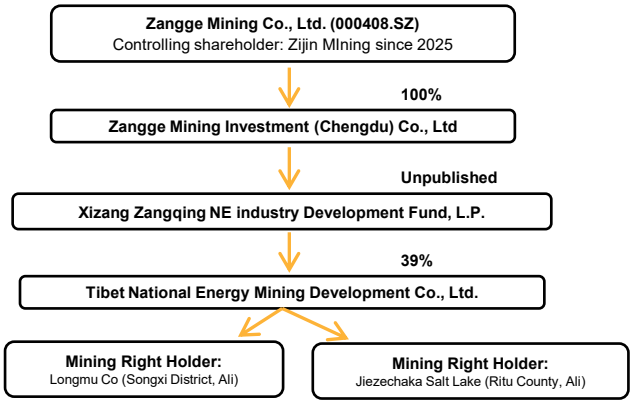


Appendix 17: Equity Penetration to Tibet National Energy Mining



Lookthrough ownership: 26.95%
(Zangge Mining→Xizang Ali Mami Co Mining)

Appendix 18: Equity Penetration to Tibet National Energy Mining



Lookthrough ownership: 21.09%
(Zangge Mining→Tibet National Energy Mining)

Source: National Enterprise Information Credit Publicity System

Appendix 19: Company's previous incentives

Source: Annual reports、announcement

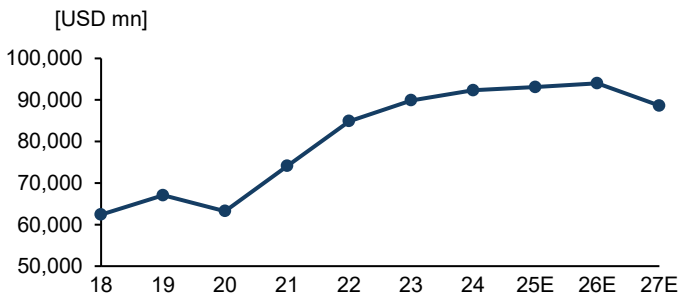
Plan Name	Type	Approval/Adoption Date	Key Grant/Transfer Dates	Quantity/Scale	Performance/Vesting Arrangement (Summary)	Participants
2020 Restricted Stock Unit (RSU) Incentive Plan	Restricted Stock Units (RSU)	2020-12-29 (Shareholders' Meeting Approved)	Initial Grant: 2021-01-28; Reserved Grant: 2021-11-15; First Vesting: 2023-01-30; Reserved First Vesting: 2023-12-08; Second Vesting of Initial Grant: 2024-02-02	Initial Grant: 95,980,600 shares (686 persons); Reserved Grant: 2,510,000 shares (39 persons); Total: 98,490,600 shares	Vesting period 2020-2022, phased vesting: 1. 2020: No separate assessment (linked to vesting period); 2. 2021 (first vesting): 33% vesting, subject to company net profit target; 3. 2022 (second vesting): 33% vesting; 4. Remaining 34% vest as planned	Directors, senior executives, core backbones, etc. (see announcement for specific list)
2021 Stock Option and Restricted Stock Incentive Plan	Stock Options + Restricted Stock	2021 (Reviewed by Board of Directors/Supervisory Board multiple times; see announcement for details)	2021-06-30: Initial RS Grant (repurchase) 4,608,179 shares (28 persons) and RS Grant (new) 2,371,821 shares (19 persons); 2022-01-10: Reserved Options 280,000 units (6 persons); 2022-01-13: Reserved RS 190,000 shares (2 persons)	Total RS: approx. 7,170,000 shares; Options: 280,000 units	Phased vesting/exercise: 1. Restricted Stock: Annual assessment, vesting conditions include company net profit growth + individual performance (evaluation standard A/B/C/D corresponding to 100%/80%/60%/0% vesting); 2. Stock Options: Exercise conditions consistent with restricted stock; Repurchase and cancellation upon resignation	Directors, senior executives, and core employees
First Phase Employee Stock Ownership Plan (ESOP)	Employee Stock Ownership Plan	2021-06-23 (Shareholders' Meeting Approved)	First Lock-up Period Expiry: 2022-07-29	Total Scale: 26,574,228 shares	Three-phase vesting, performance assessment: 1. Company level: 2021 net profit growth not less than 100% compared to 2020 (194 million yuan) (actual completion 1.508 billion yuan, met); 2. Individual level: 2021 assessment all A (100% vesting); Vesting ratio: 40%, 30%, 30%	Employees of the company and its holding subsidiaries (including management and core backbones)
2022 Restricted Stock Unit (RSU) Incentive Plan	Restricted Stock Units (RSU)	2022 (Reviewed and approved by Board of Directors/Shareholders' Meeting)	Initial Grant Completed (see announcement for year); First vesting period and reserved first vesting period registration completed in 2024	Not Disclosed	Phased vesting: 1. Company level: Annual net profit assessment target set (specific figures not disclosed); 2. Individual level: Vesting ratio determined by performance appraisal results; Adjust related matters of the company's convertible bonds after vesting	Directors, senior executives, and core employees
Second Phase Employee Stock Ownership Plan (ESOP)	Employee Stock Ownership Plan (Repurchased Shares as Source)	2025-04-18 (Approved at 2024 Annual Shareholders' Meeting)	2025-06-30: Initial non-trade transfer 8,350,000 shares; 2025-08-21: First batch of reserved non-trade transfer 260,000 shares	Transferred: 8,610,000 shares; Total plan scale not disclosed	Three-phase vesting, performance assessment: 1. Company level: Taking 2024 net profit as the base, 2026 net profit needs to meet growth target (specific ratio not disclosed); 2. Individual level: Vesting ratio determined by annual performance appraisal; Covers directors (excluding independent directors), supervisors, senior executives, middle management, and core backbones	Directors, supervisors, senior executives, middle management, and core backbones

Appendix 20: Comparison of Copper Mines

Source: Company announcements

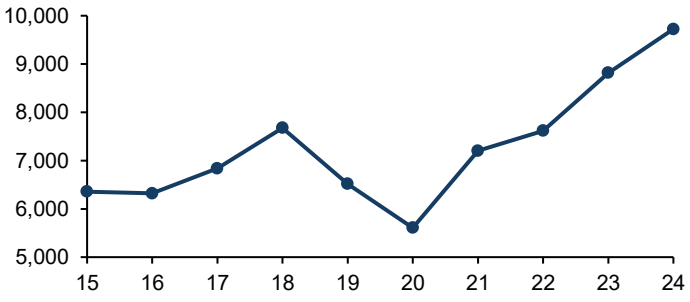
Mine	Region	Resources(Mt Cu)	Taste rate	Type	Affiliated Enterprise
Julong	Tibet,China	25.88	0.29%	Porphyry	Zijin/Zangge
Oyu Tolgoi	Mongolia	about 25	0.42%	Porphyry	Rio Tinto/Gov. of Mongolia
Resolution Copper	Arizona,USA	26–28	1.50%	Porphyry	Rio Tinto/BHP
La Granja	Cajamarca,Peru	about 22	0.51%	Porphyry	First Quantum/Rio Tinto
Collahuasi	Tarapacá,Chile	25.56	0.95%	Porphyry	Anglo America/Glencore/Mitsui
Pebble Project	Alaska, USA	34.30	0.35%	Porphyry	Northern Dynasty Minerals

Appendix 21:Global copper industry capex



Source: Bloomberg

Appendix 22:Global grid capex



Source: Bloomberg

Appendix 23: Global Copper End-Use Demand

(kt)	2021	2022	2023	2024	2025F	2026F	2027F
Global total consumption	**25,973**	**26,073**	**26,821**	**27,458**	**28,009**	**28,872**	**29,631**
yoy	*7.2%*	*0.4%*	*2.9%*	*2.4%*	*2.0%*	*3.1%*	*2.6%*
Energy transition	**1,804**	**2,161**	**2,966**	**3,538**	**4,154**	**4,733**	**5,088**
yoy	*28.8%*	*19.8%*	*37.3%*	*19.3%*	*17.4%*	*13.9%*	*7.5%*
Power generation (Total)	**1,444**	**1,549**	**1,905**	**2,052**	**2,215**	**2,385**	**2,499**
Total renewable	1,170	1,192	1,635	1,754	1,903	2,059	2,160
Wind	448	311	397	393	379	424	504
Solar	650	793	1,202	1,362	1,479	1,586	1,615
Other renewable	71	87	36	39	45	49	41
Non-renewable	274	358	271	299	312	327	339
Battery storage (BESS)	**48**	**110**	**140**	**239**	**257**	**270**	**279**
Power grids (Utility Scale)	**2,223**	**2,375**	**2,494**	**2,591**	**2,688**	**2,769**	**2,808**
Energy transition (ET) grid	124	149	252	338	428	503	540
Core grid	2,099	2,227	2,241	2,253	2,260	2,266	2,268
Electric vehicles and charging	**462**	**711**	**939**	**1,207**	**1,566**	**1,902**	**2,109**
Passenger vehicles	360	581	732	902	1,171	1,458	1,593
Commercial vehicles and buses	39	61	76	109	158	214	266
Supply-chain stock adjustments	40	31	79	126	142	97	89
E-bikes and E-trikes	5	6	7	8	9	10	10
EV charging infrastructure	18	32	45	64	88	125	152
Other automotive	**2,024**	**2,056**	**2,099**	**1,995**	**2,023**	**1,929**	**1,942**
ICE (PV + CV)	1,984	1,909	1,898	1,788	1,718	1,616	1,594
Hybrid	160	171	212	250	285	324	360
Supply-chain stock adjustments	-120	-23	-11	-43	20	-11	-12
Datacentres	**205**	**205**	**230**	**281**	**352**	**504**	**643**
All other/cyclical	**19,567**	**19,066**	**19,014**	**19,092**	**18,907**	**19,113**	**19,352**
yoy	*7.9%*	*-2.6%*	*-0.3%*	*0.4%*	*-1.0%*	*1.1%*	*1.3%*

Source: Bloomberg, Wood Mackenzie, ICSG, BGRIMM

Appendix 24: Global Copper Production Outlook

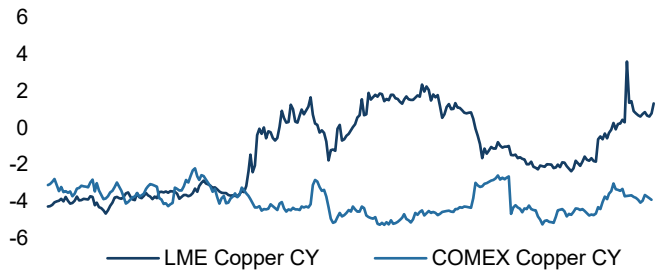
(kt)		2021	2022	2023	2024	2025F	2026F	2027F
Africa		**2,997**	**3,429**	**3,638**	**4,168**	**4,358**	**4,955**	**5,072**
Including:	DRC	2,008	2,458	2,691	3,185	3,263	3,614	3,686
	Zambia	828	781	714	742	812	966	1,010
	Botswana	10	32	78	90	100	110	120
Latin America		**8,666**	**8,513**	**8,933**	**8,763**	**8,939**	**9,187**	**9,347**
Including:	Chile	5,636	5,345	5,261	5,534	5,634	5,649	5,691
	Peru	2,259	2,378	2,720	2,705	2,725	2,839	2,770
	Panama	331	350	331	0	0	50	200
North America		**2,447**	**2,403**	**2,313**	**2,224**	**2,373**	**2,456**	**2,440**
Including:	US	1,258	1,259	1,173	1,080	1,167	1,292	1,320
	Canada	485	444	427	417	456	506	481
	Mexico	704	700	713	727	751	658	639
CIS / Caspian		**1,823**	**1,913**	**1,937**	**2,055**	**2,113**	**2,274**	**2,308**
Including:	Russia	867	957	969	1,094	1,101	1,244	1,240
	Uzbekistan	132	130	135	155	215	265	305
	Kazakhstan	721	740	758	730	710	651	615
Asia / Middle East		**3,291**	**3,531**	**3,542**	**3,855**	**3,654**	**3,976**	**4,542**
Including:	Mongolia	305	281	322	395	485	555	645
	China	1628	1,705	1,685	1,805	1,820	1,915	2,092
	Iran	333	330	352	373	415	454	494
	Indonesia	731	941	910	1011	615	710	905
Oceania		**876**	**892**	**880**	**866**	**802**	**801**	**866**
Including:	Australia	806	820	795	766	702	701	766
	PNG	70	72	85	100	100	100	100
Europe		**1,076**	**1,139**	**1,134**	**1,174**	**1,202**	**1,226**	**1,199**
Including:	Poland	391	392	390	395	395	396	401
	Serbia	123	204	233	278	292	272	252
	Spain	136	122	123	112	116	137	139
Total		**21,176**	**21,820**	**22,377**	**23,105**	**23,441**	**24,875**	**25,774**
growth			*3.0%*	*2.6%*	*3.3%*	*1.5%*	*6.1%*	*3.6%*

Appendix 25: Short-term copper price analysis

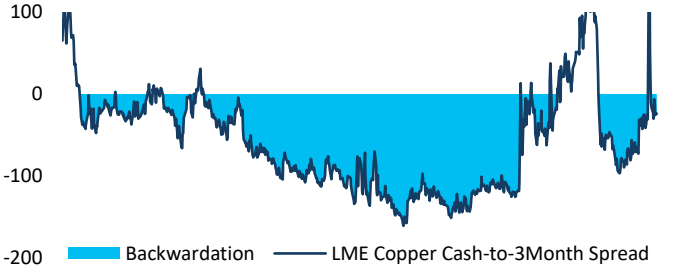
Source: Bloomberg

From a trading-structure perspective, the persistent tightening of the LME 3M-Cash spread, with repeated moves into backwardation, signals that the market is steadily repricing toward a tighter near-term supply balance as spot metal becomes relatively more valuable. At the same time, the clear divergence between LME and COMEX convenience yields reinforces this view: rising CY on the LME reflects growing scarcity of deliverable metal within the LME system, while the softer COMEX CY is driven by inventory accumulation in the U.S., which has drawn material away from LME warehouses. The combination of a tightening term structure, firming convenience yields, and cross-market inventory migration creates a trading environment in which participants increasingly position for higher prices within the LME-centric global pricing system. This reinforces a self-strengthening loop where tight spreads and elevated CY justify long positioning, giving copper prices upward momentum even without a notable improvement in traditional demand indicators.

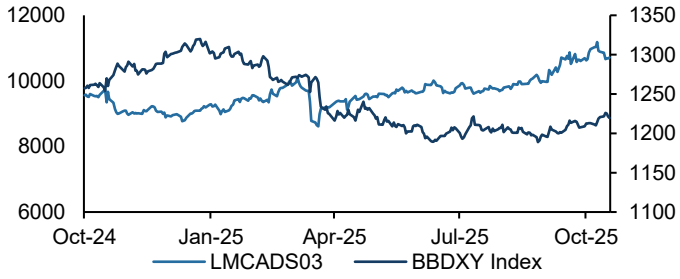
Copper Convenience Yields: LME vs COMEX



LME Copper Cash-to-3M Spread

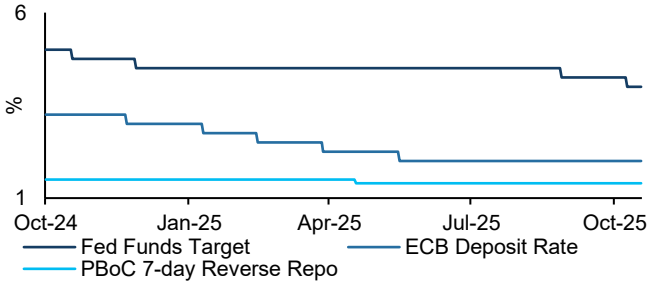


Appendix 26:LME Copper vs U.S. Dollar Index



Source: Bloomberg

Appendix 27:Major Central Bank Policy Rates



Source: Bloomberg

The appendix charts highlight the same easing backdrop discussed in the main text. As the U.S. dollar softened through 2025, LME copper prices steadily recovered, underscoring copper's growing sensitivity to global liquidity conditions. At the same time, the Fed, ECB, and PBoC all maintained a broadly accommodative policy stance, with policy rates drifting lower across major economies. These trends confirm that falling discount rates and improving liquidity are reinforcing allocation flows into real assets, providing an important macro tailwind and strengthening copper's near-term price support.

Appendix 28: Income Statement

Source: Team Analysis

Income Statement (CNY,mn)	2020A	2021A	2022A	2023A	2024A	2025F	2026F	2027F
Total revenue	**1,903**	**3,623**	**8,194**	**5,226**	**3,251**	**3,519**	**3,781**	**3,930**
COGS	(1,288)	(1,492)	(1,475)	(1,816)	(1,791)	(1,510)	(1,577)	(1,572)
Gross profit	**615**	**2,131**	**6,719**	**3,410**	**1,460**	**2,009**	**2,205**	**2,357**
OPEX	(202)	(562)	(809)	(623)	(638)	(504)	(572)	(627)
EBITDA	**842**	**2,022**	**6,337**	**3,219**	**1,279**	**1,936**	**2,053**	**2,146**
Depreciation	(424)	(447)	(421)	(431)	(446)	(430)	(420)	(415)
EBIT	**418**	**1,575**	**5,916**	**2,788**	**832**	**1,505**	**1,633**	**1,731**
Interest expense	16	10	19	8	(2)	(2)	4	3
Income from Affiliates	(227)	(237)	725	1,296	1,869	1,962	2,551	2,857
EBT	**307**	**1,695**	**6,593**	**3,866**	**2,709**	**3,466**	**4,188**	**4,591**
Income tax expense	(79)	(268)	(938)	(454)	(139)	(432)	(419)	(459)
Net profit	**229**	**1,427**	**5,655**	**3,412**	**2,569**	**3,034**	**3,769**	**4,132**

Appendix 29: Balance Sheet

Source: Team Analysis

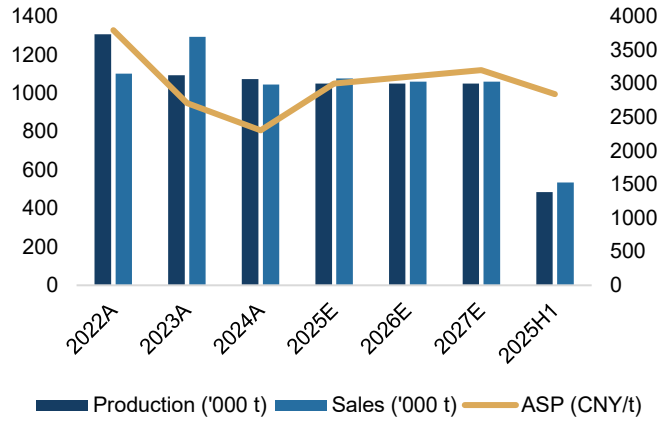
Balance Sheet (CNY,mn)	2020A	2021A	2022A	2023A	2024A	2025F	2026F	2027F
Fixed & intangible assets	3,890	3,619	3,490	3,306	3,361	3,380	3,432	3,499
Investments in Affiliates	2,220	2,545	3,268	4,130	6,056	8,018	10,569	13,426
Non-operational assets	273	1,813	1,855	3,512	3,579	3,485	3,485	3,485
Total non-current assets	**6,384**	**7,978**	**8,613**	**10,948**	**12,997**	**14,883**	**17,486**	**20,409**
Inventories	599	466	565	498	427	347	410	443
Receivables	957	1,243	1,398	630	243	429	400	396
Other current assets	283	138	185	430	564	302	307	310
Cash & cash equivalents	454	800	2,779	1,586	853	721	572	579
Total current assets	**2,294**	**2,647**	**4,927**	**3,144**	**2,087**	**1,798**	**1,688**	**1,728**
Total assets	**8,678**	**10,625**	**13,540**	**14,092**	**15,083**	**16,681**	**19,174**	**22,137**
Total shareholders' equity	**7,917**	**9,454**	**12,124**	**13,050**	**13,847**	**15,370**	**18,008**	**20,900**
Long-term & short-term debt	0	9	15	29	35	235	0	0
Other long-term liabilities	437	923	1,119	659	752	795	806	827
Account payables	313	230	273	345	431	272	347	395
Deferred income	10	9	9	8	18	10	13	15
Total liabilities	**761**	**1,171**	**1,416**	**1,041**	**1,236**	**1,311**	**1,166**	**1,237**
Total equity & liabilities	**8,678**	**10,625**	**13,540**	**14,092**	**15,083**	**16,681**	**19,174**	**22,137**

Appendix 30: Cash Flow Statement

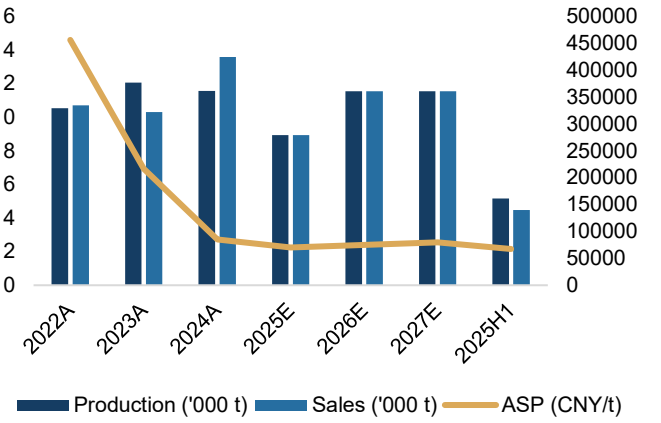
Source: Team Analysis

Cash flow statement (CNY,mn)	2020A	2021A	2022A	2023A	2024A	2025F	2026F	2027F
Net income to common	229	1,427	5,655	3,420	2,580	3,034	3,769	4,132
Depreciation & Amortization	424	447	421	431	446	430	420	415
Increase in NOWC	(114)	335	551	(1,315)	(284)	(263)	126	101
Others	(942)	495	(87)	(1,699)	(2,381)	(2,057)	(2,374)	(2,718)
Net cash from operating activities	**(175)**	**2,035**	**5,438**	**3,467**	**929**	**1,670**	**1,690**	**1,728**
Net cash from investing activities	**1,034**	**(1,770)**	**(154)**	**(1,889)**	**(42)**	**(449)**	**(473)**	**(481)**
Dividend Payed	0	0	(3,000)	(2,761)	(1,668)	(1,569)	(1,131)	(1,240)
Cash from (Repayment) Debt	(415)	0	0	0	20	215	(235)	0
Others	(72)	80	(305)	(9)	27	0	0	0
Net cash from financing activities	**(487)**	**80**	**(3,305)**	**(2,770)**	**(1,621)**	**(1,354)**	**(1,366)**	**(1,240)**
Net change in cash	**372**	**345**	**1,980**	**(1,192)**	**(733)**	**(132)**	**(149)**	**7**

Appendix 31 (A):Potassium Chloride, Production, Sales, ASP (CNY)



Appendix 31 (B): Lithium carbonate, Production, Sales, ASP (CNY)



Source: Company Reports, Team Analysis

Appendix 32 (A): Revenue Breakdown, Potassium Chloride | Base

Source: Team Analysis

Production Capacity	Units	Now	Future	Total Reserves (Eq.)
Qarhan	'000 t / year	2,000.00	-	145 Mt
Laos	'000 t / year	-	2,000.00	984 Mt
Total	**'000 t**	**2,000.00**	**4,000.00**	**1129 Mt**

Planned Production	Units	2022A	2023A	2024A	2025E	2026E	2027E
Qarhan	'000 t	1,000.00	1,000.00	1,050.00	1,000.00	1,000.00	1,000.00
% Planned Capacity Utilization	%	*50.00%*	*50.00%*	*52.50%*	*50.00%*	*50.00%*	*50.00%*
Laos	'000 t	-	-	-	-	-	-
% Planned Capacity Utilization	%	-	-	-	-	-	-
Total	**'000 t**	**1,000.00**	**1,000.00**	**1,050.00**	**1,000.00**	**1,000.00**	**1,000.00**

Actual Production	Units	2022A	2023A	2024A	2025E	2026E	2027E	2025H1
Qarhan	'000 t	1,306.70	1,094.20	1,073.00	1,050.00	1,050.00	1,050.00	485.20
% Production Completion Rate	%	*130.67%*	*109.42%*	*102.19%*	*105.00%*	*105.00%*	*105.00%*	
Laos	'000 t	-	-	-	-	-	-	
% Production Completion Rate	%	-	-	-	-	-	-	
Total	**'000 t**	**1,306.70**	**1,094.20**	**1,073.00**	**1,050.00**	**1,050.00**	**1,050.00**	**485.20**
% Production Completion Rate	%	*130.67%*	*109.42%*	*102.19%*	*105.00%*	*105.00%*	*105.00%*	

Planned Sales	Units	2022A	2023A	2024A	2025E	2026E	2027E
Qarhan	'000 t	1,000.00	1,200.00	1,042.00	950.00	1,000.00	1,000.00
Laos	'000 t	-	-	-	-	-	-
Total	**'000 t**	**1,000.00**	**1,200.00**	**1,042.00**	**950.00**	**1,000.00**	**1,000.00**

Actual Sales	Units	2022A	2023A	2024A	2025E	2026E	2027E	2025H1
Qarhan	'000 t	1,101.40	1,293.40	1,044.90	1,077.50	1,060.00	1,060.00	535.90
% Sales Completion Rate	%	*110.14%*	*107.78%*	*100.28%*	*105.00%*	*106.00%*	*106.00%*	
Laos	'000 t	-	-	-	-	-	-	
% Sales Completion Rate	%	-	-	-	-	-	-	
Total	**'000 t**	**1,101.40**	**1,293.40**	**1,044.90**	**1,077.50**	**1,060.00**	**1,060.00**	**535.90**
% Sales Completion Rate	%	*110.14%*	*107.78%*	*100.28%*	*113.42%*	*106.00%*	*106.00%*	

Average Selling Price (ASP) - Inclusive of Tax	Units	2022A	2023A	2024A	2025E	2026E	2027E	2025H1
Qarhan	CNY / t	3,795.28	2,709.64	2,305.66	3,000.00	3,100.00	3,200.00	2,845.00
Laos	CNY / t	-	-	-	-	-	-	-
Total	**CNY / t**	**3,795.28**	**2,709.64**	**2,305.66**	**3,000.00**	**3,100.00**	**3,200.00**	**2,845.00**
% YOY	%		*(28.61%)*	*(14.91%)*	*30.11%*	*3.33%*	*3.23%*	

Average Cost of Sales (ACS)	Units	2022A	2023A	2024A	2025E	2026E	2027E	2025H1
Qarhan	CNY / t	1,012.07	1,088.83	1,167.06	1,000.00	1,000.00	1,000.00	996.00
Laos	CNY / t	-	-	-	-	-	-	-
Total	**CNY / t**	**1,012.07**	**1,088.83**	**1,167.06**	**1,000.00**	**1,000.00**	**1,000.00**	
% YOY	%		*7.58%*	*7.18%*	*(14.31%)*	-	-	

***Note**: Actual Sales we forecast in 2025 has been adjusted based on the company's latest information (in response to national policy requirements and to ensure market supply, the company released approximately 80,000 tons of state reserve potassium chloride inventory in the first three quarters of 2025)

Appendix 32 (B): Revenue Breakdown, Lithium Carbonate | Base

Source: Team Analysis

Production Capacity	Units	Now	Future	Total Reserves (Eq.)
Qarhan	'000 t / year	10.00	-	10.00

Planned Production	Units	2022A	2023A	2024A	2025E	2026E	2027E
Qarhan	'000 t	10.00	12.00	10.50	8.51	11.00	11.00
% Planned Capacity Utilization	%	*100.00%*	*120.00%*	*105.00%*	*85.10%*	*110.00%*	*110.00%*

Actual Production	Units	2022A	2023A	2024A	2025E	2026E	2027E	2025H1
Qarhan	'000 t	10.54	12.06	11.57	8.94	11.55	11.55	5.17
% Production Completion Rate	%	*105.37%*	*100.53%*	*110.15%*	*105.00%*	*105.00%*	*105.00%*	

Planned Sales	Units	2022A	2023A	2024A	2025E	2026E	2027E
Qarhan	'000 t	10.00	12.00	10.50	8.51	11.00	11.00

Actual Sales	Units	2022A	2023A	2024A	2025E	2026E	2027E	2025H1
Qarhan	'000 t	10.71	10.32	13.58	8.94	11.55	11.55	4.47
% Sales Completion Rate	%	*107.07%*	*85.96%*	*129.35%*	*105.00%*	*105.00%*	*105.00%*	

Average Selling Price (ASP) - Inclusive of Tax	Units	2022A	2023A	2024A	2025E	2026E	2027E	2025H1
Qarhan	CNY / t	456,281.34	216,916.15	85,000.00	70,000.00	75,000.00	80,000.00	67,470.00
% YOY	%		*(52.46%)*	*(60.81%)*	*(17.65%)*	*7.14%*	*6.67%*	

Average Cost of Sales (ACS)	Units	2022A	2023A	2024A	2025E	2026E	2027E	2025H1
Qarhan	CNY / t	31,496.14	37,404.81	41,000.00	42,000.00	42,000.00	42,000.00	41,478.00
% YOY	%		*18.76%*	*9.61%*	*2.44%*	-	-	

Appendix 33: Key Inputs of DCF

Source: Team Analysis, Bloomberg

Valuation hypothesis & Cost of Capital	Units	Model Parameters Explanation		Input	Index
Valuation Date	**Date**				**2025/12/31**
Forecast years	**n**				**3**
Perpetual Growth Rate (g)	%			3%	*3.00%*
Beta (β)	x			399001.SZ-10-0.33	0.88
Risk-Free Rate (R_f)	%			China Bond, Yields, 10Y	*1.86%*
Expected Market Return (R_m)	%			399001.SZ-10-Yr Annualized Return	*3.21%*
Equity Risk Premium (ERP)	%			Damodaran's estimation	*5.25%*
Effective Tax Rate	%				*10.00%*
Value of Debt	CNY, mn	*From 2025 Q3 report*			235.00
Value of Equity	CNY, mn		58.33	1570.2257 *as of 2025/9/30*	91,591.27
Short-Term borrowing	CNY, mn	*From 2025 Q3 report*			10.00
Long-Term borrowing	CNY, mn	*From 2025 Q3 report*			225.00
Cost of Short-Term borrowing	%	*1Y LPR as of 2025/9/22*			*3.00%*
Cost of Long-Term borrowing	%	*According to the interest rate disclosed by the company, weighted*			*3.28%*
Cost of Debt (R_D)	%				*2.94%*
Cost of Equity (R_E)	%				*6.48%*
Weight Average Cost of Captial (WACC)	**%**				***6.47%***

Appendix 34: FCFFs Calculation in DCF

Source: Team Analysis, Bloomberg

FCFF	Units	2023/12/31	2024/12/31	2025/12/31	2026/12/31	2027/12/31	Perpetual Phase
EBIT	CNY, mn	2,788.30	832.30	1,505.27	1,633.09	1,730.83	
Income from Affiliates	CNY, mn	1,296.27	1,868.66	1,962.09	2,550.72	2,856.80	
NOPAT	CNY, mn	3,676.12	2,430.86	3,120.62	3,765.43	4,128.87	
+ D&A	CNY, mn	430.78	446.28	430.26	420.22	414.76	
- Increase in NOWC	CNY, mn	(1,314.91)	(283.77)	(262.84)	126.14	100.52	
- CapEx	CNY, mn	323.78	147.57	448.68	472.65	481.37	
FCFF	**CNY, mn**	**5,098.02**	**3,013.33**	**3,365.03**	**3,586.85**	**3,961.74**	**117,487.08**
Discount Year	n			0	1	2	2
Discount Factor	x			-	0.94x	0.88x	0.88x
Discounted FCFF				-	3,368.79	3,494.66	103,635.67

Appendix 35: SOTP Valuation Process

Source: Team Analysis, Bloomberg

Potassium chloride		Lithium carbonate		Copper	
Ticker	**EV/EBITDA**	**Ticker**	**EV/EBITDA**	**Ticker**	**P/E**
000792.SZ	12.70	000792.SZ	12.70	ANTO LN	31.39
000893.SZ	9.40	002460.SZ	33.50	IVN CN	30.40
NTR CN	6.40	SQM/B CI	8.80	SCCO US	25.8
Multiple (Premium Adjusted)	**22.4x**	**Multiple (Premium Adjusted)**	**29.0x**	**Multiple (Premium Adjusted)**	**29.2x**
EBITDA, CNY mn	1751.04	EBITDA, CNY mn	184.49	Earnings, CNY mn	1962.09
EV, CNY mn	**39258.25**	**EV, CNY mn**	**5343.98**		
Potassium & Lithium EV, CNY mn			**44602.23**		
+ Cash & Equivalents, CNY mn			720.50		
- Total Debt, CNY mn			235.00		
Potassium & Lithium Market Cap, CNY mn			**45087.73**	**Copper Market Cap , CNY mn**	**57,289.16**

STOP Valuation	
Total Market Cap, CNY mn	102,376.89
Total shares outstanding, mn	1,570.23
Target Price, CNY	**65.20**

Appendix 36: DDM Valuation Process

Source: Team Analysis, Bloomberg

DPS	**CNY**	**1.00**	**0.72**	**0.79**	**76.95**
Discount Year	n	0	0.5	1	1
Discount Factor	x	-	0.97x	0.94x	0.94x
Discounted DPS		-	0.70	0.74	72.27
		Target Price, CNY			**73.71**

Appendix 37: ESG Scorecard

Source : Company Report, team analysis

Approach & rationale: Given that there is the lack of unified standard for ESG, and ZANGGE holds a special position in the non ferrous metals industry, the company's performance is evaluated based on industry characteristics and diverse standards. To establish a representative, objective and accurate evaluation framework, we've referred to the scoring criteria of MSCI, Bloomberg and LSEG, and selected the most representative sub-indicators to conduct a detailed ESG evaluation. Below are the specific ratings of the relevant indicators and the corresponding basis:

Rating	Category	Description
0	Not applicable	No evidence of any effort or achievement related to the criterion.
1	Below Expectation	Some attempts observed, but minimal progress or success in meeting the criterion.
2	Basic Compliance	Basic Compliance Shows clear effort with partial accomplishment in addressing the criterion.
3	Meets Industry Standard	Standard Effort and outcomes align with common industry expectations for the criterion.
4	Above Average	Demonstrates superior effort and notable success in achieving the criterion.
5	Industry Pioneer	Sets a benchmark of excellence, innovation, and exceptional results in fulfilling the criterion.

	ZANGGE	Salt Lake	Tianqi	Ganfeng	Sinomine
Conversion Rate	4.5	5.0	3.5	4.0	3.0
Recovery	4.0	5.0	3.0	4.5	3.0
Comprehensive Resource Utilization	Membrane separation and lithium extraction efficiency improvement	Adsorption lithium extraction and crystallization optimization	Improvement room for lithium salt conversion improvement	Lithium concentrate roasting process, purification tech	Relatively outdated resource conversion process and purification tech
Score	**4.3**	**5.0**	**3.3**	**4.3**	**3.0**
Carbon Emission	4.0	5.0	4.0	4.5	3.0
Clean Energy	4.0	5.0	3.0	4.0	3.0
GHG Emissions	Standardized carbon emission management, dual energy-saving in production	Widely application of low-carbon processes and full-chain control	Electrified equipment and green electricity improvement	Waste heat recovery and direct green electricity supply	high-energy-consuming process and fossil energy
Score	**4.0**	**5.0**	**3.5**	**4.3**	**3.0**
Ecological Environment Protection	Zero-discharge waste water tech and vegetation restoration	Brine recycling and wetland restoration	Solid environmental investment and measures	Green mining of lithium ore and battery recycling loop	Delayed ecological restoration measures, but reached average level of the industry
Score	**4.0**	**5.0**	**4.0**	**4.5**	**3.0**
E	**4.1**	**5.0**	**3.5**	**4.3**	**3.0**
Diversity	3.0	4.0	3.0	4.0	3.0
Benefits	3.0	4.5	4.0	4.0	2.5
Accidents	4.0	3.0	5.0	4.0	3.0
Employees' Rights	Basic benefits and effective safety training, but insufficient diversity	Diversity in progress and comprehensive benefits, but safety to be enhanced	Insufficient job structure but excellent safety control	Full and excellent employees' rights	Reasonable diversity and safety management with weak benefits
Score	3.3	3.8	4.0	4.0	2.8
Public Welfare	3.5	3.5	4.0	3.0	4.0
Community Support	3.5	3.5	4.0	4.0	5.0
Disaster Response	4.0	5.0	4.0	3.0	3.0
CSR	Education public welfare projects, timely disaster material donation	Regular public welfare donation and community, large donation in disaster	Public welfare fund and sustainable projects, disaster reconstruction	Scattered public welfare activities and delayed disaster response	Public welfare cooperation projjects, but passive disaster response
Score	3.7	4.0	4.0	3.3	4.0
Compliance Review	3.0	4.0	5.0	5.0	3.0
Formulation of Management Rules	4.0	4.0	4.5	5.0	3.0
Supply Chain	Insufficient supply chain compliance audit and relatively full management rules	Standard compliance review and comprehensive management rules	Excellent compliance review and relatively optimal management norms	Top-notch compliance review and top-tier management system	Lack of compliance review and management rules
Score	3.5	4.0	4.8	5.0	3.0
S	**3.5**	**4.0**	**4.2**	**4.0**	**3.4**

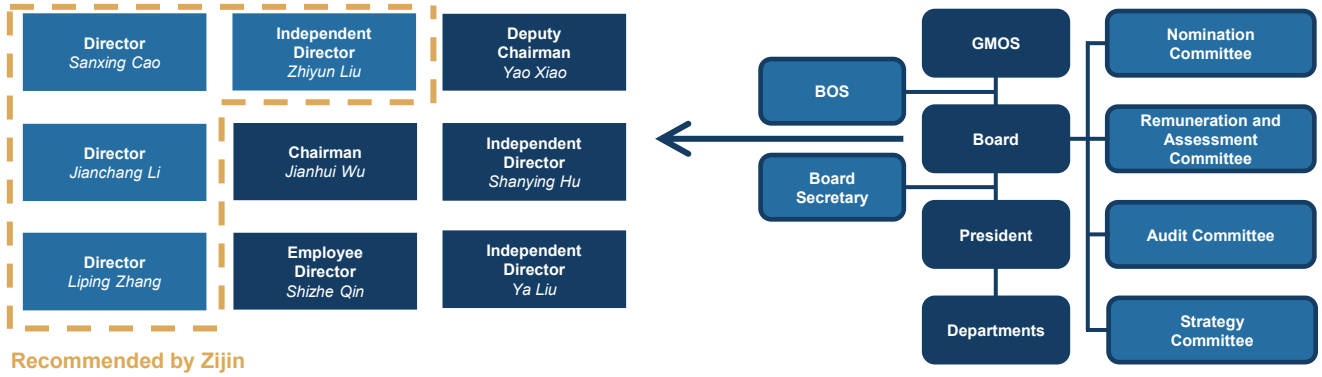
Appendix 37: ESG Scorecard (Continued)

Source: Company Reports, Team Analysis

	ZANGGE	Salt Lake	Tianqi	Ganfeng	Sinomine
Governance	3.0	4.0	4.5	5.0	4.0
Supervision	4.0	4.0	4.0	5.0	3.0
Management Structure	Average governance and standardized supervision	Standardized governance	Governance prominent strategy committee role	Governance diversified board composition	lack of internal supervision departmenet
Score	3.5	4.0	4.3	5.0	3.5
Disclosure	3.5	3.0	4.5	4.0	4.0
Penalty	3.0	3.0	5.0	3.0	5.0
Compliance Risk	Regular information disclosure and minor penalty record	Insufficient information disclosure with minor penalty and no major penalty	Detailed information disclosure and zero penalty record	Relatively comprehensive information disclosure and minor penalty	Sufficient information disclosure and no penalty
Score	3.3	3.0	4.8	3.5	4.5
Voting Rights	4.0	3.5	4.5	4.0	4.0
Dividend	5.0	1.0	2.5	3.0	4.0
Shareholder's Equity	Well-protected voting rights and high dividend payout	Voting rights average and extremely low dividend policy	Relatively optimal voting rights with average dividend	Voting rights good and moderate dividend	Good voting rights and dividend policy
Score	4.5	2.3	3.5	3.5	4.0
Independence	3.0	3.0	4.5	4.0	3.0
Experience	3.0	3.0	4.5	4.0	2.5
Board of Directors	Independent directors from affiliated enterprises, and average experience of directors < 5 years	Independent directors < 1/3 , most promoted internally	Independent directors > 50%, directors including executives of multinational enterprises	Independent directors comes from authoratative institutions	Independent directors < 1/3 and directors lack of experience
Score	3.0	3.0	4.5	4.0	2.8
G	**3.6**	**3.1**	**4.3**	**4.0**	**3.8**
Overall	**3.8**	**4.2**	**3.9**	**4.1**	**3.3**

Appendix 38: Management Structure

Source: Company Reports, Team Analysis



Appendix 39:Regional physical risks: 2030 & 2050 scenarios

Source: ICL

Location	Acute / Chronic	Type of Risk	Scenario SSP1-26 (2030)	Scenario SSP1-26 (2050)	Scenario SSP2-45 (2030)	Scenario SSP2-45 (2050)	Scenario SSP5-85 (2030)	Scenario SSP5-85 (2050)
Israel	Chronic	Heat stress						
	Chronic	Water stress						
	Acute	Flooding						
	Acute	Wildfire						
	Acute	Storms						
APAC	Chronic	Heat stress						
	Chronic	Water stress						
	Acute	Flooding						
	Acute	Wildfire						
	Acute	Storms						
Europe	Chronic	Heat stress						
	Chronic	Water stress						
	Acute	Flooding						
	Acute	Wildfire						
	Acute	Storms						
North America	Chronic	Heat stress						
	Chronic	Water stress						
	Acute	Flooding						
	Acute	Wildfire						
	Acute	Storms						

Level	Likehood	Impact
	Expected:>80	Critical
	Highly likely:50–80	Major
	Likely:20–50	Significant
	Not likely:20–50	Moderate
	Slight:<10	Low

Low score Medium score High score