MINISTRY OF INDUSTRY AND MINERAL RESOURCES

MONGOLIAN NATIONAL MINING ASSOCIATION

MONGOLIA Inc.

MINING INDUSTRY IN MONGOLIA

THE MOST COMPREHENSIVE REPORT 2025

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ABOUT+ MONGOLIA INC.

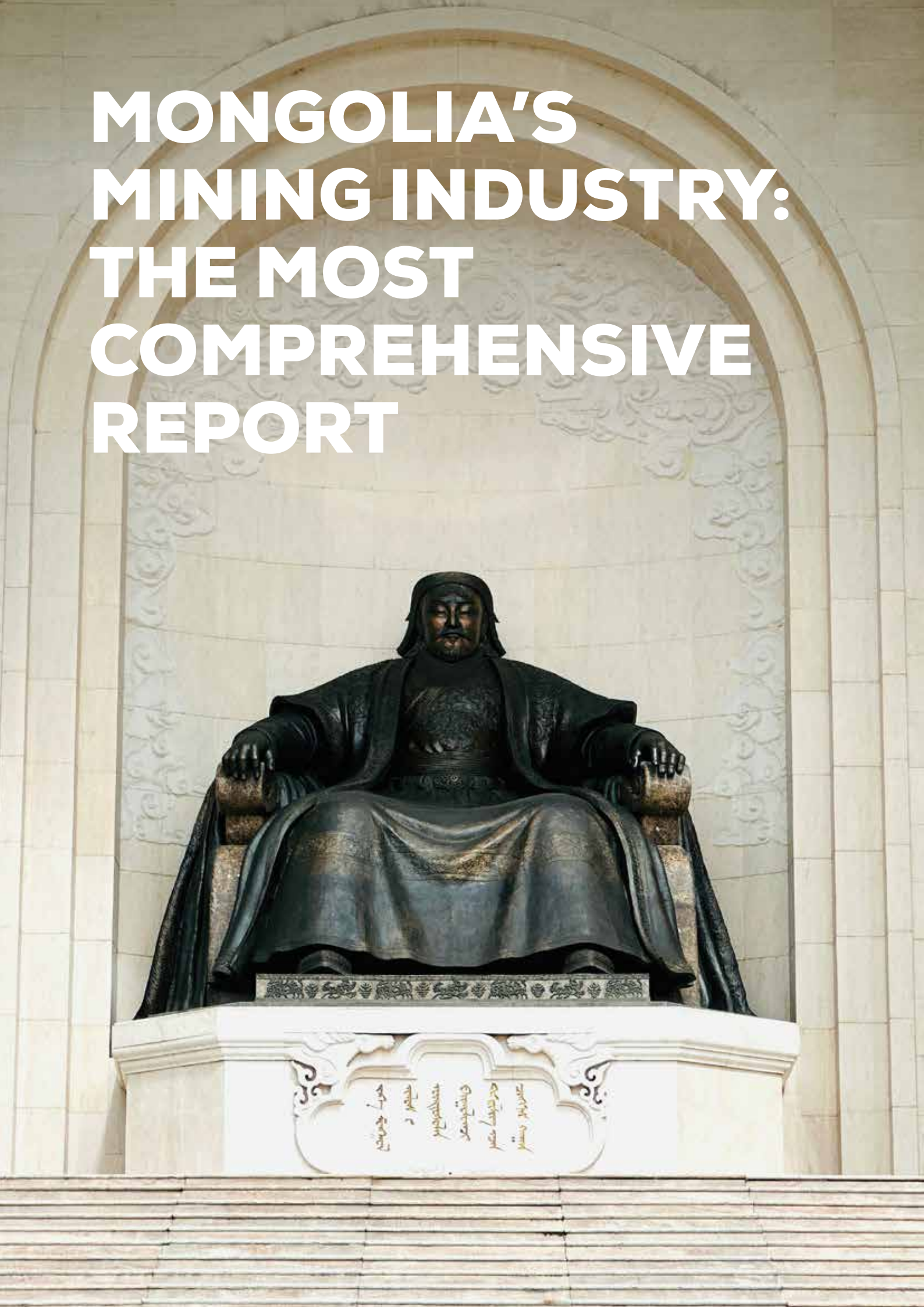
Mongolia Inc. is an independent information company specializing in critical insights and analysis for investors exploring Mongolia. We leverage local knowledge and sector expertise to provide a comprehensive understanding of the country's business environment, regulatory framework, and investment opportunities.

Our mission is to facilitate investment by delivering reliable, accurate, and up-to-date information. Transparency is at the core of our approach, ensuring investors receive the most relevant and timely insights available.

Whether you're a seasoned investor or new to Mongolia, Mongolia Inc. is your trusted partner, providing a comprehensive overview of the country's unique opportunities and challenges to support informed decision-making.

At Mongolia Inc., we are your independent resource for investing in Mongolia. Passionate about this dynamic market, we offer clarity and expertise to help investors navigate its evolving landscape

MONGOLIA'S MINING INDUSTRY: THE MOST COMPREHENSIVE REPORT



MINISTER'S MESSAGE +

Dear Investors,

On behalf of the Government of Mongolia, I extend my deepest appreciation to all investors and partners who share our vision for the sustainable growth and development of Mongolia's extractives sector.

Following the 2024 parliamentary elections, the Coalition Government has prioritized the industry and mineral resources sector as a key driver of economic growth. Our strategic focus is on industrialization—transitioning from raw material extraction to value-added processing.

To diversify the national economy and enhance export revenues, the Government of Mongolia has undertaken a series of structural reforms. A National Wealth Fund has been established to ensure transparent and accountable governance, while long-awaited mega-projects are now being successfully implemented.

As part of the Government's 2024-2028 Action Plan, 14 major projects have been identified, 7 of which are in the industry and mineral resources sector. These include:

- Copper Processing Complex
- Steel Complex
- Oil Refinery Complex
- Gold Refinery
- Coal and Coke Chemical Complex
- Uranium project

Additionally, Mongolia is working closely with both foreign and domestic investors to bring uranium, rare earth elements, and other critical minerals into economic circulation. To further enhance the investment climate, the Government is revising key legal frameworks, including the Foreign Investment Law and the Minerals Law.

Our long-term vision is to build a diversified, high-value industrial economy, aligned with global development trends, advanced technology, green energy transition, and sustainable resource management.

We warmly welcome global investors to explore the vast opportunities in Mongolia's mining sector, backed by a supportive regulatory environment and strong government commitment to industrial and economic transformation.

Tuvaan Tsevegdorj

Member of Parliament of Mongolia,
Minister of Industry and Mineral Resources of Mongolia

EXECUTIVE SUMMARY +

After 30 years of transitioning towards a democratic society and market economy, Mongolia has successfully overcome many economic challenges. By leveraging its abundant natural resources, young population, and highly skilled workforce, Mongolia is a developing country that has proven its resilience and potential for growth.

Foreign investment in mining mega-projects has played a critical role in Mongolia's rapid economic growth, and the government has recognized the importance and impact of foreign investors on the country's economy. Despite the challenges of achieving domestic recognition, public acceptance and understanding, and creating a favourable environment for foreign investment, Mongolia has successfully laid the groundwork for a government-sponsored policy to support global investors.

Mongolia is rich in natural resources such as gold, copper, coal, iron ore, and oil, with only 30% of the country having been geologically surveyed and only 1% licensed for mining. This presents significant opportunities for the exploration industry, and Mongolia's strategic location adjacent to China, the world's largest consumer of raw materials, offers a massive market for Mongolia to tap into.

With over a decade and half of experience in foreign investment in mining projects, I can confidently say that Mongolia presents enormous growth opportunities. Despite a GDP of just $23 billion, the country's vast natural resources and highly skilled, motivated workforce make it a prime destination for investment.

Looking forward, Mongolia is entering a new phase of growth, driven by government initiatives to support recovery across major sectors. As the country actively seeks foreign investment, this report aims to provide valuable insights to help you assess the risks and opportunities of investing in Mongolia.

Mongolia presents a compelling opportunity for foreign investors seeking access to a rapidly growing economy, abundant natural resources, and a skilled workforce.

I hope this comprehensive report serves as a valuable resource as you evaluate the potential of investing in this exciting dynamic country.

Bataa Tumur-Ochir
Founder and CEO,
Mongolia Inc Limited

FOREWORD +

It is my great pleasure to introduce you to the latest edition of the Most Comprehensive Report of Mongolia's Mining Industry.

As one of the world's most untapped resource-rich nations, Mongolia has long been recognized for its vast mineral wealth, including gold, copper, coal, uranium and rare-earth minerals.

This report provides an in-depth overview of Mongolia's mining sector, presenting its current state of mineral reserves, geological potential, policy and regulatory background and emerging opportunities. We draw on a range of publicly available data sources, including government reports, industry publications, and market analysis, to present an informed and balanced perspective on the sector.

Along with this report, the Mongolia Investment Report 2025 has also been released, providing the most recent updates on the country's business and investment environment, economic situation, political landscape, infrastructure development, government policies and general overview of potential risks.

I would like to express my sincere gratitude to the team at Mongolia Inc. for their dedication and hard work in preparing this report. I also extend my thanks to the Mongolian National Mining Association for their collaboration and support in the development of this report and their continued efforts to promote Mongolia's mining industry.

Please note that all dollar symbols ($) and the written word 'dollar' are presented as US dollars unless stated otherwise.

Elisa Tagarvaa
Editor-in-Chief

01

ABOUT+ MONGOLIA

GEOGRAPHY

Mongolia is among the fastest-growing economies in Central Asia, boasting vast untapped mineral resources. With the rapid development of business partnerships and democratic governance, foreign investment interest in Mongolia is on the rise.

Located between China and Russia, Mongolia is a landlocked country that spans a vast area in the Asian continent, with an extreme climate and a small population. The capital city of Mongolia is Ulaanbaatar.

Total area:
1,564,116 KM²

Time zone:
UTC/GMT +8

Capital:
ULAANBAATAR

Official language:
MONGOLIAN

Official currency:
TUGRIK/MNT

Administrative divisions and territorial units:
21 provinces (aimags),
3 cities: Ulaanbaatar, Darkhan, Erdenet

MONGOLIA AT GLANCE

GDP (2024)
$23.6 BILLION

Export revenue (2024)
$15.8 BILLION

FDI (2024 Q1-Q3)
$2.9 BILLION

State budget revenue (2024)
₮31.4 TRILLION

Industrial production (2024*)
₮32.2 TRILLION

GNI per capita (2024)
$5,369

GDP per capita (2024)
$6,890

Table 1.1

MACROECONOMIC INDICATORS

Indicator	2020	2021	2022	2023	2024
GDP (billion $)	13.3	15.3	17.1	20.3	23.6
GDP per capita ($)	4,128	4,657	5,126	6,008	6,890
GNI per capita ($)	3,688	3,686	4,212	4,869	5,369
GDP rate (%)	-4.4	1.6	5	7.2	4.9
Foreign exchange reserve (million $)	4,534	4,366	3,400	4,921	5,510
FDI inflow (million $)	2,560	2,714	3,418	3,533	2,900*
Foreign trade turnover (million $)	12,875	16,087	21,243	24,437	27,396
Export (million $)	7,576	9,241	12,539	15,187	15,783
Import (million $)	5,299	6,846	8,704	9,250	11,613
Balance of Trade (million $)	2,277	2,396	3,834	5,937	4,171

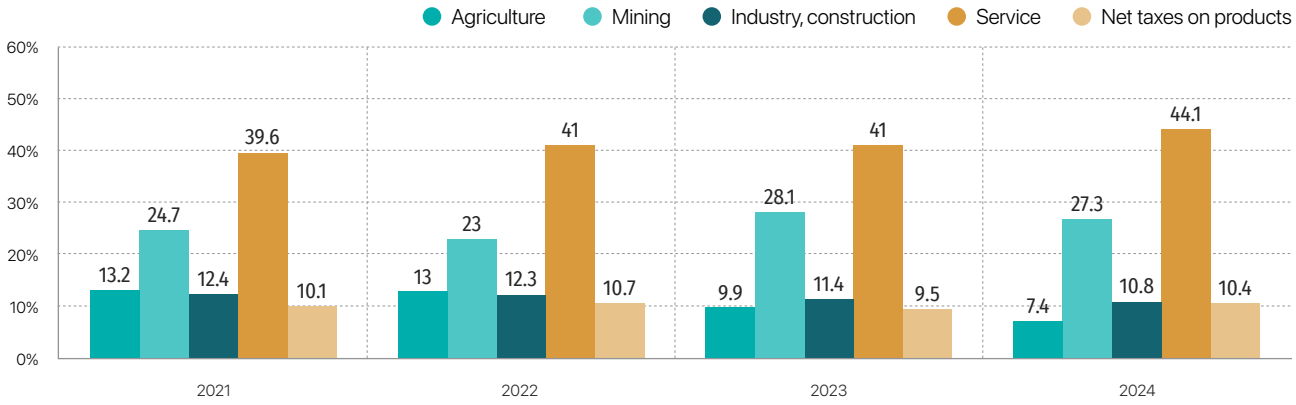
Source: The Central Bank of Mongolia, NSO of Mongolia, Mongolian Customs General Administration
**Q1-Q3, 2024*

ECONOMY

Mongolia is currently experiencing an important milestone in its development. The country's rapid economic growth over the past three decades, driven largely by the mining sector, has significantly expanded its GDP. The Gross National Income (GNI) per capita reached $5,369 in 2024. The international credit rating agencies—Fitch Ratings, S&P Global, and Moody's—have upgraded Mongolia's credit rating to "B2, stable" for 2024. According to the World Bank analysts' forecast, Mongolia's economic growth is expected to reach 6.5% in 2025.

Figure 1.1

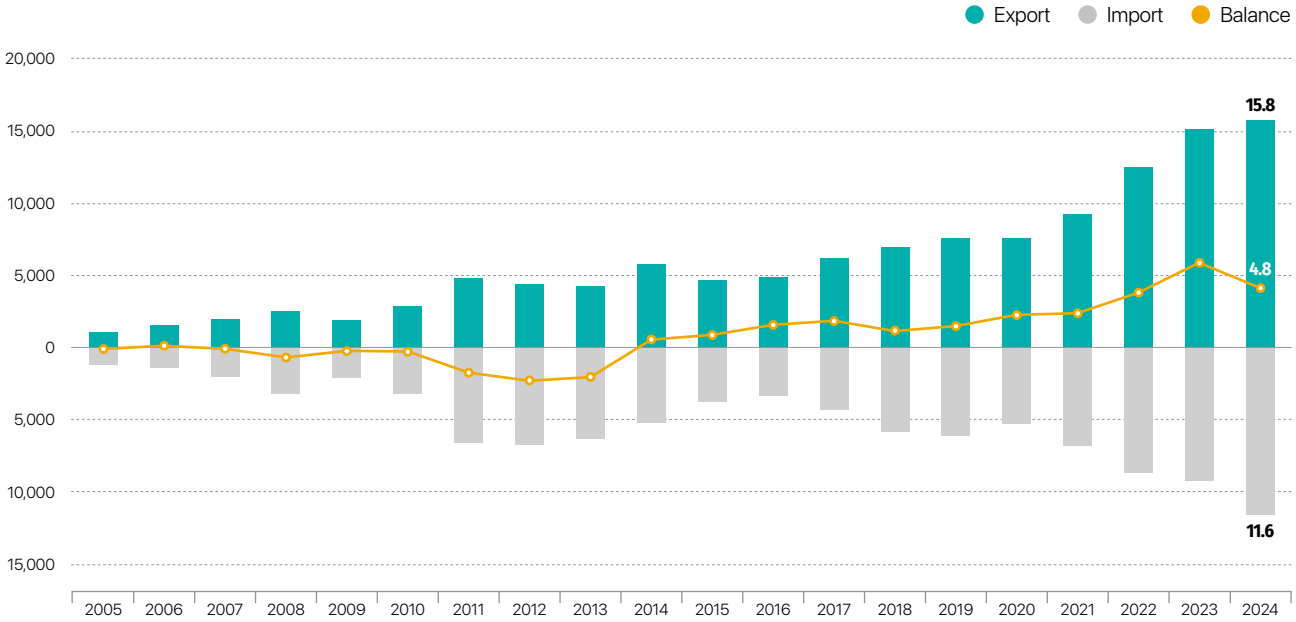
THE STRUCTURE OF GDP BETWEEN 2021 AND 2024 (%)



Source: NSO

Figure 1.2

IMPORT-EXPORT TRADE BALANCE, BY YEAR (IN BILLION $)



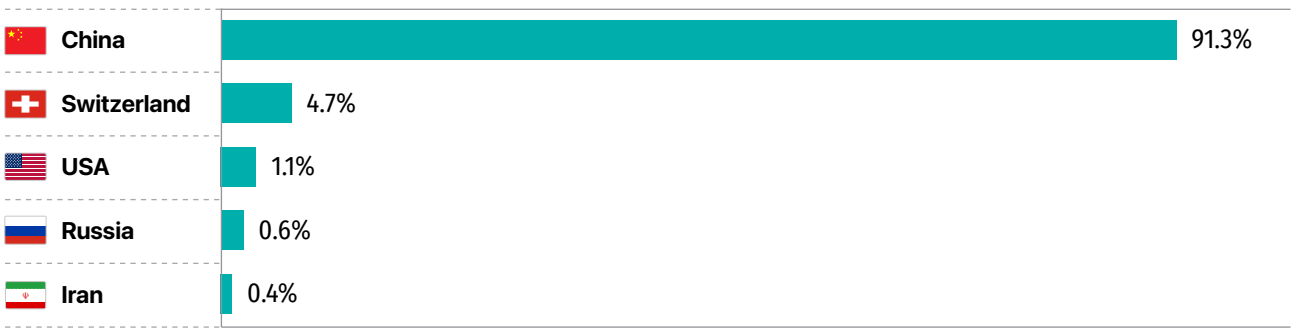
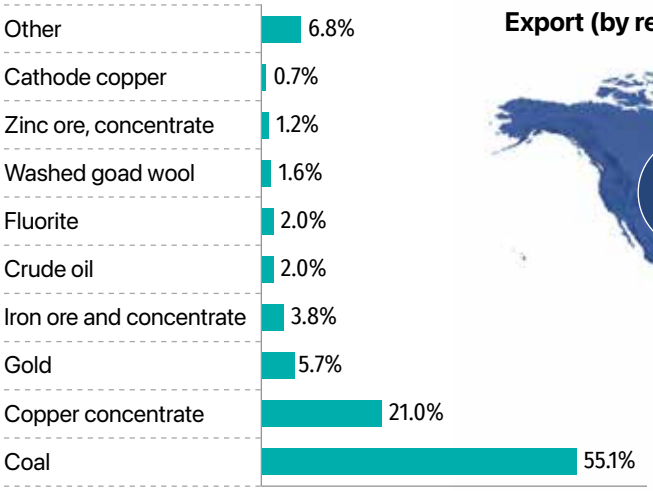
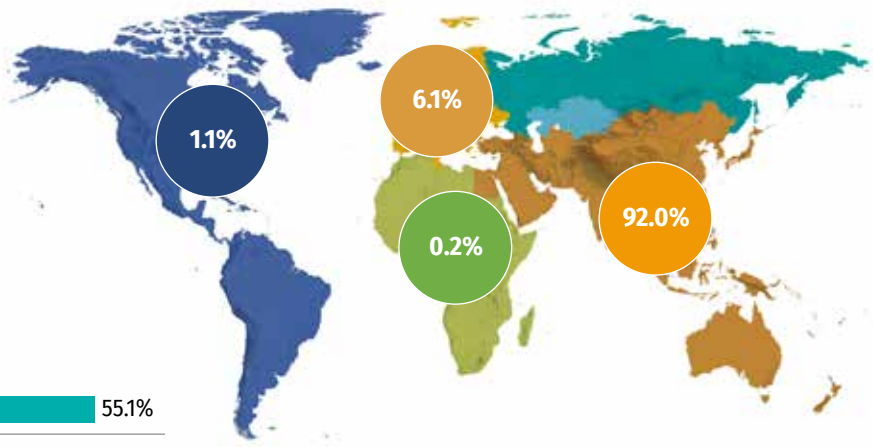


Figure 1.3

MAIN EXPORT PRODUCTS OF MONGOLIA (%)



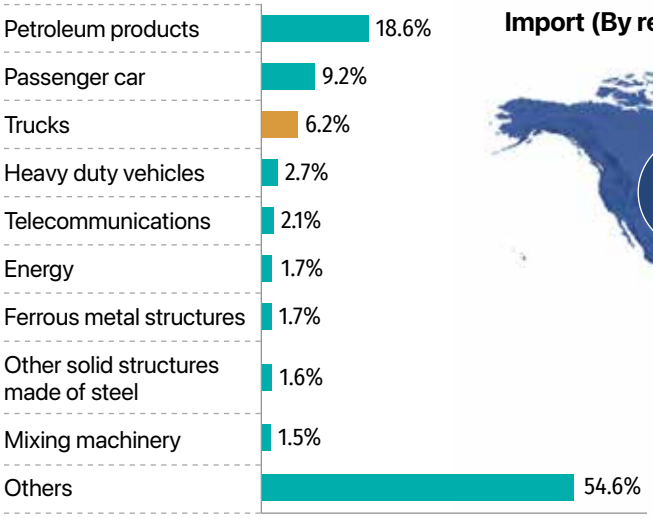
Export (by region)



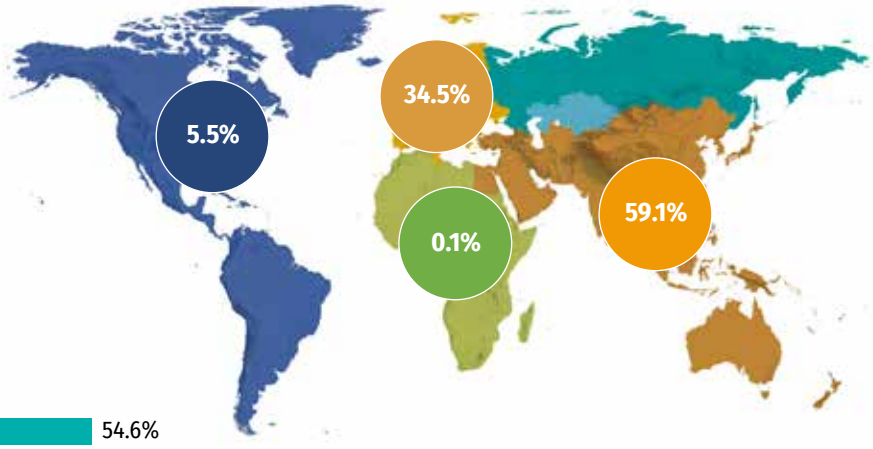
Source: Mongolian Customs General Administration

Figure 1.4

MAIN IMPORT PRODUCTS OF MONGOLIA (%)



Import (By region)

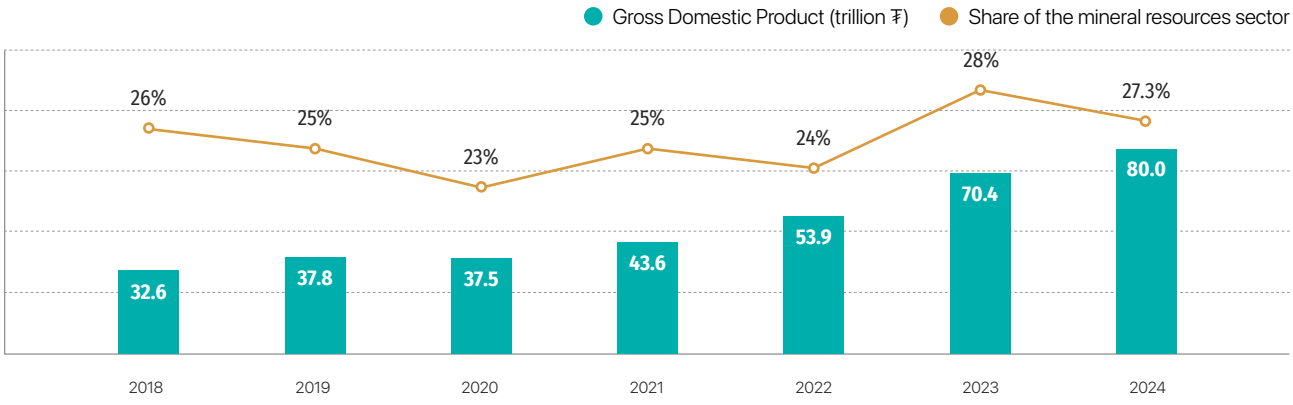


Source: Mongolian Customs General Administration

Figure 1.5

MINING SECTOR CONTRIBUTION TO GDP GROWTH

As of 2024, the mining sector accounts for 27.3% of Mongolia's GDP.

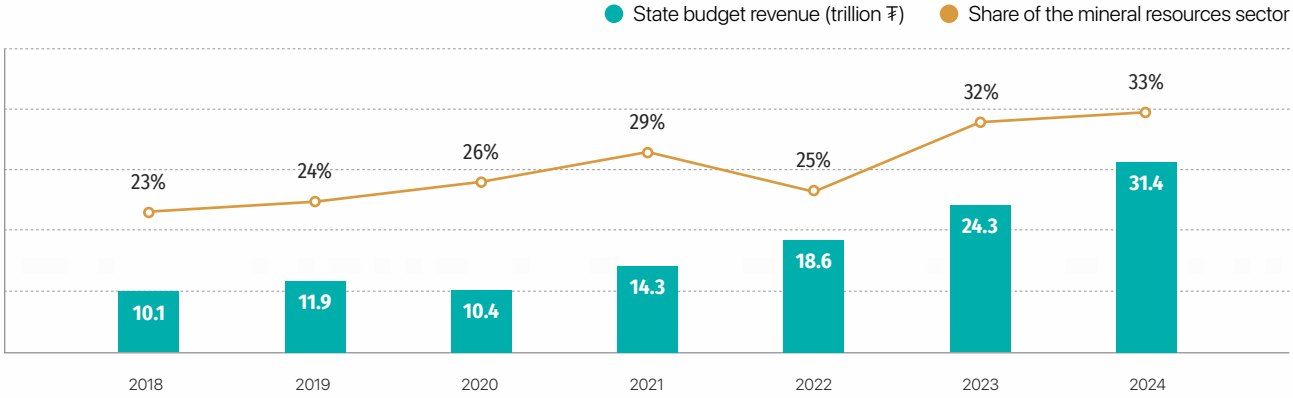


Source: Central Bank of Mongolia

Figure 1.6

MINING SECTOR CONTRIBUTION TO STATE BUDGET REVENUE

The mineral resources sector accounts for 33% of Mongolia's state budget revenue in 2024.

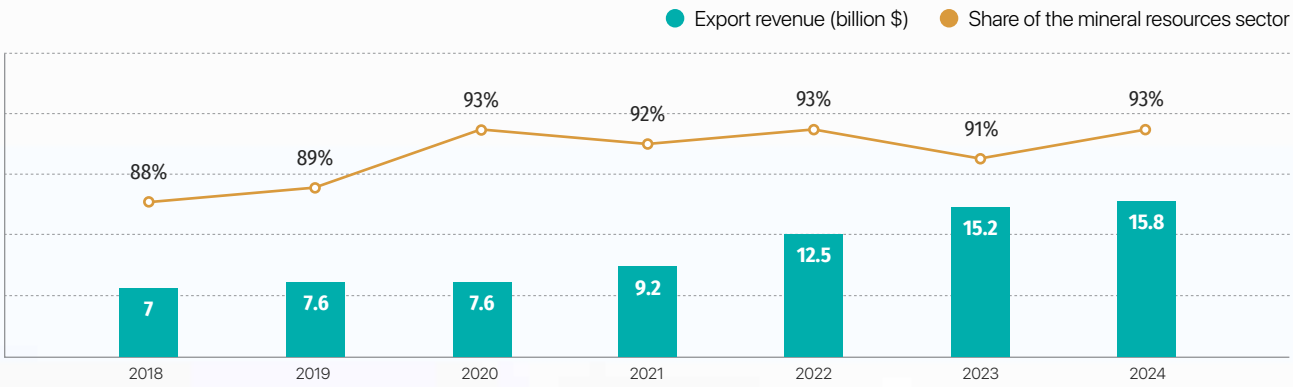


Source: Central Bank of Mongolia

Figure 1.7

THE SHARE OF MINING PRODUCTS IN TOTAL EXPORTS

Mineral exports made up 93% of Mongolia's total exports in 2024.



Source: Bank of Mongolia

02

MINING INDUSTRY BACKGROUND+

Mongolia's mining industry is the backbone of its economy, contributing significantly to GDP, government revenues, and employment. Rich in mineral resources, the country is a major producer of copper, gold, coal, and other minerals. Its strategic geopolitical location next to one of the world's largest commodity markets, China, further enhances its economic potential.

Foreign investment in Mongolia's mining sector has surged since the 2000s, driven by major mineral discoveries and rising global commodity demand, particularly due to China's rapid industrialization and infrastructure development. Until recently, approximately 70% of total foreign direct investment (FDI) has been directed toward the mining sector, with over 80% of that investment linked to the Oyu Tolgoi copper and gold project. Mongolia's latest mega mining success is the world-class Zuuvch Ovoo uranium project, set to commence operations through a partnership between the Mongolian government and the French company Orano.

Over the past decade, Mongolia's mining sector has experienced rapid development, driven by foreign investment, infrastructure expansion, and evolving government policies. Successive governments have pursued policies aimed at enhancing the business environment, supporting the mining sector, improving geological data, expanding mining opportunities, and promoting sustainable and responsible mining practices

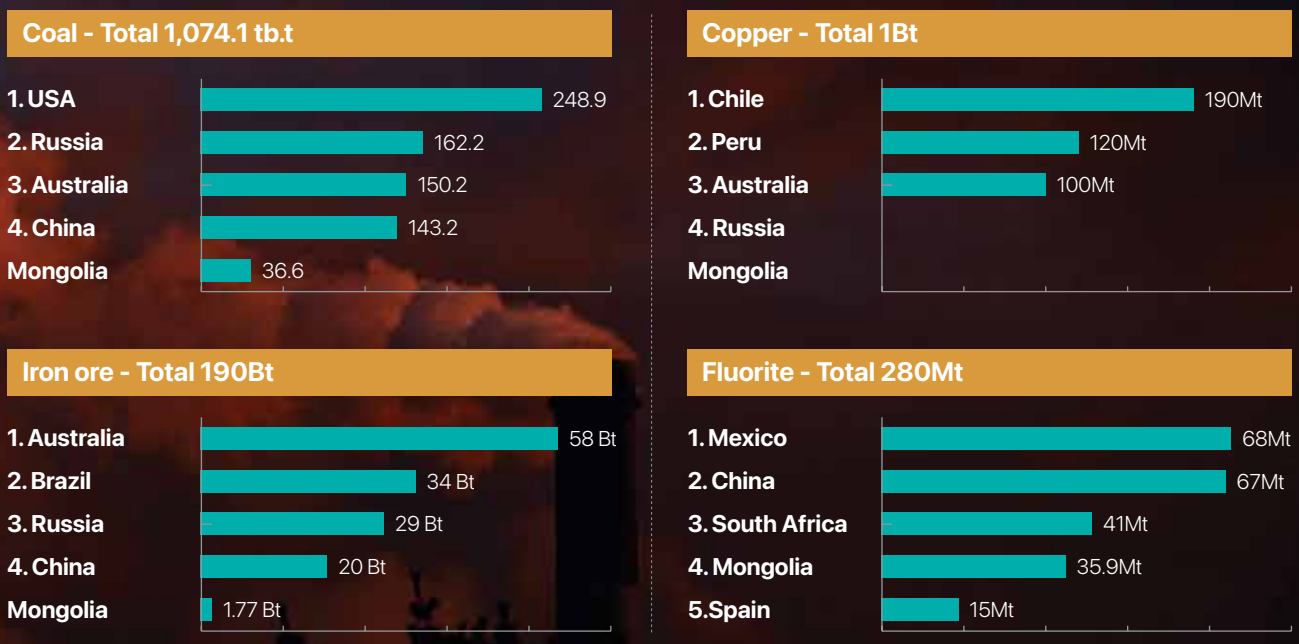
2.1

MINING SECTOR AT GLANCE

Mongolia is a resource-rich developing country, with over 8,000 known occurrences of more than 80 types of mineral deposits identified across 1,170 registered deposits. The International Monetary Fund, an international financial organization with 189 member countries, identifies Mongolia as one of the 29 resource-rich developing countries due to its richness in natural resources.

Figure 1.8

MONGOLIA'S POSITION IN THE GLOBAL MINING MARKET: MINERAL RESERVES (AS OF 2022)



Source: MIMR, National Geological Survey, MRPAM, Mongolian Customs General Administration, U.S. Geological Survey

Figure 1.9

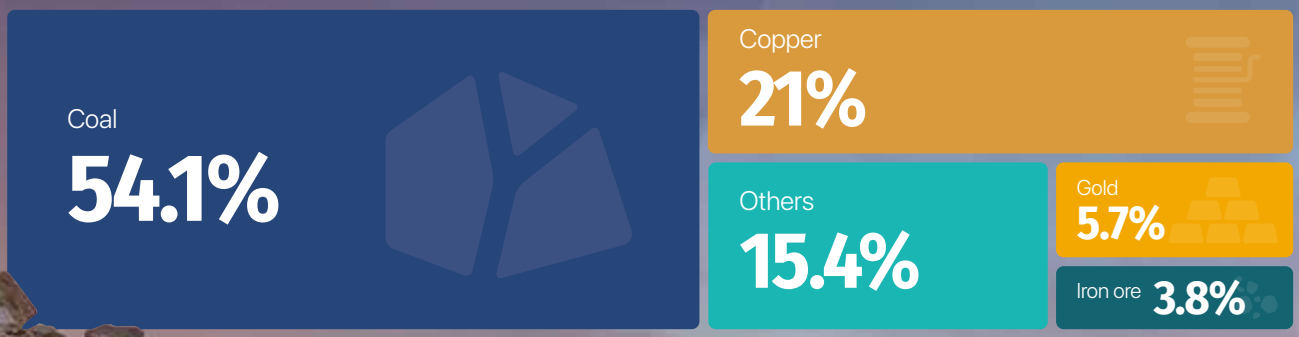
MINING CONTRIBUTION TO MONGOLIA'S ECONOMY (AS OF 2024)

GDP	FDI*	Export	Industrial production	Budget income
27.3%	81%	93%	71%	33%

Source: Ministry of Finance, NSO, Customs General Administration

Figure 1.10

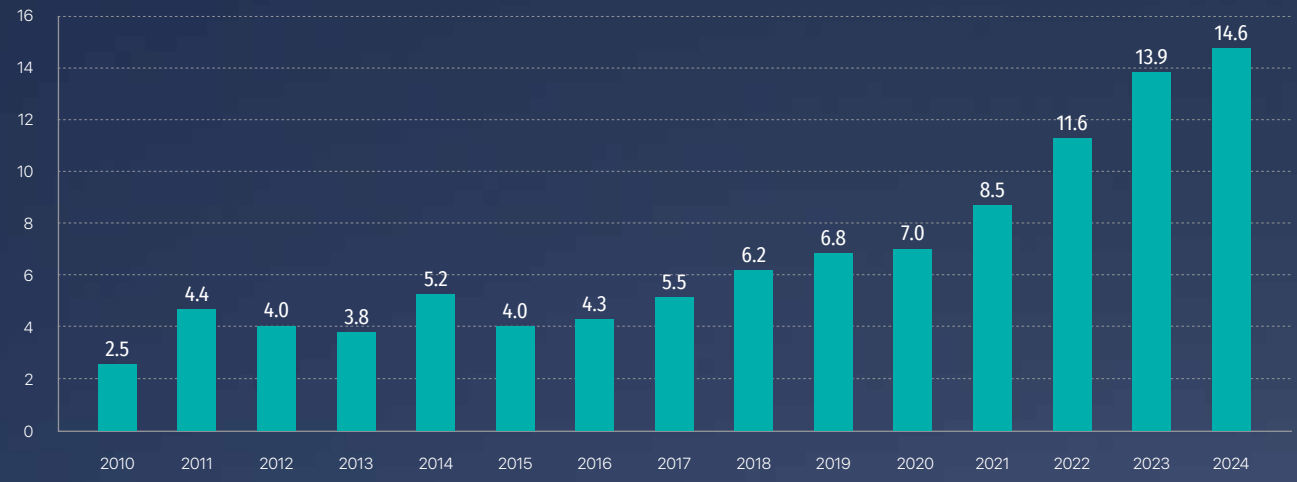
EXPORT BREAKDOWN (AS OF 2024)



Source: NSO

Figure 1.11

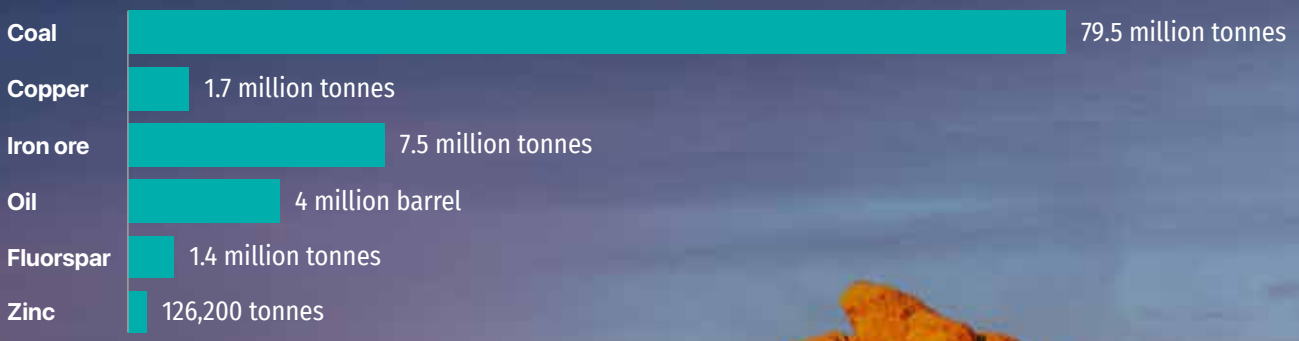
MINERAL EXPORTS BY YEAR (IN BILLION $)



Source: The National Statistical Office of Mongolia

Figure 1.12

2024 MINERAL EXPORT VOLUME BY TYPE



Source: NSO

2.2

FOREIGN DIRECT INVESTMENT IN MINING SECTOR

Mongolia's economic growth remains heavily reliant on the mining sector and foreign direct investment (FDI). Between 1990 and 2024, the country attracted $47 billion in FDI, with over 70% directed toward mining. Since the launch of investments in the Oyu Tolgoi project in 2010, the mine has accounted for nearly half of all foreign investment in Mongolia's mining industry. As of Q3 2024, 81% of foreign direct investment (FDI) has been directed towards the mining sector.

Research from the University of Finance and Economics of Mongolia estimates that a 1% increase in FDI drives a 0.76% long-term GDP growth, with 0.22 percentage points directly attributed to investments in Oyu Tolgoi.

To facilitate foreign investment, Mongolia has established the Investment and Trade Agency, which operates a One-Stop Service Center to assist investors. Investment regulations were initially governed by the Law on Foreign Investment (1993) before being replaced by the Investment Law (2013), which provides equal rights for foreign and domestic investors, offering tax incentives and stability agreements for large-scale projects.

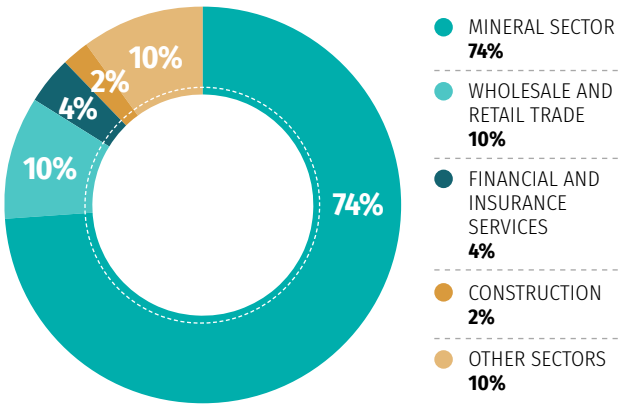
The Mongolian government has undertaken reforms to improve the investment climate, including simplifying permitting and licensing processes, reducing bureaucracy, and enhancing transparency. Further initiatives focus on streamlining registration, visa, and residency procedures, ensuring investment stability, and strengthening legal protections for investors. These measures aim to attract and retain foreign capital while fostering long-term economic growth.

In line with these goals, the government is in the process of drafting a new Law on Foreign Investment to replace the current Investment Law. As of February 2025, the draft law is under public consultation. The proposed law aims to incorporate the following principles:

- Ensure a stable legal environment for investment;
- Uphold the rule of law with consistent and impartial application;
- Prohibit retroactive application of laws that would harm investor rights;
- Guarantee strict adherence to contractual obligations; and
- Promote openness and transparency.

Figure 1.13

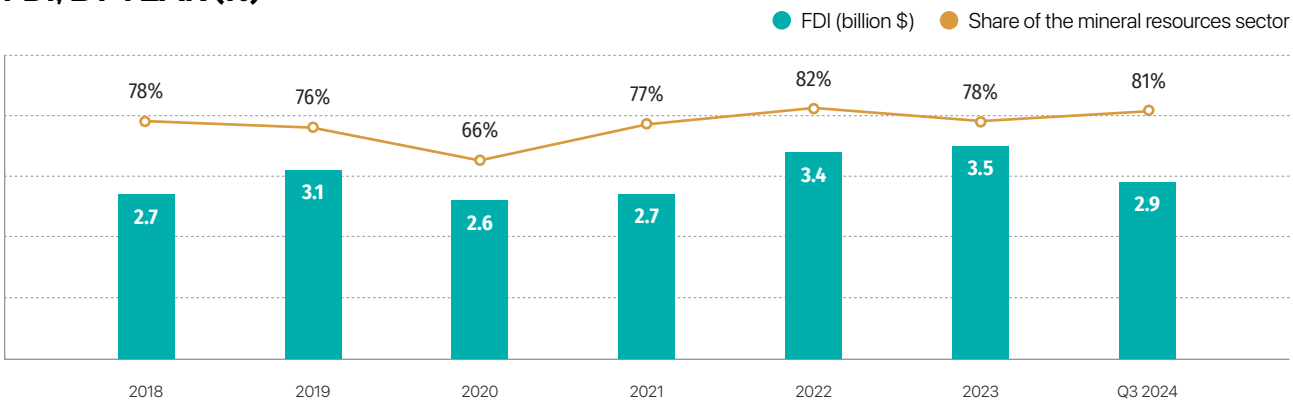
FDI DISTRIBUTION IN MONGOLIA (1990 - Q3 2024)



Source: Central Bank of Mongolia

Figure 1.14

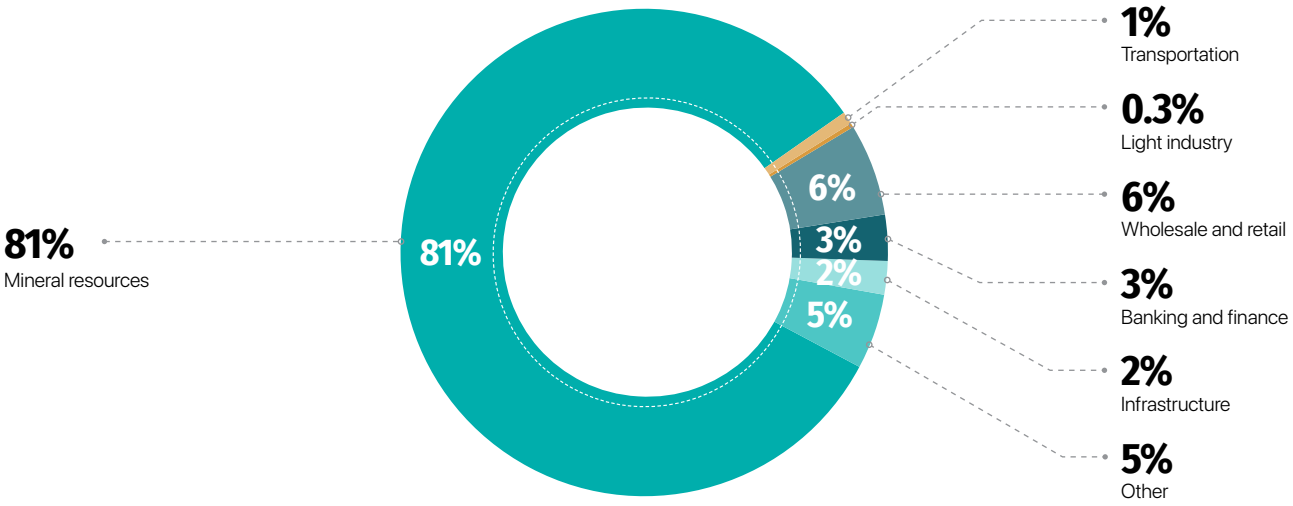
FDI, BY YEAR (%)



Source: Central Bank of Mongolia

Figure 1.15

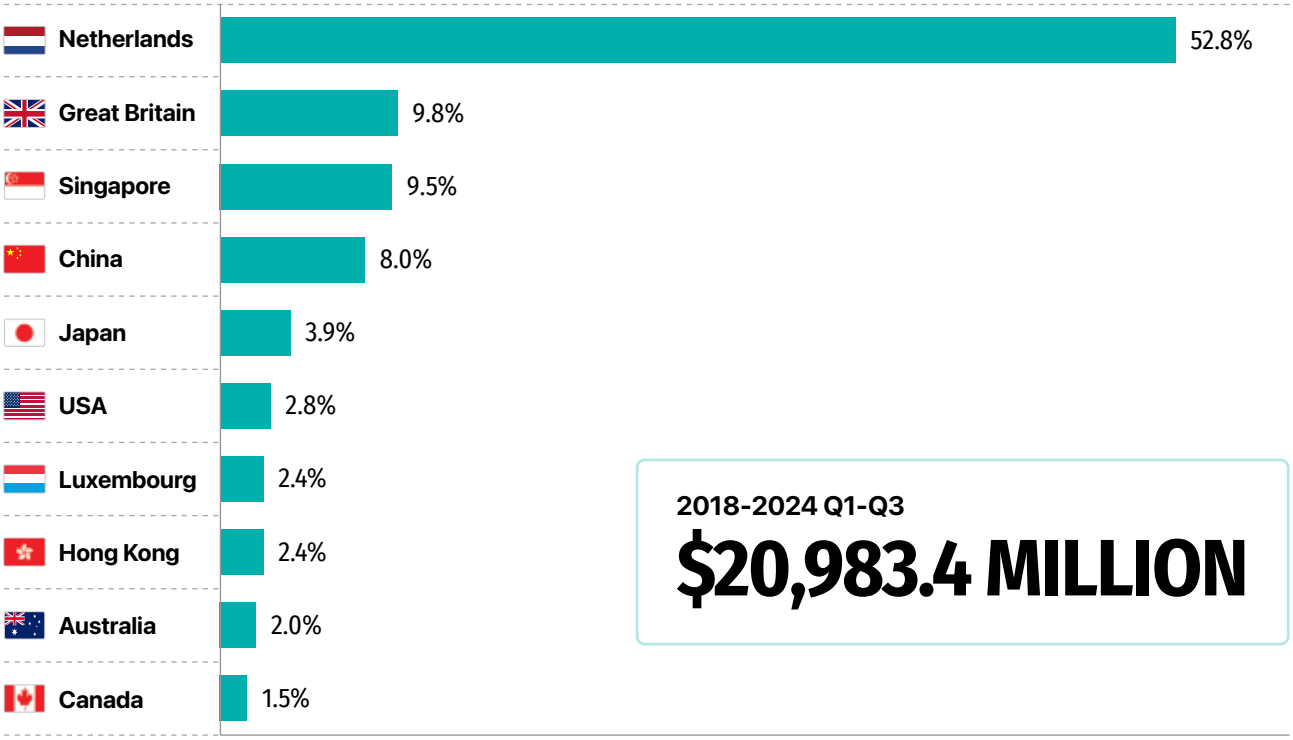
FDI, BY SECTOR (2024 Q1-Q3)



Source: Central Bank of Mongolia

Figure 1.16

TOP COUNTRIES INVESTING IN MONGOLIA (2018-2024 Q1-Q3), %



2018-2024 Q1-Q3

$20,983.4 MILLION

Source: Central Bank of Mongolia

Table 1.2

MINING LICENSE OWNERS IN MONGOLIA, AS OF 2024

Provinces	Number of companies	Number of owned licenses	Field (hectares)	Percentage in total field
Total	1,761	2,740	6,844,216.3	100%
Domestic company	1,419	2,200	5,448,292	79.6%
100% foreign-owned company	251	394	1,089,110.8	15.9%
Foreign joint venture enterprise	91	146	306,813.5	4.5%

Source: MRPAM

2.3

MINING COMMODITY EXCHANGE

Mongolia established the Exchange of Mining Commodity in 2023 following the approval of Law on the Exchange of Mining Commodity. The purpose of the law is to ensure open and transparent trading of mining commodity by state-owned enterprises, facilitate commodity trade agreements, oversee compliance and monitor contract implementation.

Under the law, the Mongolian Stock Exchange has been granted a special license to operate the trading of mining products and transactions have been conducted through this exchange since 2023. Currently, commodities such as coal, iron ore, fluorspar and copper concentrated are being traded.

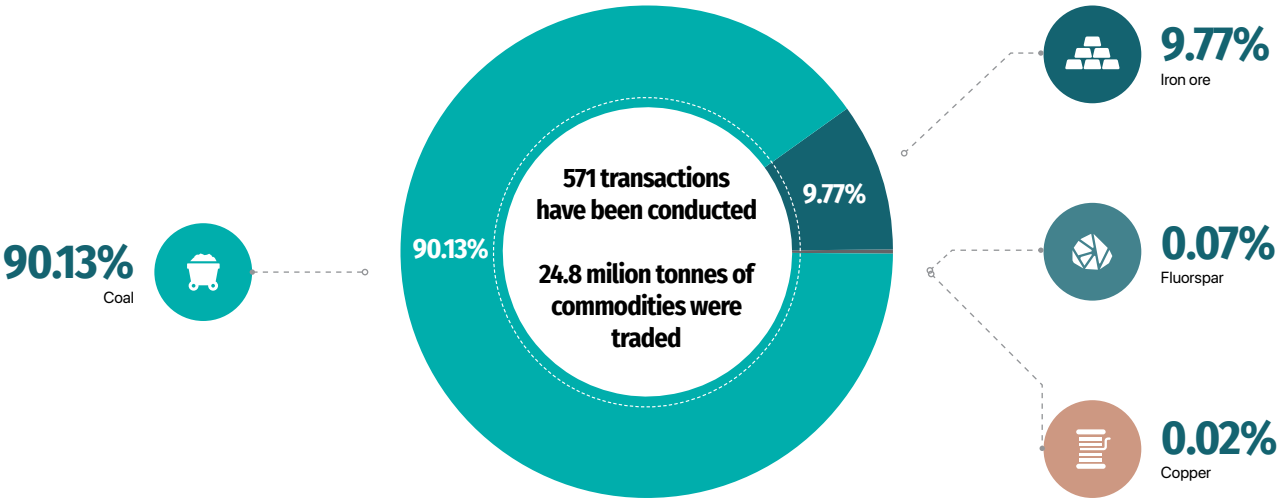
Thus far, companies such as Erdenes Tavan Tolgoi, the locally-owned Tavantolgoi, Energy Resources (HK-listed Mongolian Mining Corporation), Khangad Exploration and Southgobi Diamond have sold coal through the exchange. Plus, Erdenet Mining Corporation and Usukh Zoos have traded copper concentrates while Monrostsvetment JSV and Darkhan Metallurgical Plant have traded their respective products. Meanwhile Oyu Tolgoi LLC is reportedy planning to trade its copper concentrate via the exchange after the expiration of its current sales contracts. Although it is not officially confirmed yet.

The end users and buyers of Mongolia's mining products are typically the concentration and processing plants in northern China. Due to factors such as payment terms and delivery timelines, these plants often rely on intermediary buyers rather than making direct purchases. Since the launch of the Mining Commodity Exchange, buyers have diversified beyond China, with 424 companies from various countries, including Hong Kong, Singapore, Kazakhstan, South Korea, the United States, Japan, and Switzerland, registering as buyers. However, not all actively participate in trading; only 70–80 companies regularly engage in transactions, according to local news agency GoGo News.

Under the Law on the Exchange of Mining Commodities, buyers must transact through brokerage firms that are members of an exchange licensed by the Financial Regulatory Commission. However, as per additional regulations, trading on the exchange can be conducted without brokers until April 1, 2025. As of 2024, more than 10 companies have obtained licenses to act as commodity brokers.

Figure 1.17

MINING COMMODITY EXCHANGE TRANSACTION (AS OF 2024)



How to participate in the trading of mining commodities?

Individuals and legal entities wishing to participate in the trading of mining products must meet the following three requirements:

1. Buyer Registration: The buyer must register as a purchaser on the comex.mse.mn system, ensuring that all necessary documentation is complete and verified.
2. Agreement with the Mongolian Stock Exchange: The buyer must sign a trading agreement with the Mongolian Stock Exchange to participate in transactions.
3. Deposit Requirement: The buyer must fully pay a 10% margin deposit for participation in that day's trading session.

To trade mining products, the following types of trading contracts are used:

- Spot contracts
- Forward contracts
- Futures contracts
- Option contracts

As of 2024, spot and forward contracts, which involve the immediate delivery of traded products to buyers, are being commonly used.

The trading price is aligned with international market prices and is based on the principles of fairness, market demand, and supply. The price will be announced at border checkpoints of neighboring countries, and the final price will be determined by the parties agreeing to the price announced by the Mongolian Stock Exchange during the transaction.

Trading will occur on business days between 10:00 AM and 5:00 PM and will be conducted in three stages.

01

Registration

- Lasts for 60 minutes
- The buyer is only allowed to place an order, cancel, or change their order once during this time.

02

Call

- The duration lasts for 1 minute.
- It is possible to increase the order price, but not to decrease it.
- When the buyer updates the price during the call, the countdown resets to 1 minute.
- New orders cannot be placed.

03

Deal

- If the price is not updated during the last 1 minute of the call, the transaction will be made at the highest price offer.

2.4

MINING REVENUES ALLOCATION

Mongolia's economic growth is fueled by mining, yet equitable revenue distribution remains a significant challenge.

Mongolia's mining sector plays a dominant role in the economy, yet it has struggled to ensure equitable distribution of resource wealth. While rapid mining development has fueled high economic growth, the World Bank classifies Mongolia as a country with relatively low poverty levels, low-income inequality, and strong economic expansion.

However, concerns remain over over-reliance on mining revenues and ineffective allocation of wealth. According to the World Bank, despite Mongolia's rapid economic growth, the gap between rich and poor remains a key risk, alongside the potential for deepening inequality due to the country's dependence on the mining industry.

Over the past 20 years, 99 cents of every dollar generated from Mongolia's mineral wealth has been spent, while only 1 cent has been saved through the Stabilization Fund and Future Heritage Fund. Systematic savings from mining revenues only began in 2011, highlighting the challenges of long-term wealth preservation and fiscal sustainability.

Figure 1.18

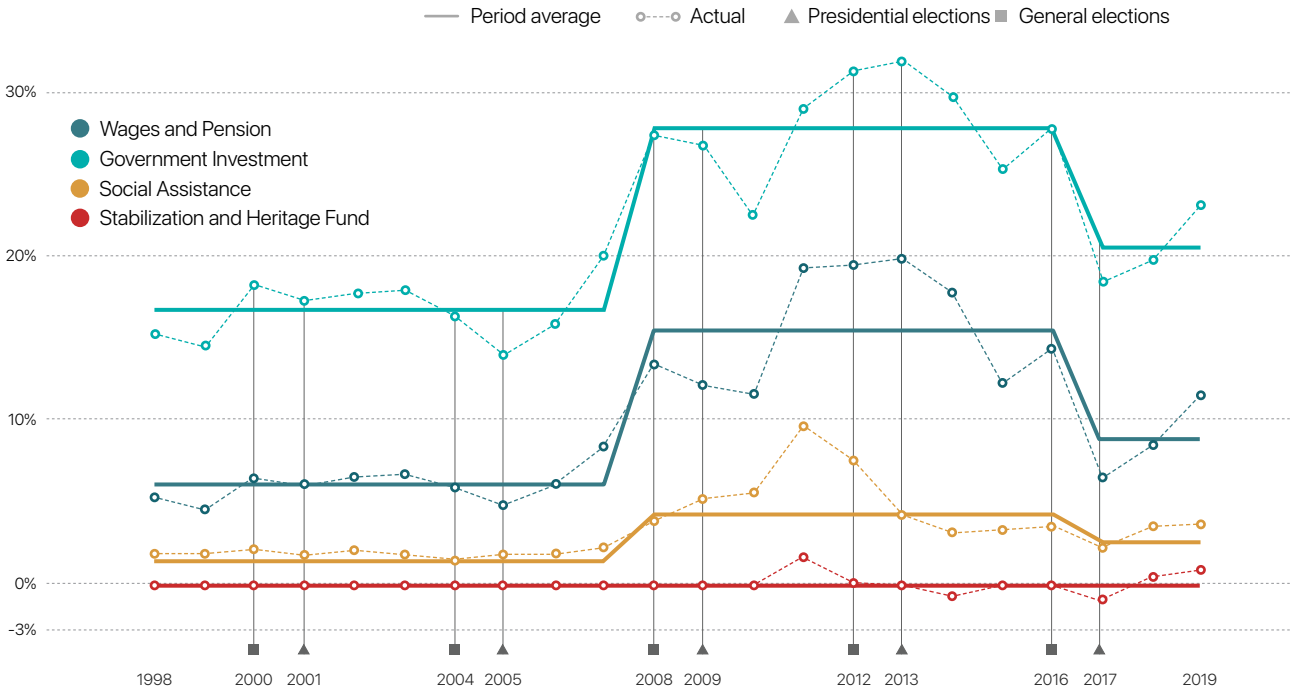
EXPLAINED BY POLITICAL CONVENIENCE

Source: The World Bank

Figure 1.19

HOW MINERAL REVENUES WERE ALLOCATED (AS % OF GDP)

The use of mineral revenue was mostly determined by political convenience, not economic merit.



Source: World Bank, 2020

National Wealth Fund of Mongolia

In April 2024, Mongolia's Parliament passed the National Wealth Fund Law, establishing a structured framework for managing revenues from the country's natural resources. The fund consists of three specialized funds, each serving a distinct purpose: Future Heritage Fund, Accumulation Fund, and Development Fund. These funds are designed to accumulate, invest, and distribute national wealth derived from Mongolia's mineral resources.

Three Key Components of Mongolia's National Wealth Fund:

1. Future Heritage Fund – A savings fund focused on accumulating resource wealth for future generations. The fund's assets will be invested in global financial instruments to grow in value over time.
2. Accumulation Fund – A newly introduced mechanism designed to distribute resource revenues directly to Mongolian citizens. The funds will be used to support healthcare, education, and housing. Every citizen will have a personal accumulation account.
3. Development Fund – A fund dedicated to financing large-scale development projects that drive Mongolia's economic growth.

Following international sovereign wealth fund models, Mongolia has structured its National Wealth Fund into these three distinct categories to ensure clear and effective resource management. While the Future Heritage Fund and Development Fund have already been active, the Accumulation Fund introduces a new concept aimed at direct citizen benefit.

Under this policy, dividends from up to 34% of the government's share in strategic mineral deposits will be distributed to individuals through the Accumulation Fund.

Amendments to the Minerals Law & Resource Ownership

The Accumulation Fund will be financed through dividends from the state's 34% ownership share in mining companies operating in Mongolia. In addition, key amendments to the Minerals Law have been introduced to strengthen the government's stake in strategic mineral assets:

- If a strategic deposit (including associated secondary deposits) was discovered through state-funded exploration, the government is entitled to up to 50% ownership free of charge when partnering with private entities for development.
- If a strategic deposit was discovered through private investment, the government is entitled to up to 34% ownership free of charge.

This new National Wealth Fund framework represents a transformational shift in Mongolia's natural resource governance, aiming to balance long-term savings, economic development, and direct financial benefits for citizens.

03

REGULATORY & POLICY LANDSCAPE

3.1

STATE POLICY

Mining is a significant industry in Mongolia, and the country's parliament and government have put in place various policies and regulations to govern the sector. These includes the country's long- and mid-term policies, as well as related laws and regulations such as the Law on Minerals and Investment Law.

The Mongolian government has pledged to make the license issuance process transparent and simple, while also supporting responsible mining practices. In addition, the government is dedicated to protecting the rights and interests of foreign and local investors in the mining sector.

Under Mongolia's long-term policy "Vision 2050" and mid-term "New Recovery Policy", the government has a policy of supporting the exploration, extraction, processing, and delivery of the benefits of its mineral sector to its people. Within this policy framework, the goal is to increase mineral exploration, add value to processed production, and deliver the benefits of mineral sector values to its people through a national wealth fund.

Mongolian Government's Action Plan for 2024-2028

In Mongolia, policies are implemented through political party platforms, which are then incorporated into the Government Action Plan (GAP) as part of the policymaking and execution process. The Mongolian government updates its action plan every four years. Approved in 2024, the Government's most recent Action Plan includes a number of major mining-related activities.

The following are key mining-related initiatives in the current government's action plan:

- Increase the processing level of raw materials in the mining sector, expand heavy industry capacity, and boost export revenues.
- Accelerate geological research and exploration, discover new deposits, and establish a comprehensive geo-information database.
- Finalize the location of copper concentrate smelting and processing plants based on Mongolia's copper deposits and conduct detailed feasibility studies for infrastructure development.
- Launch the next major strategic development project on the scale of Oyu Tolgoi.
- Establish heavy industrial complexes for coke-chemical processing, coal-chemical processing, copper refining, steel production, fluorite ore processing, and construction materials manufacturing, enhancing value-added production.
- Commission a domestic oil refinery in Dornogovi Province, utilizing local raw materials to supply a portion of the country's demand for automotive fuel meeting international standards.
- Support rare earth element processing projects through government policy initiatives.
- Encourage private sector involvement in industrial and technology parks in Baganuur, Nalaikh, and Bagakhangai districts, including supporting adjacent industries.
- Establish national fuel reserves capable of sustaining 3-6 months of domestic petroleum demand by constructing strategic storage facilities.
- Increase gold production and build a gold refining plant.
- Sign an investment agreement for the Zuunbayan-Ovoo and Dulaan Uul uranium deposits.
- Accelerate exploration and resource assessment at strategic sites within the Erdenet copper-molybdenum deposit, including the Oyut and other sections, preparing them for future mining operations while incorporating advanced technology and artificial intelligence into exploration.
- Establish a pilot plant for coal-chemical technology research, workforce training, and feasibility analysis of future large-scale projects, focusing on synthetic gas, fuel, and hydrogen production.

"Vision 2050" Long-Term Development Policy

Mongolia's Vision 2050 long-term development policy is structured into three phases, with a comprehensive approach that integrates mining, foreign direct investment (FDI), environmental sustainability, and infrastructure development. This strategy aims to ensure a holistic and sustainable approach to Mongolia's economic growth.

One of the key features of Vision 2050 is its broad scope, covering mineral processing, strategic deposits, railway infrastructure, and business climate reforms to promote responsible resource development.

Key Mining and Investment Strategies in Vision 2050:

1. Development of Responsible Mining
   - Strengthen responsible mining practices while increasing the processing and value-added production of mineral resources.
2. Infrastructure for Strategic Deposits
   - Construct railways connecting strategic mining deposits to border ports, improving export logistics and ensuring efficient transportation of mineral products.
3. Debt Management & Investment Climate
   - Enhance government debt management, reduce debt burden, and create favorable conditions to attract and retain foreign investment.
4. Business-Friendly Investment Environment
   - Establish a fully supportive investment framework and create a favorable business environment for both domestic and foreign investors.

Beyond these, the economic development agenda under Vision 2050 includes goals such as:

- Expanding the utilization of major mining deposits with foreign investment.
- Promoting high-tech industries within the mining sector.
- Defining sector-specific development sub-targets to position mining as a leading economic sector.

However, the successful implementation of these strategies will depend on various factors, including policy execution, regulatory stability, and global economic conditions. While Vision 2050 outlines a structured roadmap, ensuring practical realization will require strong governance and sustained commitment.

New Recovery Policy

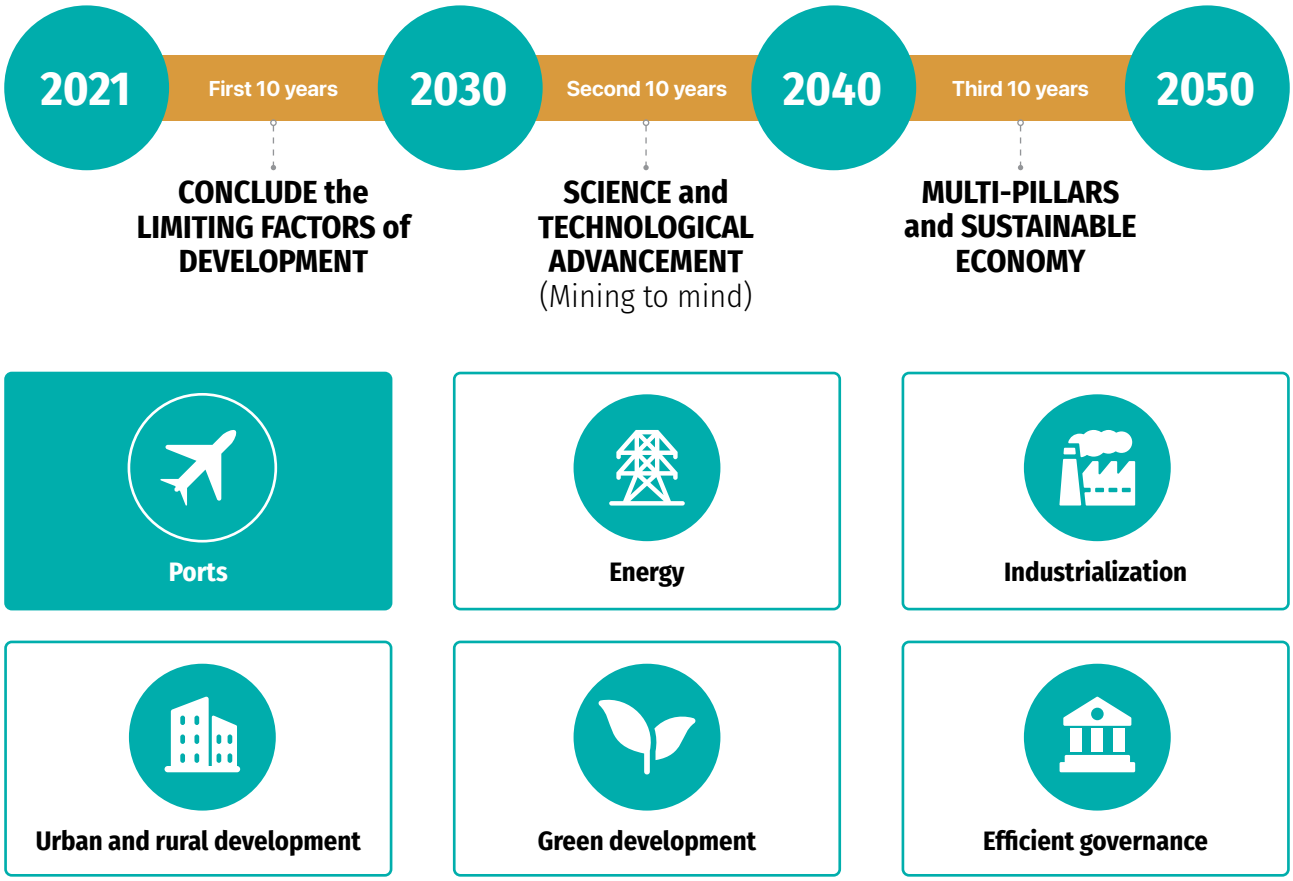
To implement Vision 2050, the "New Recovery Policy" was adopted in 2021.

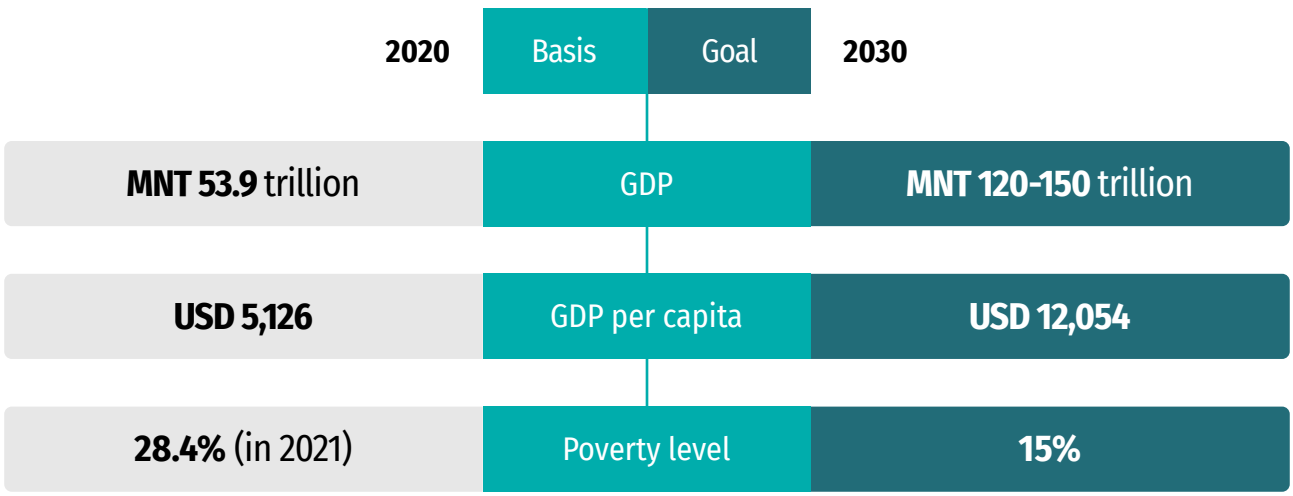
Within this framework, the Revival of Border Ports initiative aims to increase the capacity of border crossings and enhance exports.

One common feature of these policy documents is their broad focus on environmental issues related to the mining sector. The policies emphasize minimizing negative environmental impacts, ensuring that development is carried out without causing harm to the environment.

Figure 1.20

NEW RECOVERY POLICY





STATE POLICY ON MINERALS

The Parliament of Mongolia has approved the State Policy on Minerals, 2014-2025, with its Order No.18 of January 16, 2014. The main objective of the policy is to establish stable environment for investment, to improve minerals exploration, exploitation and processing qualities by introducing advanced technologies and innovation that have minimal impacts on the environment, produce value-added products and improve competitiveness at international Market.

Legal environment

The Minerals Policy seeks to improve current laws and regulations and implement international standards across a number of areas such as:

- the creation of a specific legal environment for exploration and mining of common-occurrence mineral deposits;
- supporting cooperation and legal organization of artisanal miners through state policy and by improving related legislative regulation;
- improving registration and supervision of transferring /purchasing of entity and company's controlling shares/mineral exploration and mining special licenses; and
- providing the required legislative environment to allow specialized organizations with qualified engineering research teams to carry out exploration projects for the mineral sector.

Geological industry

The goal of the Minerals Policy in the geological sector is to increase the quality of, and information in, the geological database of the Mongolian State through:

- implementation of internationally recognized methods and classifications; and
- intensification of prospecting activities by supporting private sector involvement.

Improvements in the registration and monitoring system for mineral deposits is also envisaged by ensuring that there is a formal annual update of all mineral reserves in Mongolia.

Extraction industry

A key objective of the Minerals Policy is the development of a transparent and responsible mining extraction and processing industry that is export oriented, compliant with modern international standards, and capable of providing sustainable development to the Mongolian economy.

In relation to strategically important mineral deposits, the objective is to improve cooperation between the State and the private sector while also increasing the level of State control and monitoring capabilities, as well as overall responsibility. The Minerals Policy does not state how this will be achieved and it therefore remains to be seen how this objective will be implemented.

Finally, an important goal of the Minerals Policy is to ensure efficient monitoring by the State and or/local authorities of all mining operations and the related levying of fees and charges, including the avoidance of any duplication of fees and charges.

Processing industry

The Minerals Policy aims to increase secondary processing of minerals and support value-added production through policy and legislation, including the provision of tax and financial incentives to be offered by the State.

Examples of processing projects potentially eligible for State support include coal concentrate, coking coal and chemical plants, coal-fired power plants, liquid fuel and gas extraction out of brown coal, and liquid fuel extraction out of oil shale deposits.

Environmental protection and rehabilitation

Environmental protection is a key aspect of the Minerals Policy, as it seeks to develop rehabilitation regulations consistent with international standards.

The use of surface water rather than underground fresh water will be encouraged for mining and processing operations. Priority will also be placed on the re-use of water and the use of gray water.

3.2

MINING LAWS

Minerals Law

The mining sector in Mongolia is regulated by the Minerals Law, which was first enacted in 1994 and has been amended several times since then, including in 1997 and 2006. This law has encouraged foreign investment in the mining sector, and following its passage in 1997, investment in mineral exploration in Mongolia has risen dramatically.

According to the Ministry of Industry and Mineral Resources, by the mid-2000s, Mongolia was attracting 4% of global financing for mineral exploration.

With the implementation of the Minerals Law, Mongolia has issued over 6,000 exploration licenses covering 44% of its territory, actively supporting geological exploration. This increased exploration has resulted in the discovery of a promising pipeline of potential world-class mineral projects, including the famous Oyu Tolgoi deposit.

The 2006 revision to the legislation established a new category of Strategically Important Deposits, which will be exploited by both the Mongolian government and private entities. Since 2006, the law has been amended 43 times and the Government of Mongolia also has a plan to revise the Minerals law.

The aim of the law is to govern the relationships involved in the exploration, prospecting, and mining of mineral resources, as well as the safeguarding of exploration areas and active mining zones in Mongolia. The law applies to all types of mineral resources, except for water, petroleum, and natural gas.

According to the Minerals Law, mining companies are mandated to be incorporated in Mongolia, registered as taxpayers, and operate under Mongolian laws.

The Minerals Law outlines the rules and regulations for all aspects of the mining sector, including the granting of licenses, the collection of taxes and fees, and the protection of the environment and local communities. Some of the key provisions of the Law on Minerals include:

1. License requirements:

The law outlines the requirements for obtaining a license to explore and extract minerals in Mongolia. This includes the submission of an exploration plan, the payment of fees, and the provision of security for environmental rehabilitation.

2. Environmental Protection:

The law requires mining companies to conduct environmental impact assessments and to implement measures to mitigate any negative impacts on the environment and local communities. This includes the restoration of the site after mining activities have been completed.

3. Revenue Sharing:

The law requires mining companies to pay taxes and royalties on their mining activities. A portion of these revenues is also required to be shared with local communities. The Minerals Law governs the royalty rate for mineral commodities. A mining license holder pays a royalty based on the sales value of all extracted, sold, or shipped products. The sales value is determined using international benchmark prices and follows a sliding scale royalty system.

4. Local Employment:

The law requires mining companies to provide training and employment opportunities for local workers. The law also requires mining companies to source goods and services from local businesses whenever possible.

The Minerals Law specifies that foreigners can make up a maximum of 10% of the total workforce of a mining license holding company. Additionally, Article 42 of the Minerals Law mandates cooperation between the local government and the community. This cooperation results in a local agreement that addresses various aspects such as environmental protection, employment, infrastructure development, and overall mine usage.

5. Transparency and Reporting:

The law requires mining companies to regularly report on their activities, including production levels, revenue, and environmental performance. This information is made publicly available to promote transparency and accountability."

Recent Amendments:

The National Wealth Fund Law, which governs the accumulation, distribution, and management of the country's wealth, came into effect in April 2024. Following its approval, amendments were made to the Minerals Law.

In 2007, by resolution of the Mongolian Parliament, 16 mineral deposits with a value exceeding 5% of the country's GDP were classified as "Strategically Important Deposits". As part of the amendments to the Minerals Law, a new provision has been introduced, prohibiting any entity from owning more than 34% of the total shares in a legal entity holding a mining license for a Strategically Important Deposits, either individually or in partnership with other entities with a shared interest, unless the entity is state-owned or has signed an investment agreement with the Mongolian government.

Under the 2006 Minerals Law, the government's share in Strategically Important Deposits may range from 34% to 50% depending on whether exploration was funded by the state budget. The 2024 amendment extends this provision to apply not only to primary Strategically Important Deposits but also to their associated secondary deposits. In other words, the government will hold shares in the mining licenses of these secondary deposits under the same principles.

The amendment also specify that if the ultimate owner of a license holder for strategically important deposits fully or partially transfers ownership of land use rights, mineral rights, radioactive minerals, or mining and exploration licenses for petroleum to others, whether through shares, equity interest, voting rights, or inheritance, the transfer will be subject to a 30% tax.

Environmental Protection Law

The Environmental Protection Law of Mongolia regulates "the relations between the State, citizens, business entities, and organizations in order to guarantee the human right to live in a healthy and safe environment, an ecologically balanced social and economic development, the protection of the environment for present and future generations, the proper use of natural resources and the restoration of available resources."

The law came into effect in 1995 and was amended several times. The law aims to protect the natural resources listed below from activities that may have a harmful impact on the environment and result in ecological imbalance:

1. land and soil
2. underground resources and mineral wealth
3. water
4. plants
5. animals
6. air

The law requires individuals and entities to prevent environmental damage caused by household and industrial waste, to comply with national environmental regulations and laws, avoid and monitor any polluting activities, and rectify any such actions. It also requires companies that may have negative environmental impacts to plan annual budgets and implement measures to mitigate and eliminate them.

The law gives environmental inspectors the authority to enforce national environmental protection legislation and establishes an environmental audit mechanism for companies that use natural resources. The audit must be conducted by a licensed entity.

The Environmental Protection Law states that fees for using natural resources include fees for licenses, using natural resource reserves, and discharging waste and pollutants at acceptable levels. If companies exceed the limits permitted by their contracts or licenses, they must compensate for using more natural resources or discharging more waste and pollutants than allowed.

The 2019 Amended Constitution of Mongolia grants citizens the constitutional right to be informed about the impact of subsoil resources usage on the environment within their territory. Laws on Environmental Protection and Impact Assessment were also changed to support this right.

Citizens can ask for information about the condition of natural resource use, its impact on the environment, rehabilitation process and control measures taken, and officials or project implementers must provide it. Project implementers are also obliged to share related information about their activities to local governments.

Environmental Impact Assessment Law

The Environmental Impact Assessment Law aims to protect the environment, prevent ecological imbalance, ensure minimal adverse impacts on the environment from the use of natural resources, and regulate relations that may arise in connection with the assessment of environmental impacts of and approval decisions on regional and sectoral policies, development programs and plans and projects.

Initially enacted in 1998, the Law on Environmental Impact Assessment was subsequently revised in 2001. As Mongolia's mining industry grew dramatically over the years, it became apparent that there was a necessity to update to the legal framework since every mining operation had some effect on the environment. To address this issue, the Mongolian parliament passed an amended version of the Law on Environmental Impact Assessment in 2012, which is currently in effect.

The law emphasizes Strategic Environmental Assessment, Cumulative Impact Assessment and Environmental Impact Assessment.

Strategic Environmental Assessment is conducted to determine and identify any potential environmental risks associated with regional or national-level projects and develop strategies to minimize them. The Law also allows citizens to be involved in the strategic assessment of any project.

Cumulative impact assessment analyzes the combined effects of various projects on human health, the environment in the particular area.

All mining companies are required to conduct Environmental Impact Assessment, which means prior identification, mitigation and elimination of possible adverse impacts of a particular project on human health and the environment. The authorized legal entity prepares Detailed Environmental Impacts Assessment, and a company develops an environmental management plan to ensure the realization of recommendations outlined in the strategic assessment.

The implementation of the environmental management plan should be reviewed every year.

A mining license holder shall deposit, as a guarantee, 50% of the total annual budget required for implementation of environmental protection measures in the designated account opened by the state organization in charge of environmental protection.

The conservation of biodiversity terms is included for the first time in this law.

Overall, the Environmental Impact Assessment Law of Mongolia, amended in 2012, plays a crucial role in protecting the environment, ensuring sustainable development, and minimizing adverse impacts of natural resource use.

Common Minerals Law

Typical building materials, such as sand and gravel, clay, brick, granite, and crushed stone, make up common minerals. The Law on Common Minerals governs the exploration and licensing of these minerals within Mongolia's territory, as well as the responsibility of license holders and the safeguarding and rehabilitation of exploration areas and mining environments. This also encompasses the utilization of clay and sand in treatments, and the regulation of relationships related to the exploration and exploitation of common minerals required for road and railway projects and programs decided upon by the State Great Khural and the Government.

Nuclear Energy Law

The Nuclear Energy Agency was established at the beginning of 2009. Later that year the State Great Khural formulated the State Policy for Utilization of Radioactive Minerals and Nuclear Energy and the Nuclear Energy Law, which were designed to incorporate international standards for nuclear and radiation safety and security.

As a result, the legal environment has formed in Mongolia to explore and process radioactive minerals and utilize nuclear energy and introduce technologies friendly to human health and environment.

Nuclear Energy Law aims to regulate relations connected to exploitation of radioactive minerals and nuclear energy on the territory of Mongolia for peaceful purposes, ensuring nuclear and radioactivity safety, protecting population, society and environment from negative impacts of ionized radioactivity.

In 2015, amendments were made to the Nuclear Energy Law, which granted regulatory authority to MRPAM for matters related to granting, suspending, and revoking radioactive mineral licenses.

The Nuclear Energy Agency is responsible for overseeing the exploration and exploitation of radioactive minerals,

the adoption of nuclear technology, and the development of related research.

All deposits of radioactive minerals are considered strategically important regardless of their size. If reserves of a deposit are determined without state funding, but are registered in the State Integrated Registry, the state will own at least 34% of the shares of the legal entity owning a mining license of radioactive minerals at no cost. If reserves are determined with state funding and exploited in partnership, the state will own at least 51% of the shares at no cost.

According to MRPAM, there are seven companies working in the field, with five exploration licenses and eight exploitation licenses, operating in compliance with the requirements of Nuclear Energy Law.

On behalf of the Government of Mongolia, the state-owned limited liability company Mon-Atom holds participating interests in those companies with radioactive exploitation licenses.

On November 21, 2024, in connection with the signing of the Investment Agreement for uranium mining with the French multinational company "Orano Mining," an amendment to the Nuclear Energy Law was approved, along with related amendments to other laws.

The primary amendment in the law is the prohibition on bringing radioactive waste and nuclear fuel across Mongolia's borders or allowing it to transit through the country. Another key change involves extending the term of the investment agreement from 10 years to a potential 20 years. Additionally, the royalty on the use of radioactive mineral resources is set at 5% of the sales value of uranium ore concentrate. Depending on fluctuations in the market price of radioactive minerals, the royalty will be classified into categories ranging from 0 to 130 USD per unit, with a potential increase of up to 9%.

Petroleum Law

Petroleum Law aims to regulate matters related to petroleum and unconventional petroleum prospecting, exploration, and exploitation within the territory of Mongolia.

The law was enacted in 2014 to establish a comprehensive legal framework for the petroleum sector, replacing the outdated law of 1991.

The Petroleum Law classifies petroleum products into two main categories: oil and unconventional oil. Oil includes crude oil, natural gas, and refined petroleum, while unconventional oil refers to oil sands and oil shale.

The law identifies three types of petroleum-related activities: prospecting, exploration, and exploitation. Exploration and exploitation activities for oil and unconventional oil are subject to licensing procedures. Other activities, such as prospecting and the storage and transportation of petroleum, require permissions or approvals from the relevant authorities. Such permissions usually involve a simple approval process, whereas licenses involve more complicated procedures.

The Ministry of Industry and Mineral Resources (MIMR) and Mineral Resources and Petroleum Authority of Mongolia (MRPAM) are the primary regulators for the petroleum sector. MIMR is responsible for policy issues, the issuance of licenses and organizing tenders for exploration sites. MRPAM is the main implementing authority responsible for matters such as concluding production sharing agreements, approval of annual plans, and the supervision of fee payments.

The Petroleum Law defines separate terms for "contractor", "operating company" and "subcontractor".

A contractor is a company that has entered into a production sharing agreement to conduct oil and unconventional oil exploration or extraction activities in Mongolia.

An operating company is a contractor's company, incorporated and registered as a taxpayer in Mongolia, that conducts the exploration and extraction activities.

A subcontractor is a company incorporated and registered as a taxpayer in Mongolia to conduct certain petroleum-related activities according to an agreement concluded with a contractor or an operating company.

The Petroleum Law defines prospecting as geological, geochemical and geophysical research conducted to determine the presence and condition of oil and unconventional oil in a certain area. Prospecting is not a licensed activity, but a legal entity wishing to conduct prospecting must submit a request to MRPAM.

A company engaged in prospecting may request a production sharing agreement with MRPAM.

The production sharing agreement may take more than several months to conclude as the process involves the completion of negotiations with MRPAM, the procurement of an approval from the MIMR and the issuance of an authorization from the Cabinet.

The Petroleum Law defines exploration as geological, geochemical, geophysical activities, drilling and test extractions conducted to explore an oil deposit and determine the amount of its reserves.

The term of an oil exploration license may not exceed eight years, with the possibility of two extensions of up to two years each. Unconventional oil exploration licenses are issued for a maximum of 10 years, with the possibility of one extension of up to five years.

An exploration license will be issued to a company that

has entered into a production sharing agreement with MRPAM. If a company is engaged in prospecting, it can pursue such an agreement. In cases where neither MRPAM nor a prospecting company have been able to reach a production sharing agreement, an exploration license may be granted to a company that has won a bid for reserve.

The Petroleum Law defines exploitation as exploitation site development and the exploitation of oil and unconventional oil.

Within 90 days of the expiry of the exploration term, an exploitation license holder must present a reserve report to the MIMR to obtain approval of the reserve. Within 30 days of such approval, the exploration license holder must submit an application for an exploitation license.

The term of an oil extraction license may not exceed 25 years with the possibility of two extensions of up to five years each. The term of an unconventional oil exploration license may not exceed 10 years, with the possibility of one extension of up to five years.

The Petroleum Law provides that exploitation licenses can also be granted through an open tender in six different situations. These include cases where the state has financed exploration activities, or where the holder of an exploration license does not apply for an exploitation license.

The profit of the oil will be shared in accordance with the terms of the production sharing agreement where MRPAM and a contractor company agrees.

Water Law and related regulations

Mongolia is among the 36 high-water-risk countries in the world. The country's total water resources are estimated at 564.8 cubic kilometers, with 98.1% coming from surface water and only 1.9% from groundwater. The distribution of surface water is uneven, with 63% stored in Khuvsgul Lake in northern Mongolia.

Groundwater is the main resource of drinking and industrial water, contributing 82% of total water use, according to the Ministry of Environment and Tourism of Mongolia.

The agriculture sector is the dominant user of water, accounting for 56% of total water use in 2022, with 25% for irrigation and 31% for livestock. Mining consumed 15% but is likely to increase its water consumption due to high GDP growth expected through mineral exports.

Water availability varies from one region to another. Water supply is also affected by seasonal and climate variations.

The Gobi region, which makes up 30% of Mongolia's land, heavily relies on groundwater for mining, with over 70 active mines as of 2020, including significant projects such as the Oyu Tolgoi Copper and Gold Mine and the Tavan Tolgoi Coal Mine.

However, groundwater in the Gobi region is limited, causing conflicts. For instance, Umnugobi Province attempted to ban groundwater extraction for mining in 2013, which would have affected the country's most important mines. Following protests from mining companies which were disputed in the courts, the resolution was suspended by the end of 2013.

Over the last few years, Mongolia has passed several laws to mitigate the negative impacts of mining. Among them are the Water Law, the Environmental Impact Assessment Law and, most recently, the Water Pollution Fee Law.

The Water Law, which came into effect in 2012, aims to govern relations concerning the protection, rational use, and restoration of water resources and their basins. The law states that water is the strategic resource. The law serves as an umbrella law for water resource management, defining the mandates of state organizations responsible for the development and adoption of Integrated Water Resources Management Plans. It also introduces the concepts of river basin councils and river basin authorities.

Mongolia has a strong commitment to Integrated Water Resources Management (IWRM), as defined in the Water Law. The law formally established river basin authorities throughout Mongolia to manage the 29 river basins. As of 2020, there are 21 operational river basin organizations that are responsible for creating management plans for their respective basins.

The Water Law also stipulates the creation of River Basin Multi-Stakeholder Platforms, which bring together stakeholders from local administrations, the private sector, civil society, and academia to comment on river basin management plans and negotiate priorities, as well as the work of the River Basin Authorities. At the river basin level, management plans are supposed to identify the state of water resources and lay out measures to safeguard their quality and quantity.

Provincial and local authorities play a role in collecting water use fees, which are partly earmarked to finance environmental protection measures. However, water use fees tend to be rather low. In order to increase overall funds while also incentivizing wastewater treatment at the mine, the Water Pollution Fee Law was adopted in 2019.

04

MINERAL RESERVES & GEOLOGICAL POTENTIAL+

Previous geological surveys and mineral exploration conducted in Mongolia identified a total of 2,500 deposits of 85 types across 10,000 occurrences and thousands of geochemical and geophysical anomalies and mineralized points of interest.

Exploration of gold deposits are mainly located in the southern and northern parts of Khentii and Khangai mountains. Copper and molybdenum deposits are located in the basin of Orkhon and Selenge Rivers, fluorspar is found in Eastern Mongolia and phosphorus in the Khuvsgul region. Large coal reserves are observed in Tavan Tolgoi, Khar tarvagatai, Achit nuur, Bagan nuur and the Uvdug khudag deposits. And the Nalaikh, Sharyn gol, Aduunchuluun and Baganuur deposits play an important role in supplying thermal coal to urban settlements due to their location in key industrial areas.

Mongolia has many iron ore deposits such as Tumur tolgoi, Bayar gol and Tamir gol. The majority of copper ore deposits are located in the areas of Orkhon, Selenge, Gobi, south Kherlen, Bayankhongor and Khankhukhii, out of which the largest is the Erdenet Copper Molybdenum deposit in the Orkhon-Selenge province.

The country has many deposits of gold and zinc such as Tumurtyn Ovoo, Salkhit, Tulgatai Mountain and Modon ovoo. The Berkh flourspar mine was opened in 1954 and is one of the largest fluorspar mines in Mongolia. The eastern part of the country also has many fluorspar deposits.

A majority of phosphorus deposits stretch along the west side of Khuvsgul Lake starting at Soyon Mountain. Jewels such as crystal, topaz, sapphire, garnet, chrysolite, amethyst, turquoise and jade can also be found and some of these deposits are of industrial importance.

Mongolia also has the term "strategic mines" which refers to mineral deposits considered critical for the country's economy and development prospect. These mines typically hold valuable minerals, and in some cases, may demonstrate richness not only in the individual deposits but across the entire region.

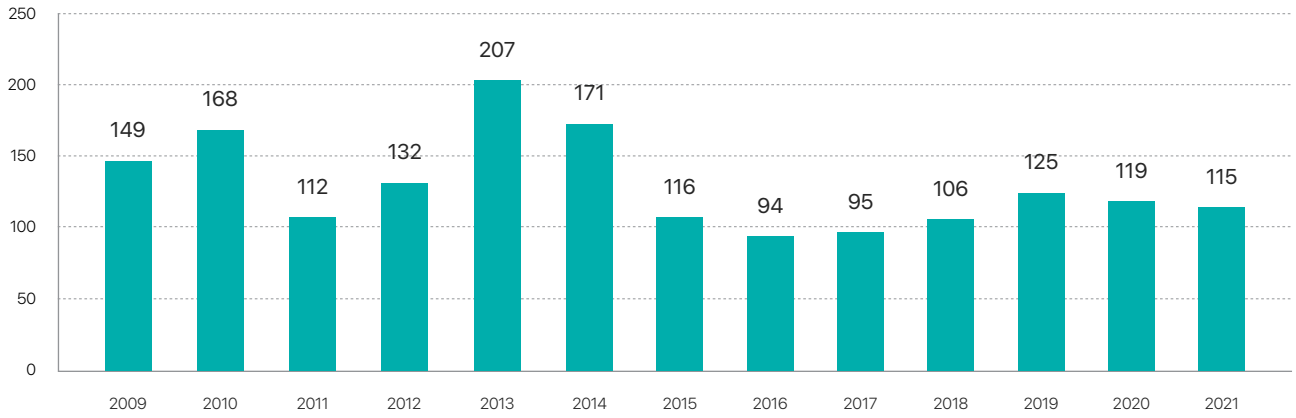
Figure 1.21

OVERVIEW OF MONGOLIA'S MINERAL RESOURCES (IN TONNES)

Source: The Ministry of Industry and Mineral Resources of Mongolia, 2022

Figure 1.22

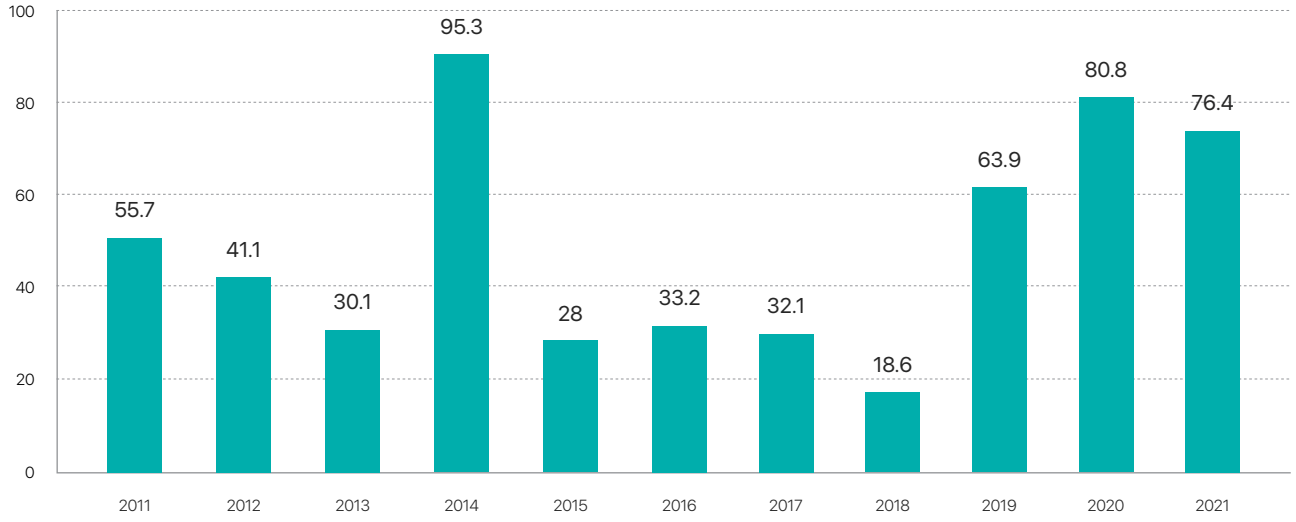
NUMBER OF REGISTERED DEPOSITS YEAR BY YEAR



Source: The Mineral Resource and Petroleum Authority of Mongolia

Figure 1.23

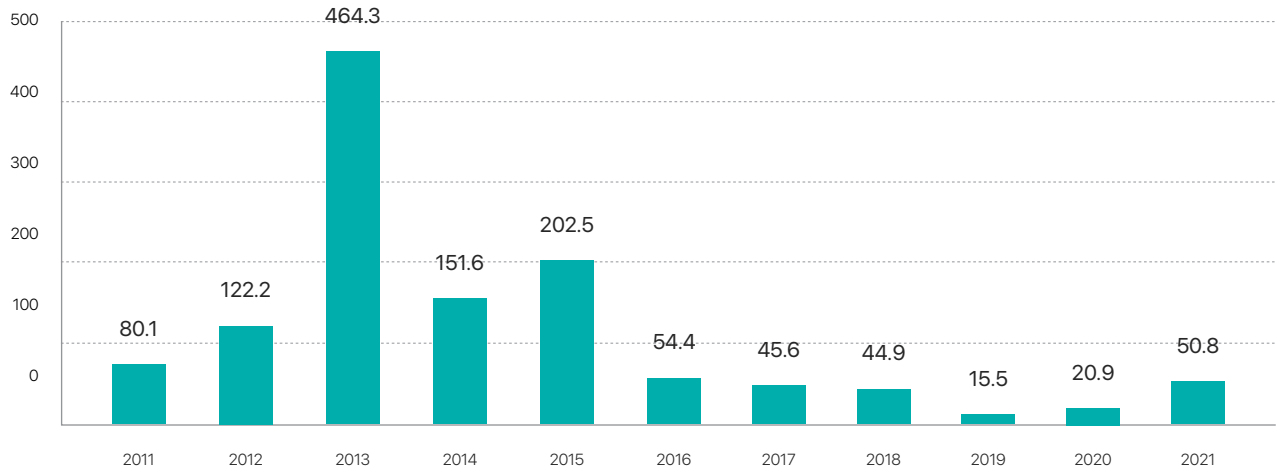
NEWLY REGISTERED HARD ROCK GOLD MINE RESOURCES (IN TONNES)



Source: The Mineral Resource and Petroleum Authority of Mongolia

Figure 1.24

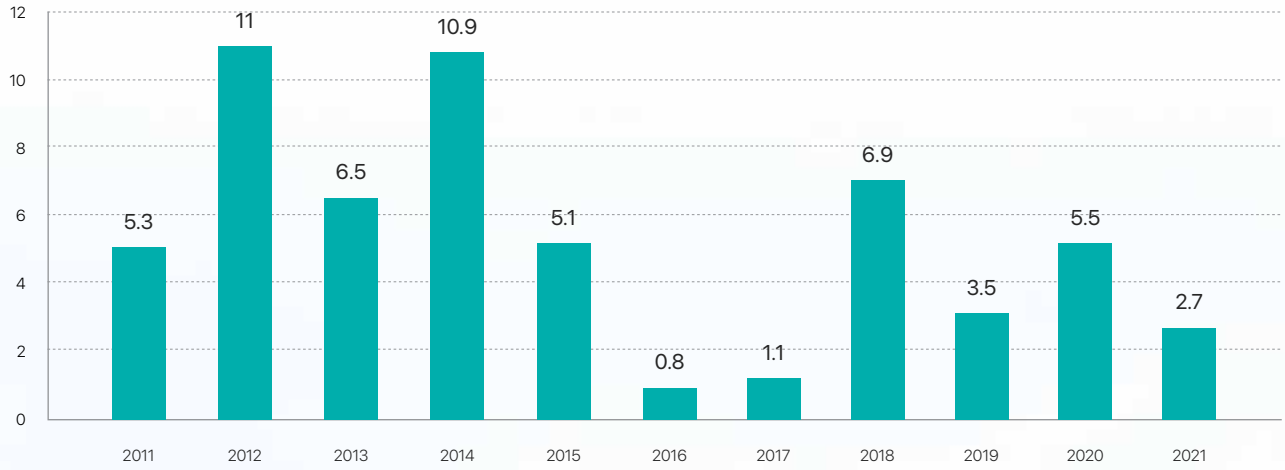
NEWLY REGISTERED IRON ORE RESOURCES (IN MILLION TONNES)



Source: The Mineral Resource and Petroleum Authority of Mongolia

Figure 1.25

NEWLY REGISTERED FLUORSPAR ORE RESOURCES (IN MILLION TONNES)



Source: The Mineral Resource and Petroleum Authority of Mongolia

To facilitate easy and readily accessible geodata for the industry and investors, Mongolia established the National Geoscience Database, which is managed by the newly formed agency, the National Geological Survey. The database provides clear and accurate information about resources, which is crucial for supporting investment in the sector. In 2022, the National Geological Survey of Mongolia released updated maps of Mongolia's mineral deposit and occurrence locations, providing a comprehensive understanding of the country's resource potential.

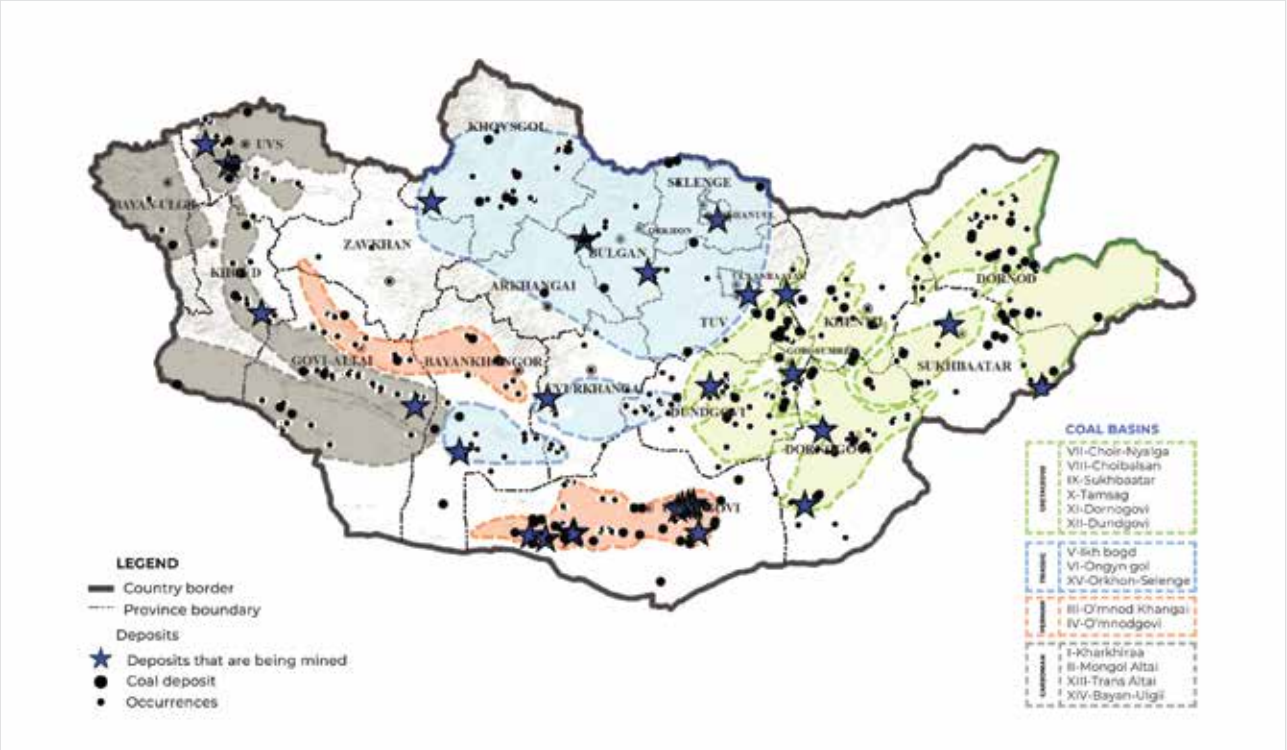
Figure 1.26

GEOLOGICAL SURVEY

Source: The Ministry of Mining and Heavy Industry of Mongolia

Figure 1.27

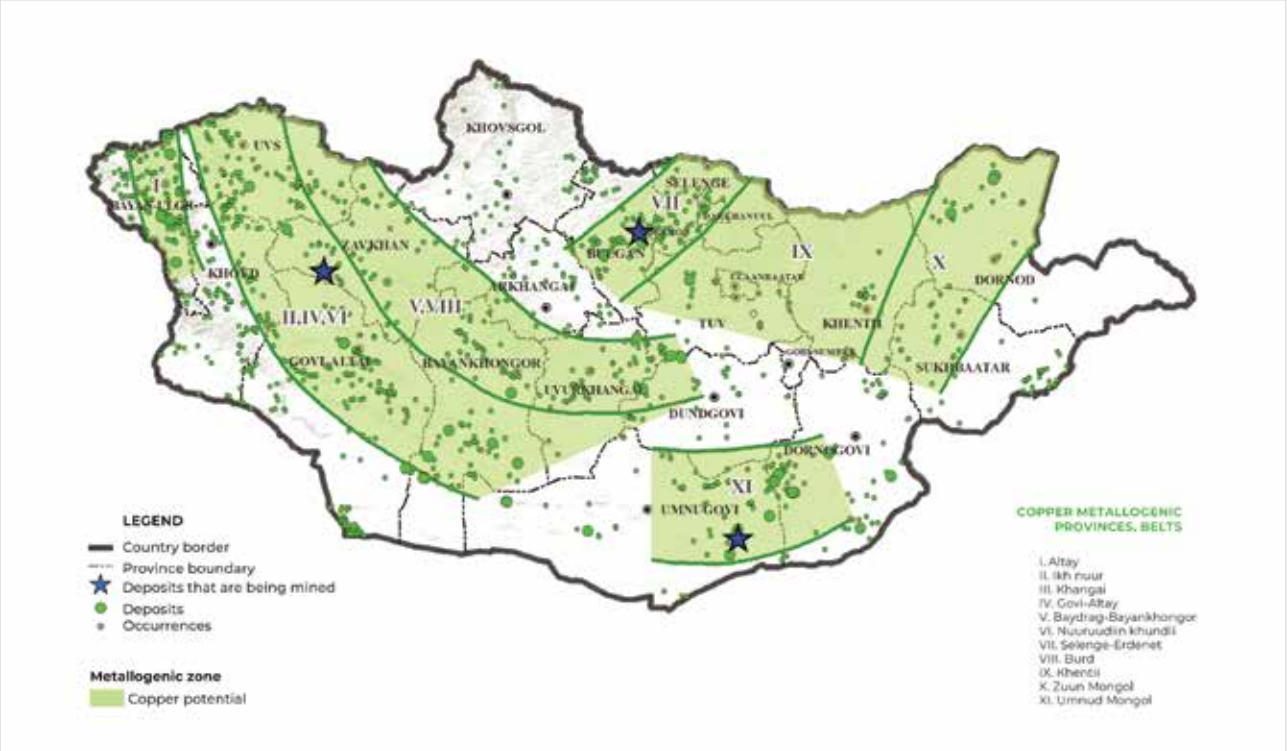
LOCATION MAP OF COAL DEPOSITS AND OCCURRENCES IN MONGOLIA, SCALE 1: 12 000 000



Source: National Geological Survey of Mongolia

Figure 1.28

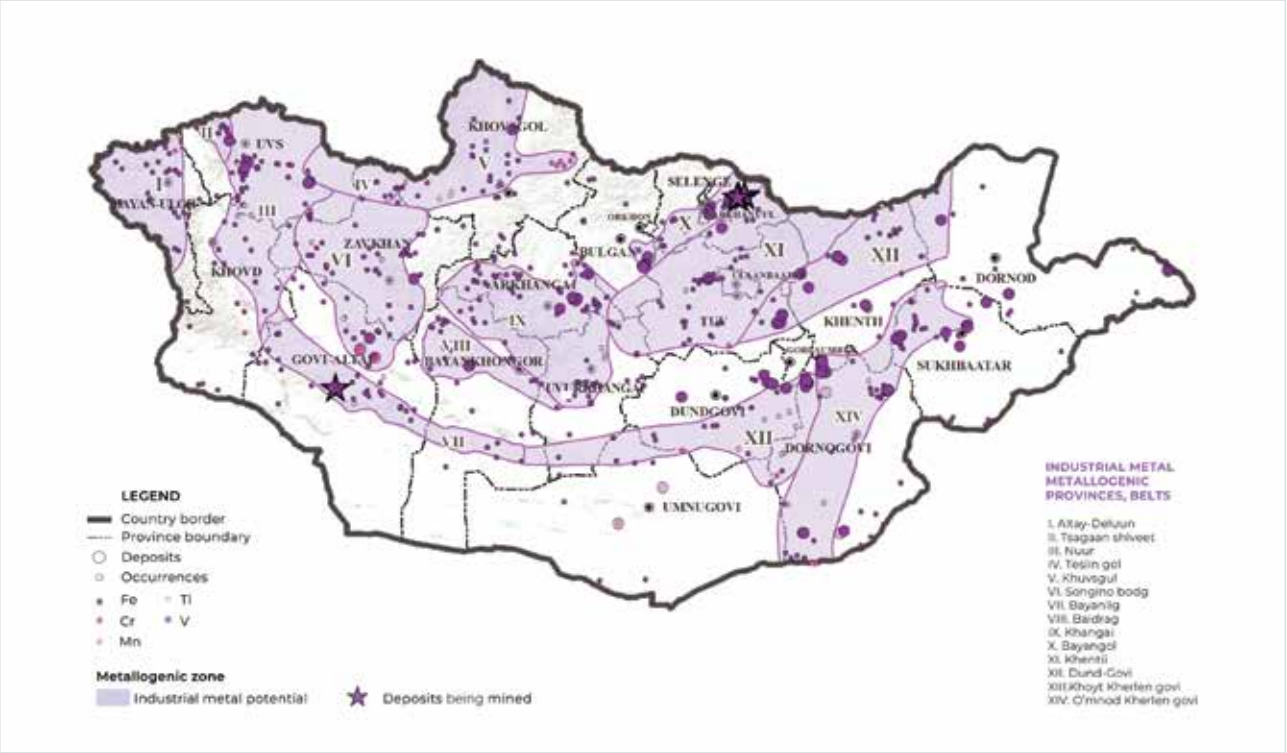
LOCATION MAP OF COPPER DEPOSITS AND OCCURRENCES IN MONGOLIA, SCALE 1 : 12 000 000



Source: National Geological Survey of Mongolia

Figure 1.29

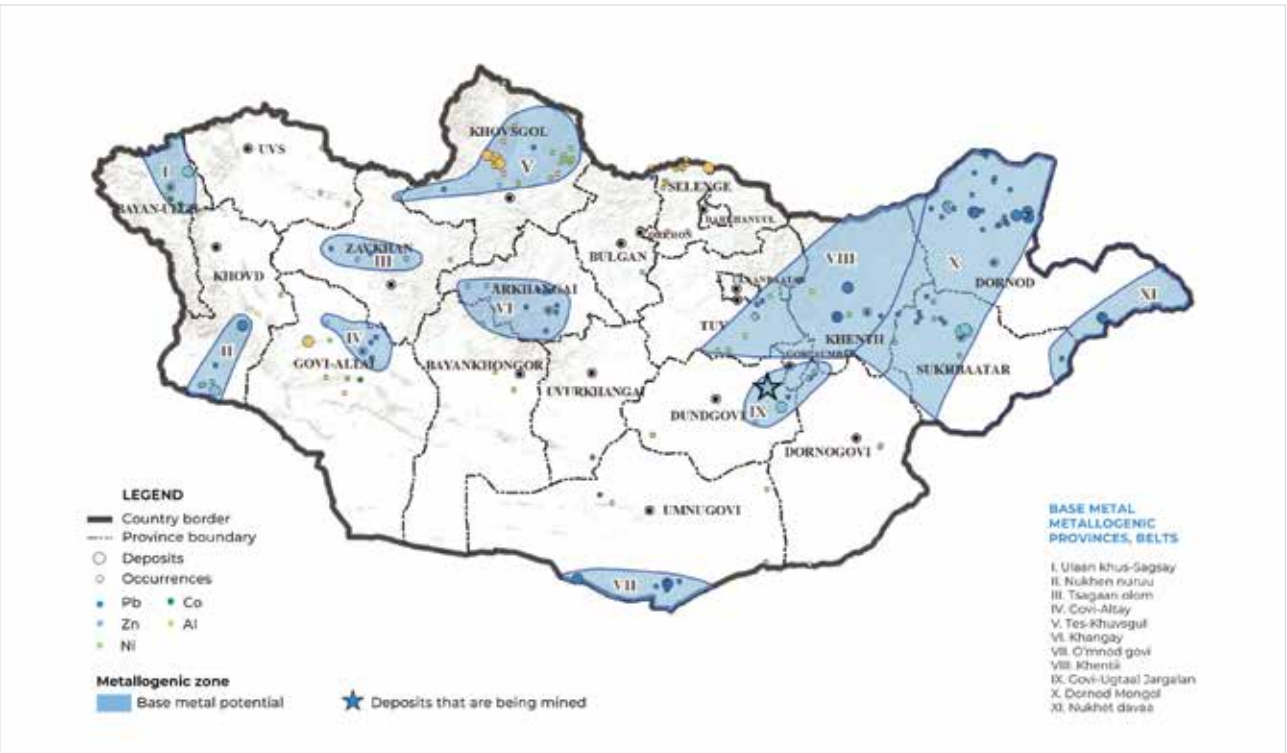
LOCATION MAP OF INDUSTRIAL METALS (FE, CR, MN, TI, V) DEPOSITS AND OCCURRENCES IN MONGOLIA, SCALE 1 : 12 000 000



Source: National Geological Survey of Mongolia

Figure 1.30

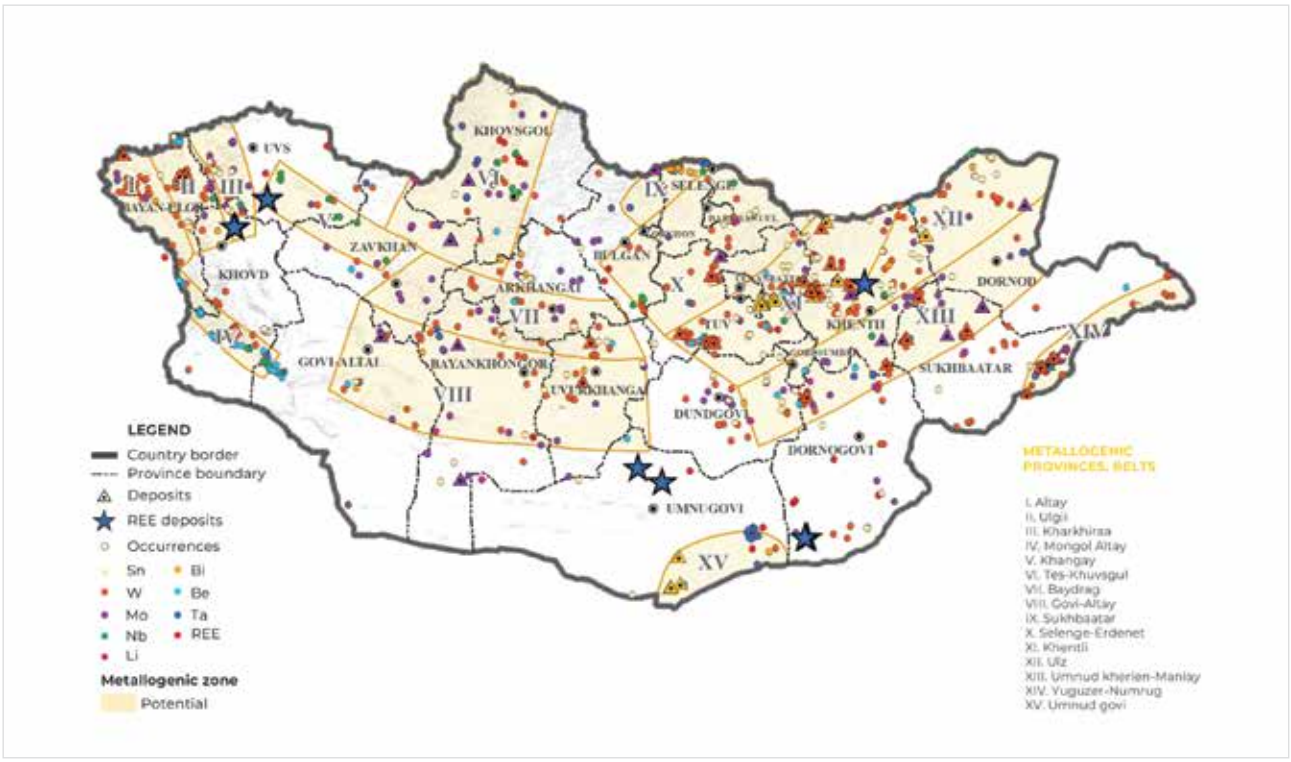
LOCATION MAP OF BASE METALS (PB, ZN, NI, CO, AL) DEPOSITS AND OCCURRENCES IN MONGOLIA, SCALE 1 : 12 000 000



Source: National Geological Survey of Mongolia

Figure 1.31

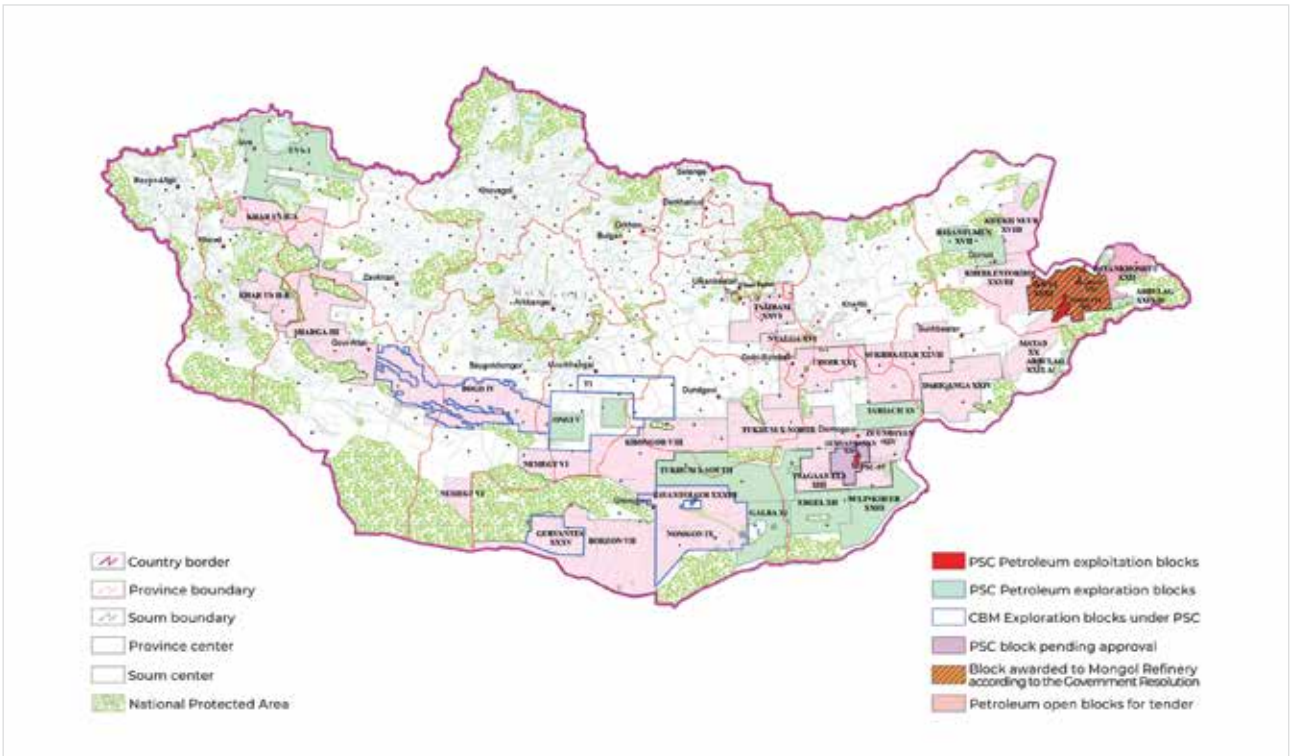
LOCATION MAP OF RARE METALS (SN, W, MO, BI, BE, TA, NB, LI, REE) DEPOSITS AND OCCURRENCES IN MONGOLIA, SCALE 1 : 12 000 000



Source: National Geological Survey of Mongolia

Figure 1.32

ONVENTIONAL AND UNCONVENTIONAL OIL AND GAS EXPLORATION AND EXPLOITATION BLOCKS, SCALE 1 : 6 000 000



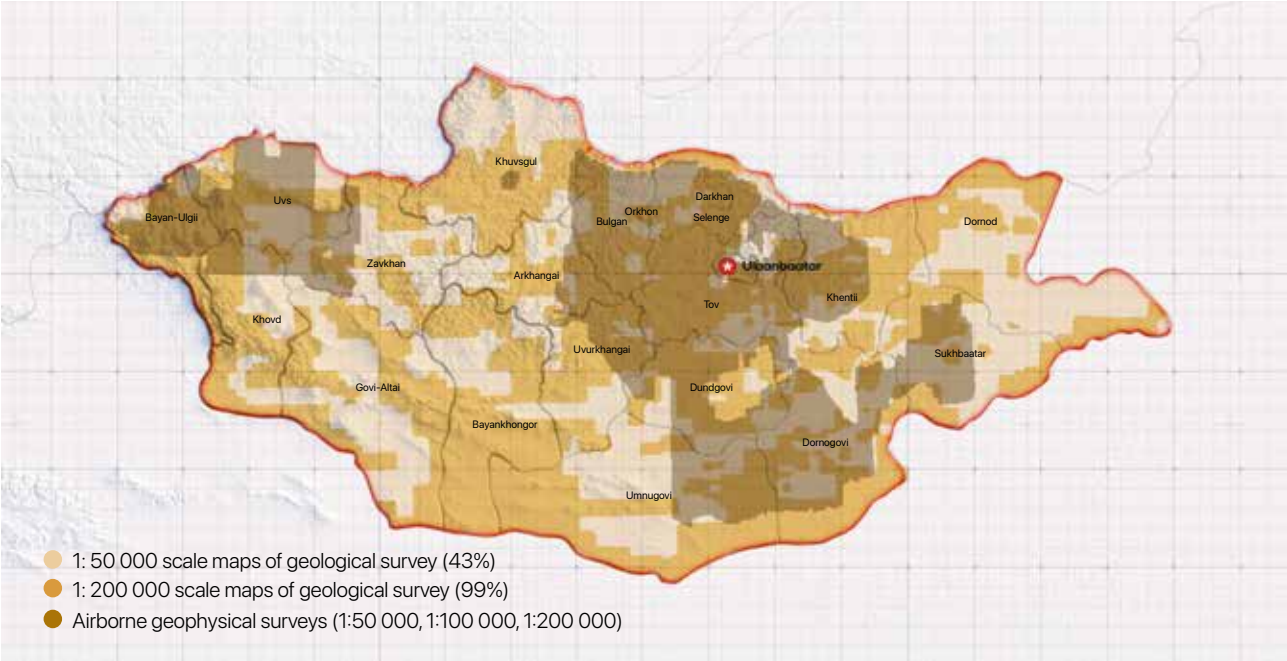
Source: MRPAM

1:200 000 scale outline geological research work had been carried out across 100% of Mongolian territory. However 1:50 000 scale outline work covered only 47% and geophysics research covered 66% of the territory.

Geological and research projects funded by the government of Mongolia 1:50 000 geological mapping and ongoing general exploration projects.

Figure 1.33

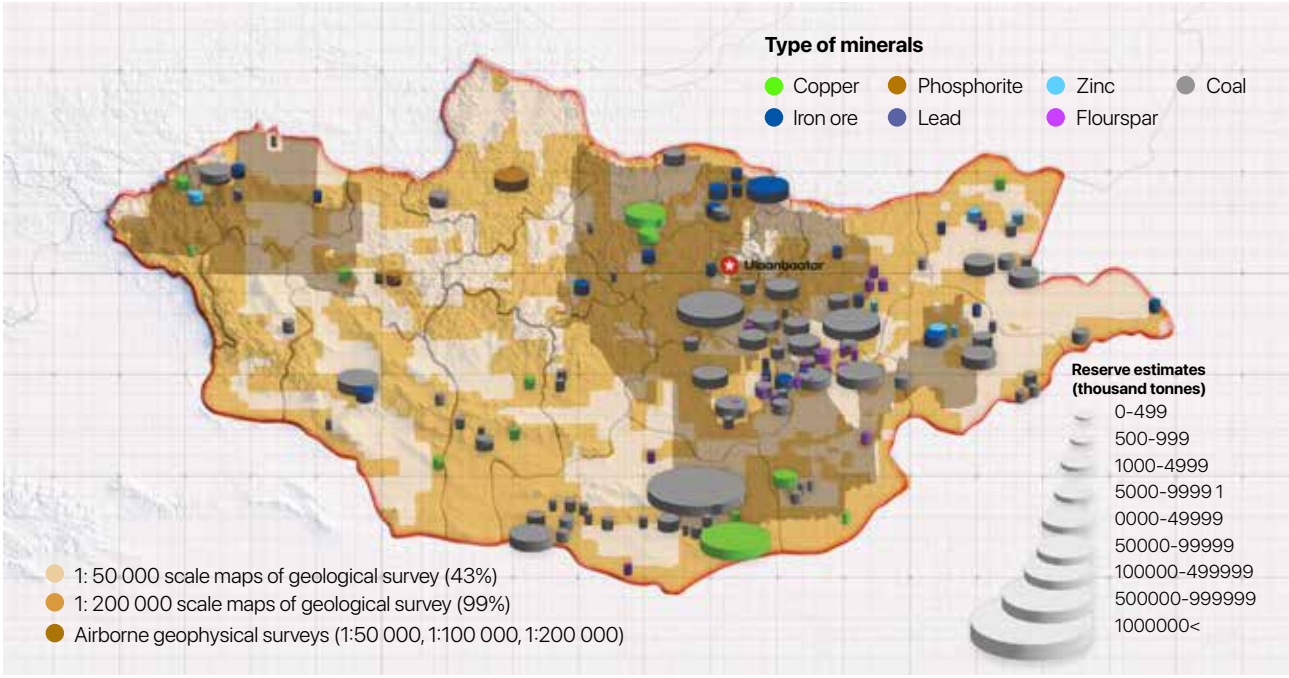
GEOLOGICAL MAPPING



Source: National Geological Survey of Mongolia

Figure 1.34

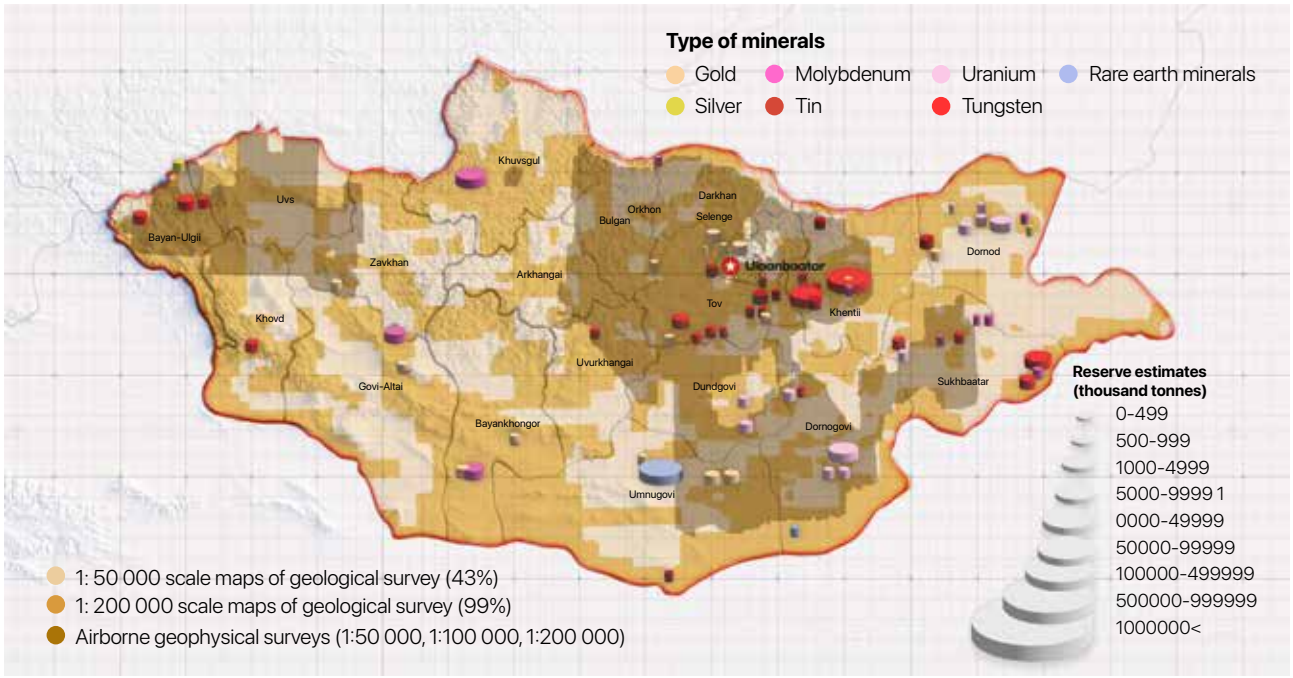
GEOLOGICAL MAPPING



Source: National Geological Survey of Mongolia

Figure 1.35

GEOLOGICAL MAPPING

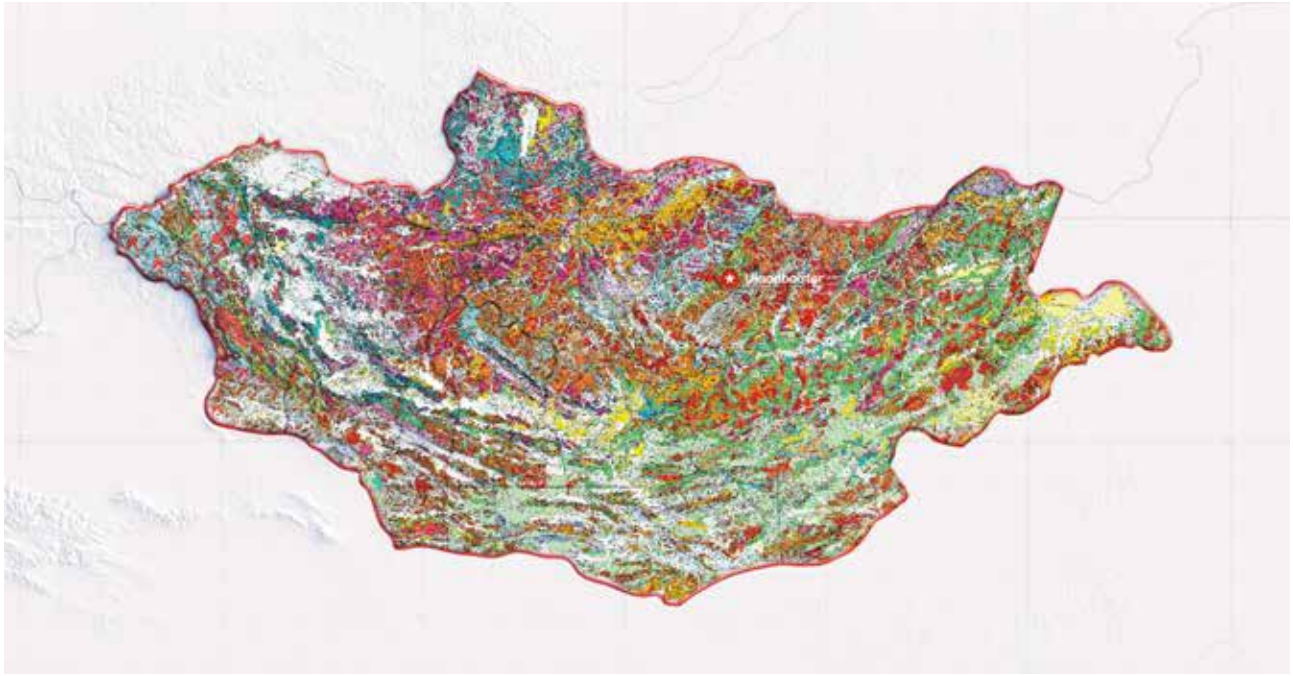


Source: National Geological Survey of Mongolia

In addition, the government of Mongolia has developed the "MongeoCat" system, a catalog of geological and research reports that meets international standards.

Figure 1.36

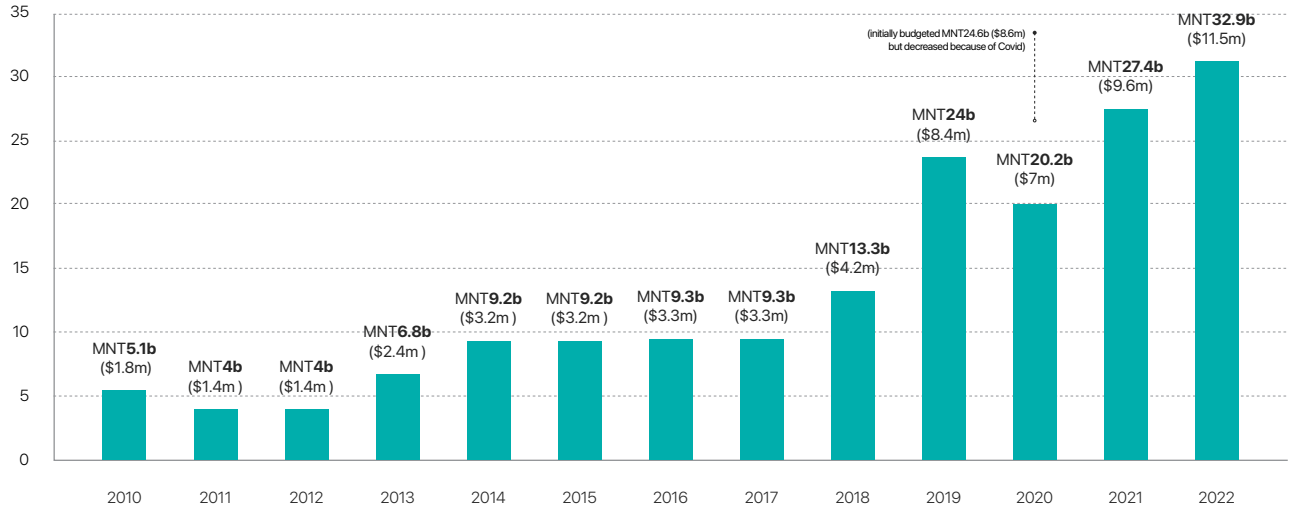
GEOLOGICAL MAP OF MONGOLIA



Source: National Geological Survey of Mongolia

Figure 1.37

STATE-FUNDED GEOLOGICAL SURVEY (IN MILLION $)



Source: Ministry of Finance, Ministry of Industry and Mineral Resources

Table 1.3

PRIVATE EXPENDITURES FOR EXPLORATION WORKS, BY TYPE OF WORKS

	2022	2023
	Million ₮	Million ₮
Total	**182,566.7**	**427,160.6**
Preparations	3,169.8	2,480.6
Area measurements	2,453.5	0.0
Exploration routes	1,245.5	4,046.9
Field sampling	192.5	853.7
Geophysical studies	5,572.0	10,886.7
Primary process of extracting and processing the subsoil and minerals	3,375.4	5,098.7
Drilling	120,425.0	260,038.0
Sampling	6,338.1	7,542.3
Laboratory testing	10,603.2	97,528.3
Transportation	3,927.5	11,190.0
Topographic	787.8	914.5
Hydrogeological studies	1,125.3	4,547.7
Geo ecological studies	167.1	231.6
Archaeological study	218.6	456.1
Implementation of environmental and social standards	1,161.7	1,193.1
Processing	6,469.7	9,150.5
Contingency	87.1	380.9
Other expenditure	15,247.0	10,621.0

Source: The MRPAM

05

MINING LICENSES

The Mineral Resource Petroleum Agency of Mongolia grants mining and exploration licences and monitors the operations of licence holders. The Ministry of Environment and Tourism approves environmental protection plans for mining and exploration licence holders. Without this approval, the licence may be subject to termination or suspension.

There are two types of mineral related licences:

- Exploration licences, under which the licence holders can explore minerals in a given area.
- Mining licence, under which the licence holder can mine and extract minerals and keep the related benefits.

Under the current Minerals Law, only legal entities incorporated in Mongolia are able to apply for and hold exploration and mining licences.

Exploration licenses are granted for up to three years with the possibility of three times extensions for period of three years. The size of an exploration area shall not be less than 25 hectares and shall not exceed 150,000 hectares.

The license holder of the exploration license has a right to submit a request to hold mining license for the MRPAM. Mining licenses are granted for an initial term of 30 years and can be extended twice for additional 20-year periods. Licenses for minerals with radioactivity are subject to a different regime.

As of 2024, Mongolia has 2,740 active mining and exploration licenses.

Figure 1.38

NUMBER OF VALID LICENSES, 2017-2024

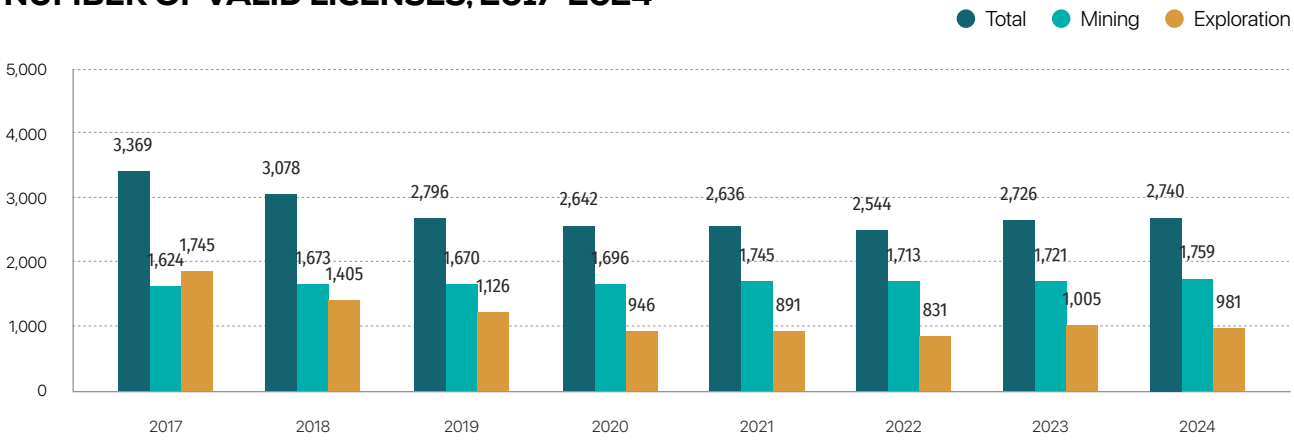
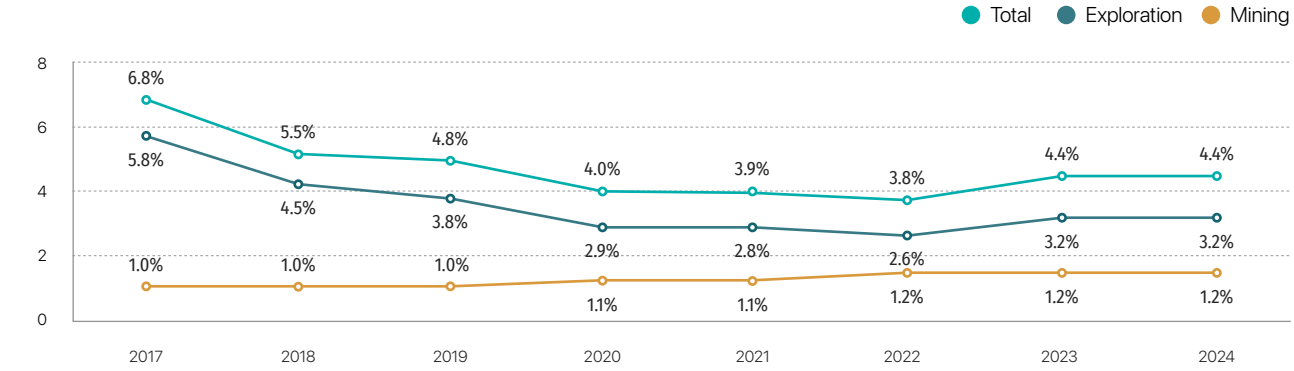


Figure 1.39

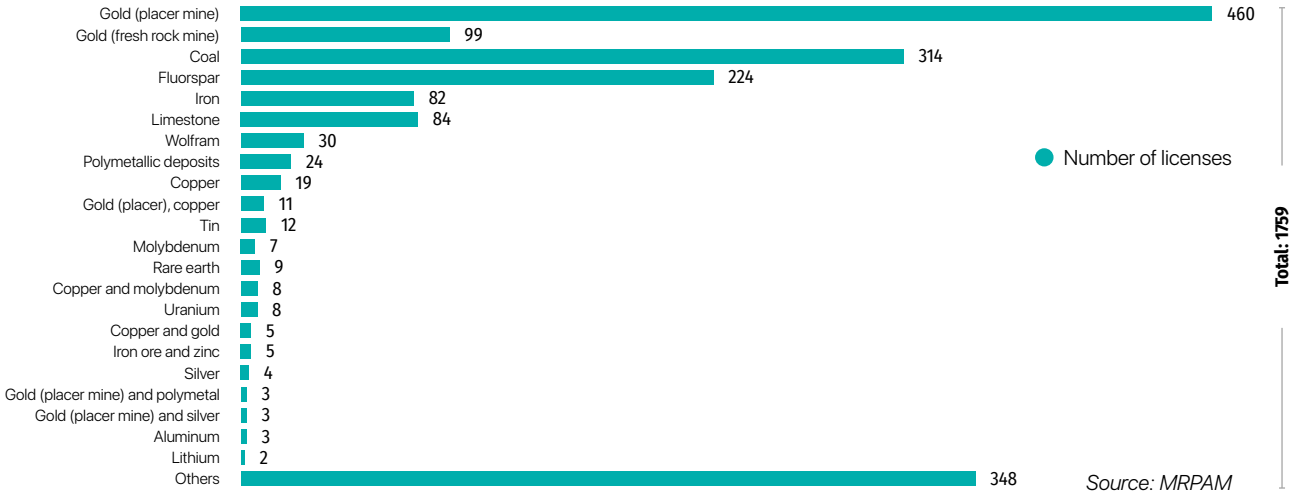
PROPORTION OF LICENSED AREA RELATIVE TO TOTAL TERRITORY



Source: MRPAM

Figure 1.40

MINING LICENSE CATEGORIES OF MONGOLIA (AS OF 2024)



Source: MRPAM

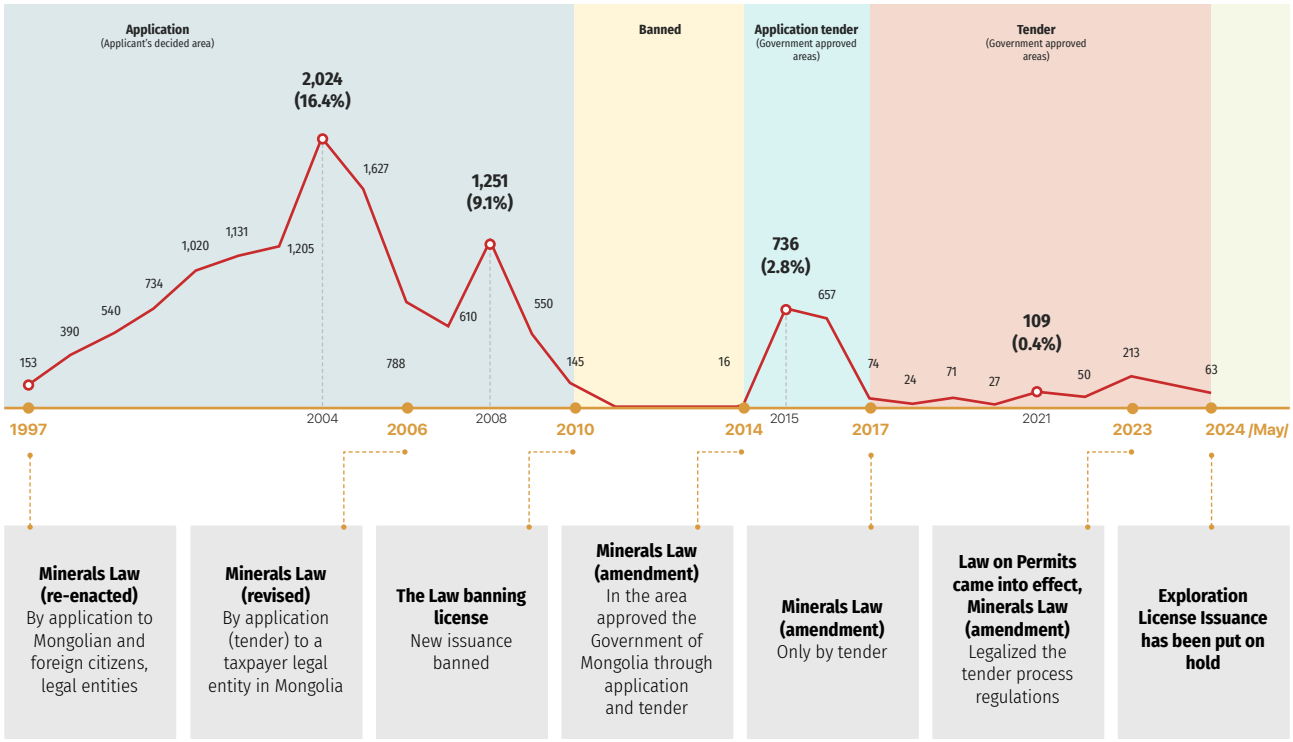
After Mongolia re-enacted its Minerals Law in 1997, the issuance of exploration licenses increased dramatically. 2004 saw the largest number of valid exploration licenses, 2,024, covering 16.4% of Mongolia's territory.

In 2014, the Minerals Law was amended to provide for the issuance of exploration licenses through applications and tenders. Thus, changing the pretext of investors choosing their own land for exploration, now investors apply for exploration licenses only in areas designated by the government.

Starting from 2017, licenses have been issued only on a tender basis. In 2023, the Law on Permits came into effect, introducing amendments to the Minerals Law and officially legalizing the tender process. However, the issuance of exploration licenses has been halted since May 2024. In January 2025, the Ministry of Industry and Mineral Resources (MIMR) announced that the revised Regulations for Exploration License Issuance had been approved and submitted to the Ministry of Justice and Internal Affairs, where they are currently awaiting registration. Once the registration is complete, the Mineral Resources and Petroleum Agency of Mongolia (MRPAM) will conduct a two-week trial run to ensure transparency and openness in the system, after which the issuance of exploration licenses will begin.

Figure 1.41

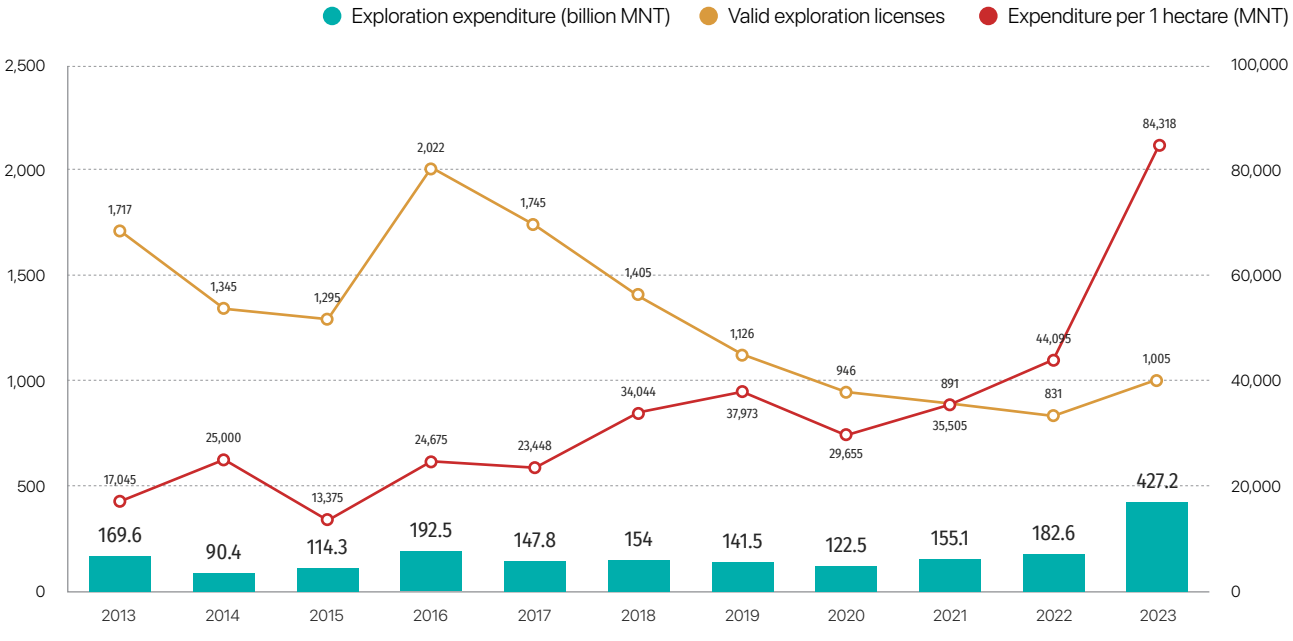
REGULATIONS ON EXPLORATION LICENSE ISSUANCE



Source: The Ministry of Industry and Mineral Resources of Mongolia

Figure 1.42

INVESTMENT IN MINERAL EXPLORATION ACTIVITIES

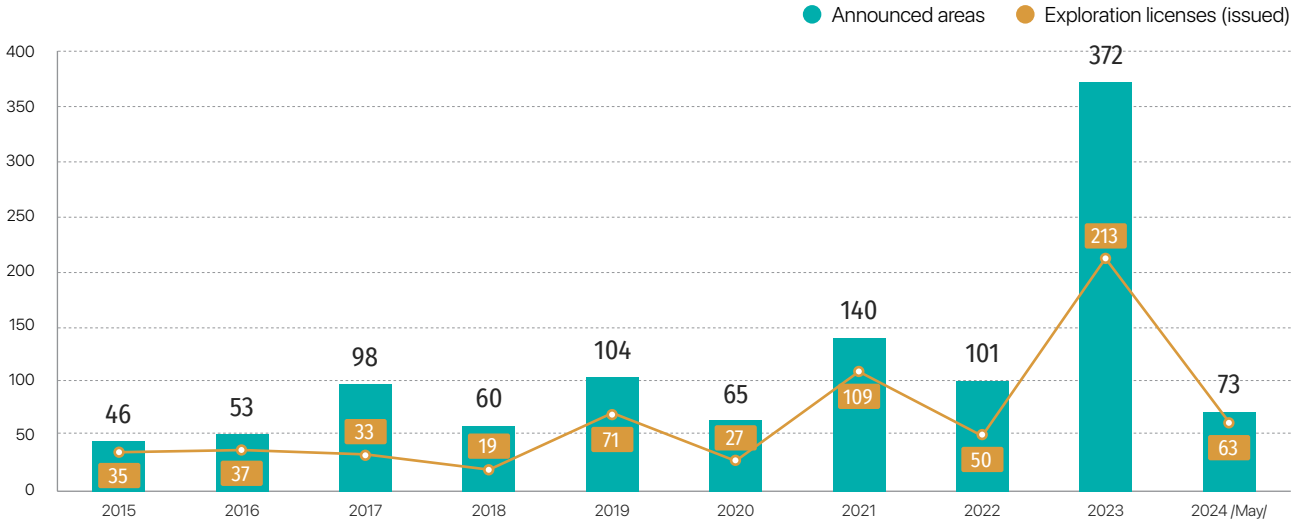


Source: The Ministry of Industry and Mineral Resources of Mongolia

Figure 1.43

CURRENT LICENSE ISSUANCE THROUGH TENDER

Exploration licensing status (2015-2024)



Source: MRPAM, Mongolian State Procurement Platform

Figure 1.44

EXPLORATION LICENSE ISSUANCE PROCESS

Tender process for obtaining exploration tenements

www.tender.gov.mn
Exploration tenement tenders are announced on a digital platform

1

Participants prepare required documents for submission

2

Digitally pay the due and submit documents

3

Open and transparent tendering process

4

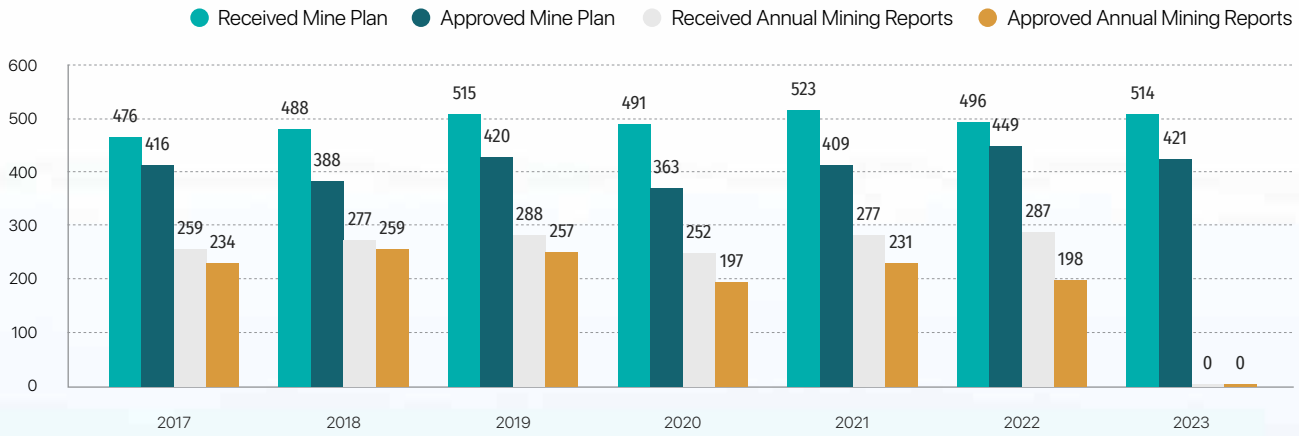
Successful participants receive digital notification to obtain the tenement

5

Source: The Ministry of Industry and Mineral Resources of Mongolia

Figure 1.45

SUMMARY OF SUBMITTED AND APPROVED MINING REPORTS AND PLANS



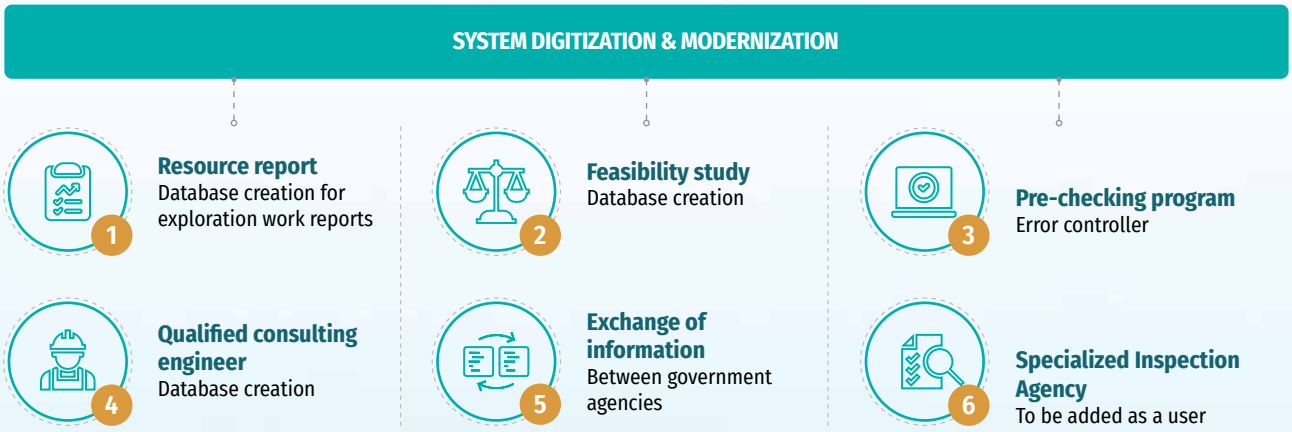
Mining licenses can be granted by way of tender or by request of an exploration license holder. If an exploration license holder meets the relevant requirements and applies for a mining license for the relevant area with the exploration licence, the MRPAM should in principle grant a mining licence on a priority basis. If the licence applied for is not covered by an existing valid exploration licence, the MRPAM may grant a mining licence by way of an open tender.

Exploration licenses are granted by way of tender organised by the MRPAM. When a tender is announced, eligible interested parties submit their bids together with the required document and pay a bid fee to the MRPAM. The MRPAM will then evaluate the technical and financial proposals of the applicants and will choose the best among them.

It's worth bearing in mind that the Government of Mongolia has embarked on a campaign to digitize all public services. This also includes the application and renewals process, as well as issuance, termination, and return of exploration licenses. The relevant government agencies are also working to bring online the entire license granting and bidding process.

Figure 1.46

SYSTEM DIGITIZATION & MODERNIZATION



06

ENVIRONMENTAL & SOCIAL RESPONSIBILITY

MONGOLIAN NATIONAL
MINING ASSOCIATION

MONGOLIAN NATIONAL MINING ASSOCIATION (MNMA)

The Mongolian National Mining Association (MNMA) is a leading non-profit organization dedicated to advancing Mongolia's mining sector. Representing all of Mongolia's largest mining companies, including operators, exploration firms, suppliers, and consultants, MNMA plays a crucial role in promoting sustainable and responsible resource development.

MNMA's mission is to ensure that mining drives economic growth while safeguarding the environment and improving the lives of local communities. The association collaborates with government agencies, international organizations, and industry stakeholders to enhance mining regulations, support innovative practices, and foster transparency and accountability.

MNMA's key initiatives, including the Responsible Mining Codex, Towards Sustainable Mining (TSM) Initiative, and the Consolidated Mining Standard Initiative (CMSI), emphasize its unwavering commitment to developing a responsible and sustainable mining sector. Through these efforts, MNMA is driving progress towards higher industry standards, environmental stewardship, and long-term economic growth.

Why Responsible Mining Standards Matter

Industry standards are essential for establishing clear expectations for responsible operations. They ensure that mines are safe, efficient, environmentally conscious, and socially inclusive. In the global market, investors and consumers increasingly seek assurances that raw materials come from responsible sources. Following internationally recognized standards builds trust, opens doors to new markets, and strengthens a company's reputation.

Moreover, implementing international standards not only assures financiers, investors, and buyers of reliable operations but also helps create long-term benefits for local communities by supporting sustainable economic opportunities, such as post-closure financial sources developed in collaboration with local stakeholders. Additionally, these standards ensure Mongolia's mining industry remains part of the global energy transition and maintain responsible and transparent supply chains from investment decisions to final product purchases, supporting adaptation and resilience.

To meet these growing expectations, MNMA has implemented key initiatives that align Mongolia's mining sector with global best practices.

The Responsible Mining Codex

MNMA's Responsible Mining Codex provides a comprehensive framework that helps companies meet high standards across five essential areas:

1. **Corporate Governance and Transparency:** Promoting fair decision-making and transparent operations that build stakeholder trust.
2. **Labor Relations and Rights:** Upholding labor rights and fostering respectful, inclusive workplaces.
3. **Health and Safety:** Ensuring robust safety measures and a healthy working environment.
4. **Community Development and Engagement:** Supporting local economic development and encouraging active community participation.
5. **Environmental Protection:** Minimizing environmental impact and promoting sustainable resource management.

All of Mongolia's largest mining companies, represented by MNMA, have adopted this codex, demonstrating their commitment to responsible mining. By adhering to these principles, they contribute to long-term industry growth that benefits both the economy and society.

Towards Sustainable Mining (TSM) Initiative

MNMA has also embraced the internationally recognized Towards Sustainable Mining (TSM) initiative, originally developed by the Mining Association of Canada. TSM provides tools for continuous improvement in key areas, such as environmental performance, community engagement, and energy efficiency.

TSM has been adopted by 13 countries, including Mongolia and implemented by over 200 companies worldwide. Major global investors and manufacturers, including Apple, Tesla, and BMW, recognize TSM certification as proof of responsible sourcing. By adopting TSM, MNMA ensures that Mongolian mining companies align with global sustainability expectations, enhancing their competitive edge.

TSM PROTOCOLS

Communities & People

- Indigenous and Community Relationships
- Safe, Healthy & Respectful Workplaces
- Crisis Management & Communications Planning
- Preventing Child and Forced Labour
- Equitable, Diverse & Inclusive Workplaces

Environmental Stewardship

- Tailings Management
- Biodiversity Conservation Management
- Water Stewardship
- Climate Change

The Consolidated Mining Standard Initiative (CMSI)

To address the complexity of multiple overlapping standards, MNMA is actively contributing to the Consolidated Mining Standard Initiative (CMSI). This initiative aims to unify and simplify responsible mining standards by integrating the best aspects of four leading frameworks: The Copper Mark, TSM, the World Gold Council's Responsible Gold Mining Principles, and ICMM's Mining Principles.

Why Consolidation Matters

In today's world, financial institutions, lenders, and investors increasingly support responsible mining and assess environmental, social, and governance (ESG) performance before providing funding. Leading global associations have joined forces to create a unified standard that applies regardless of the type of mineral being extracted. This offers project implementers a clear path to compliance and avoids the confusion of having to create separate ESG frameworks for each project.

Previously, projects would rely on different advisors to meet varying standards, making processes fragmented and costly. With consolidation, the guidelines are simpler and more efficient.

By joining these global standards, Mongolia's mining sector gains credibility and ensures long-term benefits for stakeholders. Unified standards lead to measurable ESG impacts, create trust, and ensure that buyers continue to source responsibly.

A Unified Approach

Once finalized, CMSI will set a globally consistent benchmark for responsible mining. It is expected to be adopted by major organizations such as ICMM, the World Gold Council, and The Copper Mark, potentially reaching nearly 100 companies across 60 countries and covering over 600 mining sites. This widespread adoption would lead to better practices across the industry, enhancing its overall impact.

Building Momentum

MNMA is proud to represent Mongolia in this global effort to strengthen responsible mining practices. By advocating for clear, high-standard guidelines, MNMA helps ensure that Mongolian mining companies remain competitive, meet investor expectations, and contribute to sustainable development.

MNMA's initiatives, including the Responsible Mining Codex, TSM, and CMSI, highlight its commitment to building a responsible, sustainable mining sector. By aligning with international best practices and elevating Mongolia's mining industry on the global stage, MNMA is driving progress toward a future where mining supports both economic growth and environmental protection.

SUSTAINABILITY EFFORTS IN MONGOLIAN MINING SECTOR

The growing importance of Mongolia's mining sector highlights the need for responsible and sustainable practices, as communities become more aware of and concerned about the potential impact of mining activities on their livelihoods and environment.

Government support for the gold sector in the 1990s resulted in a rise in the number of artisanal gold miners, which had harmful effects on the local environment. Artisanal miners, who frequently operate in unsafe and unhealthy conditions, contributed to the degradation of pastureland, rivers, and drinking water sources for local communities. It eventually led to local movements against mining operations, prompting the government to enact new laws and amendments aimed at enhancing environmental standards, involving local communities, and promoting local development and employment.

Mining companies in Mongolia now need to have not only a legal license but also a social license from local communities to gain acceptance and support for their activities, especially with regards to environmental, social, and governance considerations.

This section highlights mining sector activities related to sustainability in Mongolia.

Environment

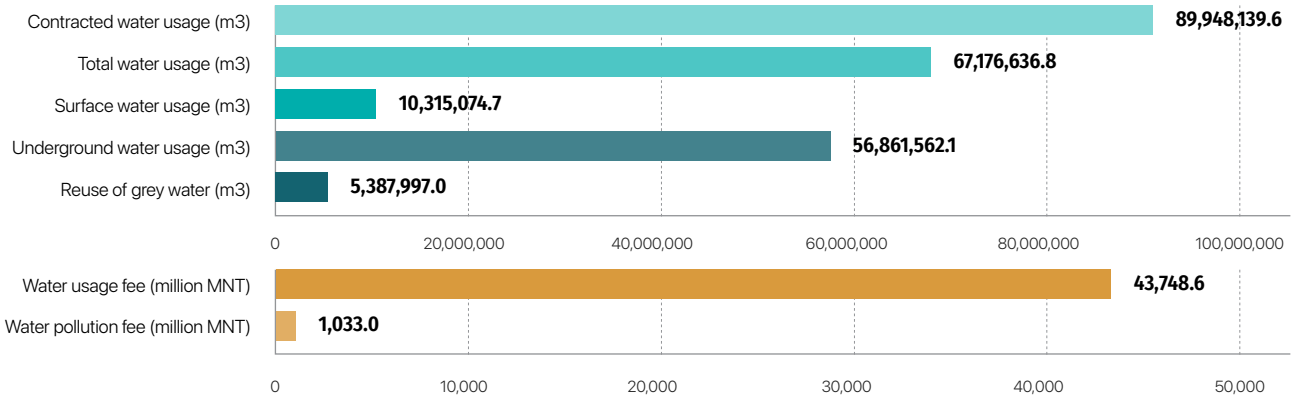
All mining and exploration license holders are required to develop an Environmental Protection Management Plan. This plan should be created after consulting with the local administration and relevant environmental administrative division, then approved by the local governor and submitted to the local environmental monitoring authority. Additionally, the license owner must deposit 50% of the total annual budget required for implementing environmental protection measures as a guarantee. Once all the activities outlined in the plan are completed, the transferred funds will be refunded.

The Environmental Protection Management Plan must be prepared based on the recommendations outlined in the Detailed Environmental Impact Assessment conducted by an authorized legal entity.

Mongolia is a high-water risk country with most of its water resources coming from surface water. Groundwater is mainly used for drinking and industrial purposes. Mining consumes 15% of total water use, expected to increase with growing GDP from mineral export. Mining companies are required to pay a fee for their water usage.

Figure 1.47

WATER USAGE AND RELATED FEES OF MINING COMPANIES (AS OF 2021)

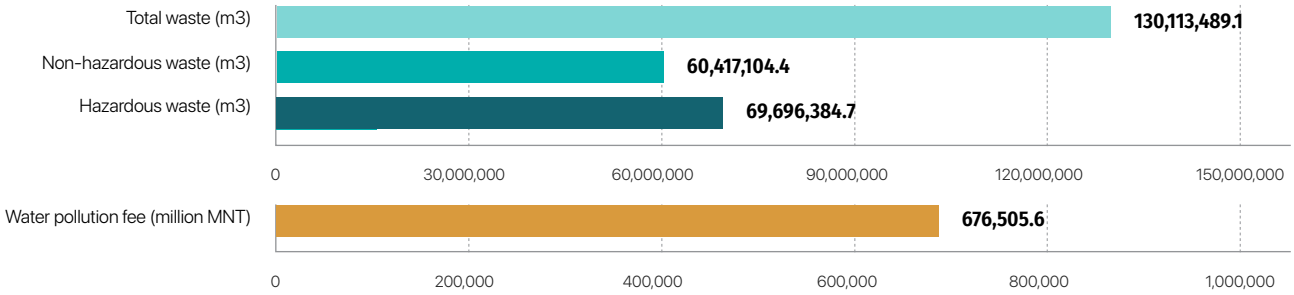


Source: EITI Mongolia

EITI Mongolia reported that 88.7% of total water usage fee came from the biggest 10 mining companies. The world-renowned copper mines of Erdenet and Oyu Tolgoi were the biggest contributors, accounting for 38.2% and 30.5% respectively.

Figure 1.48

MINING WASTE (AS OF 2021)



Source: EITI Mongolia

The large volumes of waste generated from mining projects. The safe disposal of mining waste is a crucial concern, particularly in Mongolia where waste is commonly disposed of on land and wet or toxic waste is disposed of in dams constructed near the mining site.

The awareness of rehabilitation and mine closure have been increasing in Mongolia's mining sector. Under the Minerals Law, companies are required to pay a "rehabilitation bond" to the Soum Government to assist rehabilitation activities. Despite this legal requirement, the law is often not adequately enforced. Moreover, inadequate government resources and capacity to monitor and enforce regulation also inhibits the effective rehabilitation of mine-affected land across Mongolia.

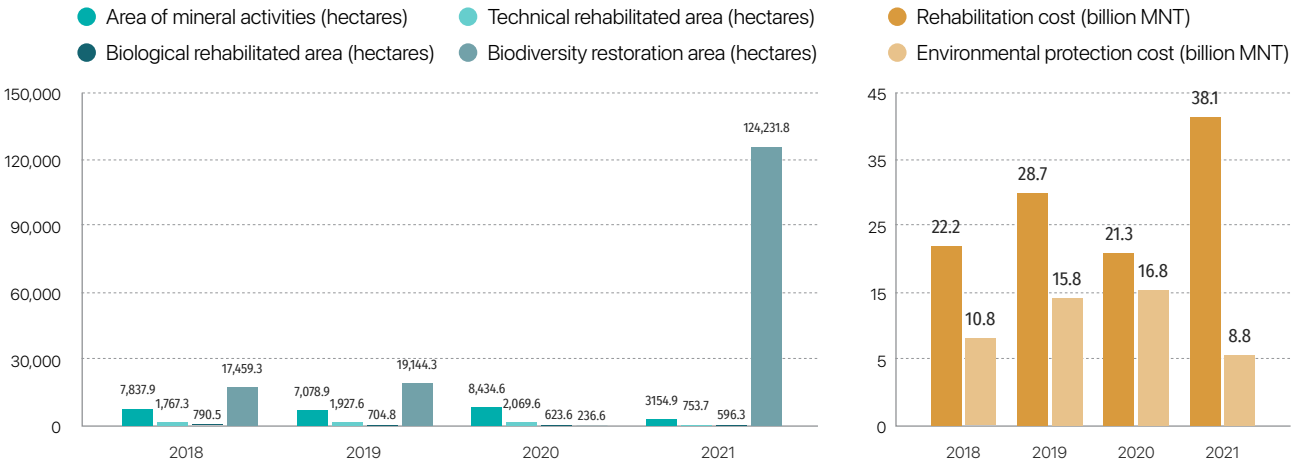
In 2020, the Government estimated that 30,000 hectares of land were damaged, with 28,000 hectares resulting from mining activities. To address this, the Government included the rehabilitation of 8,000 hectares of damaged land in its Action Plan from 2020 to 2024.

The Ministry of Environment and Tourism, in collaboration with the Deputy Prime Minister, the Minister of Environment and Tourism, the Minister of Mining and Heavy Industry, and the Minister of Justice and Internal Affairs, has received approval for a joint decree to implement a unified initiative called "Rehabilitation 2024."

Under this initiative, between 2020 and 2023, 9,773 hectares of land underwent technical rehabilitation, while 2,549 hectares were restored through biological rehabilitation efforts.

Figure 1.49

REHABILITATION OF MINING COMPANIES IN MONGOLIA



Source: MRPAM

Mine closure is becoming a significant concern in Mongolia. According to the Ministry of Environment and Tourism, a few years ago, the average percentage of successful mine closure in Mongolia was around 30%. Incomplete mine closures not only have adverse effects on the environment and local communities but also tarnish the reputation of the mining sector, ultimately impacting all future mining operations.

Mine closure works in Mongolia are based on many different laws and regulations, including Minerals Law and the Regulation on Temporary and Permanent Closure of Mine. The government is currently working on drafts bills for the revised Minerals Law and other related laws. One of the focuses of these bills is to emphasize the importance of mine closure, bringing it up to international standards, and including detailed regulations regarding the financial aspect.

Boroo Gold Mine stands as the pioneering example in Mongolia, being the first to successfully complete a mine closure, setting a powerful precedent for future large-scale closures. Boroo Gold's tailings dam is widely regarded as a model of exemplary environmental management, and its mine closure plan goes above and beyond, encompassing not only soil rehabilitation but also the restoration of biodiversity. This holistic approach reinforces Boroo Gold's leadership in sustainable mining practices and sets the standard for the industry's future.

There are also concerns about what will happen when mining activities come to an end. For example, Erdenet, a city with a population of over 100,000, heavily depends on the world-renowned copper mine of Erdenet, which accounts for 92% of the city's economy according to MIMR. Similarly, Umnugovi Province, the largest center of mining deposits, relies on mining activities for 60-65% of its budget. During the peak of the boom in Tsogttsetsii, the center of Umnugovi Province, the population increased tenfold to approximately 20,000 people. Consequently, some experts in Mongolia suggest that mine closure plans should address this issue.

Local community engagement and benefits

There is major concern from the public regarding the local benefits of mining projects and such concerns play a crucial role in granting social license to these projects.

The establishment of the Local Development Fund in 2011 aimed to foster local development with active citizen involvement. As per the Budget Law, the fund received the entirety of the revenue from mineral exploration license fees and 50% of the revenue from mineral extraction license fees, along with 5% of royalties, 30% of crude oil royalty payments and 5% of VAT. These resources are then allocated to local development projects within the soums, considering factors such as the local development index, population, and territory.

FUNDING SOURCES OF THE LOCAL DEVELOPMENT FUND

100% mineral exploration license fee

50% mineral extraction license fee

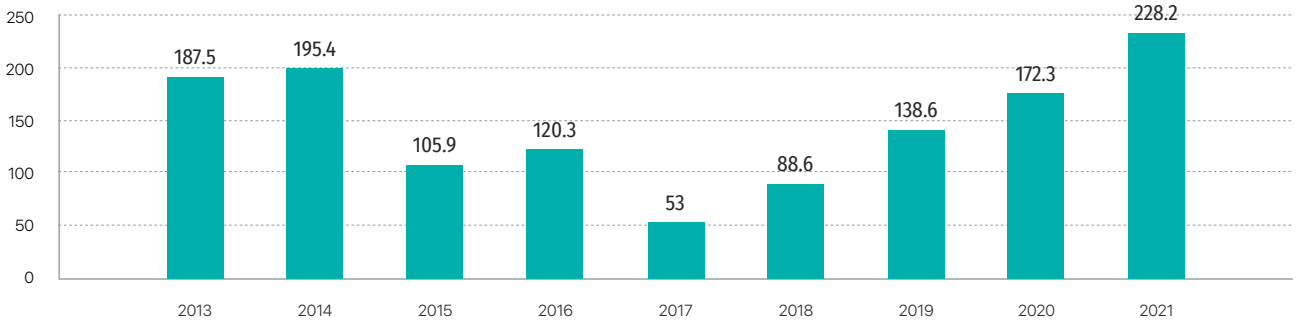
5% royalties

30% crude oil royalty

5% VAT

Figure 1.50

FUNDING OF THE LOCAL DEVELOPMENT FUND (IN BILLION MNT)



Source: GoGo News

Taxes and Fees Paid by Companies to the Local Government in Mongolia

- Real estate tax
- Tax on vehicles
- Land fees
- Water usage fees
- Water pollution fees
- Royalty fee for common minerals
- Payment for the employment of foreign workers
- Dividends on local-owned property
- Penalty
- Compensation
- Contribution at rate of 50% to designated account for environmental protection
- Others
- Donation

Source: EITI Mongolia

Every year, mining companies are donating more to government organizations, local administrations, and local communities. The outflows have significantly increased since 2018, and by the end of 2020, they had reached MNT45.9m ($16m). Between 2014 and 2020, mining companies contributed a total of MNT213b ($74.7m) to local administrations and government organizations. Notably, Oyu Tolgoi LLC alone accounted for 61.3% of the total outflows to the government organizations.

The local governor plays a crucial role in managing company-community relations, as they are authorized to grant permissions for land and water usage. Additionally, under the Minerals Law, the provincial governor can object to mining activities in case of violations and restrict mining operations in areas designated for local use.

Mining companies in Mongolia are also required to establish localized cooperation agreements with local governments in regions where their mining projects are located. These agreements outline community development projects to be implemented during the project's lifespan. The companies aim to hire local workers, partner with local small and medium businesses by purchasing their products and services, and provide sponsorship for local students, among other efforts. These actions enhance mutual understanding of the benefits that a mining project can bring to the local community and provide long-term social support.

Local community participation in licensing involves consultation and collaboration with the local government and community during the licensing process for mining projects. This includes obtaining opinions from the province's Citizens Representative Khural, as well as the local government having the right to veto geographical coordinate suggestions from the MRPAM. The local government also has the right to intervene if the mining license holder is not following the law and harming the local community or environment. Moreover, the Minerals Law requires that the foreigners can only compose up to 10% of the mining license holder's total workforce, ensuring local community participation.

Resource Governance Index of Mongolia

The 2021 Resource Governance Index score for Mongolia increased to 70 out of 100, driven by improvements in revenue management and the enabling environment, but local impact governance declined. The New York - based think tank - Natural Resource Governance Institute's 2021 Resource Governance Index assesses how 18 resource-rich countries govern their mineral wealth.

The 2021 Resource Governance Index presents following key points about the governance of Mongolia's mining industry:

- Mongolia's licensing subcomponent score remained unchanged, and relatively few licenses have been issued since 2017. However, there is no requirement for extractive companies to disclose beneficial ownership information or publish contracts.
- Although public officials are required to disclose their financial holdings in extractive companies, this information has not always been made public. There is a need for stricter laws in this area to prevent corruption and conflicts of interest.
- Companies are required to submit environmental impact assessments, but many of these assessments are not disclosed. Information about rehabilitation and closure procedures is also lacking.
- Mongolia's revenue management score has increased due to improvements in the governance of sovereign wealth funds. However, the Future Heritage Fund has not yet been invested, and fiscal rules are modified almost every year, reducing their effectiveness.
- Although Mongolia has a strong governance of open data, driven by a strong government push for digitization and the creation of an online e-government structure, this is not always reflected in the mining sector. The government must work to improve online disclosures and ensure that data is accessible to the public.
- The implementation gap between enacted laws and their enforcement has decreased, but there is still a lack of disclosures and enforcement related to local impacts and subnational resource revenue sharing. The Mongolian government must ensure that this information is disclosed to the public.

Table 1.4

MONGOLIA'S SCORES IN THE 2017 RGI AND 2021 RGI

	2017 RGI Score	2021 RGI Score	Trend
RGI COMPOSITE SCORE	64	70	6
VALUE REALIZATION	63	61	-2
Licensing	61	61	0
Taxation	85	85	0
Local impact	67	53	-14
State-owned enterprises	40	44	4
REVENUE MANAGEMENT	54	71	17
National budgeting	48	75	27
Subnational resource revenue sharing	74	53	-21
Sovereign wealth funds	42	86	44
ENABLING ENVIRONMENT	73	78	5
Voice and accountability	83	86	3
Government effectiveness	57	61	4
Regulatory quality	63	77	14
Rule of law	65	73	8
Control of corruption	62	60	-2
Political stability and absence of violence	89	93	4
Open data	92	99	7
LAW	73	75	2
PRACTICE	53	59	6
GAP (PRACTICE LESS LAW)	**-20**	**-16**	**4**

Figure 1.51

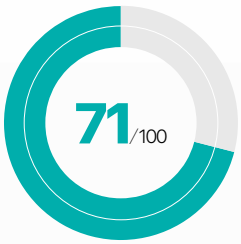
MONGOLIA MINING: 2021 RESOURCES GOVERNANCE INDEX AND COMPONENT SCORES

PERFORMANCE BANDS

- GOOD (Scores over 75)
- SATISFACTORY (Scores over 60-74)
- WEAK (Scores 45-59)
- POOR (Scores 30-44)
- FAILING (Scores under 30)

Value realization

Measure of the quality of governance regarding allocating extraction rights, exploration, production, environmental protection, revenue collection and state-owned enterprises



Revenue management

Measure of the quality of national budgeting, subnational resource revenue sharing and sovereign wealth funds

Enabling environment

Measure of the general quality of governance the country

Source: Natural Resource Governance Institute

07

KEY COMMODITIES

7.1 COAL

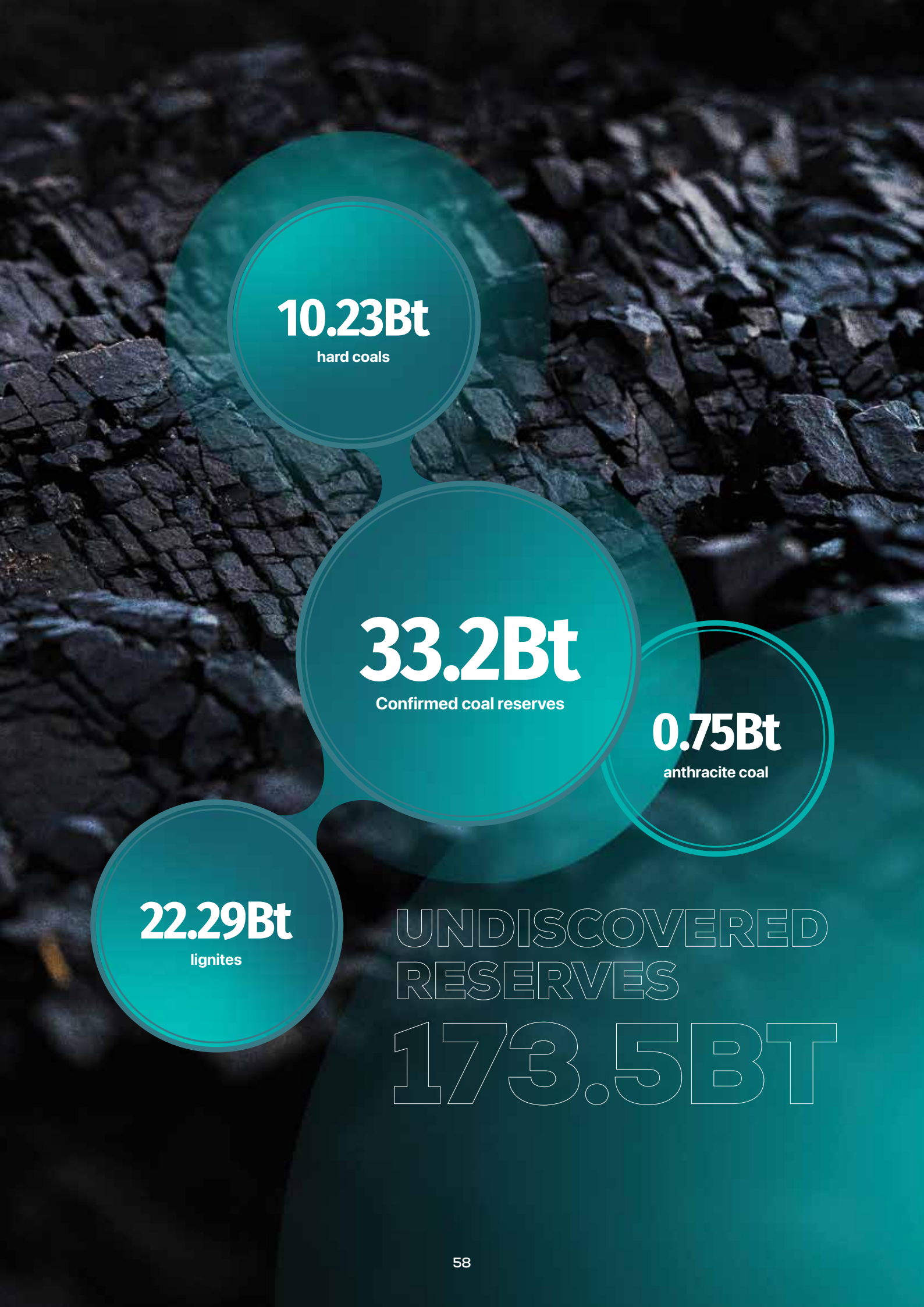
Highlights

Mongolia ranks 23rd globally in terms of coal reserves and 17th in coal mining. The largest consumer of this vast coal resource is China. In 2023, Mongolia alone supplied 50% of China's coking coal demand, becoming one of the leading competitors in China's market.

In 2024, coal exports reached a remarkable level of 83.7 million tonnes, marking the first time in history that Mongolian coal exports surpassed 80 million tonnes.

Reserves

Throughout the country, 15 basins consist of three types of coals, holding a confirmed coal reserve of 33.2b tonnes. The Mongolian Coal Association also reports about 173.5b tonnes of undiscovered reserves that additional geological surveys can unearth.


10.23Bt
hard coals
33.2Bt
Confirmed coal reserves
0.75Bt
anthracite coal
22.29Bt
lignites
UNDISCOVERED RESERVES
173.5BT

As of 2024, there are a total of 314 valid coal mining licenses in the country.

Figure 1.52

COAL RESOURCE DISTRIBUTION MAP

Source: The Mineral Resource and Petroleum Authority of Mongolia

Table 1.5

COAL RESERVES BY PROVINCE AS OF 2022

№	Provinces	Number of licenses	Proven reserves (thousand tonnes)
1	Arkhangai	1	1.20
2	Bayankhongor	15	211.03
3	Bulgan	4	86,21
4	Govi-Altai	28	435.53
5	Govisumber	10	1,828.38
6	Darkhan-Uul	1	71.51
7	Dornogovi	44	3,308.51
8	Dornod	15	1,727.60
9	Dundgovi	23	2,198.16
10	Uvurkhangai	1	29.69
11	Umnugovi	52	7,230.78
12	Sukhbaatar	18	1,937.77
13	Selenge	4	439.15
14	Tuv	38	7,881.60
15	Uvs	15	1,158.04
16	Ulaanbaatar	12	839.63
17	Khovd	11	177.90
18	Khuvsgul	6	214.24
19	Khentii	8	3,708.08

Source: The Mineral Resource and Petroleum Authority of Mongolia

The table shows all confirmed coal reserves. As of 2022, total reserves currently stand at 33.2b tonnes. Information was collected from the 177 coal producers within the framework of the 307 coal mining licenses already issued, reviewed by the Mineral Resources Professional Council, and submitted to the Mineral Resource and Petroleum Authority of Mongolia.

Mongolia's coal reserves are relatively evenly distributed across five regions: Central, Khangai, Gobi, Western, and Eastern. The majority of Mongolia's coal reserves are concentrated in the Eastern and Gobi regions.
Approximately 80% of Mongolia's total coal reserves consist of lignite (brown coal).

The country's largest coal deposits include Baganuur, Sharyn Gol, Shivee Ovoo, Nariin Sukhait open-pit mine, and the Tavan Tolgoi coal deposit.

Among these, Tavan Tolgoi is recognized for its high-quality coking coal, which has superior characteristics in terms of ash content, moisture, sulfur content, and calorific value. Additionally, its proximity to China (approximately 250 km) provides a significant logistical advantage for exports.

At the Tavan Tolgoi deposit, coal is extracted and exported to China by three major entities:

- Erdenes Tavan Tolgoi (a state-owned company),
- Tavan Tolgoi JSC (a joint ownership between local government and private investors), and
- Mongolian Mining Corporation (MMC), which is listed on the Hong Kong Stock Exchange.

In September 2024, Erdenes Tavan Tolgoi announced that, based on comprehensive exploration and studies conducted from 2017 to 2023, the company's licensed area holds 8.1 billion tonnes of coal reserves.

Production & exports

The coal industry as a percentage of overall exports exceeded copper in 2010, and its contribution to the state budget also surpassed copper, becoming the biggest driver in the country's economy. Mongolia single-handedly supplies 50% of China's total coal consumption and is one of the biggest players in the coking coal industry.

Figure 1.53

MINERAL EXPORTS BY TYPE

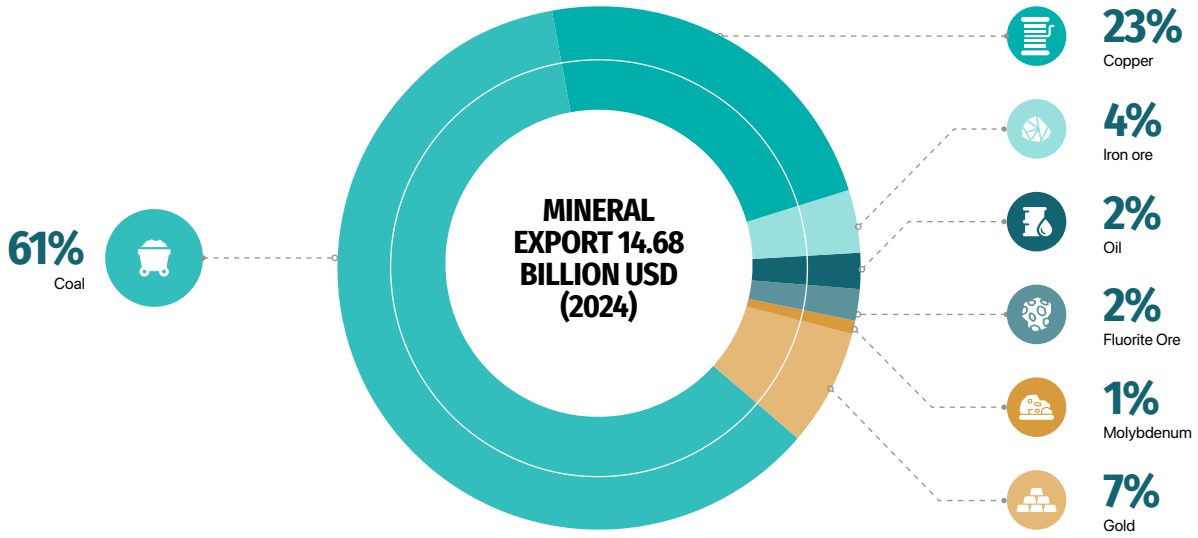
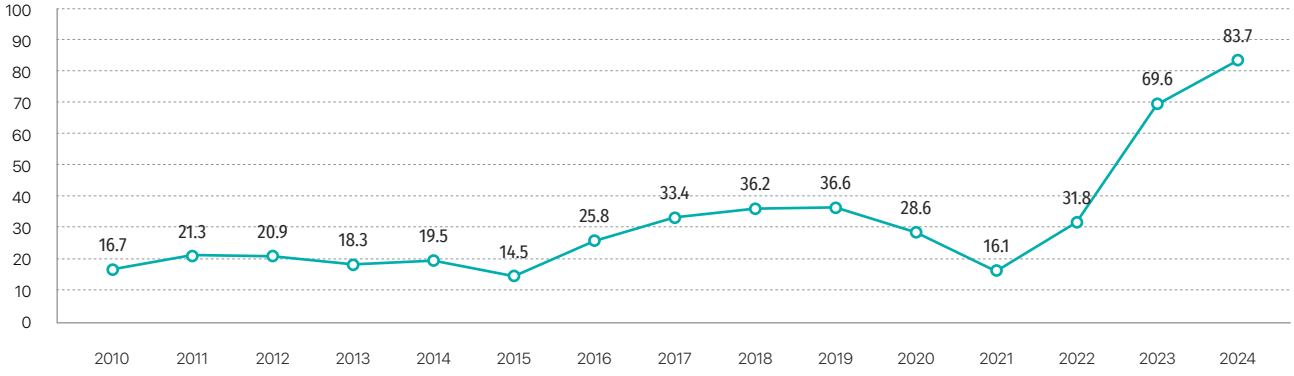


Figure 1.54

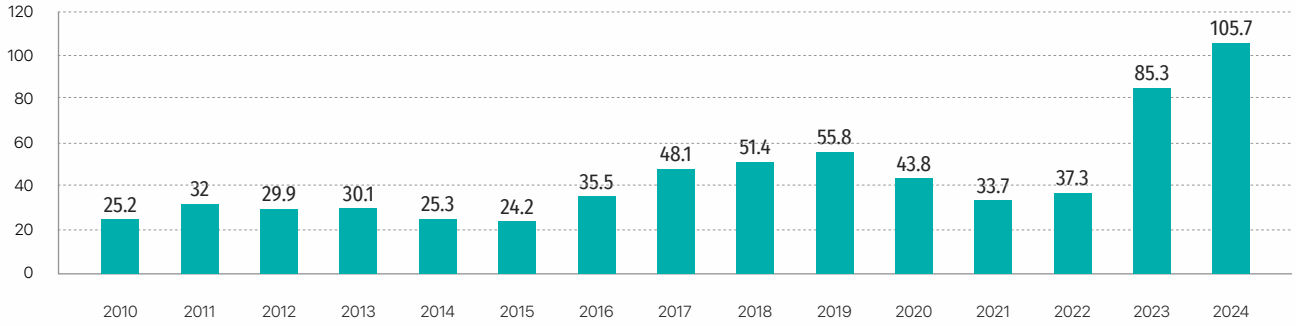
COAL EXPORTS (IN MILLION TONNES)



Source: NSO of Mongolia

Figure 1.55

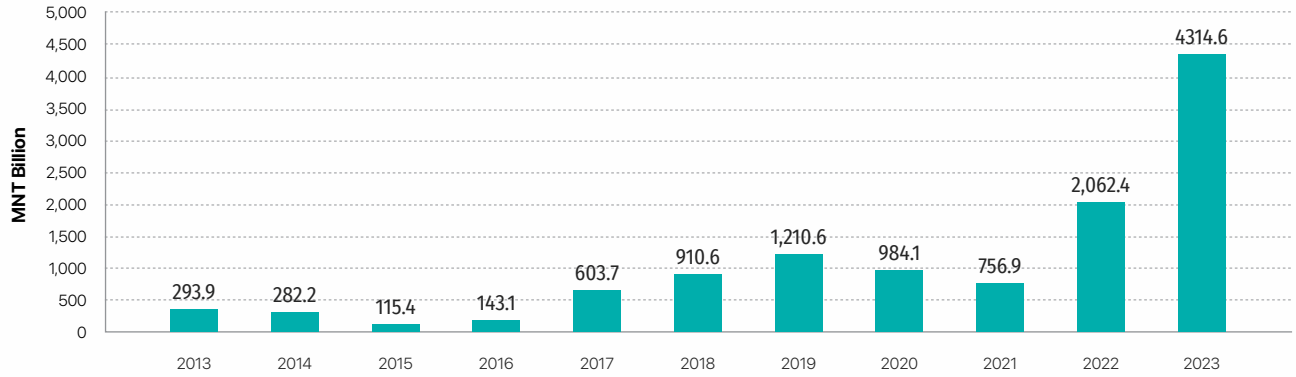
COAL PRODUCTION (IN MILLION TONNES)



Source: NSO of Mongolia

Figure 1.56

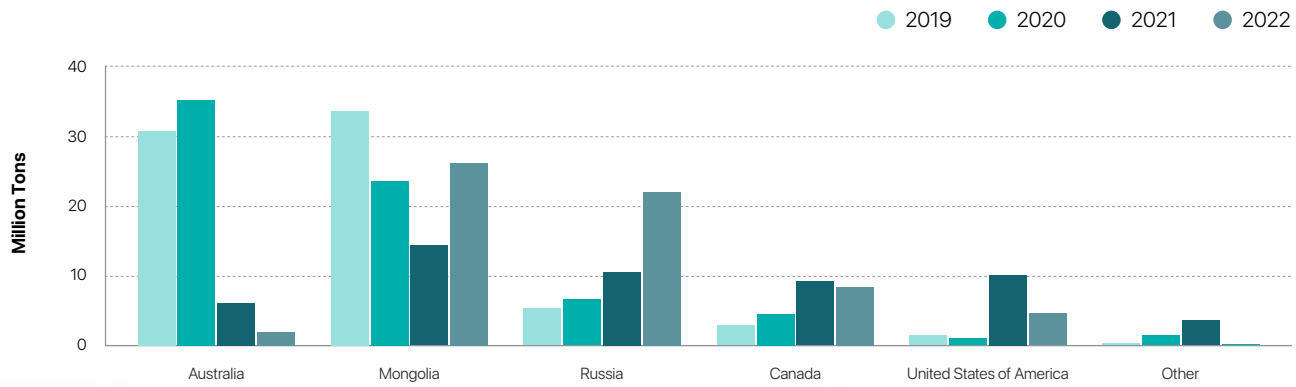
FISCAL REVENUES FROM COAL (IN BILLION MNT)



Source: Ministry of Industry and Mineral Resources

Figure 1.57

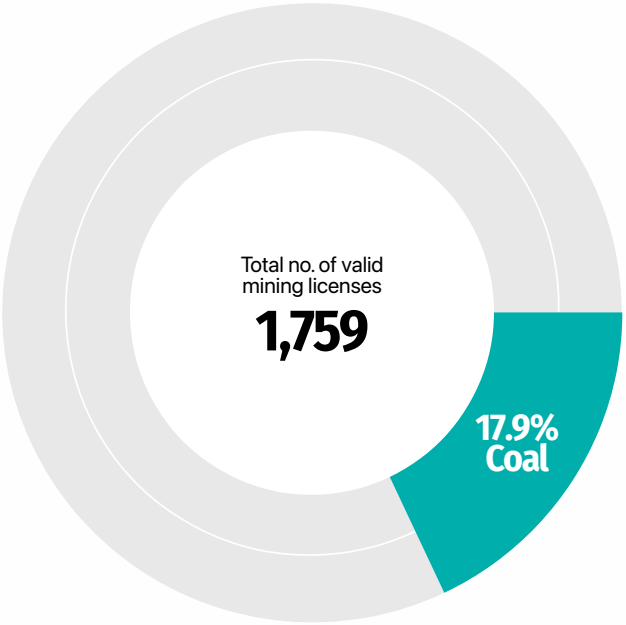
CHINA'S ANNUAL COKING COAL IMPORT VOLUMES (IN MILLION TONNES) (NOTES)



Source: Sxcoal

Figure 1.58

COAL MINING LICENSES (NUMBER AND TOTAL AREA)



The total area covered by mining licenses is 1,872,178.9 hectares, and **42.5%** of that area is designated for coal mining.

As of 2021, 44 coal mines are currently operating in the country, and 65% of them are hard coal mines.

Infrastructure

Mongolia exports coal via five border checkpoints, namely Gashuunsukhait, Shiveekhuren, Khangi, Bichigt, and Bulgan. The majority of exports flow through via Gashuunsukhait-Ganqimaodu port and the Shiveekhuren-Ceke crossing.

Figure 1.59

% OF COAL EXPORTS KEY BORDER CROSSINGS

Source: Mongolian Coal Association

Figure 1.60

ROAD BORDER CROSSINGS

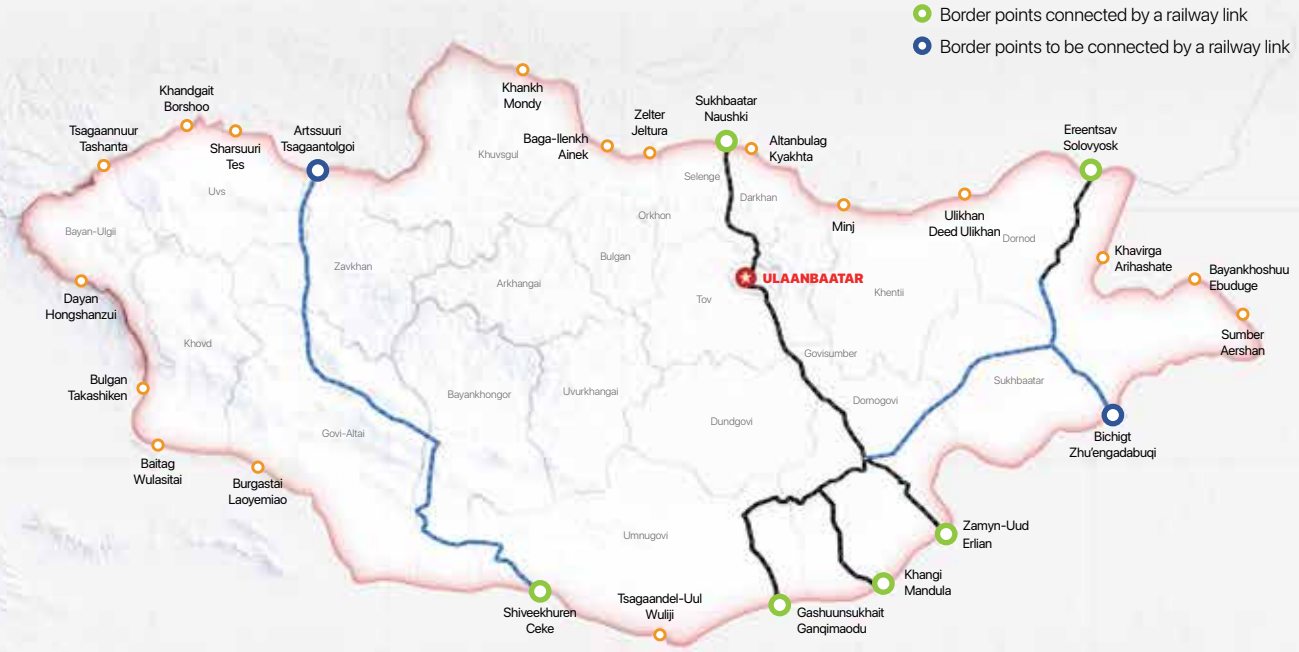
Source: Ministry of Road and Transports of Mongolia

Coal is exported both by road and rail, with the majority of exports still being transported across the border to China via road. Only a small portion – or just under 1%, is transported is exported via the Zamyn-Uud-Erlian border crossing.

A number of public and private partnerships exist on road and railroad construction projects, ultimately helping to boost coal exports:

Figure 1.61

RAILWAY BORDER CROSSINGS



Source: Ministry of Road and Transports of Mongolia

The Government of Mongolia has a plan to enhance the country's railway system. In 2023 alone, three major railway projects were completed, and more are in the pipeline.

1. Tavan Tolgoi - Zuunbayan railway project

The railway along the Tavantolgoi – Zuunbayan route is expected to have annual capacity of 15 million tonnes of freight with the potential to double.

- Continuous length: 416.1 km
- Location: From Tavan Tolgoi coal deposit in Tsogttsetsii soum, Umnugovi aimag to Zuunbayan in Dornogovi aimag, covering Tsogttsetsii and Manlai soums of Umnugovi aimag, Mandakh and Zuunbayan baghs of Sainshand soum in Dornogovi aimag.
- Annual capacity: 15 million tonnes of cargo

2. Tavan Tolgoi - Gashuunsukhait railway project

Tavantolgoi – Gashuunsukhait railway has an annual capacity of 30-50 million tonnes of freight transportation. A total of 2 million tonnes of freight were transported by Tavantolgoi – Zuunbayan and Tavantolgoi – Gashuunsukhait railways in 2023.

- Continuous length: 233.6 km
- Location: Continues from the Tavan Tolgoi coal deposit in the South Gobi to the Gashuunsukhait border crossing.

3. Zuunbayan - Khangi railway project

Zuunbayan – Khangi railway is set to increase the export value of over 10 deposits in the Gobi region.

- Continuous length: 226.9 km
- Location: The railway starts at the Zuunbayan station of the Ulaanbaatar Railway in Zuunbayan bagh, Sainshand soum, Dornogovi aimag, and run to Khangi port, connecting it to the Chinese port of Mandal

The Khangi port is strategically located in the middle of Gashuunsukhait, the main coal and copper export port, and Zamyn-Uud, the main import port.

4. Shiveekhuren - Ceke railway project

The construction of the 6.9 km Shiveekhuren - Ceke railway has also been completed in 2024. The connection of the two ports marks the beginning of the western vertical axis Shiveekhuren-Nariinsukhait-Artssuuri railway, a cross-border railway of the "Economic Corridor" of Mongolia, Russia, and China.

However, to fully utilize these railways for freight transport at their full capacity, it is essential to establish cross-border railway connections with China. The government has included the construction of cross-border railways and freight transfer terminals at the Gashuunsukhait-Gantsmod, Khangi-Mandal, and Shiveekhuren-Ceke border points in its action program and is working toward implementation as of February 2025.

Once these three railways are fully operational, export capacity will increase by 20 million tonnes at the Gashuunsukhait-Gantsmod port, 10 million tonnes at the Khangi-Mandal port, and 10 million tonnes at the Shiveekhuren-Ceke port.

The newly constructed railways are critically important projects for increasing the transportation of mining products to China for export.

Within the framework of the government's action program for 2024-2028, the following new railways are planned for construction:

- The Central Corridor Railway, connecting Altanbulag to the Khangi port.
- The Eastern Vertical Railway, linking Ereentsav to the Bichigt port.
- The Western Vertical Railway, from Arts Suuri to Nariin Sukhait and Shiveekhuren.
- The Horizontal Corridor Railway, connecting these routes across the country.

These railway projects aim to further enhance Mongolia's transportation infrastructure and export capacity

Coal Processing Industry

Mongolia's policy is to process their own coal, thereby adding more value to the industry prior to exporting abroad. Although coal accounts for over 54.1% of total exports, coal processing only accounts for about 20% of all coal exports. Current state policy is focused on increasing the number of coal processing plants.

About 30 coal processing plants currently operate in Mongolia, out of which about 21 deploy the wet method, with the remaining amount being processed using dry method technologies.

Mongolia's first-ever coal processing plant was established in 2011 by Energy Resource LLC within the framework of the Ukhaa Khudag project. Built with three phases, each phase of the plant is capable of washing and processing 5m tonnes of coal each year. Within a decade after becoming operational, the plant had processed a total amount of 62m tonnes of raw coal, produced 31m tonnes coking coal, and refined 12.5m tonnes of thermal coal.

Located in the Nariin Sukhait of Umnugovi province, MAK's processing plant has an annual processing capacity of 1m tonnes of coal. The plant, which is currently running at 65% of output capacity, uses 100 liters of water and recycles 92% of the used water. Capacity can be further expanded to 5m tonnes.

In April 2021, the Mineral Resources Professional Council reviewed and accepted the feasibility study of the Tavan Tolgoi coal processing plant. The plant is expected to have three building blocks with a processing capacity of ten million tonnes per annum each and a total capacity of 30 million tonnes per year. In 2024, the first phase of the coal processing plant project, with a capacity to process 10 million tonnes of coal per year, was put into operation.

In December of the same year, the coal processing plant's the first product, 12.8 thousand tonnes of processed coking coal was sold through an open auction on the Mongolian Stock Exchange and transportation began.

Coal companies

The Mongolian state-owned Erdenes Tavan Tolgoi, the Mongolian Stock Exchange-listed Tavan Tolgoi JSC, and the Hong Kong Stock Exchange-listed Mongolian Mining Corporation (also known as Energy Resource LLC) all operate coal mines at the Tavan Tolgoi coal deposit. These three projects account for over half of Mongolia's coal exports.

The state-owned company, Erdenes Tavan Tolgoi, commenced raw coal production in 2010 and became the first domestic company to exceed $1 billion in sales revenue in 2019.

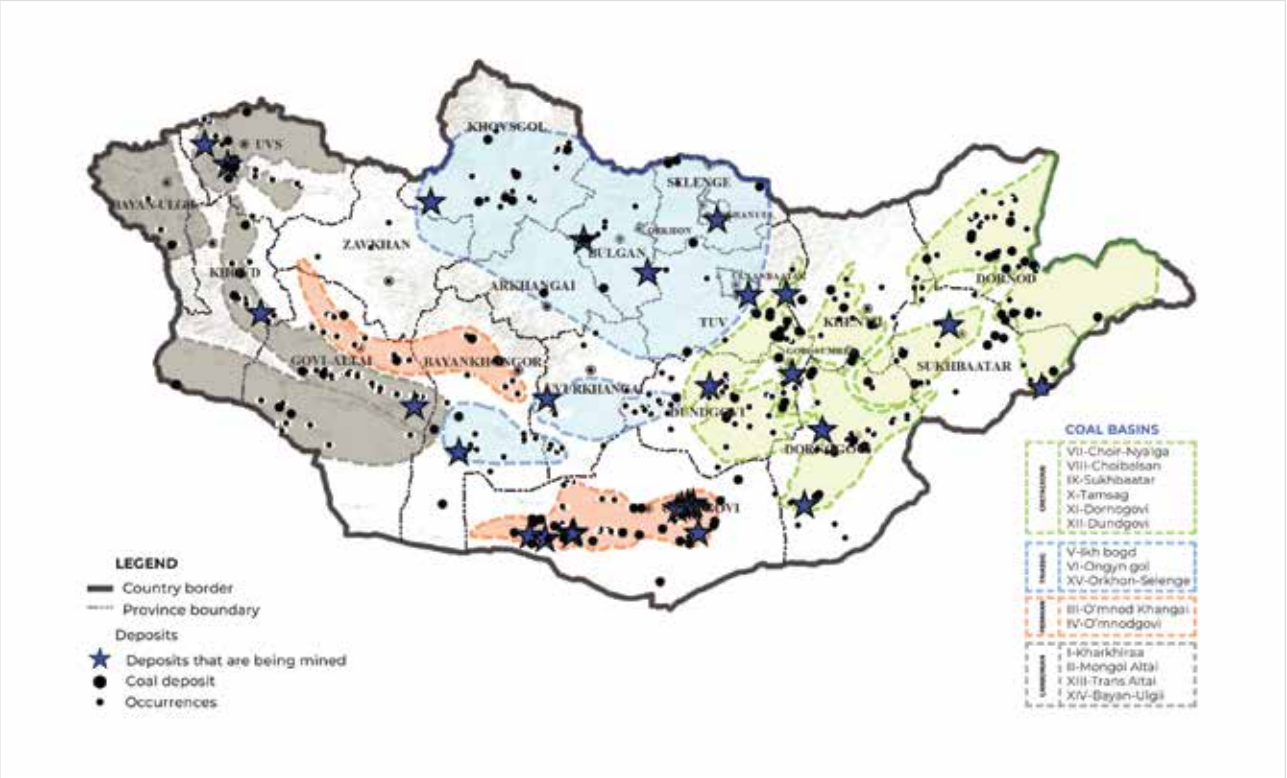
Mongolian Mining Corporation (also known as Energy Resource LLC) is Mongolia's largest producer of washed hard coking coal. The company owns the Ukhaa Khudag deposit, which is part of the Tavan Tolgoi coal deposit, as well as the Baruun Naran coking coal deposit, both located in the South Gobi region of Mongolia.

Additionally, several companies—including SouthGobi Resources, Usukh Zoos, and Mongolyn Alt Corporation—operate coal mines at the Nariin Sukhait coal deposit, located over 400 km from Tavan Tolgoi. These companies extract and export coal.

The Nariin Sukhait coal deposit holds approximately 380 million tonnes of high-rank, low-ash, low-sulfur metallurgical and steam coal resources.

Figure 1.62

LOCATION MAP OF COAL DEPOSITS AND OCCURRENCES IN MONGOLIA, SCALE 1: 12 000 000



Source: National Geology Survey of Mongolia

In the western part of Mongolia, Mongolia Energy Corporation (MEC) operates Khushuut Coking Coal Projects which is located approximately 1,350 km west of Ulaanbaatar in the Khovd Province of Mongolia. It is about 311 km from the Xinjiang Takeshiken border, connected by the Khushuut Road. The company, listed on the Hong Kong Stock Exchange, sells coking coal and thermal coal to Northern China.

Another highly prospective major coal deposit is Aspire Mining Limited's project.

Aspire Mining Limited is an Australian Stock Exchange-listed 100% metallurgical coal and rail company with a 100% interest in the world-class Ovoot Coking Coal Project and a 90% interest in the Nuurstei Coking Coal Project. Aspire's flagship Ovoot project, located in Khuvsgul Province of Mongolia, hosts 255 Mt JORC Coal Reserves.

The company has not yet started its coal project, postponing its implementation.

The Government of Mongolia's 2024-2028 Action Plan outlines 14 mega projects under four key policy directions. The first of these projects is the construction of cross-border railway connections and cargo transshipment terminals at the Gashuunsukhait-Ganqimaodu, Khangi-Mandula, and Shiveekhuren-Ceke border ports.

The implementation of this project is expected to increase total export capacity by 40 million tonnes, with:

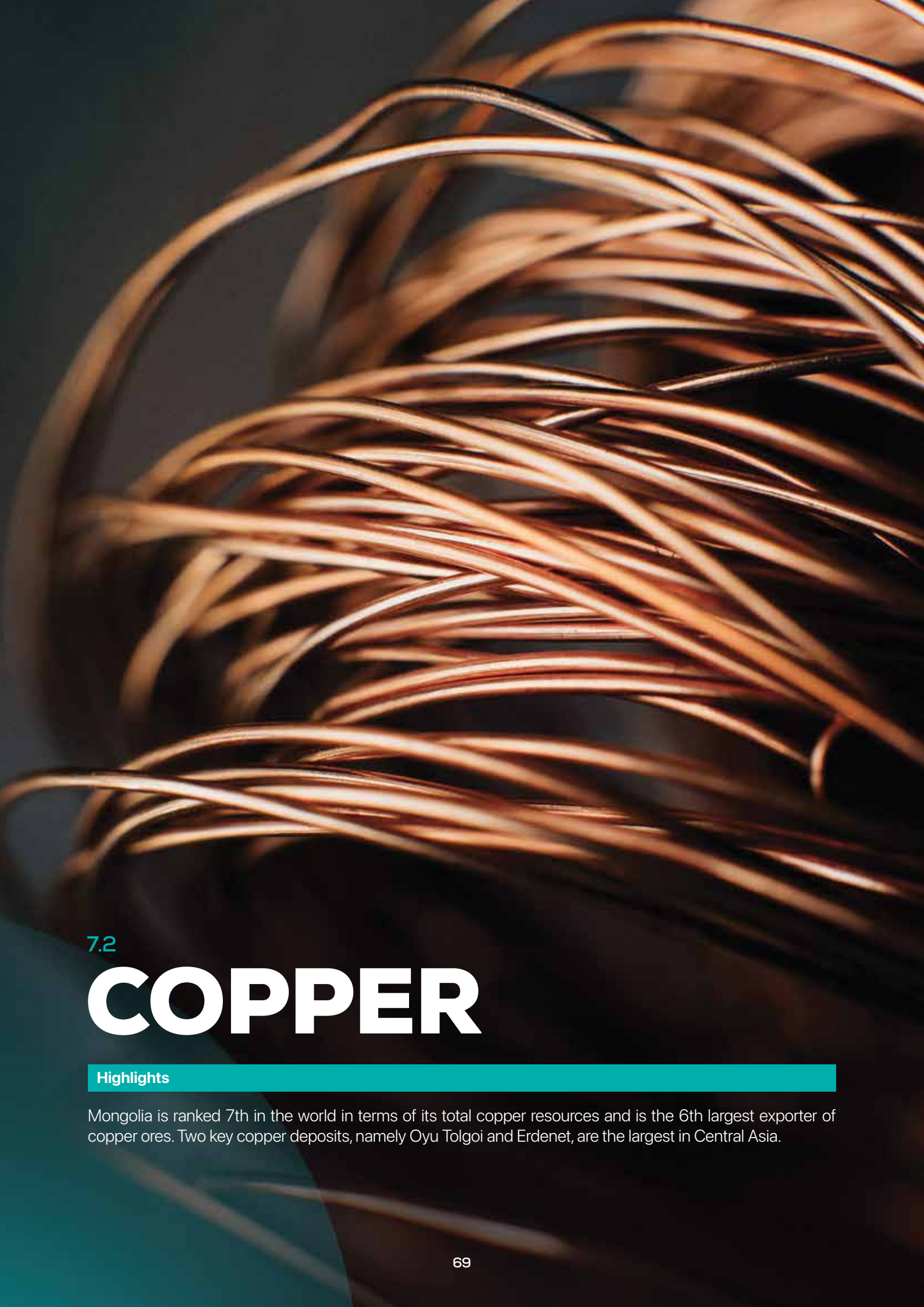
- Gashuunsukhait-Ganqimaodu port increasing by 20 million tonnes,
- Khangi-Mandula port increasing by 10 million tonnes, and
- Shiveekhuren-Ceke port increasing by 10 million tonnes.

As a result, export revenues are projected to double, and coal export capacity via railway is expected to triple.

The government aims to:

- Construct cross-border railway connections,
- Develop paved roads linking border ports, and
- Build cargo transshipment terminals.

With these infrastructure developments, Mongolia's annual mining product exports are projected to reach 100 million tonnes.



7.2

COPPER

Highlights

Mongolia is ranked 7th in the world in terms of its total copper resources and is the 6th largest exporter of copper ores. Two key copper deposits, namely Oyu Tolgoi and Erdenet, are the largest in Central Asia.

Copper plays a significant role in Mongolia's economy and its contribution to the mining industry in the overall economy is considered the third highest in the world, ranking the country above other mining-driven economies like Uzbekistan and Kazakhstan (joint 16th), Georgia (22nd), and Russia (23rd). The Rio Tinto-backed Oyu Tolgoi project is forecasted to become the world's 4th biggest copper producer by 2030.

Reserves & exploration

Mongolia has the 7th biggest resource of copper in the world with 56.5 million metric tonnes. The country is also 13th in terms of copper production and 6th worldwide in terms of copper ore exports. As of 2024, there are 19 copper deposits across Mongolia with valid mining licenses. Of these, the biggest deposits are the Erdenet, Oyu Tolgoi, and Tsagaan Suvarga deposits.

In 2018, the National Development Agency estimated the value of Mongolia's copper reserves at about USD 529 billion based on the copper reserves and market prices at the time.

Exploration projects are progressing at a rapid phase, especially in the gold and copper porphyry belt of Southern Mongolia, where the Oyu Tolgoi and Tsagaan Suvarga projects are in operation. By way of example, the ASX-listed Xanadu Mines and TSX-listed Kincora Copper have been exploring the region for years.

Table 1.6

VALID COPPER MINING LICENSES (AS OF 2024)

	Mining Licenses		Share of Licenses in the Total Area	
	#	%	#	%
Copper	19	1.1%	86,141,4	4.6%
Gold (placer mine), copper	11	0.6%	83906.19	4.5%
Copper, molybden	8	0.5%	14,328.26	0.8%
Copper, gold	5	0.3%	8807	0.5%

Source: MRPAM

Production & Export

In Mongolia, two main concentrators produce export copper concentrate - the Erdenet and Oyu Tolgoi projects. The country began exporting copper concentrates in 1970 with the establishment of the Erdenet mine which is the key deposit for copper concentrates. Copper exports accounted for 22.2% of total exports in 2013 when the Erdenet Plant was the only copper exporter. After Oyu Tolgoi became operational in the following year, 44.5% of total exports were copper, which increased to 49% in 2015.

As the Mongolian mining industry grows, the market for copper concentrate has also expanded. Notably in 2024, the production and export volume of copper concentrate peaked, accounting for 22.1% of the total export value.

Mongolian refined copper is supplied by both Erdmin LLC and Achit Ikht LLC.

Achit Ikht LLC exports processed copper cathode to China. Erdmin LLC produces copper cathode and copper products, such as copper wires, for domestic consumption.

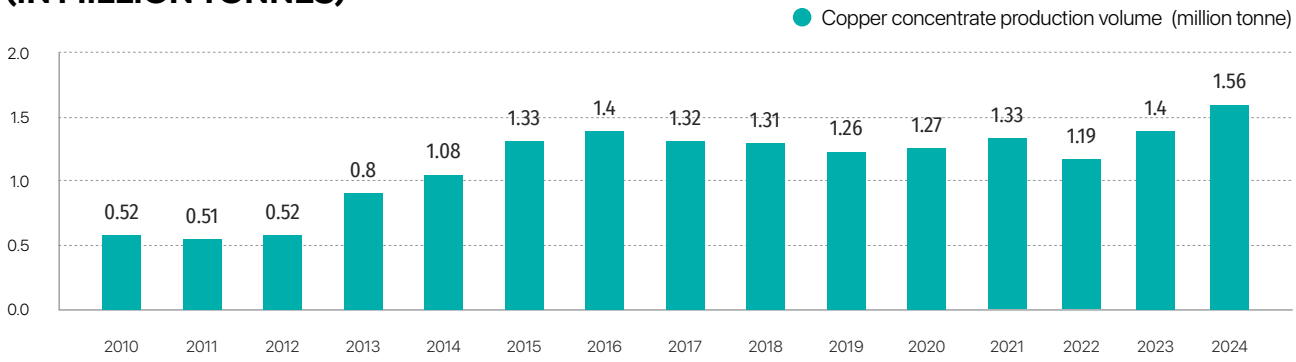
Looking forward, Mongolia is interested in processing copper concentrates and producing copper cathode. Therefore, the following two projects are included in the long-term development program "Vision-2050":

- Inaugurating a copper refinery with an annual capacity of 124,100 tonnes near "Erdenet Mining Corporation" SOE.
- A copper refinery project that will use copper concentrates of Oyu Tolgoi to produce copper cathode.

With new projects such as the Tsagaan Suvarga and Kharmagtai projects, Mongolia is expected to become one of the world's largest copper suppliers in the decades to come.

Figure 1.63

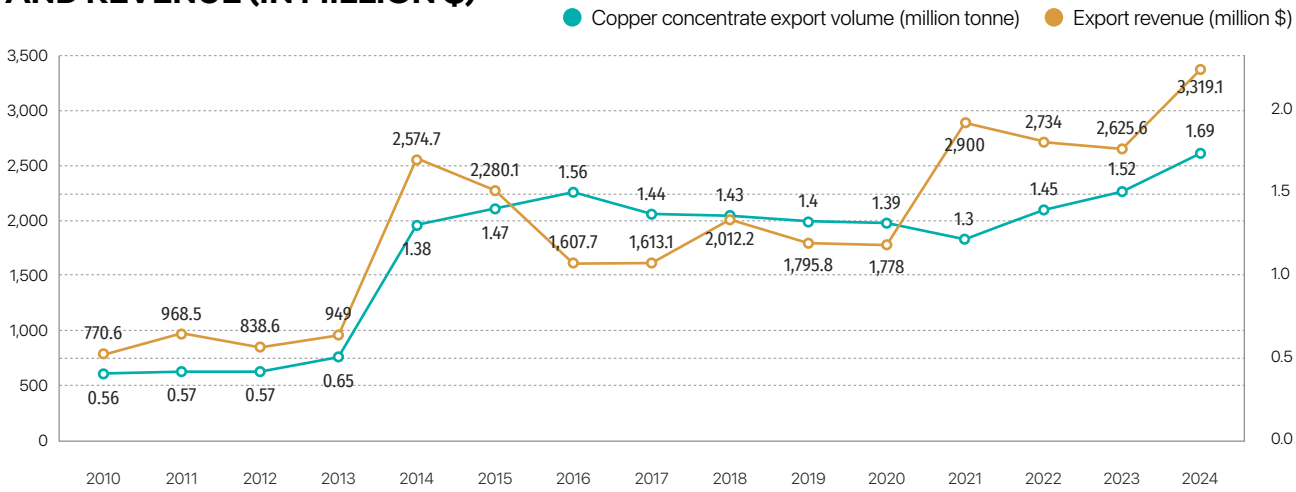
MONGOLIA'S COPPER CONCENTRATE PRODUCTION VOLUME (IN MILLION TONNES)



Source: NSO of Mongolia

Figure 1.64

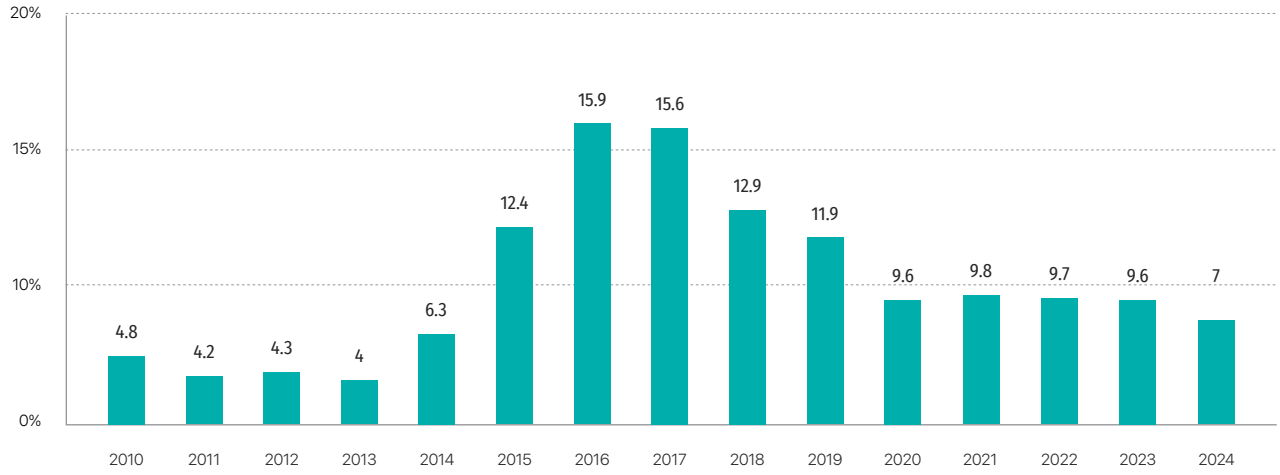
COPPER CONCENTRATE EXPORTS VOLUME (IN MILLION TONNES) AND REVENUE (IN MILLION $)



Source: NSO of Mongolia

Figure 1.65

COPPER CATHODES, 99% (IN THOUSAND TONNES)



Source: NSO of Mongolia

Mongolia exports 100% of its copper concentrates to the Chinese market via road and rail. The Erdenet plant uses the Erdenet-Zamyn-Uud route while the Oyu Tolgoi plant delivers via the Oyu Tolgoi- Gashuunsukhait road route for exports.

Chinese demand for Mongolian copper concentrate is expected to continue to be strong in the mid and long term.

Figure 1.66

COPPER EXPORTS ROUTE

22.1%
of total export

100%
of the products are exported to China.

23%
of total minerals export

30.6%
of fiscal revenue from the mining sector (as of 2023)

Oyu Tolgoi	
Location:	**Khan-Bogd, Umnugobi Province, Mongolia**
Ownership:	Erdenes Oyu Tolgoi LLC - 34% (Government of Mongolia) Rio Tinto - 66%
Operations:	Active
Commencement:	Open-pit mine - 2013 Underground mine - 2023
Mineral reserves:	Copper and gold
Production Capacity:	100 kt p/a
Total number of employees:	20,000 (as of 2024)
Infrastructure:	Concentrator, open-pit mine, underground mine

Figure 1.67

COPPER CONCENTRATE PRODUCTION

(thousand.t, by dry weight)

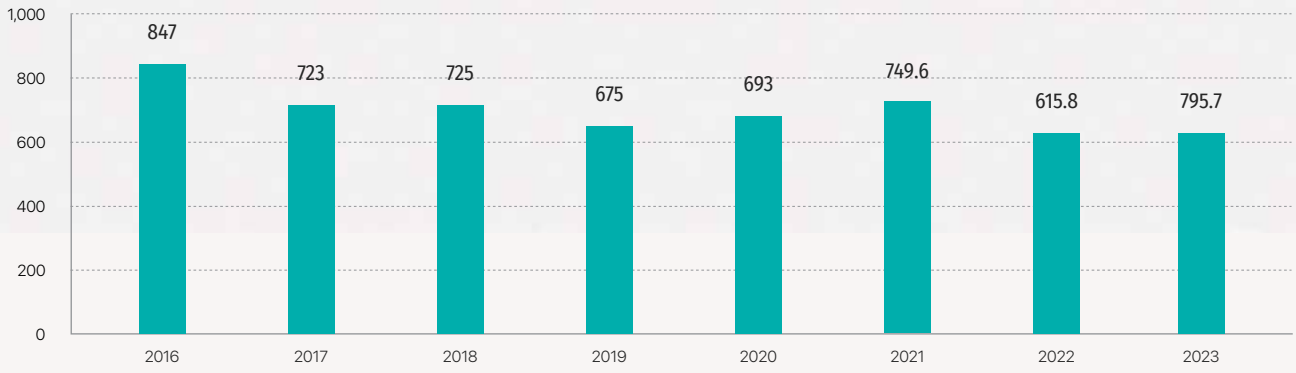
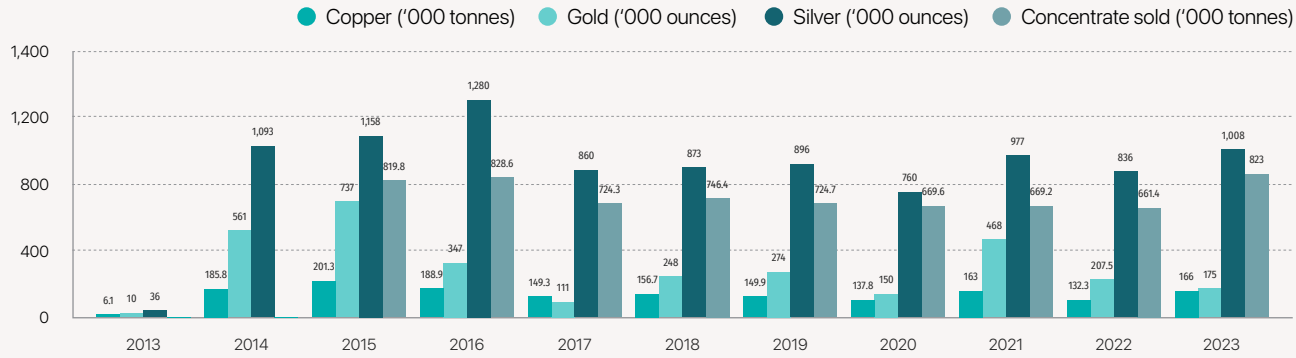


Figure 1.68

COPPER CONCENTRATE SALES



Highlights:

Oyu Tolgoi is known to be one of the largest deposits of copper and gold in the world. The Mongolian government owns a 34% stake in Oyu Tolgoi (OT), while the rest is controlled by Rio Tinto, the second-largest mining company in the world, which operates the mine. In 2022, Rio Tinto invested $3.1 billion and completed the acquisition of 49% of Turquoise Hill Resources, which previously owned 66% of Oyu Tolgoi. Rio Tinto CEO Jakob Stausholm stated that "Oyu Tolgoi is a remarkable asset with talented people that will bring significant long-term value for both Rio Tinto and Mongolia."

The Oyu Tolgoi project is located approximately 550 kilometres south of Ulaanbaatar, and 80 kilometres north of Mongolia-China border. The property is cut by the Oyu Tolgoi trend, a 12 kilometres north-south oriented corridor which is host to the known deposits, Hugo North, Hugo South, Oyut and Heruga. Open-pit mining operations commenced at Oyut in 2013. The Hugo North depost is currently being developed as an underground operation.

The copper concentrator plant, with related facilities and necessary infrastructure, was originally designed to process approximately 100,000 tonnes of ore per day from the Oyut open pit. However, since 2014, the concentrator has consistently achieved a throughout of over 105,000 tonnes per day due to improvements in operating practices.

"Rio Tinto strongly believes in the long-term success of Oyu Tolgoi and Mongolia" Jakob Stausholm, CEO of Rio Tinto

With the start of underground mine production in the first quarter of 2023, Oyu Tolgoi has become a comprehensive copper mine.

From 2028 to 2036, the project is expected to have an average production of 500,000 tonnes of copper a year from both open pit and underground operations, compared with 163,000 tonnes in 2021 from open pit operations.

With the commencent of the OT project, large inflows of foreign investment has been come to Mongolia since 2011.

Between 2010 and 2020, the OT project invested $11.6 billion in Mongolia. Rio Tinto and the Government of Mongolia renegotiated the deal several times over the progress of the project due to implementation process and excess cost.

"Rio Tinto strongly believes in the long-term success of Oyu Tolgoi and Mongolia, and delivering for all stakeholders over the long-term. The transaction will simplify the ownership structure, and further strengthen Rio Tinto's copper portfolio," Rio Tinto's Chief Executive Director Jakob Stausholm said in a statement.

7.3

GOLD

1. Highlights

The gold industry provides a considerable contribution to Mongolia's foreign exchange reserves and significantly weighs on export revenues; thus, it is considered an industry of high economic importance for Mongolia. The central bank of Mongolia, with an aim to support gold miners, implemented the "Gold" financing program three times since 1992, dispensing crucial support for the sector.

Since 1992, the gold production and mining in Mongolia has increased 26 times and the gold purchase by the central bank grew 10 times in the last decade. Gold industry accounted for 10% of mining production and 24% of Mongolia's total export revenue in 2020. However, as of 2023, the sector accounted for 4.9% of export revenue, and 16.1% of foreign exchange reserves.

2. Reserve

Mongolia's residual gold reserve, including placer deposits, hard rock deposits, and other gold-bearing metal deposits, amounted to 1,587 tonnes as of 2018.

Registered gold reserves

Types of deposit	1991		1997		2014		2018	
	Number of deposits	Reserve, t	Number of deposits	Reserve, t	Number of deposits	Reserve, t	Number of deposits	Reserve, t
Placer deposit	156	90.3	498	206.25	608	27.6	444	57.7
Hard rock deposit	15	50.2	31	127.8	74	224.2	107	469.1
Other gold-bearing metal deposits	-	-	-	-	17	1,101.3		1,118
Total	**171**	**140.5**	**529**	**334.05**	**699**	**1,353.1**	**571**	**1,644.8**

There are numerous placer deposits registered in Mongolia. But the share of placer deposits in the total discovered reserves of gold is relatively small. On top of that, exploration activities drastically reduced since the enactment of a "The Law with the Long Name" that prohibited gold mining activities near rivers and ponds. As a result, mining activities in placer deposits have continually shrunk. In terms of location, numerous placer deposits of gold were registered in the central region provinces, including Tuv, Selenge, Bayankhongor, and Darkhan-Uul.

In order to increase the overall production of gold, the Government of Mongolia is strongly supporting the deployment of advanced technologies in major deposits for average capacity instead of utilizing low-yield small mines.

The number of registered hard rock deposits in Mongolia is the highest in Selenge, Tuv, and Umnugovi provinces. From the major mines, Boroo and Gatsuurt deposits are already depleted.

Major hard rock gold deposits

	Deposit name	Province	Soum	AM
1	Altan Tsagaan Ovoo	Dornod	Tsagaan-Ovoo	Au
2	Bayan Airag	Zavkhan	Durvuljin	Au
3	Bayan-Undur	Tuv	Bayan	Au
4	Bayan-Uul	Tuv	Delgerkhaan, Buren	Au
5	Boroo	Selenge	Bayangol	Au
6	Gatsuurt	Selenge	Mandal	Au
7	Naran Tolgoi	Tuv	Jargalant	Au
8	Olon Ovoot	Umnugovi	Mandal-Ovoo	Au
9	Undur Naran	Dornogovi	Saikhandulaan	Au
10	Urkhut	Bayankhongor	Bayangovi	Au
11	Kharmagtai	Umnugovi	Tsogttsetsii	Au
12	Tsagaan Chuluut	Dornod	Bayandun	Au
13	Ereen	Selenge	Mandal	Au
14	Bayan Khundii	Bayankhongor	Shinejinst	Au
15	Oyu Tolgoi	Umnugovi	Khanbogd	Au, Cu

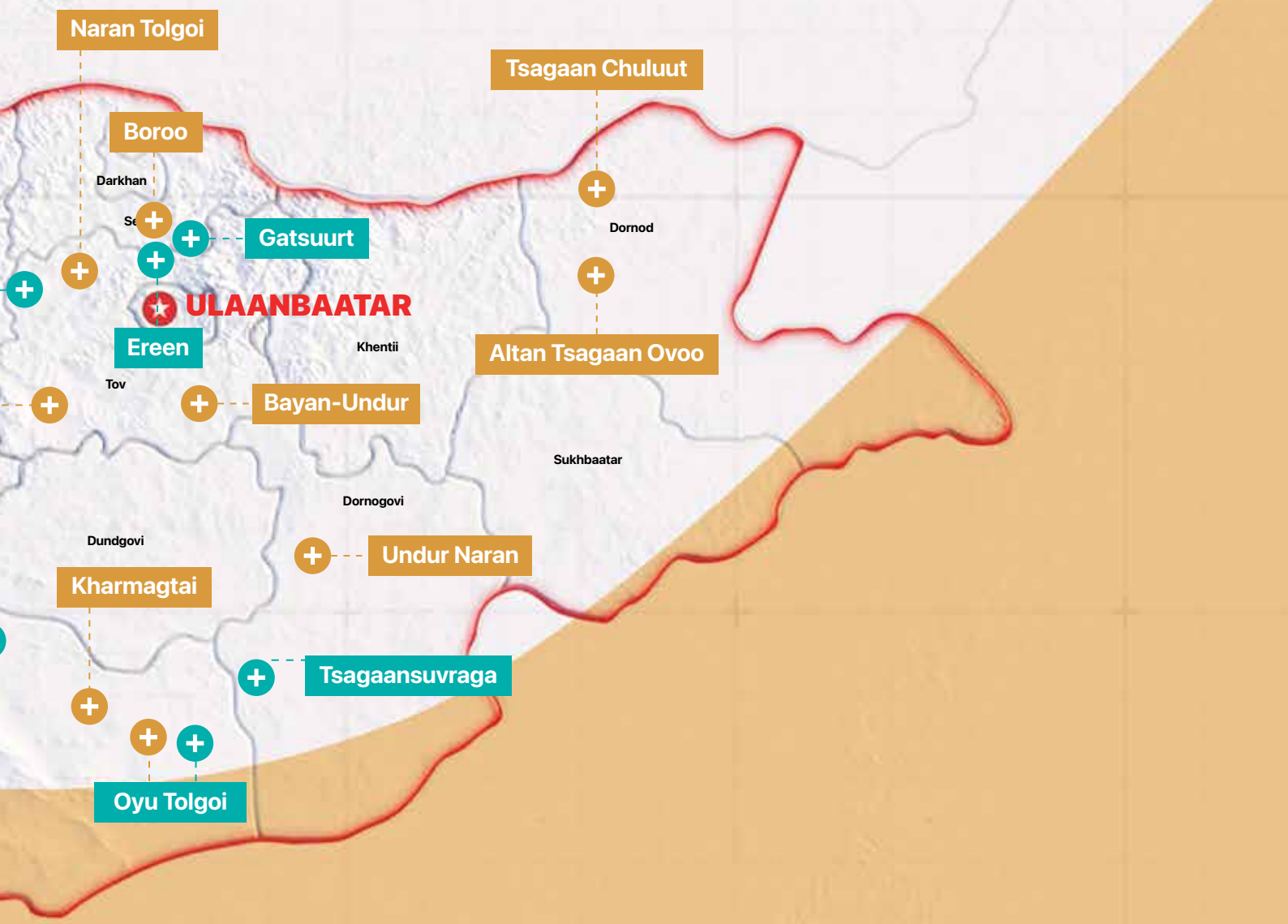
Figure 1.69

GOLD DEPOSITS IN MONGOLIA

Other gold-bearing metal deposits include copper, lead, and zinc deposits. The majority of the country's discovered resources of gold are incorporated in these deposits. By far, the biggest one in terms of size is Oyu Tolgoi. The copper-gold deposit of Oyu Tolgoi alone has a total of 1,028 tonnes of gold resources. In addition, 810 tonnes of additional gold reserves, which can be used in certain circumstances, have been registered at the Oyu Tolgoi deposit.

In 2020, most of the newly registered hard rock gold deposits were in Zavkhan, Umnugovi, and Bayankhongor provinces, whereas most of the placer gold deposits were located in Tuv, Selenge, Khentii, and Bayankhongor aimags.

Placer gold mining licenses account for the majority of valid licenses, while hard rock deposits account for about 90% of total gold reserves. In recent years, the number of hard rock gold minig projects, including the Altan Tsagaan Ovoo, Bayankhundii and Tsagaan Tsakhiur, operated by foreign invested companies have been increasing thanks to FDI inflow.



3. License & Exploration

Gold mining license:

Throughout Mongolia, there are 460 valid mining licenses for placer mines and 99 for hard rock deposits of gold. In addition, licenses for gold-bearing metal deposits remain valid. In terms of quantity, placer gold accounts for the largest share of all mining licenses, accounting for 26%.

Table 1.7

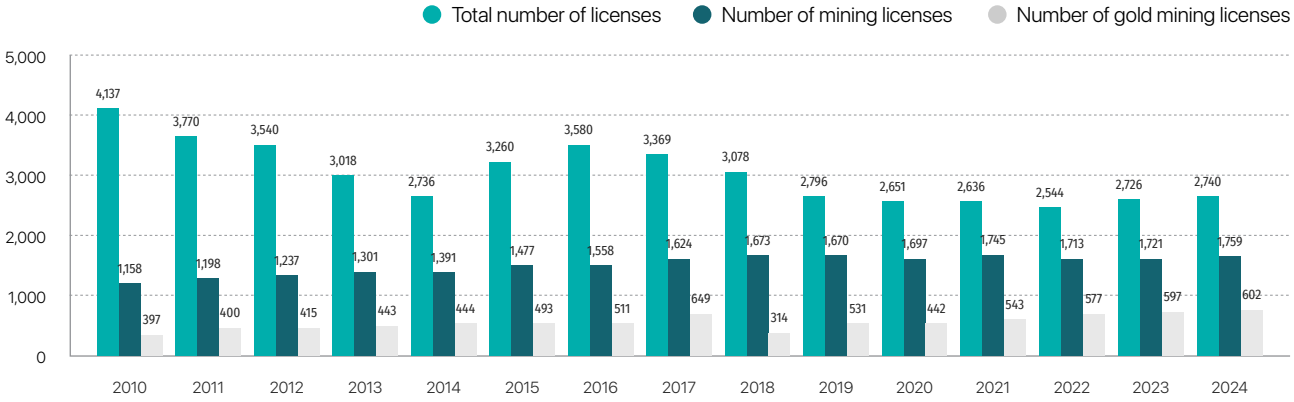
THE NUMBER OF VALID MINING LICENSES AND EFFECTIVE AREA (AS OF 2024)

	Mining licenses		Area size	
	Number	Percentage	Number	Percentage
Total	**1,759**	**100%**	**1,872,178.9**	**100%**
Gold (placer)	460	26.2%	192,222.35	10.3%
Gold (hard rock)	99	5.6%	133,560.32	7.1%
Gold (placer) and Copper	11	0.6%	83,906.19	4.5%
Copper and Gold	5	0.3%	8,807.4	0.5%
Gold	4	0.2%	4,244.8	0.2%
Gold (placer) and polymetal	3	0.2%	17,320.6	0.9%
Gold (placer) and Silver	3	0.2%	9,587.7	0.5%

Source: MRPAM,

Figure 1.70

NUMBER OF GOLD MINING LICENSES



Source: MRPAM

Gold exploration

The number of mineral exploration licenses has been steadily declining. In 2016, there were 2,000 exploration licenses, but by 2022, this number had dropped to 831. This reduction is largely due to the shift from an application-based process to a tender system for granting exploration licenses. Since 2017, all exploration licenses have been issued only through a government organized tender process. While the competitive bidding system was intended to increase fairness, it has led to significant delays, a lack of transparency, and additional procedural hurdles, all of which have contributed to fewer new licenses being issued.

On January 1, 2023, the Law on Permits came into effect, introducing amendments to the Minerals Law and officially legalizing the tender process.

Furthermore, the National Security Council of Mongolia issued the following recommendations in its Resolution No.3 in 2022:

- The issuance of special mineral exploration permits should be conducted electronically via a tender process.
- The process should be transparent and accessible to the public.
- The area granted for exploration should not exceed 15% of the total territory of a soum or district.

As a result, the number of exploration licenses has started to gradually increase from 2023; however, the issuance of exploration licenses has been halted since May 2024. In January 2025, the Ministry of Industry and Mineral Resources (MIMR) announced that the revised Regulations for Exploration License Issuance had been approved and currently awaiting registration. Once the registration is complete, issuance of exploration licenses will begin.

Furthermore, Covid-19 has caused a global investment

fall which had a drastic impact on foreign direct investment in the mineral exploration sector in Mongolia.

In terms of geological study in Mongolia, the southwestern region of the country belongs to the Central Asian Orogenic Belt which includes the largest known economic gold accumulations after South Africa. The zone includes several known major gold deposits, including Oyu Tolgoi, Kharmagtai, Bayankhundii, Altan Nar, and Uudam Khundii. However, the number of geological surveys is fairly limited in the zone.

Within the frames of the "Gold 2" program, a geological study of gold "BUM Alt 2019" is being carried out in the west and southwest regions, covering almost a third of Mongolia's territory. Successful completion of the survey will allow for a shorter and low-cost exploration of deposits and reserves.

Provinces under the geological study are Bayan-Ulgii, Uvs, Khovd, Zavkhan, Govi-Altai, Bayankhongor, Uvurkhangai, Arkhangai, Khuvsgul, Bulgan, Dundgovi, and Umnugovi.

Source: The National Geological Office of Mongolia

The existing major gold mines are mainly discovered as a result of many years of exploration and geological study. For example, the Altan Tsagaan Ovoo project of Steppe Gold in Dornod Province, was first discovered 18 years ago. Erdene Resource Development carried out exploration in the areas of the Bayankhundii gold mine for 16 years. Tsagaan Tsakhir hard rock gold mine of Naran Mandal LLC was also discovered by an exploration conducted between 1950 and 1960.

4. Production & Export

Gold production

In Mongolia, there are several major gold mines in Tuv, Selenge, and Umnugovi provinces. Also depending on the locations of placer mines, gold production is mostly centered in Selenge, Tuv, Uvurkhangai, Bulgan, and Bayankhongor provinces.

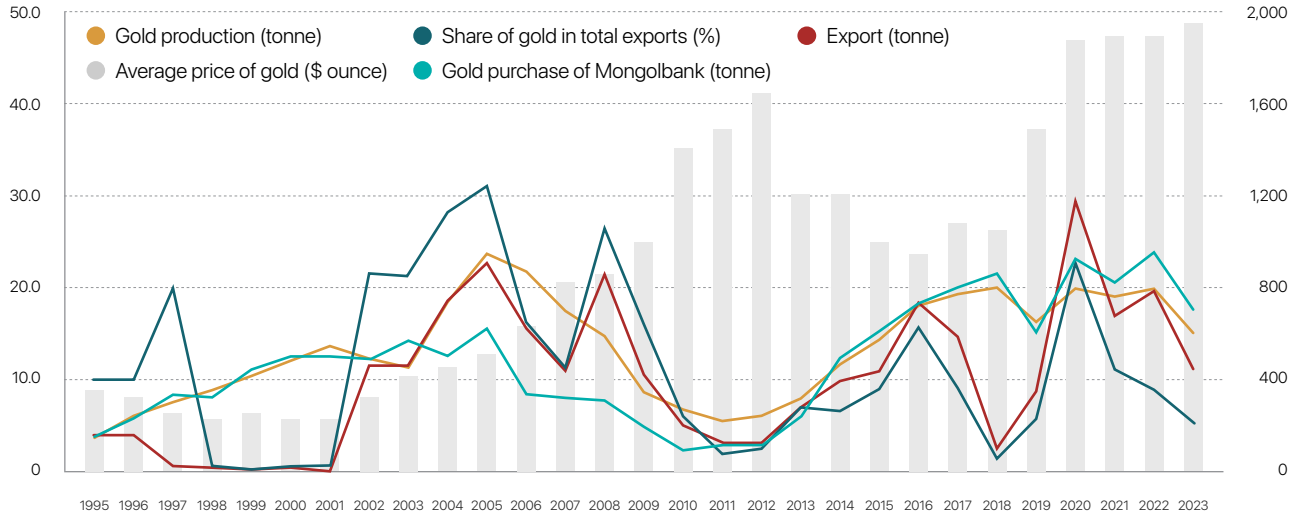
Mongolia's gold production shrank in 2007-2013 when the price of gold was high in the global market. The overall output, which was 17.5 tonnes in 2007, fell to a third of this amount in 2011 to 5.7 tonnes. This peculiar drop in production amid high prices was because of the unfavorable legal environment created by an enactment of a particular law in Mongolia, which also caused shrinkage in explorations.

Gold production then started to pick up in 2012-2013. Since the beginning of 2011, the Mongolian government has been paying special attention to create a favourable legal environment, especially in the gold sector. Also, the royalty rate, which was 10 percent, was lowered to 2.5 percent to incentivize miners to sell their gold to the central bank. These were significant supports that boosted gold output and the central bank's gold purchase.

Plus, the "Gold-2" program implemented in 2017 offered soft loans to gold miners and as a result, gold production started to pick up.

Figure 1.71

GOLD PRODUCTION, EXPORT AND CENTRAL BANK'S GOLD PURCHASE IN MONGOLIA



Source: NSO of Mongolia, Mongolbank, World gold council

In Mongolia, gold is one of the major export commodities and an important source for Central bank's accumulation of international reserves as well as for government budget revenue.

Gold purchase by the Bank of Mongolia

As stated in the Law on Minerals, gold mined within the territory of Mongolia must be sold to either the Bank of Mongolia or its partnering commercial banks. The central bank purchases gold at global market rates. The new gold testing laboratories in Darkhan-Uul and Bayankhongor provinces were also established which have improved the transparency of gold trades and increased turnover. Plus, the improved tax environment and the impact of "Gold" financing programs to support gold miners has made a positive impact on the gold sector.

Over the past decade, the Bank of Mongolia has acquired over 200 tonnes of gold, bolstering the country's foreign exchange reserves. In 2024, the Central Bank purchased 16.4 tonnes of gold, bringing foreign exchange reserves to $5.5 billion by year-end.

The Bank of Mongolia's annual gold purchases peaked at 23 tonnes in both 2020 and 2023, a 23-fold increase compared to the total gold purchased in 1990.

Figure 1.72

MONGOLBANK'S GOLD PURCHASE, REVENUE FROM GOLD, FX RESERVES, AND SHARE OF GOLD IN FX RESERVES

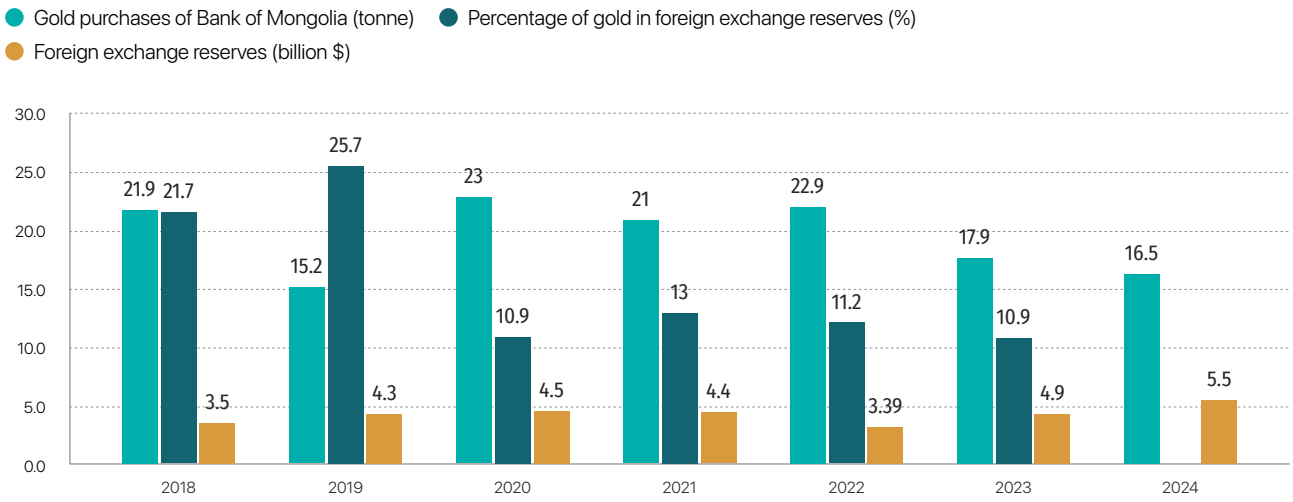
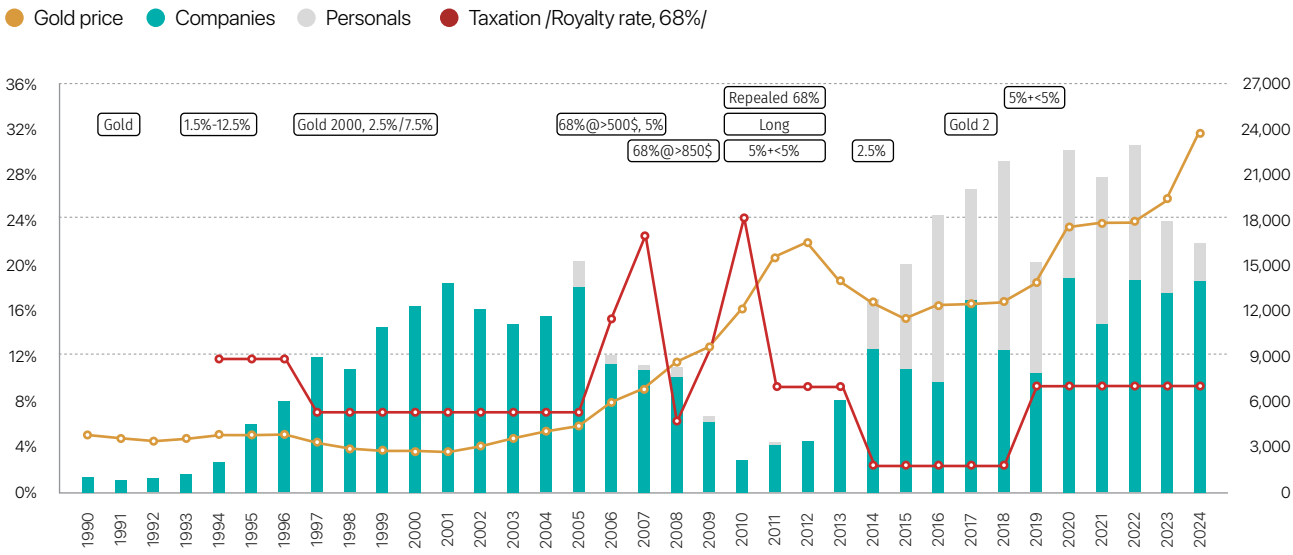


Figure 1.73

CENTRAL BANK'S GOLD PURCHASE, GOLD PRICE AND LEGISLATIVE CHANGES



Source: The Bank of Mongolia

- 1991: "Gold" program first launched
- 1994: Royalty rate is set at 1.5-12.5% in accordance with Minerals Law of Mongolia
- 1997: "Gold 2000" program launched
- 1997: Revised Mineral Law of Mongolia set royalty rate of hard rock mining at 2.5% and placer gold mining at 7.5%
- 2006: Revised Mineral Law of Mongolia set royalty rates at 5%
- 2006: Legalized tax rates of up to 68% in case price reaches $850 per ounce in accordance with Special Product Price Increase Tax Law
- 2008: Legalized tax rates of up to 68% in case price reaches $850 per ounce in accordance with Special Product Price Increase Tax Law
- 2009: Parliament passed the Law on the Prohibition of Minerals Exploration and Mining in Headwaters of Rivers, Protected Water Basins Zones and Forested Areas (the Long-named law)
- 2010: Revised Mineral Law of Mongolia legalized additional royalty rate of 5 % in case of price increase above $900 per ounce
- 2011: Repealed Special Product Price Increase Law (68%)
- 2014-2019: Royalty rates were kept at 2.5% in accordance with revised Mineral Law of Mongolia
- 2017: "Gold 2" program started
- 2019: Royalty rates increased to 5%, additional royalty set to 0%.

5. Gold exports

Mongolian gold is exported in two types of forms as pure gold and gold concentrate.

Mongolian gold export increased till 2008, and then dramatically dropped because of lower gold output as well as changes in policy and regulations in the sector. Even though the world gold price increased by 80% between 2008 and 2012, revenue of the gold export was significantly lower. The gold exports have rebounded since 2011 due to favorable changes in regulations and improvements in the world gold market.

According to the Economic Research Institute (ERI), Canada was the major destination of Mongolian gold during the period between 2010 and 2013. This is related to the fact that then Centerra Gold backed Boroo Gold LLC sends its production directly to refineries in Canada.

Mongolia's pure gold export reached its peak in 2020 alongside the spread of Covid-19 pandemic, exceeding 30 tonnes for the first time, and as a result, revenue from gold exports reached $1.7 billion. In terms of physical amount, exports increased by 28 percent compared to 2005 while the revenue jumped 439%.

Mongolia exports the majority of its gold to two countries. In 2023, 89.8 percent was exported to Switzerland, and 10.2 percent to South Korea. The share of gold earnings in total exports accounted for 4.9 percent in the same year.

Oyu Tolgoi is the main exporter of copper and gold concentrate whose main destination is China. It is indeed one of the largest copper-gold mine projects in the world and the company's gold sale in concentrates was 175,000 ounces in 2023.

6. Legal environment, policy framework, and regulatory agencies

Legal environment related to the gold industry

Mongolian government carried out several policy measures in the gold sector since 1990.
"Gold-1" financing program: Thanks to the investment attracted within the frames of "Gold-1" in 1992-2000, the annual gold output was increased from 0.7 tonne to 11.0 tonnes and several placer mines became operational, accumulating a significant amount of tax revenue and contribution to the sector development. In the beginning of 1990s, gold miners used to not take enough rehabilitation measures. In 1995-1997, certain actions, including environmental assessments and technical rehabilitation, were carried out by gold mining private entities.

In the early 1990s after the fall of the Soviet regime, the country faced the challenge of creating economic opportunities for its rural population and urban unemployed. It led to an increase in the number of artisanal miners which were later estimated to be around 100,000 full time and part time artisanal and small-scale miners in Mongolia. They became more widespread in gold placer mines in Sharyn Gol, Zaamar and Bayankhongor. The artisanal miners generally used mercury and occasionally cyanide for gold extraction without understanding the risks for their own health and the natural environment.

"Gold-2000" program: The development of the gold industry reached a new level in 2000-2010 and the annual output at the national level hit 24.1 tonnes, of which over 40 percent were mined from hard rock deposits. However, gold mining operations significantly declined later in the decade due to the enactment of "Windfall Tax on Some Products". The purpose of this law was to impose a tax on the additional income generated from increased prices of some minerals, including gold.

"Gold-2 program": The program was approved in 2017 to support the foreign exchange reserves of the Bank of Mongolia, and as a result the bank purchased 18.6 tonnes of precious metal in 2016, 20 tonnes in 2017, 21.9 tonnes in 2018, 15.2 tonnes in 2019, and a historic amount of 23.6 tonnes in 2020, amassing about $900 million to the foreign exchange reserves.

"State policy on mineral resources sector": The policy framework was approved by the Mongolian Parliament in 2014 and serves as the basis for developing the gold industry, and related laws and regulations.

2014 amendments to the Law on Minerals had a positive impact on the gold purchase of the Bank of Mongolia. The approval of the Law on Repealing the Law on Windfall Tax on Some Products in 2011 and the 2014 amendments to the Law on Minerals, which reduced the royalty on

gold from 10 percent to 2.5 percent, helped create transparency on gold trades and had a positive impact on gold purchase and exports. The Law on Minerals was amended once again in 2019 to set the royalty on gold up to 5 percent. The increase in tax did not reduce overall turnover.

Furthermore, 30 percent of revenue from royalties and 50 percent of fee income from exploration and mining licenses are now allocated to the local budget. This was an important step in promoting cooperation between gold miners and the local community.

Regulative agencies in the gold industry

The Ministry of Industry and Mineral Resources is the central body of the state in charge of policymaking, monitoring, and coordination of stakeholders in the mining sector.

The Mineral Resource and Petroleum Authority of Mongolia is an implementing agency under the Ministry of Industry and Mineral Resources. The agency develops mining policies, provides support on policy enforcement, collects information and data regarding gold mining activities, implements policy guidance, and offers licensing services.

Mongolbank - the Bank of Mongolia or the central bank manages the purchase, sale, storage, and refining of gold in accordance with the Treasury Law. Private entities and artisanal miners engaged in gold mining activities, as well as third-party intermediaries, are obliged to sell their gold to the central bank or its partnering commercial banks as specified in the Treasury Law. The purchasing price of the Bank of Mongolia shall be referenced from the London Metal Exchange.

Moreover, the Bank of Mongolia has the right to store gold on its own or in other foreign correspondent banks. It is also the only legal entity with the right to export gold in Mongolia.

The Bank of Mongolia makes gold payments based on the results of the analysis of gold and silver content in molten gold in the Precious Metals Laboratory of the Probation Inspection Agency and deducts 5 percent royalty under the seller's identification and transfers it to the General Department of Taxation.

With an aim to boost the implementation of the Gold-2 program, the Bank of Mongolia is providing long-term down payments and financing to gold mining companies that can be repaid in gold. The financing is offered in two forms. First, a short-term working capital financing of up to 6 months. Second, an investment financing of up to 24 months.

Agency for Standardization and Metrology - The Assay Office is responsible for the identification, quality control, registration, and monitoring of gold samples.

7. The opportunity of developing a gold refinery

The gold mined and processed in Mongolia has an average grade of 90 percent, which needs to be purified to 99.99 percent to be sold on the international market.

The country has been refining its gold in other countries, such as Russia, the United Kingdom, and Japan. As the production of gold increases and several new hard rock and placer mine projects are becoming operational, the government views that a domestic gold refinery is needed.

About 2 percent of gold is either lost or goes to waste when refining in other countries and the estimation of other metal contents, such as silver and platinum, gets complicated according to the "Gold 2025 Program Baseline Study Report" published in 2015. Furthermore, transportation, insurance, and protection costs and duration of refining gold are higher abroad and highly complex.

It is impossible to export, pledge, and trade gold that is not purified under the world standard of pure gold in a refinery guaranteed by the London Metal Exchange's certification.

Regardless, the country had a plan of building its own gold refinery for some time.

The Government's 2024-2028 plan includes the initiation of establishing a gold refining plant. The project is expected to refine 70% of the gold that is currently refined and monetized at foreign refineries domestically once implemented. This will reduce costs related to transportation, insurance, and security. Additionally, the project will increase the proportion of processed gold, allowing it to be sold on the international market, thereby boosting foreign exchange earnings.

7.4

IRON ORE

Highlights

The central region of Mongolia has vast resources of iron ore. Iron ore exports have been steadily increasing since 2008 and have surged significantly since 2012. Prior to the Covid-19 pandemic in 2019, Mongolia's total exports of iron ore reached historic high of 8.5 million tonnes.

Reserve & exploration

There is 1.77 bn tonnes of total confirmed reserve of iron ore and 5.5 bn tonnes of unconfirmed resources in Mongolia. In total, 63 deposits are registered, with 6 deposits having more than 50 million tonnes of ore. Mining of iron ore commenced in 2005. The majority of discovered reserves of iron ore in Mongolia is located near the Selenge and Darkhan provinces, considered as the industrial center of Mongolia.

Mongolia's iron ore products are mainly low grade. Since 2011, an average of 6 million tonnes of iron ore is exported to China annually. In the last 17 years, Mongolia has exported a total of 91 million tonnes of iron ore, generating revenue of MNT 6.6 billion. Tumurtei, Tsakhiurt-Ovoo, Tayannuur, and Ereen were included in the category of deposits with over 50 million tonnes of iron ore reserves. At the end of 2024, there are 82 valid iron ore mining licenses accounting for total area of 50,693 hectares.

Table 1.8

MONGOLIAN MAJOR IRON ORE RESERVES (IN MILLION TONNES)

Deposits	Crude ore (mt)	Owner	Details
Bayantsogt	249	Haranga Resources	The mine is located in Eruu soum, Selenge province. Average grade is 16.5% of iron.
Tumurtei	230	Darkhan Metalurgical Plant, 100%	The open pit mine is located in Khuder soum, Selenge province and 90 km from the main railroad. Ore grade is 50-51.6%. The mine is only strategic, iron ore deposit by Mineral Law of Mongolia. Started its operation in 2011.
Bayangol	174	Bold Tumur Eruu Gol LLC, 100%	This open pit mine is located in Eruu soum, Selenge province and has own rail facilities directly conneted to the main railroad. Ore grade is 49.6%. Started its operation in 2007.
Tayannuur	101	Altain Khuder LLC, 100%	The open pit mine is located in Tseel soum, Govi-Altai province and is 168km from the border of China. In 2008, Altain Khuder LLC signed a long-term supply contract with Bayi Steel, a Chinese subsidiary company of Baosteel, and has been shipping iron ore concentrate since 2009. (www.altainkhuder.mn)
Tumurtolgoi	25	Darkhan Metalurgical Plant, 100%	This open pit mine is located in Khongor soum, Darkhan province and is 28km from Darkhan Metalurgical Plant and 20km from main railroad. Started its operation in 2009. Ore grade is 57.2% (www.dmp.mn)

Source: Economic Research Institute, Mongolian Mining Journal (2014)

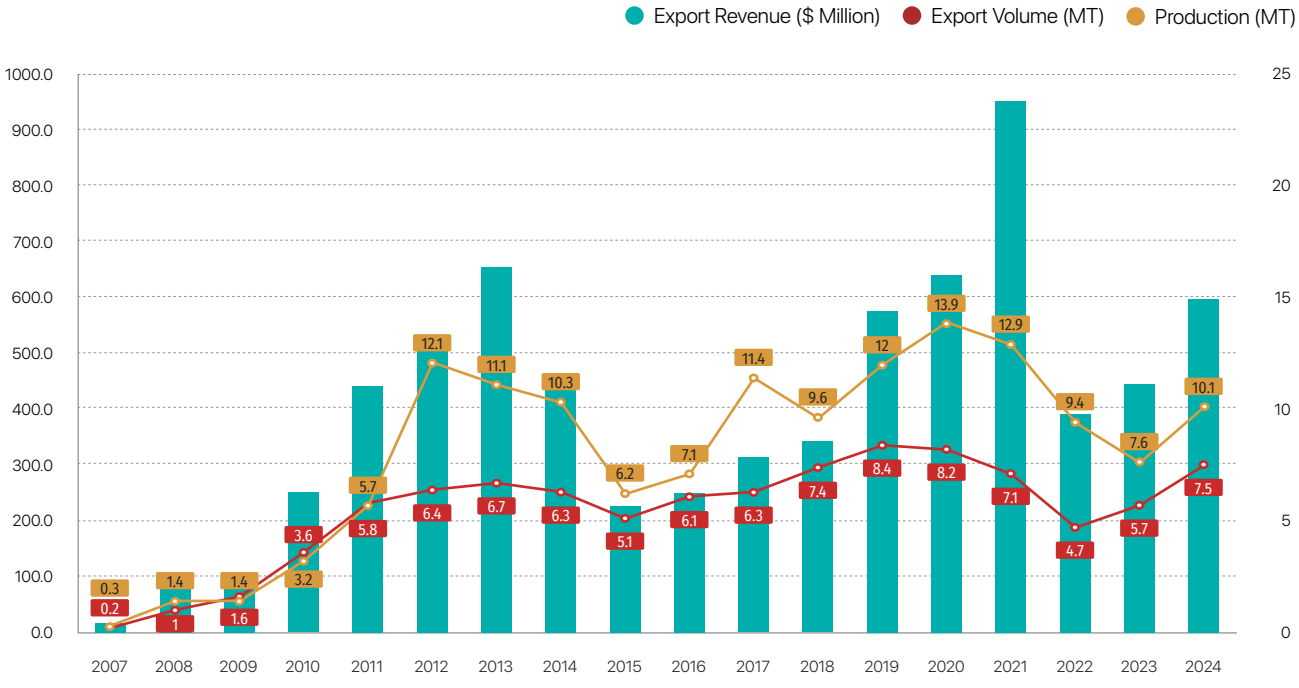
Production & exports

Mining activities and exports of iron ore picked up in 2008 and have been consistent ever since. In 2021, iron ore export accounted for 10% of total minerals export.

In 2024, iron ore exports accounted for 3.8% of total exports, reaching 7.5 million tonnes, which is a 31.5% increase compared to the previous year, while export revenue reached $601 million, marking a 35.8% increase compared to the previous year.In terms of annual production, a total of 10.1 million tonnes of iron ore and concentrates were produced, reflecting a 32% rise compared to the previous year.

Figure 1.74

IRON ORE PRODUCTION, EXPORT VOLUME AND REVENUE, 2007-2024



Source: The NSO of Mongolia

Infrastructure

Mongolian iron ore is shipped mainly by rail due to the fact that local road transportation tariffs are higher than railroad tariffs. However, most of the iron ore deposits are small and far from the main railroad. So, building railroads for all of these deposits is not financially viable (MRPAM, 2016).

The major iron ore reserves in Northern Mongolia are connected to the main railroad and iron concentrates are shipped to Chinese steel mills directly via rail. However, Ulaanbaatar Railway holds a monopoly in Mongolia and charges relatively high tariffs on iron shipments. In order to mitigate these costs, there have been several instances where mining companies constructed self-financed railroads.

As a case in point, Bold Tumur Eruu Gol, the largest iron ore mining company, has built an 85km stretch of railway line between its mine in the Eruu district of Selenge province to Ulaanbaatar Railways (ADB, 2014). In total, the distance between the mine and the Chinese border is 1,100 km and it leads to a cost of $17 per tonne only for domestic transportation (Source: Economic Research Institute). Currently, most iron ore mines export to Baotou which is one of the major steel-producing regions of China through the Sainshand - Zamiinuud - Erlian - Baotou route.

The Government of Mongolia completed the development of the 227 km Zuunbayan-Khangi railroad project in 2022, with operations commencing in 2024. This new route will serve as a key export corridor for iron ore and coal, cutting the distance by 318 km compared to the current export route. The railway is expected to drive significant economic growth by reducing transportation costs by $4-8 per tonne and increasing the export volume of mining products by 20-25 million tonnes annually. The cost savings are anticipated to create more competitive pricing for Mongolian iron ore, positioning it favorably against Chinese and Australian producers.

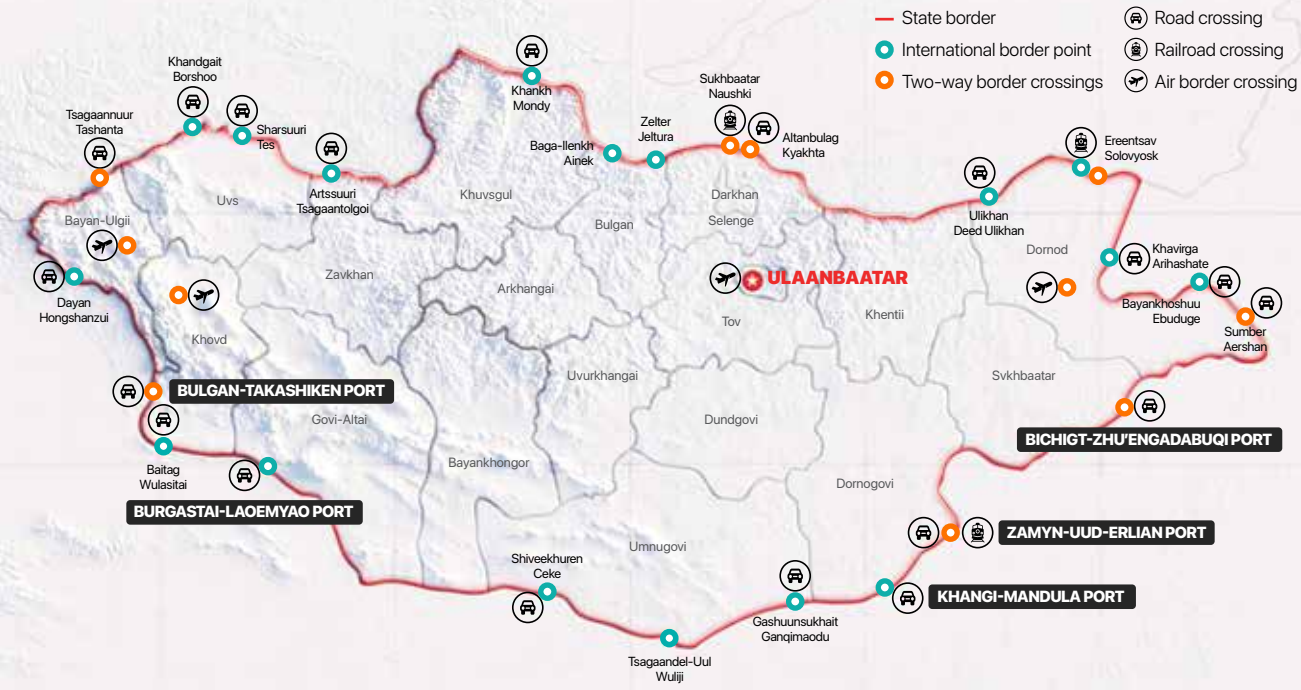
Figure 1.75

MAIN IRON PROJECTS, THEIR GEOGRAPHICAL DISTRIBUTION AND PROJECTED CAPACITY IN 2013

Source: Economic Research Institute, 2014

Figure 1.76

IRON ORE EXPORT PORTS



Source: General Authority for Border Protection of Mongolia

Market

External market:

China imported 1.24 billion tonnes of iron ore in 2024, an increase of 5% on 2023's 1.18bn tonnes, which was a record-breaking year in itself. Although Mongolia's iron ore reserves are not as significant compared to major exporters, its geographical proximity to the biggest consumer China is a considerable advantage.

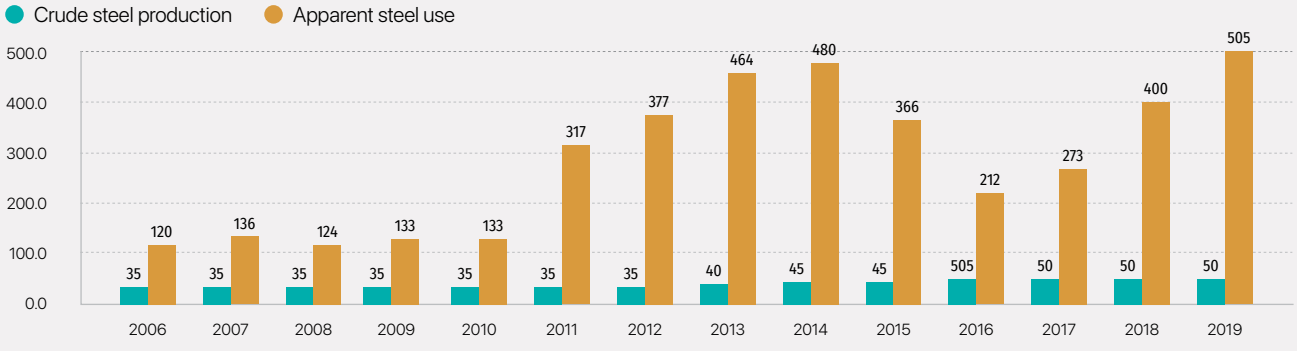
Domestic market:

Currently, Mongolia's steel production is lower than its consumption. The largest steelmaker is Darkhan Metallurgical Plant which uses local steel scraps for its steel production. Its capacity is 100,000 tonnes a year, but capacity usage is only 50-60%.

The Government of Mongolia's 2024-2028 Action Plan includes the commissioning of a Steel Complex. By implementing this project, the goal is to fully meet the growing domestic demand for steel reinforcement and other steel products, producing 1.0 million tonnes of steel billets and products. Additionally, the steel plant will be established, with the first phase producing 500,000 tonnes of pig iron and 500,000 tonnes of steel billets. From these billets, steel products such as rebar, angle iron, and wire will be manufactured, fully satisfying the domestic demand for construction reinforcement.

Figure 1.77

MONGOLIA'S STEEL PRODUCTION AND USE, THOUSAND TONNES



Source: World Steel Association,

7.5

OIL

Highlights:

Exploration & reserves

Mongolia's oil industry goes back over 80 years.

American geologists first surveyed the Gobi region and speculated oil reserves in the 1930s. Since then, Mongolian, and Russian geologists have conducted numerous large-scale surveys and have discovered several reserves.

In 1940, Mongolian geologist J. Dugersuren and Soviet geologist Y.S. Zhelubovsky, leading the 17th team of the Eastern Expedition, conducted exploration in the Zuunbayan Basin and made the first oil discovery in Mongolia.

Over the following decade, more than 100 promising structures were identified and evaluated in Nyalga, Dornogovi, Choibalsan, Umnugovi, and the Tamsag Basin, leading to the discovery of the Zuunbayan and Tsagaan Els oilfields.

Based on these two fields, the Zuunbayan oil refinery was built and commissioned in 1949. Between 1950 and 1969, over 500,000 tonnes of crude oil were extracted and refined, supplying a significant portion of the country's fuel and petroleum needs.

In the early 1990s, oil exploration projects resumed in Mongolia. The Petroleum Law of Mongolia was put into effect in 1991. Petroleum exploration and production in Mongolia are performed solely under Production Sharing Contracts (PSC) signed over each petroleum block between the investor and the Government of Mongolia.

The first Production Sharing Contract was signed in 1993. Four years later, exploration work on Block XIX identified the country's first free flowing oil. Soon after, oil production and exports to China was commenced.

Ever since then, Mongolia has identified 39 petroleum exploration blocks in total. Among these, 4 blocks are under oil production and extraction, 9 blocks are under oil exploration, and 6 blocks are designated for unconventional oil exploration, including coalbed methane gas. These projects are carried out under Production Sharing Contracts granted by the Government of Mongolia.

Over the past 30 years, a total of $4.6 billion has been invested in oil exploration and survey. As a result, Mongolia has confirmed 332.64 million tonnes of proven oil reserves and 43.3 million tonnes of recoverable reserves, officially registered in the National Mineral Resource Database. Between 1996 and 2023, a total of 10.4 million tonnes of crude oil was extracted from the Toson-Uul, Tamsag, Zuunbayan, and Tsagaan Els oilfields and exported. Revenue from oil exports under the Production Sharing Contracts contributed approximately MNT 2.5 trillion to the state budget.

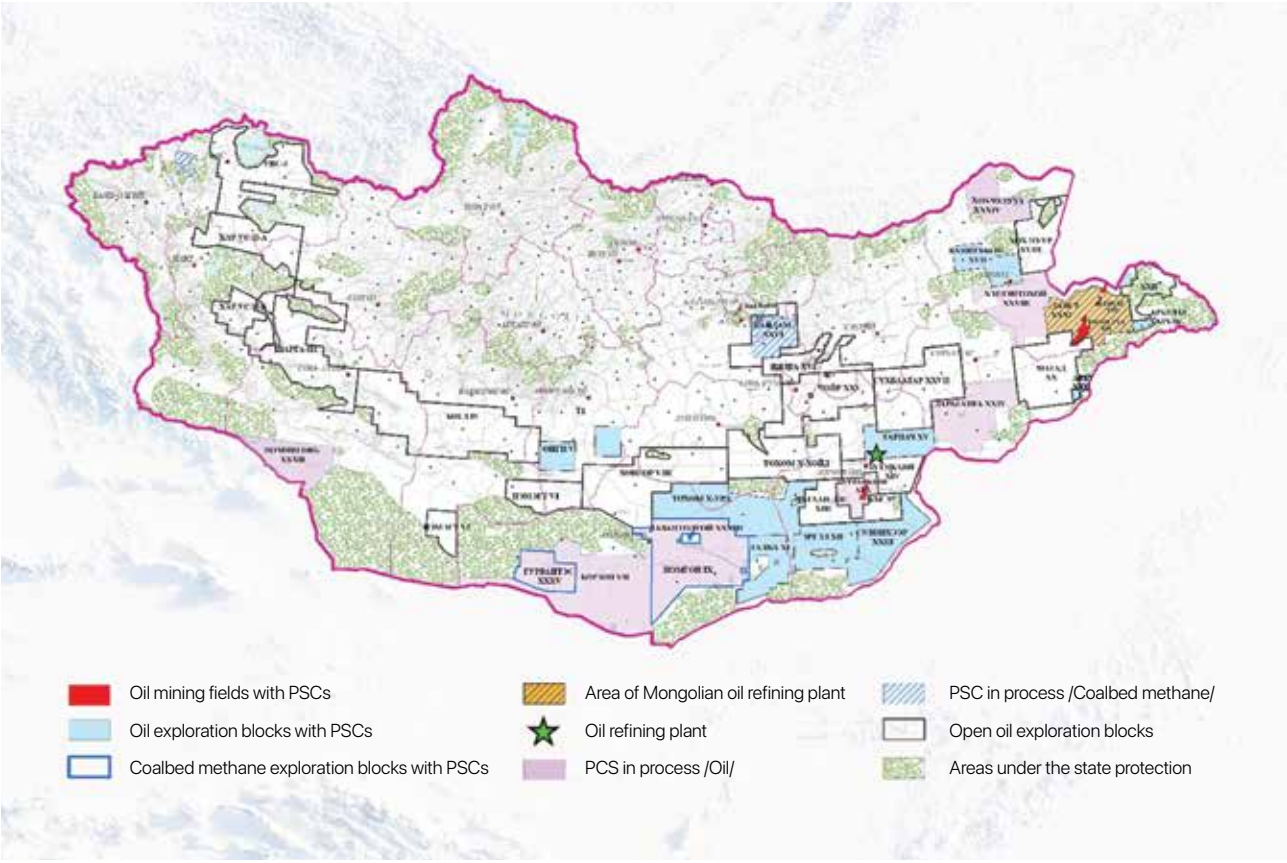
Petroleum exploration and production in Mongolia are performed solely under Production Sharing Contracts (PSC) signed over each petroleum block between the investor and the Government of Mongolia.

As of 2024, out of the 34 petroluem fields, 4 fields are advanced to production, while exploration is being conducted on 9 fields.

In terms of unconventional petroleum exploration, the Government has PSCs and exploration contracts in place for 6 fields (coalbed methanes).

Figure 1.78

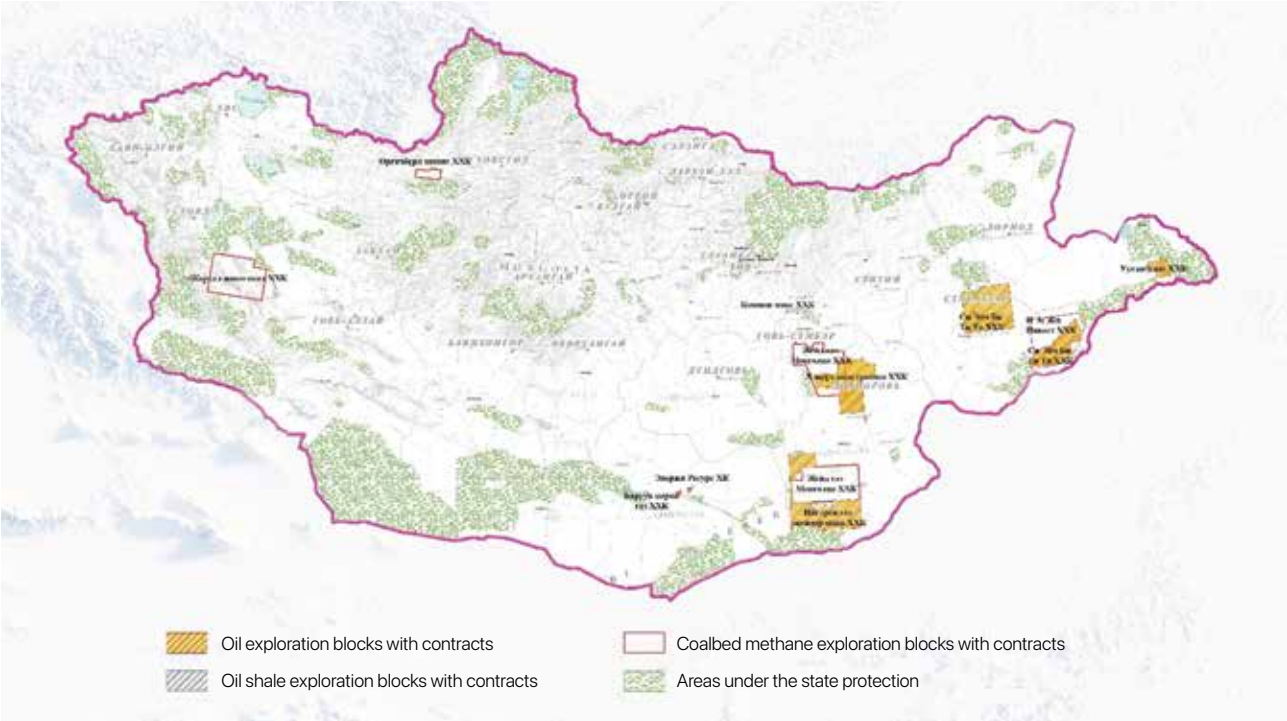
LOCATION OF OIL AND UNCONVENTIONAL OIL FIELDS



Source: MRPAM

Figure 1.79

LOCATION OF OIL AND UNCONVENTIONAL OIL EXPLORATION FIELDS WITH CONTRACTS



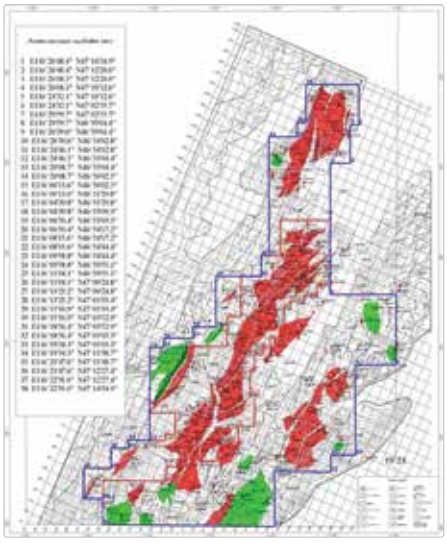
Source: MRPAM

Production & Export

PetroChina Daqing Tamsag currently accounts for more than 95% of total oil production & exports and Dongsheng Oil around 5%. PetroChina Daqing Tamsag exports to Chinese refineries by truck via the Bayankhoshuu border point, while the Dongsheng Petroleum Mongol Company exports by rail. In addition, Mongolian government granted Petro Matad Limited a 25-year exploitation license for Field XX in Eastern Mongolia in 2021 and the company commenced its production in 2024. It was also reported that in 2025, the oil exploration of Field XX was fully transferred to the state's special use. The company stated that this marks the first oil exploration and production field in Mongolia to be designated as a special purpose zone.

Figure 1.80

KEY INDICATORS OF TOSON-UUL OIL FIELD (AS OF 2021)

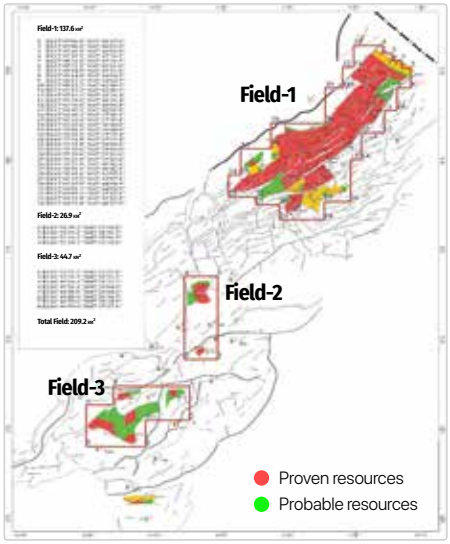


Toson-Uul
Location: Matad soum, Dornod province
Contractor: PetroChina Daqing Tamsag (Mongolia) LLC
Effective date: 1993
Extraction area: 650 square km (8.4% of exploration area)
Number of wells drilled: 982
Oil extraction wells: 491
Oil extraction per day: 1,115 tonnes
Oil: 836 kg/m3, 0.1% of sulfur, 5.75 mPa.s

Source: MRPAM

Figure 1.81

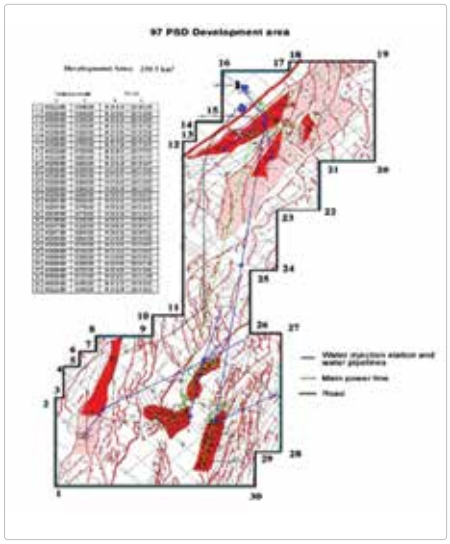
KEY INDICATORS OF TAMSAG OIL FIELD (AS OF 2021)



Tamsag oil field
Location: Khalkha Gol soum, Dornod province
Contractor: PetroChina Daqing Tamsag (Mongolia) LLC
Effective date: 1995
Extraction area: 209.2 square km (2.1% of exploration area)
Number of wells drilled: 589
Oil extraction wells: 311
Oil extraction per day: 1,242 tonnes
Oil: 875 kg/m3, 0.17% of sulfur, 18.9 mPa.s

Figure 1.82

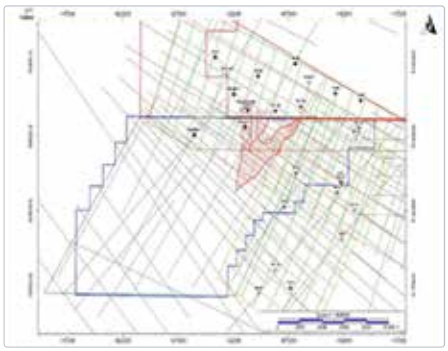
KEY INDICATORS OF ZUUNBAYAN, TSAGAAN-ELS OIL FIELDS (AS OF 2021)



Oil fields of Tsagaan Els, Zuunbayan
Location: Zuunbayan bagh, Sainshand soum, Dornogovi province
Contractor: Dongsheng Petroleum Mongolia LLC
Effective date: 1997
Extraction area: 239.5 square km (4.5% of exploration area)
Number of wells drilled: 131
Oil extraction wells: 102
Oil extraction per day: 134 tonnes
Oil: 878 kg/m3, 0.1% of sulfur, 29.6 mPa.s

Figure 1.83

KEY INDICATORS OF HERON OIL FIELD (AS OF 2021)

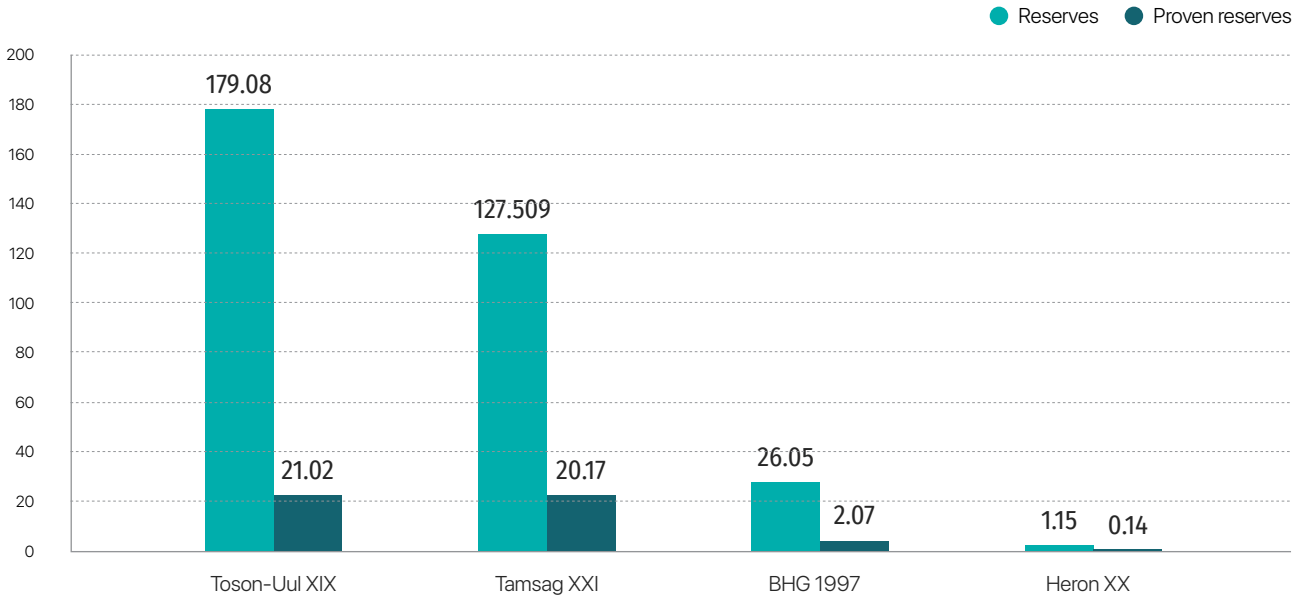


Heron field (Tsen Togoruu)
Location: Matad soum, Dornod
Contractor: Petro Matad LLC
Effective date: 1993
Extraction area: 218 square km (1.2% of exploration area)
Number of wells drilled: 8
Oil extraction wells: Haven't started yet.
Oil: 807 kg/m3, 0.03% of sulfur, 27.2 mPa.s

Source: MRPAM

Figure 1.84

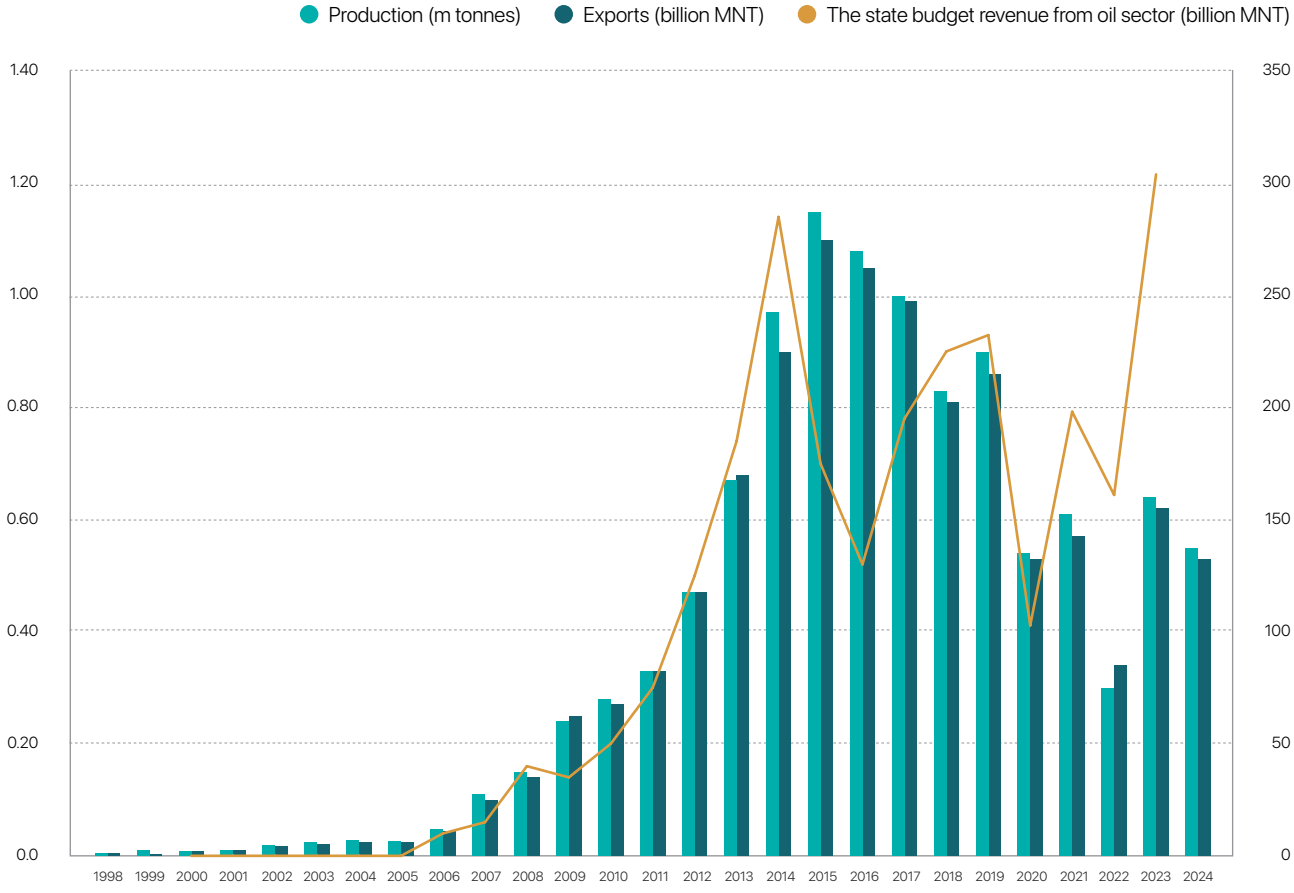
RESERVES OF OIL FIELDS IN MONGOLIA (IN MILLION TONNES)



Source: MRPAM

Figure 1.85

OIL PRODUCTION, EXPORTS AND BUDGET REVENUE FROM OIL SECTOR

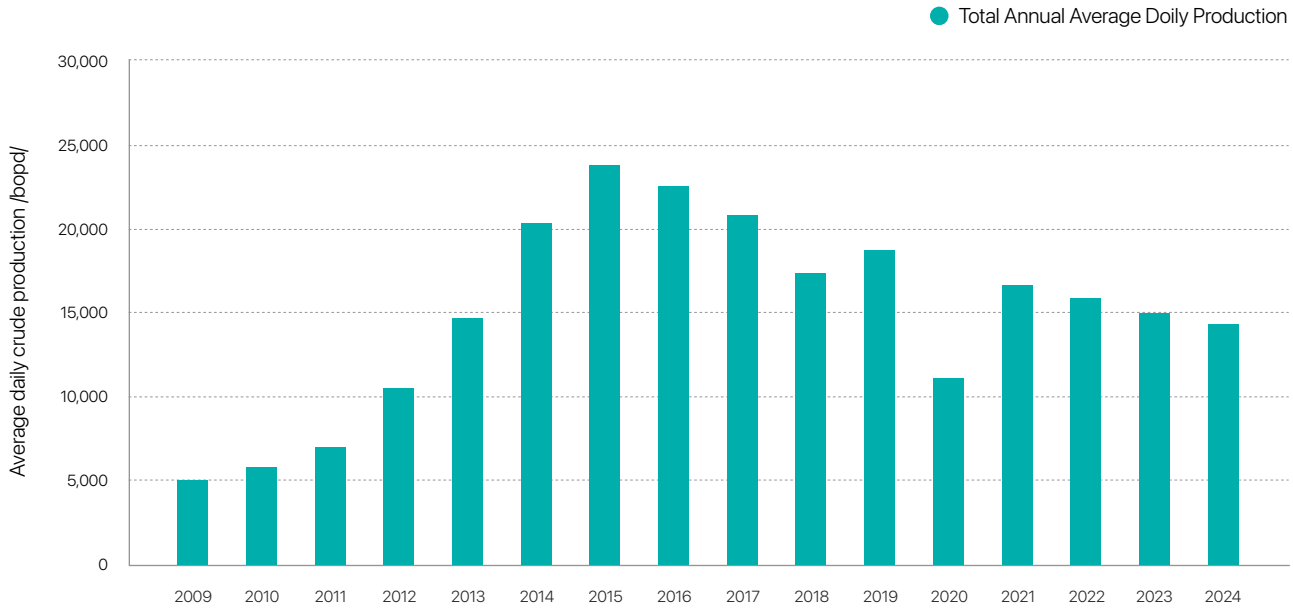


Source: MRPAM

Mongolia produced a total of 85 million barrels, or 11.16 million tonnes of oil, and exported 81.5 million barrels, or 10.71 million tonnes of oil to China in 1996-2024, generating MNT 2.4 trillion /as of Q1 of 2024/ to the state budget from oil. The government fully supports domestic oil industry.

Figure 1.86

DAILY CRUDE PRODUCTION OF MONGOLIA

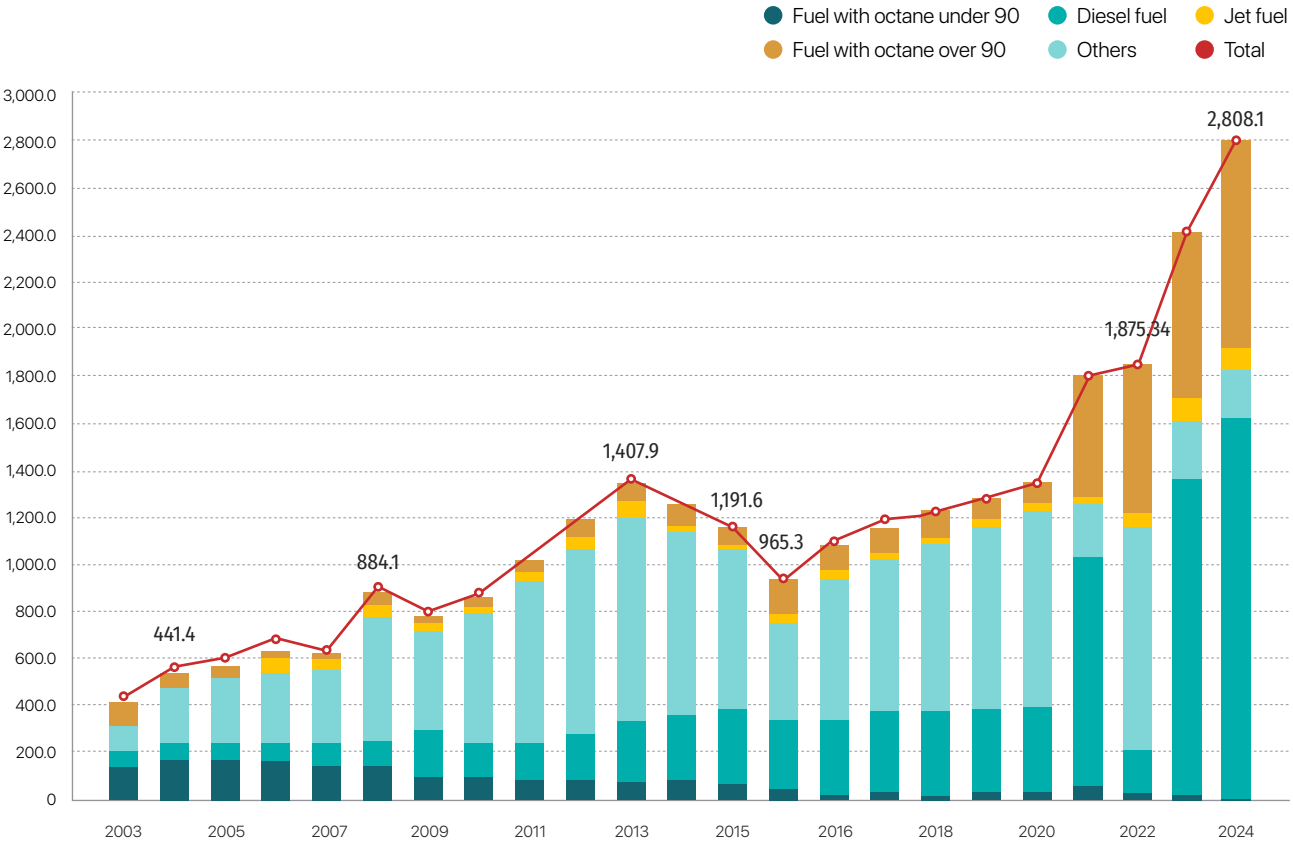


Mongolia's petroleum consumption and imports

Mongolia's fuel consumption is fully reliant on imports, with an average of two million tonnes of oil products are imported annually. This number has increased to 2.7 million tonnes in 2024. More than 90% is imported by Russia's state-owned Rosneft and the rest from China and South Korea.

Figure 1.87

FUEL IMPORT OF MONGOLIA (IN THOUSAND TONNES)



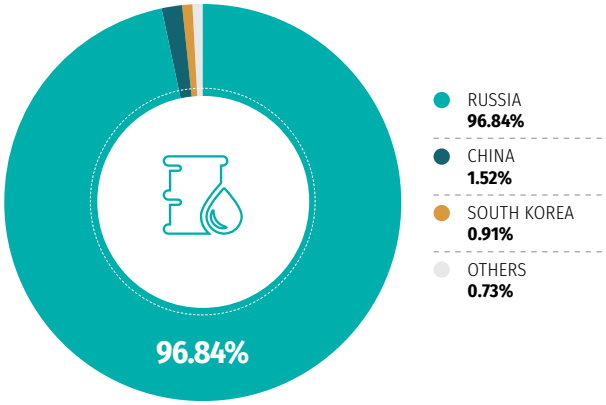
Source: MRPAM

Imports of gasoline and diesel fuel jumped 10% between 2006 and 2013. But the dimnishing economic activity lowered the overall imports of gasoline in recent years.

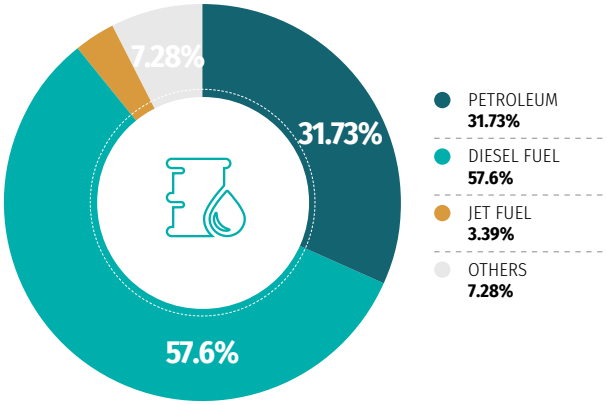
Figure 1.88

PETROLEUM PRODUCTS IMPORT BY COUNTRY AND TYPE

Petroleum-based imports, by country: 2024



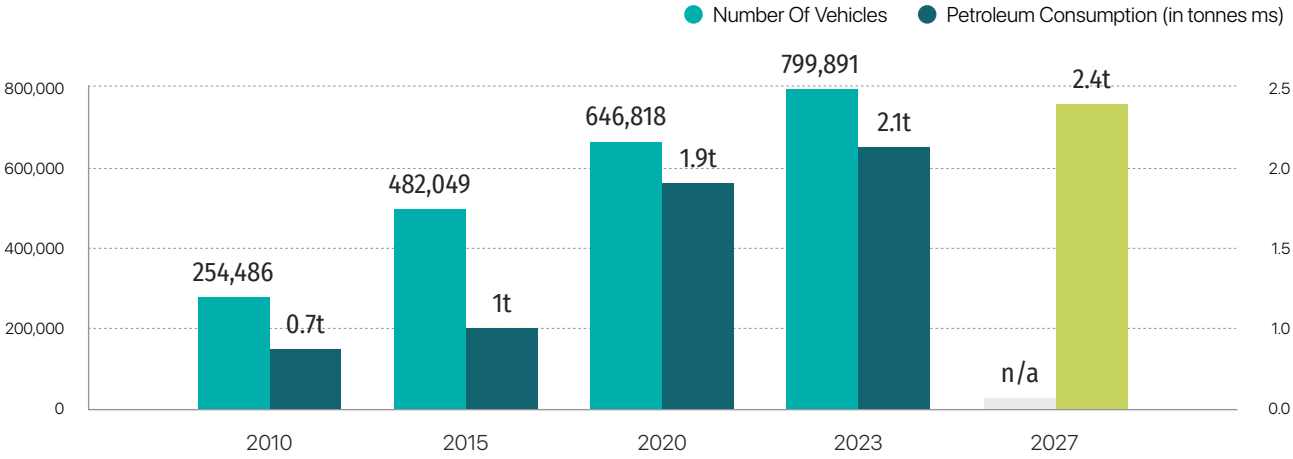
Petroleum-based imports, by type: 2024



In terms of grade, the imports of A-80 fuel shrank over years, while A-92 fuel import increased consistently. However, a growth scenario is highly likely for diesel fuels with the expansion of the mining sector in Mongolia.

Figure 1.89

MONGOLIA'S PETROLEUM CONSUMPTION AND VEHICLE NUMBERS



Petroleum products are imported on a monthly basis, based on the average of the previous month's price on the Singapore Commodity Exchange. A total of 78 importers petroleum products locally. Nationwide, fuel is sold through a network of 106 warehouses owned by petroleum companies, over 1,419 gas-fueling stations, 10 liquefied gas storage facilities, and 78 natural gas vehicle filling stations.

Oil refinery project

The $1.24 billion Oil Refinery Project, funded by a soft loan from the Export and Import Bank of India, was approved in 2018. Unlike Oyu Tolgoi, which is managed by Rio Tinto, the Oil Refinery is a government-led project. Planned in four phases of construction, the project faced delays and increased costs due to the Covid pandemic. Originally set for completion in 2024, the first phase remains unfinished, the loan repayment period began and financing for the remaining phases has stalled. The project now requires additional funding and is expected to be completed by 2027. Once operational, it will process 1.5 million tonnes of oil, meeting 55% of Mongolia's domestic needs.

Details:

Annual capacity: 1.5 million tonnes of oil production
Location: Altanshiree soum, Dornogovi province
Raw oil sources: Toson Uul XIX and Tamsag XXI
Quality of petroleum production: MNS and Euro V
Annual operating hours: 8,000 hours
Power source: 35 MW power station.

Laws and regulations

Matters pertaining to petroleum and unconventional petroleum prospecting, exploration, and exploitation within the territory of Mongolia are regulated by the Petroleum Law of Mongolia.

The Petroleum Law of Mongolia was adopted in 1991. The law was revised in 2014 providing clear and transparent legal environment and creating more favorable conditions for investors. The law regulates the operations of Mongolian and foreign entities or individuals on exploration, production, transportation, storage, and marketing of oil in Mongolia.

The MRPAM is the government agency overseeing the implementation of the law and relevant regulations.

The term "oil exploration" refers to geological, geochemical, geophysical, drilling, and extraction testing work to be performed for the purpose of oilfield discovery and establishing oil reserves. "Exploitation" refers to development and extraction operations for exploiting a petroleum and unconventional petroleum deposit.

Petroleum exploration and production in Mongolia are performed solely under Production Sharing Contracts (PSC) signed over each petroleum block between the investor and the Government of Mongolia.

7.6

FLUORSPAR

Highlights

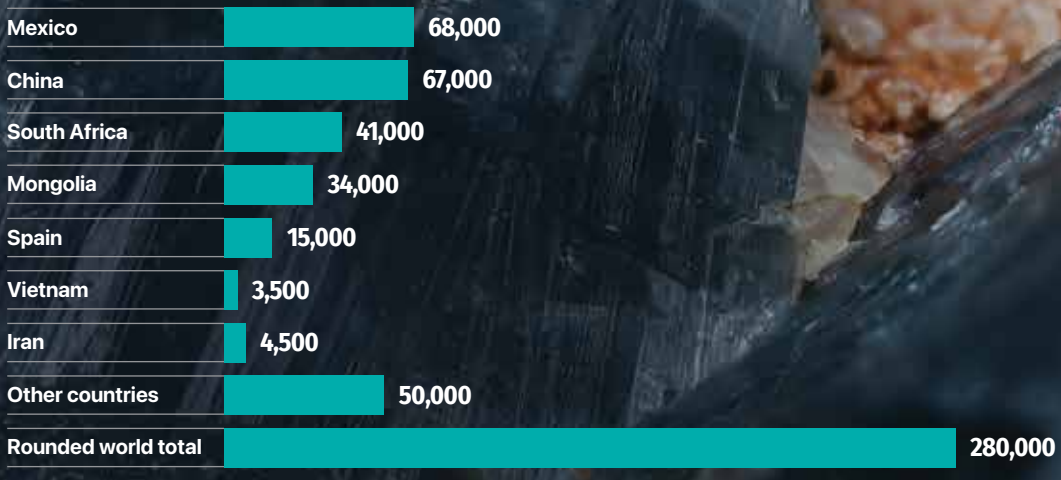
Mongolia is the third biggest producer of fluorspar in the world after China and Mexico, and fourth in the world with its fluorspar reserves. In addition to neighboring China being one of the largest producers, it also purchases fluorspar from Mongolia.

Reserve & Exploration

Figure 1.90

GLOBAL FLUORSPAR RESERVES IN 2023, BY COUNTRY

(in 1,000 metric tonnes)

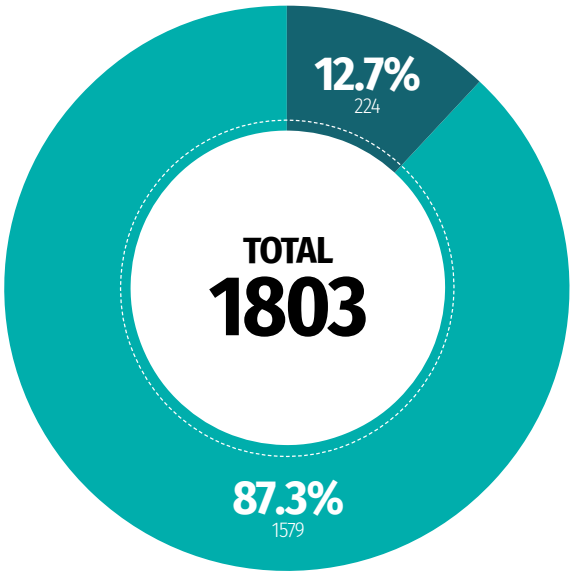


Source: U.S. Geological Survey Publications Warehouse

At the end of 2024, Mongolia has 224 valid fluorspar mining licenses, which accounts for 12.7% of total mining licenses issued and 3.3% of the total area licensed for exploitation.

Figure 1.91

NUMBER OF VALID FLUORSPAR MINING LICENSES (AS OF 2024)



There is a a total of 163 deposits and 545 points of mineral discovery located in Mongolia, with 48.3 million tonnes of mineral reserves in 122 million tonnes of ore.

According to the Mongolian Fluorspar Association *"exploration has not been carried out at a depth of 100 to 200 meters, and if exploration and research expand in this area, it is possible to increase estimated reserves."*

FLUORSPAR - **12.7%** 224

OTHER - **87.3%** 1579

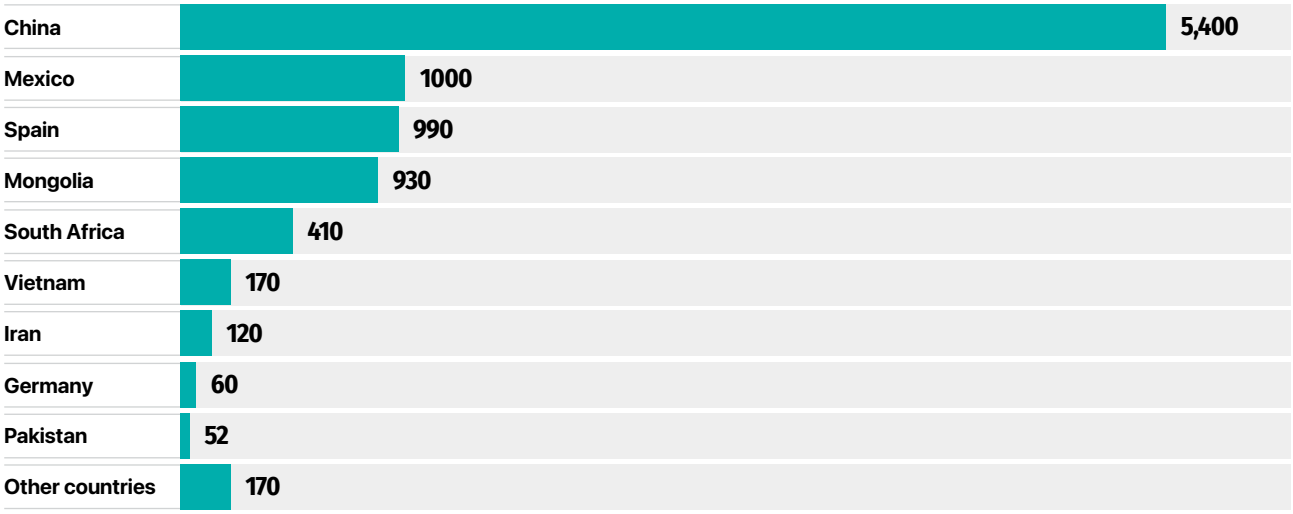
Source: MRPAM

Production & export

Figure 1.92

GLOBAL FLUORSPAR MINE PRODUCTION IN 2023, BY COUNTRY

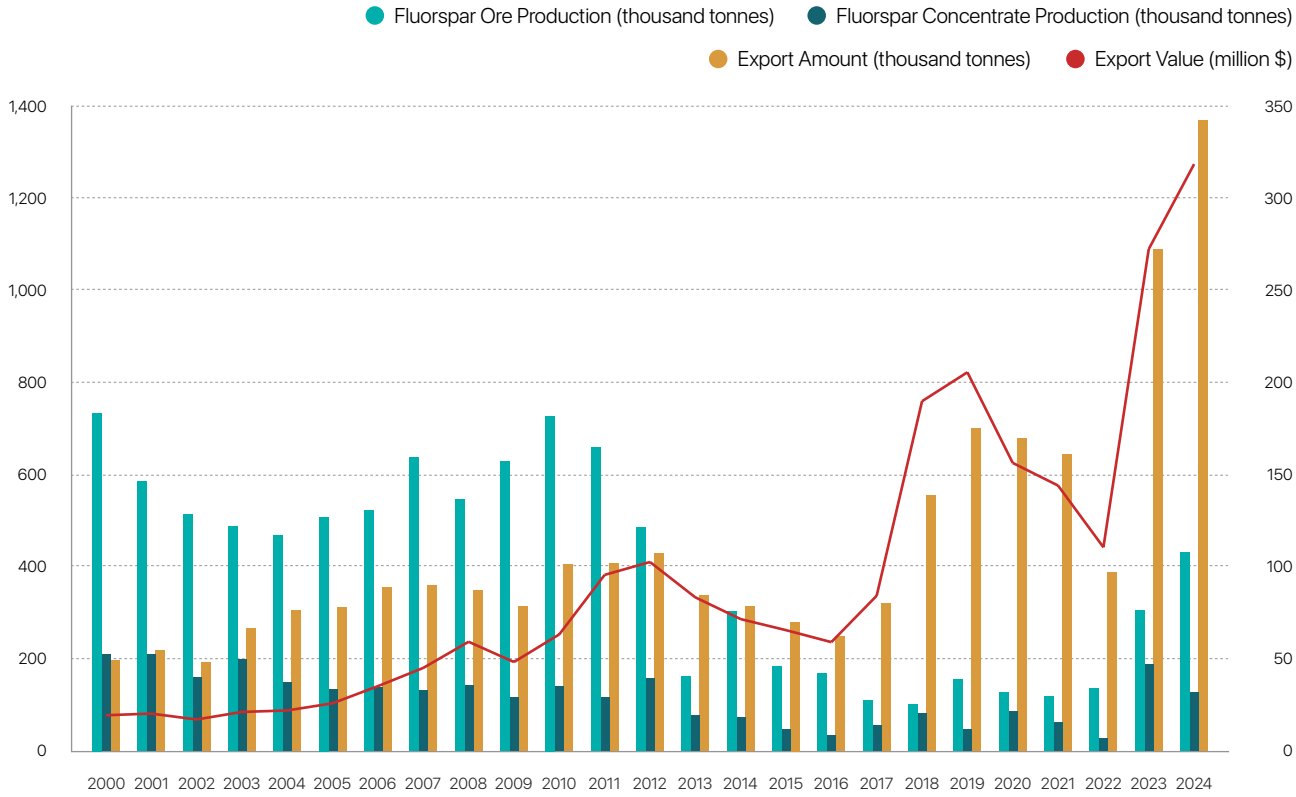
(in 1,000 metric tonnes)



Global production of fluorspar in 2018 reached 6m tonnes, of which 9.3% was produced in Mongolia. In 2023, Mongolia produced more than 10.5% of the world's total production of 8.8m tonnes. In 2024, 1.2 million tonnes of fluorspar were exported to China, making up 90% of total fluorspar exports. Notably, the export value reached a record high of $318.5 million. Export to China first started in 2002. According to statistics, fluorspar production and exports declined between 2010 and 2015, but have steadily recovered since 2016, with exports reaching a historical high of 1.37 million tonnes in 2024.

Figure 1.93

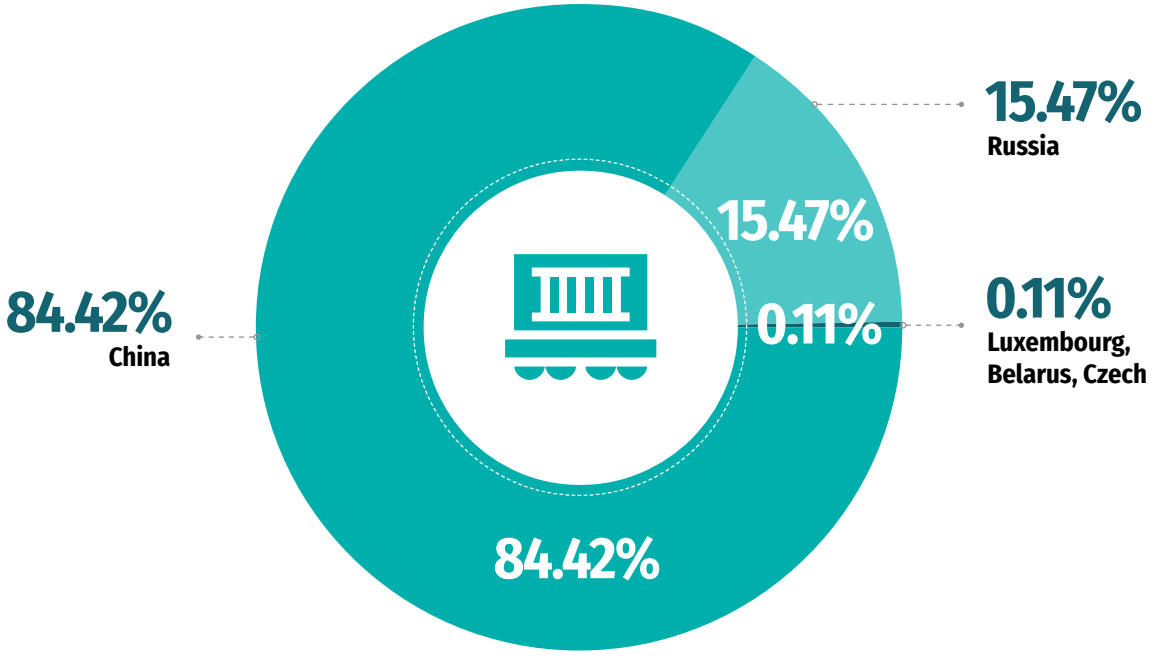
FLUORSPAR PRODUCTION AND EXPORT (2000-2024)



Source: NSO of Mongolia

Figure 1.94

MONGOLIA'S FLUORSPAR EXPORT BY COUNTRY AS OF 2023



Source: General Customs Administration of Mongolia

7.7

ZINC

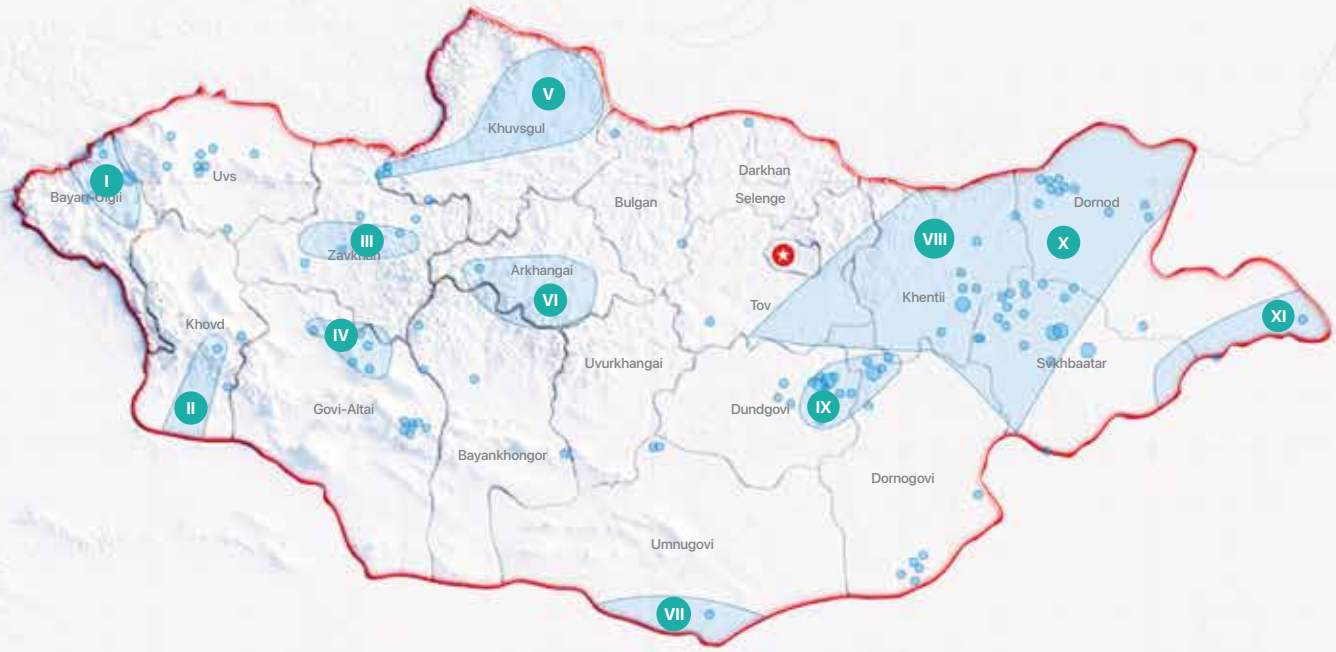
Geological survey

Mongolia has 11 metallogenic provinces and zones with zinc-bearing polymetallic potential, including Ulaan Khus-Sagsai, Nukhet Davaa, Tsagaan Olom, Govi-Altai, Tes-Khuvsgul, Khangai, South Gobi, Khentii, Govi-Ugtaal Jargalan, Eastern Mongolia, and Nukhet Davaa.

Zinc-bearing polymetallic deposits (including Pb, Ag, Fe, Cd, etc.) have been identified in the Khentii and Eastern Mongolia metallogenic zones, where deposits such as Tumurtiin-Ovoo zinc deposit, Ulaan, Tsav, and Mukhar polymetallic deposits have formed. Additionally, numerous zinc occurrences have been identified in their vicinity.

Figure 1.95

ZINC METALLOGENIC BELTS, DEPOSITS, AND OCCURENCES IN MONGOLIA



Metallogenic provinces and regions:

I	- Ulaan Khus-Sagsai	II	- Nukhen Nuruu	III	- Tsagaan Olom	IV	- Govi-Altai	V	- Tes-Khuvsgul
VI	- Khangai	VII	- Southern Gobi	VIII	- Khentii	IX	- Govi-Ugtaal Jargalan	X	- Dornod Mongolia
XI	- Nukhet Davaa								

According to the National Geological Survey, a total of 139 zinc resource occurrences have been registered across 60 soums of 16 provinces of Mongolia. Zinc occurrences contain 0.001-65% zinc, and for the 30 of the total occurrences, the total zinc resources are estimated at 106.7 million tonnes.

Table 1.9

ZINC RESOURCE OCCURENCES IN MONGOLIA

№	Province	Number of occurrences	Resources in tonnes
1	Arkhangai	1	
2	Bayan-Ulgii	7	
3	Bayankhongor	3	27.3
4	Bulgan	2	320,000
5	Govi-Altai	15	412,500
6	Dornogovi	10	100,083,280
7	Dornod	26	4,709,450.7
8	Dundgovi	16	583,514
9	Zavkhan	10	
10	Umnugovi	3	
11	Sukhbaatar	20	529,392.1
12	Selenge	1	2.2
13	Tuv	1	
14	Uvs	9	
15	Khovd	3	1,134
16	Khentii	12	72,601.4
TOTAL		139	106,711,901.7

Deposits

According to the National Geological Survey, there are 10 zinc deposits registered in the National mineral resources database. After consolidating the reserves of these deposits, it was recorded that 52.79 million tonnes of ore containing 2.18 million tonnes of zinc, 259.11 thousand tonnes of lead, 777.74 thousand tonnes of iron, 1.28 thousand tonnes of copper, 520.24 tonnes of silver, and 9.27 thousand tonnes of cadmium.

Table 1.10

ZINC DEPOSITS IN MONGOLIA

Name of the deposit	Province	Ore, mineral	Reserve grade, content	Reserve in tonnes
Dulaan Khar Uul	Bayan-Ulgii	Ore	B+C	9,843.30
		Zn	4.64%	456.80
		Pb	1.3%	128.06
		Ag	8.5 g/t	83.00
		Cd	0.07 g/t	7,100.00
Dalan-Ukhaa	Dornogovi	Ore	C	12,157.10
		Zn	0.38 %	46.69
		ZnEq	0.69 %	83.87
		Pb	0.18 %	22.68
		Ag	5.03 g/t	61.15
		Cd	0.002 %	228.68
Zuun Tumurtein	Dundgovi	Ore	B+C	1,218.20
		Zn	3.33 %	27.30
		Fe	27.4	140.97
Tsagaan Tolgoi	Dundgovi	Ore	B+C	8,633.70
		Zn	0.913%	78.84
		ZnEq	1.271%	109.70
		Pb	0.216%	18.68
		Ag	7.19 g/t	62.09
		Cu	0.015 %	1.28
Salkhit	Sukhbaatar	Ore	B+C	2,525.99
		Zn	5.44 %	137.34
		Cd	130 g/t	243.06
		Ag	0.003 %	5.40
Tumurtein Ovoo	Sukhbaatar	Ore	A+B+C	9,109.00
		Zn	13.69 %	948.60
		Cd	0.027 %	1,751.00
Tumurtein Ovoo /Tumurtiin Ovoo/	Sukhbaatar	Ore	A+B+C	3,273.95
		Zn	9.43 %	308.60
		Pb	0.5 %	16.29
		Ag	26.83 g/t	87.83
		Fe	19.47 %	636.77
		Iron ore	B+C	3,937.55
		Fe	33.8 %	1,476.34
Uulbayan	Sukhbaatar	Ore	B+C	1,509.20
		Zn	2.601 %	73.81
		Pb	0.786 %	22.32
		Ag	19.38 g/t	96.14
Uvurtal	Sukhbaatar	Ore	C	213.11
		Zn	3.24 %	6.91
		Pb	0.8 %	1.70
Bayan-Uul	Khentii	Ore	B+C	4,310.10
		Zn	2.166 %	97.64
		Ag	30.44 g/t	124.63
		Pb	1.149 %	49.38
		ZnEq	4.15 %	181.51
		Cd	0.156 %	401.40

Source: MRPAM

Mining licenses, production and export

In 2023, exploration work for zinc was planned on 0.4% of the total exploration licenses, covering 1.6% of the total exploration area in Mongolia.

Currently, five zinc and polymetallic deposits are in operation in Mongolia. These include:

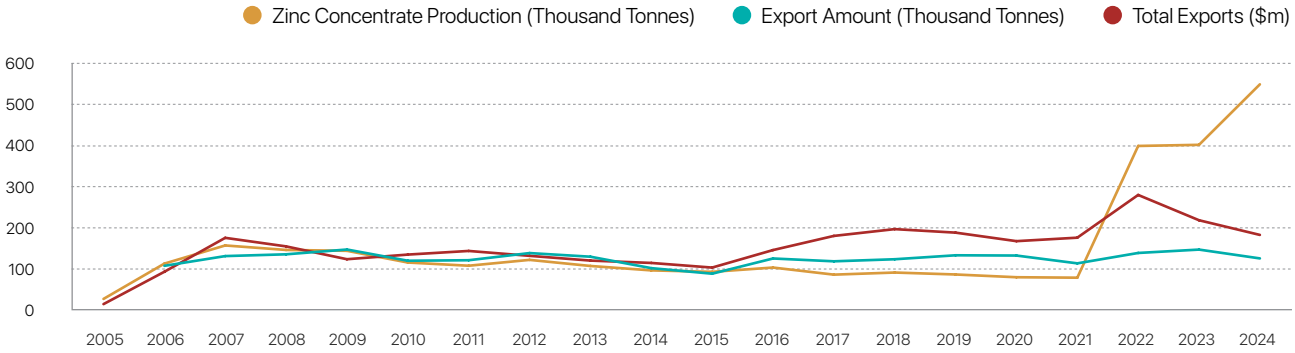
- Tumurtiin Ovoo and Erven Khoshuu Ovoo in Sukhbaatar Province,
- Ulaan Deposit in Dornod Province,
- Elstei Deposit in Dornogovi Province, and
- Barigalt Deposit in Khentii Province.

All of these deposits are concentrated in the eastern region of Mongolia.

Out of these five active deposits, two use open-pit mining, one uses underground mining, and two use both open-pit and underground mining methods. Zinc-containing ores are processed using flotation technology to produce zinc concentrates. The grades of the produced zinc ores range from 4.4% to 8%, while the concentrates contain 48.3% to 53.6% zinc.

Figure 1.96

ZINC PRODUCTION AND EXPORTS



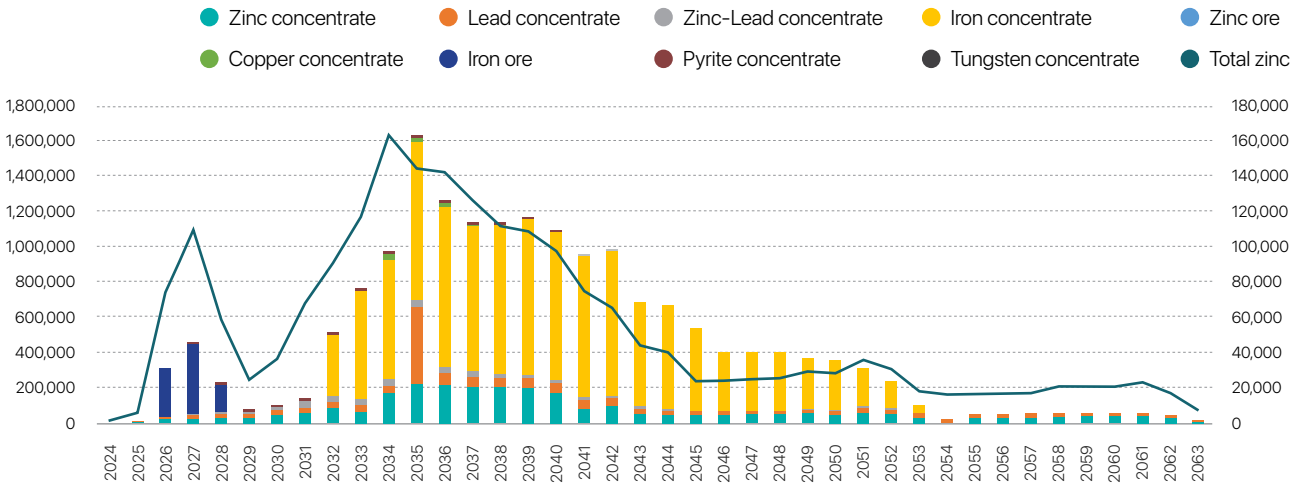
From 2016 to 2023, zinc mining enterprises earned between MNT 3.7 trillion in sales revenue annually, contributing MNT 998.1 billion to the national and local budgets.

According to MRPAM, a total of 40 mining licenses held by 34 companies for zinc-bearing mineral resources are currently valid. Among them, 19 companies hold 18 mining licenses where feasibility studies have been conducted, leading to 19 development-ready projects. Of these, 17 projects are expected to produce zinc-containing products.

Based on the feasibility studies of both operating and development-ready projects, a total of 18.048 million tonnes of zinc-bearing ore and concentrate is projected to be produced between 2024 and 2063. The estimated amount of pure zinc contained in the final product is 2.1 million tonnes.

Figure 1.97

ZINC PRODUCTION OUTLOOK - TOTAL OUTPUT & CONTAINED ZINC



7.8

URANIUM

Mongolia has identified 13 uranium deposits, approximatel 100 occurrences, over 1,000 mineralized points, and areas with redioactive anomalies across its territory. The total geological resources of these 13 deposits are 192,241.02 tonnes, with 11 of them officially registered through the Mineral Resources Professional Council. There have been no changes in these figures since 2020. 67% of the total resources are considered suitable for in-situ leaching (ISL) mining.

Mongolia's 13 uranium deposits are Dornod, Gurvanbulag, Ulaan, Nemer, Mardain Gol, Kharaat, Khairkhan, Gurvansaikhan, Ulziit, Dulaan-Uul, Zuuvch-Ovoo, Enger-Ar, and Dalt.

As of October 2024, 98.46 thousand hectares of land across 9 soums in 4 provinces have been licensed for uranium exploration and mining. Currently, 7 companies hold 3 exploration and 8 mining licenses. Of these, two exploration licenses are fully owned by Mongolian companies, while the remaining exploration license and all 8 mining licenses are held by foreign-invested companies from China, France, the Czech Republic, and Japan.

The total licensed area for uranium mining and exploration accounts for 0.06% of Mongolia's total land area. Compared to 2009, the number of exploration licenses has decreased 13-fold.

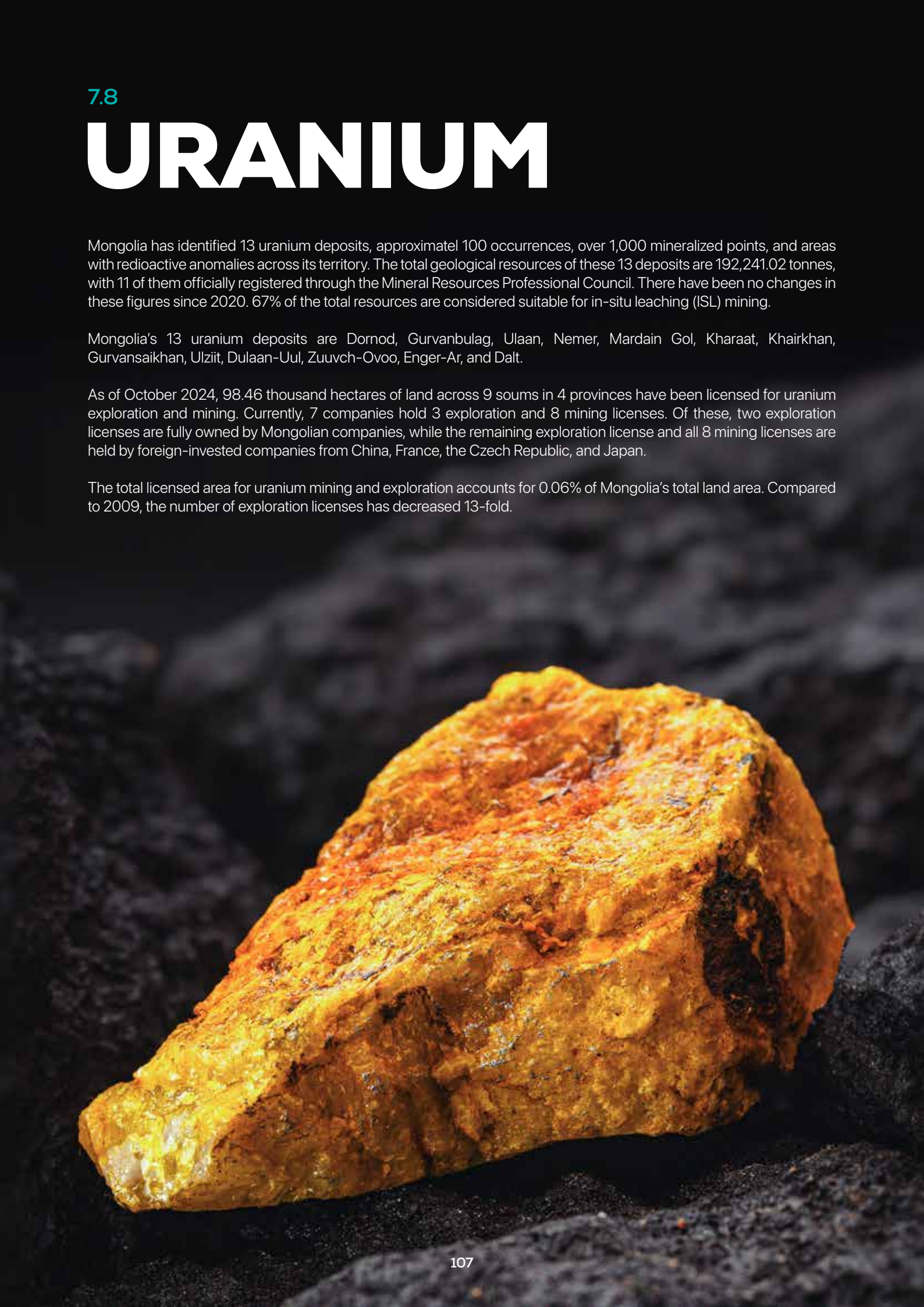


Table 1.11

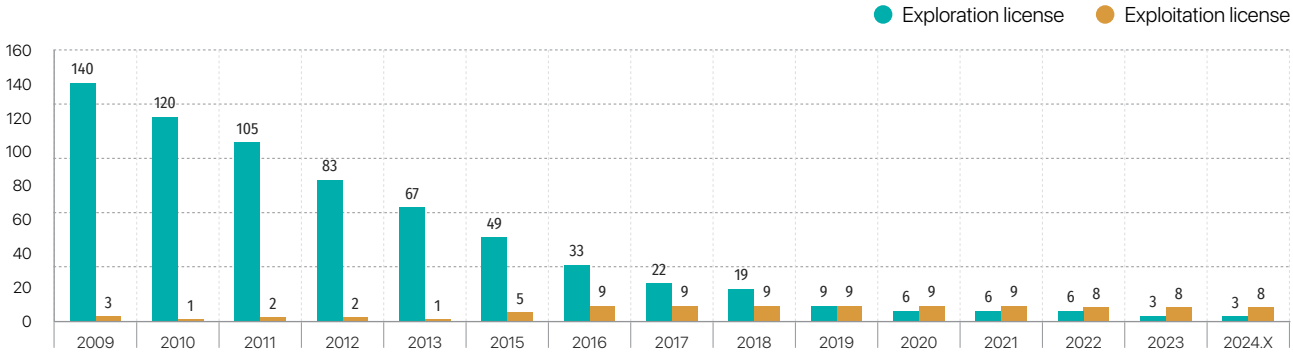
OVERVIEW OF URANIUM DEPOSITS IN MONGOLIA

№	Deposit	Classification	Grade (%)	Reserves (tonnes)	Reserve confirmation date
1	Dornod	C1+C2+ C1/non/	0.18	27,221	1988.11.13
2	Gurvanbulag	B+C+C /non/	0.152	13,058.3	2011.09.27
3	Mardain Gol	C	0.052	1,948.1	2014.07.09
					2015.05.19
4	Nemer	C	0.111	5,937.62	2014.07.09
					2015.05.19
5	Ulaan	C1+C1 /non/	0.145	270	1989.11.30
6	Kharaat	B+C	0.026	7,288	2009.10.16
7	Khairkhan	B+C	0.071	8,406.5	
8	Gurvansaikhan	C	0.034	4,250.1	2012.09.18
9	Ulziit	C	0.036	3,075.7	2012.09.18
10	Dulaan-Uul	B+B/non/+ C+C/non/	217.69 g/t	7,054.71	2011.08.23
		B+B/non/+ C+C/non/	188.83 g/t	4,841.73	2015.07.07
					2016.01.14
11	Zuuvch-Ovoo	B+B/non/+ C+C/non/	234 g/t	93,290.63	2013.03.28
					2013.03.20
					2015.05.25
					2020.04.15
12	Enger Ar	B+C	0.05	80.52	2016.08.01
13	Dalt	B+C	0.032	15,518.11	2018.12.08
Total reserve: 192,241.02 tonnes					

Source: MRPAM

Figure 1.98

CHANGES IN THE NUMBER OF URANIUM LICENSES OVER 15 YEARS



Source: MRPAM

According to the 2022 publication by the International Atomic Energy Agency on uranium production, demand, and supply, the global uranium reserves are estimated at 6.1 million tonnes. 93% of these reserves are concentrated in 13 countries, with Australia (1.6 million tonnes), Kazakhstan (906,000 tonnes), and Canada (594,000 tonnes) leading in uranium resources.

Mongolia holds 192,000 tonnes of uranium reserves, accounting for 3% of the world's total uranium reserves, ranking 10th globally.

In January 2025, the Government of Mongolia and Orano Mining have signed an investment agreement for the development and operation of the Zuuvch-Ovoo uranium mine in Mongolia's southeastern Dornogovi province. Under the terms of the agreement, Badrakh Energy, a joint venture between Orano and Mongolia's state-owned MonAtom Group, will be responsible for the industrial operation of the major Zuuvch-Ovoo and Dulaan Uul / Umnut deposits, which have estimated uranium resources of close to 90,000 tonnes. With a 30-year estimated lifespan, the project represents an initial investment of around $500 million before the deposit comes on stream, and a total of $1.6 billion over the mine's lifetime, creating 1,600 direct and indirect jobs.

Development of the project is planned to take 4 years, after which the Zuuvch-Ovoo mine will go into production, with an estimated nominal capacity of around 2,500 tonnes of uranium per year.

Orano Mining has been present in Mongolia for over 25 years.

7.9

LITHIUM

Reserves

Mongolia's lithium reserves are estimated at 683,600 tonnes, with lithium ore reserves totaling 2.26 million tonnes. Over the past few years, five zones with lithium resources have been identified, each ranging from 240 to 300 km in length and 45 to 50 km in width. In 2024, an exploration was conducted for one lithium deposit, bringing the total number of lithium deposits to four, three of which are primary lithium deposits, and one contains lithium as a secondary mineral.

The Khukh Del deposit in Dundgovi province has the largest resource, with 433 million tonnes and a proven reserve of 23,500 tonnes. It is estimated to contain 283.9 million tonnes of ore with an average grade of 0.156%, along with 443,600 tonnes of lithium carbonate reserves.

The measured reserves of the Munkhtiin Tsagaan Durvuljin deposit, also located in Dundgovi province, are 2.27 million tonnes of ore with an average grade of 0.65%. This deposit contains 14,575 tonnes of lithium, 4,286.1 tonnes of rubidium with a content of 0.15%, and 0.622 tonnes of cesium with an average content of 0.03%. Since the COVID-19 pandemic, there has been a growing interest in lithium research.

To date, foreign investors have shown an interest and of particular note is a subsidiary of the South Korean conglomerate Posco Group who recently contacted Mongolian state-owned Erdenes Resources LLC to conduct joint exploration of rare minerals. In recent years, Ion Energy company has been actively exploring lithium in Mongolia for the first time.

08

INVESTMENT OPPORTUNITIES

Mongolia's mining industry offers significant investment potential, supported by its vast mineral wealth, strategic location, and evolving regulatory framework. As the sector continues to grow, leading mining companies are driving its future through exploration, development, and production growth.

This section highlights few prominent companies in Mongolia's mining industry, providing insights into their operations, assets, and investment appeal.

With vast reserves of gold, copper, coal, uranium, and rare earth elements, the featured companies represent key resource sectors, showcasing the country's diverse opportunities for investors.

STEPPE GOLD
Mongolia's Premier Precious Metals Company

MULTI-ASSET, LOW COST, EMERGING GOLD PRODUCER

TSX: STGO / OTCQX: STPGF / WKN: A2JMMP

Steppe Gold Ltd. is a Mongolia-focused multi-asset precious metals company with a proven track record of low-cost production, social responsibility and environmental stewardship.

We operate two active mines in Mongolia and are evaluating highly prospective projects for future acquisition.

2 PRODUCING MINES	**1** EXPLORATION PROJECT
2.37Moz AuEq P&P	**3.35Moz** AuEq M&I + I
140Koz AuEq ANNUAL PRODUCTION FROM 2026	ADDITIONAL EXPLORATION PROJECT UNDER ASSESSMENT

Head Office:

Shangri-La office, Suite 1201, Olympic street 19A, Sukhbaatar District 1, Ulaanbaatar 14241, Mongolia

Tel: +976 7732 1914
www.steppegold.com

ATO GOLD MINE

- Phase I oxide zone in production
- Phase II Expansion: 1.3Moz AuEq to be recovered in 12 years, with payable oz of 1.03m
- Construction is on track, fully financed with $150m project facility, $49.6m already drawn and deployed; first production in 2026
- Strong local community support

BOROO GOLD MINE

- Two active mining projects: Boroo Gold and Ulaanbulag – both operational, expected 430Koz in 2024-2031
- All hard-rock minerals and placer deposits
- Well-positioned and highly profitable operating gold mine, close to major infrastructure
- Established operation with 50k tpd mining fleet, 50,000 tpd mill, and CIL gold processing plant

OUR STRENGTH

Strong local support: Headquartered in Mongolia

Focused on growth: Management and shareholders aligned vision

Buy and build strategy: Access to high quality assets

99% Mongolian local talent: Strong executive team and local workforce

NEAR-TERM FOCUS

- Maximize production and cash flow, and complete Phase II Expansion
- Increase exploration activities to extend resources, reserves and production
- ATO Phase II Expansion construction underway, on-track
- Consider further acquisitions

SOCIAL RESPONSIBILITY & ENVIRONMENTAL STEWARDSHIP

- Boroo Gold has proven track record in environmental stewardship and innovation and is a pioneer in mine closure and rehabilitation operations in Mongolia
- With strong local community engagement, Steppe Gold provided financial scholarships to 1,886 local students.
- Signatory of Mongolian President's One Billion Trees Campaign
- ESG Report in alignment with the Sustainability Accounting Standards Board (SASB) Metals & Mining Sustainability Accounting Framework.

ERDENET MINING CORPORATION SOE

A COPPER SMELTER TO BE ESTABLISHED WITHIN THE INDUSTRIAL AND TECHNOLOGICAL PARK

Erdenet Mining Corporation SOE (EMC) is one of the leading mining companies in Asia and with an annual ore processing capacity of 40 million tons of ore, it produces up to 600,000 tons of copper and over 6,000 tons of molybdenum concentrates.

THE INDUSTRIAL AND TECHNOLOGICAL PARK "THE COMPLEX OF MINING – METALLURGICAL - CHEMICAL PLANTS"

Total area of 1217.4 hectares adjacent EMC has been allocated for the construction of industrial park as special state use by the Government Resolution No.17 in 2022.

A feasibility study for the construction of copper smelter in Mongolia, based on technology double SKS, was carried out by Continuous China ENFI Engineering Corporation in 2022.

Studies on the selection of the copper smelter location were conducted by JICA in 2014 and HATCH in 2016.

Feasibility study capacity (approved in 2022)

COPPER CONCENTRATE 560 thous.TPY
COPPER CATHODE 125 thous.TPY
ELEMENTAL SULFUR 182 thous.TPY
GOLD INGOT 72 kg/year
SILVER INGOT 38.2 thous.kg/year

INVESTMENT USD 772 million

COPPER SMELTER

ECONOMIC INDICATORS of the FS:

Sales income (mill.USD per year)	1113.6
Profit after tax (mill.USD per year)	56.8 – Net profit
Taxes and fees payable to the State budget (mill.USD per year)	18.5
Payback period (year)	7.7
IRR, %	10.71
NPV (mill.USD)	283.3

Advantages of the FS:

- Reduced CAPEX and OPEX compared to other technologies,
- Feasible to process low grade copper concentrate, (=>15% Cu),
- No strict requirements for copper concentrates,
- No need for preliminary deep drying of the concentrates,
- Fully automated technological process,
- Various concentrate mixes can be processed,
- EMC concentrate is ideal for the autogenous process,
- Continuous Smelting-Converting stages,
- No gas mist in the working area.

PILOT-PLANT TESTS FOR THE SULPHER MAKING FROM SO2 OFF-GAS

The first pilot-plant has been set up at the Cu-Ni plant site of Kalatongke Mining Industry Co.Ltd in China and tests for sulfur production from SO2 off-gas has been carried out successfully in cooperation with China ENFI Engineering Corporation.

Following the pilot-plant test results, the FS is being updated.

Sulfur production offers several advantages, including ease of transportation and storage, minimal environmental impact, and marketable product.

FUTURE PLANTS WITHIN THE INDUSTRIAL AND TECHNOLOGICAL PARK

	FEASIBILITY STUDY	DETAILED ENGINEERING	LAND PERMIT	ENVIRONMENTAL ASSESSMENT	INVESTMENT	OTHER RELATED PERMITS
Copper Smelter	✓	x	✓	✓	x	✓
Molybdenum concentrate treatment plant	✓	x	✓	x	x	✓
Electric wire and cable manufacturing plant	✓	x	✓	x	x	✓
Erdenet Machinery complex plant	✓	x	✓	x	x	✓

A FAVORABLE LEGAL ENVIRONMENT FOR FOREIGN AND DOMESTIC INVESTORS

Through 1217 hectares of land in the Industrial and Technological Park Project and ongoing infrastructure development, we are focused on producing final and value-added products using cathode copper.

INFRASTRUCTURE OF THE INDUSTRIAL AND TECHNOLOGICAL PARK

Paved auto-road construction
The contractor for the construction of power grid is under selection.

Highway construction
INVESTMENT: **4.2 mill.USD**
PROCUREMENT: **52.7 %**

Railway construction
INVESTMENT: **4.5 mill.USD**
PROCUREMENT: **92 %**

Water supply and sewage system
INVESTMENT: **12.0 mill.USD**
PROCUREMENT: **92 %**

Special land use area - protected
INVESTMENT: **1.1 mill.USD**
PROCUREMENT: **92 %**

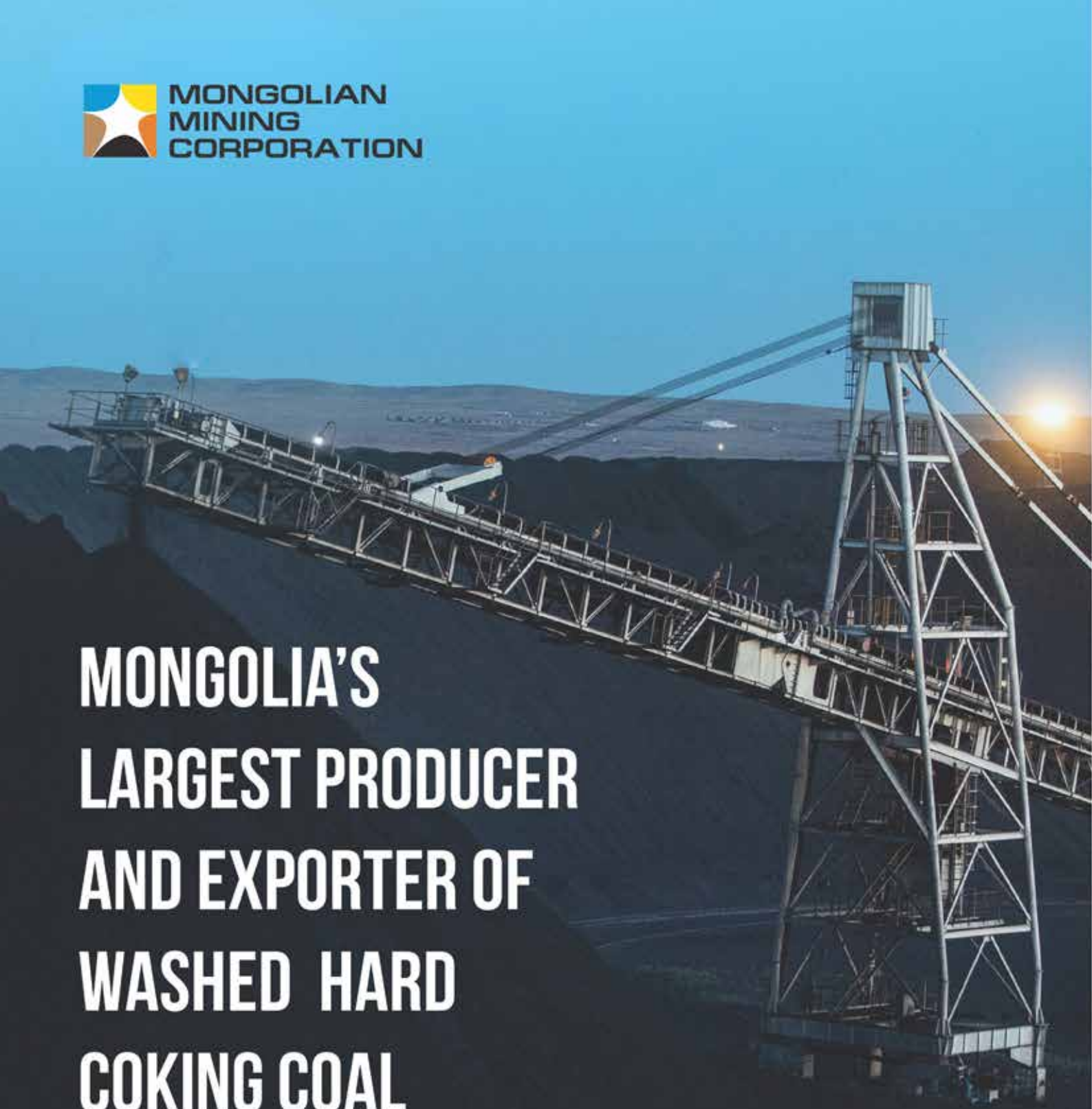
Power supply
INVESTMENT: **46.1 mill.USD**
PROCUREMENT: **ENGINEERING DESIGN - 100%**
The contractor selection has started

CONSTRUCTION FOR THE INFRASTRUCTURE PROJECT WORTH USD 68 MILLION, FUNDED BY EMC, IS IN PROGRESS

Nairamdal Square, Bayan-Undur soum,
Orkhon province, 61027, Mongolia
757-73501, 757-72109
info@erdenetmc.mn
www.erdenetmc.mn

MONGOLIAN MINING CORPORATION

MONGOLIA'S LARGEST PRODUCER AND EXPORTER OF WASHED HARD COKING COAL



www.mmc.mn

Mongolian Mining Corporation (MMC; stock code: 975) is a high-quality coking coal producer and exporter in Mongolia. It owns and operates Ukhaa khudag and Baruun naran coking coal mines both located in Umnugobi (South Gobi) aimag, Mongolia.

With the first Coal handling and preparation plant in Mongolia and supporting infrastructure facilities all in-place, MMC has the most advanced coking coal operations in the country and is the only major washed coal producer and exporter in Mongolia.

In 2010, the company was successfully listed on the main board of Hong Kong Stock Exchange and became the first Mongolian company to offer its shares internationally. It makes a substantial contribution to the economy of Mongolia through integrated coal mining operations, value added production and delivery of good quality hard coking coal products to the world market.

The operations at Ukhaa khudag commenced in 2009, while Baruun naran mine started its operations in 2012. The sizable coking coal resources and reserves at the Baruun naran coking coal mine provides MMC a potential to diversify its coal products and further enhance its sources of revenue. Furthermore, the proximity between the two coal mines enables synergies that include the shared use of existing transportation infrastructure and the marketing base.

In January 2024, MMC became 50% equity holder in Erdene Mongol LLC, which holds two mining licenses. Bayankhundii gold mine of Erdene Mongol LLC is currently under development and its gold production is expected to start from the second half of 2025.

MMC is one of the largest local employers and one of the largest tax contributors of the country. It employed over 3,000 employees as of 2024 and approximately 7,000 people have permanent jobs within the framework of its operations.

TOWARDS SUSTAINABLE MINING ("TSM")

MMC is the first international company to publicly submit the TSM self-assessments through a subscription service independent of a national mining association. In 2024, MMC has conducted its first TSM external verification, with the objective of progressively implementing TSM best practices throughout its operational mines while anticipating year after year improvement in its overall performance.

The verification was completed to the level required for a limited assurance engagement, following the guidance in Mining Association of Canada's ("MAC") Terms of Reference and ISO 19011 and ISAE 3000 standards. The Group has completed its first preliminary self-assessment in 2023 of which represents the program's foundation.

www.mmc.mn

ERDENE MONGOL LLC

Erdene Mongol LLC has been committed to the exploration and development of base and previous metals in southwestern Mongolia for over two decades, leading to the discovery of the Khundii Minerals District.

Erdene Mongol LLC is jointly owned by Erdene Resource Development Corp (TSX:ERD |MSE:ERDN) and Mongolian Mining Corporation (HKEx:0975). In January 2023, Erdene Resource Development Corporation and Mongolian Mining Corporation entered into a strategic partnership to jointly advance the Bayan Khundii Gold Project.

The Khundii Minerals District: Makings of a Multi-mine, Multi-commodity District

Bayan Khundii Gold Project Overview

- Flagship project under construction with first gold slated for 2025; foundation of multi-mine, multi-commodity district.
- One of the highest-grade gold projects under development globally: Gold reserves of 513,000 oz @ 4 g/t Au head grade; 150m maximum depth.
- Average annual production of ~87koz Au in years 2-5 generating FCF of ~US$97M/annum* at US$2500/oz gold price.
- Excellent economics: after tax IRR of 61%, NPV5% of US$380M at current gold prices; payback of 2.05 years; modest capex of US$100M with contingency in recent BFS update.

*Reference 2023 Feasibility Study. Figures represent 100% of Project

Exploration Upside at the Khundii Minerals District: Altan Nar, Dark Horse and Ulaan

Altan Nar – Au, Ag, Pb, Zn
- High grade gold-polymetallic deposit discovered in 2012.
- Mineral resource estimate (NI 43-101) in 2018.
- Secured mining license in 2021.

Indicated Resource: 452,900 oz @ 2.8 g/t AuEq*
Inferred Resource: 277,100 oz @ 2.5 g/t AuEq*

*Gold equivalent calculations assume metal prices of US$1,310 per ounce gold, US$18 per ounce silver, and US$2,400 per tonne lead and US$3,100 per tonne zinc and processing recoveries of 81% for silver, 81% for lead and 60% for zinc.

Dark Horse - Au
- High-grade gold deposit located 2km north of Bayan Khundii.
- 1.5km trend of alteration and gold mineralization.

Highlight intersections:
- AAD-176: 18m @ 6.4 g/t Au, incl. 4m @ 25.2 g/t Au
- AAD-177: 23m @ 11.4 g/t Au, incl. 4m @ 59.8 g/t Au
- AAD-178: 15m @ 42.8 g/t Au, incl. 5m @ 123.5 g/t Au

Ulaan - Au
- High-grade gold discovery 300m from Bayan Khundii.
- Believed to be continuation of Bayan Khundii.

Highlight intersections:
- UDH-14: 53m @ 3.6 g/t Au
- UDH-21: 335m @ 1.1 g/t Au
- UDH-35: 41m @ 8.1 g/t Au

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badrakh energy

The Zuuvch Ovoo project will be operated by Badrakh Energy, subsidiary of Orano Group and Mon-Atom LLC.

FRENCH-MONGOLIAN URANIUM MINING PROJECT ZUUVCH OVOO

The first uranium project in Mongolia to cover all stages of uranium mine operations, from extraction to production, up to the export of a uranium oxide.

LOCATION
Mongolia, Dornogovi province

DISCOVERY DATE
2006 Dulaan Uul/ Umnut deposit
2010 Zuuvch Ovoo deposit

REGISTERED RESOURCES IN SAND*
World-class deposit with registered 88,000 tU

URANIUM GRADE ESTIMATE
230 ppm

DEPOSIT DEPTH
170-200 meters

NOMINAL PRODUCTION CAPACITY
2,500 tU/year

TECHNOLOGY OF EXTRACTION
In-situ Recovery

TOTAL INVESTMENT
1.6 billion USD over the lifetime of the project

LIFETIME
more than 30 years

JOB ESTIMATE
1,600 direct and indirect

+976 7011 0675 info.badrakhenergy@gmail.com Badrakh Energy

badrakh energy

orano

MOH-ATOM

FRENCH-MONGOLIAN PROJECT

The Zuuvch Ovoo project is being developed by **Badrakh Energy**, a joint venture between **Orano group (France)** and **Mon-Atom (Mongolia)**. This world-class uranium deposit, discovered by **Orano Group'** geologists in the early 2000s, will supply a critical mineral resource to combat climate change and contribute to the growth of Mongolia's uranium mining industry.

Beginning of the exploration activities	**1997**	**2006**	**Discovery of the Dulaan Uul deposit**
Discovery of the **Zuuvch Ovoo deposit**	**2010**	**2013**	• **Resources classification** • Signature of Shareholders' Agreement
Appproval of the **Feasibility Study**	**2015**	**2016**	Mining licenses granted
Pilot Test facilities are constructed	**2018**	**2021 - 2022**	Pilot Test Operations
Investment agreement negotiations Update of the Feasibility Study	**2022 - 2024**	**2025**	**Signature of the Investment Agreement** Update of the Detailed Environmental Impact Assessment

4 YEARS:
Construction of facilities and infrastructure

+30 YEARS:
Mine Operations

+10 YEARS:
Remediation & Redevelopment-long-term environmental monitoring

+976 7011 0675 info.badrakhenergy@gmail.com Badrakh Energy

MNREC
MONGOLIAN NATIONAL RARE EARTH CORP LLC

INVEST IN THE FUTURE OF RARE EARTHS:
KHALZAN BUREGTEI PROJECT

Transforming the Global Critical Metals Landscape

In an era defined by the accelerating shift toward green technology, electrification, and supply chain diversification, the Khalzan Buregtei (KB) Project stands as one of the most significant rare earth deposits globally. Developed by Mongolian National Rare Earth Corp LLC (MNREC), KB is positioned to become a strategic, non-China-based supplier of high-value rare earth elements (REEs) essential for electric vehicles (EVs), wind energy, aerospace, and advanced technology sectors.

Why Khalzan Buregtei?
A Strategic Investment Opportunity

The KB deposit contains a high-grade, multi-element rare earth resource, with an emphasis on heavy rare earth elements (HREEs):

60 144.24 **Nd** Neodymium
59 140.908 **Pr** Praseodymium

Key for permanent magnets in EVs and wind turbines

66 162.5 **Dy** Dysprosium
65 158.925 **Tb** Terbium

Critical for high temperature resistant magnets

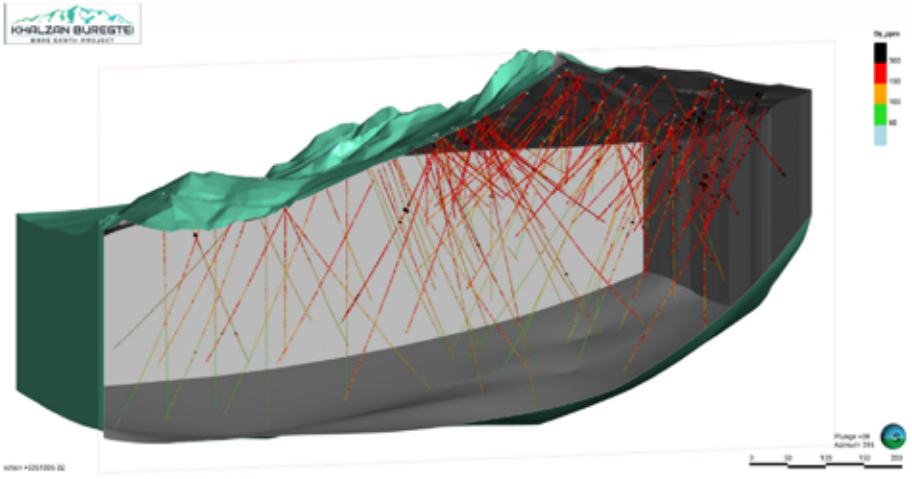
41 92.91 **Nb** Niobium
40 91.22 **Zr** Zirconium
73 180.948 **Ta** Tantalum

Essential for high-tech applications

With over a decade of development and an investment exceeding $30 million, MNREC has de-risked the KB Project and established a clear roadmap to production.

Strong Economics & High Returns

A 2023 study confirms KB's strong financial fundamentals:



- Post-tax IRR: 20% Highly attractive returns.
- Life of Mine: +20 years Long-term stability.
- Annual Ore Processing: 9–12 Mt Large-scale production.
- Rare Earth Oxide (MREO) Production: 13,000 t/a (92% purity).
- 550+ direct jobs created.
- Payback Period: 4 years

Advancing to Production: 2024-2025 Milestones

- PFS Completion (NI 43-101 compliant)
- Definitive Feasibility Study (DFS) Underway
- Pilot Metallurgical Testing in Canada & Australia (2025)
- Bulk Sample Processing Trials
- Environmental & Social Impact Assessment (ESIA) in progress

Prime Location & Strong Infrastructure

Situated in western Mongolia, KB benefits from efficient logistics and export potential:

- 65 km from Khovd City, 1,400 km west of Ulaanbaatar
- 300 km from key trade routes with China & Russia
- Heavy-duty roads linking to international ports
- 3 km from a 220kV national power grid
- 10 km from a stable water supply

Cutting-Edge Mining & Processing

Stage 1: Open-Pit Mining & Concentration

- Low-strip ratio, cost-efficient mining
- Crushing, grinding, magnetic & flotation separation
- Production of high-grade REE concentrate

Stage 2: Hydrometallurgical Processing

- Advanced chemical separation & purification
- Production of Mixed Rare Earth Oxide (MREO)
- Opportunities for further downstream processing

Commitment to Sustainability & ESG

MNREC adheres to global ESG standards and sustainable practices:

- Proximity to the Erdeneburen Hydropower Plant (40 km) – Clean energy integration.
- Resource efficiency & environmental safeguards.
- Local community engagement & job creation.

Backed by World-Class Expertise

MNREC partners with leading global experts for technical excellence:

- **Wood Plc:** Pre-Feasibility Study (PFS).
- **RPM Global:** Mineral Reserve & Life of Mine studies.
- **Bureau Veritas, Aurelia Laboratory** (Australia): Metallurgical & flotation testing.
- **SGS Lakefield** (Canada) & **ANSTO** (Australia): Pilot metallurgical studies.
- **Adamas Intelligence**: Global rare earth market analysis.

A Rare Opportunity in Critical Metals

As nations push for secure and diversified REE supply chains, KB presents an unparalleled investment opportunity. Positioned at the forefront of the global REE sector, MNREC is dedicated to delivering long-term value and sustainable development.

Join us at PDAC 2025 and be part of Mongolia's next great mining success!

Contact

14th floor, Trade and Development Bank Headquarters, Ulaanbaatar, Mongolia

info@mnrec.mn +976 7501-1801 MNREC.MN

Scan More Information:

GLOSSARY

ADB	Asian Development Bank
AI	Artificial Intelligence
AQR	Asset Quality Review
BIT	United States and Mongolia Bilateral Investment Treaty
BOM	Bank of Mongolia
CITA	Communications and Information Technology Authority of Mongolia
CNY	Chinese Yuan
CRC	Citizens' Representative Council
EPA	Economic Partnership Agreement
FDI	Foreign Direct Investment
FIPA	Canada-Mongolia Foreign Investment Promotion and Protection Agreement
GDP	Gross Domestic Product
GQ	Gigawatts
HPP	Hydro Power Plant
IMF	International Monetary Fund
IPO	Initial Public Offering
JSC	Joint Stock Company
JV	Joint Venture
LLC	Limited Liability Company
LTE	Long Term Evolution
MF	Ministry of Finance (Mongolia)
MIAT	Mongolian International Air Transport
MIMR	Ministry of Industry and Mineral Resources
MNT	Mongolian tugriks
MPP	Mongolian People's Party
MRPAM	Mineral Resource Authority of Mongolia
MSE	Mongolian Stock Exchange
MW	Megawatts
NBFI	Non-bank financial institutions
NDA	National Development Agency
NSO	National Statistics Office of Mongolia
OT	Oyu Tolgoi
RGI	Resource Governance Index
SOE	State owned enterprise
SPP	Solar power plant
TDB	Trade and Development bank of Mongolia
TPP	Thermal power plant
UB	Ulaanbaatar
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
US	United States

VAT	Value added Tax
WHO	World Health Organization
WPP	Wind Power Plant
WTO	World Trade Organization

MINING INDUSTRY IN MONGOLIA

THE MOST COMPREHENSIVE REPORT 2025

MONGOLIA Inc.

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