



**MINISTRY OF MINING &
HEAVY INDUSTRY OF MONGOLIA**



**Investment potential in the
MINERALS SECTOR OF
MONGOLIA**

Outline

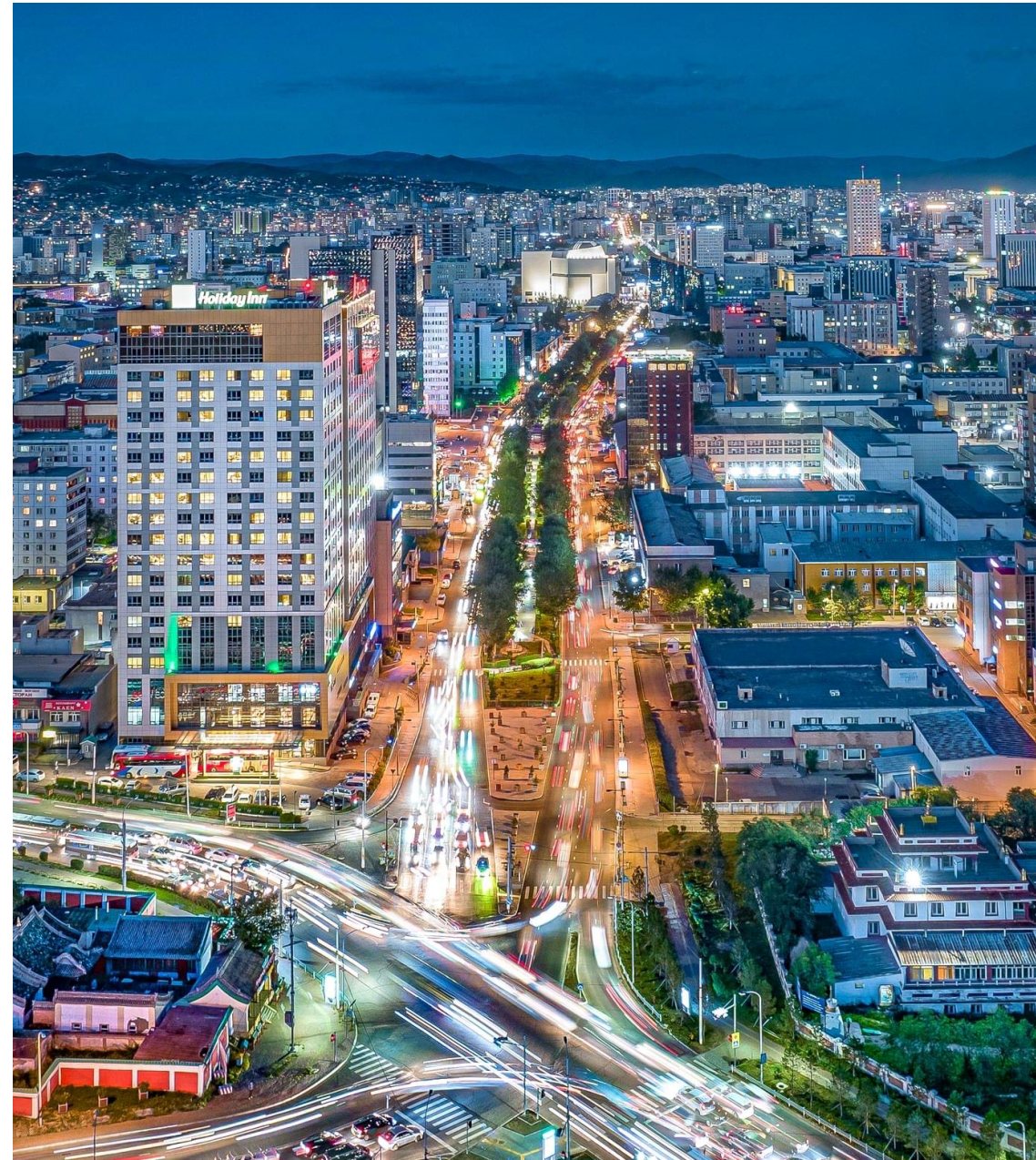
Mongolia at a glance

Minerals potential of Mongolia

- Geological potential
- Metals
- Nonmetals
- Critical elements
- Combustible minerals
- Petroleum
- Securing exploration tenement
- Intro to active mining projects

Setting up in Mongolia

- How to Start Business
- Legal environment



One of the world's fastest-growing economies, holding a massive wealth of mineral resources. With an outward-looking professional business community, democratic government and rapidly improving living conditions, many international investors are turning their attention to Mongolia. Landlocked between Russia and China, Mongolia is a country of extremes. Despite the different climate types, thin populations, and large territory within Asia, the cosmopolitan atmosphere of central Ulaanbaatar contrasts with the isolated existences of smaller communities.

MONGOLIA AT A GLANCE

3.4 million
Population

2.0%
GDP Forecast 2022
(IMF)



3.4 million
Population

TOP EXPORTS 2022/III



Coal Briquettes
\$11.5 billion



Copper Ore
\$2.2 billion

TOP IMPORTS 2022/III



Refined Petroleum
\$1.2 billion

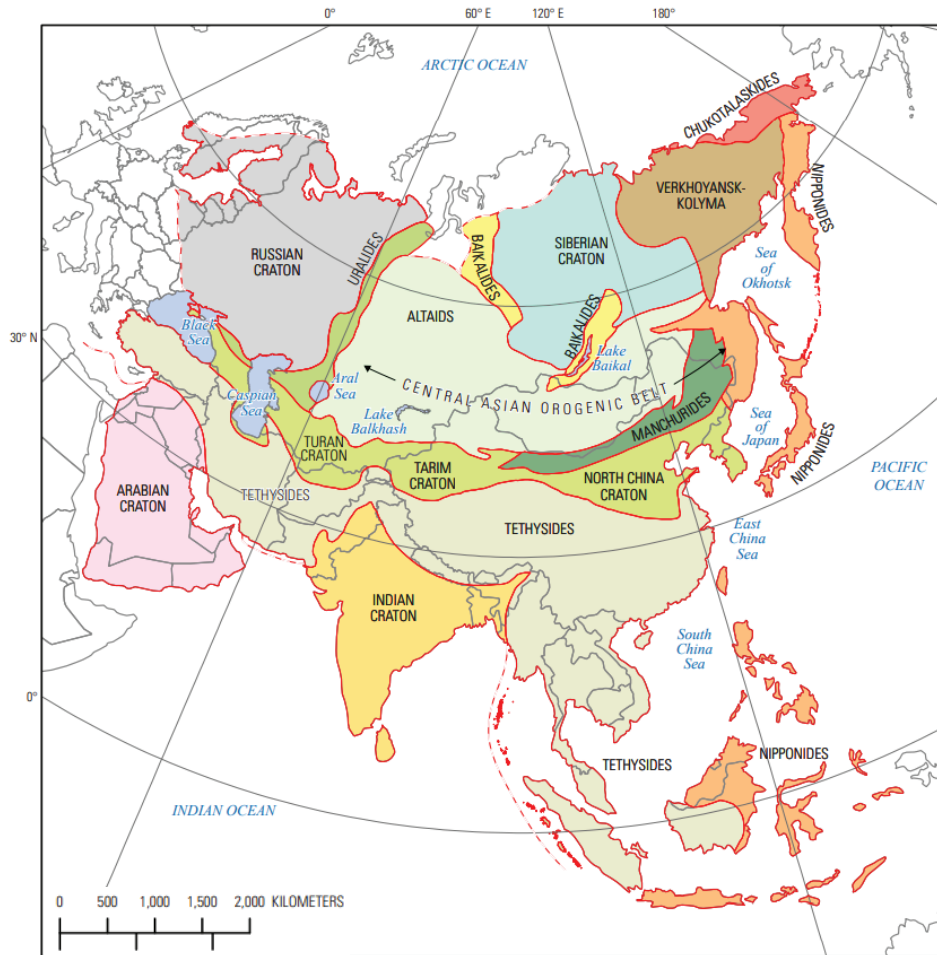


Cars
\$960 million

KEY TRADING PARTNERS BY DESTINATIONS



Minerals potential of Mongolia



Mongolia is in the heart of the Central Asian Orogenic Belt located between the East European, Siberian, North China, and Tarim cratons, and is considered the largest area of Phanerozoic continental crustal growth (Bold et al., 2016). The evolution of the orogenic belt involved magmatism associated with a variety of geologic settings appropriate for the formation of many types of mineral deposits (Zientek et al., 2015).

Mongolia has excellent geologic/natural potential for mineral resource development (Hedenquist & Daneshfar, 2003), which promises an unprecedented growth potential for copper, base metals, gold, coal, and uranium.

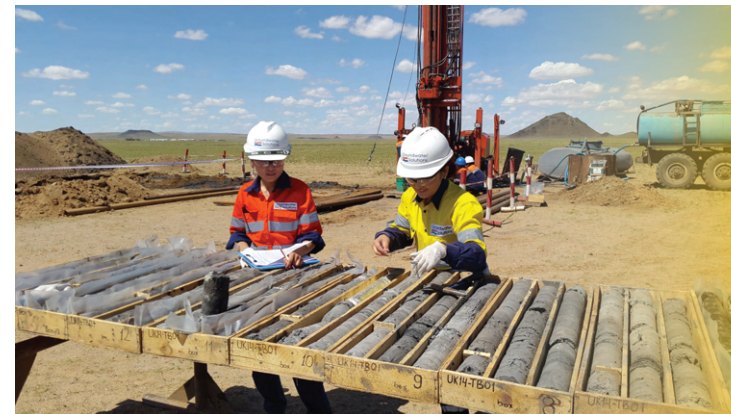
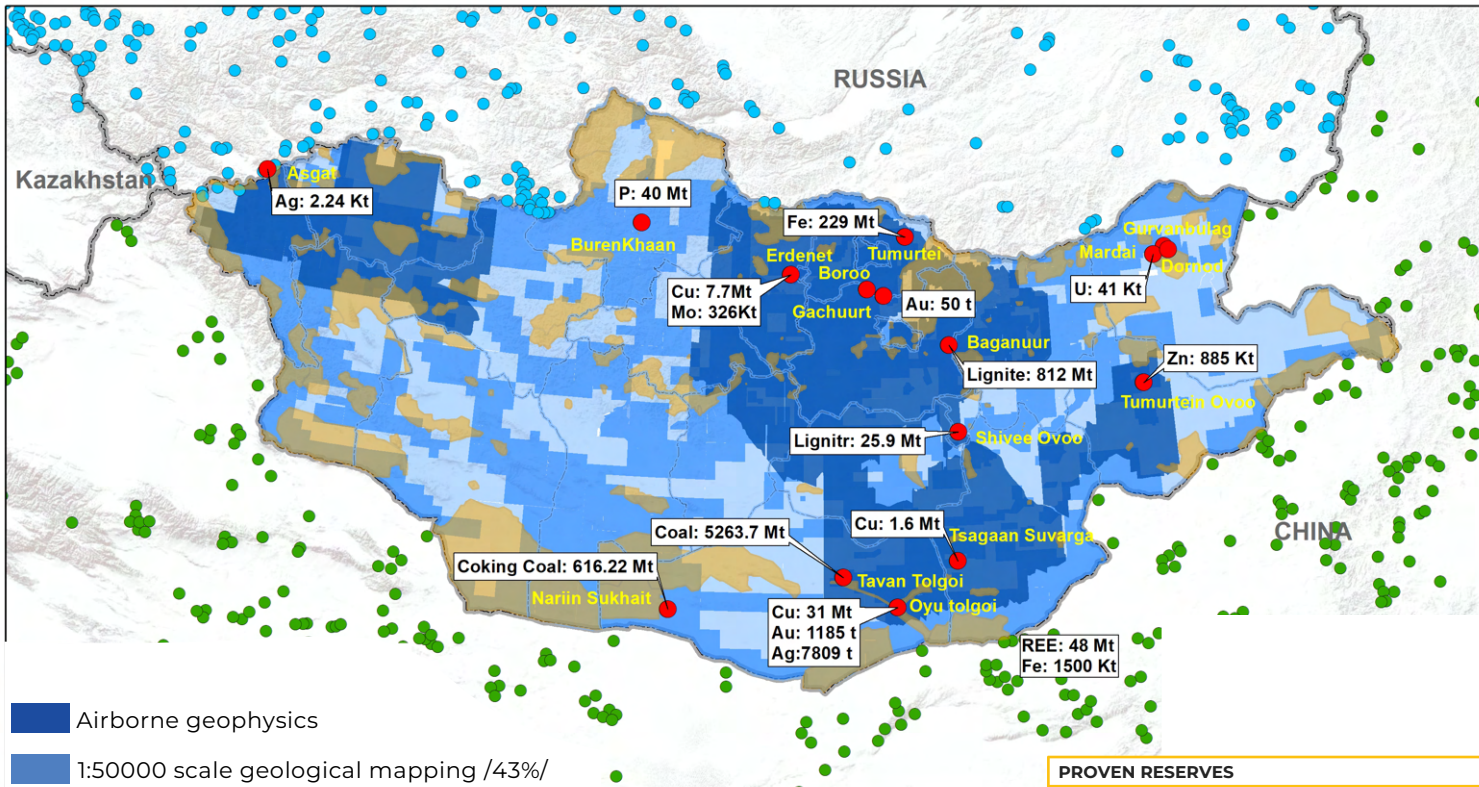


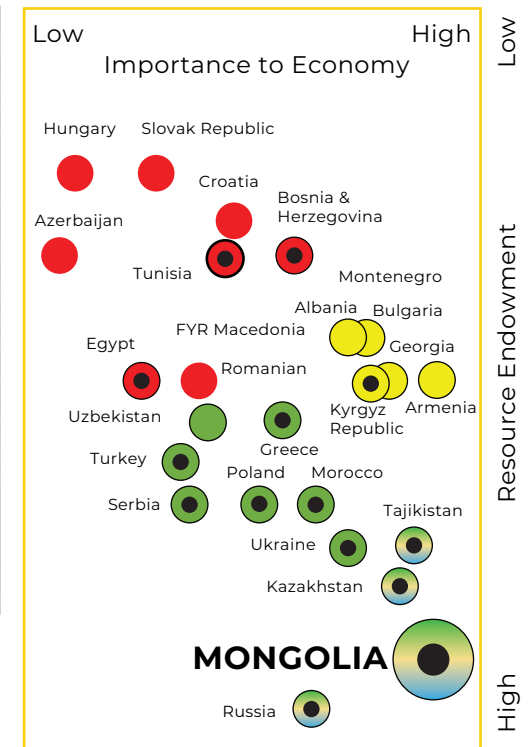
Photo description: Hydrogeological research of the deposit carried out in Dundgovi Province, Gurvansaikhan Sum, Ash Well Project site.

Source: Zientek et al., 2015

Minerals potential of Mongolia



PROVEN RESERVES		
Minerals	Unit	Proven reserves
Copper	million tn	69.9
Coal	billion tn	33.4
Iron ore	billion tn	1.84
Gold	tn	448.1
Zinc	million tn	4.4
Fluorspar	million tn	34.2
Uranium	thousand tn	192.2
Crude oil	million tn	332.6

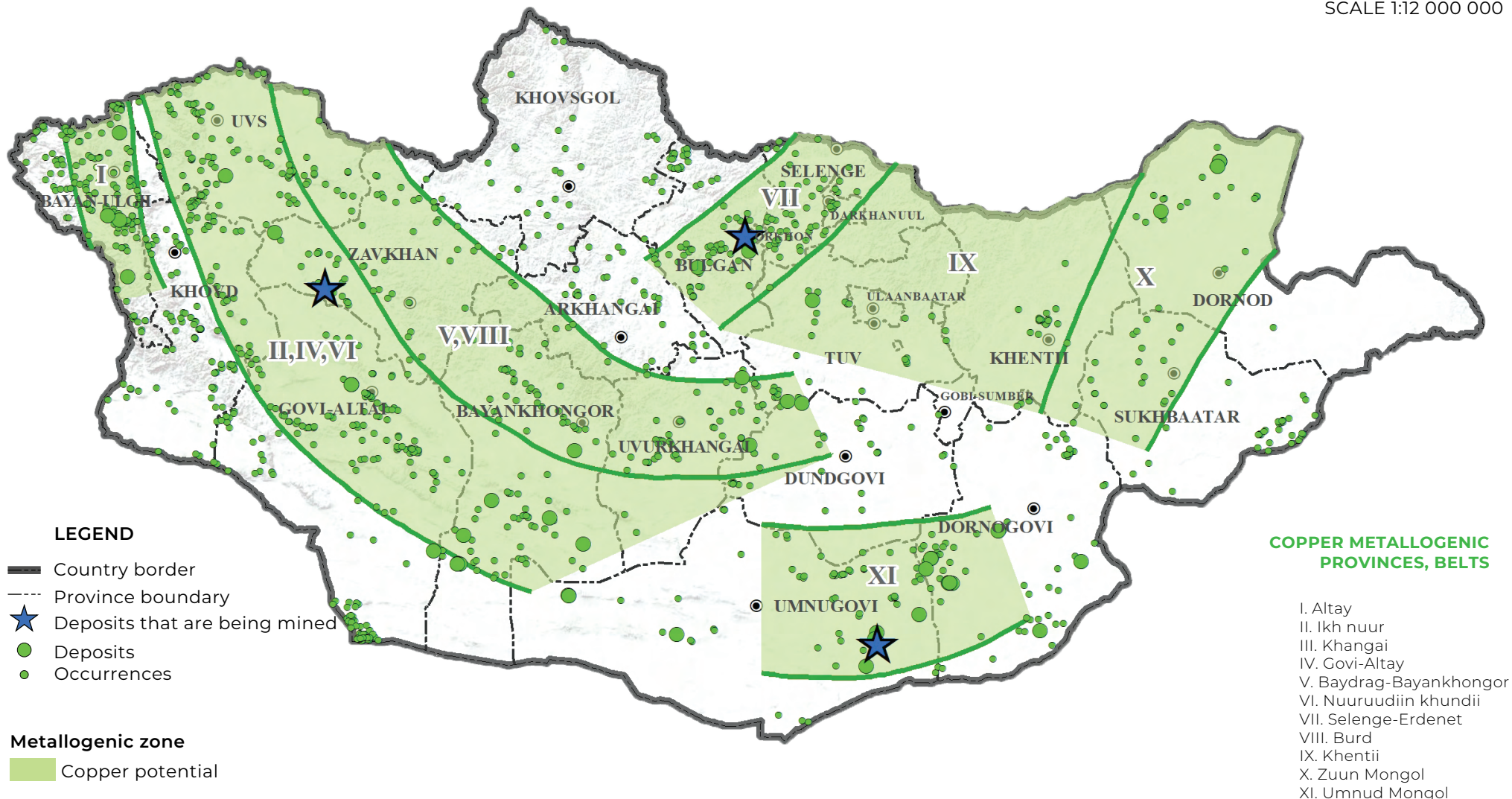


EBRD, 2018

Copper

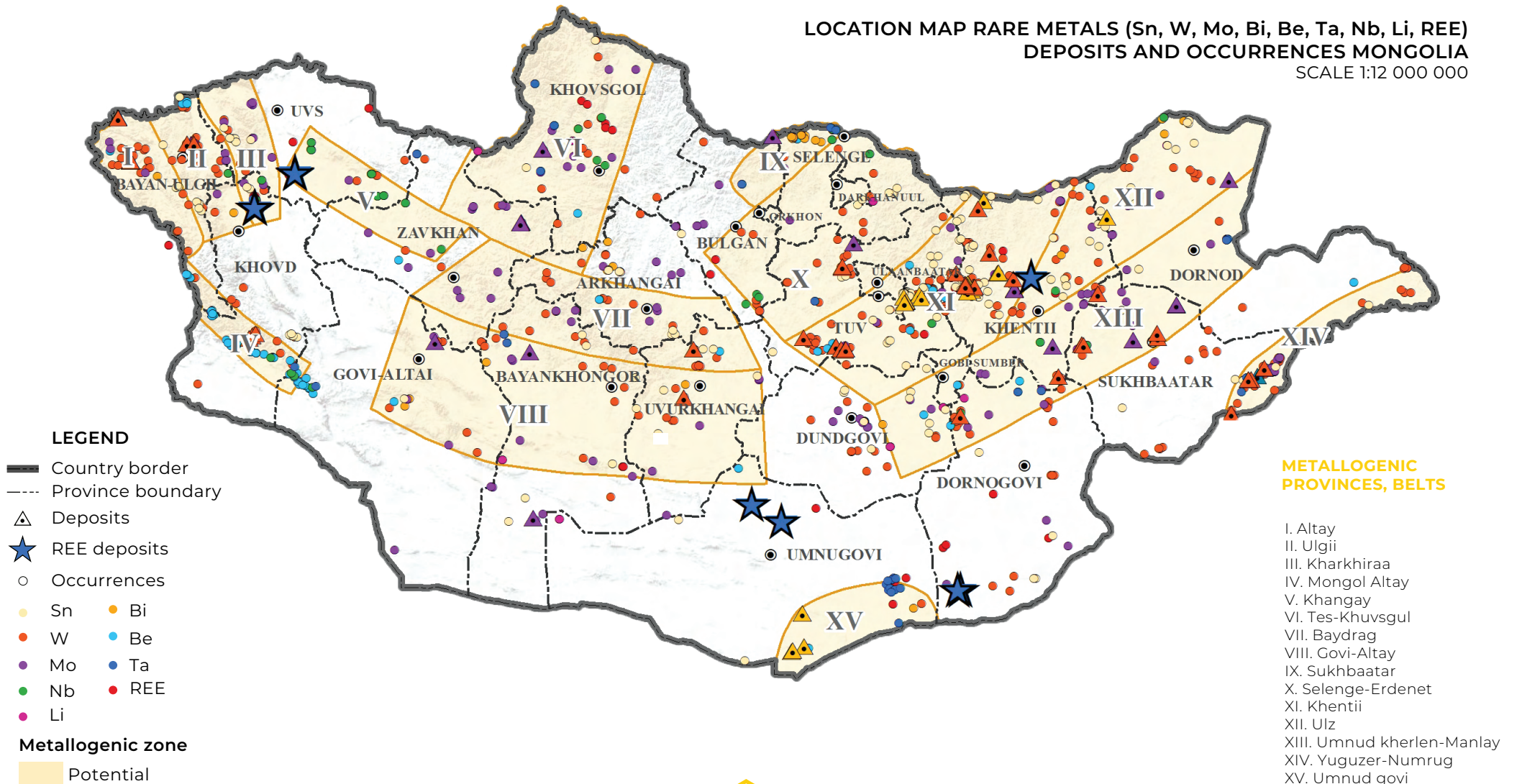
LOCATION MAP OF COPPER DEPOSITS AND OCCURRENCES MONGOLIA

SCALE 1:12 000 000



Rare Metals

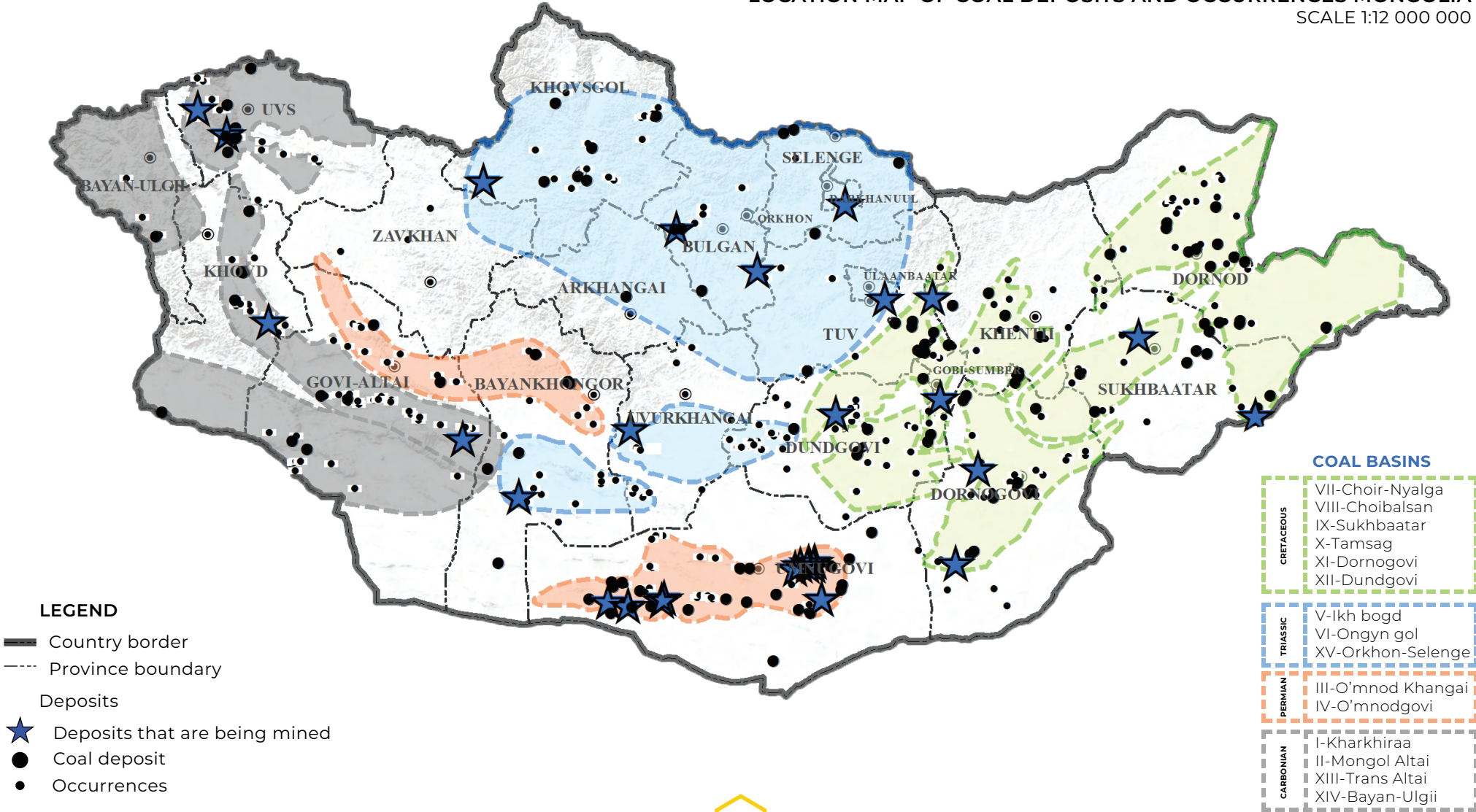
LOCATION MAP RARE METALS (Sn, W, Mo, Bi, Be, Ta, Nb, Li, REE) DEPOSITS AND OCCURRENCES MONGOLIA
SCALE 1:12 000 000



Coal

LOCATION MAP OF COAL DEPOSITS AND OCCURRENCES MONGOLIA

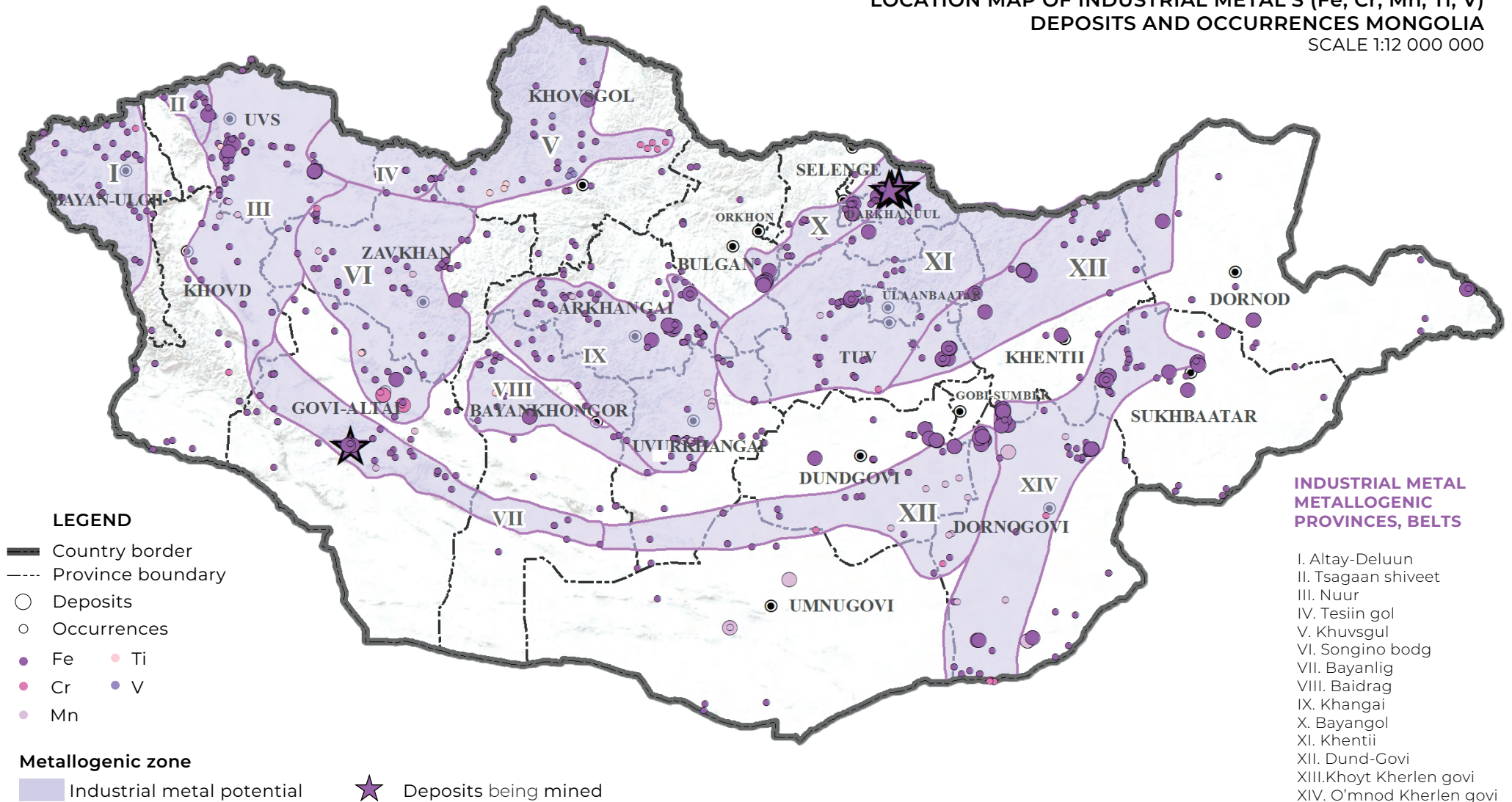
SCALE 1:12 000 000



Source: National Geological Survey of Mongolia

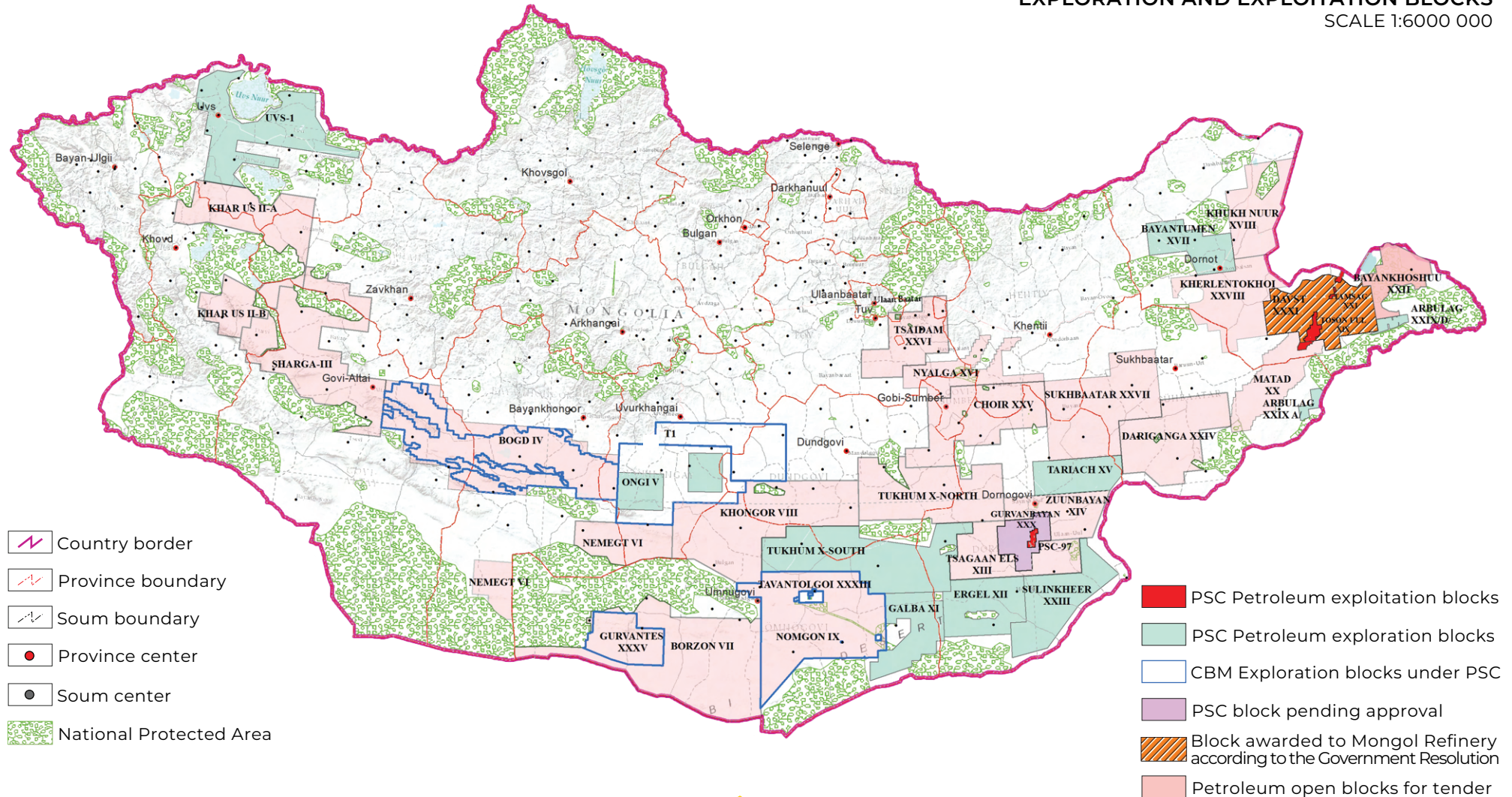
Industrial Minerals

LOCATION MAP OF INDUSTRIAL METAL'S (Fe, Cr, Mn, Ti, V)
DEPOSITS AND OCCURRENCES MONGOLIA
SCALE 1:12 000 000



Petroleum

CONVENTIONAL AND UNCONVENTIONAL OIL AND GAS
EXPLORATION AND EXPLOITATION BLOCKS
SCALE 1:6000 000

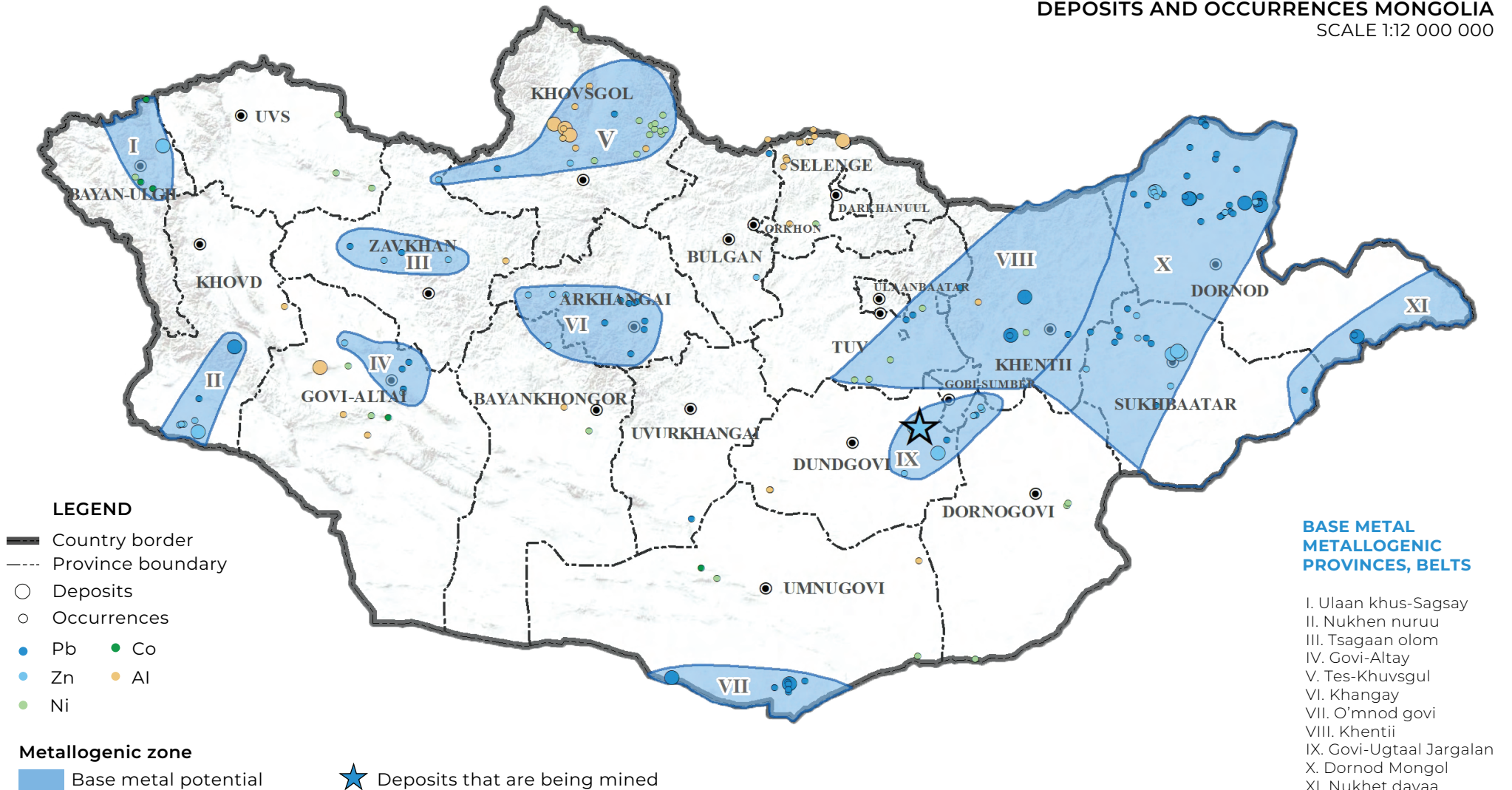


- Country border
- Province boundary
- Soum boundary
- Province center
- Soum center
- National Protected Area

- PSC Petroleum exploitation blocks
- PSC Petroleum exploration blocks
- CBM Exploration blocks under PSC
- PSC block pending approval
- Block awarded to Mongol Refinery according to the Government Resolution
- Petroleum open blocks for tender

Base Metals

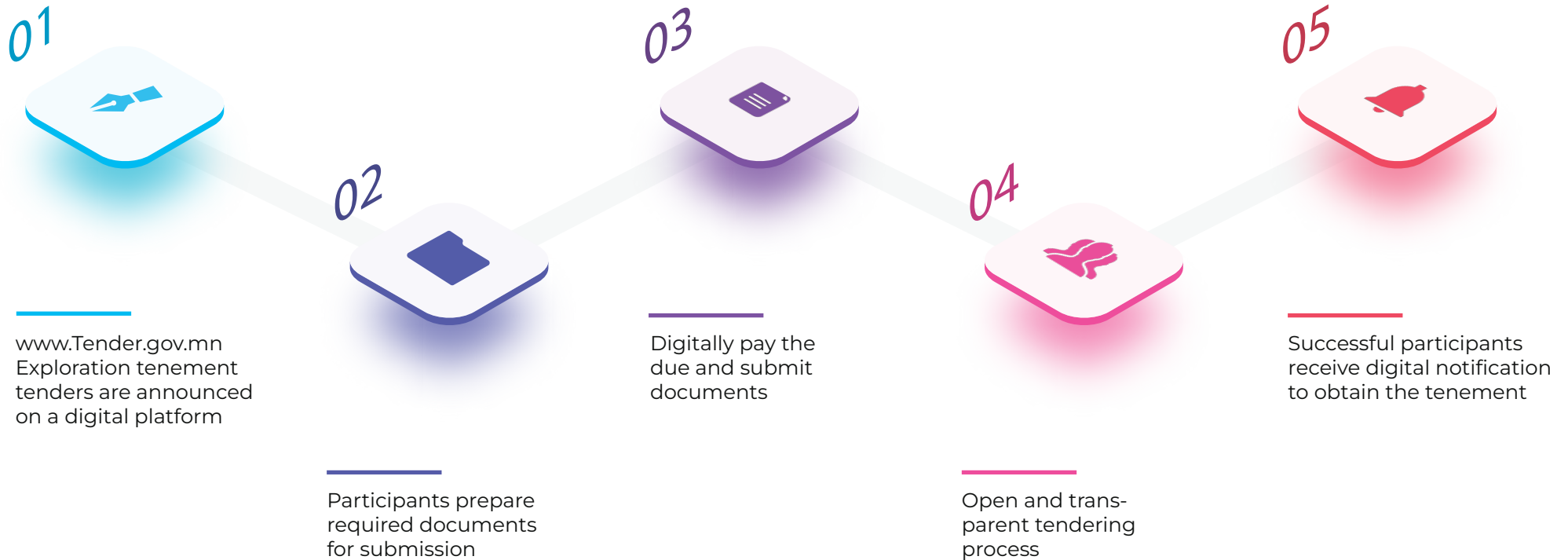
LOCATION MAP OF BASE METAL'S (Pb, Zn, Ni, Co, Al)
DEPOSITS AND OCCURRENCES MONGOLIA
SCALE 1:12 000 000



Tender process

Digital transition

for obtaining exploration tenements



Open, transparent, and rapid service



INTRO to ACTIVE MINING PROJECTS IN COPPER and COKING COAL

Oyu Tolgoi deposit



Oyu Tolgoi mine is located 550 kilometres south of Ulaanbaatar and 80 kilometres from the Chinese border. The deposit was discovered in 2001.

Oyu Tolgoi operates both open pit and underground mines (underground mine is expected to reach sustainable production in the first half of 2023) along with a concentrator and necessary infrastructure to process 100,000 tonnes of ore per day. As of September 2022, 97 per cent of Oyu Tolgoi's workforce was Mongolian, of which 21 per cent was from the Umnugovi community.

Oyu Tolgoi sells its copper concentrate to international customers through a combination of long-term and spot contracts. When the underground mine reaches full production, Oyu Tolgoi is expected to become one of the top five copper mines in the world.

The mine has made significant economic contribution to national and local economies – total in country spend between 2010 to end of September 2022 reached US\$14.5 billion.

Company profile

Ownership:

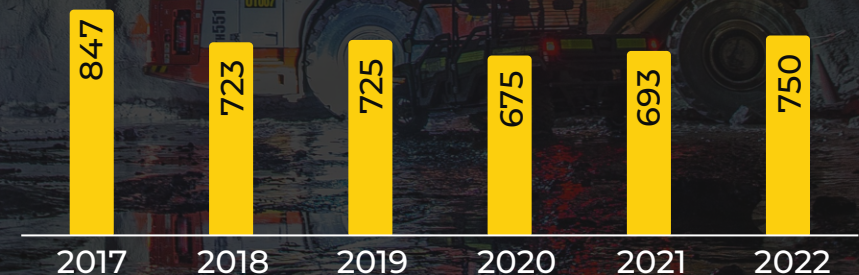
Oyu Tolgoi LLC is owned by **Turquoise Hill Resources Ltd.** (66 per cent) and **Erdenes Oyu Tolgoi LLC** (34 per cent). Erdenes Oyu Tolgoi is wholly owned by the Government of Mongolia. Turquoise Hill Resources Ltd. is majority owned by **Rio Tinto** (51 per cent). Since 2010, Rio Tinto has provided strategic and operational management services to Oyu Tolgoi.

Reserve:

43.5 mil.tn copper, **1,838.0 tn** gold, **11,746.0 tn** silver, **202.0** thous.tn Mo.

Concentrate produced

(Dry metric tonnes, 000's)



Ukhaa Khudag Deposit Baruun Naran Deposit

**SIZABLE COKING
COAL RESOURCES
AND RESERVES
BASE**



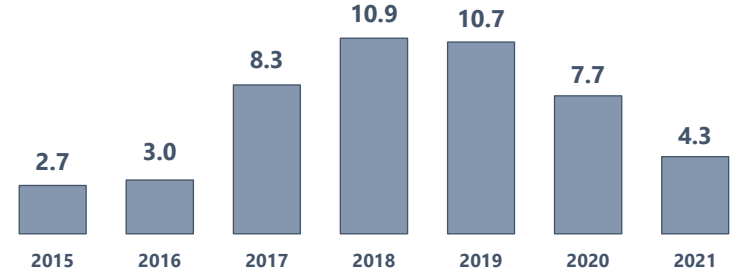
Mongolian Mining Corporation (the “Group”) and operates two open-pit coking coal mines, namely the Ukhaa Khudag (“UHG”) deposit located within the Tavan Tolgoi coal formation and the Baruun Naran (“BN”) deposit, both of which are located in the South Gobi province of Mongolia.

UHG mine is located ~540 km south of Ulaanbaatar, the capital city of Mongolia, and ~240 km from the Mongolia-China border crossing Gashuunsukhait-Ganqimaodu (“GS-GM”). BN mine is located ~30 km south-west of UHG mine.

The Group is the sole fully integrated washed coking coal exporter in Mongolia, comprising of mining, processing, transportation, and sales and marketing platforms.

UHG, BN, and Tsaikhar Khudag (“THG”) mining licenses were granted in 2006, 2008 and 2013, respectively. The licenses permit the Group to engage in coal mining activities for an initial period of 30-years, extendable twice by 20-years each.

**ROM COAL PRODUCTION
(Mt)**

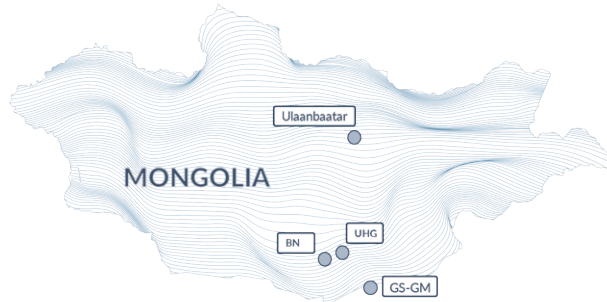


MSCI
ESG RATINGS

A

CCC | B | BB | BBB | **A** | AA | AAA

CDP
DISCLOSURE INSIGHT ACTION
D
2020
CLIMATE



S&P Global
Ratings
B-

Fitch Ratings
B

HKEX
975

ERDENETIIN OVOO DEPOSIT



Resource:

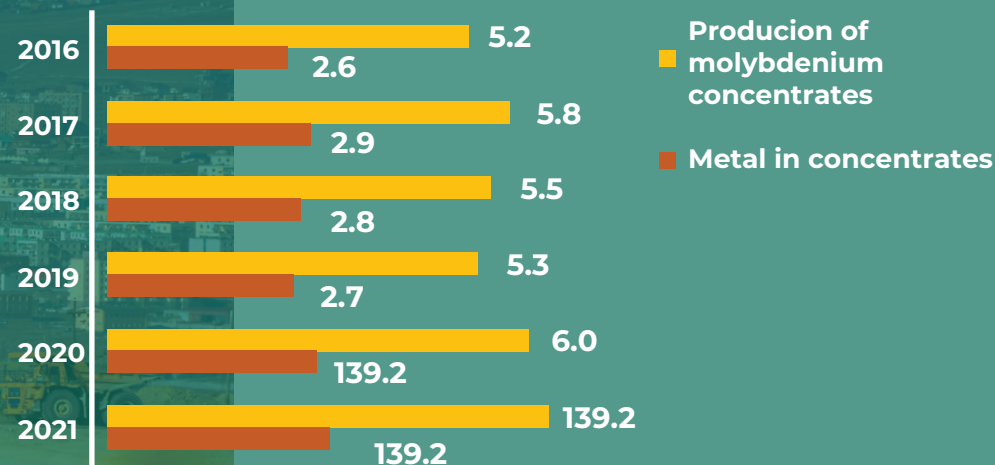
The deposit reserves were established in 1972 and the concentrator was commissioned in 1978. The resources of 10.7 million tons of copper and 499.6 tons of molybdenum have been determined as of 2021.

Production:

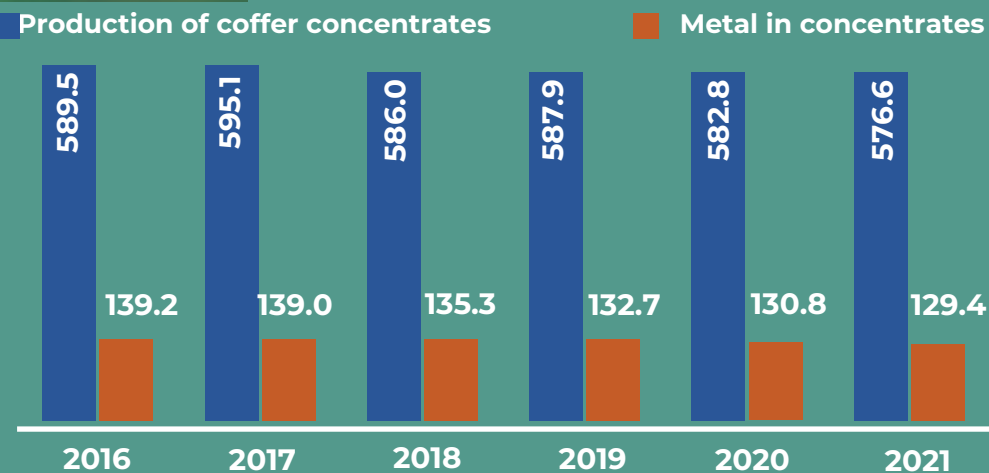
Per year, Erdenet Mining Corporation SOE mines 37 million tons of ore, processes 32.5 million tons of ore, produces around 580.0 thousand tons of copper concentrates and around 5.0 thousand tons of molybdenum concentrates.

The construction of Erdenet city with a complex infrastructure based on the mining industry in Mongolia has been a classical project model.

MOLYBDENUM PRODUCTION (thousand tons)



Copper Production (Thousand tons)



Kharmagtai Copper-Gold Project

COMPANY PROFILE

XANADU MINES



The Kharmagtai mineral complex is located in Omnogovi Province, approximately 420km southeast of Ulaanbaatar. It is located within the South Gobi porphyry copper province hosting well known deposits such as Oyu Tolgoi copper-gold operations (120km south), the Tsagaan Suvarga porphyry copper- molybdenum development (170km east) and Xanadu's Oyut Ulaan porphyry copper-gold exploration project (260km northeast).

The Kharmagtai project includes a 1.1 billion tonne Mineral Resource and a Scoping Study confirming strong project economics with a 4-year payback and 20% IRR. A Pre-Feasibility Study will commence in 2024 along with continued discovery exploration, funded by US\$35M from a strategic partnership with Zijin Mining. The PFS will deliver a maiden Ore Reserve, uplifted economics, and a financial investment decision (FID). Initial production of copper-gold concentrate is expected late 2027, at which point Kharmagtai will be a globally significant, low-cost Mongolian producer of copper and gold.

Ownership:

Kharmagtai is owned by **Mongol Metals LLC (90%)** and **QGX Ltd (10%)**. Mongol Metals is majority owned by **Xanadu Mines Ltd (85%)** and **Ganbayar Lkhagvasuren (15%)**. Since 2013, Xanadu Mines has operated exploration programs at Kharmagtai.

Mineral Resource:

1.1Bt containing 3Mt Cu & 8Moz Au, including a >100Mt higher-grade zone

Scoping Study and PEA:

Open pit mine, 30-yr life; **US\$630M NPV**; **4-yr payback & 20% IRR**, producing 50ktpa copper & 110kozpa gold

Zijin Strategic Partnership:

Three phase investment with first phase completed. Detailed JV and placement agreements are being completed for shareholder vote.

- **Phase 1 (completed) = A\$5.6M** cash at 4cps (38% premium) for 9.9% of Xanadu.
- **Phase 2 = A\$5.7M** cash to increase to 19.99% of Xanadu.
- **Phase 3 = US\$35M** cash invested in 50-50 JV that controls Kharmagtai

Tavan Tolgoi Deposit

Commitments to community and environment

Sustainable development is one of the core values of Erdenes Tavantolgoi JSC. At Erdenes Tavantolgoi, Climate change is one of the significant challenges of our time. We continuously adapt to the latest possible methods to combat climate change and remain sustainable while delivering value to customers, employees, and local communities by safely and sustainably operating coal mining and production. The company is committed to working sustainably to minimize greenhouse gasses and air pollution and remediate and rehabilitate the landscape once mining is completed. Moreover, as part of our corporate social responsibility scheme, we strive to finance projects focusing on the environment and community development. Some of these include:

- ◆ 180 Million Trees Project – Mongolia has pledged to the UN to plant 1 billion trees by 2030. As part of this pledge, ETT has committed to planting 180 million trees, and the project is already underway.
- ◆ Coal briquette subsidy – Ulaanbaatar is the coldest capital city in the world. Therefore, hundreds of thousands of households still burn raw coal for heating, which increases air pollution. To offset the pollution from burning raw coal, ETT has financed the coal briquette factory and offers subsidies to its coal briquettes, making it affordable to every household. The subsidy saw a massive increase in the number of households adopting coal briquettes for use due to its affordability. This resulted in a 30 percent decrease in air pollution in Ulaanbaatar city.
- ◆ ETT's spirit animal is the Tibetan lynx, but it is threatened by habitat loss and is listed as vulnerable. With the help of conservation experts and biologists from the National University of Mongolia, ETT is working on a conservation project to protect vulnerable species.
- ◆ Finally, Erdenes Tavantolgoi JSC has committed to reaching net-zero by 2060 in line with the target markets' policies

NET ZERO
by 2060



MONGOLIAN COAL & ENERGY GROUP

The collage features several hexagonal frames containing images: a large mining truck, the ETT logo, an industrial refinery at night, a train on tracks, a road stretching into the distance, a power plant or industrial facility, and a large parking lot filled with cars. Small icons representing different industrial and environmental aspects are scattered throughout the collage.

Company Highlights

- **7.08 billion** JORC-compliant tonnes of resources, of which **53%** is high-quality coking coal
- In 2021, ETT became the **6th** largest coking coal exporter in the **world** and the **#1** coking coal exporter to **China**, by volume.
- Close proximity to the **target market**
- ETT is **81.5%** owned by the government of Mongolia
- One of the top 3 tax payers in Mongolia.
- A member of the World Coal Association



Coking coal mining license



License area



Approved reserves JORC classification



Coking coal

Mongolian coal & Energy group

Main operations

Coal production /thousand tons/



Coal sales /million \$/



Projects

Tovantolgoi-Cashuunsukhait Railway

The 236.6 km long railway has 2 stations, 6 crossings, 16 bridges, 172 pipes, livestock crossings and has a capacity to transport 30-50 million tons of freight per year.

Tavantolgoi-Zuunbayon Railway

The total length of the Tavantolgoi-Zuunbayan railway is 416.1 km and is planned to have a capacity of 15 million tons of freight per year.

Conveyor system

The Tavan Tolgoi deposit plans to build 2 lines of 18 km each at the western and eastern Tsankhi mines and 1 line of 12.6 km from the mine to the Coal Concentrator.

Coking plant

Coking plant consists of two plant modules with 1 million tons of coke capacity per annum and is automated by the world's leading PLC and DCS control systems. Also plant will generate electricity using heat generated during coke production.

Washing Plant

The coal washing plant has the capacity to receive and concentrate up to 30.0 million tons of coal per year. The plant consists of 3 modules with capacities of 10.0 million tons of coal, each of which operates separately.

Tavantolgoi Thermal Power Plant Project

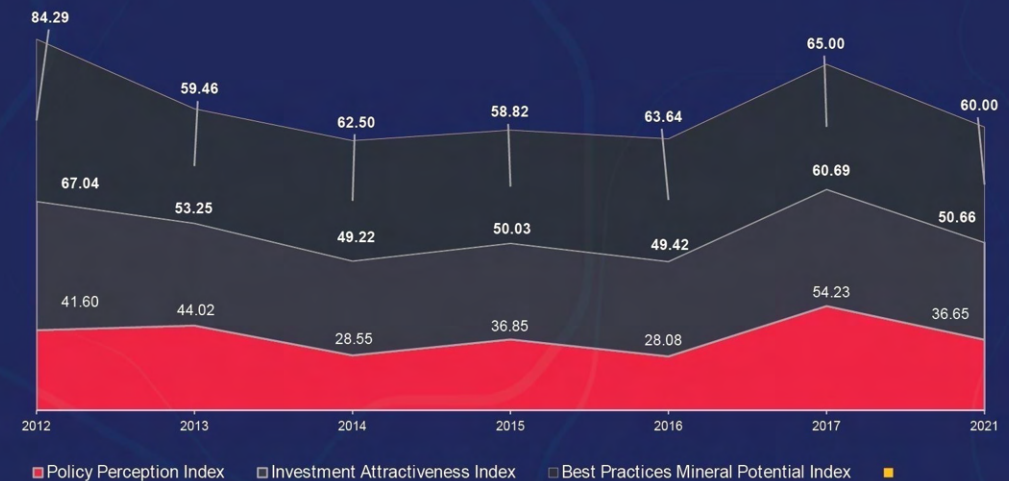
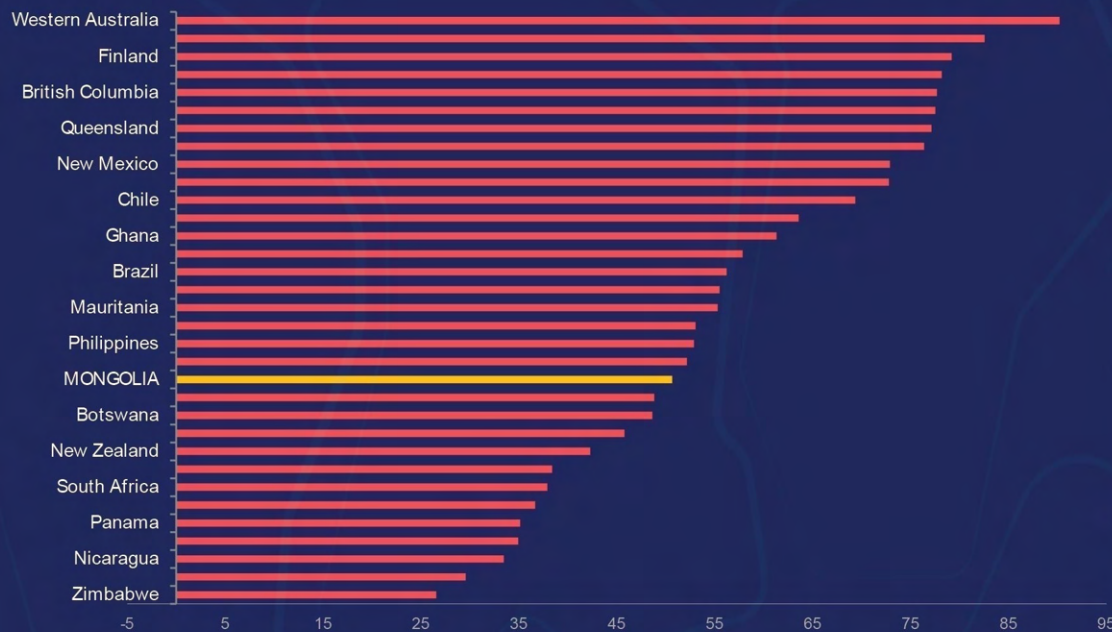
The power plant is planned to be built on the basis of the Tavan Tolgoi coal deposit in the area of the Tavantolgoi industrial technology park, more than 30 buildings and open facilities, with a total installed capacity of 450 MW or three steam turbines of 150 MW each.

Cashuunsukhait integrated transport terminal

The 9283,87-hectare Integrated Terminal is located on the China-Mongolia border. After completion the terminal will have export capacity of 75 million tons of coal per year from which 30 million tons will be transported by rail and 45 million tons will be transported by truck. This project will significantly increase overall export volume and passage speed on the border. The terminal will be the biggest terminal and free economic zone in Mongolia.

INVESTMENT IN THE MINERALS SECTOR OF MONGOLIA

CRITERIA	2012	2013	2014	2015	2016	2017	2021
Investment Attractiveness Index /point/	67	53	49	50	49	61	51
Investment Attractiveness Index /placement/	31/96	80/112	93/122	85/109	81/104	53/91	63/84
<i>Policy Perception Index</i>	42	44	29	37	28	54	37
<i>Best Practices Mineral Potential Index</i>	84	59	63	59	64	65	60

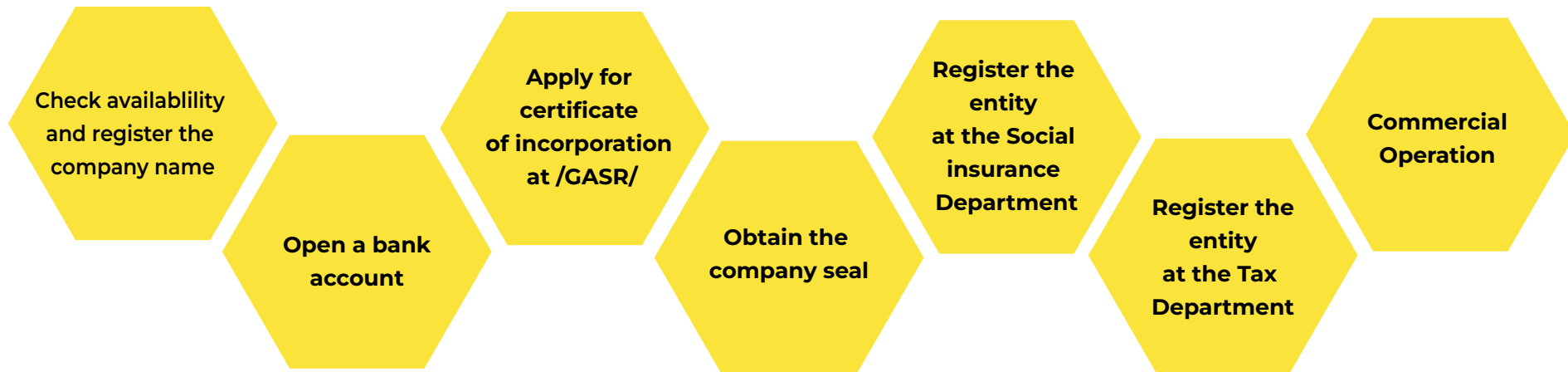




SETTING UP IN MONGOLIA

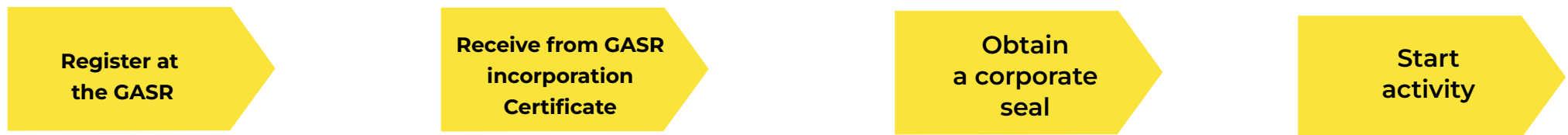
Establishment procedure of a new business Entity with foreign investment

The incorporation of new business entity with foreign investment (BEFI) in Mongolia takes place at the General Authority for State Registration /GASR/.



Establishment procedure of a representative office of a foreign legal entity

The establishment of a new representative office of a foreign legal entity in Mongolia takes place at the GASR.



LEGAL ENVIRONMENT

The Minerals sector's legal environment is constantly improving, and the major laws related to doing business in the sector are as follows.

Minerals Law /2006/
Common Minerals Law /2010
Water Law /2012/
Nuclear Energy Law /2009/
Petroleum Law /2014/
Petroleum Production Law /2005/
Land Law

Environment impact assessment law /2012/
Law on the fees for natural resources /2012/

Company Law /2011/
General law on taxation /2008/
Law on investment /2008/
Concession law /2011/
Business entities income tax law /2006/
VAT law /2015/
Customs Law /2008/

Always open to COLLABORATION



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HEAVY INDUSTRY OF MONGOLIA**

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