

OVERVIEW OF MINING BUSINESS

Qualifications



Engineering Consultation Certificate (Class A)



Qualification Certificate for General Contracting of Mine Engineering Construction (Class B)



Engineering Design Integrated Qualification Certificate (Class A)
The first such certificate throughout the non-ferrous industry of China.

Talents

- ★ 1 Academician of the Chinese Academy of Engineering
- ★ 2 National Engineering Survey and Design Masters
- ★ 6 National Non-ferrous Industry Design Masters
- ★ 3 AusIMM Fellows
- ★ 7 JORC/Competent Persons
- ★ 1 Selected member in the national “Millions of Talents Project”
- ★ More than 500 professionals, with more than 50% of senior titles and more than 60% holding master's degrees



TURN A STONE OF RESOURCE INTO
A GEM OF UNDERTAKING

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NON-COAL MINE

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ENFI

COMPANY PROFILE

Founded in 1953, China ENFI Engineering Co., Ltd., i.e., China ENFI Engineering Corp. (formerly known as China Non-ferrous Engineering and Research Institute, hereinafter referred to as "China ENFI"), is the first national professional design institution set up after the founding of the People's Republic of China with the mission to revive and develop the country's non-ferrous metals industry. Now a subsidiary of China Minmetals Corporation and MCC Group, both Fortune Global 500 companies, China ENFI holds Class A Engineering Design Integrated Qualification for all areas of the industry.

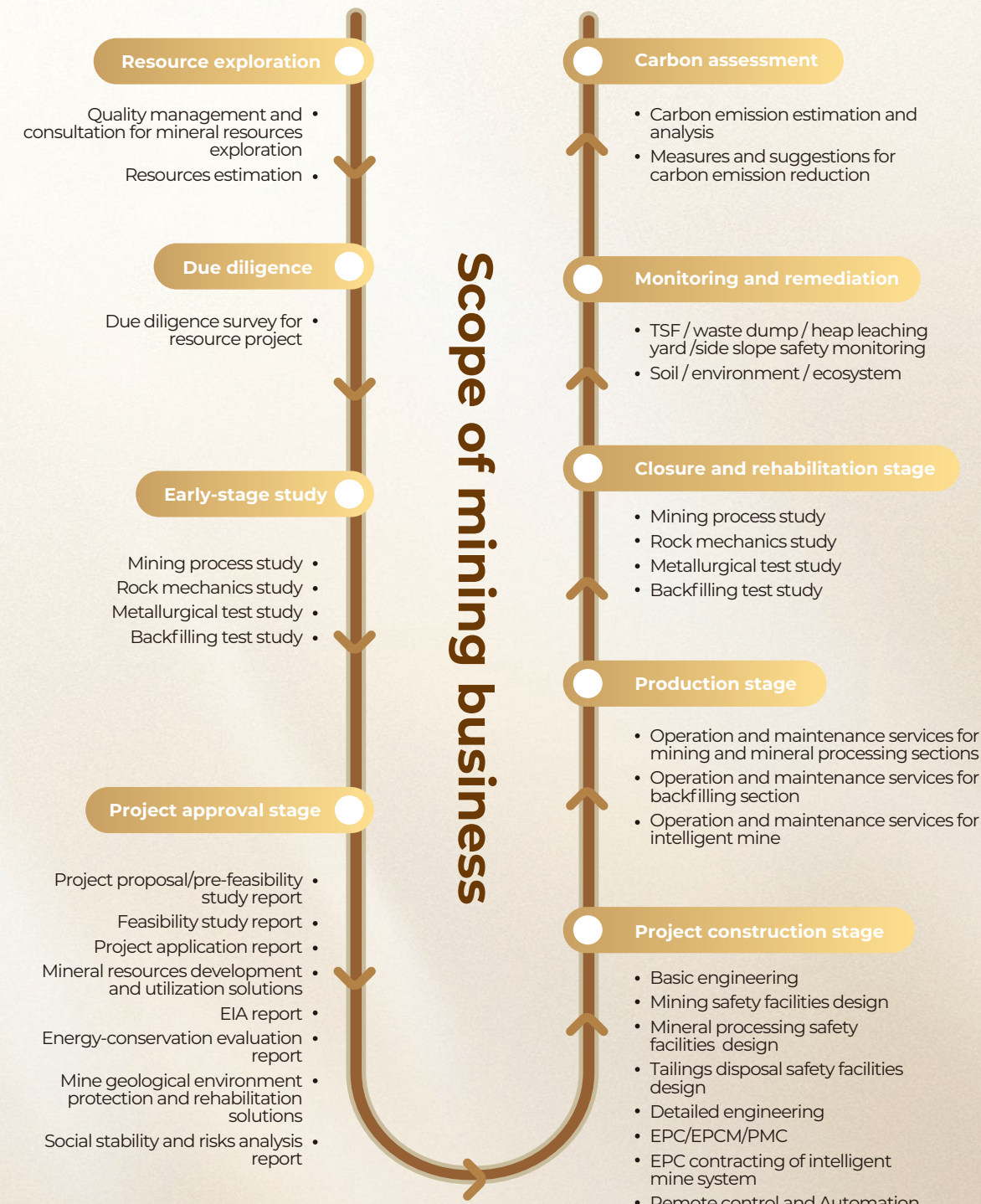
For more than 70 years, China ENFI has been involved in over 12,000 engineering projects in more than 30 countries and regions. Rooted in non-ferrous mining and metallurgy, driven by technological innovation, and specializing in high-end consulting, China ENFI has developed three major business sectors: scientific research, engineering services, and industrial investment, and has a strong presence in nine business lines, namely non-coal mines, non-ferrous metallurgy, water services, energy and environment, advanced new materials, urban infrastructure and tourism, urban mineral resources, intelligent equipment, and real estate management. With its versatility and core competitiveness, China ENFI can provide services throughout a project life cycle: EPC, project management, engineering consultation, design, cost estimation, construction supervision, environmental evaluation and product supply, etc., and possesses capabilities throughout a project value chain, from consultation, design, construction, to investment and operation.

As a technology leader in the industry, China ENFI boasts a high-quality engineering design team covering more than 40 engineering disciplines including geology, mining, mineral processing, tailings, metallurgy, architecture, structure, electrical, thermal engineering supplemented by utility and auxiliary facility engineering, on top of which is a talent and expert team made up of academicians of the Chinese Academy of Engineering and many national and industry-level design masters, and one hundred

Ph.D.'s. China ENFI has set up an all-discipline technological R&D platform, and possesses 3 national platforms including National Engineering Research Center for Silicon Materials Preparation Technology, etc., 1 academician & expert workstation, 2 post-doctoral research stations, ENFI Research Institute, Mining Economy Research Institute, MCC Low-Carbon Technology Research Institute, Yanshi R&D Base and 18 provincial and ministerial level platforms. Relying on the "3331815" (3 national platforms, 3 stations, 3 institutes, 18 provincial and ministerial platforms, 1 base, 5 co-development and innovation platforms) R&D platforms, China ENFI has created a large number of technological innovations with high market value, won more than 1400 awards at the national, provincial and ministerial levels, and obtained more than 2000 granted patents with invention patents accounting for about 60%, leading the industry towards a sustainable intelligent, eco-friendly and green development.

Guided by China's industrial strategies, China ENFI is accelerating its transformation towards a digitalized, data-driven, international company with vast networks. As China's national team in non-ferrous mining and metallurgy, the vanguard of environmental protection, and a pioneer in emerging industries, China ENFI always builds its strength on technology and quality, making unremitting contributions to the growth and upgrade of the industry, and aims to become the most trustworthy international engineering service provider and energy and environmental business developer.





Comprehensive technology of deep buried resources mining

High-density slurry and paste filling technology

Block caving mining

Ultra-large scale mine development

Large-scale open-pit comprehensive mining

Open-pit and underground combined mining

Low-grade and hard-to-mine deposit mining

Stability monitoring of open-pit slope and TSF

Development of mines with heavy water inflow

Potash ore mining and beneficiation technology

Efficient comminution process

Polymetallic ore mineral processing

High-efficiency lithium minerals recovery

Efficient separation of rare earths

Slurry long distance pipeline delivery

Centerline tailings damming

Combined waste rock-tailings damming

Large-scale tailings dry stacking

Intelligent mine “MIM+” technology

Unmanned track transportation system

Mine solid waste open-pit backfilling treatment

CORE PROPRIETARY TECHNOLOGIES

National standards compiled by China ENFI			
S/N	Standard name	Standard type	Standard Code
1	Code for Energy Conservation Design of Non-Ferrous Metal Mines	National standard	GB 50595-2010
2	Mining Drawing Standard for Metal and Nonmetal Mines		GB/T 50564-2010
3	Code for Design on Fire Prevention of Non-ferrous Metals Engineering		GB 50630-2010
4	Code for Technological Design of Non-Ferrous Concentrator		GB 50782-2012
5	Code for Design of Tailings Facilities		GB 50863-2013
6	Design Document Preparation Standard of Construction Project for Non-ferrous Mine		GB/T 50951-2013
7	Code for Design of Underground Opening of Non-ferrous Metals Mine		GB 50915-2013
8	Load Code of Non-ferrous Metals Engineering Structures		GB 50919-2013
9	Technical Code for Equipment Foundation of Non-ferrous Metals Engineering		GB 51084-2015
10	Code for Design of Measurement and Control of Non-ferrous Metals Mines		GB/T 51196-2016
11	Non-coal mine mining terms and standards		GB/T 51339-2018
12	Safety Regulations for Metal and Nonmetal Mines		GB 16423-2020
13	Safety Regulations for Tailings Pond		GB 39496-2020
14	Code for Design of Water-conservation for Nonferrous Metal Enterprises		GB 51414-2020

TYPICAL PROJECTS



Yulong Copper Mine

—High-altitude open-pit mine



Dexing Copper Mine

—Ultra-large open-pit copper mine in China



Jinduicheng Molybdenum Mine

—Molybdenum mine model in green, energy saving and comprehensive utilization



Xintian Mineral Processing Plant of Dulong Copper-Zinc-Tin Mine

—Project granted with National Quality Engineering Award




Huayue Ni-Co ore slurry pipeline project

—First nickel laterite slurry long-distance pipeline delivery line in Indonesia



Daye Non-ferrous Company Tonglvshan Copper-Iron Mine

—Open-pit fill technology model



Mirador Copper Mine

—First large open-pit solid minerals development project in Ecuador



Tongkuangyu Copper Mine

—China's first mine with block caving method



Dongguashan Copper Mine

—China's first 1000m-deep shaft mining



Chambish Copper Mine, Zambia

—Africa's first digitalized mine



Yanqianshan Iron Ore Mine Smart Mine Project

—Whole system smart mine project



Nanfen Process Plant (EPC)

—Process plant upsizing and intelligent modification model




Pulang Copper Mine

—China's largest production capacity underground copper mine




Sanshandao Gold Mine

—China's first undersea mining metallic mine



Jinchuan Nickel Mine

—Downward consolidated fill mine with largest continuous mining area in the world



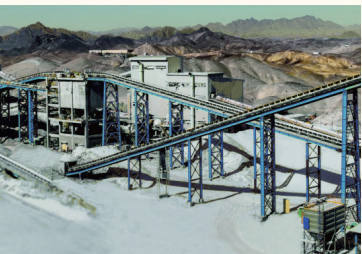
Yunshan Graphite Mine (EPC)

—World largest single graphite processing production line



Ramu Nickel-Cobalt Mine, Papua New Guinea (EP)

—Leading Ni laterite technology



Saindak Copper-Gold Mine, Pakistan

—China-Pakistan economic cooperation model



Sishanling Iron Ore Mine

—Super-large deep shaft iron ore mine with a capacity over 10mt/a to be completed



Kaiyang Phosphate Mine

—Phosphate mine with largest production capacity and deepest mining depth in China



Laos Dongtai Potash Mine

—Project awarded with Luban Prize and EPC Contracting Bronze Key Prize



Kamoa-Kakula Copper Mine (EPCM), DRC

—World level high-grade copper mine



MAK TS Project, Mongolia (EPCM for process plant + EPS for TSF)

—Third largest Cu-Mo reserves in Mongolia



Asmara Copper-Gold Polymetallic Mine Project, Eritrea (EPC)