SINOSTEEL ENGINEERING & TECHNOLOGY CO., LTD.

Stock code: 000928

Beyond Expectations

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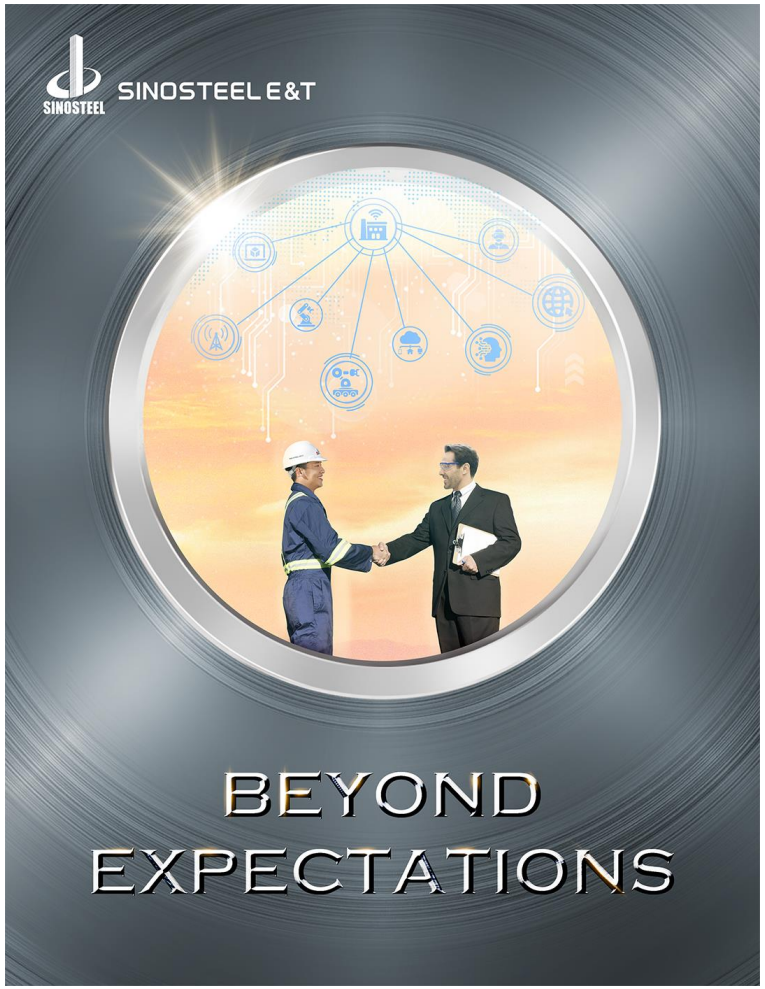
About Us

About Us

- **Leading company of industrial engineering, technology and service worldwide;** listed on Shenzhen Stock Exchange (stock code: 000928);
- Focus on industrial engineering & service, energy saving & environmental protection, safety & protection as well as high-tech businesses;
- Merged with China Baowu Steel Group Corporation since October 2020;
- One of the first group of Chinese engineering companies goes global, business covering more than 40 countries;
- Provide outstanding all-process and life-cycle service, as well as all-in-one green & low-carbon solutions to customers around the globe with continuous input into R&D and technological innovation.



Mission: By providing outstanding all-process and life-cycle service, along with green, innovative and sustainable all-in-one solutions to our clients, we are committed to intelligent and low-carbon development and, together with our partners, endeavor to a harmonious coexistence with the community and society.

Vision: Continuously to enhance our core competitiveness and maintain the leading position in China and aim to be a forefront engineering company of metals in the world, driven by technology-based development and unceasing innovation.

Value: Efficiency & Excellency,
Reliability & Innovativeness,
Collaboration & Win-win

Motto: Beyond Expectations

About Us - Milestones I

SINOSTEEL E&T

1972 Sinosteel Equipment & Engineering Co., Ltd., the core subsidiary of Sinosteel E&T founded.

1986 Participated in the construction of Baosteel and received the National Award for Major Technical Equipment, Ministry Award for Progress in Science and Technology.

1999 Incorporated with Sinosteel Group Corporation Limited;
Started international project contracting by exporting 750,000tpa bar mill to Turkey.

2003 Contracted a group of large-scale projects with worldwide influence, including the largest blast furnace (3050m^3), coke oven (6m, 2x65 ovens) and sintering (300m^2) project in Turkey.

2005 Ranked Top 10 on the list of Chinese 100 EPC Contractors by Turnover with outstanding references and kept in the front rank in the metallurgical sub-list for years in a row.

2006 Achieved business expansion from single project to integrated steel complex contracting by undertaking the Zongheng 6mtpa steel plate plant via EPC model.

2008 Listed in ENR's Top 225 International Contractors.

2010 Chosen by CuDeco as the EPC contactor for its Rocklands 3mtpa Copper Processing Plant, the first non-ferrous mining project contracted by a Chinese company in Australia.

2011 Contracted the 2x600MW power plant project of ICDAS in Turkey, speeding up business diversification.

About Us - Milestones II

2012
Closed the acquisition deal of Sinosteel Engineering & Design Institute Co., Ltd., and obtained grade A qualification for engineering and consulting in metallurgy/construction/telecommunications, TV & Broadcasting.

2013
Became the holding company of Sinosteel Tiancheng Environmental Protection Science & Technology Co., Ltd. and acquired 100% shares of Sinosteel Brazil.

2014
Listed on Shenzhen Stock Exchange as Sinosteel Engineering & Technology Co., Ltd. (stock code: 000928);
Annual revenue reached RMB 10 billion for the first time.

2015
Initiated the founding of Tianyu Intelligent Manufacturing Co., Ltd. as the largest shareholder, expanding into hi-tech field.

2016
Signed contracts of Tosyali 4mtpa pellet plant in Algeria - the largest travelling grate pelletizing project contracted by a Chinese company abroad, and one of the largest DRI projects in the world;
Signed Mutun steel complex project, the first integrated steel plant in Bolivia

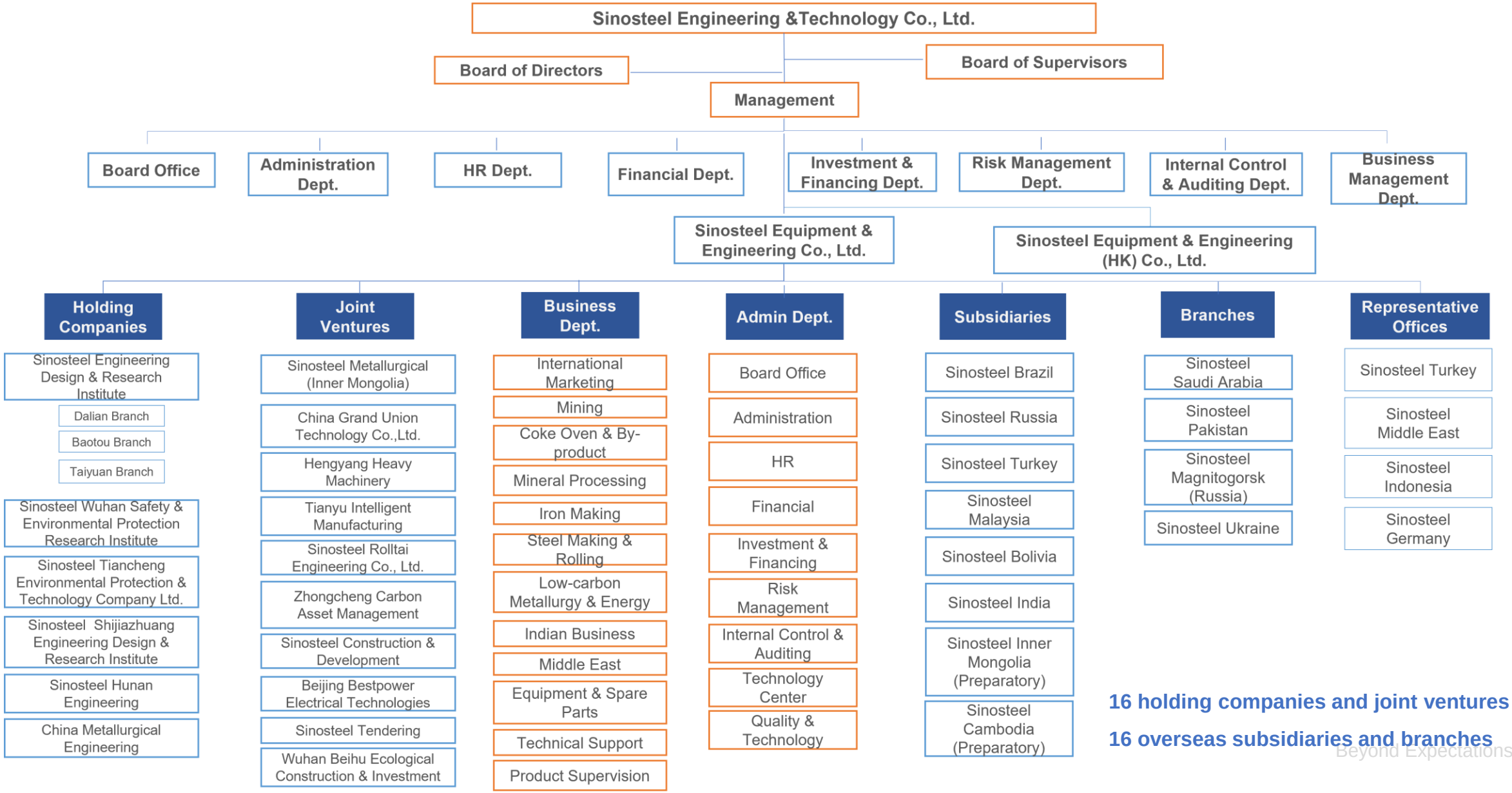
2017
240t EAF of Tosyali in Algeria, one of the largest EAFs in the world, was successfully put into production.

2018
Acquired Sinosteel Wuhan Safety & Environmental Protection Research Co., Ltd.;
Signed contract of MMK 2.5mtpa coking project, the largest coke oven by-product plant contracted by a Chinese company overseas.

2019
Rank in ENR's Top 250 International Contractors List hit a new record, No 107;
The first travelling grate pellet plant applying technology independently developed by Sinosteel MECC in China started production.

2020
Signed contracts of Baowu Ma Steel 4mtpa traveling grate pellet plant and ArcelorMittal 5mtpa traveling grate pellet plant, making Sinosteel MECC one of the first grade pelletizing technology providers in the world;
Signed contract of 1800mm HRC project for Tosyali in Turkey, a break through of China's large scale hot strip rolling technology in terms of export to overseas countries

About Us - Organization



16 holding companies and joint ventures

16 overseas subsidiaries and branches

SINOSTEEL E&T

SMS group

PRIMETALS TECHNOLOGIES

CSN
Companhia Siderúrgica Nacional

bhpbilliton BHP

MIDREX

ЭРДЭНЭС ТАВАН ТОЛГОЙ
ERDENES-TT

JINDAL SAW LTD.
TOTAL PIPE SOLUTIONS

NMDC LIMITED

DANIELI

CODELCO

ERG

ارامكو السعودية
Saudi Aramco

MITSUBISHI
HEAVY INDUSTRIES, LTD.

tenova
HYL

JSL
INDAL STAINLESS

SIDERPERU
El acero del Perú

丸紅株式会社
Marubeni

About Us - Partners

SINOSTEEL E&T

BAOSTEEL

HBIS GROUP 河钢集团 HBIS GROUP

首钢集团 SHOUGANG GROUP

福建三钢

建龙集团 JIANLONG GROUP

MA STEEL 马钢集团

KISC

柳钢集团 LIUZHOU STEEL GROUP

ANSTEEL 鞍钢集团

德龙集团 DELONG GROUP

武汉钢铁

盛隆冶金

涟钢 LY STEEL

山东钢铁 SHAN STEEL

沙钢集团 SHAGANG GROUP

河北新华联合冶金集团 HEBEI SINOGIANT STEEL HOLDINGS GROUP LIMTED

02

Competitive Strength

Competitive Strength

SINOSTEEL E&T

Globalization

Technology Innovation

Resources Integration

Diversification

Operation & Management

Brand

Competitive Strength - Globalization

One of the first group of Chinese metallurgical engineering companies goes global

- Export cutting edge technologies, equipment, and management service of Chinese metallurgical industry, support customers to extend their industrial chain and provide integrated systematic service to more developing countries;
- Business footprints in more than 40 countries and there are about 30 subsidiaries and branches;
- **Gained excellent reputation in overseas metallurgical engineering field;**
- Signed contracts of ArcelorMittal 5mtpa traveling grate pellet plant and Tosyali 1800mm HRC project in 2020, a hard time struck by COVID-19 pandemic.

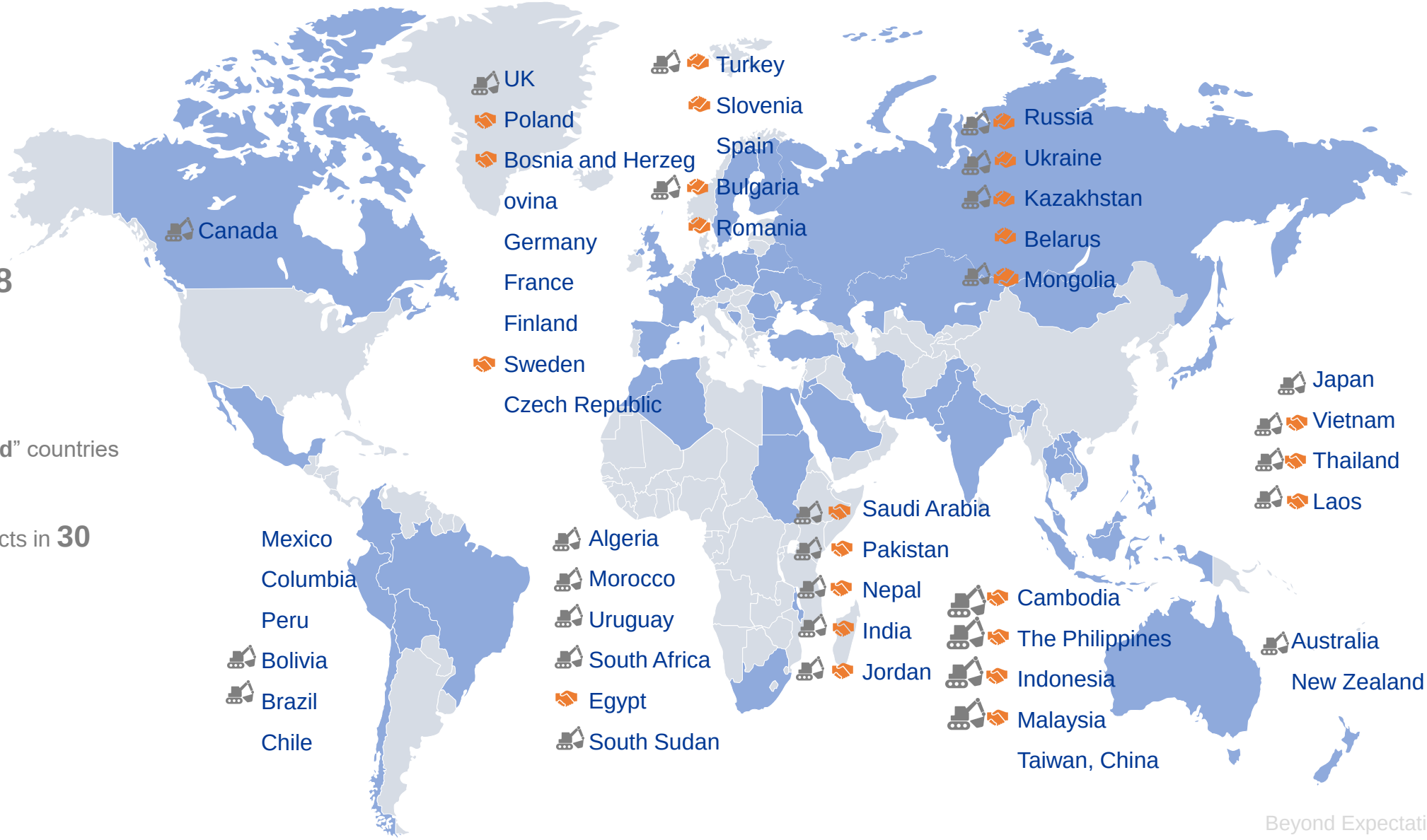
Competitive Strength - Globalization

SINOSTEEL E&T

Business in **48** countries and regions

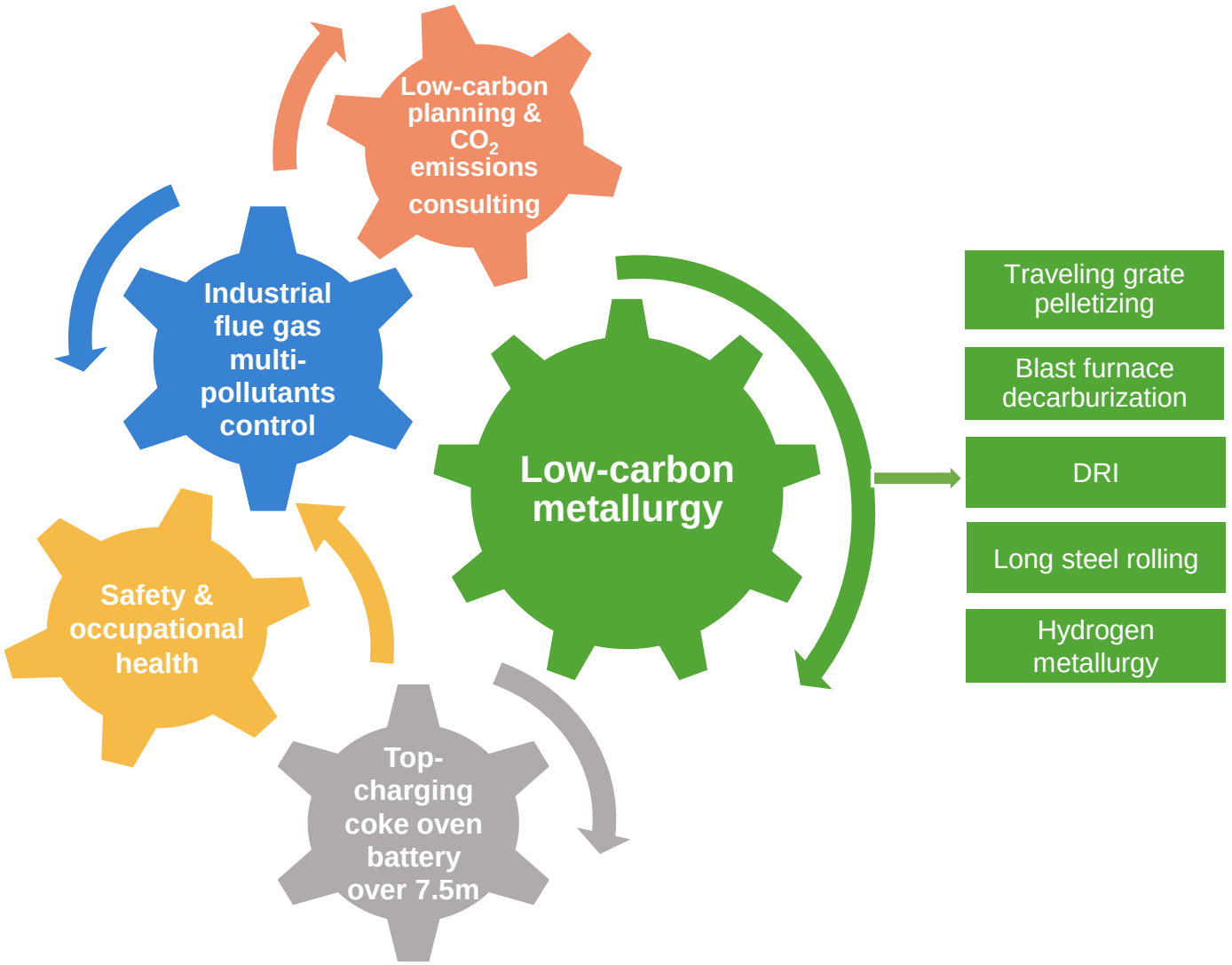
26
"**Belt and Road**" countries

EP/EPC projects in **30** countries



Competitive Strength - Technological Innovation

- Stick to technological innovation as the power source and driving force of development;
- Gain and keep competitive edge through independent and cooperative innovation; follow closely and lead technological development trend;
- Focus on low-carbon metallurgy technology development with forward planning and provide integrated solution covering metallurgical, chemical and energy industries.



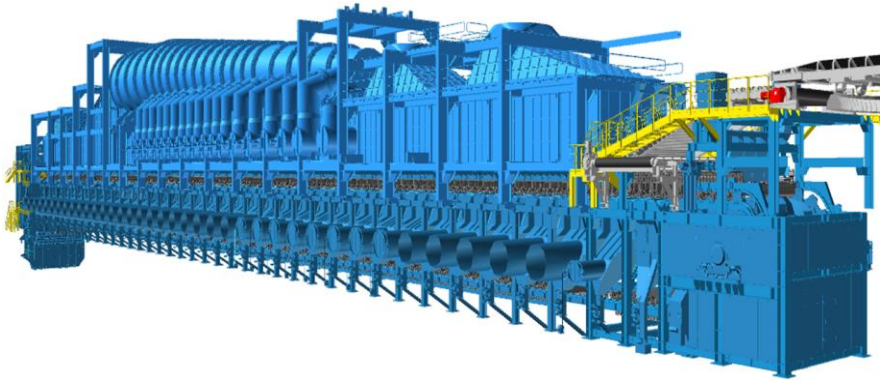
Competitive Strength - Technological Innovation (blast furnace decarbonization)

The blast furnace decarbonization project of Baowu Group, contracted by Sinosteel E&T on EPC basis, employs pure oxygen iron making, hydrogen enrichment, in addition to top BFG decarbonization - BFG recycling injection technologies, expected to substantially improve the efficiency of smelting furnace and reduce carbon dioxide emission by 30%

- Blast furnace iron making produces 70% CO_2 of the integrated BF-BOF route;
- Research on fraction increase of pellets, COG, natural gas and hydrogen reduces carbon emission and expedites the application of smart BF technologies;
- The hydrogen-rich carbon recycling blast furnace, a pioneer low-carbon project of Baowu Group, is retrofitted from the original 380m^3 BF and employs pure oxygen iron making, hydrogen enrichment, as well as top BFG decarbonization - BFG recycling injection technologies;
- The efficiency of smelting furnace will be substantially improved and carbon dioxide emission will be reduced by 30%.

Traveling grate iron ore pelletizing (TGIOP) technology

- Clean burden and a substitute to sinter in blast furnace iron making; optimal raw material for DRI; carbon emissions before iron making will drop by 10% in case fraction of pellet for blast furnace is increased from 10% to 50%;
- Independently developed by Sinosteel E&T, the world-leading technology filled a gap in China, and is exported overseas successfully for the first time by Chinese company;
- Achieved industrial production of 2mtpa/3mtpa/4mtpa/5mtpa capacity, and reserves capacity for 6mtpa and 8mtpa production;
- Research combining computational fluid dynamics (CFD) and laboratory;
- Development of airflow balance control for hot air system ensures effective heat transfer and recycle, and appropriate material flow control, greatly reducing energy consumption and emissions of pollutants and CO_2;
- Research and optimization of pallets, indurating system and refractory furnace lining enables even distribution of temperature field, reducing generation of NOx
- Applying BIM for digitalized design, construction management and delivery;
- China-made large and automated pelletizing equipment meets the demand of variety of material conditions and products.



Competitive Strength - Technological Innovation (DRI)

Core route to achieve carbon emission peak and neutrality for iron & steel industry

- DRI production emits less carbon dioxide by using typically clean gas as reductant and fuel, and is recognized as the main route to achieve carbon emission peak and neutrality for iron & steel industry. Its application will contribute to decarbonization pathways including change of Fe resource structure, process route reformation, clean energy utilization, coproduction in iron & steel, chemical and energy industries, as well as CCUS;
- “DRI+EAF” steelmaking reduces carbon dioxide by 50-60% than conventional “BF+BOF” route;
- The first Chinese engineering company built gas-based DRI plants, completed two of the world’s largest DRI projects which are in production, and another DRI-based steel complex is under construction in Bolivia;
- Established long-term and stable cooperation with Midrex, HYL and research institutions in terms of process technology, equipment, project construction and management;
- Committed to technological development, industrial application and equipment upgrade in engineering field, and promoting its application in China.

Competitive Strength - Technological Innovation (wire rod rolling system)

Single-pass, double-pass and multi-pass TMCP improves efficiency and quality whilst reducing cost

R&D on HRB400E rolling technology and equipment started since 2014:

- Originate the cancellation of V and Nb in coiled rebar rolling;
- Originate the retrofit of conventional bar rolling to employ TMCP technology;
- High-speed wire rod rolling with fraction of Mn reduced to 0.55-0.6%, free of V and Nb;
- High-speed bar rolling with fraction of Mn reduced to 0.7-0.8%, free of V and Nb;
- Actual rolling speed for Φ8mm coiled rebar is 95m/s, and 72m/s for Φ10mm, both are the maximum speeds nationwide;

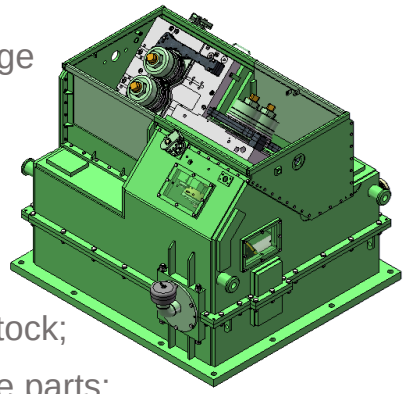
R&D on 500MPa rebar rolling technology (5M) started since 2018:

- Breakthrough of rolling the billet with 0.22% C, 0.5% Si, 1.3% Mn, free of V and Nb into 500MPa steel, saving US$23-31 per ton compared to traditional micro-alloy process;
- Enable the uniform adoption of 500MPa rebar by Chinese Standard for Reinforced Concrete;

Reducing & sizing mill and modular mill meet the requirement of high speed and bearing capacity of TMCP process

Successful development of reducing & sizing mill and modular mill:

- TMCP for A1-A3 dual-phase region at temperature of 750℃
- Medium and low voltage motor driven, low voltage power supply, low electrical investment cost;
- Shorter driving chain allows lower energy consumption and no-load power;
- Flexible pass design for different steel grade;
- Roll collar are replaced in pairs, requiring less stock;
- Modular design requires less maintenance spare parts;
- Serialized RVM150/230/265/290/330 mills adapt to all specifications of high-speed wire rod and rebar rolling;



Maximum speed:

- High-speed wire rod: sizing free 105m/s, sizing 110m/s
- High-speed rebar: 50m/s

147 patents (30 to be applied for), 10 on-site know-how

Competitive Strength - Technological Innovation (hydrogen metallurgy)

Hydrogen metallurgy is the ultimate approach to decarbonizing steel, and is the company's forward step in transforming "carbon-based" to "hydrogen-based" metallurgy

HBIS Zhangxuan High-tech Hydrogen Energy Development and Utilization Plant - world's first hydrogen metallurgy paradigm project

- A notable milestone for Chinese steel industry, employing Energiron-ZR process;
- Carbon dioxide emission will be cut by more than 60% per year;

Baosteel Zhanjiang gas-based shaft furnace - pilot hydrogen metallurgy project of Baowu Group:

- The first million-ton scale hydrogen-based shaft furnace integrated independently in China;
- Adapted to 50%, 70% or even 80-90% hydrogen operation, satisfying different production and experiment requirements;
- Expected to reduce carbon emission by 70% (84% if CO_2 is reused, and up to 90% if the proportion of hydrogen is 90%) .

Competitive Strength - Technological Innovation (cutting-edge technology)

Collaborate on low-carbon metallurgy, promote industrialization of technological innovation and cutting-edge low-carbon technology with independent intellectual property rights

- Cooperation with institutions and universities on low-carbon metallurgy technology and materials, hydrogen production, storage and utilization, metallurgy-energy-chemical integration and optimization, solid waste disposal and recycling, intelligent manufacturing of iron & steel process, as well as intensive and clean utilization of mineral resources, in terms of research, development, application and industrialization;
- Technical alliance to conduct sci-tech research, talent cultivation, platform building and achievement transformation.

Competitive Strength - Technological Innovation
(pollutants & carbon emissions control)

Remarkable scientific and research strength in air pollution control, iron & steel, petrochemical industries, and multiple applications of advanced green technology

4 National platforms of S&T innovation

- National Environmental Protection Engineering Center for Industrial Flue Gas Control
- National Engineering and Technology Research Center for Industrial Flue Gas
- National Engineering Laboratory for Flue Gas and Multi-pollutants Control Technology and Equipment
- Academician workstation for metallurgical ultra-low emission

8 National research projects

- Whole-process air pollution prevention and control for large integrated industrial park in Yangtze Rive Valley
- Dry dedusting for closed ferroalloy furnace
- Ultra-low emission of pelletizing flue gas multi-pollutants
- Solar film closure for dust control of urban stock (ash) yard
- PM2.5 control of metallurgical furnace flue gas
- Intelligent flue gas multi-pollutants control system
- Fine dust control for coal power plant boiler flue gas
- PM2.5 control for coal-fired flue gas

- Advanced green, self-developed and pioneered technologies, as well as the first set/project covering the entire metallurgical process
- Leading technology and equipment for controlling PM 2.5 emissions in kiln dust of iron & steel industry has contributed greatly to *China's Blue Sky Initiative*.
- Pre-charged bag filter reduces particulate emissions by 30-50%, resistance consumption by more than 40%, space demand by 35% and energy consumption per ton steel by 25%

Competitive Strength - Technological Innovation
(low-carbon planning and carbon emissions management & consultancy)

SINOSTEEL E&T

Professional and life cycle low-carbon planning and carbon emissions management & consulting, a Think Tank to promote green development of iron and steel industry

- Vast experience of provincial and municipal climate change programs, carbon peaking planning and assessment, as well as low-carbon pilot application;
- Carbon asset management and consultancy for governments and enterprises: measures, system and training on climate change, carbon accounting and performance cost research, carbon emissions forecast, diagnosis for energy saving and emissions reduction system, roadmap for low-carbon technology, analysis of emissions reduction potential and cost, plan and assessment for carbon peaking.

✓ planning, implementation and project study of circular economy;

✓ Industry development planning;

✓ eco-environmental planning and project studies;

✓ low-carbon development planning, result evaluation and project studies;

✓ energy saving planning and monitoring;

✓ soil survey, risk assessment, remediation plan, result evaluation.

Government & Enterprise

✓ fund application, feasibility study report;

✓ circular economy planning, eco-environmental planning, technology R&D of multi-purpose utilization of resources;

✓ low-carbon & carbon peaking planning, carbon emission inventory;

✓ environmental impact assessment, completion acceptance, environmental project studies;

✓ environmental stewardship, diagnosis and troubleshooting;

✓ clean production auditing, green manufacturing third party evaluation;

✓ evaluation, assessment and diagnosis for energy saving, energy auditing, energy management consulting;

✓ soil survey, risk assessment, remediation plant, result evaluation, troubleshooting;

✓ risk assessment for social stability, emergency planning for unexpected environmental incident

Competitive Strength - Technological Innovation
(safety, environmental protection & occupational health)

SINOSTEEL E&T

Safety and occupational health

- One-stop safety services including expert consultation, safety training, intrinsic safety improvement, consulting and review for standardization of safety production;
- Dust explosion risk assessment, engineering and construction of explosion-proof retrofit, fire protection inspection;
- Research on safety production, emergency rescue, disaster prevention and mitigation, occupational health for governments, and studies meeting demand of enterprises in safety management of intelligence, information and digitalization;
- Strategic partnership with governmental institutions and universities.

Water treatment

- Metallurgical wastewater treatment, consulting and engineering for remediation of polluted water and soil, as well as for municipal drainage, rural ecological restoration, environmental management and operation of landfill and waste incineration plant;
- Technologies in the fields of metallurgical wastewater recycle, municipal sewage treatment, high concentration wastewater treatment, two stage electrochemical oxidation water treatment, prevention and control of heavy metal pollution, landfill leachate treatment, soil remediation, flue gas control, brine reduction, black and odorous water pollution control, water environment improvement, municipal solid waste disposal, sludge treatment and reuse.

Inspection & test

- Inspection and reinforcement construction service on pipeline, vessel and building structure in metallurgical, petrochemical, non-ferrous and power sectors.

Competitive Strength - Technological Innovation (coke oven above 7.5m)

Developed reheating top-charging coke ovens above 7.5m, meeting the demand of 3500-4000m³ blast furnaces

- ZG7.5X3-1 type coke ovens, whose output of single oven reaches 40.52 tons and one coke oven battery produces 1.75 million tons of coke, fill the blank of coke oven productivity between 3 million to 4 million tons worldwide;
- Perfectly match the demand for coke capacity of large blast furnaces in construction, leading the trend of coking technology;
- China's first 7.5m coke oven batteries contracted by Sinosteel E&T run at Fangchenggang steel base in stable condition

Pronounced for advantages bring economic and environmental benefits

- Logical and tight furnace structure improves thermal efficiency and operation environment;
- Complete heat exchange system (COG, mixed gas);
- Coke oven machines are equipped with automated operation management and oven identification systems, achieving unmanned operation;
- Increased volume of single coking chamber, dedusting efficiency of 99.5% at charging, unloading and machine side areas, as well as high pressure ammonia spraying lead to effective control and drastic reduction of paroxysmal pollutant emission;
- Achieves even upward heating, reduces NOx generation and temperate of burnt waste gas;
- Matched with coke oven riser and flue waste heat recovery.

03 Business Overview

To build a forefront technology-oriented engineering company

All-process and life-cycle service, green and sustainable all-in-one solutions

Industrial engineering & service - Sinosteel MECC

- Focus on metals, mining, energy, and coking chemical industries
- The only engineering company in China that is capable of contracting EPC projects from mining to all-process steel complex

Energy saving & environmental protection - Sinosteel Tiancheng

- Environmental industry leader of China
- Runs two national technology centers and one national engineering laboratory, and established China's only academician workstation specialising in iron & steel ultra-low emissions

Safety & protection - Sinosteel SEPRI

- High-tech enterprise engaged in safety, occupational health, environmental protection and green technology, test and inspection, as well as service for startups and innovation
- Professional carbon asset management and consulting for governments and enterprises

Business Overview - Industrial Engineering & Service

SINOSTEEL E&T

Focus on metallurgy and extend to mining, coking chemical, energy, energy saving & environmental protection sectors

Industrial engineering & service
- Sinosteel MECC

All-process and life-cycle service, green and sustainable all-in-one solutions for metallurgy, mining, energy and chemical industries

Low-carbon metallurgy and energy	low-carbon metallurgical technology, product and projects, conventional and renewable energy projects, energy saving & environmental protection projects, coking chemical projects, equipment and material integration and supply; Services include consulting, feasibility study, technology support, engineering, construction and operation
Metallurgy	Material yard, sintering, pelletizing, coking, iron making, ferroalloy, steelmaking, steel rolling and auxiliary facilities; All-process and life-cycle service
Mining	Exploration, feasibility study, equipment supply, engineering design, procurement & construction, and project operation & management of ferrous, non-ferrous, and non-metallic mineral resources; Total solutions of bulk material handling for mining, metallurgy, cement, chemical fertilizer, agriculture and ports sectors
Coking chemical	Coal gasification, purification and converting, coking and other coal comprehensive utilization, fertilizer, acid, alkali and salt projects; produce clean energy, reduce environmental pollution, safe & efficient

SINOSTEEL E&T

Consulting, feasibility study, technology and product development, engineering, construction and operation service for low-carbon metallurgy, energy and chemical industries

Non-blast furnace iron making and low-carbon metallurgical material and projects

Tosyali 2.5mtpa DRI project and AQS 2.5mtpa DRI project in Algeria, Mutun 250,000tpa DRI project in Bolivia, HBIS Zhangxuan High-tech 550,000tpa direct reduction project and Baosteel Zhanjiang 1mtpa hydrogen-based shaft furnace direct reduction project in China;

Conventional and renewable energy projects

600MW supercritical coal power plant and 2x350MW power plant in Turkey, 2x350MW coal power plant and 2x660MW ultra supercritical coal power plant in China, 2x150MW coal power plant in Mongolia, 2x350MW power plant in Cambodia;

Energy saving & environmental protection and coking chemical projects

17 gas and hot pressure generation projects counting up to 436MW, 4 transmission and transformation projects, MMK desulfurization project in Russia, AMKR blast furnace dedusting project in Ukraine; decarbonization gas heating project, 200,000tpa coal-to-ethylene glycol project, as well as 300,000tpa gas-to-ethylene glycol and 150,000tpa LNG cogeneration project in China;

Consulting and engineering service

Feasibility study for Baosteel Zhanjiang hydrogen-based shaft furnace project in China, FEED design for ERG 400,000tpa semicoking project in Kazakhstan, privatization consulting of PSM steel plant in Pakistan;

Industrial Engineering & Service - Low-carbon Metallurgy & Energy

SINOSTEEL E&T

01 Non-blast furnace iron making - direct reduction, smelting reduction, hydrogen metallurgy

02 Gas purification, heating and conversion

03 Low-carbon metallurgical material - insulation agent, mold powder, desulfurizer, refining agent

04 Co-production of iron & steel, energy and chemical industries

Industrial Engineering & Service - Low-carbon Metallurgy & Energy

- The first Chinese engineering company built gas-based DRI plant;
- Completed two of the world’s largest DRI projects which are in production;
- Established strategic partnership with Tenova in demand-oriented way for the introduction of Energiron-ZR process and collaborated on the natural gas-based DRI of Mutun steel complex in Bolivia;
- Long-term and stable cooperation with Midrex, HYL, universities and research institutions in respect of technology development & application, equipment upgrade, project construction and management to promote DRI in China.

Industrial Engineering & Service - Low-carbon Metallurgy & Energy

AQS 2.5mtpa DRI, Algeria

- Customer: Algerian Qatari Steel (AQS)
- Capacity: 2.5mtpa direct reduced iron
- Scope: PC
- Duration: 2016-2020
- Highlight**: one of the biggest DRI projects worldwide**

Tosyali 2.5mtpa DRI, Algeria

- Customer: Tosyali Iron Steel Industry Algerie A.Ş.
- Capacity: 2.5mtpa direct reduced iron
- Scope: EPC
- Duration: 2015-2017
- Highlight: **one of the biggest DRI projects worldwide**

Industrial Engineering & Service - Low-carbon Metallurgy & Energy

Guotai Xinhua 2x350MW Coal Power Plant, China

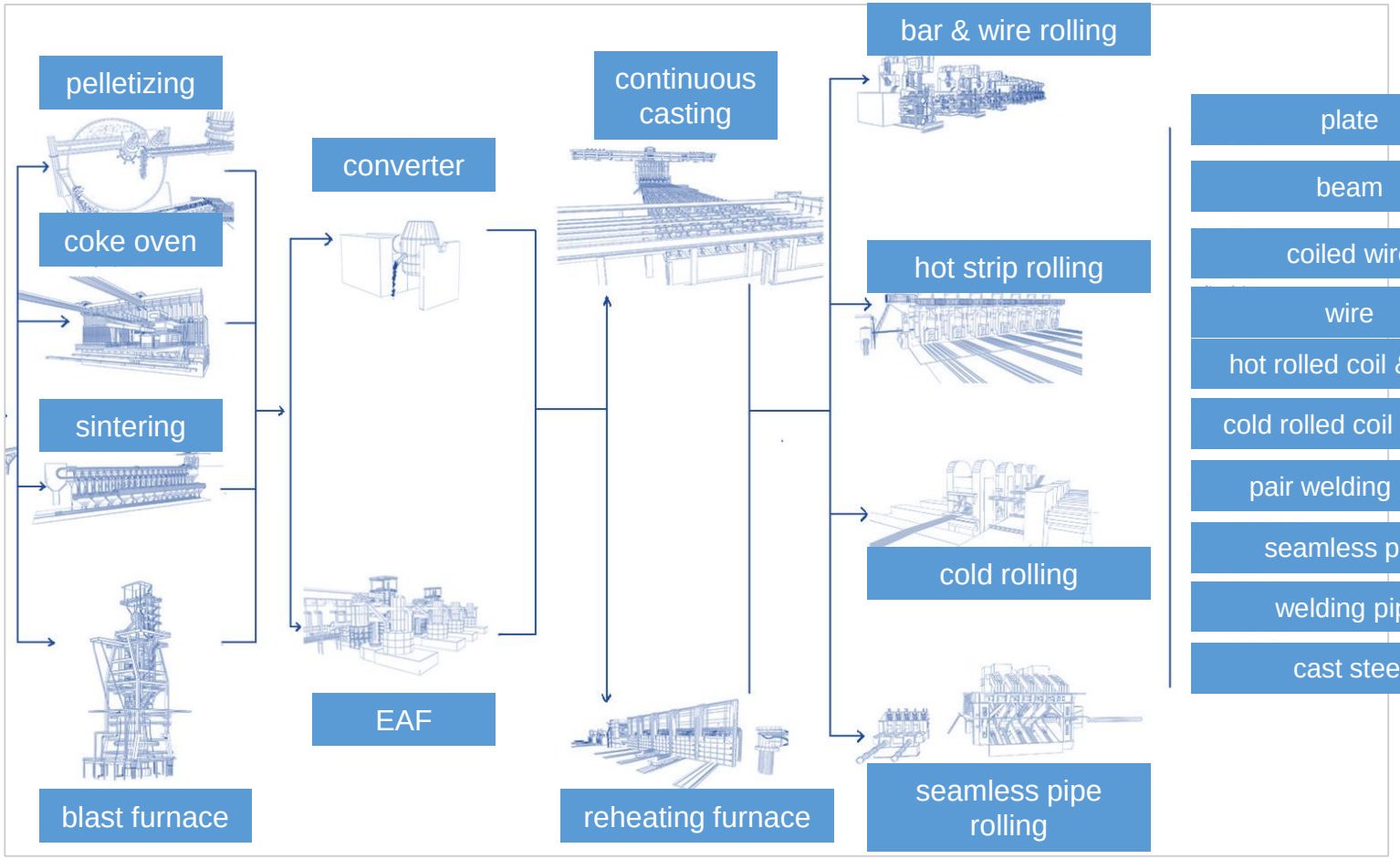
- Customer: Xinjiang Guotai Xinhua Mining Co., Ltd.
- Capacity: 2x350MW supercritical air cooled, coal-fired steam turbine generator set, power-heat cogeneration fulfill the needs for chemical production
- Scope: EPC
- Period: 2014-2017

ICDAS Coal Power Plant Project, Turkey

- Customer: ICDAS
- Capacity: Phase II of 2x600MW power plant
- Scope: EP+Part of C, O&M
- Period: 2011-2014
- Highlight: ***2016-2017 National Quality Engineering Award***

All-process project contracting in metallurgical Industry

material yard→ sintering → pelletizing → coking → iron making → steelmaking → steel rolling and auxiliary facilities



consultancy
feasibility study
engineering
equipment supply
system integration & software
construction
Installation
project management
technical supervision & training
operation assistance
maintenance
pare parts

Industrial Engineering Technology & Service - Metallurgy (steel complex)

Projects contracted on EPC basis include DRI-based steel complex for Tosyali in Algeria, Lu’an steel complex, Shenglong steel complex, Zongheng steel complex and Huaxi special steel complex in China, Mutun DRI-based steel complex in Bolivia, and ZISCO steel complex in the Middle East.

Industrial Engineering Technology & Service - Metallurgy (steel complex)

Tosyali 2.3mtpa DRI-based Steel Complex, Algeria

- Customer: Tosyalı Iron Steel Industry Algerie A.Ş.
- Scope: EPC
- 4mtpa travelling grate pellet plant - high adaptability to raw material, eco-friendly, first level equipment, low consumption, high efficiency, stable and green operation;
- 2.5mtpa DRI - one of the world's biggest DRI projects in production, fed with oxide pellets and fueled with natural gas, gas recycling enables clean and low-carbon production, reduces 1.1 tons of carbon per ton of iron produced;
- Steelmaking plant:

  1x240t EAF, one of the world's largest EAFs in production

  1x240t LF

  Fume dedusting system

  EAF & LF material handling system

  1x8 strand CCM

  Water treatment system for steelmaking
- Long product: 1x750,000tpa double high-speed bar mill (8mm~12mm), 1x1.2mtpa double high-speed bar mill (12mm~32mm), max. speed 45m/s, effective capacity exceeds designed capacity;
- Duration: 2015-2018

A"B&R"project，Algeria's largest investment in metallurgical industry; Sinosteel E&T's first integrated steel plant in Africa, and first overseas DRI-based steel plant

Shenglong Renovation & Technical Transformation Project, China

- Customer: Shenglong Metallurgical
- Scope: EPC
- Corridor and shed of material yard
- 4x60t double hearth lime kiln
- 2x1680m³ blast furnace
- 2x360m²sintering and waste-heat power generation
- 2x150t converter
- 2x150t ladle furnace
- 2xR9m 2x2 strands slab caster
- 1xR9m 10x10 strands billet caster
- Duration: 2018-2019

Lu’an 3mtpa Steel Complex, China

- Customer: Lu’an Iron & Steel
- Scope: EPC
- 2x1780m³ blast furnace
- 1.3mtpa stamp-charging coke oven and by-product (2x5.5mx65 chamber)
- 3mtpa rod / wire
- 2x25000m³/h air separation
- Duration: 2017-2019

Industrial Engineering Technology & Service - Metallurgy (steel complex)

Fangchenggang Steel Base Steel Complex, China

- Customer: Guangxi Liuzhou Iron & Steel Group
- Scope: EPC
- 3.5mtpa coke oven (4x7.5mx60 ovens), 4mtpa traveling grate pellet plant, long product rolling (3 high-speed wire & rod mills, 2 bar mills & 2 high-speed bar mills), steelmaking dedusting
- Duration: 2018-2021
- Highlight: **model project of national industrial structure upgrading; key project of China's West Region Development;**

Industrial Engineering Technology & Service - Metallurgy (steel complex)

Mutun 200,000tpa Steel Complex, Bolivia

- Customer: Empresa Siderurgica del Mutun
- Scope: EPC
- overall project feasibility study
- 820,000tpa iron ore beneficiation plant
- 400,000tpa pellet plant
- 250,000tpa DRI employs Energiron-ZR process, natural gas is used as reductant, greatly reducing NOx generation and carbon emission
- 200,000tpa electric arc furnace (EAF)
- 200,000tpa ladle furnace (LF)
- 2x2strands 150x150mm continuous billet caster
- 200,000tpa steel rolling
- Auxiliary facilities: compressed air station, oxygen generation, power plant, natural gas pipeline, water treatment station;
- Duration: 2019-2023

Key project of Bolivian Government PND Program;

Bolivian very first integrated steel complex

Industrial Engineering Technology & Service - Metallurgy (steel complex)

ZISCO 1.5mtpa Steel Complex, Middle East

- Customer: ZISCO
- Raw material yard
- 204m^2 sinter plant
- 2000m^3 blast furnace
- 2x120t converter
- 2x120t LF+1x120t VD, 2x6 strands CCM
- Auxiliary facility: compressed air station, 2x15,000m^3/h oxygen generation, converter gas holder, blast furnace gas holder, TRT, power supply unit, waste-water & sewage treatment station
- Duration: 2012-2021

Integration of Chinese state-of-the-art engineering design, equipment manufacturing and project management

Industrial Engineering Technology & Service - Metallurgy (steel complex)

Cangzhou Zongheng 6mtpa Integrated Steel Complex, China - First Integrated Steel Complex EPC Project of the Company

1st Phase 2mtpa

- 240m^2 sinter plant
- 2x10m^2 pellet plant (shaft furnace)
- 6x150m^3 lime kiln
- 2350m^3 blast furnace
- 2x150t converters
- 150t LF
- 1x2 strand slab continuous caster
- 1x200t/h walking beam slab reheating furnace
- 165,000m^3 BF gas holder
- Duration: 2007-2008

2nd Phase 4mtpa

- 2x240m^2 sinter plant
- 200mtpa pellet plant (grate-kiln)
- 2x2350m^3 blast furnaces
- 200mtpa, 6m top-charging coke oven batteries with by-product and CDQ
- 2x150t converters
- 2x150t LF
- 1x2 strands slab continuous caster
- 1x200t/h walking beam slab reheating furnace
- 165,000m^3 BF gas holder
- Duration: 2008-2010

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering | **Blast Furnace / DRI** | **Steelmaking & CCM** | **Steel Rolling**

- EPC capacity: 180m^2 ~ 600m^2;
- Three steps sintering, low negative pressure hot air ignition, and ultra thick bed sintering technologies enable the high output sinter with excellent quality; low energy consumption sintering is achieved by adopting know-how of sintering waste gas recycle, circular cooler waste gas micro-dynamic recycle and stepped utilization, along with flue gas waste heat reuse; stability and intelligence of sinter production are improved by continuous upgrade to new type sintering machine and circular cooler and renovation of expert system;
- 83 sintering production lines have been contracted:
  - ✓ 31 sintering machines ≥300m^2
  - ✓ 10 sinter machines ≥400m^2
  - ✓ 17 overseas projects

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering | **Blast Furnace / DRI** | **Steelmaking & CCM** | **Steel Rolling**

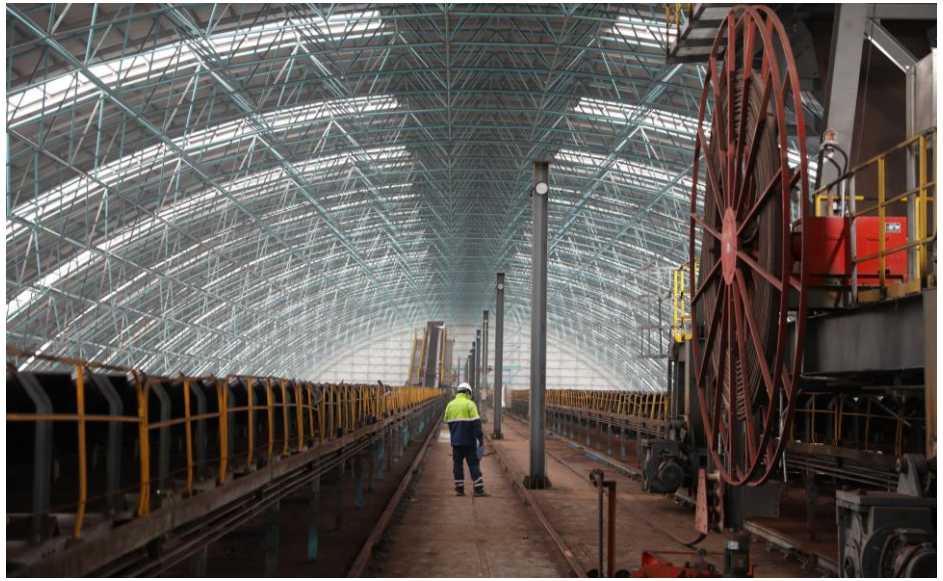
Shandong Laiwu 2x480m^2 Sintering Project, China

- Customer: Shandong Iron & Steel Group
- Capacity: 2x480m^2, 11.5mtpa cooled sinter feed
- Scope: EPC
- Duration: 2019-2020
- Highlight: **record of the fastest construction with the first sintering machine completed in half the scheduled time**

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering | Blast Furnace / DRI | Steelmaking & CCM | Steel Rolling



Shiheng Special Steel 2x265m² Sintering Plant, 24mtpa Material Yard, China

- Client: Shiheng Special Steel Group
- Capacity: 2x265m², 24mtpa fully closed intelligent material yard
- Scope: EPC
- Duration: 2019-2020
- Highlight: **coefficient factor 1.415t/h·m²; waste heat boiler steam no less than 100kg/t-s; power consumption per ton of sinter no more than 36Wh/t-s**

Shanxi Jinnan 2x220m² Sinter Plant, China

- Customer: Shanxi Jinnan Iron & Steel Group
- Capacity: 2x220m²
- Scope: EPC
- Duration: 2018-2020

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering | Blast Furnace / DRI | Steelmaking & CCM | Steel Rolling

MMK 2x300m^2 Sintering Project, Russia

- Client: MMK (Magnitogorsk Iron & Steel Works)
- Capacity: 2x300m^2, 5.5mtpa sinter feed
- Scope: EP
- Duration: 2016-2018
- Highlight: **the largest sintering project exported by Chinese companies; *2018 MMK Excellent Partner Award*** ; **Russian President Vladimir Putin attended the completion ceremony**

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering | Blast Furnace / DRI | Steelmaking & CCM | Steel Rolling

Dexin 2x230m^2 Sintering Project, Indonesia

- Customer: PT. Dexin Steel Indonesia
- Capacity: 2x230m^2, 100,000m^2 material yard
- Scope: EPC
- Duration: 2018-2019
- Highlight: **leading in Indonesia with regard to capacity and technological level; several technologies are applied for the first time in Indonesian steel industry.**

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL SINOSTEEL E&T

Pelletizing | Blast Furnace / DRI | Steelmaking & CCM | Steel Rolling

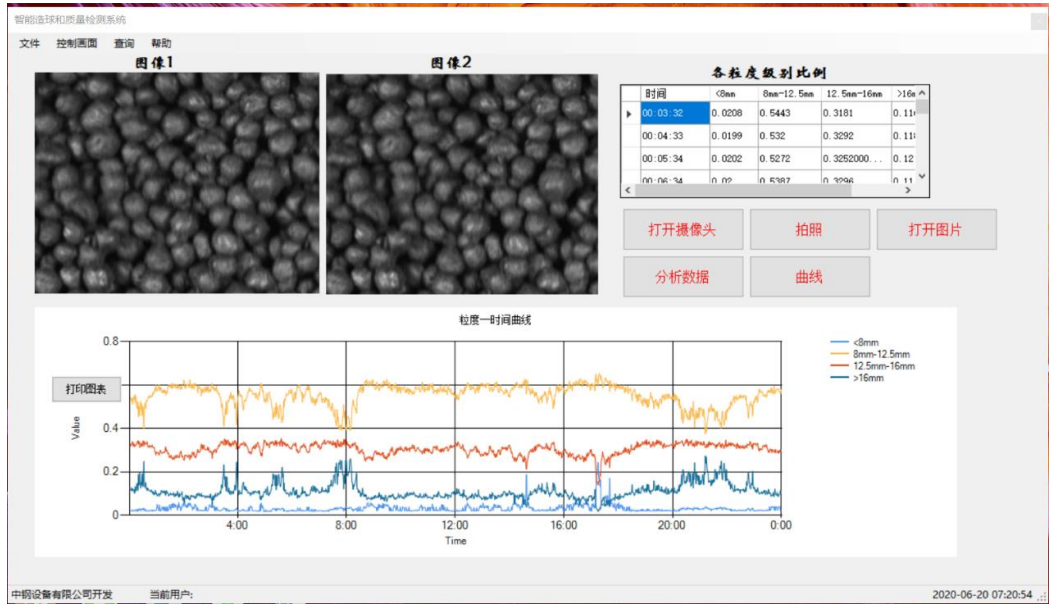
- Independently developed traveling grate pelletizing technology and equipment;
- Customized production plan as per condition of raw material and actual demand to produce quality pellet feeding blast furnace or non-blast furnace iron making;
- Complete technological system comprising process technology development – key equipment R&D - EPC contracting, well received by overseas users, multiple state and industry awards;
- References include:
  - ✓ 11 traveling grate pellet plants with capacity of 2mtpa-5mtpa;
  - ✓ 15 grate-kiln pellet plants with capacity of 600,000tpa-2.5mtpa;
  - ✓ 2 regrinding and re-concentration plants with capacity of 4mtpa and 7.5mtpa
- **Digital delivery**: AMKR 5mtpa traveling grate pellet plant
- **Operation and maintenance management**: HBIS 2x4.8mtpa traveling grate pellet plant

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Pelletizing | **Blast Furnace / DRI** | **Steelmaking & CCM** | **Steel Rolling**

- Pelletizing data center: collection and integration of domestic and overseas pellet production data, Big Data Analytics provide valuable guidance for pellet producers in construction and intelligent operation & maintenance of pellet plants;
- Smart control technology: indurating system auto-control, pallet car intelligent inspection and smart pelletizing.



Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Pelletizing | **Blast Furnace / DRI** | **Steelmaking & CCM** | **Steel Rolling**

ArcelorMittal 5mtpa Traveling Grate Pellet Plant, Ukraine

- Customer: ArcelorMittal Kryvyi Rih (AMKR)
- Capacity: 5mtpa
- Scope: EPC
- Duration: 2020-
- Highlight: **AMKR's first pellet plant; the largest traveling grate pellet plant in Ukraine.**

Pelletizing | Blast Furnace / DRI | Steelmaking & CCM | Steel Rolling

Baowu Ma Steel 4mtpa Traveling Grate Pellet Plant, China

- Customer: Ma'anshan Iron & Steel Company Limited
- Capacity: 4mtpa
- Scope: EPC
- Duration: 2020-2021
- Highlight**: the first traveling grate pellet plant of Baowu Group**

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Pelletizing | **Blast Furnace / DRI** | **Steelmaking & CCM** | **Steel Rolling**

WISCO 2.6mtpa Traveling Grate Pellet Plant, China

- Customer: WISCO Kunming Iron & Steel Co., Ltd.
- Capacity: 2.6mtpa
- Scope: EPC
- Period: 2020-2021

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Pelletizing | **Blast Furnace / DRI** | **Steelmaking & CCM** | **Steel Rolling**

HBIS 2x4.8mtpa Traveling Grate Pellet Plant, China

- Customer: HBIS Tangsteel New District
- Capacity: 2x4.8mtpa
- Scope: EPC
- Duration: 2018-2021
- Highlight: **10 million-ton-scale quality pellet production base; China's largest traveling grate pelletizing project uses self-developed technology**

Fangchenggang Steel Base 4mtpa Traveling Grate Pellet Plant, China

- Customer: Guangxi Liuzhou Iron & Steel Group
- Capacity: 4mtpa
- Scope: EPC
- Duration: 2018-2021
- Highlight: **the first pelletizing production line in Southwestern China applying self-developed traveling grate technology**

Pelletizing | Blast Furnace / DRI | Steelmaking & CCM | Steel Rolling

Sangang Minguang 2mtpa Traveling Grate Pellet Plant, China

- Customer: Fujian Sangang Group
- Capacity: 2mtpa
- Scope: EPC
- Duration: 2018-2019
- Highlight**: the first pellet plant applying independently developed traveling grate technology by Sinosteel E&T in China**

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Pelletizing | Blast Furnace / DRI | Steelmaking & CCM | Steel Rolling

SISCO 2.5mtpa Traveling Grate Pellet Plant, Middle East

- Customer: SISCO
- Capacity: 2.5mtpa
- Scope: EPC
- Duration: 2013-2017
- Highlight: **Sinosteel E&T's first successful application of overseas pelletizing plant adopted TGIOP technology, which is also the first international IOP EPC project ever contracted by a Chinese company. Winning a Second Prize of *Engineering Design Achievement of Metallurgical Construction* in 2019**

ZISCO 2.5mtpa Pellet Plant, Middle East

- Customer: ZISCO
- Capacity: 2.5mpta
- Scope: EPC
- Duration: 2013-2015

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | **Blast Furnace** | Steelmaking & CCM | Steel Rolling

- EPC capacity: 450m³ ~ 3000m³;
- Furnace's top pressure-equalizing gas recovery combined with blast furnace damping down gas recovery ensures zero leakage of blast furnace gas (BGF); reverse blowing is applied to BFG dry dedusting to save ammonia consumption; application of new type lining for furnace high load area, by adopting segmented cooling control, enhances slag stability and extends furnace campaign life; heat pressure-equalizing applied for hot blast stove lowers energy consumption to the highest standard in China; high temperature blasting simultaneous with NOx ultra-low emission; R&D of pure oxygen hydrogen-rich carbon recycling blast furnace reduces greenhouse gas emission significantly from iron making.
- 41 blast furnace projects since 2000
  - ✓ 8 blast furnaces < 1000m³
  - ✓ 21 blast furnaces of 1000~2000m³
  - ✓ 10 blast furnaces of 2000~3000m³
  - ✓ 2 blast furnaces above 3000m³
  - ✓ 7 blast furnaces revamping
  - ✓ 4 overseas blast furnace EPC projects

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furnace | Steelmaking & CCM | Steel Rolling

Jinxi 2x2000m³ Blast Furnace, China

- Customer: Hebei Jinxi Iron & Steel Group
- Volume: 2x2000m³
- Scope: EPC
- Duration: 2018-2020

Jinshenglan 2x1350m³ Blast Furnace, China

- Customer: Hubei Jinshenglan Metallurgical Technology
- Capacity: 2x1350m³
- Scope: EPC
- Duration: 2015-2016

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furnace | Steelmaking & CCM | Steel Rolling

Isdemir 3050m³ Blast Furnace, Turkey

- Customer: Isdemir
- Capacity: 3050m³
- Scope: EPCM
- Duration: 2005-2010
- Highlight：**the largest blast furnace project exported by a Chinese company of the time; won 2012-2013** ***National Quality Engineering Award***

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furnace / DRI | **Steelmaking & CCM** | Steel Rolling

- 12 sets of EAF, 22 sets of converters, 30 sets of LF, 2 sets of VD, 195 strands of billet and slab casting;
- Development of high efficiency EAF and billet casting
- Competences in EAF steelmaking:
  - ✓ Flexible charging: full-scrap top charging, DRI hot and cold charging, horizontal scrap preheating and hot metal charging;
  - ✓ Key technologies: large amount of steel left operation, constant molten pool, coherent jet carbon/oxygen lance, foamed slag forming;
  - ✓ Adaptable and efficient engineering: multi-specialty simultaneous design by multiuser, a synergy of the BIM platform adopted by the company to ensure real-time update of data and models.

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furnace / DRI | **Steelmaking & CCM** | Steel Rolling

Fuzhou Wuhang 2x105t EAF Steelmaking & CCM, China

- Customer: Fuzhou Wuhang Steel
- Capacity: 2x105t EAF, 2x105t RF, 2x5x5-strand billet caster
- Scope: EPC
- Duration: 2017-2020

Shanxi Hongda 170t Converter Steelmaking & CCM, China

- Customer: Shanxi Hongda Iron & Steel Group
- Capacity: 1x170t converter, 12x12-strand billet caster
- Scope: EPC
- Duration: 2019-2021

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furnace / DRI | **Steelmaking & CCM** | Steel Rolling

Huaxi 170t Converter Steelmaking & CCM, China

- Customer: Hebei Huaxi Special Steel Co., Ltd.
- Capacity: 1x170t converter, 12x12-strand billet caster
- Scope: EPC
- Duration: 2019-2021

Naiman 1.2mtpa Ferronickel Alloy Project, Inner Mongolia

- Customer: Inner Mongolia (Naiman) Jing'an Nonferrous Metal Materials Co., Ltd.
- Capacity: 18x33000kVA submerged arc furnace (RKEF)
- Scope: EPC
- Duration: 2018-2021
- Highlight: **RKEF process reduces energy consumption and cost**

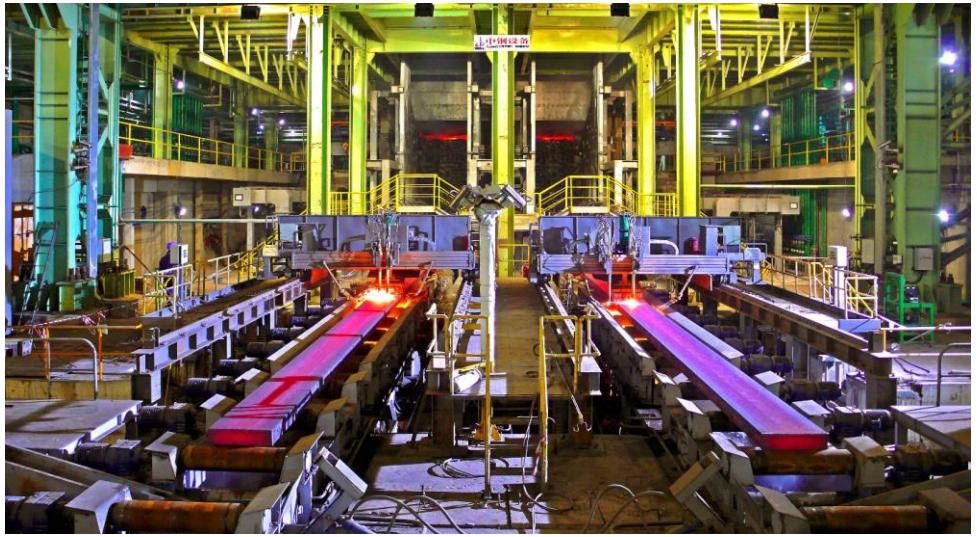
Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furnace / DRI | Steelmaking & CCM | Steel Rolling

ICDAS 1.75mtpa Electric Furnace, Turkey

- Customer: ICDAS
- Capacity: 1.75mtpa
- Scope: EPCM
- Duration: 2002-2004



Tosyali Continuous Slab Caster Project, Turkey

- Client: Tosyali Holding
- Capacity: 170x425-800x10mm
- Scope: EPM+Installation
- Duration: 2008-2009

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furance / DRI | Steelmaking & CCM | **Steel Rolling**

- Independently developed TMCP process technology, matched rolling mill and flexible cooling device for wire rod and bar rolling, high speed bar delivery, modular mill and water cooling equipment minimize the addition of micro alloy and reduce cost;
- The first China-made double high-speed bar line in production with max. speed of 45m/s and to be speeded up to 50m/s;
- Completed the most number of TMCP projects in China and 56 long product projects since 2000; Leading the trends of TMCP in China;
- Single pass on slitting section for double high-speed bar rolling lessens the replacement of rolling mill and improves efficiency;
- Focus on elevating billet temperature, reducing billet temperature drop, coordination of casting and rolling pace;
- Hot delivery and direct rolling achieved on multiple projects, reducing fuel consumption and carbon emission.

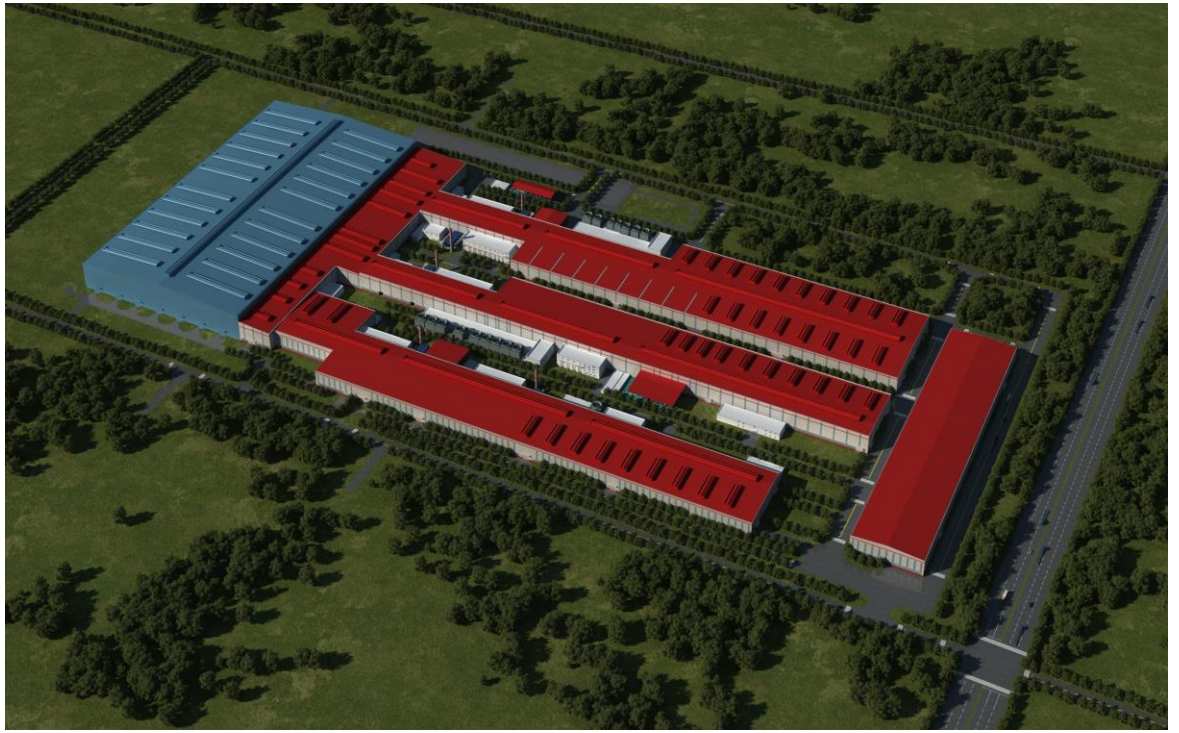
Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furance / DRI | Steelmaking & CCM | **Steel Rolling**

Tangyin Long Product Project, China

- Customer: Heibei Tangyin Iron & Steel Co., Ltd.
- Capacity: 2x600,000tpa high speed wire rod mill, 1.4mtpa high speed bar mill, 2mtpa 1450mm HSM
- Scope: EPC
- Duration: 2021-2022*
- Highlight: **self-developed technology, high-speed straight rolling for rebar with maximum speed at 45m/s**



Jianlong Xilin Double High-speed Bar Project, China

- Customer: Jianlong Xilin Iron & Steel Co., Ltd.
- Capacity: 1.6mtpa, Φ12.0mm~Φ16.0mm
- Scope: EP
- Duration: 2021-2022*
- Highlight: **self-developed technology, high-speed straight rolling for rebar with maximum speed at 45m/s, intelligent solution featuring *less manpower, digitalized system, intelligent control***

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furance / DRI | Steelmaking & CCM | **Steel Rolling**

Tosyali 1800mm HRC, Turkey

- Customer: Tosyali Holding
- Capacity: 3.5mtpa HRC,1800mm
- Scope: EP
- Duration: 2020-2022*
- Highlight: **the largest hot continuous rolling project contracted by a Chinese company abroad; the biggest metallurgical investment in Turkey since 2020; a paragon project that adopts advanced Chinese hot continuous rolling technology and equipment**

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furance / DRI | Steelmaking & CCM | **Steel Rolling**

Fangchenggang Steel Base Long Product Project, China

- Customer: Guangxi Liuzhou Iron & Steel Group
- Capacity: 3.5mtpa, 3 high speed wire rod mills, 2 high speed bar mills, 2 bar mills
- Scope: EPC
- Duration: 2018-2020
- Highlight: **world's first long product rolling project uniting 7 lines that are constructed simultaneously and smoothly put into operation, employs Sinosteel E&T's self-developed long product rolling technology and RVM modular mill applicable for TCMP process of high-speed wire rod and bar;**
- Max. speed of Φ6.0mm is 110m/s;
- Max. speed of Φ8.0mm coiled rebar is 95m/s;
- Max. speed of Φ10.0mm coiled rebar is 70.5m/s.

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furance / DRI | Steelmaking & CCM | Steel Rolling

Valin Lianyuan Long Product Project, China

- Customer: Hunan Valin Lianyuan Iron & Steel Co., Ltd.
- Capacity: 2x600,000tpa high-speed wire rod, 1.4mtpa high-speed bar, 2mtpa 1450mm hot strip
- Scope: EP
- Period: 2019-2020
- Highlight: **fist China-made double high-speed bar line in production, applying Sinosteel E&T's self-developed long product rolling technology; double-pass TMCP process and extra-heavy 265 top-crossing modular mill with max. speed at 45m/s, achieving controlled rolling and cooling**

Industrial Engineering Technology & Service - Metallurgy

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furance / DRI | Steelmaking & CCM | Steel Rolling

Tosyali High-speed Bar Rolling Project, Algeria

- Customer: Tosyali Holding
- Capacity: 750,000tpa of 8mm~12mm bar; 1.2mtpa of 12mm~32mm bar
- Scope: EPC
- Duration: 2015-2017
- Highlight: **self-developed long product rolling technology and equipment, maximum speed at 45m/s**

950mm Hot Strip Rolling Project, Turkey

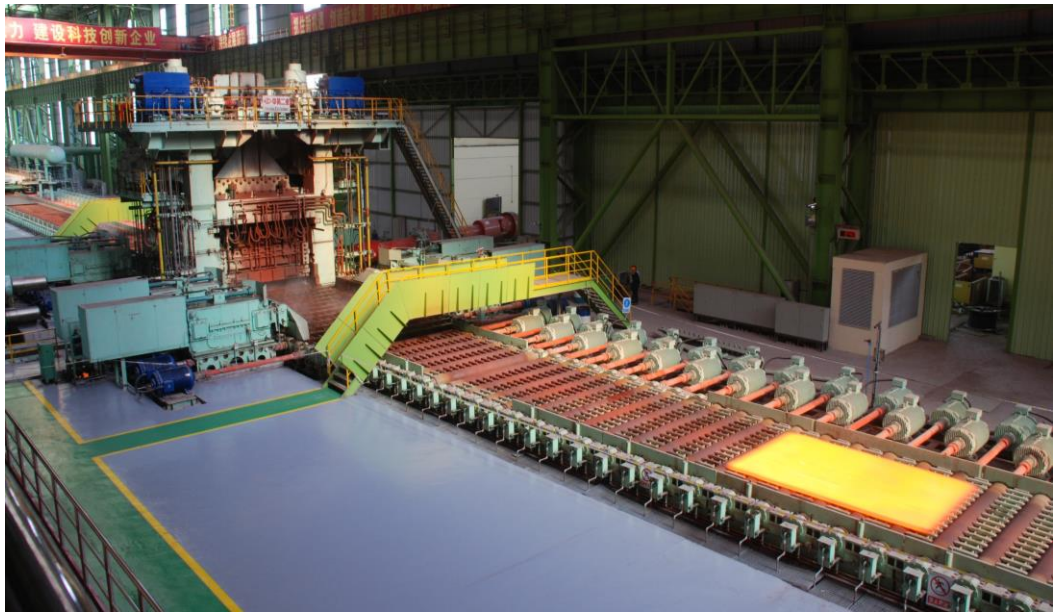
- Client: Tosyali Holding
- Specification: 950mm
- Scope: EPCM
- Duration: 2008-2009
- Highlight: **Tosyali's first hot continuous rolling line in Turkey;** ***2011-2012 Silver Medal of National Quality Engineering Award***

SINOSTEEL E&T

Sintering / Pelletizing | Blast Furance / DRI | Steelmaking & CCM | Steel Rolling

Chongqing 4100mm Plate Mill Project, China

- Client: Chongqing Iron & Steel Group
- Specification: 4100mm plates
- Scope: EPC
- Duration: 2007-2009
- Highlight: **the largest plate mill in western China at the time**



Industrial Engineering Technology & Service - Mining

- All-around service including exploration, feasibility study, equipment supply, engineering design, procurement & construction, and project management of ferrous, on-ferrous, and non-metallic mineral resources;
- EPC contracting of mining, beneficiation and long-distance bulk material conveying;
- Advanced engineering design concept for intelligent & green mining project enables highly automated operation & maintenance, achieving lower investment and operational cost, along with energy saving;
- total solutions of bulk material handling processes through leading technologies, meeting the highest standards, in addition to design localization in diversified industries, including mining, metallurgy, cement, chemical fertilizer, agriculture and ports;
- 6 iron ore grinding and conveying projects in Brazil, 1 iron ore beneficiation project and 1 rare earth beneficiation project in Australia, 1 platinum beneficiation project in South Africa, 1 iron ore re-concentration project and 1 iron ore FS project in Algeria, ISUA iron ore FS project in Greenland, ETT coking coal FS project in Mongolia; 4 large mining projects in China

Industrial Engineering Technology & Service - Mining

Wesizwe 1mtpa Platinum Beneficiation Plant, South Africa

- Customer: Wesizwe, South Africa
- Capacity: 1mtpa
- Scope: EPC
- Duration: 2019-

Tosyali 4mtpa Iron Ore Beneficiation Plant, Algeria

- Customer: Tosyali Holding
- Capacity: 4mtpa
- Scope: EPC
- Duration: 2019-

Industrial Engineering Technology & Service - Mining

Magnezit 50,000tpa Fused Magnesia Project, Russia

- Customer: Magnezit Group
- Capacity: 50,000tpa
- Scope: EPC
- Duration: 2018-2021

Industrial Engineering Technology & Service - Mining

Northern Minerals 60,000tpa Heavy Rare Earth Pilot Plant, Australia

- Customer: Northern Minerals
- Capacity: 60,000tpa raw ore (final product includes 1,110 tons mixed rare earth carbonate concentrate product per year)
- Scope: green field EPC including beneficiation and hydrometallurgy plant at remote location
- Duration: 2016-2018

Rocklands 3mtpa Copper Processing Plant, Australia

- Customer: CuDeco
- Capacity: 3mtpa raw ore (final products include native copper, copper concentrate, pyrite concentrate with Co and magnetite concentrate)
- Scope: EPC
- Duration: 2011-2016
- Highlight: **one of the most successful EPC projects contracted by a Chinese company in Australia, *2018-2019 National Quality Engineering Award***

Industrial Engineering Technology & Service - Coking Chemical

Experienced in coking project contracting in Turkey, Japan, India, Indonesia and Russia;

Advance the implementation of heat recovery coking process to contribute to pollution control whist produce high quality metallurgical coke and foundry coke;

- EPC contracting, equipment supply, project management and consulting covering coal preparation and coke screening, coking, gas purification, CDQ, ultra-low emission and energy conservation, desulfurization and denitration, advanced wastewater treatment, by-product finishing, and COG further processing:
  - ✓ Top-charging coke ovens with chamber height of 4.3m, 6m, 7.1m, 7.5m and 7.66m;
  - ✓ Stamp-charging coke ovens with chamber height of 4.3m, 5.5m, 6.5m and 7m;
  - ✓ New type heat recovery coke ovens;
  - ✓ CDQ capacity varies from 75t/h ~ 200t/h, 18 sets of boilers are in use;
  - ✓ Know-how of coking chamber pressure self-regulating device and COG & BFG auto-shift device;
  - ✓ Self-developed automatic temperature measuring system and heat regulating system.

Industrial Engineering Technology & Service - Coking Chemical

MMK 2.5mtpa Coke Oven By-product Plant, Russia

- Customer: MMK (Magnitogorsk Iron and Steel Works)
- Capacity: 2.5mtpa top-charging coke oven battery, 50 ovens, with chamber height of 7m, by-product and CDQ
- Scope: EPC
- Duration: 2018-2022*
- Highlight: **Sinosteel E&T's self-developed 7.1m large top-charging coke oven technology; the largest coke oven project of MMK and Russia in the past 40 years; the largest coke oven project exported by a Chinese company in respect of contract value**

Fangchenggang Steel Base 3.5mtpa Coke Oven and Coal Preparation Project, China

- Customer: Liuzhou Iron & Steel Group
- Capacity: 3.5mtpa, top-charging coke oven batteries, 4x60 ovens, with chamber height of 7.5m
- Scope: EPC
- Duration: 2018-2020
- Highlight: **ZG7.5X3-1 type oven with full intellectual property is adopted, a breakthrough of self-developed large coke oven above 7.5m**

Industrial Engineering Technology & Service - Coking Chemical

JSW 3mtpa Coke Oven By-product Plant, India

- Customer: JSW
- Capacity: stamp-charging coke oven batteries, 4×62 ovens, with chamber height of 6.25m, 2×90t/h CDQ
- Scope: EPC
- Duration: 2018-2021*
- Highlight: **output of single phase reaches 3 million tons/year**

JSW Dolvi 140t/h CDQ, India

- Customer: JSW Dolvi
- Capacity: 1mtpa dry coke, with 2x55 ovens stamp-charging coke oven batteries, with chamber height of 5.5m
- Scope: EP+S
- Duration: 2018-2021*

JSW 1.9mtpa Coke Oven and 3mtpa By-product Project, India

- Customer: JSW
- Capacity: 4x72 ovens coke oven batteries, with chamber height of 4.3m
- Scope: EPCM
- Duration: 2008-2019 (delay due to land acquisition, etc,)
- Highlight: **Complying with the standards of AS process in the shortest time, the fastest completion of single coke oven battery in India**

Industrial Engineering Technology & Service - Coking Chemical

Dexin 1.3mtpa Coke Oven By-product Plant, Indonesia

- Customer: PT Dexin Steel Indonesia
- Capacity: 1.3mtpa stamp-charging coke oven batteries, 2×65 ovens, with chamber height of 5.5m
- Scope: EPC
- Duration: 2017-2021
- Highlight: **Indonesia's first stamp-charging coke oven by-product plant and gas purification project, Sinosteel E&T's self-developed technology is adopted, all the equipment is China-made**

Xuyang 1.2mtpa Coke Oven By-product and Relocation Project, China

- Customer: Hebei Xuyang Coking Co., Ltd.
- Capacity: 1.2mtpa coke oven, by-product and gas purification
- Scope: EPC
- Duration: 2017-2018
- Highlight: ***2021 National Quality Engineering Award***

Industrial Engineering Technology & Service - Coking Chemical

Bohai 3mtpa Coke Oven By-product Project, China

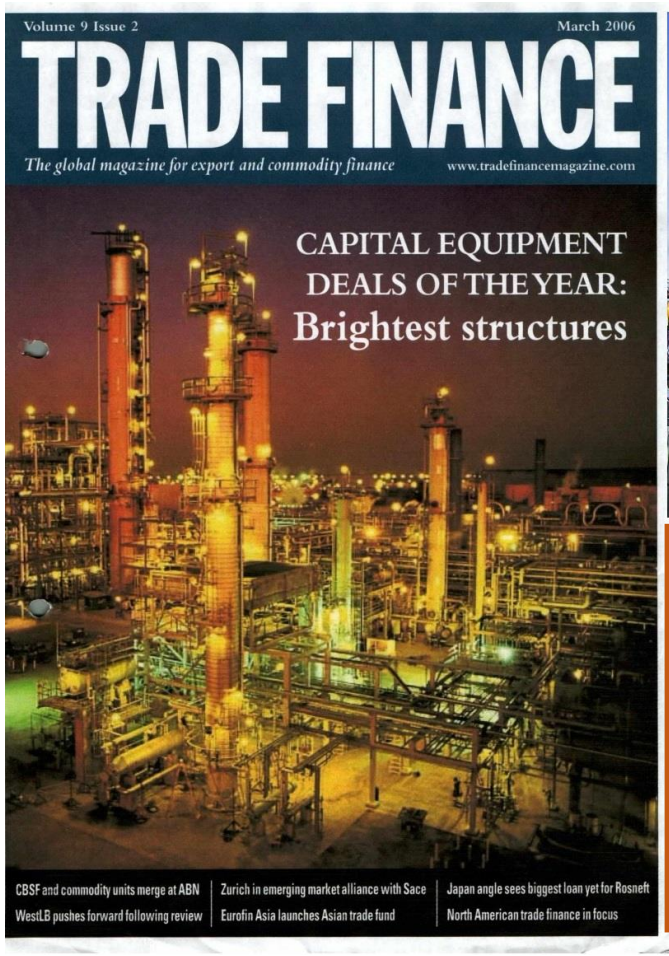
- Customer: Hebei Bohai Coal Coking Co., Ltd.
- Capacity: 4x7.1m top-charging coke oven with by-product, 2x185t/h CDQ and new coke wet quenching
- Scope: EPC
- Duration: 2013-2016
- Highlight: **Sinosteel E&T's first self-developed EPC large coke oven batteries above 7m**

Sumitomo 1.2mtpa Coke Oven Project, Japan

- Customer: Sumitomo Metals
- Capacity: JN60 type 2x65 ovens, with chamber height of 6m
- Scope: EPCM
- Duration: 2006-2009
- Highlight: **the largest coke oven project contracted by a Chinese company for a world-class steelmaker in developed countries at the time**

Isdemir 1.3mtpa Top-charging Coke Oven By-product Project, Turkey

- Customer: Isdemir
- Capacity: 4x65 ovens with chamber height of 6m, by-product and auxiliary facilities
- Scope: EPCM
- Duration: 2004-2007
- Highlight: **named by *Trade Finance* magazine as *Deals of the Year - Capital Equipment of 2005*; the largest coke oven project in Turkey at the time**



Liheng 300,000tpa Ethylene Glycol and LNG Co-production Project

- Customer: Shanxi Liheng Iron & Steel Group
- Capacity: 300,000tpa
- Scope: EPC
- Duration: 2018-2020

Yangquan 200,000tpa Ethylene Glycol Project, China

- Customer: Yangquan Coal Group
- Capacity: 200,000tpa
- Scope: PC
- Duration: 2014-2016
- Highlight：**The most efficient & highest performance production line of coal-to-ethylene glycol in China**

Business Overview – Energy Saving & Environmental Protection

National engineering centers & laboratories and industry-university-R&D cooperation boost industrialization of S&T achievements and contribute to green and low-carbon development of metallurgy

Energy saving & environmental protection - Sinosteel Tiancheng

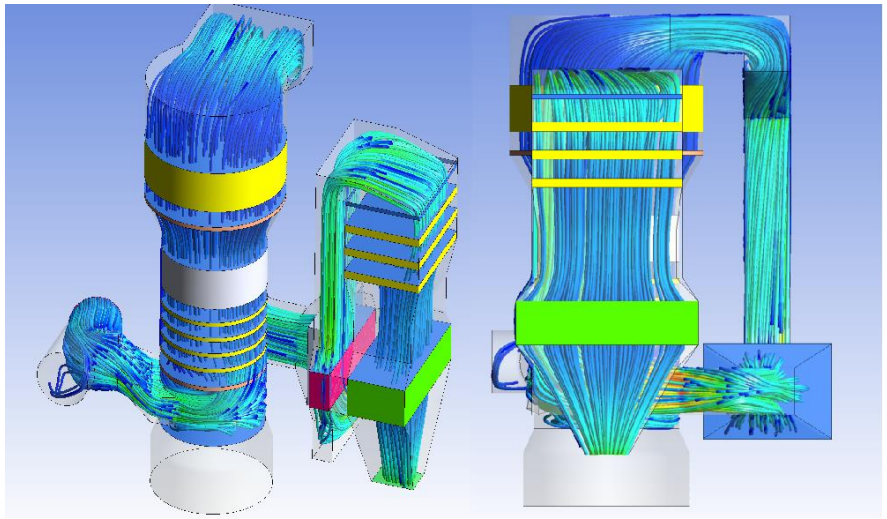
Technology R&D, equipment manufacturing, consulting, EPC contracting, operation & management of air pollution control, industrial solid waste, soil remediation, and organic waste utilization

Air pollution control	Pre-charged bag filter for controlling PM2.5; for dust control: straight-through uniform-flow bag filter, long bag low pressure pulse filter and top-inlet high efficiency low resistance bag filter; Fluid Catalytic Cracking(FCC) and flue gas SCR + bag filter + ammonia / sodium desulfurization; coking and delayed coking VOCs control
Organic waste	Agricultural organic waste utilization and harmless disposal with anaerobic fermentation and aerobic composting technologies, as well as relevant investment and operation
Solid waste utilization	Zinc and ferric dust & waste disposal & recycling for steel producers with crude steel output over 7mtpa on mode of EPC, BOT, engineering or consulting
CCUS	CCUS technology development based on self-developed “Technology and Equipment for Controlling PM 2.5 Emissions in Kiln Dust of Iron & Steel Industry”

Energy Saving & Environmental Protection

- Front runner of environmental protection and metallurgical flue gas ultra-low emission technology, with multiple original and pioneer technologies, along with first-set equipment and projects;
- 3 national engineering technology R&D centers + 1 academician workstation: National Environmental Protection Engineering Center for Industrial Flue Gas Control, National Engineering and Technology Research Center for Industrial Flue Gas, National Engineering Laboratory for Flue Gas and Multi-pollutants Control Technology and Equipment, and China's only academician workstation for metallurgical ultra-low emission technology;
- Multiple national key research projects including 4 specific subjects on air pollution of the Ministry of Science and Technology and 3 "863 Plan" projects
- More than 30 development reports, standards and regulations drafted for the state and industry, in addition to 80 inventions and patents; ;
- A wealth of technologies listed in *National Inventory of Advanced Pollution Control Technology*, *Inventory of Industrial Structure Adjustment Guidance,* and *Inventory of Green Industry Guidance*;

Energy Saving & Environmental Protection



Fangchenggang Steel Base Steelmaking Dedusting Project

- Customer: Guangxi Liuzhou Iron & Steel Group
- Scope: EPC - 4 secondary dedusting and 2 tertiary dedusting for converter, 1 dedusting for liquid iron pretreatment, 1 dedusting for No.1 RF, 1 dedusting for underground stock bin, 1 dedusting for No.2 RF and 1 reserved dedusting
- Duration: 2020
- Highlight: **self-developed ultra-low emission technology for metallurgical furnace fine dust (PM2.5); the concentration of PM2.5 reduced to below 10mg/m^3, and PM2.5 capture rate is above 99%, filter resistance < 900Pa, 3.11kWh power consumption is saved per ton steel**

Xinsteel Ultra-low Emission Retrofit for Sintering Gas Dedusting

- Customer: Xinyu Iron & Steel Group
- Scope: EPC, retrofit for 360m^2 sintering machine dedusting
- Duration: 2021*
- Highlight: **"bag filter + limestone-gypsum wet flue gas dedulfurization + SCR and honeycomb wet electric precipitation" technology is used; China's first bag-filter dedusting project for sintering machine head; concentration of NOx of flue gas outlet < 50mg/Nm^3, SO_2 < 35mg/Nm^3, PM2.5 < 10mg/Nm^3**

Energy Saving & Environmental Protection

Cangzhou Zhongtie 1250mm/1780mm Reheating Furnace Flue Gas Desulfurization, Denitration and Dedusting

- Customer: Cangzhou Zhongtie Equipment and Material Co., Ltd.
- Scope: EPC
- Duration: 2020
- Highlight: **China's first reheating furnace flue gas control project adopting 'medium-high temperature SCR + SDS + bag filter" process; concentration of NOx of flue gas outlet < 100mg/Nm³, SO_2 < 35mg/Nm³, PM2.5 < 8mg/Nm³, achieving ultra-low emission**

Cangzhou Zhongtie Hot Blast Stove Denitration Project

- Customer: Cangzhou Zhongtie Equipment and Material Co., Ltd.
- Scope: EPC - denitration for 4 sets of hot blast stoves of 2500m³ blast furnace
- Duration: 2020
- Highlight: **multiple patent technologies adopted; sodium hydroxide wet desulfurization to remove SO_2 - China's first hot blast stove emission control project employing sodium alkali desulfurization process**

Energy Saving & Environmental Protection

Huifeng Closed Decoking and VOCs Control for Delayed Coker Unit

- Customer: Shandong Huifeng Petrochemical Group
- Scope: EPC, closed decoking and VOCs control for 1.5mtpa delayed coker unit
- Duration: 2020-2021
- Highlight: **first application of self-developed “coke storage yard fugitive emission control for delayed coking” technology; minor modification with only 45 days shut down; intelligent control of coke reclaiming and unloading, completely unmanned, high efficient, stable, maintenance-friendly and low power consuming**

Liuzhou Steel Coke Oven Gas Desulfurization and Denitration Project

- Customer: Guangxi Liuzhou Iron & Steel Group
- Scope: EPC, COG desulfurization and denitration of 2×55 ovens JN60-6 type top-charging coke oven batteries
- Duration: 2019
- Highlight: **first application of “SDS dry desulfurization + pre-charged bag filter + medium-low temperature SCR denitration + waste heat recovery” technology for COG flue gas control; short process, less area occupation, low lump sum cost, stable and maintenance-friendly**

Business Overview - Safety & Protection

Metallurgical safety consulting, green and energy saving planning, technical support to governmental emergency management and safety supervision of iron & steel and nonferrous industries

Safety & protection - Sinosteel SEPRI

The only high-tech enterprise focusing on safety, occupational health and environmental protection R&D business in metallurgical field

Safety & occupational health	Consulting for non-coal mine, metallurgical industry & trade, fire protection and municipal public safety; intelligent safety monitoring and warning for construction site and enterprise; dust explosion prevention; low-carbon metallurgy safety risk assessment; safety evaluation; safety training & consulting, occupational health & hygiene evaluation; protection engineering
Environment & low-carbon	Industrial wastewater pollution control; municipal sewage treatment; plant ventilation & dust control; noise control; soil remediation; landfill leachate treatment; environmental engineering project consulting, investment and operation; carbon emission reduction project implementation & consulting, low-carbon, energy saving & emission control technology; clean production, energy saving and energy efficiency assessment & auditing
Inspection & test	Pressure vessel (pipeline), building (structure), steel structure inspection and reinforcement, special equipment and labor protection supplies inspection & test
Startups & innovation service	Industrialization of S&T achievements, scientific research, test & pilot, aids to startups, investment and financing consulting, technical service

Business Overview - Safety & Protection

SINOSTEEL E&T

Technical support to governmental departments

Safety consulting

- More than 600 safety & environmental technologies
- 260 national and provincial S&T awards
- Drafting 60 safety regulations and 100 safety technical standards
- One of the first safety assessment institutions of China; production safety evaluation agency

Carbon asset management consulting and service

- Energy saving & green development evaluation
- Technical support center of energy saving monitoring
- Technical support on climate change
- Planning on climate change, carbon peaking action plan and evaluation, low-carbon pilot application

Key laboratories of inspection & test

- Metallurgical safety engineering & research center
- Detection technology center on dust and poison of mine and radiation hazards
- Analysis and identification center on occupational hazards of metal and nonmetal mines
- National inspection center on labor protection supplies quality
- Associations of production safety and metallurgical safety

Aiming at "standard leading", "intelligent safety" and "green & low-carbon" development, strive to grow into a leader and the most influential Think Tank in the safety and environmental protection fields in China

Business Overview - Safety & Protection

Energy Saving and Low-carbon Technology Consulting

- Customer: WISCO
- Scope: analysis of impact of carbon emission estimation methods and emission factors selection on carbon quota allocation planning and transaction costs, data support for the planning of carbon emission during the *14th Five-Year Plan* period
- Duration: 2021

Planning on Climate Change of Wuhan City

- Customer: the Bureau of Ecology & Environment of Wuhan Municipal government
- Scope: assessment reports on carbon peaking planning, pilot low-carbon city, construction of pilot climate adaption city, in addition to strategies addressing climate change
- Duration: 2020-2021

Business Overview - Safety & Protection

Comprehensive Management of Ecological Environment for Juzhang River Valley

- Customer: Government of Qixingtai Town of Hubei Province
- Scope: EPC, canals desilting and ecological environment restoration
- Duration: 2021-2022
- Highlight: **honeycomb technology, geotextile piping bag, solar aerator**

Expansion of Leachate Treatment Station for Municipal Waste

- Customer: Linquan Wanneng Electricity & Environmental Protection Co., Ltd.
- Scope: EPC
- Capacity: 400m³/d leachate treatment, outlet water meets requirements for recycled circulating cooling water
- Duration: 2020-2021

Business Overview - Safety & Protection

Strategic Cooperation with Emergency Management Agency of Suzhou City

- Customer: Emergency Management Agency of Suzhou City
- Scope: technical support of production safety monitoring to industrial enterprise; inspection & supervision and safety training to metal smelting, explosive dust, space-limited and ammonia-related refrigeration enterprises; professional training to industry safety inspectors; safety technology instruction

Mask Quality Inspection

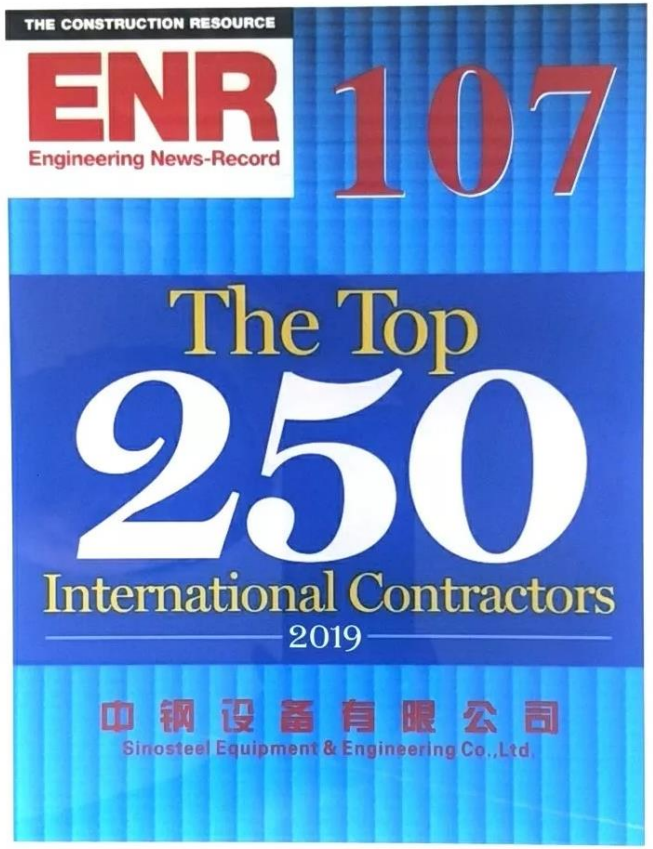
- Customer: State Administration for Market Regulation
- Scope: inspection and technology consulting of mask production
- Highlight: **one of the five inspectors for mask quality control during the COVID-19 pandemic outbreak in China**

04 Honors and Qualifications

Honors and Qualifications

Multiple records of “the largest” overseas projects and integrated equipment supply

- Consecutive ranking in ENR’s **Top 250 International Contractors** and **Top 250 Global Contractors** lists since 2008; ranking in List 2019 hit a new record;
- Hebei Xuyang COG purification project, *National Quality Engineering Award 2020-2021*;
- Finalist of *Fastmarkets Global Awards for Steel Excellence 2020* for the state-of-the-art hot rolling mill and water-cooling device matching for (TMCP) rebar, the only nominated Chinese engineering company
- Technology and application: synergic control of industrial flue gas multi-pollutants, first prize of *China National Science & Technology Progress Award 2020;*
- Technology and application: ultra-low emission control of multi-pollutants in multi-process of iron & steel Industry, second prize of *China National Science & Technology Progress Award 2020*
- Key technologies of flue gas multi-pollutants treatment and its applications in non-electric power industry, special prize of *Science & Technology Progress Award by Ministry of Education 2019;*
- Technology and application: ultra-low emission control of multi-pollutants in multi-process of iron & steel Industry, first prize of *Environmental Science and Technology by Ministry of Ecology and Environment 2019;*
- Rocklands 3mtpa copper processing project for Cudeco, *National Quality Engineering Award 2018-2019*;
- ZISCO 2.5mtpa pelletizing project, *National Quality Engineering Award 2018-2019*;
- BD-624 large traveling grate indurating machine, *Metallurgical Science & Technology Award 2018*;
- 200,000tpa ethylene glycol project for Yangquan Coal Group, *Chemical Quality Engineering Award 2016;*
- ICDAS BIGA 2 x 600MW power plant unit 2 project, *National Quality Engineering Award 2016-2017*;
- AMT Kazakhstan steel plant project, *Metallurgical Quality Engineering Award 2014*;
- JINDAL SAW 1.2mtpa pelletizing project, *National Quality Engineering Award 2014*



Honors and Qualifications

Drafting and participating in the formation of more than **100+** national standards

252 patents

23 qualifications covering metallurgical, mining, construction, telecommunications, civil and environmental industries

Member of the Low-carbon Standard Experts Division, the Low-carbon Development Promotion Committee of Iron & Steel Industry, CISA

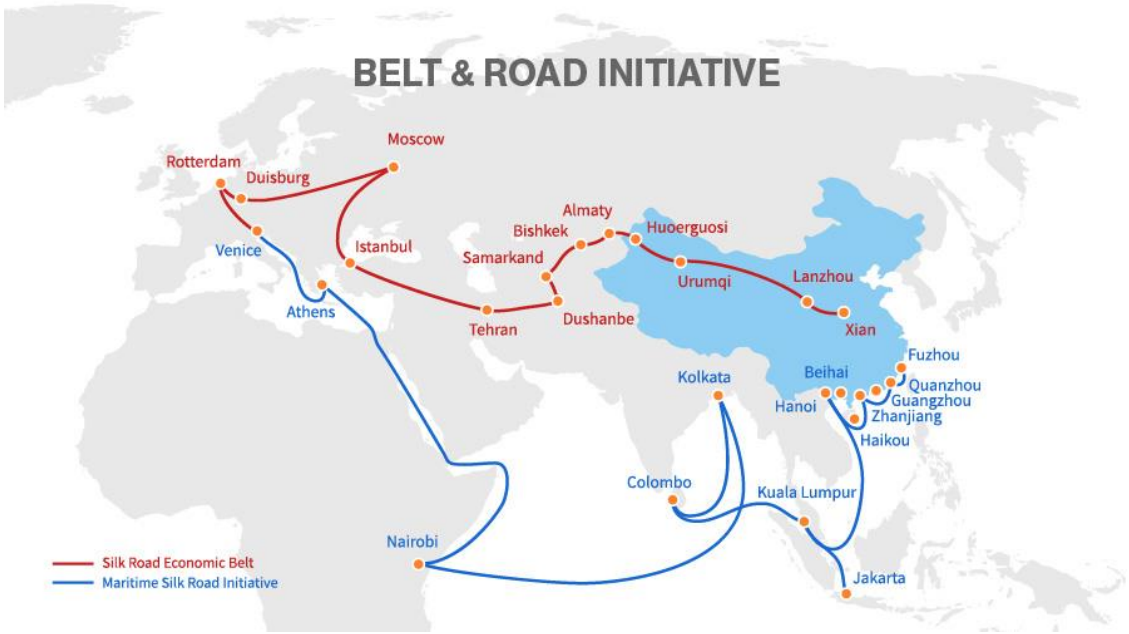
05 Prospects

Solution Provider of Low-carbon Metallurgy, Pioneer of Greener Growth

- China’s carbon peaking and neutrality goals push an accelerated transformation toward greener and low-carbon growth;
- Iron and steel industry is the largest source of carbon emission among manufacturing field in China, and its low-carbon development requires huge efforts of every single enterprise involved;
- Focusing on project contracting, Sinosteel E&T aims to develop towards more globalized, greener and intelligent direction, endeavoring to become a technology-oriented and innovation-driven forefront engineering company in the world;
- Expand global presence and enhance resources integration capability, develop core competences in low-carbon metallurgy technology and assist the high quality production of iron and steel by providing intelligent service;
- Make great efforts in process technology and equipment improvement, development of disruptive decarburization technology and zero carbon technologies including hydrogen-rich & hydrogen DRI and green hydrogen production, along with professional and life-cycle carbon asset management and consulting.

Prospects - Globalization

Promote the high equality growth of iron and steel industry in the globe by providing greener and ecological-friendly industrial engineering service



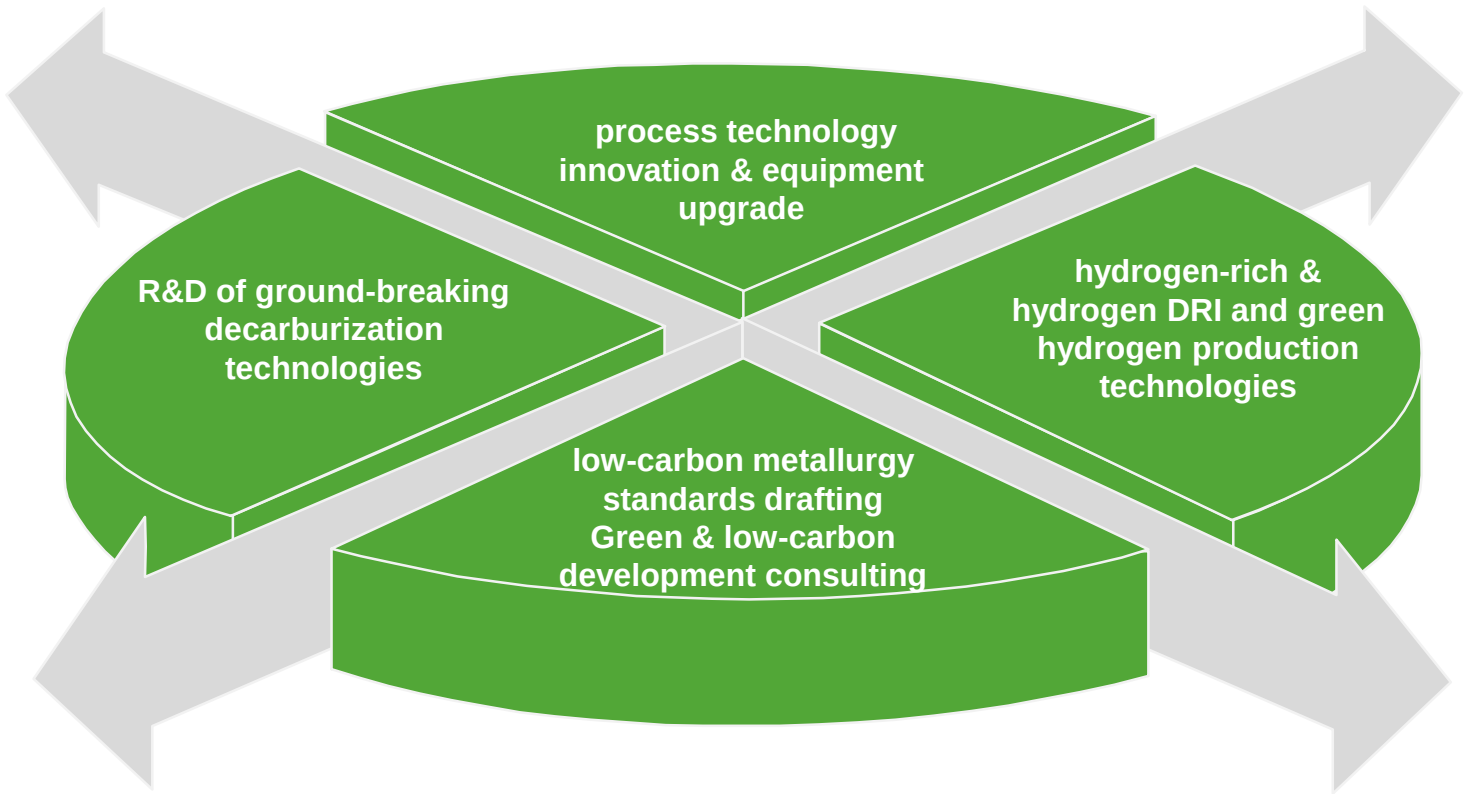
01 Projects and business covering more than 26 “Belt and Road” countries; 70% of the sales coming from countries along the B&R”

02 Continuous export of advanced technologies, equipment and management service of Chinese metallurgical industry to help overseas customers extend industrial chains

03 Provide green technologies and integrated service to support high quality development of “B&R” countries and establish international production capacity cooperation

Prospects - Pioneer of Greener Growth

All-process, life-cycle and low-carbon production solutions



- Direct reduction, smelting reduction, hydrogen metallurgy
- Flash smelting and new smelting technologies
- Gas purification, heating and conversion
- Electric heating
- Low-carbon metallurgical material (Insulation agent, mold powder, desulfurizer, refining agent)
- Metallurgical, energy and chemical co-production
- CCUS
- Clean energy including hydrogen and solar energy

Prospects - Provider of Intelligent Steel Production

New ecosystem based on industry internet platforms, digital transformation solutions

Advanced digital delivery platform

Digital project management of engineering, construction and operational maintenance; smart engineering and production system; transition towards digital engineering and service provider.

Building of Big Data Center and data governance competence

Deep integration of IT&OT data enables the intelligent dispatching of production resources and delivery chain; data governance competence enhancement; big data governance system building; intelligent operation ability elevation

Intelligent safety service

Recording & documentation, monitoring and value-added service; intelligent safety systems for construction site and metallurgical safety, industrial and trading safety monitoring and warning system, urban lifeline safety warning platform

Resources integration

Collaboration with suppliers on R&D and serialization of smart plant construction based on existing intelligent equipment and control service

SINOSTEEL E&T

Bellwether of the Belt & Road Initiative

Pioneer of Green Development

Provider of Intelligent Steelmaking Solutions

SINOSTEEL
中钢国际
SINOSTEEL E&T

BEYOND EXPECTATIONS

Reference Highlights

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Mining

Time	Project
2019-2023*	ETT, Mongolia 10mtpa coal washing plant FS
2017-2023	Mutun, Bolivia Iron ore exploration for steel complex
2019-2020	Tosyali, Algeria 4mtpa concentrate regrinding & rewashing
2018-2022*	WESIZWE, South Africa 1mtpa platinum ore beneficiation project
2017-2022*	Magnezit, Russia 50,000tpa fused magnesia project
2017-2022*	FERAAL, Algeria Gara Djebliet 10mtpa iron ore FS
2018-2019	HBIS Group, China Raw material area equipments
2018-2019	Ningbo Steel, China Material handling system for 2500m3 blast furnace
2016-2018	VALE, Brazil South Division iron ore processing equipment
2011-2016	Cudeco, Australia Rocklands 3mtpa copper processing project

Mineral Processing

Time	Project
2020-2023*	ArcelorMittal Kryvyi Rih, Ukraine 5mtpa traveling grate pellet plant
2020-2021	Baowu Masteel Group, China 4mtpa traveling grate pellet plant
2020-2021	Guangxi Shenglong Metallurgical Co., Ltd., China 3mtpa traveling grate pellet plant
2020-2021	WISCO Kunming Iron & Steel Group, China 2.6mtpa traveling grate pellet plant
2018-2020	Guangxi Liuzhou Iron & Steel Corporation, China Fangchenggang Steel Base 4mtpa hematite traveling grate pellet plant
2018-2020	HBIS Tangsteel, China 4.8mtpa traveling grate pellet plant
2019-2021	CPG, Germany 4mtpa traveling grate pellet plant
2018-2019	Sanming Iron & Steel Group Minguang Co., Ltd., China 2mtpa traveling grate pellet plant
2016-2018	Tosyali, Algeria 4mtpa traveling grate pellet plant
2013-2016	SISCO, Middle East 2.5mtpa traveling grate pellet plant
2011-2013	SAMARCO, Brazil 7mtpa traveling grate pellet plant equipment supply

Reference Highlights

SINOSTEEL E&T

Sintering

Time	Project
2020-2021	Zhongxin Iron & Steel Group, China 2x360m^2 sinter plant
2019-2020	Shandong Iron & Steel Group Laiwu Branch, China 2x480m^2 sinter plant
2019-2020	Shiheng Special Steel Group, China 24mtpa closed material yard, 2x265m^2 sinter plant
2018-2020	Guangxi Shenglong Metallurgical Co., Ltd., China 2x360m^2 sinter plant
2018-2020	Shanxi Jinnan Iron & Steel Group 2x220m^2 sinter plant
2017-2019	PT. Dexin, Indonesia 2x230m^2 sinter plant
2016-2019	MMK, Russia 2x300m^2 sinter plant
2013-2014	Jinshenglan Metallurgy Technology Co., China 360m^2 sinter plant
2011-2012	Guangxi Liuzhou Iron & Steel Group, China 360m^2 sinter plant
2010-2011	Chongqing Iron & Steel Corporation, China 360m^2 sinter plant

Blast Furnace

Time	Project
2020-2022*	Jiangsu Binxin Special Steel Co., Ltd., China 1250m^3 blast furnace
2019-2021	Hebei Huaxi Special Steel Co., Ltd., China 2300m^3 blast furnace
2019-2021	ERDEMIR, Turkey 3000m^3 blast furnace blower house
2018-2020	Hebei Jinxi Iron & Steel Group, China 2x2000m^3 blast furnace
2018-2019	Guangxi Shenglong Metallurgical Co., Ltd., China 2x1680m^3 blast furnace
2015-2017	ZISCO, Middle East 2000m^3 blast furnace
2015-2016	Jinshenglan Metallurgical Technology Co., China 2x1350m^3 blast furnace
2013-2015	Cangzhou Zongheng Industries Ltd., China 4x2500m^3 blast furnace
2012-2019	Lu'an Iron & Steel Group, China 2x1780m^3 blast furnace
2009-2012	MONNET, India 550m^3 blast furnace

Reference Highlights

SINOSTEEL SINOSTEEL E&T

Steelmaking

Time	Project
2021-2022*	Guangxi Shenglong Metallurgical Co., Ltd., China 4x150t converter steelmaking & CCM
2019-2021	Hebei Huaxi Special Steel Co., Ltd., China 170t converter, 12-strand billet caster
2019-2021	Shanxi Hongda Iron & Steel Group, China 2x100t converter, 2x8-strand billet caster
2018-2020	Guangxi Shenglong Metallurgical Co., Ltd., China 4.3mtpa steel making project for technical and industrial upgrading
2018-2020	Inner Mongolia Jing'an Nonferrous Metal Materials Co., Ltd., China 1.2mtpa nickel-iron alloy
2017-2020	Fuzhou Wuhang Iron & Steel Co., Ltd., China 2x105t EAF, 2x105t LF, 2x5-strand billet caster
2017-2018	ZISCO, Middle East 1.5mtpa steel making plant
2015-2017	Tosyali, Algeria 2.4mtpa EAF steel making & CCM
2013-2015	Cangzhou Zhongtie Equipment & Material Co., Ltd., China hot metal pre-treatment, 3x180t BOF and LF
2011-2012	Guangxi Liuzhou Iron & Steel Group, China 2x150t BOF

Steel Rolling

Time	Project
2021-2022*	HBIS Tangyin Iron & Steel Co., Ltd., China 2x600,000tpa high-speed wire rod mill, 1.4mtpa double high-speed bar mill, 2mtpa 1450mm HSM
2021-2022*	Anhui Shoukuang Dachang Metal Material Co., Ltd., China 2.4mtpa 3500mm plate mill
2020-2022*	Tosyali, Turkey 1800mm hot strip rolling project
2019-2021	Guangxi Shenglong Metallurgical Co., Ltd., China 1.2mtpa high speed bar mill, 2x1.5mtpa double high-speed bar mill
2019-2020	Valing Lianyuan Iron & Steel Co., Ltd., China 1.4mtpa twin-high speed bar rolling line
2018-2020	Guangxi Liuzhou Iron & Steel Group, China Fangchenggang steel base 5.8mtpa bar & wire rod rolling lines
2015-2017	Tosyali, Algeria 2.3mtpa high speed rebar mill of steel complex
2010-2011	Tosyali, Turkey 950mm hot strip mill
2009-2012	Guangxi Liuzhou Iron & Steel Group, China 1250mm cold rolling mill technical renovation
2007-2009	Chongqing Iron & Steel Group, China 4100mm plate mill

Reference Highlights

Coking

Time	Project
2018-2022*	MMK, Russia 2.5mtpa coke oven with CDQ
2018-2020	Guangxi Liuzhou Iron and Steel Co., Ltd., China Fangchenggang Steel Base 3.5mtpa coal preparation and coke oven
2018-2023*	JSW, India 3mtpa coke oven & by-product, 2x190t/h CDQ
2018-2019	JSW Dolvi, India 140t/h CDQ
2017-2021	PT. Dexin Steel, Indonesia 1.3mtpa coke oven & by-product
2017-2018	Hebei Xuyang Coking Co., Ltd., China 1.2mtpa coke oven & by-product relocation
2013-2016	Hebei Bohai Coal Coking Co., China 3mtpa coke oven & by-product
2008-2017	JSPL, India 1.9mtpa coke oven with 3mtpa by-product
2008-2010	Cangzhou Zhongtie Equipment & Material Co., Ltd. 2.2mtpa coke oven with CDQ and by-product
2006-2009	Sumitomo Wakayama, Japan 1.2mtpa coke oven
2006-2008	Xinjiang Bayi Iron & Steel Co., Ltd. 2.2mtpa coke oven & by-product
2004-2007	ISDEMIR, Turkey 1.3mtpa coke oven

Low-carbon Metallurgy & Energy

Time	Project
2021-2022*	Xinjiang Bayi Iron & Steel Co., Ltd., China Hydrogen-rich blast furnace pilot
2021*	HBIS Xuansteel, China Hydrogen energy development and utilization
2017-2023	Mutun, Bolivia 0.25mtpa DRI plant and auxiliary facilities
2016-2020	AQS, Algeria 2.5mtpa DRI plant
2015-2017	Tosyali, Algeria 2.5mtpa DRI plant
2016-2018	Yangquan Coal Industry (Group) Co., Ltd., China 2x660MW inferior coal thermoelectric plant
2013-2016	Xinjiang Guotai Xinhua Mining Co., Ltd., China 2x350MW power plant Phase I
2011-2014	ICDAS, Turkey 2x600MW coal fired power plant Phase II

Reference Highlights

Environmental, Pollution Control & Carbon Reduction

Time	Project
2020-2021	Xinjiang Bayi Iron & Steel Co., Ltd. Car dumper dedusting upgrade for raw material plant
2021	Baowu Masteel Group 4mtpa traveling grate pellet plant desulfurization and denitration
2021-2022*	Shanxi Hongda Iron & Steel Group 265m^2 sinter plant and 2mtpa pellet plant desulfurization and denitration
2021-2022*	Baowteel Desheng Stainless Steel Flue gas denitration equipment for 3 sets of 128m^2 sintering machine
2019-2020	TISCO Stainless Steel Co., Ltd. Dedusting upgrade for 660m^2 sintering machine tail
2016-2017	Chizhou Hengxin Material & Technology Co., Ltd. 1.2mtpa pellet plant flue gas desulfurization (BOT)
2021	Cangzhou Zhongtie Equipment & Material Co., Ltd. 4×7m coke oven dedusting ground station
2019-2020	Hubei Jinshenglan Metallurgical Technology Co., Ltd. 2x6.25m coke oven dedusting
2018-2020	Guangxi Liuzhou Iron & Steel Group Coke oven flue gas desulfurization and denitration
2018	HBIS Hanbao Iron & Steel Co., Ltd. 7m coke oven flue gas dedusting, desulfurization & denitration
2018	Shougang Shuicheng Iron & Steell Group Coke oven gas fine desulfurization
2020-2021	Fengnan Iron & Steel Co., Ltd. Lime kiln denitration

Environmental, Pollution Control & Carbon Reduction

Time	Project
2020-2021	Baowteel Desheng Stainless Steel HBS flue gas desulfurization for 3 sets of 2500m³ blast furnaces
2018	Laiwu Iron & Steel Yinshan Section Steel Co., Ltd. 1880m³ blast furnace casthouse dedusting
2016-2017	Shougang Jingtang Iron & Steel Co.,Ltd. 5500m³ blast furnace charging dedusting system
2016	Shougang Jingtang Iron & Steel Co.,Ltd. 5500m³ blast furnace coal dust collector
2021-2023*	Yunnan Tiaobiao Precise Casting Co., Ltd. 67t EAF and LF dedusting
2021	Hubei Shunle Iron & Steel Co., Ltd. 2×100t EAF dedusting
2020	Laiwu Iron & Steel Yinshan Section Steel Co., Ltd. Continuous casting machine dedusting
2019-2021	Guangxi Liuzhou Iron & Steel Group Fangchenggang Steel Base 4×210t converter dedusting
2016-2020	SDIS Rizhao Steel Base 2×250t + 2×180t converter dedusting
2020-2021	Cangzhou Zhongtie Equipment & Material Co., Ltd. 1780mm HSR reheating furnace flue gas SDS, SCR & dedusting

Reference Highlights

Environmental, Pollution Control & Carbon Reduction

Time	Project
2021-2023*	Zhonghan (Wuhan) Petrochemical Co., Ltd. 2.8mtpa catalytic cracking flue gas desulfurization and dedusting
2021-2022*	Shandong Huaxing Petrochemical Group Closed decoking and odor treatment for 1.4mtpa delayed coking
2021	Shandong Huifeng Petrochemical Co., Ltd. Closed decoking and VOCs waste gas control for 1.4mtpa delayed coking
2016	CNCC Qingdao Anbang Petrochemical Co., Ltd. 500,000tpa catalytic cracking flue gas dedusting and desulfurization
2020-2021	Xinxing Ductile Iron Pipes Co., Ltd. 65MW generator unit desulfurization and denitration
2018	China Guodian Corporation Jiujiang Power Plant 2×350MW generators units ultra-low emission
2014	Shanxi Xingneng Power Co., Ltd. 2×600MW generator units electric-bag precipitator
2011-2012	Huaneng Xinjiang Energy Development Co., Ltd. Tashi Power Plant 2×125MW generator unit desulfurization

Safety & Occupational Healty

Time	Project
2020-2021	Emergency Administration Agency of Suzhou City Production safety planning of 14th Five Year Plan of Suzhou City
2016-2021	Ministry of Emergency Management of China “Standard for the Prevention of Dust Explosion for Industrial Enterprise’
2018-2019	Shagang Group On-site entrusted inspection
2021	Sinosteel New Material Co., Ltd. Dust explosion risk assessment, explosion-related dedusting system engineering and retrofit
2016-2018	State Administration of Emergency Management Dust explosion risk evaluation
2019-2020	WISCO Resources Group Wulongquan Mining Co., Ltd. Safety risk graded control and hidden danger detection & elimination
2021	Ansteel Group Gas system safety specific assessment and diagnosis
2020-2021	Guangdong Shaogang Songshan Co., Ltd. Safety management improvement consulting
2019-2021	Dongfeng Honda Automobile Occupational health inspection
2019-2020	Wanbao Mining Co., Ltd. HSE of overseas projects
2021	Emergency Administration Agency of Hubei Province Occupational safety consulting

Reference Highlights

Inspection & Test

Time	Project
2021	WISCO Gas Co., Ltd. Periodical inspection of pressure vessel and pipeline
2018-2020	WISCO Reliability evaluation of belt conveyor and transfer station enclosure for sintering and raw material yard
2020	Liuzhou Iron & Steel Group Safety inspection of cast house platform structure for 6 blat furnaces
2019	Sinopec Anqing Petrochemical Company Thermoelectricity and water inspection of vessel and pressure pipeline
2018	PXSTEEL Anyuan Iron & Steel Co., Ltd. Reliability evaluation of belt conveyor
2018	Guangdong Shaogang Songshan Co., Ltd. Auxiliary material warehouse structure inspection and evaluation
2018	Panzhihua Iron & Steel Gangfan Co., ltd. Inspection of 4x650m³, 4x400m³ oxygen sphere, 400m³ Nitrogen sphere
2021	Scenario and pathway research on carbon peak of key industries of Hubei Province

Water Treatment & Low-carbon Consulting

Time	Project
2020-2021	Ecological Environment Department of Hubei Province Formulation of provincial greenhouse gas emission inventory 2017-2020
2020-2021	Ecological Environment Agency of Wuhan City Pilot evaluation and planning on climate change of Wuhan City
2021	WISCO Carbon accounting and performance cost research
2020	Development and Reform Commission of Wuhan City Circular economy planning of Wuhan City
2018-2020	Development and Reform Commission of Wuhan City Circular economy planning of Wuhan City Year 2018-2020
2020	Hubei Gucheng Economic Development Zone Green industry pilot base pilot application
2016-2019	Development and Reform Commission of Hubei Province / Ministry of Industry and Information Technology of China Specific supervision on steel plant energy consumption of Hubei Province
2019-2020	Kohler Co. in Zibo, China 1000m³/d wastewater treatment
2020-2022	Northwest Electric Power Design Institute Co., Ltd. of China Power Engineering Consulting Group 200m³/d leachate treatment station / municipal solid waste incineration project leachate treatment system (EPCO)
2021-2022	Government of Qixingtai Town, Zhijiang City Ecological environment restoration of Juzhang River Valley

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THANKS

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