NEWSLETTER

Sinosteel Equipment & Engineering Co., Ltd

ISSUE 2017

Getting closer to a prospective success in Iran

See more at Page 30

OUR SOULUTIONS
YOUR EXPECTATION

Sinosteel Equipment & Engineering Co., Ltd.

No.8 Haidian Street,
100080 Beijing, P. R. China
Tel: +86 10 62688188
Fax: +86 10 62688098
E-mail: market@mecc.sinosteel.com

mecc.sinosteel.com

SINOSTEEL

Contents

CUDECO'S COPPER PLANT IS OPEN

Australia's emerging copper producer CuDeco's flagship Rocklands processing plant, in Cloncurry, Queensland, declared its official opening in October 2016. VIP at the opening included Minister Assisting the Premier on North Queensland Coralee O'Rourke, Bob and Robbie Katter and Chinese Consul Jiqing Jiang, Director of the Economic and Commercial Office of Brisbane consulate.

Since the cooperation with the ASX-listed company CuDeco started in 2010, Sinosteel MECC has signed series of contracts totaling nearly AUD 300 million. With the application of Chinese engineering technology and equipments, the project cost was optimally controlled. Its successful implementation contributed to the mutual benefits of the two countries in mining industry in a meaningful way.

As a result of high-grade native copper, cobalt (coexist with pyrite) and magnet iron contained in the raw copper, complex processing flowsheet of crushing - HPGR – scrubber – jigging - spiral chute – table separation - ball mill – floatation - vertical mill – filter press was used. With the precondition of meeting high standard technical requirements, a large amount of Chinese equipments were selected for the first time in the history of large Australian mining project, in accordance with Australian industrial standard and Queensland mining law. Meanwhile, hundreds of trips were made by Chinese technicians to work with local construction company for the provision of technical support, instruction and test run service.

With the application of 3D design, as well as modularization and preassembly for steel structure and pipeline, Sinosteel MECC efficiently reduced the construction difficulties and cost.

Based on Chinese manufacturing resources, Sinosteel has integrated world class processing equipments for the project with a total weight of 15,000 tons, 95% of which are all made in China.

As the EPC contractor, Sinosteel MECC collaborated closely with local companies, earnestly implementing the health, safety, environmental protection, labor and quality control regulations for mining in Australia, in respects of civil construction, equipment installation, diesel power generating, etc. Hundreds of jobs have been produced by employing managing and technical people from Australia and New Zealand in recent 3 years. Meantime, the construction was completed at low cost in a high efficiency and quality way, with the management advantage of Sinosteel MECC.

The project achieved rapid transition from construction to operation stage in less than 6 months by the completion of single equipment commissioning, no-load test and load test.

"The project mode of EPC plus financing (or investment) will realize a win-win development, and allows us to provide our solutions to more business partners around the world." summarizes Director of Mining Department.

SINOSTEEL BRAZIL WON VALE'S BIGGEST EQUIPMENT ORDER OF THE YEAR

Recently, Sinosteel Projetos E Tecnologia (Brasil) Ltda., the wholly-owned subsidiary of Sinosteel MECC, signed contract with VALE, Brazil for the long-distance belt conveyor project of Mine CAUE in Minas State, Brazil. The contract scope covers engineering, manufacturing, technical service for installation and commissioning and etc. of four belt conveyors 3km-long in total. The delivery time is 10 months. This is the first contract of Sinosteel Brazil in its localization marketing in Brazil, one of the most important mining countries in the world. It's also the biggest equipment procurement order of VALE, the world's No. 1 iron ore producer in 2016.

In the past three years, due to the influence of global economic crisis and unstable political situation in Brazil, the domestic economy of Brazil has got a severe downturn, and VALE has cut its project investment significantly. For the said belt conveyor project, VALE invited several famous bulk material treatment equipment suppliers from Europe, Brazil and China, including ThyssenKrupp, METSO to participate in the competitive bidding, and the completion was extremely fierce. Through several rounds of technical and commercial negotiation, with outstanding technical advantages, experienced localized team and good reputation, Sinosteel Brazil won the bid eventually.

The main business of Sinosteel Brazil is research & development, design, manufacturing, installation, commissioning, technical service and spare parts of bulk material treatment equipment, covering such industries as mining, metallurgy, ports, coal industry, electric power industry, construction materials, foods and etc. Meanwhile, it supports the business of Sinosteel MECC in Latin America, including EPC, equipment supply and spare parts supply. Adopting internationally advanced management mode, absorbing outstanding design and manufacturing talents, basing on Chinese equipment manufacturing resources, combining the local market demand in Brazil which has huge potential, Sinosteel Brazil has been focusing on Brazilian market with its comprehensive advantage of localization operation and the spirit of "Focused, Concentrated and Professional", trying to become the most competitive supplier for bulk material treatment equipment.

The successful signing of the contract makes Sinosteel Brazil get closer to the goal of becoming the most competitive supplier for bulk material treatment equipment. It marks bulk material treatment equipment branded "Sinosteel MECC" has entered world-class mining market, which provides a new path for the internationalized & diversified business of Sinosteel MECC.

NEW GARNET PROCESSING PROJECT

Another significant step in Australia

Garnet International Group, based in Singapore, assigned to Sinosteel MECC in October 2016 the EPC contract for its Balline Garnet Processing Project in Australia.

The operation, 120km north of the port of Geraldton in Western Australia, situated existing transport and township infrastructure. According to the scope, Sinosteel MECC will also supply a concentrate screening plant at Port Klang in Malaysia, where garnet will be stored and sold to European and Middle Eastern markets. Mined from beach placer rich in garnet crystal, the almandine garnet will be mainly used for abrasive sand blasting and water jet cutting in industrial applications.

The processing plant is designed to produce up to 300,000tpy garnet in 5 grades after separation, scrubber, gravity separation, dry high-magnetic separation, classification, etc. Startup of the project is scheduled after 18 months.

NEW PLATINUM PROCESSING PLANT

for Terskaya Gornaya Kompaniya in Russia

Terskaya Gornaya Kompaniya (abbreviated as TGK), a subsidiary of London Stock listed company Eurasia Mining, has signed an turnkey contract for its Monchetundra Project in Russia with Sinosteel MECC.

The project is in Kola Peninsula, in northwest Russia on the border with Finland, and comprises engineering, construction, equipment and material supply, installation and commissioning. Under the contract, Sinosteel MECC will develop two platinum group metal deposits, which will provide 1.7 million tons of platinum group metal per year.

The open pit mining will be at low cost for its good infrastructure conditions, large mineral rights coverage and reliable reverse. The main process for the open pit mining is made up by crushing, grinding, gravity separation and flotation separation.

PILOT PLANT OF RARE EARTH AT BROWNS RANGE

for Northern Minerals in Australia

In December 2016, ASX listed Northern Minerals signed a EPC contract with Sinosteel MECC for the construction of its test pilot plant at Browns Range heavy rare earths project, situated approximately 150km southeast of Halls Creek, Western Australia, in the Tanami Desert.

The pilot plant was the first stage to take the Browns Range into full production, including the development of a three year, 60,000tpy pilot plant operation. It will consist of an open cut mining operation, with processing via a beneficiation and hydrometallurgical pilot plant expected to produce 49,000kg of dysprosium, in 59,000kg of total rare earth oxides contained in a mixed rare earth carbonate per annum. A full scale production would be achieved in stage three with tenfold capacity.

The target market is China and the first production is expected to take place in 16 months.

project site

FEASIBILITY STUDY FOR GARA DJEBILET IRON ORE

at Feraal, Algeria

Feraal, the National Iron and Steel Company, of Algeria has selected Sinosteel MECC to study the feasibility of operations on the mega deposit of Gara Djebilet in March 2016. The contract was signed at Algerian Ministry of Industry and Mining by Wang Jian and Ahmed Benabbas, both General Managers from each side. Witnesses were Minister of Algeria, Chinese Ambassador and Consul in Algeria.

The Gara Djebilet deposit contains a giant reserve between 1.5 and 2 billion tons of iron ore of 57 percent iron content, according to estimates from previous studies dating back to 1960s and 1970s. The development of iron resources could satisfy domestic demands and reduce imports.

The study will have test with various process to define the most appropriate one, based on which the mining and beneficiation design will be developed. It will also allow having a better understanding of the potential of Gara Djebilet, the iron ore production capacities, the operation costs, as it will give indications on the steel market in Algeria.

Study could be expected by end of 2017, and Feraal is considering developing this deposit through the installation of a plant with a production capacity of 10 to 12 million tons in 2025.

PELLETIZING PLANT RECEIVED PERFORMANCE ACCEPTANCE CERTIFICATE

at SISCO, Iran

The first traveling grate pelletizing project exported by China successfully produced.

On March 18, 2017, the performance test of 2.5-mtpy traveling grate pelletizing plant for SISCO, one of the biggest private steel making complex in Iran, achieved great success, demonstrating values above the guaranteed figures.

The order, signed in 2010 and commenced in 2014, calls for Sinosteel MECC to supply a pelletizing plant producing 2.5 million tons pellet per annum, to be located in Sirjan, Kerman Province. Pellet produced with magnetite concentrate from SISCO mine will feed Direct Reduced Iron making.

Travelling grate was applied for the induration process of the pelletizing plant, the process system and equipments of which were completely researched and engineered by Sinosteel MECC. As the first traveling grate pelletizing plant ever supplied by Chinese company, its successful operation demonstrated the achievement of a significant breakthrough.

The project engineering was developed with high-tech tools, such as 3-D engineering and thermal simulation, for ensuring its accuracy and advancement. Equipment procurement process was strictly controlled and combined with complete optimization to the manufacturing process and quality in accordance with engineering. The construction was also fully involved by Sinosteel MECC by dispatching numerous specialists to provide technical instruction and quality supervision and performing professional management as well as construction and commissioning to key parts namely mechanical assembly of main equipment, bricking of refractory, commissioning of instrument & automation. The production training and commissioning activities proceeded efficiently by Sinosteel MECC operational team has led to positive results in the product quality and production efficiency proven during the performance test, which certified the productivity well above the contractually guaranteed figures. Outstanding results were obtained on product quality. The importance of this result is emphasized when considering the high quality requirement and standard demanded by SISCO.

With solid commitment and thorough cooperation between SISCO and Sinosteel MECC teams, the pelletizing plant was successfully delivered, confirming customer's confidence in Sinosteel MECC, thus verifying its technical reliability and competence in traveling grate technology.

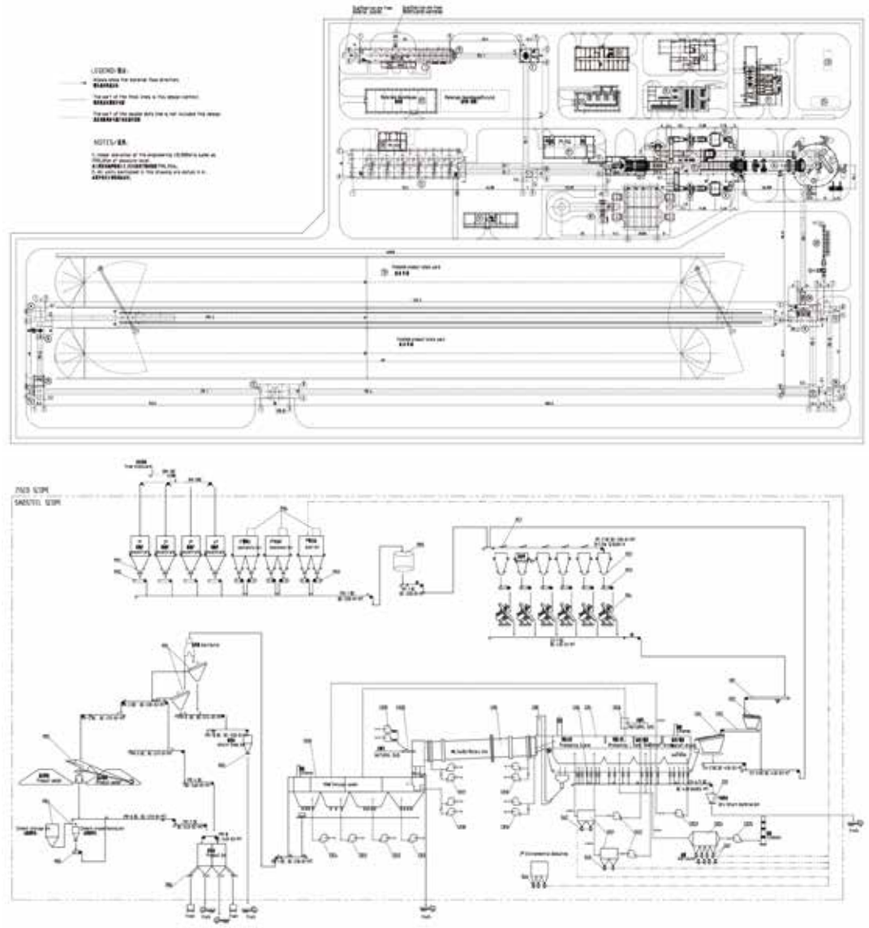
EXCELLENT OPERATIONAL PERFORMANCE FOR THE 2.5-MTPY PELLET PLANT

at ZISCO, Iran

The contract to supply the 2.5 million tons pelletizing plant for Zarand Iranian Steel Company (ZISCO), subsidiary of Middle East Mines Industries Development Holding Company (MIDHCO), was signed in March 2013. Work on site lasted 24 months and performance acceptance Test was achieved on May 30, 2016.

The pelletizing plant is engineered based on mature grate-kiln-cooler process with 8333 tons daily capacity. Sinosteel MECC has supplied financing, laboratory test, engineering and equipments. Installation for both mechanical and electrical equipments as well as refractory, training and operation were performed by Sinosteel MECC personnel.

To guarantee the schedule and quality of project, Sinosteel MECC has dispatched a team composed of 300 skilled workers for installation, along with 50 technicians providing intensive training while implementing operation for 6 months. In this way, the plant has passed performance test for once only and is producing in excellent status.



HOT TEST OF PELLET PLANT

for NMDC, India

The new pellet plant for public sector mining company NTDC Limited, as part of its value addition and diversification plans, to produce 1.2 million tons per annum is all set to commence full commercial production after signing the Provisional Acceptance Certificate to Sinosteel MECC.

The plant is based on grate-kiln-cooler process. An unusual aspect of the chain grate is the auto-opening function of bleeder valve against power off, which is easy to use and fully recognized by the customer.

The water content of raw material has surpassed 20 percent of designed figure, and heavy oil contains ore impurities, as well as in diesel. To minimize these impacts, technical improvement has been made for proportioning bin by utilization of compressed air blowing, which realized continuous feeding of mixed ore fine and, consequently, operation of balling disc. The hot blast furnace blockage caused by excessive impurities of fuel was also cleared after 16 hours overnight work. Afterwards, advices of increasing filter and cleaning impurities periodically were taken by the customer and none such problems have occurred.

Rajaschekhar (project manager of NTDC, left) handing over the PAC to Yang Muyi (project manager of Sinosteel MECC)

Commissioning before hot test.

CONSTRUCTION OF 2.5-MTPY DRI PLANT

for Algerian Qatari Steel

Algerian Qatari Steel (AQS) has awarded Sinosteel MECC the contract of construction for one of the world's largest direct reduced ironmaking (DRI) plants, EP supplied by MIDREX. It is also the second MIDREX DRI plant constructed by Chinese company. AQS is a joint venture between Sider Co. and National Investment Fund and Qatar Steel International. This natural gas-based DRI plant, situated in Bellara Algeria, 375km east of Algiers, will be part of the overall steel complex produces 2 million tons of re-bar and wire rod finished products.

European and American standards will be applied to the construction and full production is scheduled to initiate in December 2018, after which the plant will produce 2.5 million tons hot direct reduced iron and/or cold direct reduced iron simultaneously without stoppage of production.

SINTER PLANT IN PRODUCTION

for Jinshenglan Metallurgical, China

The 1×360m^2 sintering project stage I, as part of the upgrading and relocation project of Jinshenglan Metallurgical Technology Co., Ltd., located in the Linjiang Industry Park of Hubei Province, is designed to produce 3,564,000 tons qualified sinter feed per annum with capacity utilization 1.25～1.5t/m^2·h. The supply includes the complete sintering line from raw material input to sinter feed output, as well as the auxiliary facilities.

The plant will be made up basically of: fuel crushing shop, proportioning shop, primary mixing shop, secondary mixing shop, sintering shop, circular cooler, machine head deduster, main draft fan house, main chimney, finished product screening shop, transfer station, belt conveyor gallery, together with power supply & distribution, water supply & drainage, ventilation & dedusting facilities, gas, steam and compressed air supply, communication, roads, comprehensive pipeline, main control building for stage I & II, all high and low voltage distribution rooms of 35kV, 10kV and 0.4kV within battery limit of sintering. The process flow and equipments used are stable and proven practical and reliable in China. Advanced and economic PLC control system is equipped to ensure the smooth production process and product quality. To meet the requirement of energy saving and environment protection, thick bed sintering (height of sintering machine side wall is 850mm) and mixed material preheating processes are adopted. Meanwhile, the utilization of new-type circular cooler has reduced operation cost and, significantly, the air leak rate of circular cooler, in which way the efficiency of waste gas heat is improved, hence the energy consumption of sintering is reduced.

NEW 5.5 MILLION TONS SINTERING PROJECT

for MMK in Russia

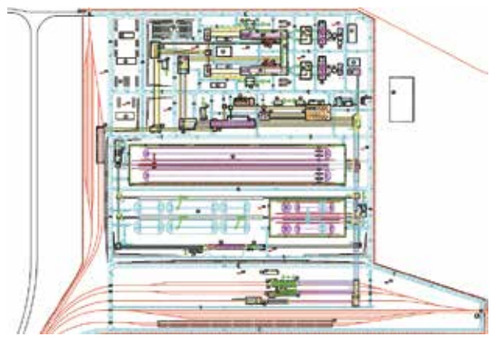
Sinosteel MECC was selected by MMK, the enormous steel producer of Russia with an annual output of 12 million tons steel, to supply its new No. 5 sintering project – including the engineering, equipment supply and site service – due to its proven comparative technical and cost advantages after the sintering desulfurization revamping project successfully produced.

The two sintering production lines are designed for an annual production of 5.5-mtpy sinter feed, and will use iron ore concentrate as raw material. Advanced technologies are designed for the project to meet the restrict requirements for emission:

- Dust emission - 20mg/Nm^3
- Sulfur oxide emission - 72mg/Nm^3

The project is executed in 2 stages, the engineering design, as stage 1, has been completed, and equipment supply, as stage 2, is currently under development. The project, will be the largest local sintering project after completion, has strong market demonstration effect.

During the execution of engineering design, Sinosteel MECC has established good communication and cooperation channel with MMK. As the largest metallurgical engineering company in China, Sinosteel MECC supplies first-rate and timely service to client with our rich engineering experiences and advanced management philosophy. The basic design was once approved and MMK signed the Acceptance Certificate.



NEW CONSTRUCTION PROJECT FOR 2X180M^2 SINTER PLANT AND MATERIAL YARD

at Alliance Steel in Malaysia

In October 2016, Alliance Steel (M) signed a contract with Sinosteel MECC for the construction of a 2x180m^2 sinter plant as well as material yard, as part of its new 3.5 million tons steel complex.

The steel complex, situated in Malaysia-China Kuantan Industrial Park promoted by then Prime Ministers of the two countries, comprises of mechanized material yard, coke oven, sinter plant, blast furnace, lime kiln, converter, CCM and rolling mill. The scope of Sinosteel MECC includes the construction and installation of process equipments, together with commissioning. Sinosteel MECC Malaysia Branch will coordinate local works to ensure the project schedule and quality will be guaranteed in a professional way.

Alliance Steel (M) Sdn Bhd, found in April 2014, is a joint-stock enterprise jointly established by Guangxi Beibu Gulf Port International Group Co., Ltd and Guangxi Shenglong Metallurgical Co., Ltd. The 3.5 million tons steel complex is the key and first project in the park. With total investment of US$ 1.4 billion, the project is expected to start operation in 2017, by when high-speed wire rod, bars and H beam will be produced and thousands of employments will be created.

7.1M COKE OVENS SUCCESSFULLY PRODUCED

at Bohai Coking, China

As part of comprehensive energy saving program, the new coke ovens for Bohai Coking Company started up in August 2016. The project is designed to produce 3 million tons of dry quenching coke, and comprised of 4 x 60 chambers 7.1m top charging coke ovens. 2x185t/h dry quenching system, together with a standby new type wet quenching facility, is equipped. Ground stations will be applied for the dedusting of charging and coke discharging. Flue gas will be recycled with preheating.

Gas purification shop consists of condensate blowing, PDS desulphurization, thiamin, ammonia still, final cooling benzole washing, negative pressure debenzolization and oil cellar. The utilization of ammonia desulphurization and negative pressure debenzolization allow for the cost reduction and benefit increase. The complete waste water treatment (including deep treatment) system and sulfuric acid preparation system with desulphurization waste fluid, which will efficiently control the coking and desulphrization wastewater and consequently reduce pollution.

STAMP-CHARGING COKE OVEN IN OPERATION

at Tianlu New Energy in China

Tianlu New Energy, located in Dingzhou, Hebei Province, is a wholly-owned subsidiary of Risun Group, the world's largest independent coking company producing 7.45 million tons of coke per annum. The new coking project consists of 2 sets of 5.5m 65-chamber stamp-charging coke ovens, together with coal preparation, gas purification, coke conveying and sewage treatment systems.

The relevant national standards and codes have been thoroughly considered and engineered in order to meet the requirements of energy conservation and emissions reduction. High-efficiency pulse bag filters are selected for coal charging and coke discharging ground dedusting stations, and transfer station dedusting system. The coke oven flue gas waste heat utilization device will produce saturated steam of Q=12t/h, P=0.7MPa, which will enter the low-pressure steam pipeline network of the whole plant, consequently achieving wide use of energy.

The process flow of "pretreatment + biochemical treatment (A2/O) + coagulating sedimentation treatment" is applied for sewage treatment system. Waste coking water after phenol-cyanogen wastewater treatment station can meet national standard for coking chemical industry.

14 instead of the originally planned 15 months required for the complete project schedule, the project is proven to achieve both quality and efficiency and have positive impact on customer satisfaction.

OPENING CEREMONY OF NO.5 COKE OVEN REVAMPING PROJECT

at Tianlu New Energy in China

The relationship between Masteel and Sinosteel MECC is strengthened by the anticipated completion of the coke oven revamping.

20 days ahead of the planned date of production, the revamping project for No. 5 coke oven of Ma'anshan Steel was successfully completed on July 21, 2016, marked by the first coal charging and discharging of quality coke. The opening ceremony was attended by the presidents of both Sinosteel MECC and Masteel.

The ovens were shut down and dismantled in October 2015 and the new oven bricking began in the coming January. To guarantee the tight schedule required by the customer, a batch of well experienced and highly specialized project technicians have all-day participated in the supervision of bricking, even during Spring Festival of China. Thus every milestone was finished in due time and eventually the early startup was achieved.

1.9-MTPY COKE OVEN SOON IN OPERATION

at JSPL, India

Metallurgical coke is one of the prime requirements for the production of hot metal through the blast furnace route. The coke not only supplies heat to the blast furnace for melting purpose but also acts as a reducing agent inside the furnaces for reduction of iron oxides to metallic iron.

The JSPL coke oven plant, located in Angul, 160km northwest of the capital of Odisha State, will produce 1.9 million tons coke per annum. Sinosteel MECC's layout concept includes 4x72-chamber coke oven batteries, which is 4.3m TJL4350F type stamp-charging featuring twinfuel underjet, combination fired and waste gas recycling, 3-mtpa by-product facility, and 1.1-mtpa coke oven as well as coke quenching to be preserved.

Facilities also included are: coal preparation, coke sieving and storing, blowing cooler, electric tar precipitator, sulfur ammonia washing, sulfur recovery, ammonia decomposition, benzene washing and eluting as well as the relevant auxiliary utilities. The plant has the ability to produce coke, COG, tar, sulfur and crude benzene.

The first coke discharging of No.1 coke oven has finished recently, and to be followed by the production of No.2 coke oven soon, as well as the by-product plant.

JSPL (Jindal Steel and Power Group) is one of India's largest industrial complexes with a dominant presence in steel, power, mining and infrastructure sectors. As part of the US$ 18 billion O. P. Jindal Group, JSPL has developed fast with annual turnover of approximately US$ 3.3 billion. In recent years, JSPL has expanded its business to various parts of the world, particularly in Asia, Africa and South America. From the widest flat products to a whole range of long products, JSPL today sports a product portfolio that caters to markets across the steel value chain. The company produces the world's longest, 121-meter, rails and large-size parallel flange beams.

SALT EXTRACTION FROM DESULFURIZATION WASTE LIQUID

for JSW, India

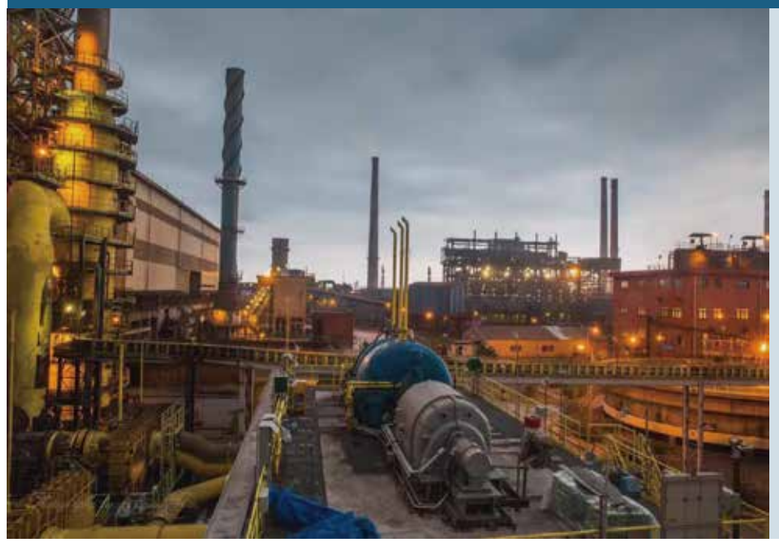
The production capability of coke ovens supplied by Sinosteel MECC to JSW Vijayanagar Works has reached up to 3.4 million tons per annum, which also leads to an daily production of 120m^3 desulfurization waste liquid. Sinosteel MECC has been working on the solution of this problem as it always does on the constant project optimization for our customers.

In the process of gas purification of coking project, wet air oxidation (WAO) a commonly used technology for desulfurization, with the advantages of easy operating, low cost of construction and operation, as well as high efficiency. Hydrogen sulfide content in the COG could be reduced below 200mg after the WAO process, which is currently widely used in both China and India but also associated with the problem in desulfurization waste liquid treatment.

The process of salt extraction from desulfurization has resolved the problem right at the basis, by extracting ammonium thiocyanate and ammonium thiosulfate. Based on the sufficient communication with customer and the mature process technology, automation level upgrade was made to the integrated facility, making the plant to be world advanced. As WAO process is widely used for desulfurization in most of coking plants in India, the project, after being put into production, will generate positive demonstrative effect for the whole industry.

4 SETS OF TRT TO BE FULLY COMPLETED

at Erdemir and Isdemir, Turkey



Sinosteel MECC has supplied 4 sets of TRT for the Turkish leading steel group, also a longtime customer. Nearly 2 years after the contract signing, No. 3 and No.4 TRT for Isdemir, the subsidiary company of Erdemir group, have been put into operation, following the performance test. Soon after, No.1 and No.2 TRT for Erdemir also started up, demonstrating excellent performance above the customer's expectation.

The efficiency of operation is attributable to the experience of Sinosteel MECC's technicians, the excellent cooperation with Erdemir team and the performance by the technological solutions supplied.

SUCCESSFUL BLAST FURNACE REVAMPING

for Binxin Steel, China

In September 2016, the No.2 blast furnace of Binxin Iron & Steel Group, Jiangsu Province, was successfully put into production after a comprehensive revamping by Sinosteel MECC. The blast furnace was commissioned in 2008, equipped with many features, namely 2 tapholes, 18 tuyeres, charging bridge, serial-hopper bell-less top charging, bag type dry dedusting. As for hot blast stove, 3 top combustion stoves were arranged in-line and hot blast temperature reached 1200℃.With its utilization coefficient above 4.2, the blast furnace produced daily 2700 tons of hot metal.

Apart from the main parts of blast furnace and hot blast stove being revamped, one more bag was added to dry dedusting system, pneumatic ash conveying system was used and electric parts were replaced.

START UP OF TWO PHASES OF BLAST FURNACE

at Jinshenglan Metallurgical, China

Reflecting the purposes of building economical and practical, recycling, energy saving and consumption reducing, and environment friendly project, which meet the requirements of modern steel plant. With the precondition that reliable process and equipments are guaranteed, project cost could be reasonably reduced.

The Phase I and Phase II blast furnaces supplied by Sinosteel MECC has successfully started up, with the utilization of advanced process technology and equipments, which allows the economic and environmental benefits to be maximized.

High productivity, good quality, low energy consumption, long life, energy saving, and environment protection would be realized by the technologies of fine material, pulverized coal injection, high blast pressure and temperature, as well as oxygen enrichment. Due to field limit, the engineering has been optimized with compact arrangement and smooth logistics, which could reduce the quantity and cost of project.

Features of the plant are:

(1) Ore & coke bin system - fine material, environment protection

(2) Furnace top system – accurate material distribution, energy saving, noise reduction, emission reduction.

(3) Hot blast stove system – high blast temperature, high efficiency, energy saving.

(4) Blast furnace proper system – long life.

(5) Casting house system – environment protection, planarization.

(6) Crude gas dedusting system – high efficiency, environment protection.

(7) Slag processing system – environment protection, energy saving, high efficiency.

(8) PLC control system

(9) Central operation system

REVAMPING OF 3x120T BOF DRY TYPE GAS CLEANING SYSTEM COMPLETED

at Rockcheck Iron & Steel, China

The 3 sets of 120-t BOF of Rockcheck Iron & Steel, using traditional wet tower & venture gas cleaning process, have been operated for almost ten years and had problems with meeting new emission standard regulation executed from January 1st 2015, requiring emission of existing plant not higher than 50mg/m^3 and emission of new plant not higher than 30mg/m3, according to “Emission Standard Regulation of Steel Making Industry”.

The revamping of original 3 primary wet tower & venture gas cleaning systems to dry type gas cleaning system at the same place would realize energy and improvement and environment protection.

Main technical features and indices:

(1) Secondary gas temperature decrease and coarse particle dust collection by evaporative cooling.

(2) High voltage DC pulsed power supply for four electric fields of electric precipitator.

(3) 3 safety pressure relief valves equipped at entry and exit of electric precipitator and nitrogen charging protection device at coarse and fine particle systems, based on design standard for explosive gas.

(4) International advanced level BOF “Full Dry Type” gas cleaning process ensures the good performance, reliability, safety and economical efficiency of whole plant.

(5) Dust concentration of flue gas emissions ≤20mg/Nm^3.

(6) Recovery gas directly delivered into gas holder with: dust concentration ≤10mg/Nm^3, pressure 3000Pa±100Pa, temperature ≤ 70℃.

Based on EPC contracting mode, the supply of Sinosteel MECC includes engineering, equipment supply, civil construction (including piling and foundation), installation, commissioning and test, of whole “Full Dry Type” system from BOF evaporated flue end to gas holder main pipe entry.

Hot test of the three cleaning systems occurred successively by the end of 2016, and the flue gas test was carried on, leading to dust concentration of flue gas emission≤10mg/Nm^3 of each, which meets the requirement of standard regulation.

NEW 200×1600MM SLAB CASTER PROJECT

at Changqiang Iron & Steel, China

Changqiang Iron & Steel Company, Jiangsu Province, producing 1 million tons per annum through its existing 2×50t BOF, 2×50t LF, 1VD and 2 billet casters, planned to build one new 200×1600mm slab caster with relevant workshop and auxiliary facilities in order to adjust product mix. The new caster is required to be equipped with dynamic soft reduction mechanism which could improve slab product quality.

Sinosteel MECC was awarded the project to supply engineering, equipment supply, installation, commissioning and technical service.

Main parameters of caster are:

(1)	Annual Capacity	1mtpa
(2)	Type	vertical bending machine
(3)	Bending/straightening	continuous bending/straightening
(4)	Basic Radius	R8000mm
(5)	Slab Section	180~200x1400~1600mm
(6)	Cut-to-length	5~10m
(7)	Casting speed	0.4~2.0m/min
(8)	Maximum casting speed	1.6m/min
(9)	Dummy bar	down chain-type dummy bar
(10)	Dummy bar speed	2.5~5.0m/min

The engineering and equipment procurement of such project has been completed, the equipment delivery and installation are scheduled for June 2017, and production on September.

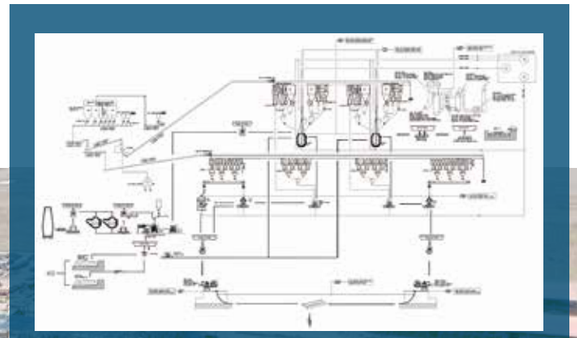
GIANT STEEL COMPLEX RAISING OFF THE GROUND

at ZISCO, Iran

The Zarand steel complex greenfield project, located in the middle of Kerman Province of Iran, was supplied by Sinosteel MECC on EPC basis. Based in Tehran and established in 2008, ZISCO-Zarand Iranian Steel Company has been established with investments of Mines and Mineral Industries Middle East (Midhco) to produce 1.5 million tons steel billets per annum.

Due to the lack of experience of local construction company, it's most unlikely to finished the project schedule, when Sinosteel MECC took over the rest of work, defecting former technical and quality flaws, and eventually finish the installation of blast furnace and hot blast stove. Meanwhile, strong technical support has been provided by Sinosteel MECC in the construction of alteration from concrete structure to steel structure of several areas of blast furnace, which also helps reduce the period. during the contract amount of CNY 4.5 billion. It was China's largest overseas metallurgical engineering project at that time.

A modern and advanced steel plant, which was completely engineered and manufactured in China, could be expected to launch soon to bring forceful guarantee for surrounding area and boost local economy growth.



As the first large-scale construction in African integrated steel plant, the project will not only enhance the overall strength of Sinosteel MECC in overseas project contracting, but also is a strongest confirmation to the longlasting cooperation relationship with Tosyali.

NEW 2.3 –MTPY STEEL COMPLEX

at Tosyali-Algerie SPA, Aligeria

At the beginning of 2015, the Turkey-based Tosyali Group assigned Sinosteel MECC to supply the 2.3-mtpy steel complex in for Tosyali Algeria located in Bethioua (Oran), Algeria. As per scheduled in the contract, the plant is expected to start operation in 2017 with the capacities to produce 3 million tons DRI, 2.2 million tons liquid steel, 2.15 million tons steel billets and 2 million tons steel bar per year. The total contract amount was approximately US$508 million. Ultimately, the new plant will reduce Algeria's steel imports.

4-mtpy pelletizing plant

As an important part of the steel complex, the 4-mtpy pelletizing plant consists of full process of raw material feeding, concentrate pre-proportioning, concentrate drying, roll-in proportioning, mixing, pelletizing, roasting, screening, product delivery and storage systems. The world leading travelling grate technology is used, which is suitable for different materials and environment friendly. The selection of world class equipments leads to high equipment and automation level, effectively reducing operating costs and difficulty. To be built to be the largest iron ore pelletizing project, the pelletizing plant will definitely be a metallurgical demonstration in Africa.

2.5-mtpy DRI

As the first MIDREX NG DRI project constructed by Chinese company, it will also be the world's largest multiple product direct reduced iron plant. The construction was executed according to European and American standards. Scheduled to start operation for October of 2017, the plant will have the capability to vary its production to produce 2.5 million tons hot direct reduced iron and/or cold direct reduced iron.

DRI Plant in Construction

EAF steelmaking and billet continuous caster

The steelmaking and oxygen plant consist of 240t EAF (240MVA transformer), 240t ladle furnace (52MVA transformer), material handling system (MHS) for EAF and LF, of which **EAF is the world's second largest in terms of design capacity with the highest unit production capacity**. The main material for EAF is 100% H/CDRI. The 8 strands billet caster (CCM) features casting section of 180×180mm (section range: 150×150～200×200mm), 12cm cut-to-length and 10.25m arc radius (R).

Relevant auxiliary facilities include 15000Nm^3/h and 6500Nm^3/h oxygen plant (OPS), water treatment plant (WTP), dedusting system (FDP), compress air station (C.A.S), raw water treatment station (O.P.WTS), SVC system; lime plant (LP) and Lime Kiln & Coke Powder Plant.

Steel rolling

The highlights of the new rolling production line are high production capacity and rolling speed in small-size bars production.

RM1 production line: Ø12-32mm rebar, design rolling speed of 50m/s;

RM2 production line: Ø8-12mm rebar, design rolling speed of 50m/s.

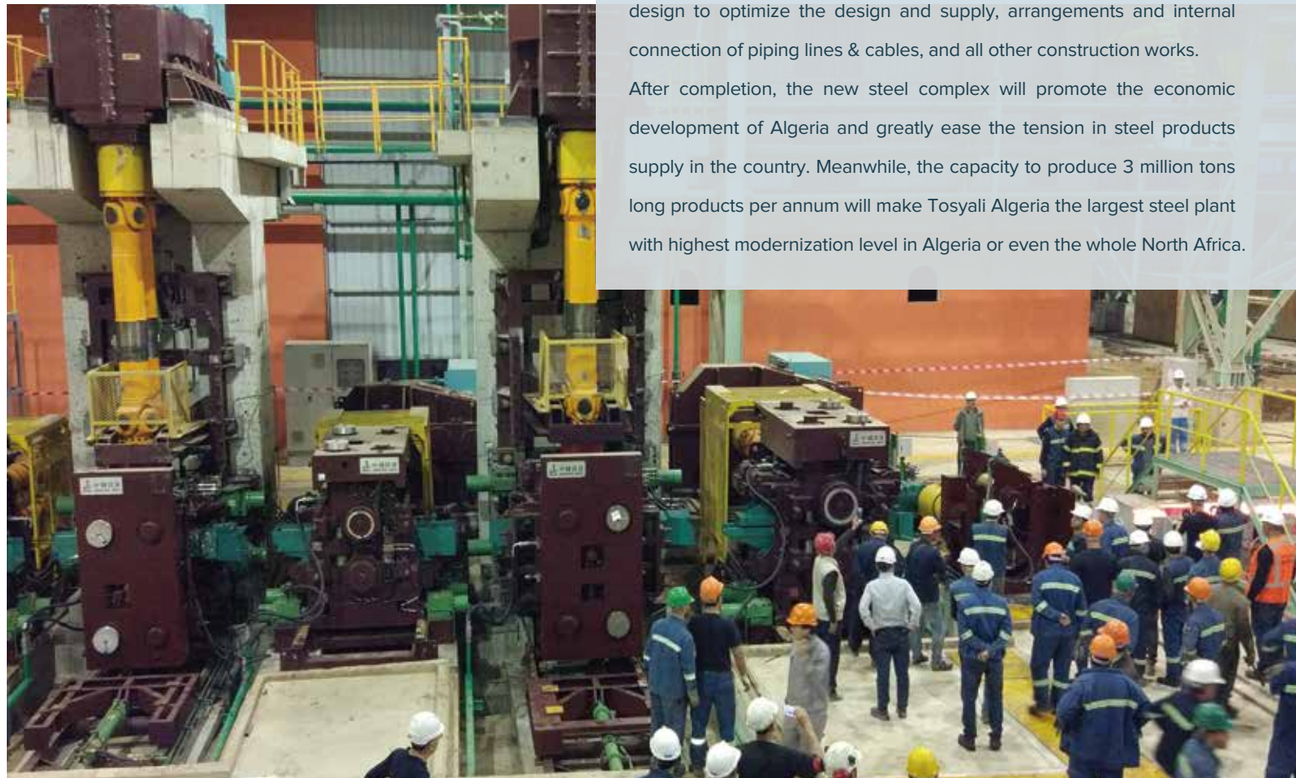
They both, designed to produce 2 million tons per annum, can perform double-line rolling through high-speed dual-channel conveying system.

RM1 rolling line comprises 18-strand tandem mill and high-speed no-twist 6-pass finishing mill (two sets), while RM2 comprises 18-strand tandem mill and high-speed no-twist 8-pass finishing mill (two sets).

All the engineering works have been done by Sinosteel MECC with 3D design to optimize the design and supply, arrangements and internal connection of piping lines & cables, and all other construction works.

After completion, the new steel complex will promote the economic development of Algeria and greatly ease the tension in steel products supply in the country. Meanwhile, the capacity to produce 3 million tons long products per annum will make Tosyali Algeria the largest steel plant with highest modernization level in Algeria or even the whole North Africa.

High speed bar mill under commissioning



NEW INTEGRATED STEEL COMPLEX

at Mutún, Bolivia

Of incalculable value to humanity, the Bolivian Pantanal (wetlands) is also home to one of the largest iron ore mines in the world, El Mutún. For more than half a century Bolivia has sought to convert its riches into a source of income and economic development. Now China is holding the key to turning this frustrated dream into a reality.

Bolivia Mutun signed a contract to develop the iron and steel works with Sinosteel MECC, who has won the order out of stiff competition with several domestic and global engineering companies, demonstrating new breakthrough in South America.

The plan is to build an iron ore concentration plant, with the installed capacity of 650,000 tons per year, a pelletizing plant and a DRI plant, with the capacity of 250,000 tons per year, and a steelwork with a continuous caster and a rolling mill to produce 150,000 tons per year of long products. The geological survey, iron ore beneficiation test, engineering, supply, construction, trial-running, training and one-year post operation service will all be provided by Sinosteel MECC. Construction is expected to take 30 months. With this timeframe, Bolivia expects to launch Mutun's operation in 2019.

To achieve the target of replacing import with high quality construction steel produced by local rich iron ore and natural gas resources, Sinosteel MECC, based on modern steel plant design and construction theory, combines actual production with local situation and establishes reasonable production relationship among all manufacturing facilities in compact layout, shortening intermediate links and logistic distance. The advanced and high-efficiency process equipment and modern information management technology adopted aims to realize the well-organized, harmonious, efficient and continuous manufacturing process as well as low-cost and efficient operation system.

In terms of equipment configuration, Sinosteel MECC has selected quality and reliable equipments, as well as modularized equipment and design. Products and design proposals convenient for construction, installation and operational maintenance are preferred. Meanwhile, automatic control system was used for production line process control to achieve monitoring of whole process and all-digital control, featuring high accuracy, speed and production stability with less human interference. The automation level is international advanced.

With the precondition of meeting requirements of production, the initial investment cost and operational cost are minimized to the limit. Advanced energy & water-saving and environmental control technologies are adopted according to the recycling economy mode of "resource – production – product – consumption –waste recycling" to effectively control comprehensive energy-consumption index of the steel plant, improve utilization efficiency of raw materials such as natural gas, water and ore and establish an ecological plant that will meet Bolivian environmental standards.


Contrat signed by President of Bolivia, Mr. Morales and Chairman of Sinosteel MECC, Mr. Lu Pengcheng

OVERHAUL FOR STEAM TURBINE

at Tubatse Chrome Plant, South Africa

After two years of operation, No.1 steam turbine unit at Tubatse Chrome Plant has turned into working with low load, which may have negative impact on the rotator impellers, along with some defected sensors need to be replaced, Sinosteel MECC was assigned an order to overhaul the steam turbine.

Due to the limited working field and cylinder dumping area, as well as the lost of some attachment tools, the repair team has to arrange new tools supply. After implementing reasonable hoisting plan, cleaning was made to the impellers, clapboard, cylinder body and oil tank. Failure rotation speed probe and temperature sensor were replaced. After re-installation, the static test, protection test and hot test have been done accordingly, so was the system grid connection. Vibration value of each test point was far below allowed maximum vibration value and displacement is also within range, declaring the successful completion of the overhaul.

NEW 2×660MW ULTRA-SUPERCRITICAL COAL-FIRED POWER PLANT

at Yangquan Coal Industry Group, China

The new 2x660MW ultra-supercritical low heat value coal indirect air cooling power generators will be equipped with efficient pulverized coal boiler, together with desulfurization, denitration and high-efficiency dedusting devices, to realize ultra-low emission. Construction is planned for 26+4 months.

Project main relevant features:

1. CHP (cogeneration, combined heat and power) project, which will satisfy the heating demand of buildings of an area of 18.43 million square meters, leading to replacement of existing small heating boilers in Yangquan city.

2. Comprehensive resource utilization project

-- consuming heat value coal to realize at-situ transformation of coal resources;

-- boilers start up by gas to to save fuel consumption;

-- coal mine drainage water supplied as production water to improve comprehensive utilization of water resource.

3. Chinese ultra-supercritical indirect air-cooling generating unit with high performance and good economical efficiency.

4. **World's highest indirect cooling tower, 221 meter in height and 178 meter in base diameter**, designed into "one tower for two units" type.

5. Achieving ultra-clean gas emission in accordance with the limitation of ultra-low emission criterion II, namely emissions of NOX, SO_2 and smoke dust not exceeding 50mg/Nm^3, 35mg/Nm^3 and 10mg/Nm^3 respectively.

6. Concentrated crystallization system of desulfurization wastewater process used to realize zero emission of desulfurized wastewater.

CONSTRUCTION OF METHANE OXIDIZATION & POWER GENERATION PROJECT IN YANGQUAN

The project, located in Sangzhang Yangquan Shanxi Province, has 6 RTO methane oxidizing systems, flue gas waste heat recovery boiler, 15MW extraction condensing type steam turbine generator unit and air cooling condenser. The main process involves recycling methane and low-concentration exhausting gas, producing high-temperature flue gas through RTO methane oxidizing system, producing steam through flue gas waste heat recovery boiler and driving the steam turbine generator unit to generate power. Based on Chinese national standards, the concentration of methane in the central air return shaft of a mine shall not exceed 0.75%, alarming is set to be started when methane concentration reaches 0.5%, and the concentration of methane in ventilation air in most of the mines is controlled to be approximate 0.3%. With such extremely low concentration, normally methane is directly discharged into air without being utilized or treated, which make the disposal and utilization of methane become an issue of great importance in energy conservation and emission reduction and needs to be addressed urgently. Meanwhile, most of the low-concentration gas extracted by pump stations in coal mines is discharged into air directly as well. As we know, the greenhouse effect of methane gas is 25 times worse than that of CO_2, however, no such technical solution that can help to effectively utilize methane gas without secondary pollution are available yet.

Regenerative thermal oxidizer (RTO) is used in the project, to recycle methane and low-concentration exhausting gas, so as to comprehensively recycle gas resources from coal mines; to oxidize and dispose gas (methane) discharged into air, so as to significantly reduce emission of greenhouse gas; to replace the existing small coal-fired boilers in air shafts of coal mines by CHP systems. This Project is in line with the guidelines of the Chinese central government and Shanxi Provincial government, "gas discharge through recovery and make safety through extraction", it will definitely bring about significant profits in security, environmental protection and integrated utilization of resources.

This Project mainly consists of three components: gas mixing system, RTO methane oxidizing system and waste heat power generating system. Methane and low-concentration exhausting gas are safely collected and mixed until concentration of methane reaches 1.2% before send to the RTO oxidizing device, wherein flameless oxidizing reaction occurs and generate hot wind with a temperature as high as about 950℃. Through heat exchange in the waste heat boiler, the high-temperature, high-pressure (9.8MPa, 540℃) steam will be produced and used for power generation by driving steam turbine generator unit. In wintertime, a part of saturated steam can be extracted from the middle part of steam turbine for heating, which could thereby realize combined heat and power supply.

Refer to data through long-term monitoring and analysis on sources of methane and low-concentration gas by Sangzhang pump station in the second mine of Yangquan Coal Industry (Group) Co., Ltd., the flow of pure methane per hour in ventilation air methane & low-concentration exhausting gas is sufficient for 6 sets of full-load RTO oxidizing systems. Therefore 144,000Nm^3 of high-temperature hot wind can be produced per hour; available thermal energy can reach 50MW; 52.9t/h high-temperature, high-pressure waste heat boiler and 15MW extraction condensing steam turbine generator unit (air cooling) can be installed; annual total power generation can reach 113.7 million kwh; in wintertime, steam extracted from the middle part of steam turbine can provide the maximum heat supply capacity of 10t/h.

The project, located in Sangzhang Yangquan Shanxi Province, has 6 RTO methane oxidizing systems, flue gas

This kind of methane oxidization project can bring excellent economic benefits and reduce power consumption for coal mines. Moreover, the Project can realize great environmental benefits as coal bed methane, instead of being discharged into air, is oxidized into CO_2 and water, thereby significantly reducing the emission of greenhouse gas. This Project will achieve multiple benefits through integrated utilization of resources.

The principle of combined heat and power supply achieved by oxidizing methane and exhausting gas is given below. Low-concentration gas from pump stations is mixed into methane to increase the concentration of methane up to 1.0%, as the material for RTO device, which can turn low-concentration methane into water and CO_2 through flameless oxidization in a high-temperature reaction chamber. More than 95% methane can be treated by RTO system, and release large amount of oxidation thermal energy, except small portion of which is used to keep reaction temperature, large portion of thermal energy is transferred to the waste heat boiler for heat exchange with water, it produces super-heated, high-temperature steam to drive the steam turbine, finally generate power. By leveraging advantages of distributed clean energy, a part of hot steam can be extracted from the middle part of the steam turbine to provide heat for the intake shaft of coal mine ventilation system in winter, so as to meet the target of phasing out small coal-fired boilers, set by the government.

The technical process is advanced in the following aspects:

1. Efficient utilization of methane and exhausting gas can be realized, breakthroughs have been made in utilizing methane and exhausting gas with methane concentration of less than 9%, and zero emission of gas discharge can be achieved in coal mines;

2. According to the result of monitoring by the Bureau of Environmental Protection, nitrogen oxide, which is the source of secondary pollution, will not be made if use such technology. This is due to the fact that the temperature of flameless oxidation is only 950℃, far lower than the high temperature of 1200℃ if use internal combustion technology. Therefore this technology completely solves the problem that methane burning may result in emission of nitrogen oxide exceeding the environmental protection standard.

3. The Project can realize combined heat and power supply, provide sufficient and stable heat supply capacity, and help phase out coal-fired boilers or gas-fired boilers in air shafts of coal mines.

4. Given that the greenhouse effect of methane is 25 times that of CO_2 , this Project can significantly reduce carbon emissions by disposing of and recycling methane for power generation.

In addition, by reviewing and studying lessons from the Gaohe Project, which is the first power generation project involving oxidization of methane and exhausting gas, we have achieved the following major advances:

1) to be safe on collecting and transferring pipelines of low-concentration gas, the gas will be absorbed into the methane pipe by its negative pressure, the mixture of gas and methane, the methane concentration of which is around 1%, will be deliver to RTO system. This technology has been reviewed by experts from the State Administration of Work Safety of China, and the national invention patent for this technology has been applied.

2) Comparing that the methane concentration in mixture produced in Gaohe project is 1.2%, that in this project is reduced to approximate 0.9%, which realize that almost all the methane in ventilation air could be treated when mix with gas distracted from all pump stations, while in Gaohe project, only 27% of methane in ventilation air could be treated. Full utilization of methane and gas from the pump station represents a case of utilizing gas in the methane, which doubles the installed capacity of oxidization-based power generation. Moreover, it will bring about prominent environmental benefits in reducing carbon emissions and destroying coal dust particles in ventilation air methane (PM2- PM7).

3) The technology has been listed into major science and technology projects for 2016, which lead by the State Administration of Work Safety of China.

SIGNIFICANT INVOLVEMENT IN PAKISTAN POWER

The Asian Development Bank (ADB) approved a $810 million loan facility for Pakistan to help the country improve its dilapidated power transmission infrastructure not capable of lifting additional power generation load. With this in the background, Sinosteel MECC has been awarded several ADB projects in recent years and going deep in the power industry of Pakistan.

132kV Substation Upgrade Project for GEPCO

The formal march of Sinosteel MECC into overseas substation project market was marked by the signature of this contract. Located in Gujranwala City, Punjab Province, the project required to upgrade 4 sets of 66kV substations into 132kV.

Digging into the local electric specification, Sinosteel MECC engineers explicitly contrasted every parameter before model selection of equipments. For the doubts remained in the process, the project team did timely and sufficient technical clarifications and communications with GEPCO. Foundations of control room and equipments are completed and shipment is going as planned as well as the installation commissioning.

500kV Power Transmission Project for NTDC

As an important component of the 3rd Tranche of ADB's Power Transmission Enhancement Investment Programme, the project functions in reinforcing and optimizing the power system of Pakistan, and further improving the lack of power situation in industry, agriculture and commerce.

The transmission lines (Goth Qazi Mahar – Rahim yar Khan) pass through main agricultural area of Pakistan, where features hot and humid climate, loose soil and the shallow underground water. Resistance of land acquisition due to road right and natural conditions have increased the difficulties of foundation construction. In order to speed it up to meet the requirement of tower erection and stringing, the project team accelerated the progress of crop compensation and changed traditional foundations to pile. Construction manpower was also increased in winter season when water level dropped.

Despite all the problems above, great progress has been achieved since the commencement of construction almost one year ago. Foundation construction of tower was completed and so is 1/3 of the erection. The stringing construction will be finished in October of 2017 and all equipments will be shipped before end of 2017. The project team is making every effort to guarantee the project schedule.

3 x 132kV Substations for IESCO

The lack of power supply due to the continuous rapid economic growth and people's living improvement has brought great impact on normal production and daily life, especially in 2015 when power rationing happened frequently even in Karachi. The project was just planned to help relieve the power shortage situation of this area.

The 3 Substations – Chakri Road Sub Substation, Sangjani II Substation and Bara Kahu Substation – cover an area of 3 hectares, with main substation capacity 8x26MVA and current phase 6x26MVA. In order to guarantee the schedule and quality of the project, Sinosteel MECC took strict check on engineering and equipment selection. The safety and reliability of substation equipments and power supply are well ensured by selecting world famous control protection devices and transformers of low loss and noise. Project completion is scheduled by September of 2017.

ETHYLENE GLYCOL PROJECT STARTED PRDUCTION

At Yangquan Coal Industry Group, China

Responding to the industrial restructuring of National Development and Reform Commission that encourages the construction of new type chemical industry, Shouyang Chemical of Yangquan Coal Group planned to develop a 200,000-tpy ethylene glycol project, which will make full use of the rich local coal resource, namely Xinyuan coal mind (5-mtpy), and combine the chemical technological advantage of the group. The project follows the recycle economy ideology of “coal-power-chemistry integration” to maximize the recycled utilization of resources.

The project, with the advantage of low raw material cost, stable field structure, covers an area of 52 hectares consistent with the industrial layout plan.

Its main product, ethylene glycol, is an important organic chemical raw material widely used in the production of polyester fiber, polyester resin, antifreeze, lubricant, plasticizer, explosives, etc. Leaded by the clean coal gasification technology, the project will focus on the production of oxo synthesis ethylene glycol, with the coal syngas (CO and H2) as the core. To ensure technical superiority, the project adopts the reliable and mature high-tech chemical technology which has been in stable operation

The project commenced in September 2014 and Phase-I successfully started up in November 2016, with the production of high-quality ethylene glycol (polyester level), demonstrating the completion of whole process from coal storage and transportation, gasification, purification, CO/H2 cryogenic separation, DMO synthesis to ethylene glycol output. The successful project execution -to full customer satisfaction- was concluded by over 20-month efforts and the stable and smooth operation.

COMPREHENSIVE DEVELOPMENT OF PPP PROJECT

Industrial Park project under construction in Ningxiang, China

On December 24th, 2015, the ceremony of contract signing and construction commencement for road network of “Changsha 2049” project was held at Ningxiang High-tech Zone, Hunan Province and participated by Qiu Zhe, Vice President of Sinosteel MECC, Liu Yonghong, member of Standing County Committee of CPC, and Liu Liang, member of Standing County Committee of CPC & First Deputy County Chief.

Ningxiang High-tech zone is the national high-tech industrialization base of energy-saving and environment protection new material, as well as the demonstration base of new industrialization industry. In order to encourage the new urbanization, “Changsha 2049” project, which has been planned to cover 40,000 square kilometers, was initiated by Ningxiang High-tech zone government. The structure of “one center, four axis, four districts” will be formed through this project, which will use Guanqiao river as central ecology area, surround by special function area and large-scale business area.

Changsha Guanqiao Construction & Development Co., Ltd., the JV company partly shared by Sinosteel MECC and Ningxiang High-tech Zone government, will be the investor and constructor of road network project for “Changsha 2049” project via PPP mode. Meanwhile, the JV company has signed strategy cooperation framework agreement with bank, providing top technical assurance and abundant capital support for “Changsha 2049” project. The signing of contract and construction commencement is a symbol on comprehensive development of PPP project by Sinosteel MECC.

REVOLUTIONARY INNOVATION ON 3D PRINTING

Tianyu to cooperate with Airbus

Originally initiated and invested by Sinosteel MECC, Tianyu Intelligent Manufacturing is a high-tech company mainly involved in sectors of 3D printing, metal parts restore and remanufacturing and industrial intelligent system, integrating manufacturing, equipment research and development, as well as technical service. The R&D team consists of leaders from international prestigious university, experts in the field concerned and high-educated youth talents, aiming aggressively to be the industry pioneer in high-end intelligent manufacturing equipment and technical service.

Tianyu Intelligent Manufacturing signed, on January 06, 2017, the cooperation agreement on 3D printing parts for aerospace with Airbus. The ceremony, with the attendance of Defense Science & Technology Industry Office of Hubei Province, witnessed the signing of scientific collaboration proposal by Francois Mery, CEO of Airbus China, and Lu Pengcheng, President of Tianyu.

The scientific collaboration was centered on the “intelligent micro casting-forging-milling composite manufacturing” technology, which creatively combines the metal forging and stamping technologies, leading to the realization of 3D printing of metal forgings with high homogeneous density, strength-toughness and shape complexity and overall improvement of one-piece intensity, toughness, fatigue life and reliability, so as to solve the universal conventional 3D printing problem. Having been researched and developed for more than 10 years by Professor Zhang Haiou, the technology is currently applied in the new product development of Xi’an Aero-engine Company and Xi’an Aircraft Industry Company. Trial-manufacturing was implemented for superalloy double twist impeller, aluminum silicon alloy thermal compression pump, engine transition, together with large aircraft skin hot forming hyperboloid model and car fender stamping FGM model, demonstrating a broad development prospect.

“Airbus has a long history of scientific research in aerospace manufacturing field to seek for a more environmentally friendly and efficient technology. Therefore, Airbus has been establishing productive collaborations with many Chinese universities, industrial scientific research institutes and companies and this project with Tianyu will be another successful case. We hope the collaboration with Tianyu will achieve new technological breakthrough in metal 3D printing field.” said Francois Mery. “Airbus is the leader of global civil aircraft manufacturers, by cooperating with them, Tianyu will realize further development in aerospace manufacturing. More advanced technologies will be promoted and commercially produced, and Tianyu will begin its new step.” emphasized by Lu.

SINOSTEEL MECC WON AWARD OF QUALITY CAMPSITE FOR CHINESE OVERSEAS PROJECT

In the selection activity of Model Campsite for Chinese Overseas Project organized by China International Contractors Association, the Zarand Project Campsite of Sinosteel MECC in Iran was longlisted out of more than 40 candidates and eventually won the “Excellent Campsite” award.

The juries reviewed from the aspects of scientific planning, overall performance of buildings, humanistic care, CI image, functional system and campsite characteristics, and decided 12 campsites, including 6 Model Campsites and 6 Excellent Campsites.

Sinosteel MECC Zarand campsite gained the honor for its safe and reliable site selection, orderly general layout, convenient and reasonable accessibility, complete functions and humanistic care, which is also a demonstration of the brand image and management level of Sinosteel MECC

ANOTHER NATIONAL QUALITY PROJECT AWARD WON BY SINOSTEEL MECC

Recently, CACEM (China Association of Construction Enterprise Management) commended the winners of National Quality Project Award of Year 2016-2017, among which Sinosteel MECC was awarded the honor for its ICDAS BIGA 2X600MW Power Plant Phase II Project in Turkey.

As part of National Quality Product Award, it represents the highest honor in the aspect of engineering construction quality. Meantime, being the earliest and most demanding award in engineering construction industry, its scope of selection includes metallurgical, coal, petroleum, petrochemical, chemical, electrical, water conservancy, nuclear industry, forestry, aerospace, construction materials, railway, highway, municipal, water transport, telecommunication and building construction fields.

The award-winning power plant project includes the supply of a 600MW supercritical condensing coal-fired generating unit at reserved expansion site, which comprises the second phase of the complete plant, including engineering, equipment supply, installation instruction, commissioning, maintenance and certification.

Since the contract signing, Sinosteel MECC has overcome difficulties like tight project schedule and lack of technical skills of local workers, completed all milestones as scheduled and passed 168-hour handover acceptance for once only, being highly recognized by the customer.

EVENT 2017

- AISTech 2017 – The Iron & Steel Technology Conference and Exposition
- 8-11 May
- Music City Center, Nashville, TN, USA
- Booth 1043

STEEL'S PREMIER TECHNOLOGY EVENT
AISTech 2017 8–11 May
Nashville, Tenn., USA • Music City Center

- The 18th Series of Power Generation, Renewable Energy & Electrical Equipment Exhibitions
- 6-9 September
- Jakarta International Expo, Indonesia
- Hall D2, Booth 9417

A PAMERINDO INDONESIA TRADE EVENT
ELECTRIC, POWER & RENEWABLE ENERGY INDONESIA 2017

- PERUMIN – 33rd Mining Convention
- 18-22 September
- National University of San Agustín , Arequipa, Peru
- Booth 198, 199, 232, 233

PERUMIN 33 CONVENCION MINERA

- Metal-Expo 2017, the 23rd International Industrial Exhibition
- 14-17 November
- VDNkHa Fairground, Moscow, Russia
- Hall 75-2, Booth 2D17

METAL EXPO

- Iran Metafo -- the 14th Tehran Metallurgy Exhibition
- 4-7 December
- Tehran International Permanent Fairground, Iran

IRAN METAF

- ISME Vietnam 2017 – 8th International Steel & Metal Engineering Exhibition
- 29 November-3 December
- Saigon Exhibition & Convention Center, Ho Chi Minh City, Vietnam

ISME — VIETNAM 2017 —

- Iran Wire 2017
- 5-8 December
- Tehran International Permanent Fairground, Iran

IRAN WIRE