SWET

**提供清洁能源 共创美好生活**

Clean Energy Provider, New Life Maker

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江苏运能能源科技有限公司

Jiangsu Win-Energy Technology Co., Ltd

上海工业锅炉(无锡)有限公司

Shanghai Industrial Boiler (Wuxi) Co., Ltd

**诚信·铸就品质**

Credibility & Integrity • The Foundation Of Quality

运能能源
日出东方
如一轮红日 磅礴而出
光耀大地 泽被万物
如崇山峻岭 巍然屹立
秀于世界 造福人类
能源利用 生生不息
环境改造 功在千秋

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LEADER ADDRESS

# 领导致辞

SWET

2014年以来，我国单位国内生产总值能耗累计降低20%，以年均约2.9%的能源消费增长支撑了年均6.2%的国民经济增长。尽管我国单位GDP能耗水平逐年下降，但与国际水平仍有较大差距，是世界平均水平的1.4倍、发达国家的2.1倍，我国能源利用水平有待进一步提升。同时，建材、有色、化工、钢铁等行业的大量余热放空，造成了大量的资源浪费与环境污染。为响应国家能源发展战略，推进国家“碳达峰、碳中和战略”目标，节能减排与清洁能源利用届时将扮演更加重要的角色。

运能能源顺应时代发展需要，抓住时代发展痛点，以“提供清洁能源、共创美好生活”为己任，聚焦节能减排、清洁能源利用和环境保护领域，充分发挥公司关键产品和系统集成两个层面的自主核心技术优势，为社会提供综合能源系统解决方案和环保集成技术的一体化服务。

运能愿与社会各界携手，大力推动节能减排，深入打好污染防治攻坚战，加快建立健全绿色低碳循环发展经济体系，推进经济社会发展全面绿色转型，助力实现“双碳”战略目标。

Since 2014, China's energy consumption per unit of GDP has cumulatively decreased by 20%, supporting an average annual growth of 6.2% of the national economy with an average annual energy consumption growth of approximate 2.9%. Although the energy consumption per unit of GDP in China has been decreasing year by year, there is still a significant gap compared to the international level, which is 1.4 times the world average and 2.1 times that of developed countries. China's energy utilization level needs to be further improved. Meanwhile, a large amount of waste heat is released from industries such as building materials, non-ferrous metals, chemical engineering, and steel, resulting in a large amount of resource waste and environmental pollution. In response to the national energy development strategy and to promote the national goal of "carbon peaking and carbon neutrality", energy conservation, emission reduction and clean energy utilization will play a more important role.

SWET adheres to the demand and seizes the problems of development of the times, and takes "providing clean energy and creating a better life together" as its own responsibility, focusing on energy conservation and emission reduction, clean energy utilization, and environmental protection, fully leveraging the company's independent core technology advantages in key products and system integration, and providing integrated services of comprehensive energy system solutions and environmental protection integration technology for the society.

SWET is willing to work with all sectors of society to vigorously promote energy conservation and emission reduction, strengthen work and win the battle of pollution prevention, accelerate the establishment and improvement of a green and low-carbon circular development economic system, promote the comprehensive green transformation of economic and social development, and help achieve the "double carbon" strategic goal.

ENTERPRISE

# 企业篇

Company Profile

## 公司概况

江苏运能能源科技有限公司，是国企上市公司金通灵科技集团股份有限公司（股票代码：300091）全资子公司，专业从事国内外热电、余热发电、垃圾焚烧发电、生物质发电、高炉煤气发电等项目，是集工程设计咨询、装备制造、工程总承包、投资运营等全生命周期一体化服务的综合性公司。

公司拥有电力行业（火力发电、新能源发电专业）工程设计乙级、电力工程施工总承包叁级等总承包资质，拥有40余项国家专利，可独立完成150MW及以下规模热电联产、综合能源利用EPC总承包项目，目前已完成国内外EPC工程总承包项目60余项。公司是江苏高新技术企业，拥有ISO 9001质量管理体系、ISO 14001环境管理体系、ISO 45001职业健康安全管理体系。

旗下子公司上海工业锅炉（无锡）有限公司，是传承了90余年历史的集锅炉、压力容器产品的咨询、研发、生产、销售、安装和工程服务为一体的高新技术企业。现持有A级锅炉制造许可证、A2级压力容器制造许可证、ASME“S”、“U”钢印授权证书，具有丰富的印度IBR产品的设计和制造经验。

公司将依托上市公司的平台和品牌优势，和汽轮机、压缩机、风机等重要设备形成完整的产业链，致力于绿色能源、综合能源的系统集成，助力实现国家“双碳”战略目标。

Jiangsu Win-Energy Technology Co., Ltd(hereinafter referred to as SWET) is a wholly-owned subsidiary of state-owned listed company JinTongLing Technology Group Co., Ltd. (stock code: 300091), specializing in domestic and foreign thermal power, waste heat power generation, waste incineration power generation, biomass power generation, blast furnace gas power generation, and other projects. It is a comprehensive company that integrates engineering design consulting, equipment manufacturing, engineering general contracting, investment and operation throughout its entire lifecycle.

XSWET has general contracting qualifications such as Grade B for engineering design and Grade III for general contracting of power engineering construction in the power industry (thermal power generation, new energy generation), with over 40 national patents, it can independently complete EPC general contracting projects with an scale of 150MW and below in CHP and comprehensive energy utilization. Currently, it has completed more than 60 EPC engineering general contracting projects at home and abroad. SWET is a high-tech enterprise in Jiangsu, with an ISO 9001 quality management system, ISO 14001 environmental management system, and ISO 45001 occupational health and safety management system.

Its subsidiary Shanghai Industrial Boiler (Wuxi) Co., Ltd (hereinafter referred to as SGG) is a high-tech enterprise with over 90 years history which integrates consulting, research and development, production, sales, installation, and engineering services in boiler and pressure vessel products. It has A-level boiler manufacturing license, A2 level pressure vessel manufacturing license, ASME "S" and "U" steel seal authorization certificate, with rich experience in design and manufacturing of Indian IBR products.

SWET is committed to the system integration of green energy and comprehensive energy, and help achieve the national "double carbon" strategic objective by relying on the platform and brand advantages of listed companies together with a complete industrial chain formed by important equipment such as steam turbine, compressor, fans, etc.

**1931**

中建铁工厂成立，这是上海工业锅炉有限公司的前身，也是最早的中国民族资本开设的锅炉厂。

Zhangjia Iron works，the predecessor of Shanghai Industrial Boilers, was established and the earliest boilers factory by national capital.

**1956**

公司合营兼并了几十家工厂更名为中建锅炉厂。其实早已是中国工业锅炉的龙头企业。

After merging dozens of companies, Zhongjia Iron Works renamed itself as Zhongjia Boiler Works, becoming the leading enterprise in boiler industry.

**1964**

中建锅炉厂在中国率先开发出卧式水火管快装，组装锅炉。

Zhongjia Boiler became the first to explore the horizontal water-fire package/assembly boilers.

**1966**

中建锅炉厂改名为红旗锅炉厂，同年又改名为上海工业锅炉厂。

Zhongjia Boiler was successively renamed as Hongqi Boiler and Shanghai Industrial Boiler Co., ltd.

**1986**

上海工业锅炉厂经过美国燃烧系统工程公司（COMSAJ）引进美国工艺和技术生产出卧式内燃湿背三回程燃油（气）锅炉。

Shanghai Industrial Boiler Co., Ltd. introduced the American Technology Via American Combustion System Engineering Company(COMSAT) to produce horizontal, internal combustion, wet back and tri-m pass oil(gas) fired boiler.

**1990**

获得ASME认证成为第一家获得美国ASME认证的中国锅炉厂。

Shanghai Industrial boiler Co., Ltd. is the first boiler factory to get ASME certificate.

**1997**

通过ISO9001质量体系认证。

Shanghai Industrial Boiler Co. Ltd got the ISO9001 certificate

**2006**

2006年公司改制更名为上海工业锅炉有限公司。并与上海天新热能工程有限公司达成战略合作协议，共同参与电站工程EPC.

Restructured as Shanghai Industrial Boiler Co., Ltd .Built strategic partnership with Shanghai Tianxin Thermal Engineering CO., Ltd. to participate in power plant EPC project.

**2010**

上海运能能源科技有限公司已于2010年6月取得国家A级锅炉制造许可证。

Shanghai Industrial Boiler Co. Ltd got the A-class boiler manufacture certificate

**2011**

上海运能并购上海工业锅炉有限公司组建上海运能能源集团。

Shanghai Win- Energy Technolohy emerged Shanghai Industrial Boiler CO., Ltd and formed Shanghai Win- Energy Technology Group.

**……**

ENTERPRISE

# 企业篇

Business Scope

业务领域

## 01 工程建设EPC

### EPC engineering construction

作为一个历史悠久的能源系统解决方案和环保集成技术的供应商，我们为国内外客户提供技术方案、工程设计、核心设备制造、配套设备材料采购、施工安装、调试保运的EPC交钥匙工程建设服务。

充分发挥设计院的优化设计能力，降低项目成本、缩短项目工期，为用户创造超额价值。

充分利用设备制造厂———上海工业锅炉有限公司的优势，保证缩短交货工期，为用户提供一流设备。

充分依托自有电厂的人才资源和运营管理经验，施工建设安全高效，调试运营富有经验，为用户提供工程建设的可靠保障。

As a supplier of energy system solutions and environmental protection integration technology with a long history, we provide EPC turnkey engineering construction services for domestic and foreign customers in terms of technical solutions, engineering design, core equipment manufacturing, procurement of supporting equipment and materials, construction installation, commissioning and operation guarantee.

Fully leverage the optimization design capabilities of the design institute, reduce project costs, shorten project timelines, and create excess value for users.

Take full advantages of Shanghai Industrial Boiler (Wuxi) Co., Ltd., an equipment manufacturer, to ensure a shorter delivery period and provide users with first-class equipment.

Fully rely on the talent resources and operational management experience of Free Power Plant, the construction is safe and efficient, commissioning and operation is proceeded under rich experience, so as to provide reliable guarantee for th users in engineering construction.

## 02 设备制造

### Equipment manufacturing

上海工业锅炉（无锡）有限公司，集锅炉产品的设计、制造、安装和售后服务为一体，九十余年来一直致力于绿色锅炉和动力技术的研发设计和制造，是中国最早从欧美引进油气锅炉、角管式锅炉和循环流化床锅炉等技术的锅炉专业制造厂。在引进、吸收消化的基础上，与西安交大、上海交大、上海理工大学等科研院所合作，开发了具有国内领先水平的高效节能燃煤锅炉和清洁燃料锅炉。

Shanghai Industrial Boiler (Wuxi) Co., Ltd. integrates the design, manufacturing, installation, and after-sales service of boiler products. For more than 90 years, it has been committed to the research, development, design, and manufacturing of green boilers and power technologies. It is the earliest professional boiler manufacturer in China which introduces technologies such as oil and gas boilers, angle tube boilers, and CFB boilers from Europe and America. On the basis of introduction, absorption and digestion, we have collaborated with research institutes such as Xi'an Jiaotong University, Shanghai Jiaotong University, and Shanghai University of Technology to develop efficient and energy-saving coal-fired boilers and clean fuel boilers with leading domestic standard.

## 03 工程设计与项目保障运行

### Engineering design and project operation guaranteed

公司设有独立的设计院，技术团队由国内领军的电力工程设计、项目建设、运行管理领域的专家和各行业的专业人才组成。目前公司有注册类工程师15人，高级工程师25人，在电力工程咨询、设计、管理、调试、运营等方面具有丰富的经验，能够为客户提供优质、高效的节能环保技术服务。

SWET has an independent design institute, and the technical team is composed of domestic leading experts in the fields of power engineering design, project construction, and operation management, as well as professional talents from various industries. Currently, is has 15 registered engineers and 25 senior engineers with rich experience in power engineering consulting, design, management, commmissioning, operation, and other aspects, which enable us to provide customers with high-quality and efficient energy-saving and environmental protection technical services.

## 04 合同能源管理EMC

### Energy management contracting

公司是国家备案的合同能源管理企业，利用核心技术，依托母公司金通灵科技集团股份有限公司上市公司平台，发挥投资、融资能力，在工业节能领域，特别是在余热余压利用方面，为客户提供合同能源管理服务，减少客户投资和技术风险，同时获得节能效益，完成节能减排任务。

SWET is a nationally registered energy management contracting enterprise, by utilizing core technology and relying on the listed company platform of its parent company(Jintongling Technology Group Co., Ltd) to leverage its investment and financing capabilities, it is able to provide energy management contracting services for the customers in the field of industrial energy conservation, especially in utilization of waste heat and pressure, reduce customer investment and technical risks, as well as obtaining energy eficiency and completing the task of energy-saving and emission reduction.

# 企业篇
Capability & Assurance
实力保障

| | |
|---|---|
| 能源效率分析<br>Energy efficiency analysis | 能源检测分析专业人员为客户提供全面准确的能源检测分析报告<br>Energy testing and analysis professionals provide the customers with comprehensive and accurate energy testing and analysis reports |
| 节能项目设计<br>Energy saving project design | 为不同客户的具体需求提供能源系统解决方案和工程设计<br>Provide energy system solutions and engineering design for the customers with specific demand |
| 项目融资/投资<br>Project financing/ Investing | 公司平台可以为节能项目提供融资或投资<br>SWET provides financing or investment for energy-saving projects |
| 核心技术<br>Core tech | 九十余年的积淀，形成了核心产品和系统集成两个层面的自主核心技术<br>Two independent core technologies (core product and system integration) have been formed through 90 years' effort and experience. |
| 项目建设管理<br>Engineering construction management | 为国内外客户提供技术方案、工程设计、核心设备制造、配套设备材料采购、施工安装、调试保运的EPC交钥匙工程建设服务<br>Provide EPC turnkey engineering construction services for domestic and foreign customers in terms of technical solutions, engineering design, core equipment manufacturing, procurement of supporting equipment and materials, construction and installation, commissioning and operation guarantee. |
| 核心设备设计制造<br>Core equipment design and manufacturing | 九十余年高端装备生产制造经验，确保核心设备质量安全<br>With over 90 years' experience in high-end equipment production and manufacturing, the quality and safety of core equipment is guaranteed |
| 安装/调试<br>Installation/commissioning | 拥有一批技术娴熟、经验丰富的工程管理队伍和专业服务人员<br>SWET is equipped with a group of skilled and experienced engineering management teams and professional service personnel. |
| 系统安全<br>System safety | 和业主的原系统无忧切换（不影响原系统生产）<br>Free-minded switching with the owner's original system(without affecting the production of the original system). |
| 人员培训<br>Staff training | 以自有投资运营的电厂为基地，对客户管理人员进行全方位、系统培训<br>Free-minded switching with the owner's original system(without affecting the production of the original system). |
| 运行管理<br>Operation and management | 依托自有电厂的人才资源和运营管理经验，为客户提供运行管理技术支持和全托管运营服务<br>Provide customers with operational management technical support and fully managed operational services by relying on the talent resources and operational management experience of its own power plants. |





# 企业篇
Honors &Qualifications
资质荣誉

# 能源工程
The Solution
解决方案

## 能 源 工 程 • 解 决 方 案
## ENERGY ENGINEERING AND SOLUTION


01
高炉煤气、焦炉煤气及烟道气发电工程
Blast furnace gas, coke oven gas, and flue gas power generation projects

02
干熄焦及焦化尾气余热发电工程
Dry quenching and coking oven gas waste heat power generation project

03
转炉烟气全温域余热回收发电工程
Converter flue gas full-temperature waste heat recovery power generation project

04
有色冶炼及矿热炉余热发电工程
Non-ferrous smelting and mine blast furnace waste heat power generation project

05
水泥窑余热发电工程
Cement kiln waste heat power generation project

06
玻璃窑余热发电工程
Glass kiln waste heat power generation project

07
海外工程
Oversea Engineering

08
热电联产
CHP

09
光伏行业余热发电工程
Solar industry power generation project

10
生物质气化发电工程
Biomass gasification power generation project

11
集中智慧能源站
Centralized smart energy station

12
熔盐储能
Molten salt energy storage

STEEL INDUSTRY

# 钢铁行业

The Solution

解决方案

## 高炉煤气、焦炉煤气及烟道气发电工程

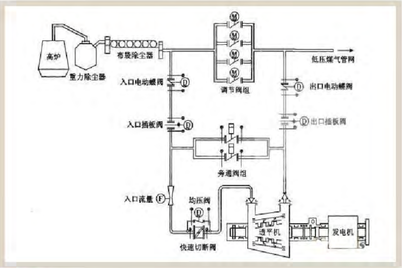
Blast furnace gas, coke oven gas, and flue gas power generation projects

公司首选煤气——蒸汽联合循环发电（CCPP），热效率高、启动快速灵活，回收利用高炉煤气和焦炉煤气，高炉煤气还可利用本身的压力，通过膨胀透平拖动发电机发电（TRT）。

公司总承包的内江星明能源80MW发电机组能效提升项目，建设一套80MW高温超高压凝汽汽轮机发电机组和一台280t/h 高温超高压高炉煤气锅炉及其辅助设施，通过项目实施达到低热值煤气回收利用、节能减排。项目年发电量达6x108Kwh。

SWET prefers gas-steam combined cycle power generation (CCPP), which is of high thermal efficiency, quick and flexible start-up, and economic in recycling of the blast furnace gas and coke oven gas. Blast furnace gas can also be used to drive TRT for power generation with its own pressure.

The Neijiang Xingming Energy 80MW Generator Set Efficiency Improvement Project, a general contracted project of SWET, is constructed with a set of 80MW high-temperature and ultra-high-pressure condensing steam turbine generator set plus one set of 280t/h high-temperature and ultra-high-pressure blast furnace gas boiler, and its auxiliary facilities. This project is built to recycle low calorific value coal gas, save energy and reduce emission, and the annual power generation is 6x108Kwh.




工艺流程图

Process Flow Diagram

内江星明能源80MW发电机组能效提升项目

Neijiang Xingming Energy 80MW Generator Set Efficiency Improvement Project

陕西略阳钢铁高炉、转炉煤气回收利用发电工程

Shaanxi Lueyang Steel Blast Furnace Gas, Converter Gas Recovery and Utilization Power Generation Project

河北德龙钢铁高炉煤气发电工程

Hebei Delong Iron and Steel Blast Furnace Gas Power Generation Project

工程实例图

Project Pictures

山西高义钢铁煤气发电综合改造工程EMC

Shanxi Gaoyi Steel Gas Power Generation Comprehensive Transformation Project EMC

山西华强钢铁高炉煤气发电工程

Shanxi Huaqiang Steel Blast Furnace Gas Power Generation Project

# 钢铁行业

The Solution

解决方案

## 干熄焦及焦化尾气余热发电工程

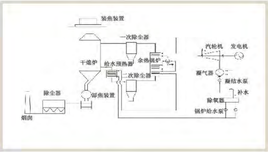
Dry quenching and coking oven gas waste heat power generation project

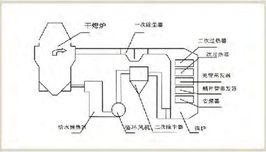
公司采用循环惰性气体冷却焦炭回收余热资源产生蒸汽，从而推动蒸汽机发电。该技术能够回收大量红焦显热并产生高压蒸汽，有效提高能源利用效率。

公司承建的中天钢铁（南通）2x35MW干熄焦余热发电项目，焦锅炉生产的红焦显热通过回收利用，并用于发电和供汽，机组年发电量可达5x108Kwh，年供蒸汽18万吨。

SWET adopts the technology of recovering waste heat resources by circulating inert gas to cool the coke and generate steam to drive steam turbines for power generation. This technology can recover a large amount of sensible heat from red coke and produce high-pressure steam, effectively improving energy utilization efficiency.

The Zenith Steel (Nantong) 2x35MW dry quenching coke waste heat power generation project, a project constructed by SWET. By recycling the sensible heat of the red coke produced by the coke boiler for power generation and steam supply, the annual power generation capacity of the unit can reach 5x108Kwh, with an annual steam supply of 180,000 tons.





工艺流程图

Process flow chart

中天钢铁（南通）2x35MW
干熄焦余热发电项目

Zenith Steel (Nantong) 2x35MW Coke Dry Quenching Waste Heat Power Generation Project

工程实例图

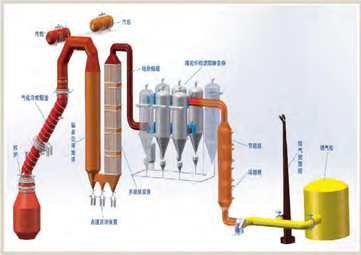
Project Pictures

## 转炉烟气全温域余热回收发电工程

Converter flue gas full-temperature waste heat recovery power generation project

公司转炉烟气全温域余热回收及超低排放系统，改变了现有的转炉烟气处理方式，采用余热回收+超低排放一体化技术，具有可靠性高的特点，即使出现故障也不影响转炉正常运行。余热回收系统采用多级辐射沉降室、多级蒸发器，模块化设计，独立循环；陶瓷纤维滤筒除尘器，多筒体并列设置，具有过滤效率高、对烟气适应性强、除尘过程无任何火星产生，煤气爆炸风险低、使用寿命延长等特点。

The company has developed a full-temperature waste heat recovery and ultra-low emission system for converter flue gas, which changed the existing converter flue gas treatment method and adopts integrated technology of waste heat recovery and ultra-low emission with high reliability. Even in the event of a malfunction, it does not affect the normal operation of the converter.



工艺流程图

Process flow chart

工程实例图

Project Pictures

METALLURGICAL BUILDING MATERIALS

# 冶金建材行业

The Solution

解决方案

## 有色冶炼及矿热炉余热发电工程

### Non-ferrous smelting and mine blast furnace waste heat power generation project

公司采用EPC总包、EMC投资的方式，投资承建丰越环保、内蒙古彭拓新能源、新疆晶和源新材料等冶炼行业的余热发电项目。利用强制循环余热锅炉回收冶炼烟气余热，生产蒸汽，推动汽轮机组发电，实现热、电联产，最大限度提高余热利用效率。

The company invests in and builds waste heat power generation projects for smelting industries such as Fengyue Environmental Protection, Inner Mongolia Pengtuo New Energy, and Xinjiang Jingheyuan New Materials through EPC contracting and EMC investment methods. Using forced circulation waste heat boilers to recover waste heat from smelting flue gas, the company produces steam to drive steam turbine units and achieve combined heat and power generation, maximizing waste heat utilization efficiency.

内蒙古澎拓新能源硅锰电炉煤气发电工程
Inner Mongolia Pengtuo New Energy Silicon Manganese Electric Furnace Gas Power Generation Project

新疆晶和源矿热炉余热发电项目
Xinjiang Jingheyuan Mine Heat Furnace Waste Heat Power Generation Project

郴州丰越环保7. 5MW有色冶炼余热发电EMC
Chenzhou Fengyue Environmental Protection 7.5MW Nonferrous Smelting Waste Heat Power Generation EMC

工程实例图
Project Pictures

## 玻璃窑余热发电工程

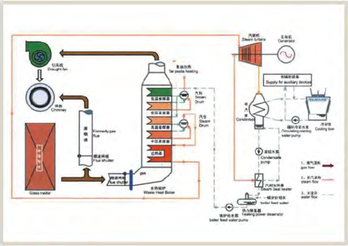
### Glass kiln waste heat power generation project

随着我国浮法玻璃技术的推广，单条玻璃熔窑的产能不断提高，熔窑排放的废气余热量规模越来越大，具备装机发电的可行性。特别是玻璃窑的燃料的改变，现在已开始大量采用天然气和煤气等清洁燃料，废气余热回收比可接近80%，玻璃企业燃料利用率可提高23-24%。

公司采用EMC方式，投资承建多个玻璃生产企业余热发电工程，其中投资承建的兰州蓝天浮法玻璃股份有限公司，日产500吨玻璃生产线两条余热发电工程装机6MW，每天可利用余热发电14. 4万度，每年节约标准煤约1. 7万吨，减排二氧化碳约4. 1万吨。

With the promotion of float glass technology, the production capacity of single glass melting kiln keeps increasing, the waste heat discharged from melting kiln becomes more and more large, which has the feasibility of installed power generation. In particular, the fuel of glass kilns has been changed. Clean fuels such as natural gas and gas have been widely used. The waste gas and heat recovery ratio can be close to 80%, and the fuel utilization rate of glass enterprises can be increased by 23-24%.

The company invests in and builds the Lanzhou Blue Sky Float Glass Co., Ltd. waste heat power generation project through EMC investment method, which can generate 144,000 kWh of electricity per day using waste heat and save about 17,000 tons of standard coal per year, reducing carbon dioxide emissions by about 41,000 tons.



工艺流程图
Process flow chart

工程实例图
Project Pictures

METALLURGICAL BUILDING MATERIALS

# 冶金建材行业

The Solution

解决方案

## 水泥窑余热发电工程

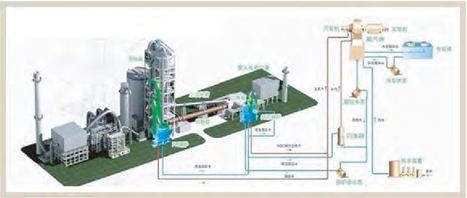
Cement kiln waste heat power generation project

公司一般采用EPC/EMC方式承建水泥窑余热发电项目，通过余热锅炉将大量的低品位废气余热进行热交换回收，实现热能向机械能的转换，从而带动发电机发出电能。

目前公司已投建50余套发电机组，总包承建的晋城山水合聚水泥有限公司，日产5000吨水泥熟料生产线余热发电工程装机9MW，每天可利用余热发电21-24万度，可解决约60%的熟料生产自用电，产品综合能耗可下降约18%，每年节约标准煤约2.5万吨，减排二氧化碳约6万吨。

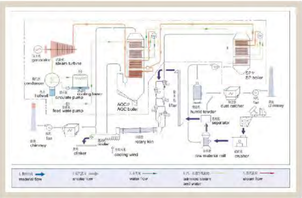
The company generally adopts cement kiln waste heat power generation projects through EPC/EMC contracting methods, recovering a large amount of low-grade waste heat from waste gas through heat exchange using waste heat boilers, achieving the conversion of thermal energy to mechanical energy, and driving the generator to generate electricity.

The company has built more than 50 sets of power generation units, and the total contracting of the Jincheng Shanshui Heju Cement Co., Ltd. waste heat power generation project can generate 210,000-240,000 kWh of electricity per day, which can solve about 60% of the self-use electricity for clinker production, saving about 25,000 tons of standard coal per year and reducing carbon dioxide emissions by about 60,000 tons.



工程模型图

Process model



工艺流程图

Process flow chart

太原北白水泥制造余热发电能源管理项目

Taiyuan Beibai Cement Manufacturing Waste Heat Power Generation Energy Management Project

山西晋城合聚水泥9MW水泥纯低温余热发电工程总承包

General contracting of Shanxi Jincheng Heju Cement 9MW pure low-temperature waste heat power generation project

河北承德喜上喜水泥线7.5MW余热发电项目

Hebei Chengde Xishangxi Cement Line 7.5MW Waste Heat Power Generation Project

工程实例图

Project Pictures

# OVERSEA ENGINEERING

## 海外工程
The Solution
解决方案

公司积极响应“一带一路”走出去战略，瞄准海外垃圾焚烧发电、电厂建设等市场，在海外承建多个发电项目，并得到国外客户的一致好评。

The company actively responds to the "Belt and Road" strategy, targeting overseas markets such as garbage incineration and power plant construction. It has undertaken multiple power projects overseas and has received unanimous praise from foreign clients.

印度海得拉巴2x600TPD垃圾焚烧发电项目，年处理生活垃圾量40万吨。烟气处理采用SNCR脱硝+旋转喷雾半干法（石灰浆）+干法消石灰喷射+活性炭吸附+袋式除尘的组合工艺，采用国际领先水平的炉排和余热锅炉技术。

The company has undertaken several garbage incineration and waste to energy power projects in India. Among them, the Hyderabad 2x600t/d garbage incineration power project adopts an internationally leading technology of furnace grates and waste heat boilers, and the flue gas treatment uses a combination of SNCR denitrification, rotating spray semi-dry method (lime slurry), dry lime injection, activated carbon adsorption, and bag filter.

印度Ramky集团Dundigal 1x750TPD
垃圾焚烧发电项目
India Ramky Group Dundigal 1x750TPD Waste Incineration Power Generation Project

**工程实例图**
**Project Pictures**

印度Ramky集团海得拉巴2x600TPD
垃圾焚烧发电项目
India Ramky Group Hyderabad 2x600TPD Waste Incineration Power Generation Project

印度Ramky集团Rewa
1x350TPD垃圾焚烧
发电项目
India Ramky Group Rewa 1x350TPD Waste Incineration Power Generation Project

**工程实例图**
**Project Pictures**

康隆达（越南）安防科技有限公司
配套热电联产项目
ConlonDa (Vietnam) Security Technology co-cogeneration project

泰国CAS 9.9MW热电联产自备电厂项目
Thailand CAS 9.9MW cogeneration self-provided power plant project

泰国AVA固废焚烧发电项目
Thailand AVA solid waste incineration power generation project

# 海外工程

The Solution

解决方案

## 工程实例图

Project Pictures

印尼杜迈2×50t/h+1×15MW电站工程

Indonesia Dumai 2×50t/h+1×15MW power station project

巴基斯坦ICI 18MW热电厂项目

18MW ICI thermal power plant project in Pakistan

巴基斯坦CHANAR 44MW甘蔗渣可再生能源热电联产发电项目

44MW CHANAR Bagasse Renewable Energy cogeneration power Project in Pakistan



印尼WILMAR比通项目

Wilmar Bitung project in Indonesia

菲律宾PALAWAN 1×17MW循环流化床电站项目

1×17MW circulating fluidized bed power plant project in Palawan, Philippines

## 工程实例图

Project Pictures

菲律宾Masbate 17MW燃煤生物质电站EPC项目

17MW coal-biomass power station EPC project in Masbate, Philippines

CHP

# 热电联产

The Solution

解决方案

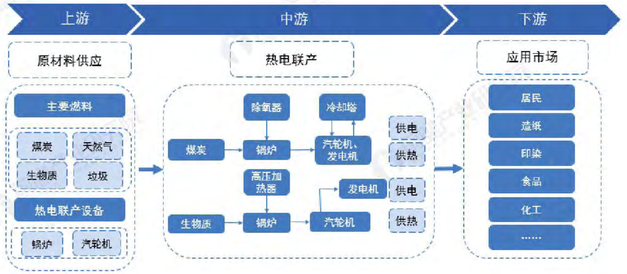
热电联产作为一种工业制程技巧，利用发电后的废热用于工业制造或是利用工业制造的废热发电，达到能量最大化利用的目的。

热电联产是在寒冷气候中减少供热系统碳排放的最具成本效益的方法，被认为是将能源从化石燃料或生物质转化为电力的最节能的方法。热电联产厂通常在城市的区域供热系统、医院、监狱等建筑物的中央供暖系统中使用，并且通常用于工业用水、冷却、蒸汽生产等产热过程中。

CHP, as an industrial process technique, utilizes the waste heat generated from power generation for industrial manufacturing or utilizes the waste heat generated from industrial manufacturing for power generation to maximize energy utilization.

CHP is the most cost-effective way to reduce carbon emissions of heating system in cold climate, it is considered as the most energy-saving way to convert energy from fossil fuels or biomass to electricity. CHP plant is usually applied in the central heating system of the city's regional heating system, hospitals, prisons and other buildings, and it is usually applied in industrial water, cooling, steam production and other heat generation processes

**图表1：热电联产行业产业链结构图**




资料来源：前瞻产业研究院整理

@前瞻经济学人APP

公司总承包的南通江能公用事业供热中心热电联产项目，建设2×220t/h高温高压循环流化床锅炉，配套建设1×B42MW背压式汽轮机+1×45MW发电机组等设备。项目建成后，年供热量658.08万GJ/a，年节标煤量为4.37万吨。

The Nantong JiangNeng Public Utility Heating Center's CHP project, one of SWET's general contracted projects, this project is constructed with 2× 220t/h high-temperature and high-pressure CFB boiler, completed with 1 × B42MW back pressure turbine plus 1 × 45MW generator set and other equipment. Once the project is completed, the annual heat supply will be 6.5808 million GJ/a, and the annual standard coal savings will be 43700 tons.

CHP

# 热电联产

The Solution

解决方案

公司总承包的福州和特新能源热电联产和集中供热项目，建成3×130t/h高温高压CFB锅炉+2×20MW背压汽轮发电机组和除尘脱硫、脱硝环保设施及配套供热管网。每年可节约标准煤1.16万吨，减少SO2排放量879吨，减少NOX排放量1750吨，减少烟尘排放量193吨。

The Fuzhou Hete New Energy CHP and Central Heating Project, as a general contracted project of SWET, it has been constructed with 3× 130t/h high-temperature and high-pressure CFB boiler plus 2 × 20MW back pressure steam turbine generator unit and desulfurization, denitrification environmental protection facilities, and completed with heating pipeline network. This project can save 11600 tons of standard coal for every year, reduce SO2 emissions by 879 tons, reduce NOX emissions by 1750 tons, and reduce smoke and dust emissions by 193 tons.

公司总承包的安徽江南产业能源有限公司热电联产项目，建设2×200t/h高温超高压循环流化床锅炉以及与之配套的相应辅助设施。锅炉采用最新型的低氮燃烧、低能耗循环流化床锅炉技术；烟气除尘采用布袋除尘+精细除尘组合装置；脱硝采用SNCR+预留SCR方式；脱硫采用石灰石湿法脱硫。

As a general contracted project by SWET, the Anhui Jiangnan Industrial Energy Co., Ltd. CHP project is constructed with 2 × 200t/h high-temperature and ultra-high pressure CFB boiler and auxiliary facilities supported. The boiler adopts the latest technology of low nitrogen combustion and low energy consumption CFB boiler, a combination equipment of bag precipitator and fine presipitator is applied in flue gas dust removal, the denitrification adopts SNCR plus reserved SCR, limestone wet desulfurization is applied.

# 新能源行业

The Solution

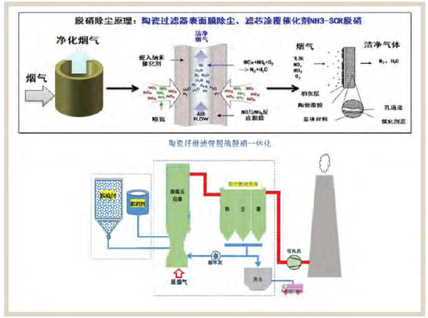
解决方案

## 光伏行业余热发电工程

Solar industry power generation project

公司总承包江西彩虹光伏一期项目3X1000t/d生产线烟气处理及余热发电项目。项目建设三座1000t/d光伏压花玻璃空气窑炉，通过余热发电系统，将窑炉排放的高温烟气回收余热发电。采用先进高效的工艺和技术（触媒陶瓷纤维滤管脱硫脱硝除尘一体化工艺），具备超低排放的控制和处理能力。项目投产后，年供电量达1.2×108kWh。

The company contracted to build the Jiangxi Rainbow photovoltaic Phase I project, which includes a 3X1000t/d production line flue gas treatment and waste heat power generation project. The project has three 1000t/d photovoltaic pressure textured glass air kilns. Through the waste heat power generation system, the high-temperature flue gas emitted by the kilns is recovered and used for power generation. The integrated process of catalytic ceramic fiber filter tube desulfurization, denitrification, and dust removal technology is used, which has ultra-low emission control and treatment capabilities. After the project is put into production, the annual power generation capacity will reach 1.2×108kWh.




工艺流程图

Process flow chart

工程实例图

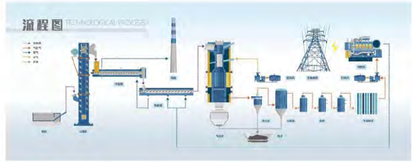
Project Pictures

## 生物质气化发电工程

Biomass gasification power generation project

生物质发电是利用生物质所具有的生物质能进行的发电，是可再生能源发电的一种，包括农林废弃物直接燃烧发电、农林废弃物气化发电、垃圾焚烧发电、垃圾填埋气发电、沼气发电。发展生物质发电，实施煤炭替代，可显著减少二氧化碳和二氧化硫排放，产生巨大的环境效益。

Biomass power generation is the use of biomass energy for power generation, is a renewable energy generation, including agricultural and forestry waste direct combustion power generation, agricultural and forestry waste gasification power generation, waste incineration power generation, landfill gas power generation, biogas power generation. The development of biomass power generation and the implementation of coal substitution can significantly reduce carbon dioxide and sulfur dioxide emissions, resulting in significant environmental benefits.




工艺流程图 Process flow chart

公司承建的黑龙江鑫金源安达生物质气化热电联产项目，建成投产后，年消耗秸秆40万吨，可替代标煤20万吨，项目建成投产后将满足整个园区的供热和生产蒸汽需求，年向外供蒸汽57.6万吨，供热158GJ。

The company actively lays out the clean fuel field and accelerates the development and implementation of biomass gasification power generation projects. The company contracted the Heilongjiang Xinjinyuan Anda biomass gasification thermal power cogeneration project. After completion, it will consume 400,000 tons of straw annually and replace 200,000 tons of standard coal. After the project is completed, it will meet the heating and steam production needs of the entire park and supply 576,000 tons of steam and 158 GJ of heat to the outside world annually.

# 综合能源

The Solution

解决方案

## 集中智慧能源站

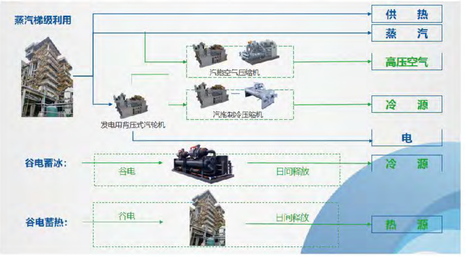
Centralized smart energy station

集中智慧能源站运用汽拖空气压缩机、汽拖制冷压缩机、冰蓄冷等系统，采用项目总承包的方式，对园区富余能源进行阶梯利用，为周边企业提供电、供热、蒸汽、压缩空气、冷源等能源。

The company's centralized intelligent energy station uses systems such as automobile-traction air compressors, automobile-traction refrigeration compressors, and ice storage to carry out step-by-step utilization of excess energy in the park and provide electricity, heating, steam, compressed air, and refrigeration energy to surrounding enterprises through project general contracting and investment operations.

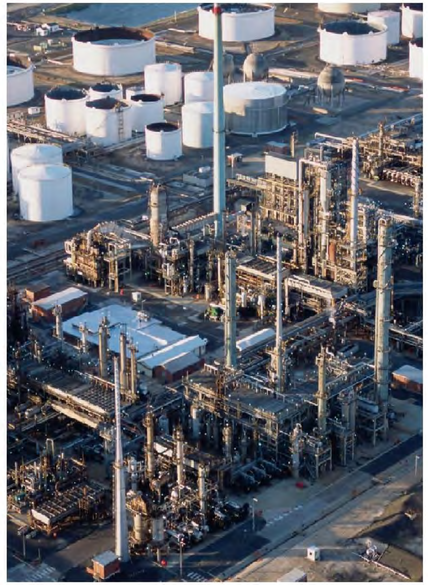
集中智慧能源站相较于原分散型能源优势明显，对锅炉高参数蒸汽进行梯级使用，使蒸汽实现满负荷利用，保证热电厂更经济高效地运行；汽轮机作为原动机直接驱动压缩机组设备，减少热能机械能的损耗，效率大幅度提升；为周边工业园区 、用户集中供蒸汽、供高压空气、供热、冷源等，实现了传统能源与新能源的结合；总投资少，后期运营维护低等。

Compared with the original distributed energy, the centralized intelligent energy station has obvious advantages. The high parameter steam of the boiler is used in steps to realize the full load utilization of steam and ensure the more economical and efficient operation of the thermal power plant. Steam turbine as prime mover directly drive compressor unit equipment, reduce the loss of thermal mechanical energy, efficiency is greatly improved; Centralized supply of steam, high pressure air, heat supply and cold source for surrounding industrial parks and users, realizing the combination of traditional energy and new energy; The total investment is small, the late operation and maintenance is low.



工程实例图

Project Pictures



# 熔盐储能
## Molten salt energy storage

熔盐储能技术是目前国际上最为主流的高温储热技术之一，利用材料在升温或降温过程中的温差而实现热能存储，具有以下优点：

- 建设周期短，8～10个月；
- 安全性高，熔盐在化工和其他领域已有长期稳定安全运行经验，通过围堰等预防措施即可完全排除高温熔盐泄露的风险；
- 熔盐储能系统的制造和运行对环境不产生污染；
- 适用范围广，温度灵活可调，适用范围190～570℃；
- 采用汽轮发电机组，可以实现调峰、调频；
- 使用寿命长达25～30年，熔盐近零损耗，可循环利用；
- 储热产汽成本相比天然气低；
- 纯物理变化，全流程无爆炸、燃烧风险；
- 储能容量大，可实现MWh～10GWh大范围、大容量储能。

Molten salt energy storage technology is one of the most mainstream high-temperature heat storage technologies in the world, using the temperature difference of materials in the process of heating or cooling to achieve heat storage, with the following advantages:

- The construction period is short, 8 ~ 10 months;
- High safety, molten salt in chemical and other fields have long-term stable and safe operation experience, through cofferdams and other preventive measures can completely eliminate the risk of high-temperature molten salt leakage;
- The manufacturing and operation of the molten salt energy storage system does not pollute the environment;
- Wide application range, flexible and adjustable temperature, applicable range 190 ~ 570℃;
- The use of turbine generator set can achieve peak regulation and frequency modulation;
- The service life is as long as 25 ~ 30 years, the molten salt is nearly zero loss, and can be recycled;
- The cost of heat storage and steam production is lower than that of natural gas.
- Pure physical changes, the whole process without explosion, combustion risk;
- Large energy storage capacity, can achieve MWh ~ 10GWh wide range, large capacity energy storage.



# 熔盐储能应用场景
## Application scenario of molten salt energy storage

### 绿电供热
Green electric heating

应用于工业园区清洁能源站，建设多能互补一体化园区

通过将园区的工业余热、废热储存在熔盐中，在必要时转化为满足生产、制造所需的电能、工业蒸汽、热水等；同时可在“谷电”时段储存电网谷电、弃风弃光电等能量，供应整个工业园区在“峰电”和“尖峰电”时段的用能需求。

It is applied to the clean energy station of industrial park and the construction of multi-energy complementary integrated park

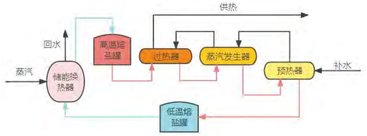
By storing industrial waste heat and waste heat in molten salt in the park, it can be converted into electric energy, industrial steam, hot water, etc. required for production and manufacturing when necessary; At the same time, it can store the power grid valley power, wind and photoelectric energy during the "valley power" period, and supply the energy demand of the entire industrial park in the "peak power" period.

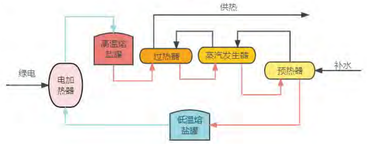
应用于工业区、商业园区、住宅区，助力区域集中供冷、供暖

通过吸纳谷电、分布式光伏风电、弃风弃光电的能量储存在熔盐中，为居民区、写字楼、事业单位、高铁站、机场等提供区域性的供热、供冷、供热水、供电等综合能源服务。

Used in industrial areas, business parks, residential areas, help regional central cooling, heating

By absorbing the energy of valley electricity, distributed photovoltaic wind power, wind and electricity abandonment in molten salt, it provides regional heating, cooling, heating water, power supply and other comprehensive energy services for residential areas, office buildings, public institutions, high-speed rail stations, airports, etc.



# 综合能源

The Solution

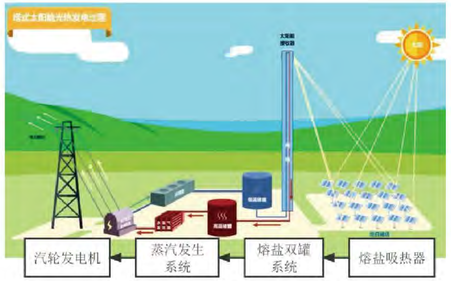
解决方案

## 光热发电

### Photothermal power generation

熔盐储能系统可以为风电光伏园区提供储能服务，在风电、光伏出力高于用电负荷需求时，将不能够上网的弃风弃光电转化为热能储存在熔盐中，在早晚用电高峰期时，再通过汽轮发电机组将热能转化为电能上网或通过换热器供应周边热用户。光伏风电园区通过配置熔盐储能设施，不仅可以平滑整体发电曲线，大幅提高电力系统的稳定运行能力，同时可以解决风光大基地弃风弃光问题，满足政策对储能、调峰的要求。

Molten salt energy storage system can provide energy storage services for wind power photovoltaic park. When the wind power and photovoltaic output are higher than the demand for electricity load, the abandoned wind and photovoltaic energy that cannot be connected to the Internet is converted into heat energy and stored in molten salt. In the morning and evening, during the peak time of electricity consumption, the heat energy is converted into electricity through the turbine generator set to the power grid or the heat exchanger supplies the surrounding heat users. By configuring molten salt energy storage facilities, the photovoltaic wind power park can not only smooth the overall power generation curve, greatly improve the stable operation capacity of the power system, but also solve the problem of wind and light abandonment of large wind bases, and meet the policy requirements for energy storage and peak balancing.




## 火电机组调峰

### Peak regulation of thermal power units

应用于现役火电机组改造

为提高现役火电机组灵活性，需有效解决机组超低负荷运行时锅炉系统的低负荷稳燃问题，通过熔盐储能技术改造，在保障机组安全稳定运行的前提下，可以实现超低负荷上网(最低零负荷)，并显著提升机组调频性能。对于热电机组，加装熔盐储能系统后，可实现发电与供热解耦，解决“以热定电”的难题，大幅提高机组灵活性。

It is applied to the transformation of thermal power units in operation

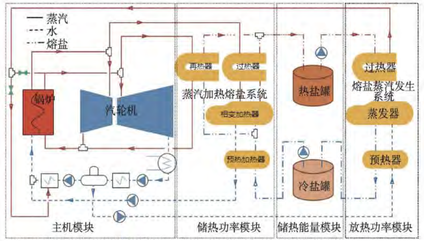
In order to improve the flexibility of active thermal power units, it is necessary to effectively solve the problem of low-load combustion stability of the boiler system during ultra-low load operation of the unit. Through the transformation of molten salt energy storage technology, under the premise of ensuring the safe and stable operation of the unit, ultra-low load can be realized on the power grid (minimum zero load), and the frequency modulation performance of the unit can be significantly improved. For thermoelectric units, after the installation of molten salt energy storage system, power generation and heating can be decoupled, solving the problem of "ordering power by heat", and greatly improving the flexibility of the unit.

应用于退役的老旧发电机组、热电联产机组的改造

在保留机组原有设备的基础上，投入少量资金加装电加热器和熔盐储能系统可将新能源弃电或电网低谷电储存起来，在用户需要时供给电能和热能。改造后的机组可发挥调峰、调频作用，提高电力系统的新能源消纳及稳定运行能力。

It is applied to the transformation of retired old generating units and cogeneration units

On the basis of retaining the original equipment of the unit, investing a small amount of money to install electric heaters and molten salt energy storage systems can store new energy abandoned or grid off-grid electricity, and supply electric energy and heat energy when the user needs it. The modified unit can play the role of peak regulation and frequency modulation, improve the new energy consumption and stable operation ability of the power system.

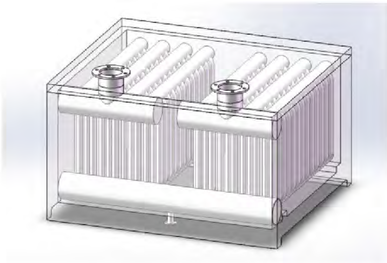


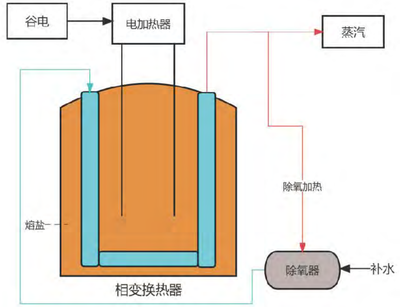
# 综合能源
The Solution
解决方案

## 熔盐储能单罐模式
Molten salt storage single tank mode

采用单罐模式，将熔盐储罐与换热器、水泵等设备一体化设计，熔盐无需在管道中流动，避免了熔盐结晶问题，设备建设成本低，安全性高，适用于20WM以下规模。

Single tank mode, the molten salt storage tank and heat exchanger, water pump and other equipment integrated design, molten salt does not need to flow in the pipeline, to avoid the problem of molten salt crystallization, equipment construction cost is low, high safety, suitable for 20WM below the scale.

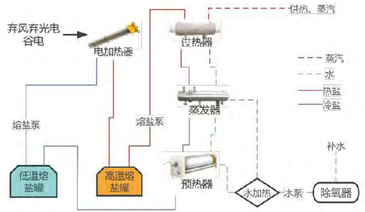


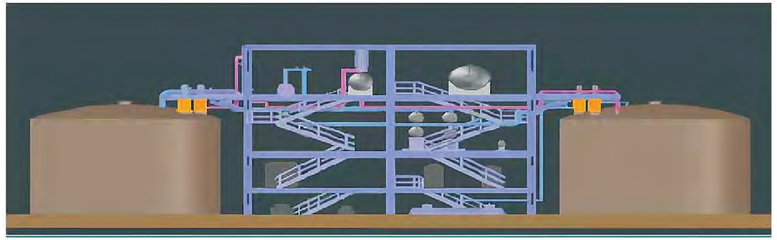



## 熔盐储能双罐模式
Molten salt storage dual tank mode

熔盐储能双罐模式是传统的储能解决方案，适用于大容量储能需求，系统包含加热器、低温熔盐储罐、高温熔盐储罐、换热器以及配套管道、阀门、仪表、电伴热、保温材料。

The two-tank mode of molten salt energy storage is a traditional energy storage solution, which is suitable for large-capacity energy storage needs. The system includes heaters, low-temperature molten salt storage tanks, high-temperature molten salt storage tanks, heat exchangers, and supporting pipes, valves, meters, electric heat tracing and insulation materials.



# 研发制造

Factory profile

工厂简介

## 上海工业锅炉的历史
## --就是中国工业锅炉产业发展的历史

上海工业锅炉（无锡）有限公司成立于1931年，是国内最早的锅炉制造商之一。现持有A级锅炉制造许可证、A2级压力容器制造许可证、ASME“S”、“U”钢印授权证书，具有丰富的印度IBR产品的设计和制造经验。2022年被认定为“江苏省专精特新中小企业”。公司拥有ISO9001质量管理体系、ISO14001环境管理体系和OHSAS18001职业健康安全管理体系认证证书；公司产品先后获得国家经委颁发的新产品金龙奖、机械部的赶超国际优质产品奖、国家级质量银奖，多次获得上海市优质节能产品和上海市名牌产品称号，公司还获得上海市高新技术企业称号。

上海工业锅炉有限公司在工业锅炉行业历史久远，蜚声中外。公司是中国改革开放以来首家引进美国技术，采用该技术设计和制造的各种油气锅炉在行业内得到了大力推广，投运业绩超过2000台，是国内一流的油气锅炉供应商，并出口印尼、泰国、孟加拉、巴基斯坦、非洲、新加坡、韩国等国家和地区。

公司积极响应国家能源发展战略，稳步推进国家碳达峰、碳中和战略目标，努力实现锅炉效率与环保排放的协调统一。公司先后与上海交通大学、浙江大学、西安交通大学、天津大学等国内知名高校进行了广泛的技术合作。其中与上海交通大学热能研究所独家合作，于2015年成功推出了新一代高效洁净工业煤粉锅炉，并形成了10~130t/h蒸汽锅炉和7~116MW热水锅炉系列产品，投运结果表明其低负荷运行能力、NOx排放、煤种适应性等都达到了国际先进水平，得到了国家工信部和财政部的肯定，并作为绿色设计和集成的示范企业；与北京航化开展化工废弃物焚烧项目合作，积累化工废弃物焚烧锅炉设计经验，形成自主设计能力，并成功开拓了世界著名焚烧专业厂商PCC（PROCESS COMBUSTION CORPORATION）的合作关系。

近年来，上海工业锅炉（无锡）有限公司在热电联产行业主推高压、超高压锅炉，以此提高能源利用效率，同时采用综合方案降低SO2、NOX的原始排放，引领行业内新一代的技术发展，主要产品以循环硫化床锅炉、余热锅炉、垃圾焚烧锅炉、生物质锅炉为主，同时可以根据客户要求设计和制造各种特殊燃料和用途的锅炉。

上海工业锅炉（无锡）有限公司全体员工发扬“价值、创新、诚信、共赢”企业精神，热忱为用户服务，我们不仅提供用户满意的各类锅炉和压力容器产品，而且还提供从锅炉岛设计到安装调试的EPC服务，以用户满意为原则，“用上工产品，无后顾之忧”是我们的承诺。

## The history of shanghai industrial boiler is the history of the development of industrial boiler in china

As one of the earliest boiler manufacturers in China, Shanghai Industrial Boiler (Wuxi) Co., Ltd (hereinafter referred to as SGG) was established in 1931. SGG has obtained A-level boiler manufacturing license, A2 level pressure vessel manufacturing license, ASME "S" and "U" steel seal authorization certificate, and has rich experience in design and manufacturing of Indian IBR products. In 2022, SGG was recognized as a "specialized, refined, and new small and medium-sized enterprise in Jiangsu Province". SGG is a manufacture with certification of ISO9001 quality management system, ISO14001 environmental management system, and OHSAS18001 occupational health and safety management system, its products have successively won the Golden Dragon Award for New Products issued by the National Economic Commission, the International Quality Product Award issued by the Ministry of Machinery and the National Quality Silver Award. SGG has won the titles of Shanghai High Quality Energy Saving Products and Shanghai Famous Brand Products many times, and also been awarded the title of Shanghai High tech Enterprise.

SGG is a globally well-known manufacture which has a long history in industrial boiler industry. It is the first company in China to introduce American technology since the reform and opening up. Various oil and gas boilers designed and manufactured based on this technology have been vigorously promoted in the industry, with operational performance of over 2000 boilers, SGG is a first-class domestic oil and gas boiler supplier and its products have been exported to Indonesia, Thailand, Bangladesh, Pakistan, Africa, Singapore, South Korea, etc.

SGG actively responds to the national energy development strategy, steadily promotes the national carbon peak and carbon neutrality strategic objectives, and strives to achieve the unification of boiler efficiency and environmental protection emissions. SGG have conducted extensive technical cooperation with well-known domestic universities such as Shanghai Jiao Tong University, Zhejiang University, Xi'an Jiao Tong University and Tianjin University, among which of the exclusive cooperation with the Thermal Energy Research Institute of Shanghai Jiao Tong University, a new generation of high-efficiency and clean industrial pulverized coal boilers was launched in 2015, a series of products such as 10-130t/h steam boilers and 7-116MW hot water boilers were developed

# 研发制造

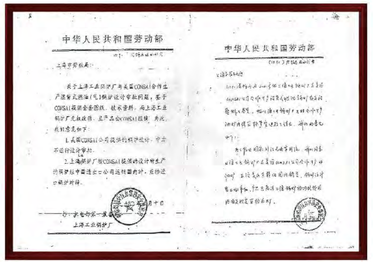
Factory profile

工厂简介

and put into operation, the results show that its low load operating capacity, NOx emissions, coal adaptability, etc. have reached international advanced levels, and have been recognized by the Ministry of Industry and Information Technology and the Ministry of Finance of China, this makes SGG become a demonstration enterprise for green design and integration. SGG have collaborated with Beijing Aviation Chemical Corporation on the chemical waste incineration project, accumulated experience in the design of chemical waste incineration boilers, developed independent design capabilities, and successfully developed a cooperative relationship with the world-renowned incineration professional manufacturer PCC (PROCESS COMBUSTION CORPORATION).

In recent years, SGG has mainly promoted high-pressure and ultra-high pressure boilers in CHP industry to improve energy utilization efficiency, and adopted a comprehensive solution to reduce the original emissions of SO2 and NOX, leading a new generation of technological development in the industry. Its main products are CFB boilers, waste heat boilers, waste incineration boilers, biomass boilers and other boilers designed and manufactured for various special fuels and applications based on customer requirements.

All employees of SGG have been promoting the enterprise spirit of "value, innovation, integrity, and all-win" and providing warmhearted service for the customers. We SGG not only provide various types of boiler and pressure vessel products that satisfy the customers, but also provide EPC service from boiler island design to installation and commissioning. Our commitment is "the rear secure with SGG products" on the basis of customer satisfaction.




劳动部认定上工锅油气炉等同美国进口产品的批复

Ministry of Labor affirms that SGG oil/gas boiler is equal to boilers from US.

# 研发制造

Product Research

产品研发

## 产品类型 / 型号

### 工业锅炉 Industrial Boiler

| | |
|---|---|
| 1t/h-35t/h WNS型油气锅炉 | WNS oil/gas fired boiler |
| 10t/h-130t/h 角管式锅炉 | Conner tube boiler |
| 10t/h-240t/h SZS型油气锅炉 | SZS oil/gas fired boiler |
| 10t/h-100t/h 高效节能煤粉锅炉 | Energy-efficient pulverized coal boiler |

### 电站锅炉 Power plant boiler

| | |
|---|---|
| 35t/h-480t/h 循环流化床锅炉 | Circulating fluidized bed boiler |
| 75t/h-480t/h 煤粉锅炉 | Pulverized coal boiler |
| 10t/h-130t/h 链条锅炉 | Chain boiler |
| 35t/h-130t/h 甘蔗渣、秸秆、稻壳、木屑、树皮、咖啡渣、糠醛渣、棕榈壳等生物质锅炉 | Biomass boiler |
| 150t/d-800t/d 炉排式垃圾焚烧锅炉 | Grate type waste incineration boiler |

### 余热锅炉 Waste heat boiler

| | |
|---|---|
| 1300t/d-10000t/d 水泥窑余热锅炉 | Cement kiln waste heat boiler |
| 500t/d-1000t/d 玻璃窑余热锅炉 | Glass kiln waste heat boiler |
| 有色金属行业（干熄焦、高炉煤气）余热锅炉 | Non ferrous metal (dry quenching, blast furnace gas) waste heat boiler |
| 化工行业余热锅炉（包括三废锅炉） | Waste heat boilers in the chemical industry (including three waste boilers) |
| 污泥皮革余热锅炉、砖窑余热锅炉 | Sludge leather waste heat boiler, brick kiln waste heat boiler, etc |



# 制造设备

Equipment Manufacturing

冲击试验机
Impact testing machine

热丝TIG焊机
Hot wire TIG welding machine

直读光谱仪
Direct Reading Spectrometer

20×4×4分段式燃气热处理炉
20×4×4 Sectional gas heat treatment furnace

100吨万能试验机
100 tons Universal testing machine

120×3200卷板机
120×3200 Rolling machine

1600×20膜式壁拼排焊机
1600×20 Membrane wall welding machine

ATCP管子预处理线
ATCP pipe pretreatment line

# 研发制造
Industrial boiler
工业锅炉

## 燃气油气锅炉
Gas and oil fire boiler

1）上海工业锅炉（无锡）有限公司自上世纪八十年代借鉴美国C E公司具有优良技术水平的V P型锅炉，并结合日本、韩国等同类型锅炉的技术，自行开发的大型全自动SZS系列燃油燃气锅炉。

2）公司自1985年与美国COMSAI公司（美国燃烧系统公司）进行技术合作，由美国提供全套技术图纸及工艺，并按美国“ASME”标准制造。锅炉系三回程烟气结构，烟管采用螺纹烟管和光管相结合技术，锅炉采取独特的后烟室全外湿背结构，具有低背压、高效率的性能。

1)Since the 1980s, by drawing on the excellent technical level of the VP type boiler from the US CE company and combining the technology of similar boilers in Japan and South Korea, SGG has developed a large-scale fully automatic SZS series oil and gas fired boiler.

2)SGG has been cooperating with COMSAI (American Combustion Systems) since 1985, COMSAI provides a complete set of technical drawings and processes and boilers are manufactured according to the American "ASME" standard. The boilers adopt a three return-way flue gas structure, and the flue ducts adopt a combined technology of threaded flue ducts and smooth ducts . The boilers adopt a unique structure of rear smoke chamber with a fully external wet back, which has low back pressure and high efficiency performance.

## 高效节能煤粉炉
Efficient and energy-saving pulverized coal boiler

公司与上海交通大学热能工程研究所联合开发出高效洁净燃烧工业煤粉锅炉技术。该技术采用高效洁净煤粉燃烧器和炉内强化洁净燃烧方式，可燃烧二类烟煤，解决了工业煤粉锅炉煤种适应性差、燃烧效率低、运行稳定性不好、运行成本高、污染物排放严重等问题。

新型高效洁净煤粉工业锅炉采用煤粉集中制备、精密供粉、空气分级燃烧、尾部烟气碱法脱硫、水管式锅炉换热、高效布袋除尘、烟气脱硫和全过程自动控制等先进技术，实现了燃煤锅炉的高效运行和洁净排放。

SGG and the thermal engineering Research Institute of Shanghai Jiaotong University have jointly developed the technology of efficient and clean combustion industrial pulverized coal boiler. This technology adopts an efficient and clean pulverized coal burner and an enhanced clean combustion method in the furnace, Class II bituminous coal can be the fuel. This technology solves the problems of poor coal adaptability, low combustion efficiency, poor operational stability, high operating costs, and serious pollutant emissions in the applicaton of industrial pulverized coal boilers.

The new high-efficiency and clean industrial pulverized coal boilers adopt advanced technologies such as centralized preparation of pulverized coal, precise supply, air staged combustion, rear flue gas alkali desulfurization, water tube boiler heat exchange, high-efficiency bag precipitator, flue gas desulfurization, and full process automatic control, achieving efficient operation and clean emissions of coal-fired boilers.

## 角管式锅炉
Corner tube boiler

角管式锅炉技术是上世纪八十年代引进的先进燃煤链条锅炉技术。经过几十年的优化、创新后，公司掌握了角管式蒸汽锅炉系列和角管式热水锅炉系列的技术。目前，角管式蒸汽锅炉被评为“上海市节能产品”称号，踪迹遍布全国。

Corner tube boiler technology is an advanced coal-fired chain boiler technology introduced in the 1980s. After decades of optimization and innovation, SGG has acquired the technology of the corner tube steam boiler series and the corner tube hot water boiler series. Currently, the corner tube steam boilers have been awarded the title of "Shanghai Energy Saving Product" and applied throughout the country.

高效节能煤粉炉
Efficient and energy-saving pulverized coal boiler

角管式锅炉
Corner tube boiler

# 研发制造

Utility boiler

电站锅炉

## 循环流化床锅炉

CFB boiler

上海工业锅炉（无锡）有限公司与国内多家研究循环流化床燃烧技术的高校及科研单位合作，开发设计了适合中国国情、具有自主知识产权的全新一代的环保节能型循环流化床锅炉，新一代循环流化床锅炉融入了国内外前沿的研究技术，有效协调了循环流化床锅炉的环保性与经济性、可靠性与灵活性。

SGG has collaborated with many domestic universities and R & D institutes, designed and launched a new generation of environmentally friendly and energy-saving CFB boilers with independent intellectual property right that are suitable for China's national conditions and have sresearching circulating fluidized bed combustion. The new generation of CFB boilers integrates leading research technologies at home and abroad, and effectively unify the environmental protection, economy, reliability, and flexibility of CFB boilers.

## 生物质锅炉

Biomass boiler

上海工业锅炉（无锡）有限公司根据燃料品种特性的具体情况，参照国外合作厂家的经验，采用适当的燃料收集，运输和炉前燃料传送方式，进料均匀性好，与负荷追踪性好，使系统达到高水准的顺畅，自动化水平高。

Based on the specific characteristics of fuel varieties and the experience of foreign cooperative manufacturers, the SGG biomass boiler adopts appropriate fuel collection, transportation, and pre furnace fuel transfer methods, making the system a high level of smoothness and automation with good feeding uniformity and load tracking.

# 研发制造

Utility boiler

电站锅炉

## 垃圾焚烧炉

Garbage incineration boiler

公司早期与美国、日本等发达国家著名公司合作，通过吸收改进，形成了入炉垃圾不需分拣，适应高水分、低热值城市生活垃圾的专有技术。

公司现有两种形式的垃圾焚烧炉：多级顺推式往复炉排、流化床燃烧

垃圾焚烧炉容量：200t/d、300t/d、400t/d、500t/d、750t/d等。

In the early time, SGG collaborated with famous companies from developed countries such as the United States and Japan, through absorption and improvement, it forms a proprietary technology which is sorting-free of the incoming waste and applicable to high moisture and low calorific value urban household waste.

SGG currently has two types of waste incineration boilers: multi-stage reciprocating grate and fluidized bed combustion.

Capacity of the waste incineration boiler: 200t/d, 300t/d, 400t/d, 500t/d, 750t/d, etc.

# 研发制造

Waste heat boiler

余热锅炉

## 余热锅炉

Waste heat boiler

余热锅炉的研究开发目的在于综合利用现有的资源，实现节能减排，降低运营成本，提高经济效益，实现资源的优化配置。目前，余热锅炉已广泛运用于各行各业，包括钢铁焦化、冶金建材、石油化工等行业。

公司通过与多个设计院、企业（上海711所、北京航化、PCC、北京华泰、703所等）的合作，成功开发了水泥、钢铁、冶金、石油化工行业的各类余热锅炉，具有较高技术含量。产品投放市场后，取得了很好的社会效益，赢得了市场的认可和广泛好评。

公司研究生产的主要产品：

锅炉类型：低温（水泥窑、玻璃窑、脱硫等）余热锅炉，钢铁焦化（干息焦，烧结换冷，高炉煤气、焦炉煤气等）余热锅炉，有色金属冶金（硅铁、锰铁、镍铁等）余热锅炉，石油化工（催化裂化、反应油气、化工废气废液、有机工业废气、制（加）氢、煅烧焦等）余热锅炉。

The research and development objective of waste heat boilers is to comprehensively utilize existing resources, save energy and reduce emission, reduce operating costs, improve economic benefits, and achieve optimal resource allocation. Now, the waste heat boilers have been widely used in various industries, including steel coking, metallurgical building materials, petrochemical and other industries.

SGG has successfully developed various types of waste heat boilers with high technological content in cement, steel, metallurgy, and petrochemical industries through cooperation with many design institutes and enterprises (Shanghai 711 Institute, Beijing Aviation Chemical, PCC, Beijing Huatai, 703 Institute, etc.). After the products are launched on the market, it achieves good social benefits and win market recognition and widespread praise.

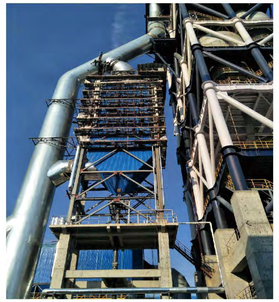
The main products researched and manufactured by SGG:

Boiler types: low-temperature (cement kiln, glass kiln, desulfurization, etc.) waste heat boilers, steel coking (dry coke, sintering and cooling, blast furnace gas, coke oven gas, etc.) waste heat boilers, non-ferrous metal metallurgy (ferrosilicon, ferromanganese, ferronickel, etc.) waste heat boilers, petrochemical (catalytic cracking, reaction oil and gas, chemical waste gas and liquid, organic industrial waste gas, hydrogen production (hydrogenation), calcination coke, etc.) waste heat boilers.

# 研发制造

Waste heat boiler

## 余热锅炉



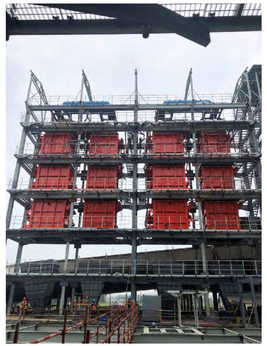
水泥窑余热锅炉 Cement kiln waste heat boiler

玻璃窑余热锅炉 Glass kiln waste heat boiler

有色冶炼余热锅炉 Non-ferrous smelting waste heat boiler

干熄焦余热锅炉 Coke dry quenching waste heat boiler

高炉煤气余热锅炉
Blast furnace gas waste heat boiler



砖窑余热锅炉
Brick kiln waste heat boiler

废气焚烧余热锅炉
Waste gas incineration waste heat boiler

废液焚烧余热锅炉
Waste incineration waste heat boiler

# 企业文化

Enterprise Concept

企业理念

## 企业宗旨

**提供清洁能源 共创美好生活**

Enterprise Purpose

Providing Clean Energy and Creating a Better Life Together

共同的理想，
让我们走到了一起，组成了运能能源集团；
共同的愿景，
是运能能源事业生生不息的根本动力，是大家凝聚力的源泉；
共同的追求，
是我们活动、行为以及处理一切事务的出发点和原点。

Same dream,makes us work together to build Shanghai Win-Energy family;
Same vision,is our everlasting motive ad source of cohesion;
Same pursuit,is our basis of activities,behaviors and business.

## 企业价值观

Enterprise values

诚信 务实
高效 卓越

Integrity Practicality
Efficiency Excellence

## 企业使命

Enterprise mission

为工业节能降耗
为世界增添绿色新能源

To save energy for industry,
to add green new energy for
the world

## 企业愿景

Enterprise mission

成为国内外知名新能源和储能方案的设备供应商和系统服务商

To become a well-known equipment supplier and system service provider of new energy and energy storage solutions both domestically and internationally

# 企业文化

Social Responsibility

社会责任

技术与交流
Technology Communication

赠巴基斯坦口罩
Complimentary Pakistani mask

组织员工奉献爱心
Charity Events

运能集团重组上工锅签约仪式
Contact signing ceremony

高效节能煤粉锅炉技术推广
The seminar for the energy-efficient pulverized coal boiler

迎新年会现场
New Year party

活动与交流
Communication conference

投资兴业回报社会
Key project contarct signing site

ENTERPRISE CULTURE

# 企业文化

Staff Activities

## 员工风采

ENTERPRISE CULTURE

# 企业文化——典型业绩 TYPICAL REFERENCE LISTS

| 序号 No. | 用户名称 Customer | 项目 Project |
|---|---|---|
| 1 | "COAL FIRED POWING GENERATION PLANT 12 MW(NETT)-OLEOCHENICAL PROJECT , LUBUK GAUNG ,DUMAI 印尼杜迈2×50t/h+1×15MW电站工程" | 2×50t/h+1×15MW电站总承包 EPC for 2×50t/h+1×15MW power plant |
| 2 | Sinomas 10MW Power Plant ,Medan,Indonisia | 2X50+10MW 电站总承包 EPC for 2×50+10MW power plant |
| 3 | ICI CO. Power Plant，Pakistan | 2X80 t/h +1X18MW 电站总承包 EPC for 2×80t/h+1×18MW power plant |
| 4 | 浙江咸亨热电有限公司 Zhejiang Xianheng Combined Heat and Power Plant | 2X75t/h+21MW 电站总承包 EPC for 2×75+21MW power plant |
| 5 | 浙江中基热电有限公司 Zhejiang Zhongji Combined Heat and Power Plant | 45t/h循环流华床锅炉节能工程总承包 EPC for 45t/h CFB boiler energy-saving engineering |
| 6 | 浙江嘉善协联热电有限公司技改项目 24Zhejiang JiashanXielian Combined Heat Co., Ltd. - Upgrade Project | 1X75t/h流化床锅炉节能工程总承包 EPC for 1×75t/h CFB boiler energy-saving engineering |
| 7 | 济宁山水水泥有限公司 JiningShanshui Cement Co., Ltd. | 4.5MW水泥纯低温余热发电工程总承包 EPC for 4.5MW cement pure low temperature exhaust heat power generation engineering |
| 8 | 兴隆县福成水泥有限公司 Xinglong Fucheng Cement Co., Ltd. | 4.5MW水泥纯低温余热发电工程总承包 EPC for 4.5MW cement pure low temperature exhaust heat power generation engineering |
| 9 | 贵州福泉利森水泥有限公司 GuizhouFuquanlisen CementCo., Ltd. | 6MW水泥纯低温余热发电工程总承包 EPC for 6MW cement pure low temperature exhaust heat power generation engineering |
| 10 | 新疆英吉沙水泥有限公司 Xinjiang YingjishaShanshui Cement Co., Ltd. | 9MW水泥纯低温余热发电工程总承包 EPC for 9MW cement pure low temperature exhaust heat power generation engineering |
| 11 | 山西朔州新时代水泥有限公司 Shanxi ShuozhouXinshidaiShanshui Cement Co., Ltd. | 9MW水泥纯低温余热发电工程总承包 EPC for 9MW cement pure low temperature exhaust heat power generation engineering |
| 12 | 山东临朐山水水泥有限公司 Shanxi LinquShanshui Cement Co., Ltd. | 9MW水泥纯低温余热发电工程总承包 EPC for 9MW cement pure low temperature exhaust heat power generation engineering |

| 序号 No. | 用户名称 Customer | 项目 Project |
|---|---|---|
| 13 | 山西晋城合聚水泥有限公司 Shanxi Jincheng ShanshuiHeju Cement Co., Ltd. | 9MW水泥纯低温余热发电工程总承包 EPC for 9MW cement pure low temperature exhaust heat power generation engineering |
| 14 | 吕梁亿龙水泥有限公司 LuliangYilong Cement Co., Ltd. | 9MW水泥纯低温余热发电工程总承包 EPC for 9MW cement pure low temperature exhaust heat power generation engineering |
| 15 | 吉林白山水泥有限公司 Jilin Baishan Cement Co., Ltd. | 9MW水泥纯低温余热发电工程总承包 EPC for 9MW cement pure low temperature exhaust heat power generation engineering |
| 16 | 河南辉县水泥有限公司 Henan HuixianShanshui Cement Co., Ltd. | 9MW水泥纯低温余热发电工程总承包 EPC for 9MW cement pure low temperature exhaust heat power generation engineering |
| 17 | 兴隆县新型建材有限公司 Xinglong New Building Materials Co., Ltd. | 9MW水泥纯低温余热发电工程总承包 EPC for 9MW cement pure low temperature exhaust heat power generation engineering |
| 18 | 甘肃蓝天浮法玻璃股份有限公司 Gansu Lanzhou Lantian Float Glasses Co., Ltd. | 6MW玻璃窑余热发电工程总承包 EPC for 6MW glass furnace exhaust heat power generation engineering |
| 19 | 兰州新蓝天新材料有限责任公司 LanzhouXinlantianNew Materials Co., Ltd. | 3.5MW玻璃窑余热发电EMC EMC for 3.5MW glass furnace exhaust heat power generation engineering |
| 20 | 郴州丰越环保科技股份有限公司 ChenzhouFengyue Environment Protection Technology Co., Ltd. | 7.5MW有色冶炼余热发电EMC EMC for 7.5MW nonferroussmelting exhaust heat power generation |
| 21 | 湖南金旺铋业股份有限公司 Hunan Jinwang Tin Industry Co., Ltd. | 1MW有色冶炼余热发电EMC EMC for 1MW nonferroussmelting exhaust heat power generation |
| 22 | 贵州岑巩金孟锰业有限公司 GuizhouCengongJinmeng Manganese Industry Co. Ltd. | 4.5MW矿热炉发电EMC EMC for 4.5MW mineral heat power generation |
| 23 | 云南红河州红铅有色化工股份有限公司 YunanHonghe Red Lead Chemical Co., Ltd. | 7.5MW有色冶炼余热发电工程总承包 EPC for 7.5MW nonferroussmelting exhaust heat power generation engineering |
| 24 | 天津金耀生物工业园 Tianjin Jinyao Biology Industry Zone | 锅炉设备供应及安装总包工程 Boiler devices supply and installation project |



ENTERPRISE CULTURE

企业文化——典型业绩 TYPICAL REFERENCE LISTS

| 序号 No. | 用户名称 Customer | 项目 Project |
|---|---|---|
| 25 | 山东铁雄冶金科技有限公司 Shandong TiexiongMetallurgy Technology Co. Ltd. | 9MW焦炉烟道气余热发电工程总承包 EPC for 9MW coke furnace flue gas exhaust heat power generation engineering |
| 26 | 韶关市坪石发电厂有限公司 ShaoguanPingshi Power Plant Co., Ltd. | 4#、5#机组烟气脱硝工程 FluegasDeNOxengineeringfor 4# & 5# units |
| 27 | 沂水山水水泥有限公司烟气脱硝改造工程 YishuiShanshui Cement Co., Ltd. flue gas DeNOx Reform Engineering | 5000T/D水泥线脱硝工程总承包 EPC for 5000T/D cement line DeNOxengineering |
| 28 | 吕梁亿龙水泥有限公司烟气脱硝改造工程 LuliangYilong Cement Co., Ltd. flue gas DeNOx Reform Engineering | 5000T/D水泥线脱硝工程总承包 EPC for 5000T/D cement line DeNOxengineering |
| 29 | 平阴山水水泥有限公司烟气脱硝改造工程 PingyinShanshui Cement Co., Ltd. flue gas DeNOx Reform Engineering | 5000T/D水泥线脱硝工程总承包 EPC for 5000T/D cement line DeNOxengineering |
| 30 | 华电国际十里泉发电厂有限公司 Huadian International Shiliquan Power Plant Co., Ltd. | 5号机组脱硝工程 DeNOxengineering for 5# unit |
| 31 | 山东里彦发电有限公司 Shandong Liyan Power Generation Co., Ltd. | 3、4号锅炉烟气脱硝工程 Flue gas DeNOxengineering for 3# & 4# boilers |
| 32 | 山东百年电力发展股份有限公司 Shandong Bainan Power Development Co., Ltd. | 4×220MW机组烟气脱硝工程 Flue gas DeNOxengineering for 4×220MW unit |
| 33 | 韶关市坪石发电厂有限公司 ShaoguanPingshi Power Plant Co., Ltd. | #3机组烟气脱硫脱硝工程 FluegasDeNOxengineering for 3# unit |
| 34 | 福建鼎兴镍业有限公司 Fujian Dingxing Nickel Co., Ltd. | 15MW烧结余热发电工程设计 15MW sintering exhaust heat generation engineering design |
| 35 | 独山金孟60万吨新型锰材料项目 DushanJinmeng 60t New Manganese Project | 2×150MW自备电厂工程设计 2×150MW self-owned power plant design |
| 36 | 青海大美甘河工业园区尾气综合利用制烯烃项目 Qinghai DameiGanhe Industry Park -Comprehensive Utilization offail GasAlkene Production Project | 2×25MW热电联产工程设计 2×25MW cogeneration engineering design |
| 37 | PT Socimas Oleochemical | 35t/h For LP Steam 50t/h+10MW EPC |
| 38 | PT Energi Sejahteramas Sinar Mas | 2×50t/h+15MW EPC |

| 序号 No. | 用户名称 Customer | 项目 Project |
|---|---|---|
| 39 | ICI Pakistan Soda Ash Business | 2×80t/h+18MW EPC |
| 40 | 山东铁雄冶金科技有限公司 Shandong Tiexiong Metallurgy Technology Co., Ltd | 焦炉烟道气余热回收发电项目总承包项目 Coke furnace flue gas heat recycling generation project EPC project |
| 41 | 兰州兰石集团有限公司 Lanzhou Lanshi Group Co., Ltd. | 4台40吨燃气热水锅炉供应及安装 4X40 ton gas fired hot water boilers supply and installation |
| 42 | 广西强强碳素股份有限公司 Guangxi Qiangqiang Carbon Co., Ltd. | 6台套煅烧余热热锅炉工程技术设计及供货安装 6 calcined waste heat boilers designation, supply and installation |
| 43 | 泰国CASP纸业 Thailand CASP paper company | 1x9. 9MW热电联产自备电厂总承包 |
| 44 | 印度Ramky集团 Ramky group of India | 2x600TPD垃圾焚烧发电项目 2x600TPD waste-to-energy project |
| 45 | 印度Ramky集团 Ramky group of India | 1x750TPD垃圾焚烧发电项目 1x750TPD waste-to-energy project |
| 46 | 印度Ramky集团 Ramky group of India | 1x350TPD垃圾焚烧发电项目 1x350TPD waste-to-energy project |
| 47 | 康隆达（越南）安防科技有限公司 ConlonDa (Vietnam) Security Technology Co., Ltd. | 1x130t/h循环流化床项目 1x130t/h circulating fluidized bed project |
| 48 | 菲律宾巴拉望 Palawan,Philippines | 1×17MW循环流化床电站项目 1 × 17MW Circulating Fluidized Bed Power Plant Project |
| 49 | 菏泽市巨丰新能源有限公司 Heze Jufeng New Energy Co., Ltd | 1x100t/h 燃气锅炉岛工程 1x100t/h Gas Boiler Island Project |
| 50 | 山东海越麦芽有限公司 Shandong Hyaline Malting CO., LTD. | 30t/h清洁型高效煤粉蒸汽锅炉总包 General Contracting of 30t/h Clean and Efficient Pulverized Coal Steam Boiler |
| 51 | 黑龙江华夏一统化肥制造有限公司 Heilongjiang Huaxia Yitong Fertilizer Manufacturing Co., Ltd | 2x150t/h循环流化床锅炉项目 2x150t/h circulating fluidized bed boiler project |
| 52 | 陕西略阳钢铁有限公司 Shaanxi Lueyang Steel Co., Ltd | 1×30MW高炉煤气、转炉煤气回收利用发电工程 Shaanxi Lueyang Steel Blast Furnace Gas, Converter Gas Recovery and Utilization Power Generation Project |

CLIENTS

# 主要客户

金光集团APP(中国)

山水集团 SUNNSY GROUP

中国石油

Sinopec

金龙鱼

川威集团 Tranvic Group

JIN YUAN 金圆水泥

华新水泥

伊利

中粮 COFCO

中国航空工业总公司

陕西煤业化工集团公司

Sustainability

太陽紙業 SUN PAPER

光明 新鲜我的生活

ZENITH 中天钢铁

雪花啤酒 SNOW

百威啤酒

南玻集团

首钢集团 SHOUGANG GROUP

耀华玻璃

中國東方航空 CHINA EASTERN

上海地铁公司

ANSTEEL 鞍钢集团