



中国十五冶
15MCC



中国十五冶
15MCC

中国十五冶金建设集团有限公司 电力业务

China 15th Metallurgical Construction Group Co., Ltd.
Power Business

中国十五冶金建设集团有限公司

China 15th Metallurgical Construction Group Co., Ltd.

地址/Address: 湖北省武汉市东湖开发区高新大道788号
No.788, Gaoxin Avenue, East Lake High-Tech Development Zone,
Wuhan City, Hubei Province

邮编/Postal code: 435000

电话/Tel.: 027-51015600

传真/Fax: 027-51015700

网址/Website: www.cn15mcc.com

打造成为行业领先的电力综合服务商

BECOMING AN INDUSTRY-LEADING POWER SERVICE PROVIDER



CONTENTS

目录

企业篇	ABOUT US	02
公司简介	Company Profile	03
电力业务展示	Introduction to Power Business	03
电力业务相关荣誉	Honors of Power Business	04
电力业务相关资质	Qualifications of Power Business	05

业绩篇	PERFORMANCE	07
热电建设	Thermoelectric Construction	08
• 主厂房	• Main Buildings	08
• 输煤系统	• Coal Handling System	10
• 输变电	• Power Transmission and Transformation Project	14
风电建设	Wind Power Construction Project	16
光伏建设	Photovoltaic Construction Project	18
其他能源	Other Energy Projects	20

实力篇	STRENGTH	21
科技创新	Scientific and Technological Innovation	22
采购物流	Purchasing Logistics	23
产业工人	Industrial Workers	24
业务模式	Business Model	25
管理创新	Management Innovation	26

ABOUT US
企业篇



COMPANY PROFILE

公司简介

中国十五冶金建设集团有限公司（简称“中国十五冶”）成立于1953年，是中国有色矿业集团有限公司的全资子公司，下设35家分子公司。拥有冶金施工总承包特级资质；冶金行业、建筑行业（建筑工程）工程设计双甲资质；矿山工程、建筑工程、石油化工工程、机电安装工程、市政工程、电力工程、公路工程7项施工总承包壹级资质；输变电、钢结构工程、电子与智能化工工程、地基基础工程、起重设备安装工程等21项专业承包资质；营业性爆破资质；对外经济合作经营资格。在30多个国家和地区设计、建设1000多个工程项目，荣获鲁班奖12项、国家级优质工程奖等工程奖项300多项，获得全国五一劳动奖状、全国优秀施工企业等企业奖项。

电力业务简介

电力工程是中国十五冶优势业务，具有电力工程施工总承包壹级资质，以及输变电工程专业承包壹级资质，服务涵盖火力发电、风力发电、光伏发电、生物质能发电和输变电等细分领域。

公司先后为华能集团、国电投集团、大唐集团、国能集团、华电集团、三峡集团、中广核、中核集团、中节能、华润集团等，以及越南、孟加拉、哈萨克斯坦、博兹瓦纳、埃塞俄比亚等国客户提供优质服务。公司享誉电力工程行业，承建电力工程116项；其中，获得国家优质工程奖12项，鲁班奖2项。

Established in 1953, China 15 Metallurgical Construction Group Co., Ltd. ("15MCC") is a wholly-owned subsidiary of China Non-ferrous Metal Mining (Group) Co., Ltd. ("CNMC"), and has 35 subsidiary companies. The company has the following qualifications, including special-grade qualification for engineering design of metallurgical construction general contracting; Grade A qualifications of metallurgy industry and building industry (Construction Project); first-level qualifications for construction general contracting of mining engineering, construction project, petrochemical engineering, mechanical and electrical installation engineering, municipal works, power engineering and highway engineering, power transmission and transformation, steel structure engineering, electronics and intelligent chemical engineering; professional contracting qualifications of 21 projects, such as foundation engineering and lifting appliance installation engineering; operating blasting construction qualification; foreign economic cooperation management qualification. Besides, the company has designed and constructed more than 1,000 engineering projects in more than 30 countries and regions, has won more than 300 engineering awards, including 12 China Construction Project Luban Prizes (National Quality Project), and many enterprise-level awards such as the National 5.1 Labor Medal and the National Excellent Construction Enterprise.

INTRODUCTION TO POWER BUSINESS

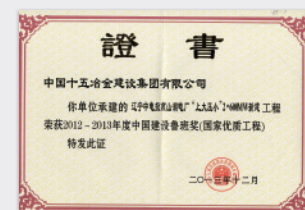
Power engineering is the dominant business of 15 MCC, which has the first-level qualification of general contracting of power engineering construction and the first-level qualification of professional contracting of power transmission and transformation engineering. Its services cover thermal power generation, wind power generation, photovoltaic power generation, biomass power generation and power transmission and transformation and other subdivisions.

The company has provided quality services to Huaneng Group, Guodian Investment Group, Datang Group, Guoneng Group, Huadian Group, Three Gorges Group, CGN, CNNC, China Energy Conservation, China Resources Group, as well as customers in Vietnam, Bangladesh, Kazakhstan, Botswana, Ethiopia and other countries. The company enjoys a good reputation in the power engineering industry and has undertaken 116 power projects; Among them, it has won 12 National Quality project awards and 2 Luban Awards.

CERTIFICATES AND HONORS

荣誉证书

实用新型专利 (11项)
Patents for Utility Model (11 patents)



中国建设工程鲁班奖2项(电力类)
China Construction Project Luban Prize (2 prizes)

国家优质工程奖12项(电力类)
National Quality Project Award (12 awards)



QUALIFICATIONS OF POWER BUSINESS

电力业务相关资质

设计咨询
Design Consulting
Qualification

设计行业(建筑工程)设计·甲级
Grade A Qualification for Design in Design
Industry (Construction Project)

施工总承包
General
Construction
Contracting
Qualifications

冶金工程·特级
Special Grade Qualification for General Contracting
of Metallurgical Engineering

电力工程·壹级
First-level Qualification for General Contracting of
Electric Power Engineering

机电工程·壹级
First-Level Qualification for General Contracting of
Electromechanical Engineering

建筑工程·壹级
First-Level Qualification for General Contracting of
Construction Project

专业施工
Professional
Construction
Qualifications

输变电工程·壹级
First-Level Qualification for Power Transmission and
Transformation Engineering

钢结构工程·壹级
First-Level Qualification for Steel Structure Engineering

地基基础工程·壹级
First-Level Qualification for Foundation Engineering

消防设施工程·壹级
First-Level Qualification for Fire Facility Engineering

起重设备安装工程专业承包·壹级
First-Level Qualification for Lifting equipment installation
engineering professional contracting

电子与智能化工程专业承包·壹级
First-Level Qualification for Electronic and intelligent
engineering professional contracting

建筑机电安装工程专业承包·壹级
First-Level Qualification for Construction mechanical and
electrical installation engineering professional contracting

测绘资质
Surveying and
Mapping
Qualification

工程测量·乙级
Grade B Qualification for Engineering Survey



业绩篇 PERFORMANCE

THERMOELECTRIC CONSTRUCTION

热电建设

1 主厂房 MAIN BUILDINGS

● 江苏华能集团淮阴电厂2×330MW三期工程

PHASE III 2×330 MW PROJECT OF JIANGSU HUANENG HUAIYIN POWER GENERATION CO., LTD.



- 该工程主要包括单机容量 2×330MW 燃煤机组主厂房及主辅机基础等建安工程
- 荣获 2008 年度国家优质工程银奖
- 2008 年度主厂房系统辅助建筑荣获中国电力优质工程

- The project mainly includes the construction and installation works of the foundation for the main building and main and auxiliary units for the coal-fired unit with the single installed capacity of 2×330 MW.
- In 2008, the company won the Silver Metal of National Quality Project.
- In 2008, the auxiliary building project of the main plant was rated as the China Power Quality Project.

● 国电蚌埠电厂一期2×600MW机组新建工程

PHASE I 2×600 MW UNIT NEW CONSTRUCTION PROJECT OF NATIONAL ENERGY GROUP BENGBU POWER PLANT



- 该工程主要包括1#机组主厂房土建、侧煤仓间、除尘控制楼等建安工程
- 该项目是蚌埠建市以来的最大工业工程，也是蚌埠市第一座大型电厂
- 荣获 2010 年度国家优质工程银奖
- 2010年度输煤系统及综合水泵房等建筑施工荣获中国电力优质工程奖
- The project mainly includes civil works of main plant for 1# unit, the construction and installation works of side bunker bay and dust removal control building.
- The project is the largest industrial project in Bengbu since the city was founded, and the first large-scale power plant in Bengbu.
- In 2010, the company won the Silver Metal of National Quality Project.
- In 2010, the construction project of coal handling system and integrated water pump house was rated as the China Power Quality Project.

● 华能莱芜电厂百万机组（2X1000MW）“上大压小”扩建工程7#机组主厂房区域建筑工程

REPLACING SMALL UNITS WITH LARGE ONES"-BASED EXPANSION PROJECT (2×100 WM) UNIT OF CHINA ENERGY GROUP LAIWU POWER PLANT - CONSTRUCTION PROJECT OF MAIN UNIT FOR 7# UNIT



- 该工程主要包括汽机房、锅炉基础、除尘器、烟道支架等建安工程
- 荣获 2018-2019 年度中国电力优质工程
- The project mainly includes the construction and installation works of turbine house, boiler foundation, dust collector and flue supports.
- In 2018-2019, the construction project was rated as the China Power Quality Project.

● 湖北华电江陵发电厂一期2×660MW超超临界燃煤发电机组工程

PHASE I 2×660 MW ULTRA-SUPERCRITICAL COAL-FIRED POWER GENERATING UNIT PROJECT OF HUBEI JIANGLING POWER PLANT, CHINA HUADIAN CORPORATION



- 该工程主要包括 #1 主厂房区域建筑工程、厂区道路、厂区地下管网、厂区综合管架、消防水及消防水泵供水系统、厂区室外地坪等建安工程。
- 湖北省实施中部崛起的重点工程，荆州最大发电厂，提供本市全年工业生产、生活四分之一用电量。
- 三维数字化电厂、煤场数字化管理，并实现烟气超净排放。
- The project mainly includes the building construction of #1 main plant, construction and installation works of roads, underground pipe network, integrated pipe frames, fire water and fire pump water supply systems and outdoor floors in the plant.
- It is one of the key projects for the Strategy for the Rise of Central China implemented in Hubei Province, and the largest power plant in Jingzhou, providing a quarter of the city's annual industrial production and living electricity.
- It is a 3D digital power plant, implements the coal yard digital management, and achieves ultra-net emission of flue gas.

● 中电投珠海横琴岛多联供能源站项目一期2×390MW 工程建筑工程

PHASE I 2×390 MW ENGINEERING CONSTRUCTION PROJECT FOR MULTIPLEX ENERGY SUPPLY STATION PROJECT OF ZHUHAI HENGQIN ISLAND, CHINA POWER INVESTMENT CORPORATION



- 该工程主要包括热系统、燃料供应系统、水处理系统、供水系统、电气系统、主厂房、升压站等
- 荣获2016-2017年度国家优质工程奖
- The project mainly includes the construction and installation works of heat system, fuel supply system, water treatment system, water supply system, electrical system, main plant, booster station and so on.
- In 2016-2017, the construction project was rated as the China Quality Project.

2 输煤系统 COAL HANDLING SYSTEM

● 中电投朝阳燕山湖电厂一期2x600MW机组工程

PHASE I 2x600 MW UNIT CONSTRUCTION PROJECT FOR CHAOYANG YANSHAN LAKE POWER PLANT, CHINA POWER INVESTMENT CORPORATION



- 该工程主要包括输煤系统、材料库的建安工程,本项目输煤系统总长度 1260 米,采用新型轨道施工方法提质增效。
- 2012 年度 60 米跨门式斗轮机轨道施工工法荣获中电建协部级工法
- 2011 年度不同地质条件下长螺旋钻孔灌注桩质量控制荣获部级 QC 二等奖
- 2013 年度提高 1.4m 宽钢丝绳芯输送带现场硫化胶接头强度荣获部级 QC 三等奖
- 荣获 2013 年度中国电力优质工程奖
- 荣获 2012—2013 年度中国建设鲁班奖

- The project mainly includes the construction and installation works of coal handling system and material warehouse. The total length of the coal handling system in this project is 1260 meters, and the new track construction method is adopted to improve the quality and efficiency of the project.
- In 2012, the construction method of 60 m portal type bucket track was awarded the Ministerial Construction Method of the China Power Construction Association.
- In 2011, the company won the second prize of the Ministerial QC for the quality control project of long auger bored pile under different geological conditions.
- In 2013, the company won the third prize of Ministerial QC for the design of improving the strength of the vulcanized joint for 1.4 m-wide steel wire rope conveyor belt.
- In 2013, the construction project was rated as the China Power Quality Project.
- In 2012-2013, the company won the China Construction Project Luban Prize.

● 国电汉川电厂三期2×1000MW输煤系统扩建工程

PHASE III 2x1000MW COAL HANDLING SYSTEM EXPANSION PROJECT OF HANCHUAN POWER PLANT, CHINA HUADIAN CORPORATION



- 该工程主要包括 1—7# 输煤栈桥、1—4# 输煤转运站、采光室、碎煤机室、取样楼、输煤综合楼、煤场、输煤筒仓、干煤棚基础、灰库、污水处理站、煤水处理站、入场煤检测中心等输煤系统建安工程
- 2012 年度提高输煤栈桥框架梁柱清水混凝土外观质量荣获省部级 QC 成果三等奖
- 2012 年度提高长距离带式输送机安装质量荣获省部级 QC 成果三等奖
- 荣获 2013—2014 年度国家优质工程奖
- The project mainly includes 1-7 # coal transport trestle, 1-4 # coal transport transfer station, lighting room, coal crusher room, sampling building, coal transport complex building, coal yard, coal transport silo, dry coal shed foundation, ash storage, sewage treatment station, coal water treatment station, admission coal testing center and other coal transport system construction and safety engineering.
- In 2012, the company won the Third Prize of Provincial and Ministerial QC Achievements for improving the appearance quality of fair-faced concrete of frame beams and columns of coal transport trestle.
- In 2012, the company won the Third Prize of Provincial and Ministerial QC Achievements for improving the installation quality of long-distance belt conveyor.
- In 2013-2014, the construction project was rated as the China Power Quality Project.

● 大连发电甘井子热电项目2×300MW等级供热机组新建工程

NEW CONSTRUCTION PROJECT OF 2x300 MW HEAT SUPPLY UNIT FOR THERMOELECTRIC CONSTRUCTION PROJECT OF DALIAN POWER GENERATION CO., LTD.



- 该工程主要包括 4# 标段输煤系统区域内埋地管道等建安工程
- 荣获 2011—2012 年度国家优质工程银质奖
- 荣获 2012 年度中国电力优质工程奖
- 辽宁省和大连市“十一五”热电发展规划工程
- 国内首例采用“烟塔合一”热电厂
- 15 个月零 11 天工期创全国同级别建设新纪录,预计年节约标煤 18 万吨,减少硫化物排放量 2000 吨、烟尘排放量 4500 吨

- The project mainly including the construction and installation works of buried pipelines in the coal handling system area of 4# Section.
- In 2011-2012, the company won the Silver Metal of National Quality Project.
- In 2012, the company won the China Power Quality Project Award.
- The project was rated as a project listed in the "Eleventh Five-Year" Thermoelectric Development Planning in Dalian City, Liaoning Province.
- The first domestic thermal power plant integrating chimney and cooling tower in China.
- The company made a new record with the shortest construction period of 15 months and 11 days in the national same-level construction projects; the project is expected to save 180,000 tons of standard coal, reduce 2,000 tons of sulfur emissions and 4,500 tons of smoke emissions every year.

● 华能伊春“上大压小”热电联产2X350MW新建工程

“REPLACING SMALL UNITS WITH LARGE ONES”-BASED NEW CONSTRUCTION PROJECT -- 2×350MW COGENERATION UNITS OF YICHUN THERMAL POWER CO., LTD., CHINA ENERGY GROUP



- 该工程主要包括#1机A排外到#1机引风机室（含引风机室）间建筑工程，#7标段工程为输煤系统建筑工程
- 荣获2015年度黑龙江省结构优质工程奖
- The project mainly includes the construction project of the pipes from Exhaust Fan A of #1 Unit to the induced fan room (including induced fan room) of #1 unit, and the construction project of #7 Section is the construction project of the coal handling system.
- In 2015, the company won the Heilongjiang Province Structural Quality Project Award.

● 内蒙古霍林河循环经济示范工程2X350MW“上大压小”自备电厂扩建工程

“REPLACING SMALL UNITS WITH LARGE ONES”-BASED EXPANSION CONSTRUCTION PROJECT OF 2×350 WM SELF-PREPARED POWER PLANT—CIRCULAR ECONOMY DEMONSTRATION PROJECT IN HUOLINHE, INNER MONGOLIA



- 该工程主要包括输煤系统及附属建筑安装工程
- 荣获2016-2017年度国家优质工程奖
- This project mainly includes installation works of the coal handling system and ancillary buildings
- In 2016-2017, the construction project was rated as the China Quality Project

● 广西贵港火电厂2×600MW工程

2×600 MW PROJECT OF GUANGXI GUIGANG THERMAL POWER PLANT



- 该工程主要包括卸煤系统、输煤系统、储煤系统、碎煤系统、燃油系统的建安工程。
- 荣获2009年度中国安装工程优质奖(中国安装之星)
- The project mainly includes the construction and installation works of coal unloading system, coal handling system, coal storage system, coal crushing system and fuel oil system.
- In 2009, the company won the China Installation Project Quality Award (China Star for Installation)

● 山西柳林电厂2×600MW工程

2×600 MW PROJECT OF SHANXI LIULIN POWER PLANT

- 该工程主要包括污水处理系统、附属生产工程及输煤系统的土建与安装工程。
- 60米跨门式斗轮机安装，创国内同类设备最高纪录

- The project mainly includes the civil and installation works of sewage treatment system, auxiliary production engineering and coal handling system.
- The installation project of 60 m portal-type bucket turbine made a new record among similar equipment in China for its installation height.



3 输变电 POWER TRANSMISSION AND TRANSFORMATION ENGINEERING

● 北京石油化工工程有限公司延安煤油气资源综合利用项目 热动力站 II、III 标段建筑工程

SECTION II AND III BUILDING CONSTRUCTION PROJECT OF THERMAL POWER STATION—YAN'AN COAL, OIL AND GAS RESOURCE COMPREHENSIVE UTILIZATION PROJECT OF BEIJING PETROCHEMICAL ENGINEERING CO., LTD.



- 该工程主要包括本标段锅炉房、主厂房、空冷岛以及空冷岛变电所等项目的土建及小安装
- The project mainly includes the civil construction and small installation works of boiler room, main plant, air cooling island and air-cooling island substation in this section

● 新疆嘉润资源控股有限公司动力站 2x350MW机组 A标段土建工程

CIVIL CONSTRUCTION WORKS OF 2x350 MW UNIT IN THERMAL POWER STATION AT SECTION A OF XINJIANG JIARUN RESOURCES HOLDING CO., LTD.



- 该工程主要包括3#、4#机组的主厂房及设备基础及设施、空冷系统、升压站等
- The project mainly includes the construction of the main building, equipment infrastructure and facilities, air cooling system and booster station of 3# and 4# units.

● 芙蓉变电站221千伏电缆隧道A标段建设工程

CONSTRUCTION PROJECT OF 221KV CABLE TUNNEL FOR FURONG SUBSTATION AT SECTION A



- 该工程主要包括220KV送变电隧道，主隧道1681.7米，隧道平均埋深在地下15米。
- The project mainly includes 220 KV Power transmission and transformation tunnel, including a 1681.7 m main tunnel with the average underground depth of 15m.

WIND POWER CONSTRUCTION PROJECT

风电建设

● 华电云南发电有限公司安宁风电分公司孝母山166MW风电场工程

166 MW WIND FARM PROJECT IN XIAOMUSHAN, ANNING WIND POWER BRANCH, YUNNAN POWER GENERATION CO., LTD., CHINA HUADIAN CORPORATION

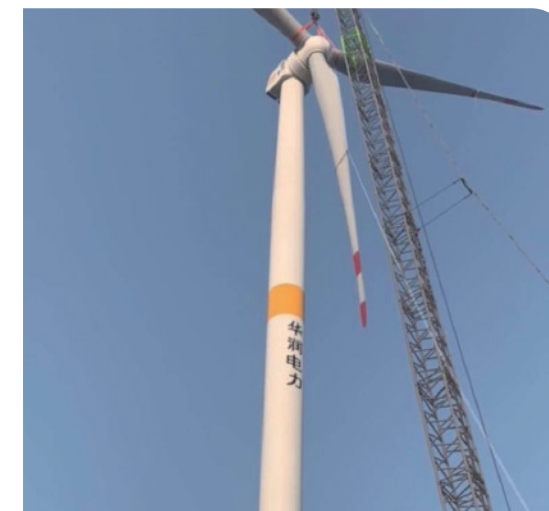


- 该工程主要包括风机基础及吊装平台
- 荣获2006年度中国电力优质工程奖
- 荣获2007年度国家优质工程银质奖
- 云南省核准的单个项目装机容量最大的风电场，且为高原山地风场，施工点平均海拔2500米以上
- The project mainly includes the construction of fan foundation and lifting platform.
- In 2006, the company won the China Power Quality Project Award.
- In 2007, the company won the Silver Metal of National Quality Project.
- It is the wind farm with the largest installed capacity of a single project approved by Yunnan Province, and a plateau mountain wind farm with the average altitude of the construction site more than 2500m.

● 华润广东徐闻二期 50MW风电工程

PHASE II 50 WM WIND POWER GENERATION PROJECT OF GUANGDONG XUWEN GAS CO., LTD., CHINA RESOURCES(HOLDINGS) CO., LTD.

- 该工程主要包括风机基础浇筑及设备电气安装，箱变砌筑及电气安装，安装机位旋挖桩。
- The project mainly includes the fan foundation pouring and equipment electrical installation, box transformation masonry and electrical installation, construction of rotary drilling bored piles in machine position rotary digging piles.



● 丰宁振北200MW风电项目风电场工程

WIND FARM PROJECT OF 200MW WIND POWER GENERATION PROJECT OF ZHENBEI NEW ENERGY CO., LTD. IN FENGNING



• 该工程主要包括32台6.25兆瓦风电机组进场道路、场内道路及吊装平台修整、风机基础施工及吊装、箱变基础及安装、风电机组至箱变低压侧电气安装、区域内集电线路电缆敷设

• The project mainly includes the repair of 32 sets of approach roads, internal road and hoisting platform for 6.25 MW wind turbines, fan foundation construction and hoisting, foundation and installation of the box transformer, electrical installation from wind turbines to the low-voltage side of the box transformer, and cable laying of the collector line in the block

● 哈萨克斯坦Abay 1×100MW和Abay 2×50MW风电工程

1×100MW AND 2×50MW WIND POWER GENERATION PROJECT IN ABAY, KAZAKHSTAN



• 该工程主要包括47台风机及塔筒等设备卸货、塔筒、机舱、轮毂、叶片吊装，内部所有电气、设备安装及接地

• The project mainly includes unloading 47 fans and tower tubes and other equipment, hoisting of tower tubes, engine rooms, wheel hubs and blades, installation and grounding of all internal electrical equipment

● 哈萨克斯坦札纳塔斯100MW风电工程

100 MW WIND POWER GENERATION PROJECT IN ZANATAS, KAZAKHSTAN



• 该工程主要包括升压站土建施工、风机基础及箱变基础施工、管理场站建筑施工、风场道路及升压站进场道路施工、吊装平台施工

• 中亚最大风电场项目

• The project mainly includes the civil construction of the booster station, the construction of fan foundation and box transformer foundation, the construction of the management station, the construction of the wind farm road and the approach road of the booster station, and the construction of the lifting platform

• It is the largest wind farm project in Central Asia

PHOTOVOLTAIC CONSTRUCTION PROJECT

光伏建设

● 甘肃高台50MW并网光伏电站工程

50 MW GRID-CONNECTED PHOTOVOLTAIC POWER STATION PROJECT IN GAOTAI, GANSU



• 该工程主要包括支架基础、变压器设备基础、升压站与综合楼等

• The project mainly includes the construction of support foundation, transformer foundation, booster station and comprehensive building

● 赞比亚CEC河畔太阳能光伏工程扩建工程

EXPANSION PROJECT OF CEC RIVER SOLAR PHOTOVOLTAIC PROJECT IN ZAMBIA



- 该工程主要包括原有光伏电站产能的基础上扩建33兆瓦的装机容量以及配套附属设施
- The project mainly includes the expansion construction of 33 MW unit (installed capacity) and supporting ancillary facilities based on the original capacity of the photovoltaic power station.

● 刚果(金)加丹加省50MW光伏EPC工程

50 MW PHOTOVOLTAIC EPC PROJECT IN KATANGA PROVINCE, DEMOCRATIC REPUBLIC OF CONGO



- 该工程主要包括光伏电站和配套升压站施工工作
- The project mainly includes the construction of the photovoltaic power station and supporting booster station

OTHER ENERGY PROJECTS

其他能源

● 埃塞俄比亚垃圾发电工程土建工程

CIVIL CONSTRUCTION OF MUNICIPAL SOLID WASTE POWER GENERATION PROJECT IN ETHIOPIA



- 该工程主要包括土建施工以及小安装部分的系统调试工作等
- 非洲首座垃圾电厂
- The project mainly includes the civil construction, small installation works and the system commissioning work
- It is the first municipal solid waste power plant in Africa

● 江苏如东25MW秸秆发电示范工程

25MW STRAW POWER GENERATION DEMONSTRATION PROJECT IN RUDONG, JIANGSU



- 该工程主要包括主厂房基础及上部结构
- 当时国内最大秸秆发电项目
- The project mainly includes the foundation and superstructure of the main plant
- It is the largest straw power generation project in China at that time

SCIENTIFIC AND TECHNOLOGICAL INNOVATION

科技创新

中国十五冶深入贯彻落实创新驱动发展战略，充分激发科技创新活力，不断释放科技引领作用。深化科技体系建设，加强顶层设计，制定技术创新规划，建立科技创新三级管理组织机构，不断优化科技创新工作；积极搭建创新平台，拥有省级国家高新技术企业、企业技术中心、国家技术标准创新基地、湖北省BIM智慧建造国际科技合作基地、高能人才培养基地等创新平台；大力引进培养科技人才，公司现有科技人才652人，占自有员工总数的20.5%，为企业储备了大批科技人才和领军人才；持续加大研发投入，研发费用始终保持在销售收入总额3%以上，为科技创新提供强力支撑；深入开展技术创新和应用研究，围绕新工艺、新技术、新设备、新材料积极开展自主创新和应用研究，培育公司核心竞争力。

The 15MCC has further implemented the innovation-driven development strategy, fully stimulated the vitality of scientific and technological innovation, and continuously played the leading role of science and technology. Besides, the company has deepened the construction of science and technology system, strengthened the top-level design, formulated technological innovation plans and established the three-level management organization for scientific and technological innovation to constantly optimize scientific and technological innovation; it has actively built innovation platforms, such as provincial national high-tech enterprises, enterprise technology centers, national technical standard innovation base, Hubei BIM intelligent construction international science and technology cooperation base, high-skill talent training base and other innovation platforms; vigorously introduced and trained scientific and technological talents; at present, the company has 652 scientific and technological talents, accounting for 20.5% of all the staffs, having cultivated a large number of scientific and technological talents and leading talents for the enterprise. The company has continued to increase the investment in research and development, always accounting for above 3% of the total sales revenue, which provides energetic support for scientific and technological innovation. The company has also carried out in-depth technological innovation and application research, actively carried out independent innovation and application research around new processes, new technologies, new equipment and new materials to form the core competitiveness of the company.



PURCHASING LOGISTICS

采购物流



中国十五冶拥有专业的物资设备公司和集采中心，在上海、天津、昆明、连云港、喀什、二连浩特等地成立办事处，在赞比亚、哈萨克斯坦、印度尼西亚、刚果（金）等地派驻现场服务人员，提供物资采购、包装运输、集港、商检、报关、收汇、核销、出口退税、清关于一体的标准化国际贸易服务；公司大力推行集中采购，实行“管办分离、招采分离”，强化标准化管理，统筹国内、国际两个市场，整合优质资源，保证采购质量。以信息化手段实施全过程跟踪管理，提高采购效率。采取“统谈统签”模式，降低采购成本；公司持续强化国际贸易服务，为客户提供揽货订舱、托运仓储、装货运输、报关报检报验、货物保险、单证制作、运输代理和咨询及相关业务，满足客户精细化、专业化、个性化需求。业务范围覆盖东南亚、中亚、中东、东欧、南美、北非及中南部非洲等20余个国家和地区，累计服务20余个海外项目，发运集装箱超12000个，大中型设备超过1000台套，散货超31万吨。

The 15MCC has a professional material and equipment company and acquisition center, set up the offices in Shanghai, Tianjin, Kunming, Lianyungang, Kashgar, Erenhot and other cities, and has sent field service personnel in Zambia, Kazakhstan, Indonesia, Democratic Republic of Congo and other places, providing standardized international trade services including material procurement, packaging, transportation, congregation of goods, commodity inspection, customs declaration, foreign exchange collection, verification, export tax refund and clearance. The company vigorously promotes centralized procurement, implements "separation of management and running, separation of bidding and procurement", strengthens the standardized management, coordinates the domestic and international markets and integrates high-quality resources to ensure the quality of procurement. The company implements the whole process tracking management by information means to improve procurement efficiency. It adopts "unified negotiation and signing" mode to reduce procurement costs; the company continues to strengthen international trade services, providing customers with cargo canvassing, booking space, consignment, warehousing, loading, transportation, customs declaration and inspection, cargo insurance, document production, transportation agency and consulting and related services to meet refined, specialized and personalized requirements of customers. The businesses of the company cover more than 20 regions and countries in Southeast Asia, Central Asia, Middle East, Eastern Europe, South America, North Africa and Central and Southern Africa; the company has undertaken more than 20 overseas projects, shipped more than 12,000 containers, more than 1,000 sets of large and medium-sized equipment, and more than 310,000 tons of bulk cargo.

TALENT TEAM

人才队伍

中国十五冶拥有一支专业技术门类齐全、经验丰富、具有开拓创新精神的技术队伍和管理团队，现有机电、建筑、水利水电等专业注册壹级建造师225人，注册壹级造价师76人，注册安全工程师45人，高级会计师17人，高级经济师12人。其中硕士及以上学历112人，高级及以上工程师人员123人，为电力业务发展提供坚实支撑。

公司近年来不断引进高端人员，大力开展社会招聘，面向社会公开招聘各类中高端人才，引进了一批博士。为新能源开发及研究板块成立了能源电力组，光伏储能组。注重员工培训，强化校企合作，共建“研究生联合培养基地”，开展电力等相关专业工程硕士联合培养。

公司拥有一支适用于自身施工特点的电力施工队伍，采取自有班组、专业分包和劳务分包等模式灵活配置。现拥有产业工人12189人，其中自有工人566人，外聘工人11623人，含属地化工人7565人。主要涉及工业建筑、机电管安装、仪表调试等，工种涵盖电工、钳工、焊工、铆工、管道工、起重工等。

The 15MCC has an very experienced and innovative technical and management team, including 225 first-level registered constructors in mechanical and electrical, construction, water conservancy and hydropower and other specialties, 76 first-level registered cost engineers and 45 registered safety engineers, 17 senior accountants and 12 senior economists. Among them, there are 112 people with master's degree or above, and 123 senior engineers, providing a solid support for the development of our power business.

In recent years, the company has continuously introduced high-end personnel, vigorously carried out social recruitment, openly recruited all kinds of high-end talents, and introduced a group of doctors. The company has set up the energy power group and photovoltaic energy storage group for the development and research of new energy. The company highlights staff training, and strengthens the cooperation between colleges and universities and enterprises to build a "graduate joint training base" for the joint training of engineering masters in electric power and other related specialties.

The company has a power construction team suiting its own construction characteristics, and adopts the flexible configuration modes of internal teams, professional subcontracting and labor subcontracting. At present, the company has 12,189 industrial workers, including 566 internal workers, 11,623 external workers, including 7,565 local workers, mainly involved in industrial construction, mechanical and electrical pipe installation and instrument, commissioning, etc., and types of work such as electricians, fitters, welders, riveters, plumbers, and lifting workers.

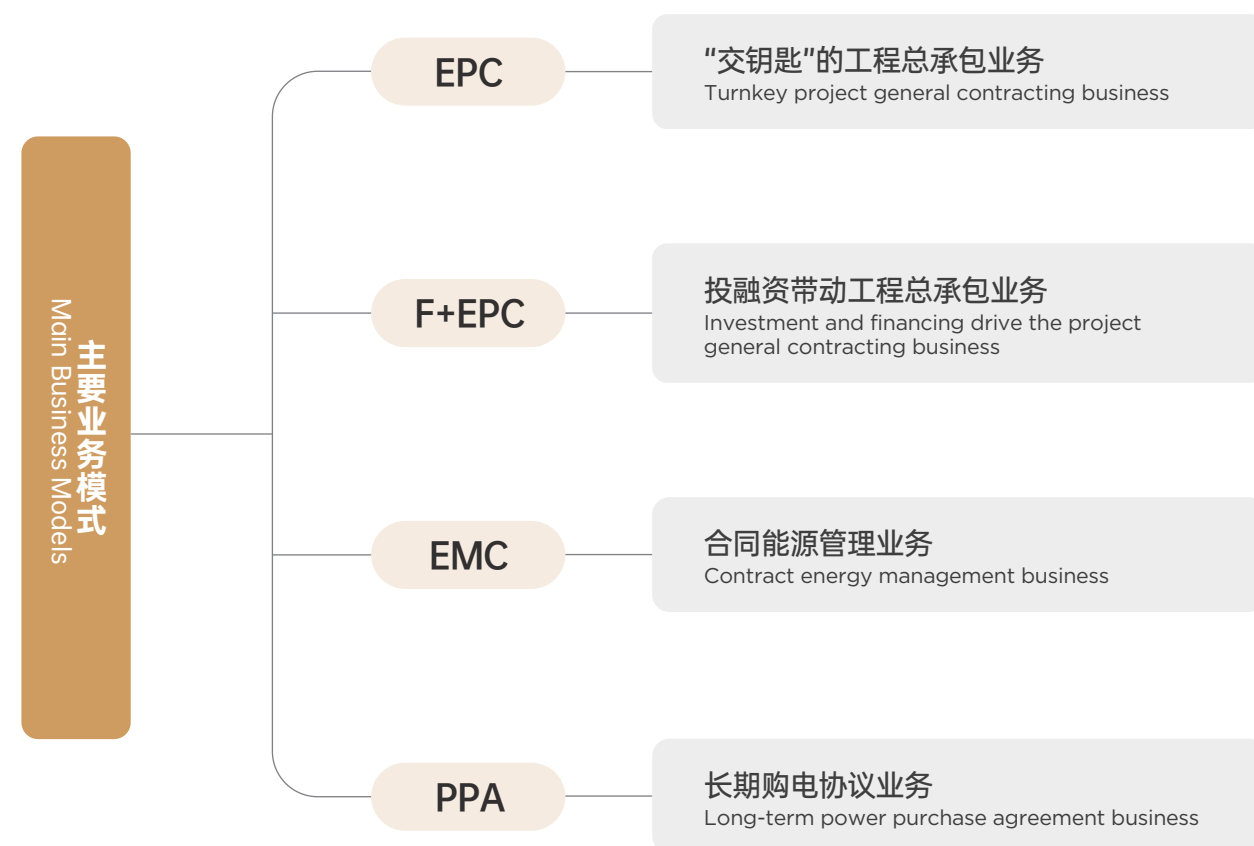


BUSINESS MODEL

商业模式

中国十五冶积极探索、拓展业务模式，为客户提供全方位综合服务，实现从传统施工模式到工程总承包模式的转变。为客户创造更多合作可能。在电力建设领域提供EPC、F+EPC、EMC、PPA等综合解决方案。

The 15MCC has actively explored and expanded the business models to provide customers with comprehensive services, and realize the transformation from the traditional construction mode to the general contracting mode. Besides, we provide EPC, F+EPC, EMC, PPA and other solutions for power construction.



MANAGEMENT INNOVATION

管理创新



中国十五冶结合企业实际大力推动管理创新，不断提升企业治理能力和管理水平。持续强化体系建设，建立健全管理体系，推行标准化管理。建立纵向贯通、横向协同、动态调整的一体化公司管理体系，按照“统一体系、分级授权、分级操作”思路，推行以“模块化、流程化、表单化”为特征的标准化管理；持续强化项目管理，坚持法人管项目，全面推行项目策划制和项目目标管理责任制，实行“分资制”管理，强化合约商务管理，加大项目激励约束，不断夯实项目经理部，确保项目履约和风险受控；持续强化科学管理，坚持系统观念，采用“系统和思维+结构化方法”指导推进工作，坚持问题导向、目标导向、结果导向，注重工作结果、效果、成果，不断提升决策质量、管理效率。

The 15MCC has vigorously promoted the management innovation in accordance with the actual situation of the company to constantly improve the corporate's governance capabilities and management level. The company continues to strengthen the construction of the system and establishes a sound management system for standardized management. The company has established a through, coordinated and dynamic integrated management system, based on the idea of "unified system, hierarchical authorization, hierarchical operation", implementing the "modular, process and form-based" standardized management; continues to strengthen project management, adheres to the model of the project management by the legal person, fully implements the project planning system and project target management responsibility system, implements the "capital allocation system" management, strengthens contracted business management, increases project incentives and constraints, and constantly consolidates the project management department to ensure project performance and risks under control; continues to strengthen scientific management, adheres to the system concept, adopts the "system and thinking + structured method" to guide and promote the work, adheres to the problem-orientated, goal-orientated and result-orientated principle, emphasizes the results, effects and achievements, and constantly improves the decision-making quality and the management efficiency.

