



中国石化  
SINOPEC

創建世界  
一流工程公司

Build a World-Class  
Engineering Corporation



中石化炼化工程（集团）股份有限公司  
SINOPEC ENGINEERING (GROUP) CO.,LTD.

股票代码：2386  
Stock: 2386

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## 公司概况 CORPORATE PROFILE



中石化炼化工程（集团）股份有限公司（简称 SEG）是由中国石油化工集团公司控股的、面向境内外炼油化工工程市场的大型综合一体化工程服务商和技术专利商，是目前国内最大的工程建设企业之一。

Sinopec Engineering (Group) Co., Ltd. (SEG) is a wholly owned subsidiary of the Sinopec Group which focuses on providing integrated engineering service and technical licenser for both the domestic and overseas refining and chemical market. It is one of the biggest engineering enterprises in China.

公司于 2013 年 5 月 23 日在香港联合交易所挂牌交易上市，是国内领先的炼油、石油化工及新型煤化工工程公司，为客户提供覆盖项目投融资、项目咨询和技术许可、工程设计、工程总承包、工程施工、项目试运行及开车和设备制造业务等一站式整体解决方案，业务涵盖炼油、石油化工、新型煤化工、无机化工、医药化工、清洁能源、储运工程、环境工程、公用工程等多个领域，以技术优势和优秀的业绩积累了广泛而稳定的客户基础。在设计和建设大型、复杂的炼油、石油化工及新型煤化工项目方面拥有强大的执行能力，在国际工程市场上具有卓越竞争力。

SEG got listed on Hong Kong Stock Exchange on May 23, 2013 and is a leading engineering company in refinery, petrochemical and new coal-to-chemical industries, providing one-stop total solutions for project financing, consultancy and technical licensing, engineering design, EPC contracting, construction, project commissioning, start-up and equipment manufacturing business in such sectors as refinery, petrochemical, new coal-to-chemicals, inorganic chemicals, pharmaceutical chemicals, clean energy, logistics, environmental engineering and utilities. SEG has established a wide and stable customer basis by reliance upon its technology capability and unrivalled track record. SEG boasts of its strong capability in performing design and construction of large-scale and complicated refinery, petrochemical and new coal-to-chemical projects and outstanding competitiveness in the international engineering market.

公司始终秉承绿色低碳发展理念，依托技术创新，努力发展节能环保、生物及非常规能源业务，为社会提供高价值服务，致力于建设更美好的世界。

By following a concept of development being friendly to environment, SEG has always striving to develop, through its technical innovation, energy conservation, environmental protection, biological and unconventional energy businesses so as to provide more high-value service and build a more beautiful world for everybody.

## 企业愿景 OUR VISION

### 创建世界一流工程公司

#### 企业核心价值观

人本 责任 诚信  
精细 创新 共赢

#### 企业使命

中国石化为美好生活加油  
共建共享 SEG 美好家园

### Build a world-class engineering corporation

#### Our core values

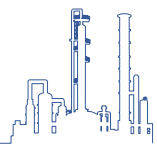
People Responsibility Integrity  
Excellence Innovation Win-win

#### Our mission

Better energy for better living  
Create a most desirable workplace







# 发展战略 DEVELOPMENT STRATEGY



 **能化为本**  
Based Upon Energy and Petrochemical

- 立足于石油化工领域，突出发展炼油、石油化工、天然气和煤化工业务

Based Upon Energy and Petrochemical, based on the petroleum chemical industry, giving prominence to refining, petrochemical, natural gas and new coal chemical business

- 利用多年积淀的人员、技术、管理等优势开发新型领域，通过合资合作、兼并重组手段发展生物及非常规能源、环保节能等业务

By advantages years of accumulation about talent, technology, management experience to develop new fields, through the means of joint venture and cooperation, mergers and reorganization to develop bio-energy and nonconventional energy, environmental protection and energy conservation business

 **创新驱动**  
Be Innovation-driven

- 构建以技术创新为核心的创新体系

Establishing an innovation system centered on technology innovation

- 以创新引领市场拓展，以创新增强竞争实力，以创新促进价值提升

Enabling innovation to lead market expansion, sharpen competitive edge and enhance value improvement

 **全球发展**  
Go Global

- 立足国内，开拓海外，相互促进，协同发展

Relying on domestic business while expanding overseas; Creating mutually reinforcing effect and synergy between domestic and overseas markets

- 领先的运营管理、项目管理、技术管理体系和信息化系统，支撑国际化项目规范运营

Supporting standard operation of international projects with leading operation management, project management, technology management system and IT system

 **价值聚焦**  
Focus on Value

- 以客户为中心，提供高价值服务，实现与客户共赢

Remaining client-oriented, offering high-value services and producing win-win results for SEG and the clients

- 确保股东价值、客户价值、社会价值和员工价值的统一性，实现整体价值最大化

Ensuring the unity of shareholder value, client value, social value and employee value and maximizing the overall value





# 发展历程

## OUR HISTORY

### 1950s

- 开始在中国开展炼油和化工行业的设计、咨询和施工业务  
Began to engage in the engineering, consulting and construction businesses in the domestic oil refining and chemical sector
- 建成中国第一个炼油工厂  
The first refinery complex in China was built by SEG
- 设计中国第一个石油化工工厂  
The first petrochemical complex in China was designed by SEG
- 建成中国第一条青霉素生产线  
The first penicillin production line was built in China

### 1960s

- 设计建成中国第一套流化催化裂化装置、催化重整装置、延迟焦化装置等炼油装置  
The first fluid catalytic cracking plant, catalytic reforming plant and delayed coking plant and other refining facilities in China were designed and built by SEG
- 设计中国第一套乙烯装置  
The first ethylene complex in China were designed by SEG

### 2009

- 完成第一个炼化一体化工程总承包项目——福建炼油乙烯一体化项目  
Refining and Ethylene Complex, which was the first of oil refining and integrated petrochemical project on EPC basis was completed
- 建成包括目前国内最大处理量的单系列炼油装置在内的惠州 1200 万吨 / 年炼油装置  
Construction of A 12 MTA refinery Refining Complex with a biggest single-train in China was completed
- 建成当时国内规模最大的百万吨级乙烯装置——天津炼油和乙烯一体化项目（1,000 万吨年炼油和 100 万吨 / 年乙烯）  
Construction of the ethylene complex with biggest capacity, i.e., Tianjin integrated refining and chemical project (10 MTA refinery and 1000KTA ethylene) in China was completed
- 建成中国第一套汽电联产 IGCC 装置——福建炼油石化有限公司 260 兆瓦汽电联产 IGCC 装置  
Construction of the first IGCC plant in China, i.e., the 260 MW steam-electricity cogeneration IGCC unit in Fujian Refining & Petrochemical Co., Ltd. was completed
- 完成在中东地区的第一个世界级规模的工程总承包项目——沙特延布 50 万吨 / 年聚烯烃项目  
Construction of Saudi Yanbu 500KTA polyolefin project, our first world-class EPC project in the Middle East region was completed

### 1980s

- 开始在中国开展炼油和化工行业的装备制造业务及环境工程领域的设计业务  
Began to undertake equipment manufacturing business in the oil refining and petrochemical sector in China and perform design in the domestic environmental engineering sector
- 设计建成中国当时单系列最大的炼油厂  
The biggest refinery in terms of single trains in China was designed and built by SEG
- 设计中国第一套同轴式催化裂化装置  
The first coaxial catalytic cracking plant in China was designed
- 承接第一个工程总承包项目  
The first EPC contract was awarded to China
- 完成第一个海外项目——孟加拉古拉萨尔化肥厂的施工  
SEG completed its first overseas project-construction of Gulasar fertilizer plant in Bangladesh

### 1970s

- 设计建成中国高海拔地区第一条成品油长距离输油管线  
The first long-distance pipeline for oil product transmission in high altitude areas in China was designed and built by SEG
- 完成了北京石油化工总厂及齐鲁第二化肥厂等一批大型乙烯、化纤、化肥重点项目  
SEG participated in a group of large-scale ethylene, chemical fiber and chemical fertilizer projects, including Beijing Petrochemical Complex and Qilu Second Chemical Fertilizer Plant etc.

- 承接哈萨克斯坦共和国第一个大型石化一体化项目——哈萨克斯坦石化工业股份公司 IPCI 项目  
Contractor of IPCI project in Kazakhstan Petrochemical Industry Inc. which is the first large-scale integrated petrochemical complex in the country
- 建成中国目前最大的煤液化项目及世界上第一套采用煤直接液化方法生产成品油的商业化示范项目——神华煤直接液化项目（1.08 百万吨 / 年成品油）  
The construction of Shenhua Direct Coal Liquefaction Project (with processing capacity of 1080KTA for refined oils) was completed. It is also the largest coal-liquefaction project in China to date and the first commercial demonstration project in the world to produce refined oil products by using direct coal liquefaction technology

### 2011

### 2010

- 全球第一套煤制甲醇制烯烃大型化工工业装置——神华集团煤制烯烃项目正式投产。该项目采用中科院大连化物所、陕西煤业化工集团有限责任公司及我们共同开发的甲醇制烯烃技术建设  
The first large-scale olefin plant using methanol produced from coals, i.e., the coal to olefin project in Shenhua Group was officially put into operation. The project was constructed by using the methanol to olefin technology jointly developed by Dalian Institute of Chemical Physical, Chinese Academy of Sciences, Shaanxi Coal Chemicals Group LLC and SEG

### 1990s

- 设计中国第一批国家战略石油储备库中的黄岛油库项目  
Huangdao Terminal project in the list of China's first national strategic terminals for petroleum reserve was designed by SEG
- 完成国际石油化工工程总承包项目——科威特阿赫迈迪 3 千万吨 / 年的炼油储备项目  
A refinery restoration project (30 MTA) for Kuwait Al Ahmadi Refinery, an international EPC petrochemical project was completed by SEG

### 2001

- 联同两家国际承包商承接中国第一个采用 PMC 管理模式的大型石油化工项目——中海壳牌石油化工有限公司南海石化项目  
Undertook the CNOOC-Shell Nanhai Petrochemical Complex, which was Chinese first large-scale petrochemical project adopting the PMC model, together with two international contractors

### 2015

- 中石化重型起重运输工程有限责任公司挂牌成立  
Sinopec Heavy Lifting & Transportation Co., Ltd. set up
- 成立中石化炼化工程（集团）股份有限公司洛阳技术研发中心  
SEG Research and Development Center of Engineering Technology set up
- 与西班牙 TR 公司、韩国韩华公司共同组成的联合体成功中标科威特新炼厂项目一包  
a consortium consisting of SEG, Spanish TR Co and Korea Hanwha Co was awarded the contract for No 1 package in a new refinery in Kuwait

### 2012

- 中石化炼化工程（集团）股份有限公司重组  
SINOPEC Engineering (Group) Co., Ltd. was organized

### 2005

- 当时中国最大规模的乙烯装置——上海赛科 90 万吨 / 年乙烯装置开车成功  
The ethylene complex with max processing capacity in China then, i.e., Shanghai Secco 900KTA ethylene complex started up successfully

### 2006

- 完成首次承接的 LNG 低温罐施工项目——中海壳牌石油化工在中国广东的 3 台 16 万立方米 LNG 低温罐安装项目  
The first LNG cryogenic tank construction project, i.e., the installation of three 160,000 cubic meters LNG cryogenic tanks for CNOOC Shell Petrochemicals in Guangdong, China was completed

### 2007

- 开始大规模从事清洁能源领域的业务  
SEG began to engage itself in businesses in clean energy sector on a large scale
- 设计我们的第一个气体净化工程总承包项目——四川普光天然气净化厂  
SEG completed its design for Sichuan Puguang Natural Gas Purification Plant, also the first EPC-based gas purification project performed by SEG

- 成立中石化炼化工程集团土壤治理中心  
SEG Soil Treatment Center set up
- 收购中石化节能技术服务有限公司  
Acquisition of Sinopec Energy Management Co., Ltd.

### 2017

### 2016

- 成立 SEG 教育培训中心  
SEG Education and Training Center set up

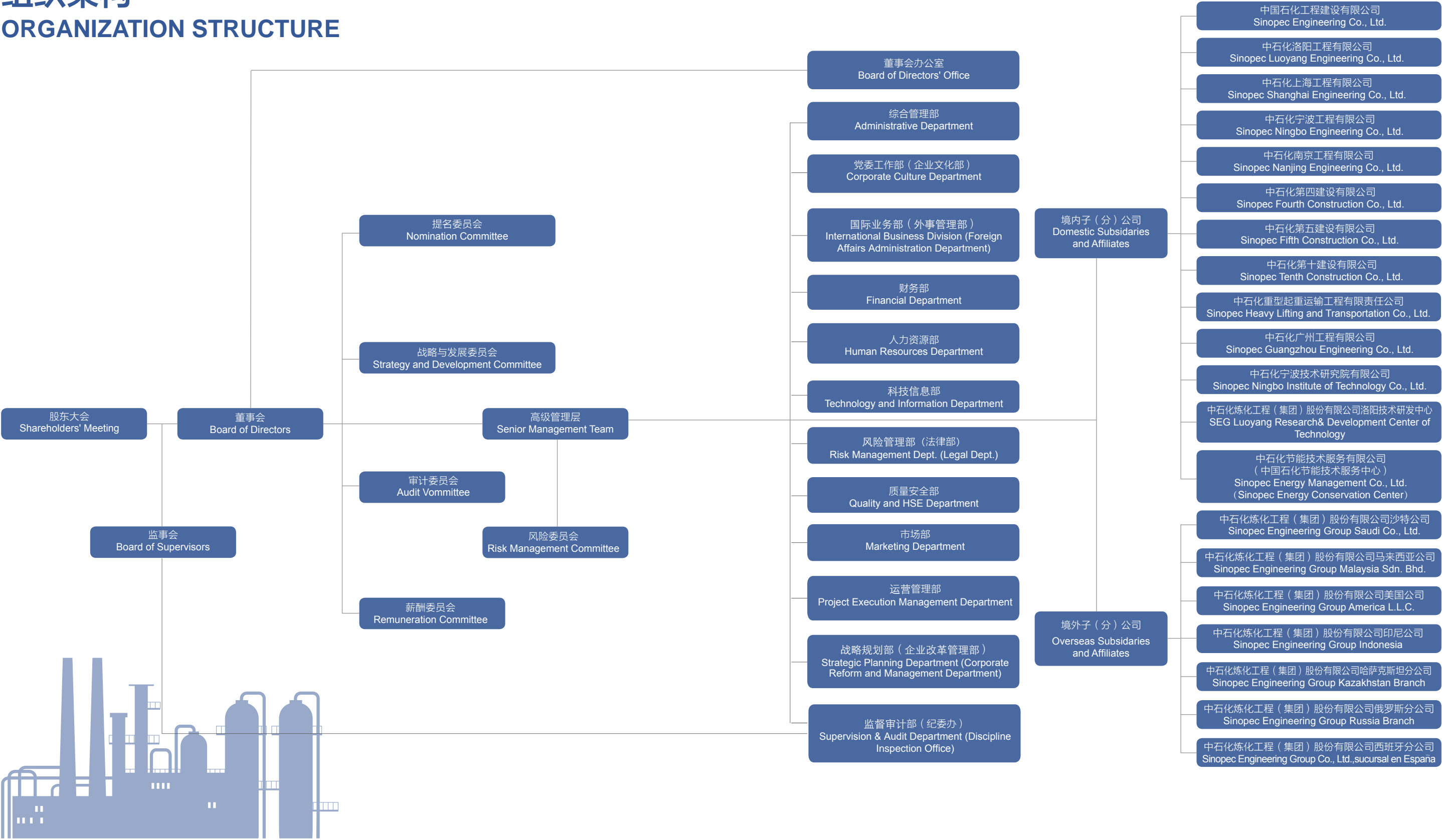
### 2013

- 中石化炼化工程 H 股于香港联合交易所主板挂牌上市，股票代码为 2386  
Had its "H" shares listed on the Hong Kong Stock Exchange. Code of share: 2386
- 承建中国石化炼化业务板块第一个海外直接投资建设项目——新加坡 8 万吨 / 年润滑油脂项目正式竣工投入营运  
The 80KTA lubricating grease project in Singapore, i.e., the first overseas direct investment for refining and chemical business segment in Sinopec undertaken was completed and officially put into operation
- 承建国内单产能最大的煤制氢装置——茂名石化 20 万标立 / 小时煤制氢装置历时 25 个月建成中交  
The biggest domestic coal to hydrogen plant in terms of unit capacity undertaken the 0.2 million Nm<sup>3</sup>/h coal to hydrogen plant in Maoming Petrochemical completed its 25-month construction and witnessed its interim handover



组织架构

ORGANIZATION STRUCTURE





# 业务概览

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# 核心竞争力 CORE COMPETITIVENESS



能够为客户提供完整覆盖项目完整生命周期的一站式整体解决方案，具有覆盖项目投融资、咨询和技术许可、工程设计、工程总承包、工程施工、项目试运行及开车和设备制造业务的一体化产业链，满足客户的全方位需求。

Provide customers with packaged one-stop total solutions covering the whole life span of a project for integrated industry chain consisting of project financing, consultancy and technical licensing, engineering design, project EPC, construction, project commissioning, start-up and equipment manufacturing business so as to meet customer's requirements in all facets.

## 设计、咨询和技术许可 Design, consultancy and technical license

设计和咨询在公司业务中处于核心地位，涵盖了项目前期工作阶段、定义阶段和实施阶段的多种设计和咨询服务（包括总体规划、方案研究、项目环境影响评价、可行性研究、项目申请报告、工艺包设计、总体工程设计、基础工程设计、详细工程设计以及项目管理承包），服务于炼油、石油化工、新型煤化工、医药化工及其他行业客户。

Design and consultancy has been the core of our business, covering various design and consultancy services (including overall projecting, schematic study, project EIA, FSR, project application report, process package design, overall engineering design, BED, DED and PM contractor) in project front-end stage, definition stage and execution stage and providing services for customers in sectors including refinery, petrochemical, new type of coal to chemicals and pharmaceutical etc.



我们拥有工程设计综合甲级资质、工程咨询单位甲级资质、工程造价咨询企业甲级资质、项目环境影响评价资质和特种设备设计资质。拥有设计和咨询服务所必备的成套技术和专业技能及先进的软件工具。设计专业配套齐全，涵盖工艺、配管、设备、自控、电气、建筑、结构、总图、环保、储运、信息工程、工程造价等 26 个专业，拥有 5900 余名业务能力强、具备执业资格的专业设计和咨询业务人员。

We are Class A general engineering designer, Class A petrochemical engineering designer, engineering consultant and engineering cost consultant. Besides, we are also qualified in performing project EIA and design for special equipment items. We boast of our packaged technology, expertise and advanced software tools as required for performing design and consultancy service. Our business covers a comprehensive range of over 26 disciplines for design covering process, piping, equipment, automatic control, electrical, architecture, structure, plot plan, environmental protection, logistics, IT engineering and engineering cost etc. SEG is staffed by more than 5900 highly competent talents for its professional design and consultancy businesses.



## 工程总承包 EPC contracting

我们提供 EPC 及其它类型的工程总承包服务，能够为千万吨级炼油和百万吨级乙烯等大型、复杂项目提供自工艺包设计至开车试运行的全流程服务。

We provide EPC and other types of EPC contracting services. We are capable of providing a full range of services throughout the entire course of engineering and construction projects, ranging from process design packages to commissioning and start-up, for large and complicated projects including 10 million t/a refinery and 1 million t/a ethylene complex.

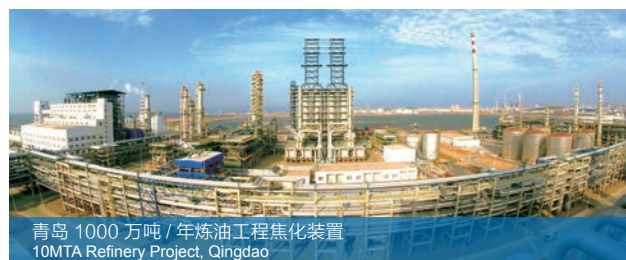


先后承接了国内外众多大型炼油厂和石油化工厂的工程总承包项目，在新型煤化工、医药化工、清洁能源、环境工程等领域承建的工程总承包项目也日益增多。

We have built a number of large refineries and petrochemical plants home and abroad as an EPC contractor. We are also undertaking more EPC projects in sectors including new coal to chemicals, pharmaceutical chemical, clean energy and environmental engineering etc.

工程总承包业务范围涵盖了工程项目的所有过程，包括咨询、设计、项目管理、采购、施工、设备制造、维修维护等，以设计能力为核心，在质量控制、成本控制、进度控制和 HSE 管理方面与项目执行过程中起关键性作用。

Our EPC business covers all processes of a project including consultancy, design, project management, procurement, construction, equipment manufacturing and overhaul and maintenance. Our EPC business focuses on our capability in design, which plays a crucial role in quality control, cost control, progress control and HSE management in the course of project execution.



我们拥有一批富有工程总承包经验的专业人员和管理人员，其中项目经理、项目控制经理、设计经理、采购经理、施工经理和 HSE 经理共计近 2,000 名。

We boast of our technical professionals and managerial who are experienced in performing project EPC, including a total of nearly 2,000 project managers, project control managers, design managers, procurement managers, construction managers and HSE managers.

## 施工 Construction

我们在国内外市场为石油炼制、石油化工、煤化工、医药化工、清洁能源、环境工程、电力工程、储运工程等工业设施的新建、改建、扩建、检修和维修提供施工服务。拥有国家一级施工总承包资质，以及建筑工程专业、设备安装工程专业、管道安装工程专业、储运工程专业、吊装工程专业、电气仪表工程专业、消防设计工程专业、市政工程专业等专业资质。主编或参编了国家及行业的施工技术标准及规范。在专业施工方面，在大型设备的吊装和运输，大型转动设备（压缩机组）的安装、大型储罐的安装、大型集散控制系统的安装和调试、特种材料的焊接等方面拥有突出的专业优势。

We provide construction services for industrial facilities new and under revamp and expansion, overhaul and maintenance for projects including those for oil refining, petrochemicals, CTC, pharmaceutical chemicals, clean energy, environmental engineering, power generation and logistics both home and abroad. We are Class A general construction contractors as certified by the state and are specialized in constructions relating with architecture, equipment erection, pipeline erection, logistics, hoisting, electrical and instrument, fire-fighting design and municipal works. We are editors-in-chief and participated in development of national and industrial standards and codes for construction techniques. With respect to professional construction, we have outstanding advantages over others in lifting and transit of large equipment, installation of large rotating equipment (such as compressor sets), installation of large storage tanks, installation and commissioning of large DCS system and welding of special materials.



依托国际先进的工程管理模式和施工程序，参与国际施工市场，自公司 2013 年上市以来先后完成了 28 个境外施工项目，截止 2017 年末，在建施工项目 18 个。拥有一支专业的施工队伍，经营管理和专业技术人员 7840 余人，焊接、设备安装、吊装、电气、仪表等技能操作技师和高级技师 1000 余人。

have a share in the international construction market. Since going public in 2013, we have completed 28 overseas construction projects and 18 overseas on-going construction projects by the end of 2017. Our professional construction team consists of 7840 operation managerial and professional technical staff and 1000 skilled technicians and senior technicians in welding, equipment installation, lifting, electrical and instrument.



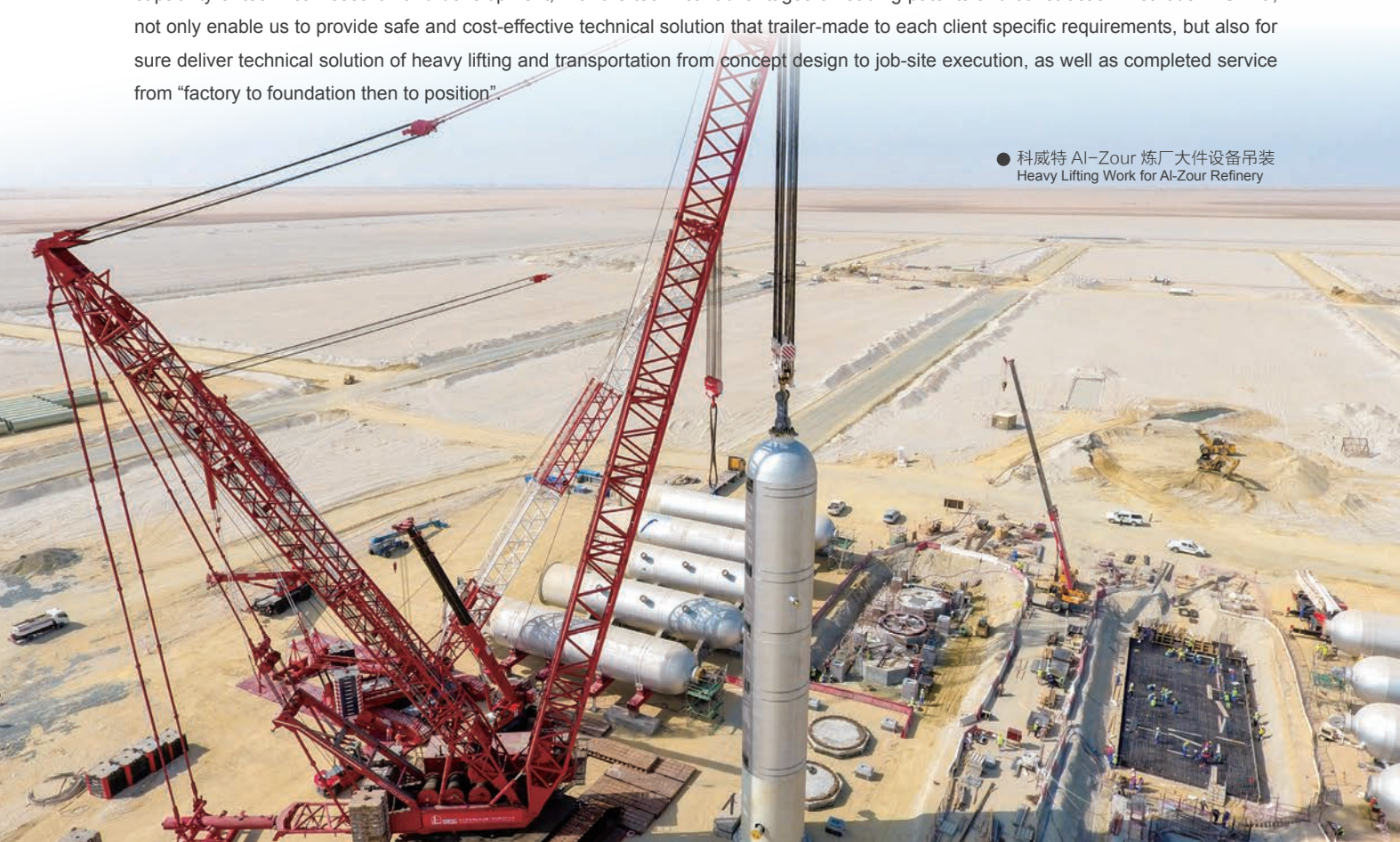
## 重型起重运输

### Heavy Lifting and Transportation

我们拥有以世界起重能力最大的履带式起重机 XGC88000（起重能力 4000 吨）为代表、呈序列化配置、可在全球调遣和运营的现代化起重装备及配套工装机具，3600 吨承载能力的运输资源，凭借强大的技术研发能力，利用在行业内领先的专利、工法等技术优势，为客户提供从概念策划到技术方案再到现场执行的安全、经济的整体解决方案，以及从“工厂到现场再到就位”的完整服务。



We deploys a state of the art fleet featured as modernization (XGC88000, the world biggest crawler crane with lifting capacity of 4000 tons), serialization and globalization (flexible mobilization and operation on the worldwide basis), owns types of transportation resources with more than 3600 Tons of carrying capacity as well as multiple serial of equipment and auxiliary tools. Besides, Based on the strong capability of technical research and development, with the technical advantages of leading patents and construction methods in China, not only enable us to provide safe and cost-effective technical solution that trailer-made to each client specific requirements, but also for sure deliver technical solution of heavy lifting and transportation from concept design to job-site execution, as well as completed service from “factory to foundation then to position”.



## 设备制造

### Equipment manufacturing

我们是中国炼油和化工大型静设备的主要制造商和供货商之一，生产和销售各种大型静设备。主要产品包括塔器、反应器、容器、换热器等压力容器设备，以及钢结构、压力管道、工业炉模块等零部件。压力容器设备制造能力达 40 千吨 / 年，钢结构制造能力达 30 千吨 / 年。除生产和销售设备外，我们也提供相关服务，包括设备技术咨询、安装和测试，以及设备检修和维修。

We are main manufacturers and suppliers engaged in production and sale of large static equipment in the domestic refinery and chemical sector. Our main product slate covers columns, reactors, vessels, heat exchangers, other pressure vessels and parts to steel structure, pressure pipelines and industrial furnaces. Our manufacturing capacity in pressure vessel and steel structures is at 40KTA and 30KTA respectively. Apart from the above, we also provide relevant services, including equipment-related technical consultancy, erection and test and overhaul and maintenance etc.

在技术方面，我们拥有大型焦炭塔反应器等专有设备技术，并拥有下料、焊接、热处理、稳定性试验、疲劳分析等方面多项专利和专有技术。拥有先进的机械加工、成型、焊接、热处理、无损检测、理化检验等设施。具有 ISO9001 证书，HSE 证书，A1、A2、A3 类压力容器设计资格证及制造资格证，ASME “U”、“U2”、“S” 钢印设计制作证等资质。In technical respect, we own proprietary technology for large coke column as well as patents and proprietary technology in material cutting, welding, heat treatment, stability test and fatigue analysis etc. Various producers own advanced facilities for machining, forming, welding, heat treatment, NDT and physic-chemical test. Separate procedures involved in production process are joined together via construction of project service management system so as to improve rapid response and resolution of findings identified therein. With ISO9001 certificate, HSE certificate, A1, A2, A3 class pressure vessel design qualification certificate and manufacturing qualification certificate, ASME "U", "U2", "S" stamp design qualification certificate.

我们是埃克森美孚、沙特基础工业公司、壳牌、英国石油、巴斯夫等跨国能源化工公司以及福斯特惠勒、福陆、塞班、CB&I 等国际工程公司的供货商。设备相继出口沙特、印度、孟加拉国、越南、泰国、澳大利亚、葡萄牙等国家。

We are suppliers to multinational energy and chemical companies including ExxonMobil Corporation, SABIC, Shell, BP and BASF, as well as international engineering companies including Foster Wheeler AG, Fluor Corporation, Saipem and CB&I. Our equipment has been exported to countries including Saudi Arabia, India, Bangladesh, Vietnam, Thailand, Australia and Portugal etc.





## 业务领域 OUR BUSINESS

### 石油炼制 Oil refining

- 大型（尤其是千万吨级大型）炼油工艺和工程技术  
Large (especially 10 MTA) refinery and engineering technology
- 处理重劣质、含硫、高含酸原油炼厂的工艺和工程技术  
Process and engineering technology in processing heavy crude oils with inferior quality and high sulfur and acid content
- 生产高品质油品的技术  
Technology for producing high-quality oil products

#### 代表业绩 Representative Performance



#### 惠州

1200 万吨 / 年炼油项目（高酸油作为原料）——目前国内单套生产规模最大的常减压装置

Huizhou 12 MTA refinery project (crude oil with high acid content as feedstock)——the biggest domestic AVD plant in terms of single set



#### 青岛

青岛 1000 万 吨 / 年炼油项目（高硫油作为原料）——国内第一个单系列年产量千万吨级炼油装置

Qingdao 10 MTA refinery project (crude oil with high sulfur content as feedstock)——the biggest domestic 10 MTA refinery plant in terms of single train



#### 镇海

1000 万吨 / 年炼油项目

Zhenhai 10 MTA refinery project



#### 海南

800 万吨 / 年炼油项目

Hainan 8 MTA refinery project

### 石油化工 Petrochemicals

- 大型化工工程（尤其是百万吨级大型乙烯）工艺和工程技术  
Process and engineering technology for large (especially 1000KTA ethylene) chemical projects
- 炼化一体化工程技术  
Engineering technology for integrated refining and chemicals projects

#### 代表业绩 Representative Performance



#### 天津

100 万吨 / 年乙烯项目  
Tianjin 1000KTA ethylene project



#### 镇海

100 万吨 / 年乙烯项目  
Zhenhai 1000KTA ethylene project



#### 茂名

100 万吨 / 年乙烯改扩建工程  
Maoming 1000KTA ethylene revamp and expansion project



#### 福建

一体化 80 万吨 / 年乙烯项目  
Fujian integrated 800KTA ethylene project



#### 上海赛科

90 万吨 / 年乙烯项目  
Shanghai Secco 900KTA ethylene project



## 替代石油能源

### Alternative energies for petroleum

- 煤气化、煤制合成气、煤制甲醇、甲醇制烯烃、天然气净化、天然气转化制液体燃料、煤替代石油制化学品、生物航煤与生物柴油技术、大型 LNG 储运设施  
Technology for coal gasification, coal to synthesis gas, coal to methanol, methanol to olefin, NG purification, NG conversion to liquid fuels, coal to chemicals in place of petroleum, bio-aviation kerosene and bio-diesels, large logistic facilities for LNG
- MTO 工艺技术  
Development or involved in development of MTO process technology

#### 代表业绩 Representative Performance



#### 鄂尔多斯

中天合创煤炭深加工项目——目前世界上最大的煤制烯烃项目  
The biggest coal to olefin project currently in the world——  
Zhongtianhechuang Erdos coal deep processing project

神华煤制油（煤直接液化 108 万吨 / 年和间接液化 18 万吨 / 年）项目  
Shenhua Erdos coal to liquefaction (direct coal liquefaction, 1080MTA and 180KTA indirect liquefaction) project



#### 扬子石化

扬子石化日产 168 万标准立方米 / 天煤制氢项目  
1.68 million Nm<sup>3</sup>/d coal to hydrogen project in Yangzi Petrochemical



#### 神华包头

神华包头 60 万吨 / 年 DMTO 项目  
Shenhua Baotou 600KTA DMTO project



#### 安庆

安庆 2000 吨 / 天粉煤气化项目  
2,000 t/d pulverized gasification project in Anqing

## 医药化工

### Pharmaceutical chemical

- 生物发酵和化学合成  
Biological fermentation and chemical synthesis
- 天然药物提取技术  
Extraction technology for natural medicines
- 医药洁净工程技术  
Pharmaceutical purification engineering technology

#### 代表业绩 Representative Performance



#### 苏州

诺华医药中间体及研发项目  
Suzhou Novartis pharmaceutical intermediate and development project



国家新药筛选中心和国家上海新药安全评价研究中心  
Projects for national new medicine screening center, national Shanghai New Medicine Safety Assessment and Research Center



#### 华北制药集团

1500 吨 / 天青霉素生产线  
North China Medicine Group 1500t/d penicillin production line



自行设计中国第一套年产千吨级维生素 C 生产装置，被誉为中国抗生素摇篮的第一个青霉素项目，以及规模为年产 30000 升的单克隆抗体生产线项目  
The first 1000 t/a domestic vitamin C production plant independently designed by SEG, which is praised as the cradle of domestic antibiotics and production line project for monoclonal antibody with a capacity of 30,000 liter/a



## 无机化工 Inorganic chemicals

- 硫酸、磷肥、磷复肥  
Advanced technology in traditional projects for sulfuric acid, phosphate fertilizer
- 硫酸低位热能回收技术  
Recovery of lower grade energy for sulfuric acid technology

### 代表业绩 Representative Performance



#### 云南磷复肥基地股份有限公司

80 万吨 / 年硫磺制酸项目  
800KTA sulfur-for-sulfuric acid project in Yunnan Phosphate and Compound Fertilizer Base Co., Ltd.



#### 江西铜业股份有限公司

年产 40 万吨 / 年硫铁矿制酸项目  
400KTA pyrite-for-sulfuric acid project in Jiangxi Copper Industry Co., Ltd.



#### 贵州开磷（集团）有限责任公司

60 万吨 / 年磷酸项目  
600KTA phosphate acid project in Guizhou Kailin (Group)



#### 湖北宜昌斯帕尔化工有限公司

40 万吨 / 年高浓度磷复肥项目  
400KTA highly concentrated phosphate and compound fertilizer project in Hubei Yichang Spal Chemical Co., Ltd.



## 节能低碳 Energy management and CO<sub>2</sub> emission reduction

### 合同能源管理 Energy management contracting

- 方案开发 技术集成 项目创新 投资运营  
Scheme development, technology integration, project innovation, investment and operation

### 能量系统优化 Energy system optimization

- 用能诊断 整体优化 梯级利用 系统集成  
Energy diagnosis, total optimization, energy step utilization, energy system integration

### 代表业绩 Representative Performance



#### 燕山分公司

苯酚丙酮装置换热网络工艺优化项目  
Optimized project for heat exchanger network of Phenol-acetone Plant in Sinopec Yanshan Company



#### 武汉石化

重整四合一炉强化传热节能技术改造  
Heat transfer enhancement technology energy-saving revamping project for quadruple furnace of continuous reformer in Sinopec Wuhan Company



#### 上海石化炼油部

3# 常减压抽真空系统节能改造  
The Mechanical Vacuum Pumping System Program for the ministry of oil refining 3# CDU Unit in Sinopec Shanghai Company



#### 齐鲁分公司

2# 裂解汽油加氢节能改造  
Energy-Saving Revamping project for 2# Pyrolysis Gasoline Hydrogenation Units of Sinopec Qilu Company



## 清洁能源 Clean energy

四川普光气田天然气净化厂项目是国内第一座大型高含硫天然气净化厂，是川气东送工程的重要组成部分，投入运作时是亚洲第一、世界第二大规模的天然气净化厂。全厂共有 12 个系列天然气处理生产线，每个系列规模为 300 万标准立方米 / 天，总规模达 120 亿立方米 / 年天然气，240 万吨 / 年硫磺。

Sichuan Puguang Natural Gas Purification Plant, is the first large high-sulfur natural gas purification plant in China and an integral part of the Sichuan-to-Eastern-China Natural Gas Transmission Project. It is the largest natural gas purification plant in Asia and was the second largest in the world when it was put into operations. It has a total of 12 NG processing and production lines, each with a processing capability of 3 million normal cubic meters per day, totaling 12 billion Nm<sup>3</sup>/a for NG and 2.4MTA sulfur.

- 全厂共有 **12** 个系列天然气处理生产线  
It has a total of 12 NG processing and production lines
- 每个系列规模为 **300** 万标准立方米 / 天  
Each with a processing capability of 3 million normal cubic meters per day
- 总规模达 **120** 亿立方米 / 年天然气，**240** 万吨 / 年硫磺  
Totaling 12 billion Nm<sup>3</sup>/a for NG and 2.4MTA sulfur



## 储运工程 Storage and Transportation Engineering

### 储备库项目 Reserve base projects

#### 代表业绩 Representative Performance



#### 镇海

500 万立方米储备库  
The 5 million m<sup>3</sup> reserve base in Zhenhai



#### 黄岛

320 万立方米储备库  
Huangdao 3.2 million m<sup>3</sup> reserve base

### 成品油管道项目 The oil product pipeline project

#### 代表业绩 Representative Performance



#### 西南

成品油输运管道项目  
Southwestern oil product transmission pipeline project



#### 珠三角

成品油管道工程  
Product pipeline in Pearl River Delta region



## SEG 在全球 SEG in the global

公司从 1990 年开始进入国际市场，覆盖中东、中亚、亚太、非洲、南美等地区，在科威特、沙特、卡塔尔、哈萨克斯坦、尼日利亚、新加坡、孟加拉国等国家和地区承担了多个炼油和石油化工工程项目，并逐步沿“一带一路”向欧洲、北非等地辐射，取得了良好的国际声誉并形成了固定的客户群，从 2000 年至今在国际工程市场累计完成合同额约 100 亿美元。

SEG began to enter the international market since 1990 covering the Middle East, Middle Asia and Pacific Region, Africa, South America and other regions. It undertakes multiple refinery and petrochemical projects in countries including Kuwait, Saudi Arabia, Qatar, KZ, Nigeria, Singapore and Bangladesh and is extending its business along the “Belt and Road” to Europe and North Africa. Due to its good reputation and customer colony established in the world, SEG has completed a total of about \$10 billion in the international engineering market since 2000.

中东地区以沙特为核心，2009 年完成的沙特延布 50 万吨 / 年聚烯烃项目作为我们在中东市场完成的第一个大型 EPC 项目，深得业主认可，从此在中东市场蓬勃发展。

With Saudi Arabia as the core in the Middle East, SEG completed construction of Saudi Yanbu 500KTA polyolefin project in 2009 as the first large EPC project completed by it in the Middle East market. The project was highly appreciated by its client and has promoted vigorously SEG business development in the Middle East Region.

从 2000 年至今在国际工程市场累计完成合同额约 **100 亿美元**。

SEG has completed a total of about \$10 billion in the international engineering market since 2000.



中亚地区以哈萨克斯坦为核心，2009 年承接哈萨克斯坦阿特劳炼厂芳烃项目，该项目作为哈萨克斯坦共和国第一个大型石化一体化项目完美落地，并于 2011 年再度承接阿特劳炼厂石油深加工项目。

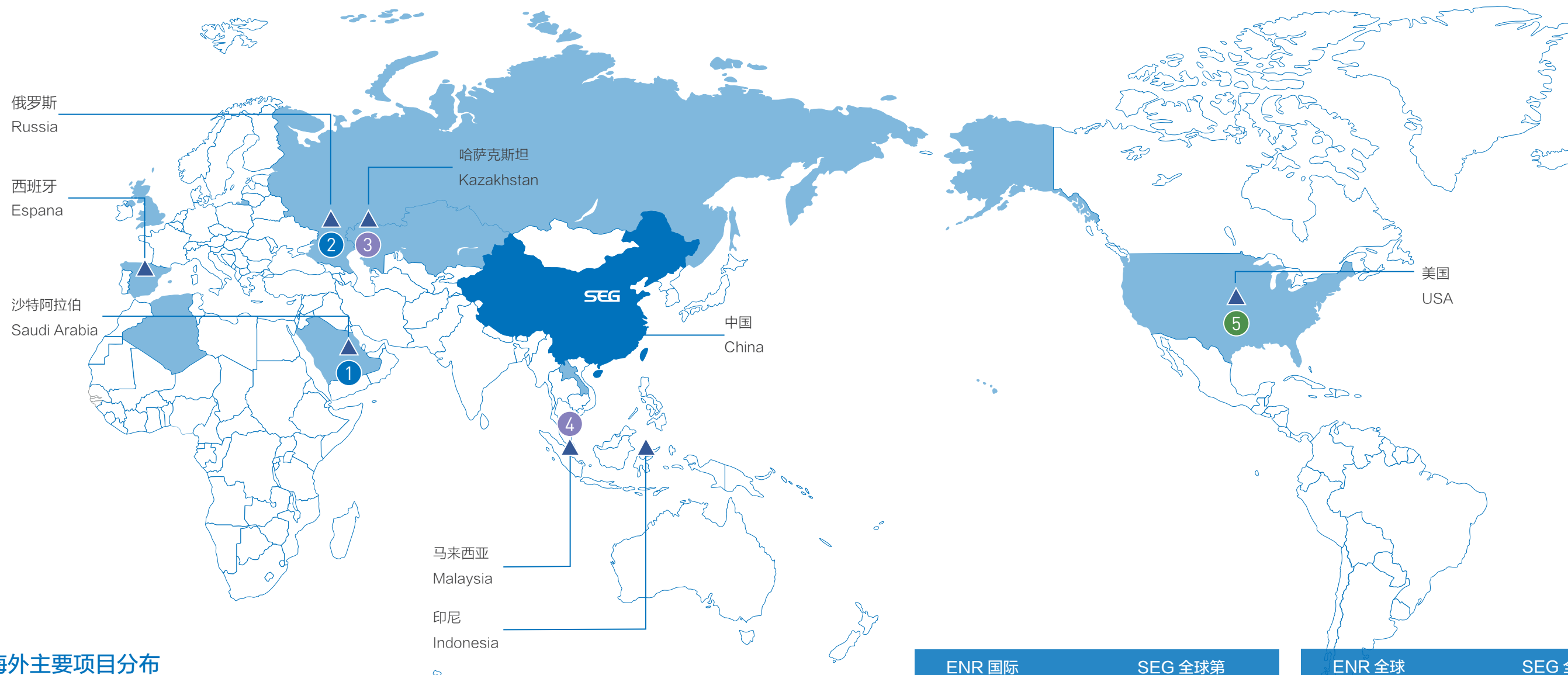
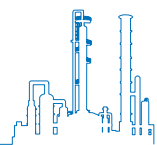
Focusing on Kz in the Middle Asia region, SEG completed construction of the aromatics project in Atyrau refinery in KZ in 2009, which is also the first large integrated petrochemical project performed by SEG in the country. Subsequently, SEG again performed the petroleum in-depth processing project in Atyraul refinery in 2011.

此外，我们相继承接了美国 Jumbo 聚酯项目、马来西亚 RAPID 项目渣油加氢包、泰国聚丙烯项目，实现了美国、东南亚地区以及海外化工项目的突破，与西班牙 TR、韩国韩华共同组成的联合体参建科威特新炼厂项目，是公司目前在中东地区赢得最大的炼化 EPC 工程项目。海外业务增长迅猛，收入持续增大，国际化收入占比逐年增加。

Besides, we also performed projects including the Jumbo polyester project in USA, residue hydrogenation package for Malaysia RAPID project and PP project in Thailand, representing a significant breakthrough in our business development in USA, Southeast Asia and overseas chemical projects. We form a consortium with TR (a company in Spain) Hanwha (a Korea company) to participate in a new refinery project in Kuwait, which is the biggest refining and chemical project on EPC basis we won currently in the Middle East. Our business and operating revenue overseas as well as the share contributed by the income from the international market is growing on YOY basis.







## 海外主要项目分布 Distribution of main overseas project

- ▲ 境外分子公司  
Overseas Subsidiaries and Affiliates
- 1 中东重点项目  
Main projects in the Middle East
- 2 3 哈萨克斯坦重点项目  
Main projects in KZ
- 4 马来西亚重点项目  
Main projects in Malaysia
- 5 美国重点项目  
Main projects in USA

ENR 国际	SEG 全球第	ENR 全球	SEG 全球第
250 强	53 位	150 强	47 名
工程承包商排名		工程设计公司排名	

## 全球数字榜 Rankings in the world

2017 年 ENR 全球 150 强工程设计公司排名，SEG 全球第 47 名，国际 250 强工程承包商排名，SEG 全球第 53 位。  
In 2017, according to ENR's rankings, SEG ranks in the 47th place among the top 150 global design firms and in the 53th place among the top 250 international contractors.

2013 年，SEG 获得穆迪投资者服务公司授予的全球工程类企业获得的最高评级——A2 发行人评级，评级展望为稳定。  
In 2013, Moody's Investors Service assigns issuer rating of A2, the highest rating for global engineering entities in the world, to SEG with the rating outlook at "stable".



# 技术创新

TECHNICAL INNOVATION

技术引领

Technical Leadership

科技奖项

Technical Award





## 技术引领 TECHNICAL LEADERSHIP

我们在石油炼制、乙烯及下游加工、芳烃和新型煤化工等领域拥有一批具有自主知识产权的核心技术，是中国唯一能以自主知识产权成套技术为主体建设大型炼化设施的工程公司。

We owns numerous core technologies with independent intellectual property rights in fields including petroleum refining, ethylene and downstream processing, aromatics and new type of coal to chemicals etc., which renders us the sole and exclusive engineering company to build large-scale refining and chemical facilities by reliance upon its packaged technology with independent intellectual property rights.



拥有中国最高设计资质，工程设计综合甲级资质、化工石油行业工程设计甲级资质、化工石油工程施工总承包特级资质和重要的专业施工资质，以及丰富的专利、专有技术和先进的工法体系，具备同时完成多套千万吨级炼油和百万吨级乙烯的炼油和化工一体化项目能力。

SEG is a Class A domestic designer with large number of patents, proprietary technologies and advanced construction techniques and systems. Being a Class A designer for general engineering design, chemical and petroleum facilities as certified by the state and specially qualified in performing chemical and petroleum construction on EPC basis and specialized important construction activities, SEG stands as one of the few engineering companies being competent for multiple sets of 10 million t/a ethylene and 1 million t/a integrated refinery and chemical projects in China.

在炼油和石油化工装置大型化、一体化以及新型煤化工技术研发上始终保持国内领先地位，核心的技术团队和高端的合作研发平台，为公司的技术开发和项目执行提供了强大支撑。

SEG has been leading in the country in such aspects as large-scale plants, integration and technical R&D in new type of coal to chemical programs. The core technical team and advanced platform for cooperation provides strong support to the corporate technical development and project execution.



拥有一支专业齐全、素质较高的人才团队，国内外用工达 2.29 万人，其中，经营管理人员 0.29 万人，专业技术人员 1.13 万人、技能操作人员 0.35 万人。拥有顶尖的技术团队，包括 3 名中国科学院和工程院院士、5 名国家级设计大师、49 名国家突出贡献专家和享受政府特殊津贴的专家、17 名集团公司高级专家和 3900 余名各专业注册类工程师。

We have a team consisting of fully professional and high-caliber talents. We have retained 22,900 employees both home and abroad. For employees working under contract system, there are 2,900 personnel engaged in business management, 11,300 technical professionals and 3,500 skilled operators. We have a top technical team, including three academicians from Chinese Academy of Science and Chinese Academy of Engineering, 5 national level designers, 49 experts with outstanding contributions to the country and covered by the state's special governmental subsidy system, 17 advanced experts from Sinopec and more than 3900 nationally certified engineers for various disciplines.



## 科技奖项 TECHNICAL AWARDS

截止 2017 年末, 公司拥有专利 2400 余件, 涵盖了炼油、石油化工、新型煤化工、医药化工、清洁能源、环境工程等业务领域。  
By the end of 2017, the company owns 2400 patents, covering refinery, petrochemical, new type of CTC, pharmaceutical chemical, clean energy and environmental engineering etc.

### 获国家级各类科技进步奖励 419 项 (次)

SEG is awarded 419 awards of above provincial (ministerial) levels for the scientific and technological progress it made

- 国家技术发明奖、科技进步奖 11 项 (次)  
11 awards for national technical inventions and scientific and technological progress
- “甲醇制低碳烯烃 (DMTO) 技术” 获 2014 年度国家技术发明奖一等奖  
“The technology of methanol to olefin with low carbon (DMTO)” was awarded first-grade prize for national technical inventions in 2014
- “特大型超深高含硫气田安全高效开发技术及工业化应用” 项目获 2012 年度国家科学技术进步特等奖  
“The technology for safe and highly efficient development of extra-large gas field with high sulfur content and commercial application” was awarded a special prize for national scientific and technological progress in 2012
- “高效环保芳烃成套技术开发及应用” 获 2015 年度国家科技进步特等奖  
“The packaged technology development for highly efficient and environmentally friendly aromatics and application thereof” was awarded a special prize for national scientific and technological progress in 2015
- “极端条件下重要压力容器的设计、制造与维护” 获国家科技进步奖一等奖  
Project of “Design, manufacturing and maintenance of important pressure vessels under extreme conditions” was awarded a first-grade prize for national scientific and technological progress

### 获省 (部) 级技术发明奖、科技进步奖 130 项 (次)

SEG is awarded 130 awards of provincial (ministerial) levels for the scientific and technological progress it made

- “百万吨级煤直接液化关键技术与示范” 获 2011 年度中国煤炭工业科技进步特等奖  
The key technology and demonstration for one million t/a direct coal liquefaction was awarded a special prize of scientific and technological progress in domestic coal industry in 2011
- “高性能甲醇制烯烃 (S-MTO) 成套技术开发” 获得 2013 年度中国石化科技进步特等奖  
The packaged technology development for olefin production by using methanol with high performance (S-MTO) was awarded the prize of scientific and technological progress in Sinopec in 2013
- “芳烃关键技术开发与应用” 获得 2014 年度中国石化科技进步特等奖  
The development and application of key technology for aromatics was awarded the prize of scientific and technological progress in Sinopec in 2014





# 可持续发展

SUSTAINABLE DEVELOPMENT

健康、安全、环境  
HSE

社会责任  
Social Responsibility

企业文化  
Enterprise Culture





# 健康、安全、环境 HSE

## 质量为先 Quality first

我们始终视客户的需求为已任，视工程质量为生命。

We have always taken customer's demand as our mission and engineering quality as our life.

通过严格的质量控制，确保工程每一个环节都符合专业标准。不满足于质量合格，在“质量永远领先一步”的方针指导下，强化科研、完善体系、提升服务，实现质量引领。

We strive to ensure all respects of a project conform to professional standard through strict management. At the same time, SEG has never been satisfied with just being acceptable in quality. Instead, we focus on scientific research and improving the system and services to be a leader in quality as guided by the policy of "Being a leader in quality management".

通过质量管理手册，建立质量控制程序，采用质量控制标准，实施质量监督和管理组织结构，建立项目质量保证体系，为不同业务分部的质量控制体系取得各种 ISO9001 和 ISO9002 系列认证。有近 1000 名人员负责在业务的不同领域进行质量控制，确保高效执行质量保证工作。

We have compiled quality management manuals, established quality control procedures and adopted quality control standards. We have also implemented a quality supervision and management organizational structure set up a project QA system. We have undergone various ISO 9001 and ISO 9002 series accreditations for our quality control systems in our different business segments. Nearly 1,000 employees are responsible for quality control in different segments of our business to ensure QA activities are carried out with high efficiency.

## 安全责任 Security responsibility

安全稳定运营是我们义不容辞的责任，也是我们不懈追求的目标。

It is both our duty and objective to ensure safe and stable operation.

我们高度重视 HSE 工作，建立了一套覆盖生产经营全过程的 HSE 管理制度体系。高度重视安全生产，保障工程本质安全。以 HSE 管理体系为主线，坚持“谁主管、谁负责”的原则，建立完善全员 HSE 责任制，实行一岗一责制和安全生产承诺制，层层落实 HSE 责任。

We attach great importance to HSE and have set up a HSE management system covering the whole production and business process. We stress on production safety to ensure inherent safety of project. By focusing on HSE management and establishing corresponding responsibility systems, an optimized whole-staff HSE responsibility system has established in SEG, where post-specific responsibility system and production safety commitment system are implemented to ensure HSE responsibilities are fulfilled level by level.

我们拥有技术管理、生产经营管理、风险管理、项目管理、健康、安全和环境管理等完整的管理体系，有效地保证了项目执行能力、运行效率、经济效益和持续增长能力。

We have comprehensive systems for technology management, business operation management, risk management and project management and HSE management to enhance our capability in project execution, operational efficiency, economic returns and sustainable growth.

## 绿色低碳发展 Green low-carbon development

作为负责任的大型能源化工工程公司，我们始终高度重视环境保护工作，实施全过程清洁管理，努力实现绿色发展，建设环境友好型企业。加强环保技术科技攻关，努力实现完全达标排放，尽可能减轻对环境的影响。

As a responsible and large energy and petrochemical engineering company, we pay great attention to environmental protection. We strive to seek green development and make our enterprise friendly to the environment. We stress on resolution of key technological issues and work hard to ensure completely on-spec emissions so as to minimize their impact upon the environment.





# 社会责任 SOCIAL RESPONSIBILITY

## 悉心关爱员工 Care for employees

团结进取、务实创新的员工是我们的宝贵资源，支撑着企业的持续发展。我们严格遵守国际、国内的有关公约和法律规定，尊重和维持国际公认的各项人权，严格执行所在地有关劳动用工的法律法规和政策，平等对待各类员工，规范劳动用工管理，建立和谐稳定的劳动关系。

Enterprising and innovative employees are our noble resources and will support to our sustainable development. We strictly adhere to international and domestic conventions, laws and regulations, respect and safeguard all human rights recognized by international community, consciously resist the disregard or violation of human rights. SEG strictly complies with laws and regulations relative to labor and employment, treats different employees equally and standardizes labor and employment management to actively establish a harmonious and stable labor relationship.

我们以促进并维持员工良好的身体状态为目标，一直努力降低工作环境对员工健康的负面影响。从源头控制职业健康危害，切实做好工作场所职业危害因素监测、员工职业健康监护、个体劳动防护用品配备以及职业健康教育与培训等工作。

Aiming at enhancing and maintaining employees' good physical status, we always try to minimize the negative effects to our employees from their working environment. We control the occupational health hazards from the source through monitoring occupational health hazards at working places, monitoring employees' occupational health, providing labor protection articles, offering occupational health education and training, etc.

不断完善特色的培训管理体系，将培训贯穿于员工职业生涯的整个过程，将企业发展与员工成长的需要相结合，丰富培训内容，创新培训方式，为员工的成才不懈努力。

We constantly improve the training management system with distinctive features, make training a indivisible part in employees' whole career, combine the corporate development with their demand for career development, enrich content of trainings, innovate modes of training and devote our efforts unremittingly to the growth and development of employees.



## 竭诚回报社会 Rewards to the society

我们始终坚持取之于社会，回报社会的理念。我们在和谐社区建设、赈灾济危、扶贫纾困、关爱健康、捐资助学以及发展国家体育事业、推动全民健身等方面做出了积极的贡献。

SEG always bears in mind the concept of rewarding society, and have contributed actively in building harmonious communities, disaster relief, poverty alleviation, health care, donation for education and supporting poor students, and helping to promote nation-wide fitness program etc.



SEG 向西藏班戈小学捐赠书籍



SEG 志愿者向北京海淀培智中心学校  
智障儿童捐赠学习用品



SEG 工程建设公司向青海省玉树藏族自治州  
囊谦县吉曲乡中心寄宿校捐赠衣物和文具



SEG 洛阳工程公司扶贫帮困对口单位  
河南省汝阳县三屯镇庙湾村小学



## 企业文化 ENTERPRISE CULTURE

### 品牌形象 Brand image

我们的工程和技术服务得到了国内外大型、特大型石油企业和煤炭企业的认可，承担中国石化、中国石油、中国海油、神华集团、陕西延长和中化集团等单位多个项目的设计与建设，赢得较高的品牌美誉度，培育了战略核心客户群。

The engineering and technical services rendered by SEG were recognized by domestic large and extra-large petroleum and coal enterprises. SEG has won high brand reputation and cultivated a strategic core customer colony through its design and construction of projects in Sinopec, PetroChina, CNOOC, Shenhua Group Shaanxi Yanchang and SinoChem etc.



### 文化理念 Culture concept

我们致力于打造“共建共享 SEG 美好家园”的文化理念，提升品牌核心价值。

It is committed to building a cultural concept to share development of SEG and promote core value of its brands.



## 建设更美好的世界









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