



SHANGHAI
ELECTRIC

再造能源未来

上海电气电站集团

SHANGHAI
ELECTRIC
POWER
GENERATION
GROUP



上海电气
SHANGHAI ELECTRIC



再造能源未来

智慧，是人类不竭的能源

多年来，我们坚持致力于传统能源效能的提升

今天，我们更积极拥抱能源新兴的智能化变革

上海电气电站集团——智慧能源全产业链方案服务商

为全球用户提供具有针对性的全面解决方案

与您一道共享智慧能源新未来

RECREATE THE FUTURE OF THE ENERGY

Wisdom is an inexhaustible energy for mankind

For years we have been dedicated to continuously improving the efficiency of traditional energies

Today we are more than ready to embrace the revolution of energy intelligentization

**Shanghai Electric Power Generation Group—a solution provider for the full industry
chain of intelligent energy**

Providing users across the globe with desired holistic solutions

Creating and sharing with you a new future of intelligent energy

CONTENTS

目录

002-005	关于上海电气电站集团	ABOUT SHANGHAI ELECTRIC POWER GENERATION GROUP	集团概况 GROUP OVERVIEW
	电站集团组织架构	ORGANIZATION STRUCTURE	
006-011	闵行基地	MINHANG BASE	制造基地 MANUFACTURING BASE
	临港基地	LINGANG BASE	
012-013	工程产业	ENGINEERING INDUSTRY	工程产业 ENGINEERING INDUSTRY
014-015	服务产业	SERVICE INDUSTRY	服务产业 SERVICE INDUSTRY
016-029	火电	THERMAL POWER	能源装备 ENERGY EQUIPMENT
	燃气轮机	GAS TURBINE	
	核电	NUCLEAR POWER	
	太阳能发电	SOLAR POWER GENERATION	
	电站环保	POWER GENERATION ENVIRONMENT PROTECTION	
	电站辅机	POWER STATION AUXILIARY EQUIPMENT	
	储能及燃料电池	ENERGY STORAGE AND FUEL CELL	
	煤化工	COAL CHEMICAL INDUSTRY	
030-035	海水淡化	DESALINATION	工业装备 INDUSTRIAL EQUIPMENT
	大中型电机	LARGE AND MEDIUM-SIZED MOTORS	
036-037	科技创新	TECHNOLOGICAL INNOVATION	科技创新 TECHNOLOGICAL INNOVATION



智慧，也是一种能源

WISDOM IS ALSO ENERGY

关于上海电气电站集团

ABOUT SHANGHAI
ELECTRIC POWER
GENERATION GROUP



上海电气电站集团是中国大型综合装备制造业集团——上海电气集团股份有限公司的核心产业板块，专业从事发电设备制造、电站工程建设和电站工程服务。

60多年来，我们致力于提高火、核、风、光等能源生产的效益。而今天，我们将全面发挥人的智慧，全面拥抱智能化的变革，重组、升级手中的能量矩阵，让其有机互动，真正让智慧产生能源效益。为世界各地客户提供具有针对性的智慧能源、清洁能源全面解决方案。

As the core business of Shanghai Electric Group, a large comprehensive equipment manufacturer, Shanghai Electric Power Generation Group specializes in power generation equipment manufacturing, power plant engineering and services.

For more than 60 years, we have been fully dedicated to improving energy production efficiency, such as thermal, nuclear, wind, and solar energy. Today, we are going to motivate our full potential to embrace the change incurred by intelligence. We will reorganize and upgrade our energy matrix and let it interact organically. This way, we will be able to boost our efficiency and provide more professional and comprehensive solutions of smart and clean energy for our customers around the world.

结构决定能量 STRUCTURE DETERMINES POWER

电站集团组织架构 ORGANIZATION STRUCTURE

上海电气电站集团 Shanghai Electric Power Generation Group

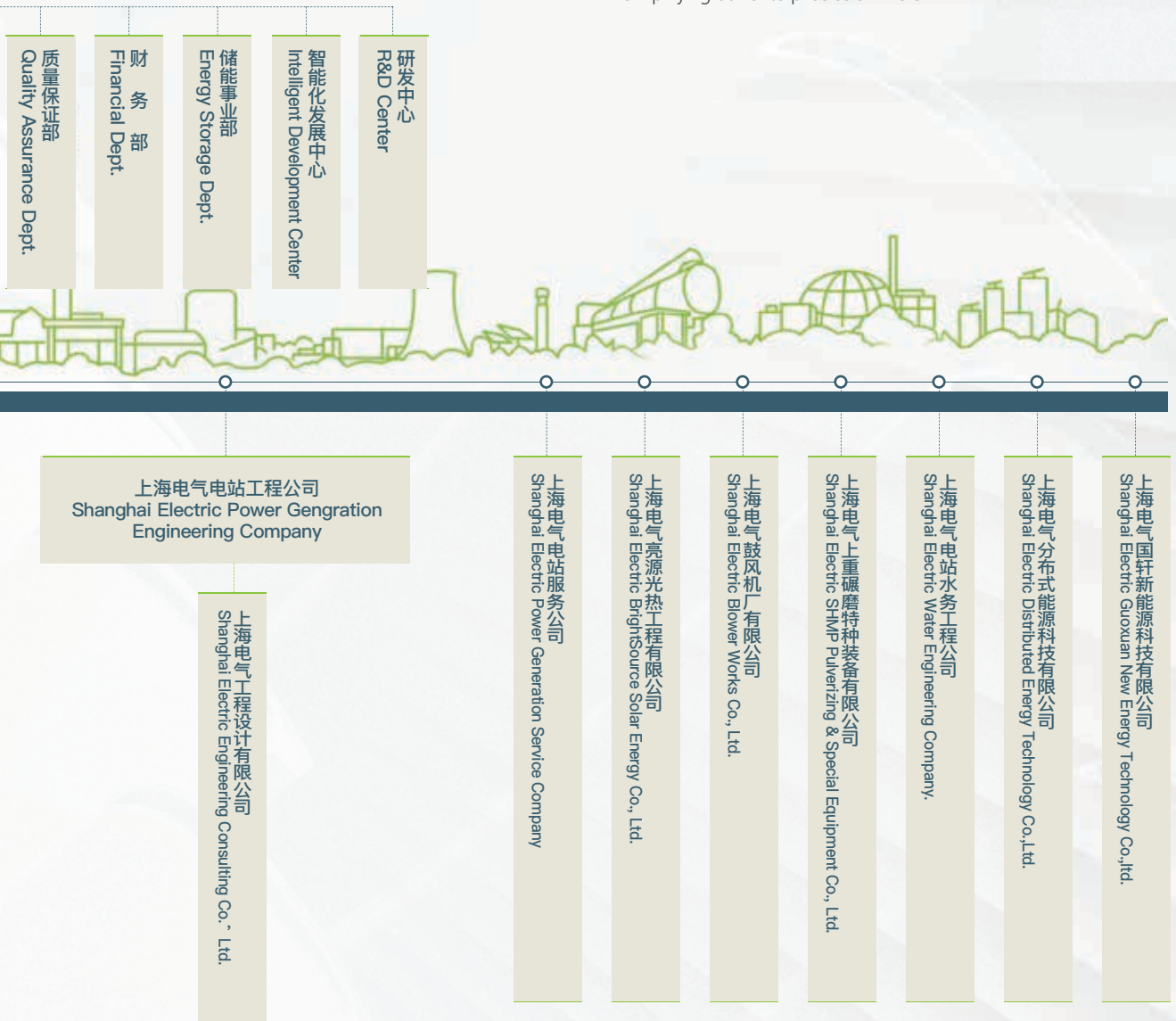


同样的电子，因为核心结构的差异，
变成周期不同的元素。
同样的企业，因为组织结构的不同，
发挥出不一样的能量。

电站集团的架构，不是简单的归类排列，
而是在多年运营中不断修订的平衡模型，
面对旗下三大产业，十大板块，
我们不仅力求每个个体做到最好，
更重视如何将它们合理整合，发挥最大效用。
让内部沟通顺畅，合力共享，
为客户减少流程，减少成本，
让大企业真正从复杂走向简单

With a little structural change of electrons in an atom, it will beget another element.
Similarly, a company after reorganization will not be the same as before.

Shanghai Electric's structure was more than a simple arrangement by classification,
But rather a model that's been evolving over the years until it came to a balance.
In the progress of reorganizing our three industries and ten major sectors,
We strive to polish every step:
Place more emphasis on how to integrate them reasonably so that they can be running in full swing; create an unobstructed internal communication system to enhance coordination; and slash the unnecessary processes and costs for our customers, thus truly simplifying our enterprise as a whole.



以智慧化生产服务，满足客户个性化定制
**MEET CUSTOMIZATION
REQUIREMENTS WITH SMART
MANUFACTURING SYSTEM**

制造基地
MANUFACTURING BASE

变化是基础，升级是常态。

我们没有呆板机械的老旧工厂，只有灵活调整的产业矩阵。

我们有大吨量、大产量；我们也有小管理，小细节，

我们离客户与供应商很近，我们的服务可以很远。

我们追求单点技术的突破，我们追求全线产品线。

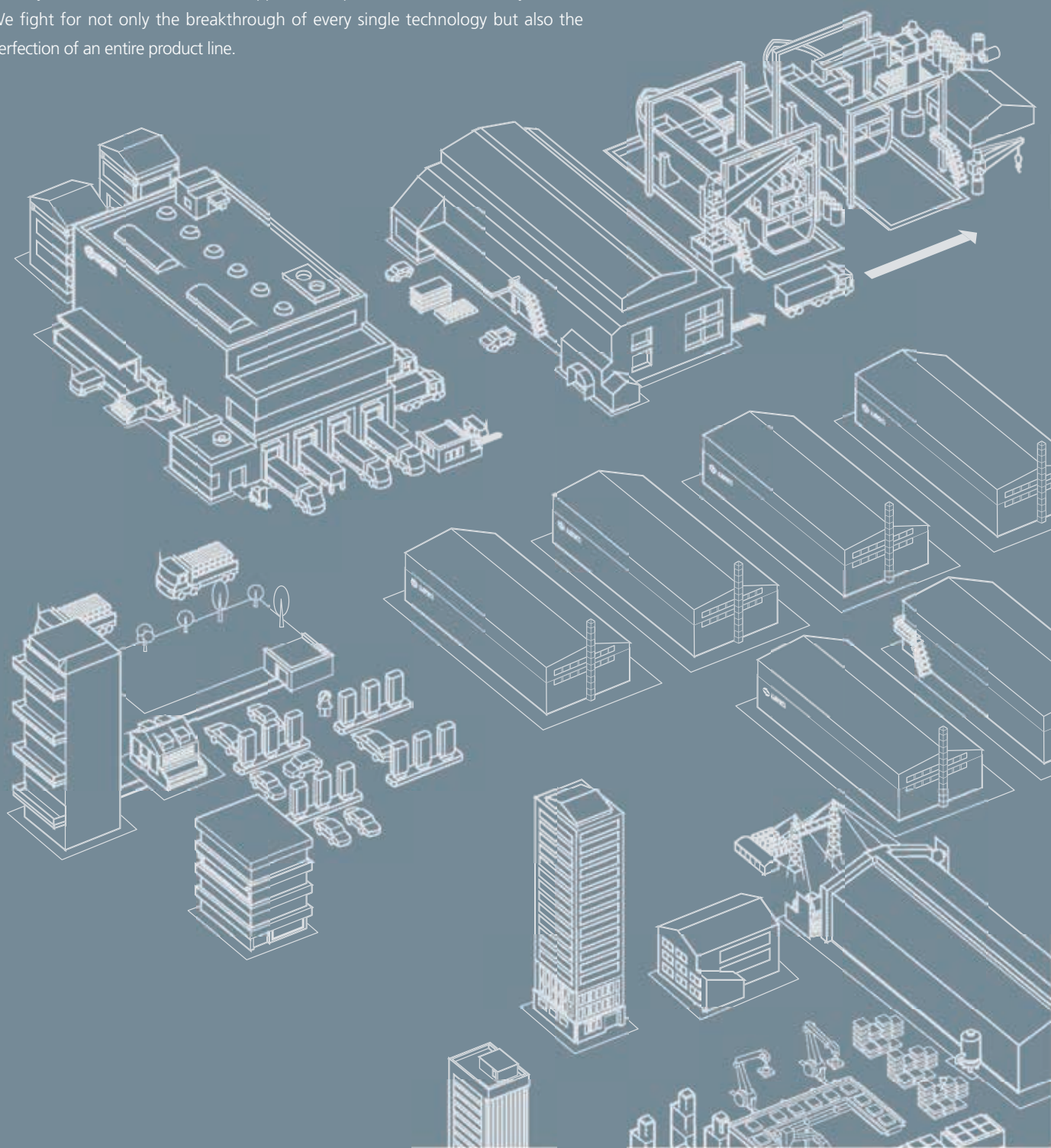
We keep changing and never forget upgrading ourselves as much as we can.

Instead of building obsolescence factories filled with old, heavy machines, we boast flexible industrial matrixes.

Our products can be tons heavy, and their output remains high. We also care about management and refinement of every detail.

We stay close to our customers and suppliers and spread our service far away.

We fight for not only the breakthrough of every single technology but also the perfection of an entire product line.



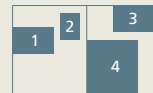


闵行基地

上海电气电站闵行基地是中国动力工业的摇篮，也是上海电气产业发展的核心区域与重要产业基地。基地占地面积超过5平方公里，工业基础设施配套完善，具备大型、重型设备运输的铁路、水路、公路条件。其中，铁路线27.3公里，岸线2.9公里，拥有1000、3000吨级码头各1座。基地由上海汽轮机厂、上海锅炉厂、上海发电机厂、上海电机厂、上重碾磨等构成。

Minhang Base

Shanghai Electric Minhang Manufacturing Base is the cradle of the Chinese power industry and also the core area and important industrial base for Shanghai Electric's development. Covering an area of more than 5km², Minhang Base is home to complete industrial infrastructure as well as railway, waterway and road networks, making the plant easily accessible and the transportation of large and heavy equipment much easier. There are 27.3 km of railway line, 2.9 km of shoreline, a 1000-ton wharf and a 3000-ton wharf. The base consists of Shanghai Turbine Plant, Shanghai Boiler Works, Shanghai Turbine Generator Plant, Shanghai Electric Blower Factory, Shanghai Electric Pulverizing & Special Equipment company, etc.



- 1 上海汽轮机厂燃机总装车间占地面积8733平方米，8个重量级台位用于安装燃机、汽机，9台行车构成高、中、低三层空中“运输网”。

Shanghai Turbine Plant's gas turbine assembly workshop covers an area of 8,733 square meters. Eight heavyweight platforms are designed for the installation of gas turbines and steam turbines, and nine traveling cranes form a three-level air "transportation network" of high, medium, and low height.

- 2 3MW多功能煤燃烧热态试验平台为开发高效节能环保的电站锅炉提供基础数据和技术支持。

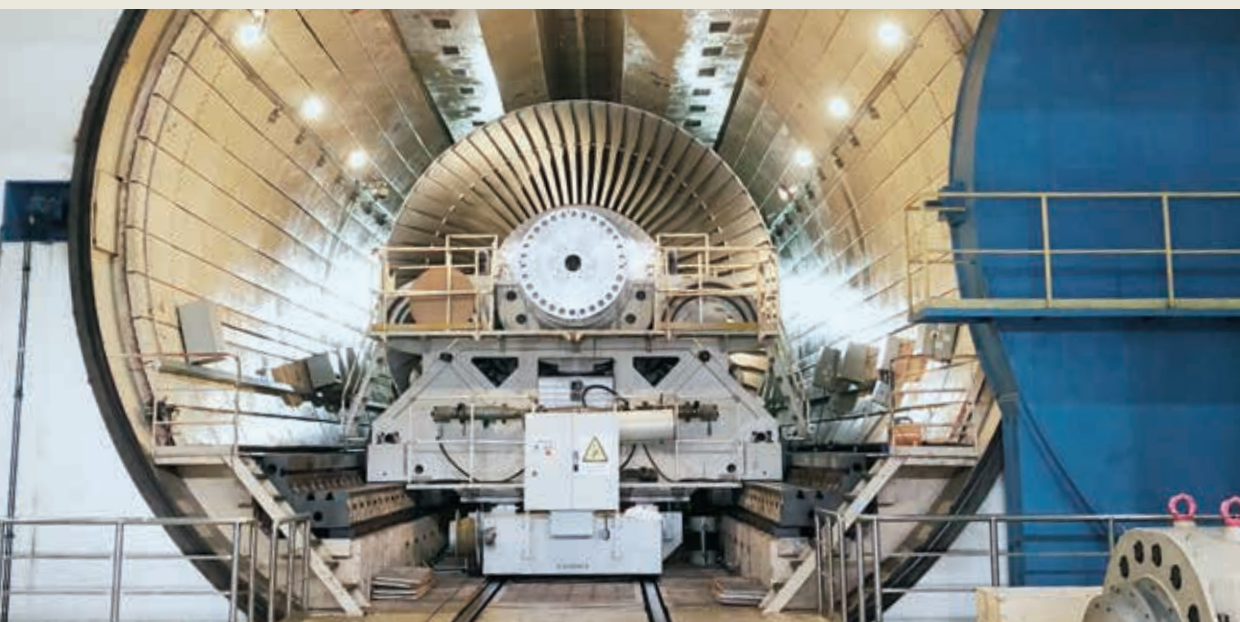
The 3MW multi-functional coal burning hot state test platform provides basic data and technical support for the development of efficient, energy-saving and environment-friendly power station boilers.

- 3 意大利进口的上海发电机厂五轴联动框架龙门铣床。

Imported from Italy, the gantry milling machine in Shanghai Turbine Generator Plant has a five-axis coordinated framework.

- 4 上海汽轮机厂汽轮机车间

Workshop of Shanghai Electric Power Generation Equipment Co., Ltd Turbine plant



临港基地

上海电气电站临港基地占地面积6.9万平方米，拥有火电、核电、海水淡化等“特大、超重、超限”装备的制造能力，主要制造百万千瓦等级大容量超超临界火电机组、二代加、三代及四代核电主设备及配套产品、重型化工类压力容器等。基地邻近的东海大桥与洋山深水港相连，拥有驳船吨位5000吨的重型码头，2台700吨行车可吊起1000吨级产品。基地内的铁路专用线通过浦东铁路接轨全国铁路网，公路运输由沪芦高速与全国高速交通网连通。基地装备了350吨数控重型卧式车床、350吨高速动平衡设备、350吨转子焊接设备、重型数控镗铣床、超大型数控立车、重型数控龙门铣、机器人自动叠装系统等加工机床和测试设备，以先进的装备和加工工艺制造出高精度、高质量的部件和成品。

Lingang Base

Covering an area of 69,000 square meters, the Lingang Base is capable of manufacturing extralarge, extra heavy, and over-sized equipment of thermal power, nuclear power and seawater desalination, such as millions of kilowatts ultra supercritical thermal power generation units, the second plus, the third, and the fourth generation of nuclear power generation units and their supporting products, and heavy chemical pressure vessels, etc.. The Donghai Bridge adjacent to the base is connected to Yangshan Deepwater Port which possesses a 5000-ton heavy duty wharf and two 700-ton cranes that can lift up to 1000 tons of cargos. Pudong railway links the special railway line in the base with the national railway network. Meanwhile, HuLu Expressway connects the base with national highway network. The base is equipped with 350-ton CNC heavy horizontal lathe, 350-ton high-speed dynamic balancing equipment, 350-ton rotor welding equipment, 350-ton heavy CNC boring miller, super-large CNC vertical lathe, heavy CNC gantry milling machine, iron core robot stacking system, etc., in an effort to produce components and products of high precision and quality.



1	2
	3

1 超大型核电制造设备——350吨高速动平衡设备2010年在临港基地投产，目前只有上海电气、西门子和阿尔斯通拥有该试验站。动平衡室里正在进行的是上海电气具有自主知识产权的“华龙一号”核电焊接转子动平衡试验。

The super-large equipment for manufacturing nuclear power generation products —350-ton high-speed dynamic balancing equipment which was put into operation at Lingang Base in 2010. At present, only Shanghai Electric, Siemens and Alstom possess the nuclear test station. In the Balance Testing Chamber, the dynamic balancing test of Hualong One nuclear welding rotor is ongoing, of which Shanghai Electric owns the independent intellectual property rights.

2 邻近洋山深水港的5000吨重型码头，吊装能力1400吨，是电站集团最重要的水路运输口岸。

The 5000-ton heavy-duty wharf adjacent to Yangshan Deep-water Port, has a hoisting capacity of 1400 tons and is SEPG's most important waterway transportation port.

3 机器人自动叠装系统、自动传送线、激光导航小车和智能立体库在临港无缝对接，实现全自动智能存储、出入库、运输、叠片。

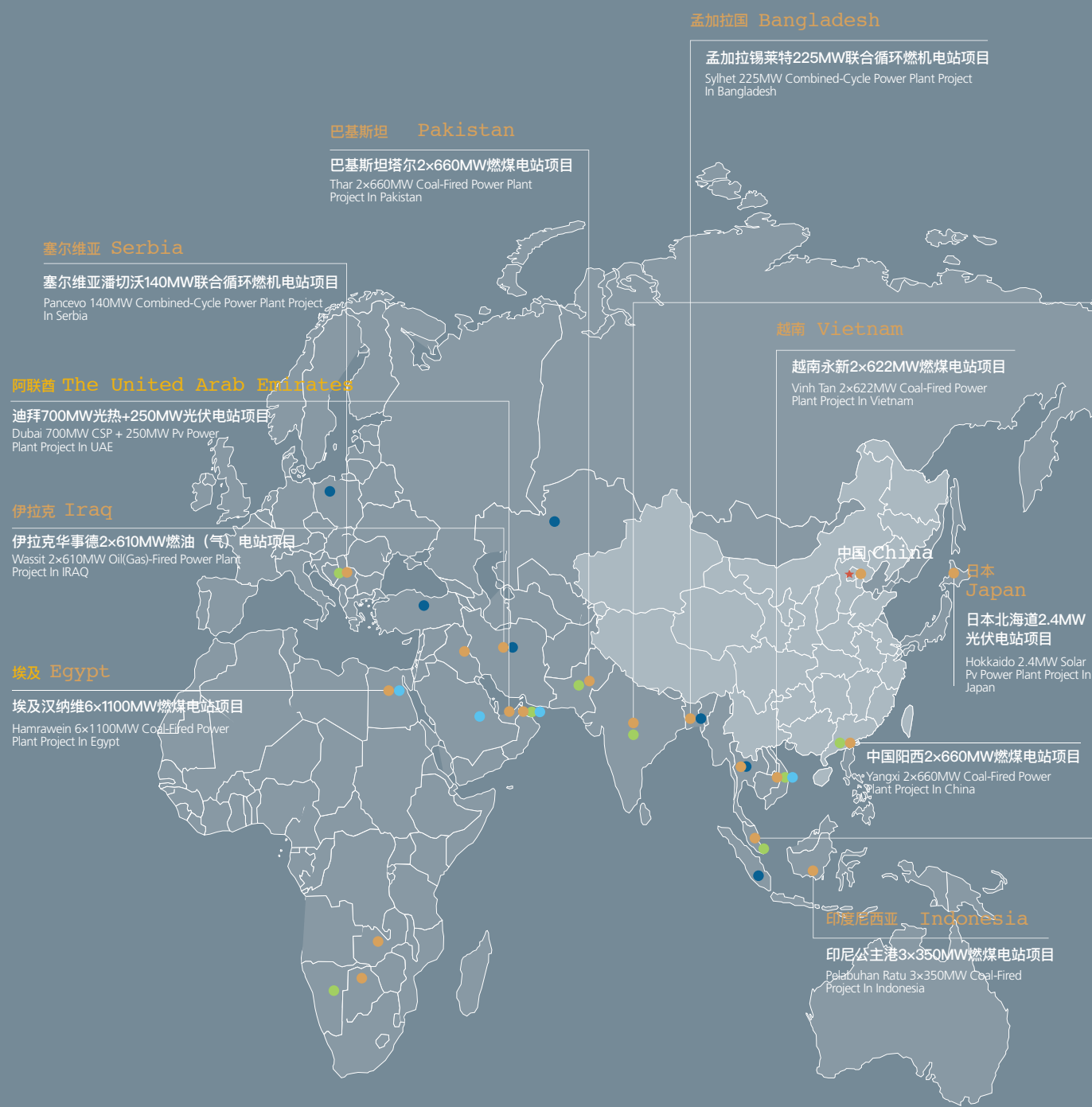
Seamless connection of iron core stacking system, automatic transmission line, AGV and smart stereoscopic storehouse, realizes the full-process automation of material storage, transmission and core stacking during stator core manufacturing.

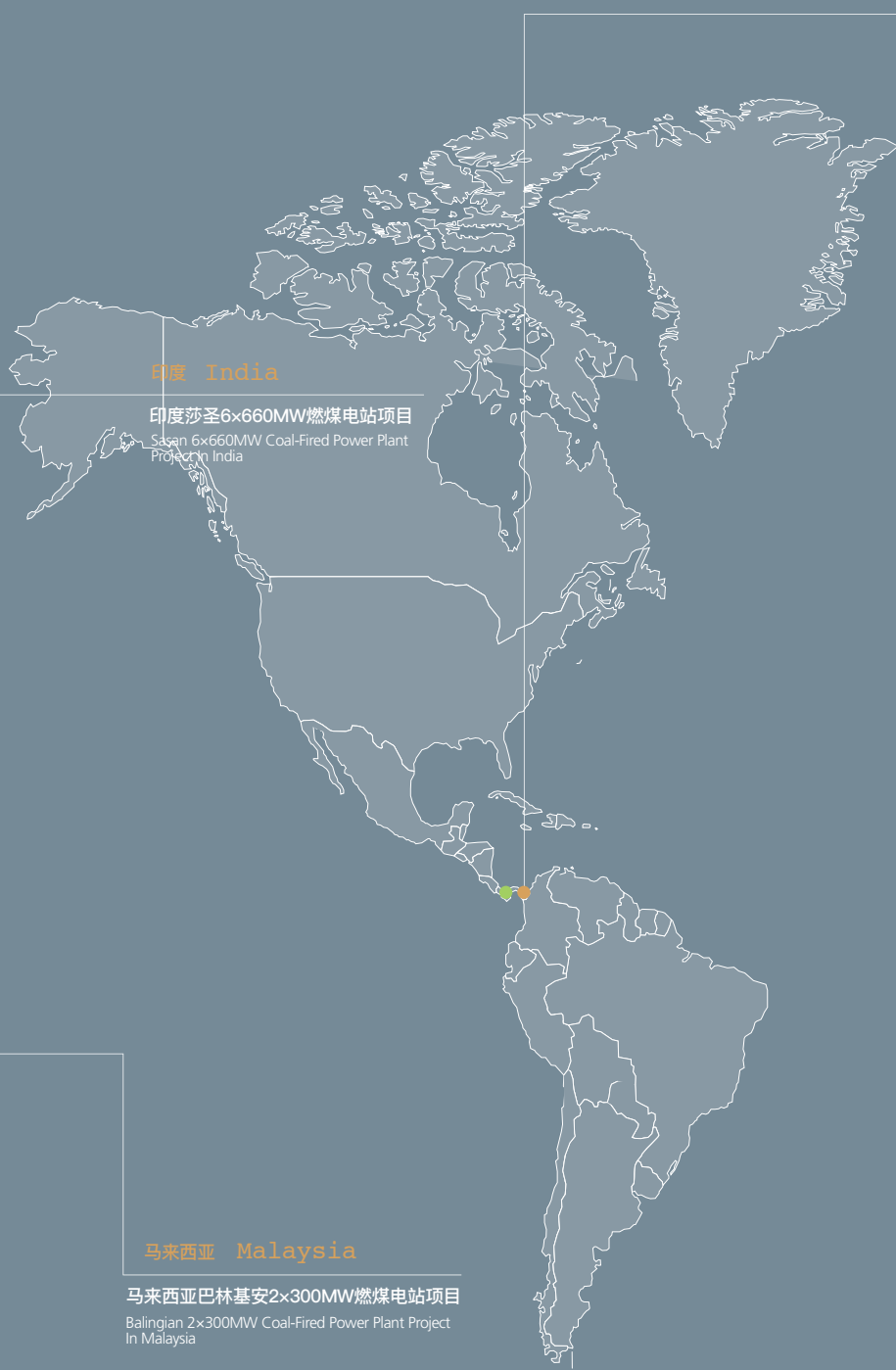


致力于为客户提供一站式能源解决方案

COMMITTED TO PROVIDING CUSTOMERS WITH INTEGRATED ONE-STOP ENERGY SOLUTIONS

- 境外子公司 Overseas Subsidiaries
- 境外分公司 Overseas Branches
- 境外办事处及其他 Overseas Offices
- 电站工程 Power Plant Projects





印度 India

印度沙圣6x660MW燃煤电站项目
Sasan 6x660MW Coal-Fired Power Plant Project In India

马来西亚 Malaysia

马来西亚巴林基安2x300MW燃煤电站项目
Balingian 2x300MW Coal-Fired Power Plant Project In Malaysia

巴拿马 Panama

巴拿马科隆420MW联合循环燃机电站项目
Colon 420MW Combined-Cycle Power Plant Project In Panama

覆盖煤电、燃机、核电常规岛、分布式能源、风电、太阳能、储能、微网、生物质发电等高效清洁能源、绿色环保新能源。

Covering a wide range of clean, high-efficient energy and green new energy, such as coal power, gas turbine, nuclear conventional island, distributed energy, wind power, solar energy, energy storage, microgrid system, and biomass power generation.

承接近百个海内外项目，遍布全球30多个国家和地区，已投产项目超70多个。

Undertaking nearly 100 projects in China and more than 30 countries and regions around the world, more than 70 of which have been put into operation.

装机容量逾9200万千瓦。

The installed capacity exceeds 92 million kilowatts.

2018年度ENR全球最大250家国际承包商排名第100位。

100st in ENR Top 250 International Contractors in 2018.

全生命周期的背后，是提早预判与精细服务 WE OFFER EARLY FORECASTS AND ATTENTIVE SERVICE OVER THE LIFE CYCLE

拓展全生命周期服务 赢得客户 EXPAND THE SERVICE THROUGHOUT THE LIFE CYCLE TO GET MORE CUSTOMERS

六大优势 Six Advantages



在役机组数量众多
A vast number of units in
service



灵活的“私人定制”方案
Flexible
"customization"



“移动工厂”设备齐全
Well-equipped
"mobile plant"

对客户服务的细心 | 对未来趋势的关心

ATTENTIVE CUSTOMER
SERVICE

CONCERN FOR
FUTURE TRENDS

上海电气致力于向客户提供专业化的电站服务解决方案，打造多元化的现代能源服务，为客户创造最大的效益和价值。

上海电气电站服务产品涵盖电站机组运行全生命周期的每一阶段，既包括节能成套改造、环保成套改造、备件服务、机组检修、运行维护、远程诊断等，也可为客户提供诸如废水零排放、燃料耦合、机组灵活性改造、智慧电厂远程诊断业务等新兴服务。服务对象包含各种等级火电机组，燃气-蒸汽联合循环机组、IGCC机组，核电机组及环保装置等电力设备。

Shanghai Electric is committed to providing customers with professional power generation service solutions and creating diversified modern energy services to help customers obtain maximum benefits.

Shanghai Electric power generation service system covers the full life cycle services facing the whole power plant, including energy-saving unit reconstruction, environmental unit reconstruction, spare parts service, unit overhaul, operation and maintenance, remote diagnosis, etc. It can also provide customers with new services such as wastewater zero discharge technique, fuel coupling, unit flexibility modification, remote diagnosis for smart power plants. Service objects include various grades of thermal power units, gas-steam combined cycle units, IGCC units, nuclear power units, and environmental devices.



“24小时待机”式服务
"24-hour standby"



强大的技术团队支撑
Strong technical team



提前预判备料
Ability to estimate and prepare enough spare parts

对升级转变的决心 | 对不断优化的恒心

DETERMINATION TO UPGRADE AND CHANGE

PERSISTENCE IN CONTINUOUS OPTIMIZATION

给能源智慧，给未来可能
LET THE ENERGY BE WISE AND
MAKE OUR FUTURE POTENTIAL

能源装备 | ENERGY EQUIPMENT

当生活方式迎来变革，智慧能源时代即将来临，
我们一直在思考如何优化传统能源，如何发现新型能源，甚至如何重新定义能源。
无论火电、核电、燃机、太阳能.....

只有积极转变能源的生产消费，才能深度推动能源的转型升级，
只有不断变化升级自己的手牌，才有向未来赢得成功的底气。

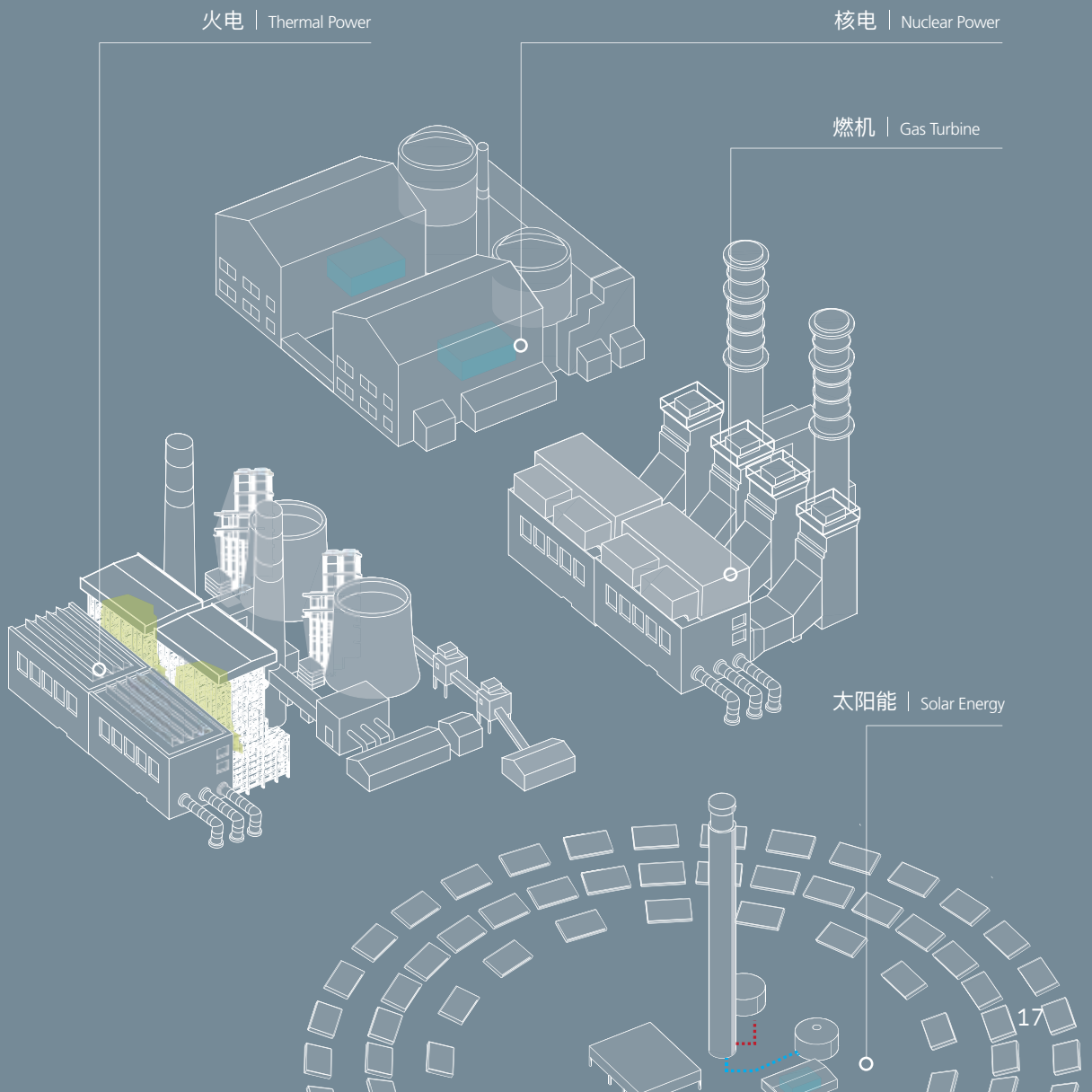
As the lifestyle changes, the era of smart energy is coming.

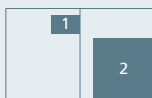
We have been thinking about how to optimize traditional energy, how to discover new energy, and even how to redefine energy.

Whether it is thermal power, nuclear power, gas turbine, solar energy...

Only by actively changing the production and consumption of energy can the transformation and upgrading of energy be largely promoted.

Only by constantly changing and upgrading our equipment can we achieve more success in the future.





- 1 上海电气供货主机设备的国电江苏泰州电厂全球首台1000MW等级二次再热机组。

The world's first 1000 MW double reheat unit supplied by Shanghai Electric in China Guodian Taizhou Power Plant.

- 2 上海电气供货主机设备的陆丰甲湖湾电厂，采用全球首台双机回热系统1000MW等级机组。

The world's first 1000MW class Unit with Echelon Cycle BEST system of Lufeng Jiahawan power plant are supplied by Shanghai Electric.

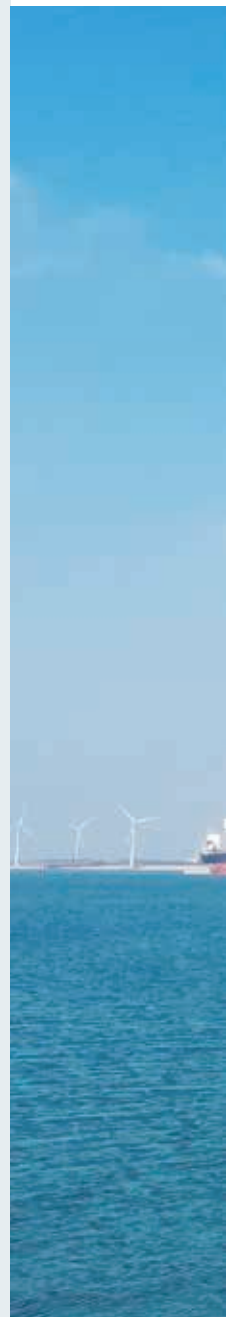
火电 THERMAL POWER

不断刷新纪录，只因始终关注趋势

KEEP REWRITING RECORDS ONLY BECAUSE WE CLOSELY MOVE WITH THE TIMES.

上海电气把火电做到高效低排放的极致，形成了从10MW~1240MW等级齐全的产品系列，年生产能力超过3000万千瓦，累计制造了超过三亿千瓦的火电设备，是全球大型火电设备供应商。由上海电气供货主机设备的全球首台1000MW等级二次再热机组——国电江苏泰州电厂刷新了全球煤电效率纪录。

As a global supplier of large thermal power equipment, Shanghai Electric has optimized the thermal power generation system to its best which has the highest efficiency and lowest emission, and has set up a complete product line ranging from 10 MW to 1240 MW. Its annual manufacturing capacity of plant equipment reached 30 GW and by now it has manufactured more than 300 GW of thermal power equipment. The world's first 1000 MW double reheat unit supplied by Shanghai Electric in China Guodian Taizhou Power Plant has set a new global record of coal power efficiency.

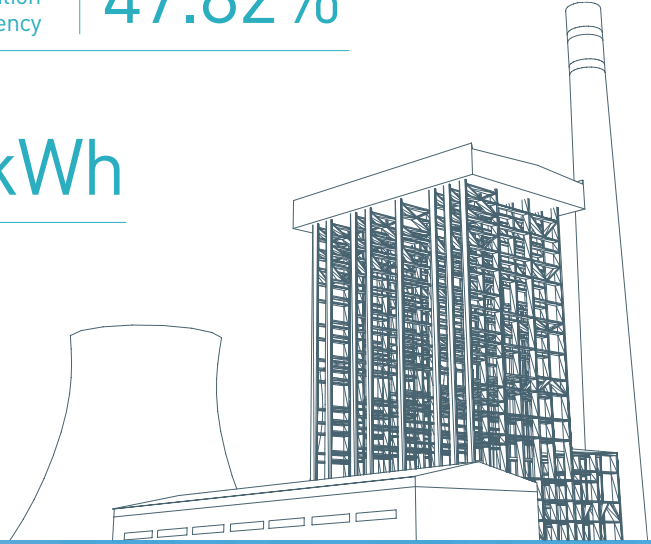


发电效率
Power generation
efficiency

47.82%

发电煤耗
Coal consumption rate

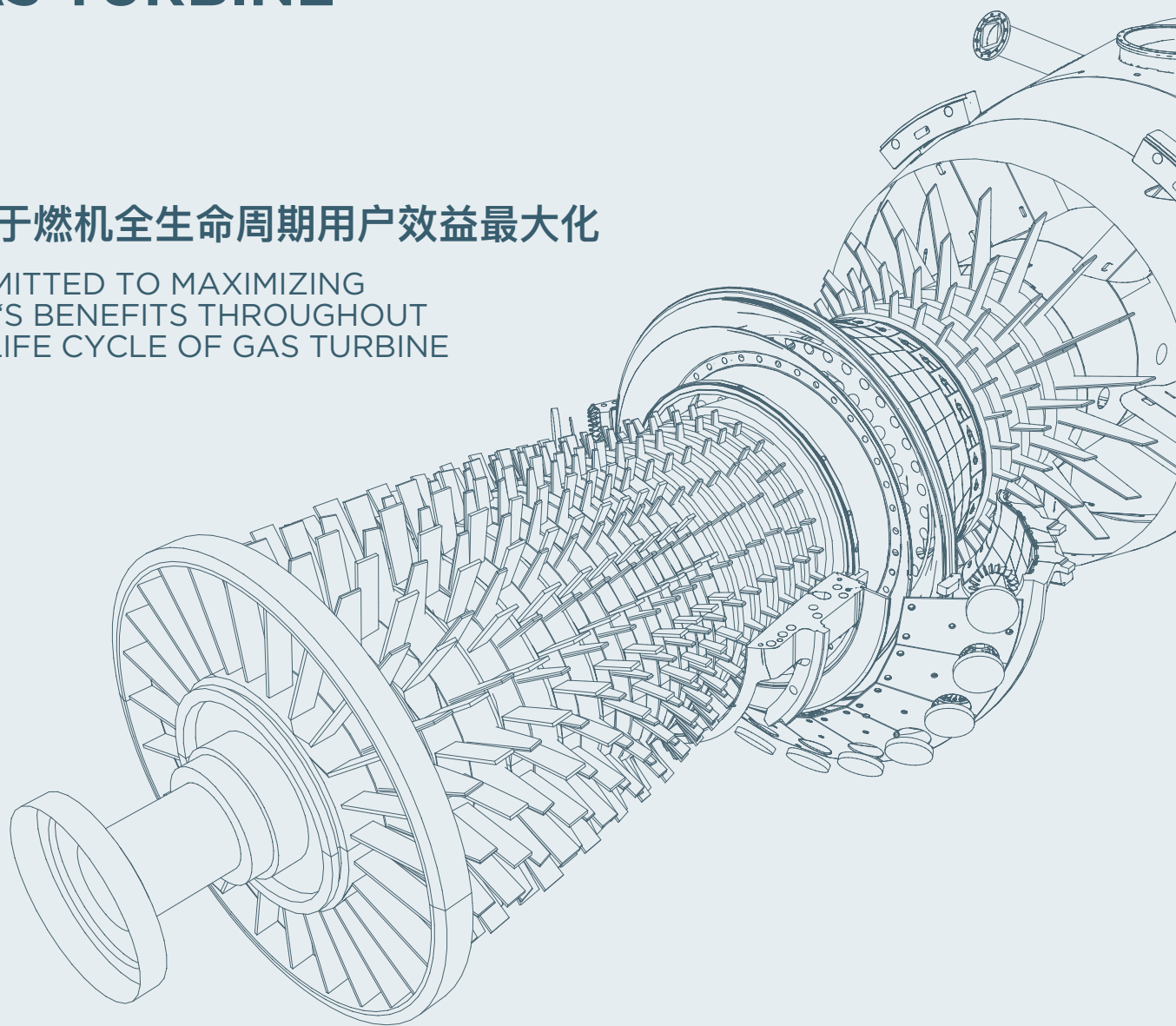
256.8g/kWh



燃气轮机 GAS TURBINE

致力于燃机全生命周期用户效益最大化

COMMITTED TO MAXIMIZING
USER'S BENEFITS THROUGHOUT
THE LIFE CYCLE OF GAS TURBINE



全天候售后服务，高枕无忧
All-weather after-sales service

全工况运行灵活，高效可靠
Flexible, efficient and reliable operation

全方位定制方案，自主技术
Autonomous Technology Customization Scheme

上海电气历经半个多世纪的不懈努力，逐步掌握了重型燃机核心技术，形成了从研发、制造、销售到服务的完整产业链，具有雄厚的系统集成能力。

上海电气通过国际并购，与意大利安萨尔多能源公司强强联手，主打产品覆盖H级、F级、小F级和E级燃机。

After more than half a century of unremitting efforts, Shanghai Electric has gradually mastered the core technology of heavy gas engines, formed a complete industrial chain from R&D, manufacturing, sales to service, with strong system integration capabilities.

Through international mergers and acquisitions, Shanghai Electric has joined forces with Ansaldo Energia Italy. Its main products cover H-class, F-class, small F-class and E-class gas turbines.



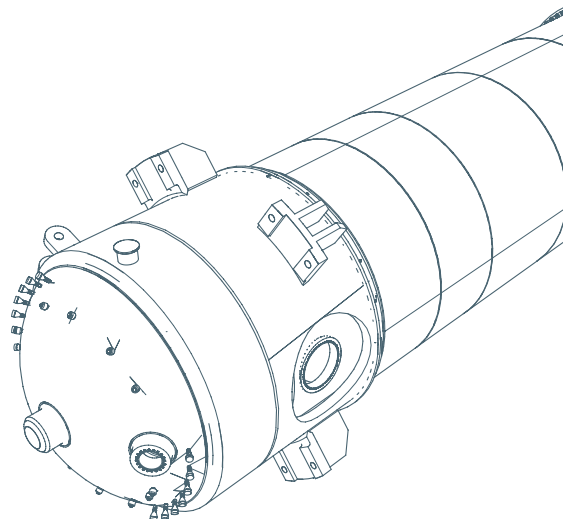
核电 NUCLEAR POWER

稳定压倒一切

STABILITY IS
EVERYTHING

上海电气是国内最早从事核电设备制造的集团，发展轨迹几乎与中国核电产业同步，具有完备的核电常规岛主要设备、核级设备的加工制造能力，能够为各代核电堆型提供成套常规岛设备和核岛辅机设备。已成功实现300MW、600MW、1000MW及以上等级的核电设备产品批量化、配套化交付，市场占有率为33%。

上海电气拥有完备的汽轮机低压转子技术和长叶片技术，可满足10MW-2000MW等级的各种堆型、各种背压（包括空冷）的配置要求，可适用于从北方到南方，从沿海到内陆，单、双背压的各种核电项目汽轮发电机组的需求。





1 上海电气的1000MW等级阳江核电汽轮发电机组体现了卓越的核电常规岛设计和制造能力，荣获中国核能行业协会科技进步奖二等奖。

Shanghai Electric's first 1000 MW Yangjiang nuclear turbine generator unit embodies its outstanding design and manufacturing capability of nuclear power conventional islands and also won the second prize of the China Nuclear Energy Industry Association's Science and Technology Progress Award.

2 上海电气的四台325MW等级核电汽轮发电机组已应用于巴基斯坦恰希玛项目，运行良好。具有自主知识产权的两台1000MW等级核电汽轮发电机组应用于巴基斯坦卡拉奇项目，正在建设中。上海电气是目前国内唯一具有常规岛成套主设备出口业绩的供应商。

Four 325MW nuclear class turbine generator Units supplied by Shanghai Electric have been successfully applied to the Pakistan Chashma Project. Two 1000MW nuclear class turbine generators with independent intellectual property rights have been applied in Pakistan Karachi project which is under construction. Shanghai Electric is the only supplier with export performance of complete sets of conventional island main equipment in China at present.



Shanghai Electric is the earliest group engaged in the manufacturing of nuclear power equipment in China. Its developing history is almost in step with that of China's nuclear power industry. It has the capability of completely manufacturing the main and nuclear-grade equipment of nuclear power conventional island, and therefore it can provide a complete set of conventional island equipment and auxiliary equipment for all generations reactor types of nuclear power plants. We have successfully delivered nuclear power equipment at levels of 300 MW, 600 MW, 1000 MW and above in batches and hold a market share of 33 %.

Shanghai Electric has a complete steam turbine low-pressure rotor and long blades technologies which are suitable for the various reactors ranges from 10MW to 2000MW grades and various back pressure (including air cooling) units that fully meet the requirements of building nuclear power steam turbine generator units of single and double backpressure all over China.



上海电气承建的全球最大太阳能电站

迪拜马克图姆太阳能园区第四期950MW光热光伏发电项目

THE LARGEST CONCENTRATED SOLAR POWER AND PHOTOVOLTAIC POWER PLANT IN THE WORLD

THE PHASE IV 950 MW SOLAR POWER GENERATION PROJECT BUILT BY SHANGHAI ELECTRIC IN SHEIKH MOHAMMEDBIN RASHID AL-MAKTOUM SOLAR PARK, DUBAI

太阳能发电 SOLAR POWER GENERATION

知日为智，善用太阳的能量

BE WISE AND MAKE GOOD USE OF THE SUN'S ENERGY

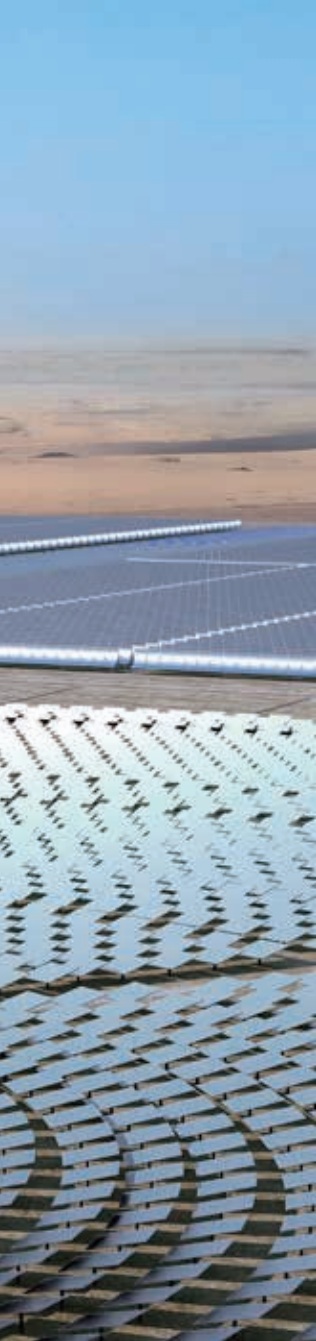
270000

可为多家住户提供清洁电力
Can clean electricity to more than 270000 households every year in Dubai

减少

140

万吨碳排放量
Reduce 1.4 million tons carbon emission



光热

上海电气采用全球领先的塔式（CT）、槽式（PT）聚光储热技术，结合全球范围内项目开发与设备制造能力，致力于为国内外客户提供聚光太阳能热发电全方位解决方案。可承接塔式/槽式太阳能热发电厂、太阳能辅助石油开采、太阳能海水淡化和ISCC系统的设计、施工、安装、调试、运营和工程总承包，提供包括全部常规岛设备在内的主要设备的制造供货，如：高效汽轮发电机组及辅助设备、镜场设备及集成控制系统、吸热器、蒸汽发生器以及储热系统设备等。

Concentrated Solar Power

Shanghai Electric adopts the world's leading heat storage tower (CT) and trough (PT) technologies to generate power from solar energy. As the company takes part in more projects and constantly improves its technique, it is committed to providing comprehensive solar thermal power generation solutions for customers all over the world. It is capable of design, construction, installation, commissioning and operation for the tower/trough solar thermal power plant, solar-assisted oil exploitation, solar seawater desalination, and ISCC systems as well as of undertaking the project general contracting. It also manufactures and supplies the main equipment of conventional island equipment, such as high-efficiency steam turbine generator set and its auxiliary equipment, mirror field equipment and integrated control system, heat absorber, steam generator, and heat storage system equipment, etc.

光伏

作为全球领先的智能光伏解决方案提供方，上海电气致力于为客户提供从项目开发、总承包管理以及运行维护全过程服务。业务领域涵盖集中式光伏电站、分布式光伏电站，累计装机容量超800MW，业绩遍布日本、阿联酋、中国等地。特别是，上海电气将旗下德国曼兹（Manz）薄膜太阳能技术与建筑、工业产品完美结合，实现能源与艺术的融合发展，在多能互补的智慧能源解决方案中扮演越来越重要角色。

Photovoltaic

Shanghai Electric, as a state-of-the-art intelligent photovoltaic solution provider, is dedicated to serve our customers with the entire process of project development, EPC contractor management, operation and maintenance. The business area covers centralized photovoltaic and distributed photovoltaic power plants, with a cumulative installed capacity of over 800 MW, and its achievements can be seen in Japan, the United Arab Emirates, China, etc. In particular, Shanghai Electric perfectly combines its German Manz thin-film solar technology with architecture and industrial products, in a way to develop energy and art at the same time, which makes its role in multi-energy complementary smart energy solution more and more important.



电站环保

POWER GENERATION ENVIRONMENT PROTECTION

力争零污染，挖掘正面收益

STRIVE TO EVADE POLLUTION AND EXPLOIT
POSITIVE BENEFITS.

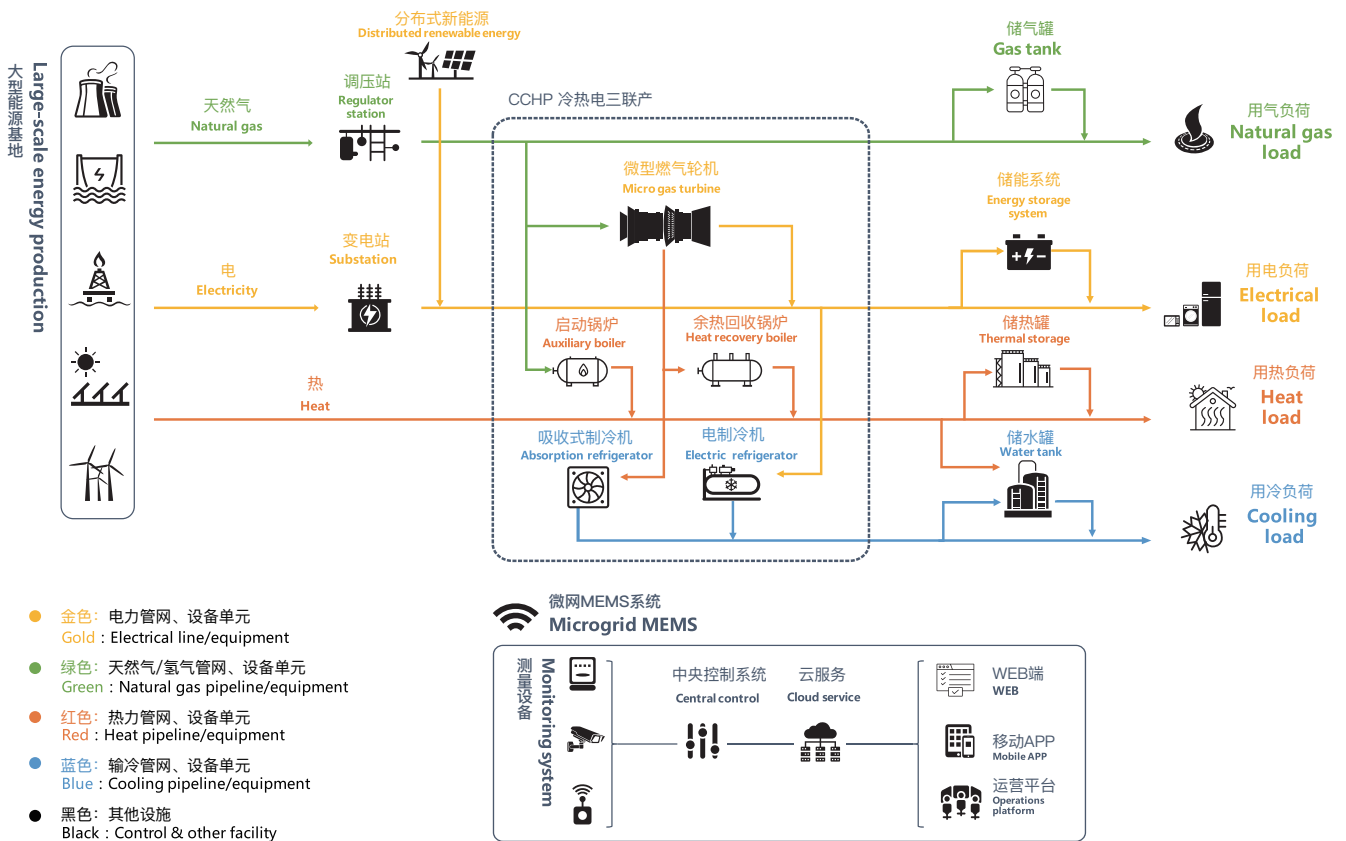
上海电气是国内较早成立的专业从事脱硫、脱硝和除尘系统工程以及废水处理、垃圾焚烧、生物质资源化、固废处理、资源循环、生态修复、能源化工、能源综合利用等总承包业务的上海市高新技术企业。

上海电气与日本石川岛播磨重工（IHI）公司签订了完整的技术转让合同，拥有成系列的脱硫技术、SCR 脱硝技术（自主研发SNCR和低氮燃烧）以及低低温电除尘技术，可为客户提供工程总承包、项目研发、设计、方案咨询、运行维护等各项业务。

Shanghai Electric is among the earliest high-tech companies in Shanghai that set up desulfurization, denitration, electrostatic precipitation, wastewater treatment, Waste incineration, biomass recycling, solid waste treatment, resource recycling, ecological restoration, energy chemical industry, comprehensive utilization of energy EPC projects.

Shanghai electric has signed a complete technology transfer contract with IHI and owns series of wet desulfurization technologies, flue gas denitration technologies (Independent research and development of SNCR and low-nitrogen combustion), super-low temperature electric dust removal technologies, which enables Shanghai Electric to provide various services such as EPC project, project design, scheme consulting, operation and maintenance to customers.





分布式能源 DISTRIBUTED ENERGY RESOURCES

未来智慧能源的生产管理方式

A PRODUCTION MANAGEMENT
MODE FOR FUTURE SMART ENERGY

上海电气在分布式能源系统投资、规划、设计、建设、运行、维护、合同能源管理服务领域为客户提供全方位服务。不仅可以提供天然气分布式能源系统的核心设备，如：燃气轮机、余热锅炉、发电机、控制系统、溴化锂机组等，还可以承接燃气、燃油、光伏、光热、风电及各类可再生能源分布式能源项目工程总承包。

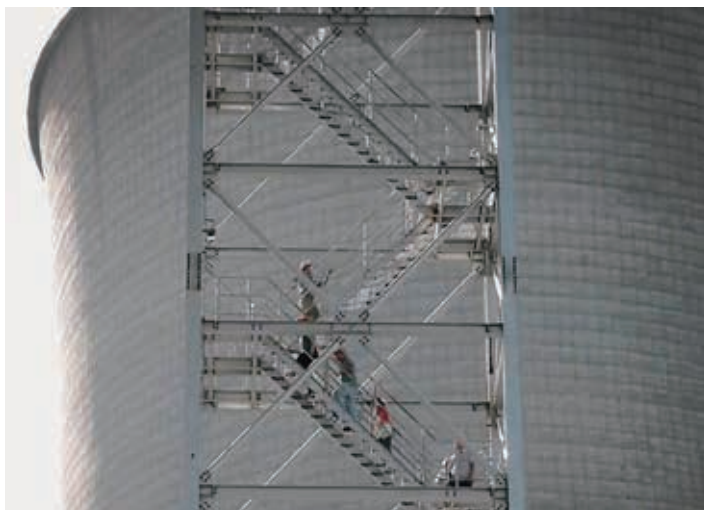
Shanghai Electric provides comprehensive services in the fields of investment, planning, design, construction, operation, maintenance and contract energy management of distributed energy systems. The company can not only offer the core equipment of the natural gas distributed energy system, such as gas turbines, waste heat boilers, generators, control systems, lithium bromide units, etc., but also take over distributed energy projects such as gas, fuel, photovoltaic, photothermal, wind power and other renewable energy resources.

电站辅机

POWER STATION AUXILIARY EQUIPMENT

一流企业背后的一流支持

TOP SUPPORT FOR THE TOP ENTERPRISE



Shanghai Electric started its power station auxiliary equipment business in 1921, and so far it has become the largest manufacturer of auxiliary equipment in China. It can provide high-pressure and low-pressure heaters, condensers, high-pressure and low-pressure deaerators and water storage tanks, closed circulating water-heat exchangers, nuclear energy Class II and III pressurizer vessels, safety injection tanks, boron injection tanks, oil storage tanks, equipment gates, personnel gates, seawater desalination devices, air cooling systems, etc. of 50 MW-1,300 MW ultra-supercritical, supercritical, subcritical thermal power and nuclear power units.

上海电气最早的电站辅机业务始于1921年, 是目前国内规模大, 品种多的电站辅机专业设计、制造厂。可提供50MW~1300MW超超临界、超临界、亚临界火电和核电机组配套的高压加热器、低压加热器、凝汽器、高、低压除氧器及贮水箱、闭式循环水水热交换器、核能二、三级容器、安注箱、硼注箱、储油罐、设备闸门、人员闸门以及海水淡化装置、空冷系统等设备。



储能及燃料电池

ENERGY STORAGE AND FUEL CELL

削峰填谷 多存少补

KEEP A STABLE STORAGE

上海电气长期致力于储能及燃料电池业务的发展研究、技术研发与工程应用，可为客户提供核心产品、系统集成服务以及整体解决方案。业务范围涉及动力电池及储能业务，包括各种化学储能及电池的梯级利用；各类燃料电池产业链和电堆业务等未来能源。

上海电气承建的崇明三星田园“互联网+”智慧能源示范项目，涵盖基于灵活性资源、智能储能、汽车充电桩、智慧用能、绿色能源灵活交易和行业融合等情景的能源互联网，是一种“源网荷储”一体化、风光储冲多种能源互补型，基于绿色能源灵活交易的智慧分布式低碳园区微电网。

Shanghai Electric has long been committed to improving energy storage and fuel cell technology developing new technologies and exploiting new application, and thus providing core products, system integration services and overall solutions for customers. The business covers power batteries and energy storage, including various chemical energy storage and the cascaded use of battery; a variety of fuel cell industry chains and galvanic pile businesses.

"Internet plus" smart energy demonstration project in Sanxing Township, Chongming District undertaken by Shanghai Electric, is an energy Internet connecting flexible resources, smart energy storage, car charging pile, smart energy usage, and flexible trading of green energy. It also is a smart distributed low-carbon park micro-grid with an integration of generation, grid, load and storage, a system that wind and solar energy can be complementary for energy storage, and flexible trading of green energy.



更清洁、更高效的煤炭利用技术，始终是上海电气追求的目标。煤气化技术作为“煤炭清洁高效利用”的龙头、核心技术之一，上海电气早在2005年便着手进行研究，并建设了煤气化技术中试试验平台。通过10余年的努力，已完成了具有自主知识产权的SG-旋风气化技术、SG-双循环加压流化床煤气化技术系列化研发。可广泛应用于煤制烯烃、煤制甲醇、煤制乙二醇、煤制天然气、煤制油、煤制氢、煤制合成氨、IGCC发电、煤制燃料气等多个领域。结合上海电气丰富的压力容器设备制造经验与一流的工程管理能力，可以为客户提供一揽子解决方案。目前2台1500t/d等级的SG-旋风气化炉已在江苏海力化工项目上实现了工程应用。

Shanghai Electric always pursues a cleaner and more efficient coal utilization technology. Coal gasification technology is one of the leading and core technologies applied in "clean and efficient utilization of coal" program. Early in 2005, Shanghai Electric built a test platform and started to develop the technology. After more than 10 years of hard work, the company has accomplished SG-Cyclone Gasification Technology and SG-Double Cycle Pressurized Fluidized Bed Coal Gasification Technology with Independent Intellectual Property. The technology can be widely applied to IGCC and various coal chemical fields such as coal-to-oil production, coal-to-fuel gas production, coal-to-hydrogen production, etc. With rich pressure vessel equipment manufacturing experience and remarkable engineering management ability, Shanghai Electric can provide customers with a package of solutions. At present, two SG-cyclone gasifiers of 1500t/d grade have been applied in JiangSu Haili Chemical Engineering Project.

煤化工

COAL CHEMICAL INDUSTRY

高效利用才能绿色排放

ONLY BY UTILIZING IT EFFICIENTLY
CAN THE ENERGY BE GREEN

让创新有底气, 让优势有传承
BE CONFIDENT OF INNOVATION AND LET
THE SUPERIORITY BE PASSED DOWN

工业装备 | INDUSTRIAL EQUIPMENT



优异的工业装备，
 是能源装备的坚强后盾，是集团产业的坚实底气，
 是傲视行业的工业精品，是制造强国的质朴初心。
 在这个重概念、求快变的时代，我们大胆探索未来，也稳步提升制造，
 我们相信，只有让制造服务智能，让智能引领制造，
 才能真正做到强大企业自身发展。
 我们的电动机、变频器、压缩机、鼓风机、磨煤机等产品，正在造福社会各行生产。

Excellent industrial equipment

Will greatly support the energy equipment as well as the group industry.

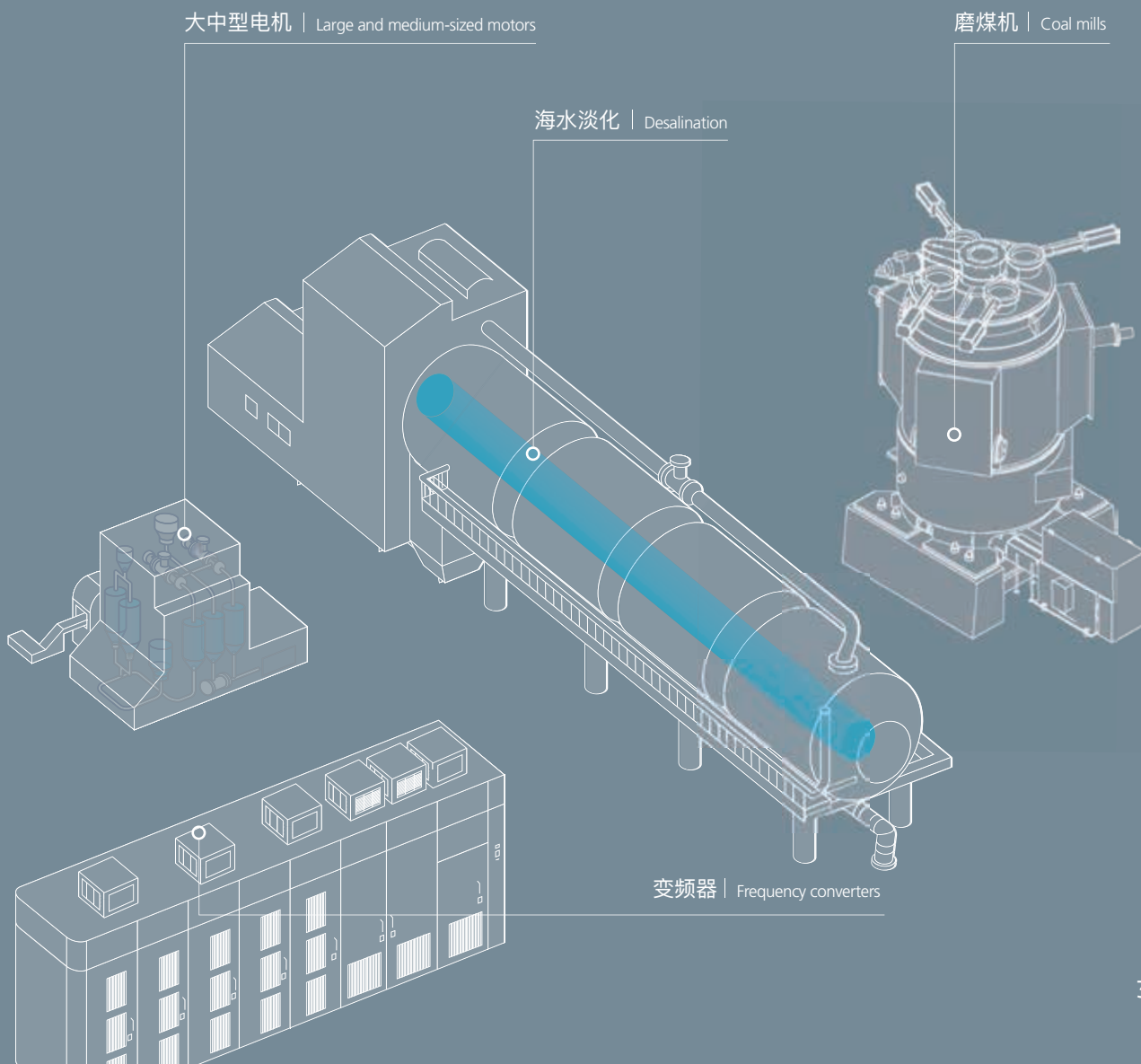
It is the proud of the group and the heart of the manufacturing kingdom.

In this era when people value conceptual thinking and seek for rapid change, we boldly explore the future and constantly strengthen our manufacturing skill.

We believe that only by making manufacturing service intelligent can the intelligence lead manufacturing.

So that the enterprise can become stronger.

The society is benefiting from our motors, frequency converters, compressors, blowers, coal mills, and so on.





海水淡化 DESALINATION

专心致志于水，极致服务于水 FOCUS ON WATER SERVE FOR WATER

上海电气长期致力于海水淡化技术研发与工程应用，拥有热法和膜法两大主流海淡技术，能够为电力、市政、化工和钢铁等领域客户提供独立水厂、水电联产、热膜耦合和余热利用等海水淡化整体解决方案。上海电气已完成近20个海水淡化工程建设，日产淡水总量达37万吨。

上海电气拥有自主的低温多效蒸馏和热水闪蒸多效蒸馏等热法海淡核心技术，拥有先进的反渗透系统集成和三维工厂设计技术，具备大型海水淡化厂的工程设计、设备采购、安装调试、运行维护、工程管理与建设能力。



Shanghai Electric has long been committed to the development and engineering application of seawater desalination technology. It has two main seawater desalination technologies: distillation and reverse osmosis methods, which enable Shanghai Electric to provide customers in power, municipal, chemical and steel fields with integrated seawater desalination solutions such as independent waterworks, combined water and electricity production, hybrid process by distillation and reverse osmosis and waste heat utilization. Shanghai Electric has completed nearly 20 seawater desalination projects with a daily fresh water output of 370,000 tons.

Shanghai Electric has its own core distillation seawater desalination technologies, such as low-temperature multi-effect distillation and hot water flash multi-effect distillation. Shanghai Electric also possesses advanced reverse osmosis system integration and three-dimensional plant design technology, so it can provide the customers with the engineering design, equipment procurement, installation and commissioning, operation and maintenance, engineering management and construction of large seawater desalination plants.



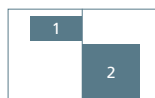
- 1 恒逸文莱3×1.25万吨/日低温多效海水淡化工程，是国内最大规模热法海水淡出口项目，其中热水闪蒸技术属全球首次采用。

The Hengyi Brunei 3×12.5 thousand T/d low-temperature multi-effect seawater desalination project is the largest distillation desalination project exported from China, and the hot water flash evaporation technology is first used in the world.

- 2 宝钢2×1.5万吨海水淡项目，是国内首个MED海水淡EPC项目。

The Baosteel 2×15 thousand T/d seawater desalination project is the first EPC MED desalination project in domestic of China.





- 1 国产首台输油管线2000千瓦/6000伏防爆无火花型自润滑异步电动机在中国石油管道沈阳输油气分公司铁岭输油站运**
The first domestic 2000 kW/6 kV explosion-proof sparkless self-lubricating asynchronous motor of oil pipeline in ShengYang
- 2 西气东输三线项目乌苏站20MW级超高速防爆变频调速同步电动机**
20MW ultra-high speed explosion-proof frequency conversion speed regulating synchronous motor in Wusu station of west-east gas trans mission line 3project



大中型电机 LARGE AND MEDIUM-SIZED MOTORS

变电为能，给力全社会

TRANSFORM POWER
INTO ENERGY TO
BENEFIT THE WHOLE
SOCIETY

在电动机领域，上海电气从上世纪五十年代起成为全国电机制造行业的重点骨干企业，成功研发制造了世界第一台双水内冷汽轮发电机，年生产能力1000万千瓦，占全国大中型交直流电机市场份额超过25%，可设计制造500kW~100000kW同步电动机，0.12kW~30000kW异步电机。产品广泛用于西气东输、南水北调、东深工程等国家重大项目，并远销世界各国。

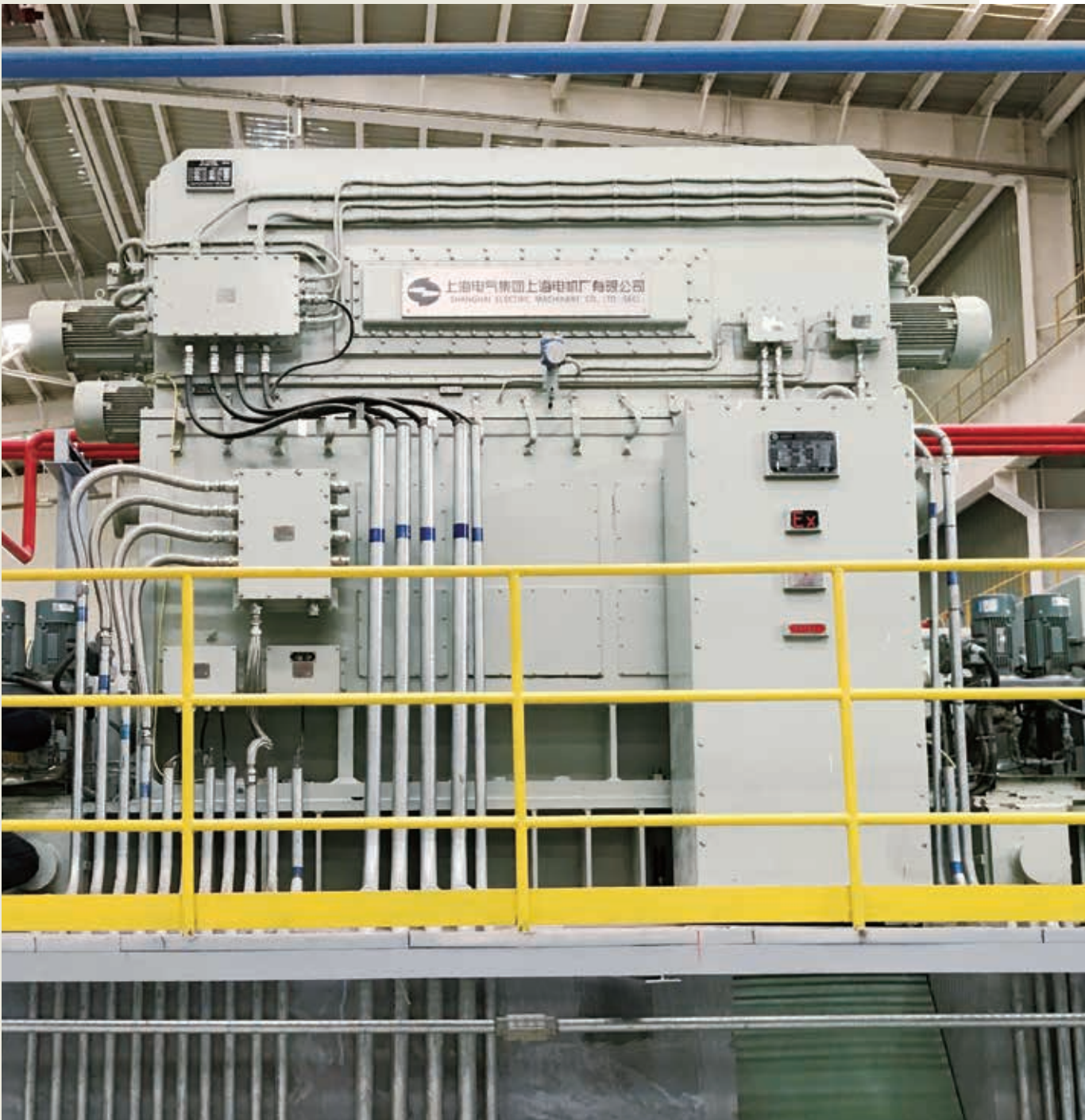
近年来，上海电气不断推出环保、节能、绿色产品，逐步形成以大中型交直流电机、中小型汽轮发电机、风力发电机为主业，向驱动成套、发电成套与电机全生命周期服务拓展的综合性电机制造服务商。

In the field of electric motors, Shanghai electric has become a key backbone enterprise of the national motor manufacturing industry since the 1950s. Shanghai Electric successfully developed the first double-water internal cooling steam turbine generator in the world with an annual production capacity of 10 million kilowatts, accounting for more than 25% of the market of large and medium-sized AC/DC motors in China. Shanghai Electric can produce 500 kW to 100,000 kW synchronous motors and 0.12 kW to 30,000 kW asynchronous motors. So far, the products have been widely used in major national projects such as West-to-East Gas Pipeline Project, South-to-North Water Diversion Project and Dongshen Water Supply Project, and are also popular with overseas customers.

In recent years, Shanghai Electric has continuously launched environmental-friendly, energy-saving and green products, mainly including large and medium-sized AC/DC motors, small and medium-sized turbo-generators, and wind turbines. Meanwhile, the company aims to build up a comprehensive motor manufacturing system by providing the customers with complete drive sets, complete power generation sets, and a full cycle service of motors.

年生产能力
Annual production Capacity

10,000,000kW



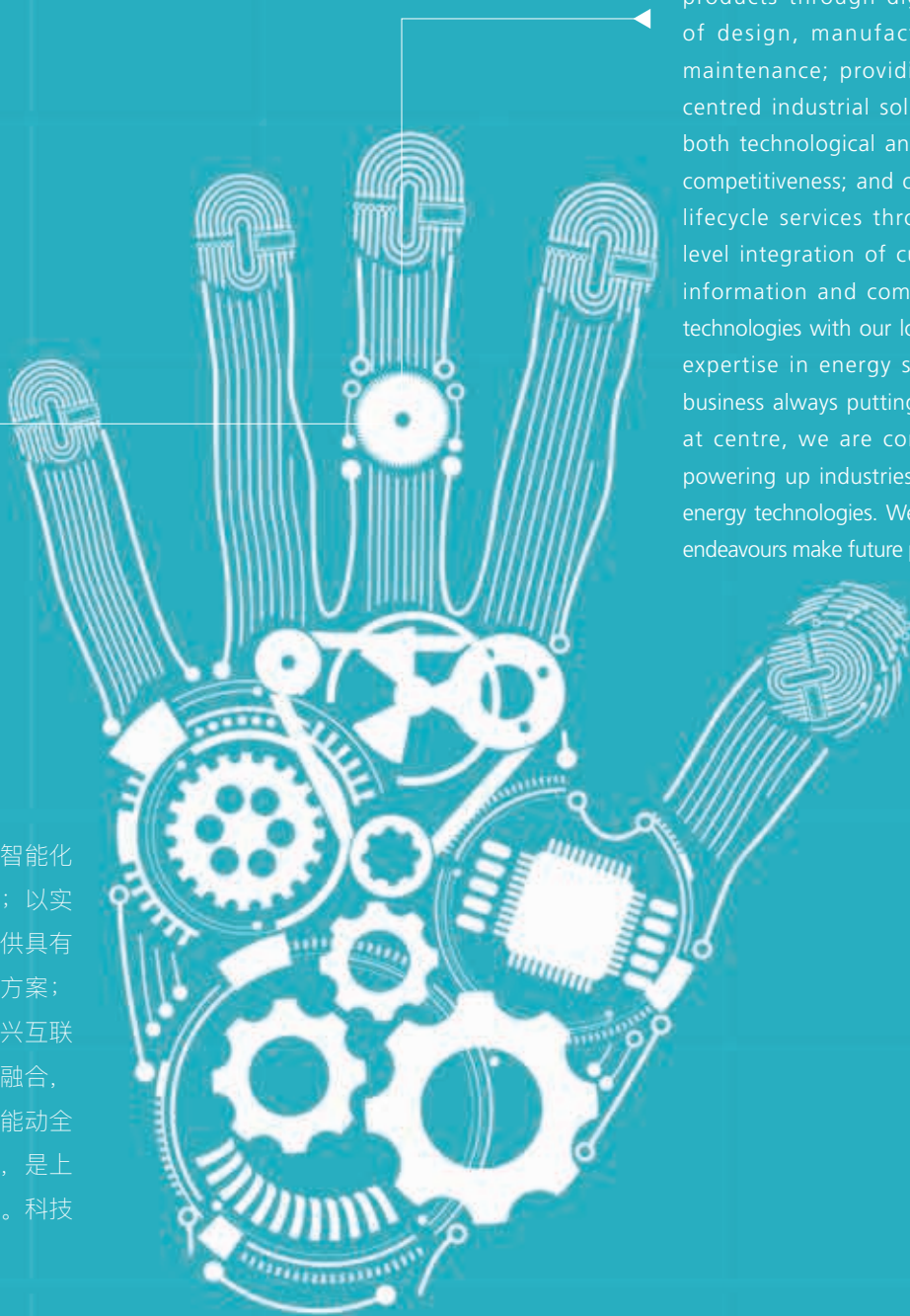
用心发现，让未来提前到来

LEARN TO DISCOVER NEW THINGS WITH YOUR HEART
AND MAKE THE FUTURE COME EARLY

科技创新 TECHNOLOGICAL INNOVATION

We are passionate in creating a R&D culture driven by our vision of an intelligent future – supplying smart products through digitalization of design, manufacturing and maintenance; providing client-centred industrial solutions with both technological and economic competitiveness; and offering full-lifecycle services through deep-level integration of cutting-edge information and communication technologies with our long-standing expertise in energy sector. As a business always putting innovation at centre, we are committed to powering up industries with smart energy technologies. We believe our endeavours make future present.

以设计、制造及运维的智能化为愿景，打造智能产品；以实现客户价值为宗旨，提供具有整体竞争力的工业解决方案；将专业知识、经验与新兴互联网技术、信息技术深度融合，提供全生命周期服务。能动全球工业，智创美好生活，是上海电气科研创新的动力。科技创新，让未来提前到来。



集团每年的研发投入高达12亿元人民币。集团在传统高效清洁能源领域，围绕高效率、低排放的目标深耕细作；保持煤电1000MW等级超超临界二次再热发电等技术国际领先，引领传统能源发电技术发展；在新兴能源与环保领域，积极跟踪及布局前沿新兴技术，在超临界CO₂、太阳能光热、综合能源及储能、环保水务等新兴领域开展技术研发与工程应用工作，支撑能源结构转型，助力能源体系升级；在数字化及能源互联网领域，上海电气电站集团拥抱数字化、智能化技术，将其与发电设备相融合，不断创新智慧能源产品，打造智慧能源解决方案。

Shanghai Electric Power Generation Group invests 1.2 billion Yuan annually in research and development. The group has been dedicated to developing technologies that make traditional types of energy efficient and clean. For years, the group maintains to be the leader of traditional types of power generation technologies in global market – the group is the world-class manufacturer of coal-fired 1000 MW class ultra-supercritical double-reheat generation units. We are also daring pioneers of cutting-edge power technologies and applications that are renewable and environment-friendly, such as supercritical CO₂, solar thermal, energy storage, integrated energy-system solution and water treatment. With such efforts, we are dedicated to promoting a cleaner and more diverse structure of energy consumption. We also believe in a future of digitalized ways of power generation – by injecting intelligent technologies into power generation units, we are committed to offering smart energy products and solutions.



01 | 家

国家技术创新示范企业
One national technology
innovation demonstration
enterprise



03 | 个

上海市企业技术中心
Three Shanghai enterprise
technology centers



02 | 个

上海市工程技术研究中心
Two Shanghai engineering
technology research centers



08 | 家

高新技术企业
Eight high and new
technology enterprises

“十三五”期间，上海电气电站集团承担及参与国家科技专项17项，上海市科技专项45项，荣获国家科技进步奖2项，国家教育部技术发明奖1项，中国国际工业博览会银奖2项，上海市科技进步奖15项，中国机械工业科学技术奖18项等国家、地方、行业奖项。

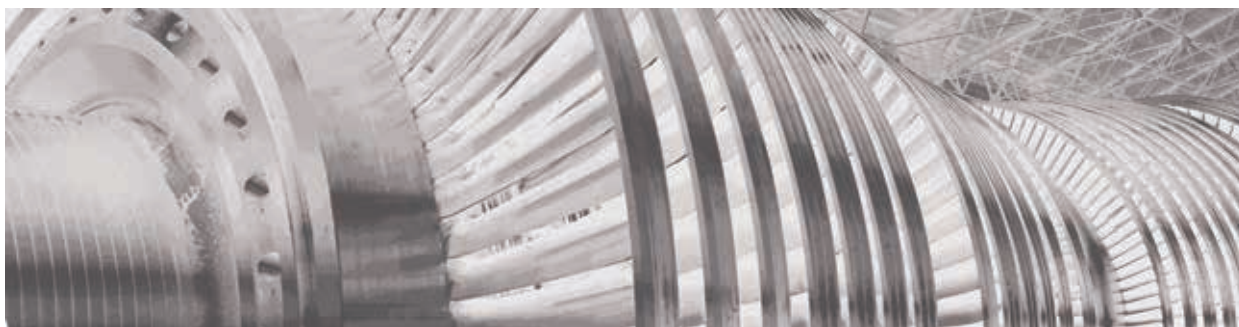
During the "13th Five-year Plan" period, Shanghai Electric Power Generation Group has participated and been tasked with 17 national science and technology programs of China, and 45 science and technology programs of Shanghai. The group has earned the following national, local-level and industry-based awards for its contribution in scientific innovation and excellent performance in the industry: 2 National Science and Technology Progress Awards; 1 Technical Invention Award issued by the Ministry of Education; 2 China International Industry Fair (CIIF) silver award; 15 Shanghai science and technology progress awards; and 18 China Machinery Industry Science and Technology Awards.

从高碳产业走向低碳产业

从装备制造走向智慧产品

从工程总承包走向全产业链方案服务

从全球化销售走向全球化经营



We have moved from high carbon industry to low carbon industry,

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From EPC contractor to the whole industry chain service provider,

From global sales to global operations.

上海电气电站集团
Shanghai Electric Power Generation Group



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