SIEMENS

Siemens in China

Siemens AG is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 170 years. The company is active around the globe, focusing on the areas of electrification, automation and digitalization. One of the largest producers of energy-efficient and resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. With its publicly listed subsidiary Siemens Healthineers AG, the company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT.

The history of Siemens in China dates back to 1872, when the company delivered the first pointer telegraph to China. The company manufactured the first steam generator and built the country's first tram line by the end of the 19th century. In 1985, Siemens entered a cooperation agreement with the Chinese government, becoming the first foreign company to participate in such a comprehensive cooperation scheme. For more than 140 years, Siemens has pioneered cooperation with the country with its solutions, technologies and products, and has been known in the country for its quality and reliability, technological excellence and innovation.

Siemens has witnessed the tremendous changes that have taken place since China embarked on reform and opening-up. The company has also made great contributions to the reform drive of the country. In fiscal 2018 (October 1, 2017 – September 30, 2018), Siemens generated revenue of €8.1 billion in China. The

company had over 33,000 employees by fiscal 2018 in the country, which has become the second largest overseas market of Siemens.

For over a century, Siemens has become an integral part of the Chinese economy and society. Offering a wide array of Environmental Portfolio and innovative solutions in cooperation with local partners, Siemens is committed to the sustainable development of China with the brand claim "Ingenuity for life". On the way to "Vision 2020+", the company dedicates itself to long-term value creation. The purpose is to serve the society and make real what matters.

As the Belt and Road Initiative develops, more and more Chinese companies are stepping onto the global stage. With leading technologies, complete portfolio, global network, financial solutions and flexible service models, Siemens cooperates with Chinese companies in fields including infrastructure, power, oil and gas and chemicals, as well as industry. By fiscal 2018, Siemens had worked with over 100 Chinese companies such as POWERCHINA, CEEC, CNPC, Sinopec Group, CNBM and CIMC Raffles to explore opportunities in over 100 countries and regions across six continents.

In 2018, Siemens set up a dedicated Belt and Road office in Beijing, and also held the first Belt and Road International Summit to connect, create and collaborate together with global partners for value co-creation.

Innovation for China's development

Siemens develops the most promising products and solutions in China, for China and also for the world. The company focuses on digital innovations and combines the global R&D systems and extensive network of innovation centers with local business needs. Siemens develops innovations to fulfill the needs of local customers and breathe fresh life into transformation and upgrade of China's industries. Meanwhile, Siemens spares no effort to build an open innovation ecosystem in China. The company partners with local governments, leading enterprises, medium, small and micro-sized enterprises and

start-ups, as well as universities and scientific research institutions to jointly develop future-oriented innovations and achieve win-win situation for all parties.

By fiscal 2018, the company had 21 R&D hubs, nearly 5,000 R&D and engineering staff, and nearly 13,000 active patents and patent applications in China. Siemens' top-notch innovators are working in world-class innovation labs in Beijing, Shanghai, Suzhou, Nanjing, Wuhan, Wuxi, Qingdao, Chengdu, etc. to contribute to the high-quality and sustainable development of China's economy.

Officially opened in 2006, Siemens Corporate Technology China (CT China) is the company's largest research branch outside Germany. Research scientists at CT China work on the cutting-edge technologies of electrification, automation and digitalization with a broad impact for the businesses.

Meanwhile, CT China is leading the company's global research in autonomous robotics with focus on the R&D of new mechatronics systems, human-robot collaboration and the application of artificial intelligence in robotic controllers.

In September 2016, Siemens Corporate Technology China, Suzhou opened with a focus on the R&D of big data, industrial IoT, connected cities solutions, cyber security and autonomous robotics. It is Siemens' first R&D hub focused on digital technologies in China.

In May 2017, Siemens announced the commercial release of its Cyber Security Operation Center service as part of its Cyber Defense Center (CDC) in Suzhou. Siemens industrial security specialists based in Siemens Corporate Technology China, Suzhou monitor customers' digital factories and production lines, identify cyber threats facing customers, warn owners in the event of security incidents and coordinate proactive countermeasures. Siemens China CDC is also integrated into the global footprint of other Siemens Cyber Security Operation Centers already in operation in Munich of Germany, Lisbon of Portugal and Milford of the U.S.

Siemens Qingdao Innovation Center was set up in March 2016. This was Siemens' first innovation center of intelligent manufacturing outside Germany. At the end of 2017, Siemens joined hands with Aucma to establish a joint laboratory for robotic applications to jointly develop R&D of special robots, industrial robots and intelligent equipment.

Siemens Wuxi Innovation Center was established in 2013. Based on local demands, the innovation center carried out extensive cooperation with local enterprises in fields including intelligent equipment, transparency factory, PROFINET, etc. to support industry upgrade and enterprise automation. Wuxi Innovation Center has cooperated with Miracle Automation Engineering Co., Ltd. to develop the digital car assembly line in an Internet of Things (IoT) demonstration project, helping the company to increase quality of products and services and achieve fast business growth.

Siemens' innovative technologies are also improving people' lives in cities. In September 2018, Siemens reached an agreement with a partner to provide over 100 Embedded City Boxes for Wuxi's Xinwu District within five years to collect urban data, perceive basic environment and traffic flows, and ultimately help Wuxi explore the path to become a world-class smart city.

In January 2017, Siemens opened Wuhan Industry Maker Space to explore and establish innovation models and industrial ecosystem of intelligent manufacturing in China together with partners. Siemens also cooperates with local universities and scientific research institutions to accelerate innovations of medium-sized, small and micro enterprises. Wuhan Industry Maker Space is part of Siemens Wuhan Innovation Center. The center was established in 2013 with a focus on R&D in areas including Industrial IoT data integration and application support technology, intelligent manufacturing, smart water, etc.

Comprehensive portfolio for long-lasting partnership

In China, as the manufacturing industry experiences a significant transformation from "Made in China" to "Innovated in China", Siemens helps manufacturers enhance

production efficiency, flexibility and security, improve product quality, and shorten the time to market of new products.

In July 2017, based on their existing cooperation framework, Siemens and China's National Development and Reform Commission signed a MoU that specified cooperative activities in areas of innovation and in the application of digital technologies. Siemens will continue to offer Digital Enterprise solutions to support the upgrade and transformation of China's industrial sector.

With strong expertise and rich experiences in digitalization area, in June 2017, Siemens opened in Beijing its first "Digitalization Experience Center" in Asia-Pacific Region. The Center comprehensively exhibits the company's leading Digital Enterprise concept for "Industrie 4.0". In August 2017, Siemens Process Industry Digitalization Experience Center opened in Shanghai to demonstrate Digital Enterprise solutions for process industries with "Digital Twin" as the core. In 2018, a new digitalization experience center with a focus on industrial button customization opened at Siemens Electrical Apparatus Ltd., Suzhou.

In September 2018, Siemens and Alibaba Cloud jointly launched MindSphere, Siemens' cloud-based open IoT operating system, on the Chinese mainland to accelerate development of China's industrial IoT.

By fiscal 2018, Siemens has provided Digital Enterprise solutions to hundreds of Chinese companies covering dozens of industries, enabling the quality development of the Chinese industry.

In the food and beverage industry, the company joined hands with Hangzhou Wahaha Group Co., Ltd. to build the first digital and intelligent beverage production line in China. In the auto equipment sector, Siemens helped Guangzhou MINO Automotive Equipment Co., Ltd. transform into a provider of intelligent manufacturing solutions and services. Siemens' virtual commissioning platform helped it increase efficiency of onsite commissioning by over 50%.

In the process industry, Siemens focuses on creating long-term values and increasing return on investment for customers. For example, Cathay Industrial Biotech Ltd. cooperated with Siemens to build a world-class digital bio-manufacturing site in Wusu, Xinjiang.

In 2016, Siemens provided an advanced Power Package System including the DP3 Closed Ring Power Solution for “BLUEWHALE I”, a semisubmersible drilling rig with the greatest operating water depth and drilling depth, to ensure its energy-efficient, stable and safe operation. In May 2017, “BLUEWHALE I” succeeded in trial drilling of combustible ice.

In addition, Siemens has also concluded agreements with companies including China Baowu Steel Group, China Aerospace Science and Industry Corporation, China Electronics Technology Group Corporation, Aero Engine Corporation of China, Kunming Shipbuilding Equipment Co., Ltd., Xinjiang Zhongtai (Group) Co., Ltd. and COFCO Engineering & Technology Co., Ltd. to jointly develop intelligent manufacturing.

As a committed partner of China’s energy industry, Siemens has always been pursuing energy efficiency and reducing greenhouse gas emissions.

In the oil and gas industry, as a leading rotating equipment supplier, Siemens provides key products and solutions for the extraction, transportation and processing of oil and gas. In August 2017, the company was awarded two orders to supply power generation equipment for Penglai 19-3 oil field project and Dongfang 13-2 gas field development project of China National Offshore Oil Corporation Limited. Meanwhile, Siemens continues to expand its footprint in such areas as propane dehydrogenation (PDH), purified terephthalic acid (PTA) and air separation with advanced compressor trains.

To help the oil and gas industry master the opportunities and challenges of digitalization, the company also provides corresponding solutions. For example, Siemens helps optimize offshore productions with the “Topsides 4.0” and “Pipeline 4.0”

as secure and digital solutions covering the whole life cycle to increase efficiency and reduce operation cost.

In April 2018, Siemens won its first H-class gas turbine order on the Chinese mainland. Siemens will supply two sets of equipment including two SGT5 - 8000H gas turbines, two steam turbines and four generators for the Gas Combined Cooling, Heating and Power project of China Huadian Corporation Ltd. in Zengcheng District, Guangzhou. This is the biggest gas turbine combined cycle project in China. It's also another breakthrough for Siemens after winning its first H-class gas turbine order in greater China to provide a power block for a new combined cycle in Black Point Power Station in Hong Kong.

Siemens also focuses on pushing forward the application of digital technologies in the power industry. In October 2017, Siemens signed an agreement to implement the setup of an integrated and connected Remote Operation Center (ROC) for the fleet of China Resources Power Holdings Co., Ltd. This is Siemens' first digitalized power ROC in China. The center will leverage MindSphere for integration and connectivity.

Meanwhile, the company also strengthens its foothold in the distributed energy market. In addition to supplying industrial gas turbines for many gas distributed power generation projects, Siemens provided three units of SGE-56HM gas engines to a distributed energy project in the economic development zone of Anshan, Liaoning Province in early 2018. This order marked the debut of Siemens' gas engine on the Chinese market.

In power generation services, Siemens continues to enhance localization in China, aiming to help local customers maximize operation efficiency and reduce risks. In March 2018, Siemens signed an agreement with Shanghai Shenergy Energy Technology Co., Ltd. to implement a high-temperature subcritical upgrade for a 320MW steam turbine unit at Xuzhou Power Plant, a subsidiary of China Resources Power Holdings Co., Ltd. in Jiangsu Province. This was Siemens' first steam turbine modernization and upgrade project in China.

In June 2018, Siemens power generation customer service center - Yixing was inaugurated. As an important part of Siemens power generation global service network, the service center provides one-stop service solutions for Chinese customers.

In the field of power transmission, together with local partners, Siemens delivered the world's first ±1,100 kV high-voltage direct-current (HVDC) transformers for the world's first ±1,100 kV HVDC transmission link (Changji-Guquan). The transmission link, currently boasting the world's highest direct current voltage grade and the largest transmission capacity, is 3,324 km long with a transmission capacity of 12 gigawatts.

With digital technologies, Siemens has also helped partners in areas such as energy management, mobility and buildings to build intelligent infrastructure and enable digital cities. In December 2017, Siemens and Hong Kong Science and Technology Parks Corporation announced the official opening of Smart City Digital Hub. Powered by MindSphere, the Hub will tackle city challenges and unleash the potential of digitalization in Asian cities.

Besides, Siemens also equipped Shanghai Tower with advanced energy management and intelligent building systems, including power transmission and distribution, energy automation, fire alarm control and intelligent lighting system, enabling intelligent management of the building and making it safer and more reliable.

Meanwhile, the company is actively engaged in transforming China's energy sector toward decentralized energy systems. Siemens provides complete distributed energy system solutions to customers in areas of utilities, public services and industrial verticals. In July 2017, the distributed photovoltaic (PV) project at Siemens Circuit Protection Systems Ltd., Shanghai (SCPS) came into operation. Siemens and its partners offered complete distributed energy solutions, including hardware and software, for SCPS turnkey distributed PV project.

In September 2018, Siemens signed an agreement with Linuo Group Co., Ltd. to further advance the construction of smart energy network system at Linuo Science and Technology Park in Jinan. Siemens is to provide research consulting on overall framework of smart park development and smart energy technology implementation programs as orientation and feasibility guidance for the Group's future smart park construction. The platform covering micro-grid management, energy management and energy storage management will be Siemens' first smart energy comprehensive management platform for parks in China.

In the rapidly growing data center market, with advanced technologies and rich experiences, Siemens won major orders. It provided Totally Integrated Power solutions including medium and low-voltage power distribution systems to ensure stable and safe power supply for Tencent data center.

In the area of mobility, Siemens helped build Zhuhai Traffic Information and Comprehensive Service Platform. The Platform has adopted the "green traffic index system" and is able to collect, sort out and analyze mass data in real time to provide a quantitative basis and criterion for the city's decision-makers, and bring mobility convenience to residents. In October 2017, Phase II of the project was completed and accepted.

In the field of urban rail transport, 33 operating metro lines in 15 Chinese cities had been equipped with Siemens' safe and reliable signaling systems by fiscal 2018.

In December 2017, Siemens won the first unattended train operation (UTO) project in China and will provide core components and key technologies of traction system for UTO trains in Shanghai Metro Line 18 Phase I project. This is an important breakthrough for Siemens in China's UTO market. In 2018, Siemens continues to expand footprint in this field and will provide fully automated signaling system solutions for Suzhou Metro Line 5 and Nanjing Metro Line 7.

In March 2017, the consortium formed by Siemens, CRRC Zhuzhou Locomotive Co., Ltd. and a local company in Malaysia won a bidding of Malaysia Light Rail Transit Line 3. The line will adopt UTO of GoA4 level, the highest level of automation. Siemens provides a propulsion system, components and related services to the line.

In addition, Siemens also focuses on innovation in the mobility area. The company's first mass transit signaling innovation R&D center in China has opened in Fuzhou. It will introduce the most advanced technologies in mass transit signaling area into the Chinese market and develop innovations that meet local demands. The center focuses its research on UTO signaling technology, signaling interconnection between mainline railways and metro lines, as well as MindSphere and applications of big data in transportation.

In the area of building technologies, Siemens provided integrated solutions to electrical works and building automation of Lilacs International Commercial Center in Shanghai. The solutions included transformers, medium- and low-voltage switchgears, building automation systems, fire safety systems and EIB lighting control system, etc.

Besides, Siemens also provided intelligent building automation system to the Passive House Technology Center at Qingdao Sino-German Ecopark. The building achieved the goal of nearly zero energy consumption and enabled a perfect living environment for people.

Utilizing its cutting-edge technology and strong capital, Siemens also provides worldwide customers with professional and reliable financial solutions. In China, the company drives business success with customized leasing solutions for Siemens equipment and third-party products in sectors such as machine tools, construction machinery, transportation and logistics, electronics, packaging, food and beverage, plastic injection and glass deep-processing, etc. Since 2005, Siemens Finance and Leasing Ltd. has financed more than 2,000 public and private hospitals, helped over 1,000 enterprises to upgrade equipment, and established strong relationships with hundreds of manufacturers and dealers.

Siemens Healthineers is a leading medical technology company committed to enabling digitalized healthcare and empowering healthcare providers to increase value by expanding precision medicine, transforming care delivery and improving patient experience. Every day, around 5 million patients globally benefit from innovative medical technologies and services of Siemens in such areas as diagnostic and therapeutic imaging, laboratory diagnostics and molecular medicine.

Value creation for society

Actively fulfilling corporate social responsibility and focusing on creating values for the society is a core mission of Siemens. As a good corporate citizen, the company has made constant efforts to contribute to the public welfare in China, focusing on creating values for the society through its technical portfolio, innovations, local operations, people development and activities in corporate social responsibility.

In addition to monetary donations, Siemens provides relevant products and solutions to contribute knowledge, experience and technological assistance to entities in need. Employees also actively participate in voluntary activities jointly organized by Siemens and non-profit organizations.

Siemens Employee Volunteer Association (SEVA) was launched as a platform of volunteering and cooperation for the employees, the company and the society. By fiscal 2018, SEVA had organized volunteering activities in 17 cities and benefited tens of thousands of people across China.

Over the years, the company has been actively engaged in a variety of corporate social responsibility activities with a focus on three areas: access to technology, access to education and sustaining community.

The company is committed to aligning business activities with the interest of future generations. Siemens aims to become the world’s first major industrial company to achieve a net-zero carbon footprint by 2030 and plans to cut its CO_2 emissions by half

by as early as 2020. To achieve these goals, Siemens invests some €100 million over three years from fiscal 2016 to reduce energy footprint of its production facilities and buildings.

In 2016, Siemens renewed the MoU with the Ministry of Education in a bid to boost cultivation of innovation-oriented talents. By fiscal 2018, Siemens had collaborated with more than 300 Chinese universities and vocational schools in building of labs, teachers training, engineering textbooks and Siemens scholarships. The company has been sponsoring the “Siemens Cup” China Intelligent Manufacturing Challenge for 12 years and cultivated more than 10,000 innovative engineering talents.

In the past nearly 10 years, Siemens has cooperated with more than 90 universities and research institutes on over 750 R&D projects in China. The Center of Knowledge Interchange (CKI) program represents Siemens’ top-level and long-term strategic collaboration with global with universities in R&D and talent cultivation. In China, Siemens has built up CKI strategic ties with Tsinghua University to further promote the cooperation on scientific and technical exchanges and talent development. In October 2017, Siemens extended the Master Research and Development Agreement for another five years, leading the CKI collaboration into its third phase in China.

In 2017, Siemens entered into partnership with Tsinghua University to jointly set up Tsinghua University – Siemens Joint Research Center for Advanced Robotics in Beijing. This synergy between global experts will be the basis for Siemens to build a new innovation community of robotics automation and control technologies, as well as for identify and develop top talents in the robotics field.

In 2018, the company has also launched “Siemens China Scholarship for Tsinghua International Ph.D. Program” to support international students to study Ph.D. programs at Tsinghua University and cultivate top talents in digitalization. Siemens is the first multinational company that has provided funds to Ph.D. students at Chinese institutions of higher education.

In May 2018, Siemens and Soochow University reached a strategic agreement to establish the Soochow University - Siemens Data Science Lab. The two parties leverage Siemens' technological advantages in digitalization to conduct researches in fields including data analytics, artificial intelligence and cyber security.

Every year, Siemens holds more than 30 technology lectures and career lectures at universities countrywide. The company also holds Siemens Open Day events at many universities. By fiscal 2018, the company had established Siemens Student Circle in 10 universities across the country. Meanwhile, the company provides full-time job opportunities for the graduates every year. A large number of graduates from top universities in China have joined Siemens trainee programs including Siemens Sales Trainee Program "Sales 100", Siemens R&D Trainee Program "R&D 100", Siemens Engineer Trainee Program "Engineer 30", Siemens Graduate Program SGP, etc. In addition, Siemens has gradually established the Campus-Hub campus learning center and Talent Training Base in various universities across the country to cultivate intelligent manufacturing talents.

As for primary education, Siemens I-Green Education Program targets China's migrant children in primary schools to raise their awareness of environmental protection and help them better integrate into city life. Since its launch in 2009, the program has been rolled out in 11 schools of migrant children in 10 cities, including Beijing, Shanghai, Wuhan, Guangzhou, Kashgar, Shenzhen, Chongqing, Nanjing, Xi'an and Chengdu. Around 2,700 Siemens employee volunteers have devoted more than 20,000 hours to this program and benefited more than 23,000 students. Siemens I-Green Education Program became one of the core projects of "China Education Support Project" for the first time in 2017. Over 340 university students joined the project as volunteers to offer science and environmental education to over 5,700 students of rural areas along the Belt and Road in China.

Siemens is committed to sustainable development of the society by taking initiatives including organizing various activities for environmental protection, supporting development of NGOs, providing social assistance to disadvantaged groups, and

providing immediate technological and humanitarian assistance in case of natural disasters.

In August 2015 after Tianjin explosion accident, Siemens donated medical equipments worth over RMB3 million. The Siemens Healthineers customer service team also responded quickly and immediately launched green channel to ensure timely emergency maintenance to installed Siemens medical equipment. Prior to this, Siemens also provided immediate technical and humanitarian assistance in the cases of natural disasters, such as the earthquake in Ludian County of Yun'nan Province, the earthquake in Sichuan's Wenchuan and the earthquake in Yushu of Qinghai Province.

In 2007, Siemens joined hands with Nanjing University, Consulate General of the Federal Germany in Shanghai and other partners to establish the John Rabe and International Safety Zone Memorial Hall, as well as the Development Fund for John Rabe International Research and Exchange Center for Peace and Reconciliation. In 2016, Siemens renewed the sponsoring agreement to make further contributions to the fund for the next five years to continue promoting John Rabe's humanitarian and volunteering spirit.

Siemens' long-term commitment to corporate social responsibility is widely recognized by the Chinese society. In November 2018, Siemens China won "Sustainable Growth and Environment Protection Award" at the fifth Corporate Social Responsibility Award Ceremony held by European Union Chamber of Commerce in China. In September 2018, Siemens China won three awards including "Best Sustainable Development Award", "Beautiful China Environmental Protection Award" and "CSR China TOP 100" at the CSR China Education Award Ceremony. In January 2018, Siemens was awarded the "Special Tribute Award" at the 7th China Charity Festival.

###

For further information, please contact:

Mr. Hu Yue
Communications
Siemens Ltd., China
P.O. Box 8543, No, 7 Wang Jing Zhong Huan Nan Lu,
Chaoyang, Beijing
Tel.: (+86 10) 6476 2758
Fax: (+86 10) 6476 4922
E-mail: yue.hu@siemens.com