

# **SIEMENS**

## **Siemens in China**

**Siemens AG (Berlin and Munich) is a technology company focused on industry, infrastructure, transport, and healthcare. From more resource-efficient factories, resilient supply chains, and smarter buildings and grids, to cleaner and more comfortable transportation as well as advanced healthcare, the company creates technology with purpose adding real value for customers. By combining the real and the digital worlds, Siemens empowers its customers to transform their industries and markets, helping them to transform the everyday for billions of people. Siemens also owns a majority stake in the publicly listed company Siemens Healthineers, a globally leading medical technology company shaping the future of healthcare. In addition, Siemens holds a minority stake in Siemens Energy, a global leader in the transmission and generation of electrical power.**

**The history of Siemens in China dates back to 1872, when the company delivered the first pointer telegraph to China. The company also 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 over 150 years, adhering to the spirit of "committed to the shared future", Siemens has been pioneering cooperation with the country with its solutions, technologies and products.**

**Siemens has taken roots in China for over a century and has become an integral part of the Chinese economy and society. In the future, Siemens will continue to**

**inject momentum into the high-quality and sustainable development of the Chinese economy by leveraging its localized value chain and global resources with the dual drives of digitalization and decarbonization.**

**Siemens lives up to “being responsible, excellent and innovative” as its company values and focuses on four development priorities: customer impact, growth mindset, technology with purpose and empowered people. Siemens is committed to becoming a top influential technology company in China, as “Siemens China<sup>a</sup>” strategy is well on track.**

### **Innovate for China and integrate into China’s development**

Siemens develops the most promising products and solutions in China, for China and also for the world. The company creates technology with purpose by combining the global R&D systems and extensive network of innovation centers with local business needs. Siemens develops innovations to fulfill the needs of local and global customers and breathe fresh life into the development of industries. Meanwhile, Siemens spares no effort to build an open innovation ecosystem in China by building partnership with governments, enterprises, as well as universities and scientific research institutions.

By fiscal 2022, Siemens had more than 5,100 R&D and engineering staff, and 21 R&D hubs, as well as nearly 11,500 active patents and patent applications in China. By working with local governments and partners, Siemens has built more than 20 digital innovation and enabling centers in China, empowering digital transformation and sustainable development of local industries with region-specific solutions.

In 2022, Siemens launched in the Chinese market an open digital business platform - Siemens Xcelerator that enables enterprises of different sizes in different industries to accelerate their digital transformation easier, faster and at scale. Siemens Xcelerator includes a curated portfolio of IOT-enabled hardware, software and digital services, a growing ecosystem of partners and an evolving online platform, bringing three major values to its customers: convenience, flexibility, and openness.

Officially opened in 2006, Siemens Technology China is the company's largest research branch outside Germany. More than 300 top-notch innovators work in world-class innovation labs in Beijing, Shanghai, Suzhou, Qingdao, Wuhan, Wuxi, etc.

Siemens Technology China empowers the sustainable business growth of the company through R&D on Corporate Core Technologies including Data analytics & AI, Simulation & Digital Twin, Software Systems and Processes, Future of Automation, Cybersecurity & Trust, Connectivity & Edge, Sustainable Energy & Infrastructure, Additive Manufacturing & Materials, etc. So far, customized solutions created by Siemens Technology China, including Workflow Canvas™, data layer, close-loop intelligent operation, digitalization toolkit for production, autonomous system and software defined production machines, have been widely used in various verticals. Besides, Siemens Corporate Technology China is committed to the research of industrial metaverse. By combining the real and digital worlds, a virtual collaboration space is created to provide immersive experience and real-time interaction, improve product development and manufacturing efficiency, unleash infinite potentials for economic and industrial transformation. Meanwhile, Siemens Technology China is actively developing solutions on green manufacturing and carbon neutrality.

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. Based on "defense in depth" concept, the center provides innovative industrial security services and solutions which take AI-driven situational awareness as the core. The innovative next-generation industrial security defense architecture based on zero trust from the Industrial Information Security Laboratory (Beijing) safeguards the digital transformation of enterprises. safeguarding the digital transformation of enterprises. Siemens has had its organization, infrastructure, portfolios and security team all certified with local security law and regulations.

SiePA developed in China is an AI-based predicative analytics system that ensures safe, reliable, efficient, green and sustainable production by providing plant operators with data insights for predictive maintenance of industrial equipment and predicative optimization of manufacturing processes. SiePA was honored with “Red Dot Award” and “SAIL Best Product” at the World Artificial Intelligence Conference in 2020. This innovative software product has been successfully deployed in many industries, including chemicals, cement, steel, water and food & beverage. Last year Siemens released SiePA 3.0, comprehensively improving the predictive analysis ability of industrial AI.

Siemens has developed the AI-enhanced process control system ShopfloorAI in China, whose design is based on deep supervision and reinforcement learning technologies to help users reduce human process interventions and thus improve product quality and productivity. The system has been applied and scaled up in industries including photovoltaic, automobile and spare parts, food and beverage, metallurgy and other industries.

As an active player in industrial communication and a member of 5G Alliance for Connected Industries and Automation, Siemens proactively engages in the research of industrial 5G communication standards and the R&D of industrial 5G products and solutions. In 2022, Siemens had officially launched its industrial 5G solutions in the Chinese market, providing safer, faster and more flexible end-to-end communication services to industrial enterprises, so as to help them build a security ecosystem and master digital transformation.

Siemens Industrial Edge integrates the core IT capabilities of network, computing, storage and intelligent applications as well as the cutting-edge AI technology, providing industrial customers with safe, real-time and flexible local data processing solutions on site. Siemens provides a variety of edge devices, a unified management platform, a diversified portfolio of edge applications and an open online app store, and has launched more than 10 devices and floor-level industry standard solutions covering the

automotive, tire, environmental protection and energy conservation industries, and actively realize the use cases. Meanwhile, Siemens is also dedicated to building an industrial edge ecosystem to create more values for enterprises and partners.

Siemens has long attached importance to standardization and the construction of technical regulations. The company has a strong footprint in standardization both locally and globally. By fiscal 2022, in China, with more than 120 representative seats in China's standardization technical committees/subcommittees and associations, Siemens has played an important role in drafting more than 220 national standards, more than 30 sector standards and several association standards. In terms of standardizing and cultivating talent, Siemens has gradually established a multi-level training system and standardized talent evaluation and incentive mechanism. In 2022, the company issued the "Siemens Standardization Expert" certificate to 40 employees in various business areas.

### **Enhance digital transformation with customers and partners**

China's digital economy is booming as the country continues to accelerate its industrial digitalization and digital industrialization. Siemens, backed by the latest digital solutions and its profound industry expertise, has been devoted to co-building an ecosystem with the Chinese government and all stakeholders in China that benefits all and has been working toward a future built on collaboration and co-creation.

In July 2017, based on the existing cooperation framework, Siemens signed an MoU with National Development and Reform Commission (NDRC) that specified cooperative activities in innovation and application of digital technologies. Siemens continues to offer Digital Enterprise solutions to support the modernization of China's industrial system.

With Digital Enterprise portfolio, **Siemens Digital Industries** seamlessly combines the real and digital worlds, and achieves continuous optimization based on "Digital Twin". At the same time, Siemens Digital Industries discovers infinite opportunities from infinite

data, enables fast and confident decision making of industrial enterprises, and accelerates their transformation and sustainable development.

In February 2021, "Siemens 1847 Industrial Learning Platform" went live. The online platform provides enterprises and engineers with high-quality content and value-added services at the forefront of industrial automation and digitization, attracting nearly 200,000 registered members, forstering a learning ecosystem in the industrial field.

In December 2021, Siemens' first one-stop digital customer service platform in China, Digital Customer Journey Platform, went live. Xi You, Siemens' first multi-touch and cross-channel service platform, is composed of the WeChat official account of Siemens Digital Industries, three mini-programs (Discover Siemens Digital Industries, Industry Mall and Industry Services) and a desktop mall. From subscription of customized information, online consultation and procurement of industrial products to online technical support services, the multi-touch platform covers the entire life cycle of a customer's journey, aiming to provide users with an enhanced digital experience customized to meet their own needs at different levels.

In 2022, Siemens' first digital native factory—the new factory of Siemens Numerical Control Ltd., Nanjing was officially inaugurated. From demand analysis, planning and design, construction to production and operation, the factory is made real based on the concept of Digital Enterprise, with the use of Siemens digital technology throughout the entire process. It is a successful example of combing real and digital worlds, integrating IT and OT, and leveraging digitalization and decarbonization. The factory has seen an increase of productivity by 20%, increase of volume flexibility by 30%, and decrease of time to market by 20%. Annually the factory can save 6,300 m<sup>3</sup> water and recude 3,300 tons of carbon emissions.

In November 2022, Siemens launched the Approved Service Partner system, an ecosystem that now has nearly 100 partners. Based on the ASP service network, Siemens is able to ensure timely delivery of professional, efficient and high-quality

services for customers, especially SMEs in industrial parks and clusters, to facilitate their digital transformation.

In the iron and steel industry, Siemens entered into strategic partnership with HBIS Group in digitalization areas including industrial IOT, digital factory, intelligent equipment and talent cultivation. Over the last three years, Siemens has supported HBIS to implement the Group's Tangsteel Company (New District) unmanned stockyard project, Hengstrip Company intelligent rolling mill project, and Shisteel Company top-level planning and predictive maintenance project, empowering HBIS to become a more competitive steel enterprise. In March 2023, the two parties signed an MoU to further deepen cooperation in digitalization and decarbonization.

In the cement industry, Siemens provided CR Cement with a digital blueprint and an implementation roadmap, and supported the transformation of its Tianyang Base by upgrading its automation infrastructure and implementing digital solutions, including Application Lifecycle Management (ALM), Manufacturing Operations Management (MOM), predictive maintenance system (SiePA), kiln control optimization system, industrial network security and situational awareness. In addition, Siemens enables the seamless integration of other supporting systems, such as smart video monitoring, material composition analyzing, and digital mining. CR Cement has seen employee efficiency increased by 33% and coal consumption decreased by 3.38%.

In the glass industry, Siemens provided Huaxing Glass with digital blueprint and implementation roadmap. The phase I project of Huaxing Glass' first digital lighthouse factory has now been successfully completed. The automatic data acquisition and data transparency has significantly improved by 98%. The overall efficiency throughout production and processing has increased by 30%. The production flexibility improved by about 25%, and the defect rate has reduced by 20%. According to the planning of the two parties, Siemens will continue to implement digital transformation for Huaxing's 15 factories.

In the food and beverage industry, Siemens and Swire Coca-Cola developed in-depth cooperation in the fields of digitalization construction, smart supply chain management and cultivation of digital talents. Siemens created a customized Manufacturing Information System (MIS) for Swire Coca-Cola, which has been applied to its production lines in Hangzhou and duplicated on 40 production lines in the group. It will be further applied to nearly 100 production lines in the future. The system has increased the group OEE by over 4%. With the interaction of the MIS and other systems in the production lines, Swire Coca-Cola's plants will save about 10 million kWh of electricity per year, equivalent to saving 3,200 tons of standard coal and reducing 7,500 tons of carbon dioxide emissions.

In the automotive industry, Siemens has supported SAIC Motor with the digital transformation. By using the Siemens Mendix low-code platform, SAIC has completed the development and launch of its intelligent factory lean human resource management system, manufacturing engineering man-hour system, missing parts vehicle management system, quality management system (QMS) and other systems in an efficient and convenient manner. Compared with traditional JAVA development tools, Siemens' low-code platform has helped SAIC save project development time and cut costs, with an increase in overall efficiency of 10-15%.

By fiscal 2022, Siemens had supported thousands of Chinese industrial enterprises in dozens of sectors to implement digital transformation and upgrade, setting benchmarks for digitalization of China's industries.

**Siemens Smart Infrastructure** combines the real and digital worlds across energy systems, buildings and industries, enhancing the way people live and work and significantly improving efficiency and sustainability. By integrating software and hardware, products, systems and solutions, SI makes infrastructures more energy efficient, intelligent and adaptable.

In June 2022, Siemens established the first smart infrastructure digital enabling center in Shanghai, to efficiently empower customers on their journey toward a digital and low-carbon future, with a diversified portfolio of innovative technologies and end-to-end solutions covering intelligent power distribution, smart buildings, smart security and smart energy.

In July 2022, Siemens published “White Paper on Zero-Carbon Smart Campus”, which, based on current progress toward the goal of carbon peaking and carbon neutrality, provides a guideline for the research and exploration of zero-carbon campus by defining the structure, analyzing pain points and entry points for smart campus of all types. and the whitepaper also shares the consulting services, solutions, innovative technologies and successful practices of Siemens in the field.

In the field of public facilities, Siemens provided smart infrastructure solutions for Beijing Daxing International Airport, ensuring efficient and safe operation of the airport. Siemens’ smart building technologies helped terminals and other facilities stay energy-saving, comfortable and safe. Meanwhile, Siemens’ low and medium-voltage products ensured a reliable energy supply of the airport.

In the building industry, Siemens contributed to the construction of China’s National Speed Skating Oval in Beijing with an integrated smart building solution that ensured optimal temperature and humidity for different areas. The oval was made even smarter and greener by installing Siemens intelligent lighting solution. In addition, the oval was equipped with Siemens’ advanced control system, energy management system and industrial cybersecurity solution to ensure the stability and safety of ice making system.

In the petrochemical industry, Siemens has been working closely with Chambroad Holding Group to build a smart grid and distribution system. A 200KW rooftop solar power system installed by Siemens for Chambroad has generated 510,000 KWH of electricity since it went into operation in 2019, which is equivalent to reducing carbon

emissions more than 500 tons. Over the years, the two companies have been working closely in the fields of smart campus, smart grid and digital transformation.

In the field of smart campus, Siemens also joined hands with State Grid to help build Shanghai Lianmin Village as “Pudong first smart energy village”, providing distributed energy solutions covering photovoltaic, wind power, energy storage, heat pumps, biomass power generation, and energy management system to coordinate supply and demand, optimize operation and maximize benefits. The project is estimated to help the village save energy consumption by 10% and reduce carbon emissions by 50%.

In the metro industry, Siemens provided almost all metro lines in Shanghai with more than 4,000 medium-voltage gas-insulated switchgear cabinets, ensuring safety and cutting operational and maintenance costs at the same time. It also provided more than 4,000 microprocessor-based protection devices, contributing to an efficient and reliable power supply for urban rail transit. In addition, Siemens intelligent lighting solution helped optimize the energy efficiency of metro lines. It has not only improved lighting efficiency but also extended the operating life of lamps, and created a pleasant environment for passengers.

In the data center field, Siemens has been driving the development of data centers and supporting the full scale rollout of China’s “Eastern Data Western Computing” project with its rich experience and comprehensive solutions. Siemens provided a low-carbon and intelligent cabinet power distribution solution for Tamron 5G Banan Industrial Park, a large data center in Chongqing built at a cost of 10 billion yuan, for more stable operation and more efficient and intelligent management.

Moreover, Siemens’ distributed power solutions support customers in the areas of power utilities, public services and industrial verticals. Powered by machine learning algorithm, Siemens Digital Solar Operation Platform is capable of photovoltaic module-level inspection and diagnosis, boosting safety, efficiency and availability of power stations. So far, it has been applied at more than 10 photovoltaic power stations across

China, including the one on the building rooftop at Siemens Beijing compound. Each year, through deploying digital photovoltaic operation and maintenance platforms, optimizing eco-friendly cooling systems and upgrading lighting systems, this station helps the compound reduce 1,250 tons of carbon emissions on average.

As a long-term, reliable and close partner of China's transportation industry, **Siemens Mobility** has actively participated in China's transportation infrastructure's innovation, digital transformation and high-quality development, with localization, digital innovation and sustainability as the core strategies. Its core business includes rolling stock and products, signaling system and other products for mainline and mass transit, rail electrification, turnkey solutions, and customer services.

In December 2017, Siemens Mobility signed the framework agreement with Jin'an District Fuzhou Municipality to establish the first Siemens Mass Transit Signaling Innovation R&D Center in China, committed to introducing Siemens' advanced technology in the field of rail transit signaling to China, and focusing on innovations to meet local needs.

In December 2017, Siemens Mobility won its first Fully Automated Operation (FAO) project in China to provide core components and key technology of traction system and electric control solutions for FAO trains in Shanghai Metro Line 18 Phase I project. The line has successfully opened for service with GoA4 automation.

Siemens Mobility has developed a big data diagnostics system—TBDS which integrates the IOT, big data, AI and other cutting-edge technologies to provide intelligent operation and maintenance solutions for subway signal systems. This has been applied to subway signal systems in cities including Fuzhou, Nanjing, Chongqing, Changsha, Hefei, and Xi'an to promote the digital transformation of urban infrastructure and transportation systems.

**Siemens Advanta** provides end-to-end digital transformation services for governments and enterprises. Based on Siemens' profound domain knowledge, cutting-edge industrial IOT technology and a thriving cross-industry ecosystem, Siemens Advanta covers businesses ranging from strategy & operations consulting, software & platforms integration, and applications & technology platforms development.

By the end of 2022, Siemens Advanta had partnered with Yantai, Jining, Wuhan, Baoding and Shenyang, etc., to co-create industrial Internet enabling centers. The centers provide end-to-end digital transformation consulting and integration services, empowering the development of local enterprises and the upgrade of regional industries.

Siemens Advanta and the School of Economics and Management of Tsinghua University jointly operate the "Tsinghua-Siemens Digital Leadership Academy" program designed specifically for the C-suite. It aims to provide comprehensive and diversified courses as well as globalization experience and insights for company senior executives and promote the high-quality development of industries.

In the field of the industrial internet, Siemens Advanta joined hands with Dawn Precision, a leader in the mechanical parts processing industry, and set up Dawn Cloud Manufacturing Industrial Internet to build an industrial ecosystem based on the industrial internet, which helped promote the innovation of its cloud manufacturing business and model, and contributed to its transformation from a traditional manufacturer to a technology company.

In the healthcare industry, Siemens Advanta worked with KingMed Diagnostics to promote the innovation of China's medical laboratory science industry. Siemens Advanta, drawing on its successful practice in Industry 4.0 and expertise in the healthcare industry, supported the digital transformation of KingMed Diagnostics with an end-to-end solution from strategic consulting at the top level to strategy implementation,

to jointly draw up a blueprint and implementation roadmap for medical laboratory science 4.0.

As a leading medical technology company, **Siemens Healthineers** is continuously developing its product and service portfolio, with AI-supported applications and digital offerings that play an increasingly important role for the next generation of medical technology. These new applications will enhance the company's foundation in in-vitro diagnostics, image-guided therapy, in-vivo diagnostics, and innovative cancer care. Siemens Healthineers also provides a range of services and solutions to enhance healthcare providers' ability to provide high-quality and efficient care.

By fiscal 2022, the company's installed base in China was over 70,000 units, covering more than 14,700 hospitals nationwide.

Siemens Healthineers is committed to the innovation of digital solutions. In September 2022, the Siemens Healthineers Digital Command Center in Shanghai was put into operation. The center, relying on the 5G virtual cockpit and the metaverse teaching and research platform, provides timely response and convenient services in equipment training, clinical application and disease diagnosis and treatment, aiming to improve the ability of doctors at the grassroots level and facilitating the establishment of a graded diagnosis and treatment system. By the end of 2022, the center had more than 400 remote experts and provided services for more than 300 hospitals nationwide, with a cumulative service time of more than 1.2 million minutes.

**Siemens Financial Services (SFS)** is deeply rooted in China for 18 years and has been committed to supporting the innovation of companies, especially SMEs, and providing customized financial services for them on their journey toward digital transformation and sustainable development.

SFS serves the Chinese companies with innovative and diversified financial solutions, covering three major sectors: financial leasing, forfeiting, and Small Ticket. SFS

operates through two legal entities: Siemens Finance and Leasing Limited (SFLL) and Siemens Commercial Factoring Limited (SCFL). Additionally, SFS serves customers and partners across China with its widely spread branch offices in major cities of the country.

Through the multi-dimensional product matrix focusing on the three sectors and two legal entities, SFS is dedicated to serving customers within the Siemens ecosphere (i.e. Digital Industries, Smart Infrastructure, Healthineers, Energy, etc.) and a wider range of verticals (Numerical Machine tools, Construction Machinery, Transportation & Sanitation, Electronics, Packaging, Food & Beverage, Additive Manufacturing, Plastic Injection, Glass Processing, Textile, Ceramics, etc.).

### **Drive low-carbon development and co-create a green ecosystem**

Siemens holds itself to the promise that business activities shall take full consideration of its compact to the future. Sustainability is an inseparable part of Siemens business practices deeply rooted in the company's DNA. To build zero-carbon industrial chains is not only concerned with a company's social responsibility but is also imperative in maintaining competitiveness.

In June 2021, Siemens launched its strategic framework DEGREE globally, which set ambitious environmental, social and governance (ESG) targets. Siemens was one of the first major industrial companies in the world to commit to achieving carbon neutrality in its own business operations by 2030. The company also aims to achieve 20% emissions reduction by 2030 and carbon neutrality by 2050 in its supply chain. Since 2019 Siemens has reduced its greenhouse gas emissions in its own operations by 46%. It aims to increase its target for carbon emissions by 90% compared with those of 2019. In fiscal 2022, Siemens has helped customers around the world reduce about 150 million carbon emissions with its technology. Siemens China is listed in the "2022 Forbes China Sustainable Development Industrial Enterprise TOP50".

In September 2021, Siemens officially launched Zero-carbon Pioneer Initiative in China. With digital innovations and cross-industry expertise, Siemens co-creates a green ecosystem with all partners in China to help build end-to-end zero-carbon industrial chains, in support of China's "30•60 goal". Siemens aims to assist more than 500 key suppliers in China in the field of decarbonization and to empower more than 10,000 customers from dozens of industries to save energy and increase efficiency by 2025, so as to jointly enable low-carbon transformation of industries.

In terms of its own operations, Siemens implemented energy conservation measures in China and enhanced lean and digital production to drive decarbonization. Seven manufacturing factories were awarded the "National Green Factory" by the Ministry of Industry and Information Technology. Six products were selected among the "2022 Green Design Product List" issued by the Ministry of Industry and Information Technology. 18 operating companies are fully integrated into Siemens' global energy management system, which monitors energy consumption in real time. SEWC received the "Carbon Neutralization Achievement Verification Statement" issued by TÜV SÜD. SSLS was selected among the first "Zero Carbon Benchmark Enterprises" in Shanghai. Siemens launched the "I-Zero Initiative" in China, aiming to promote a green working environment and lifestyle. It is estimated that the initiative, with more than 6,000 employees involved, has cut carbon emissions by 120 tons.

For supply chain, Siemens uses technological innovation and cross-disciplinary knowledge and experience to help suppliers accelerate the reduction of carbon emissions. Siemens China has included low carbonization as a key measurement in its procurement decision-making process and established a carbon emissions reduction information management system, covering nearly 7,000 suppliers. Siemens also provided carbon neutral strategies and implementation roadmaps for other strategic suppliers, including Nantong Jianghai Capacitor of Jiangsu province and Shennan Circuits of Shenzhen, to help improve the carbon transparency of their key products.

For customers, Siemens combines the digital world and real world to make possible energy savings and empower their sustainable development. In November 2021, the Siemens China White Paper on Carbon Neutrality was released and introduced a clear roadmap for industrial carbon reduction for key industries based on global and Chinese trends in carbon neutrality and carbon emission peak. In November 2022, Siemens and the Suzhou Institute of Environmental Innovation, Tsinghua University, jointly released the report “Green Star: Pioneers of China’s Low-carbon Industrial Parks”, which established an indicator system to scientifically measure the low-carbon development of industrial parks and support the transformation of industrial parks in China.

Siemens Trusted Product Carbon Footprint Accurate Calculation and Tracking solution (SiGREEN) provides enterprises with necessary technical support for the credible disclosure and verification process of the product and organization carbon footprints. With this solution, factories can calculate the carbon emission data of all core production equipment and the related manufacturing process and greenhouse gas emissions from organizational operations and value chains. This innovative solution has been certified by TÜV SÜD and successfully implemented at Siemens’ own digital factories in Amberg, Chengdu, Nanjing and the Beijing Benz Automotive factory.

Siemens Smart ECX is a smart energy and carbon management platform based on the industrial IOT architecture that brings together digital technologies including cloud computing, big data and AI, and draws on professional expertise in the field of energy infrastructure to help companies improve the efficiency of their energy systems, plan an emissions reduction roadmap, implement decarbonization projects, and build a closed-loop energy and carbon management model. By combining software and hardware such as Smart ECX, smart micro-grid controller and flexible interconnective devices, Siemens helped Beijing Huanqiu Service Center business hall to create a tailor-made PEDF (solar photovoltaic, energy storage, direct current and flexibility) energy management solution. The center has become the first one with PEDF solution in Beijing and its energy efficiency is estimated to be nearly 20% higher than traditional power centers.

Siemens Mobility's digital service for rail assets and maintenance management is developed on local market requirements, and reuses Railigent components. It covers the entire digital value chain for up to 100% system availability from condition-based monitoring, data analysis, production management and predictive maintenance, helping customers use intelligent management system for operation and maintenance, improve efficiency and quality, and reduce the whole lifecycle cost.

Using cutting-edge technologies such as edge computing, artificial intelligence (AI) and data analysis technology, and relying on rich experience in the automotive industry, Siemens provided BOZHON Precision Industry Technology (BOZHON) with Totally Integrated Automation (TIA) and digitalization solutions customized for the battery replacement industry, making intelligent battery charging and swapping possible. In addition, Siemens has customized an energy management platform for Fujian Benz, which is deployed throughout the factory to achieve intelligent management of energy data.

Siemens signed a cooperation framework agreement with Changshu High-tech Industrial Development Zone Management Committee and Suzhou Lander Real Estate Group to jointly promote the green and low-carbon development and digital transformation of the region. In July 2022, the three parties successfully built a two-in-one digital enabling platform - "Changshu Digital Enabling Center". In August, "Changshu MOBO Coordinated Innovative Industrial Park" was put into operation, which is Siemens' first project of establishing low-carbon smart campus in China. In the future, the three parties will continue to jointly explore the approach of implementing zero-carbon industrial parks and buildings.

With the tag of "decarbonization" and "digitalization", Siemens Financial Services provide financing support for key industries like infrastructure in addition to Siemens advanced technology, enabling local Chinese enterprises to achieve green upgrades with flexible and rapid financial solutions.

### **Fulfill social responsibility to create value for the 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 portfolio, innovations, local operations, people development and activities in corporate social responsibility.

In November 2022, Siemens launched the “Siemens China Caring Hands”, continuing its engagement in corporate social responsibility activities in the forms of knowledge and experience exchange, technological assistance and monetary donations, with a focus on Access to Technology, Access to Education and Sustaining Communities, to promote sustainable development.

Siemens focuses on the cultivation of innovative talents, supports the development of education, and actively contributes to the construction of local scientific research ecosystem.

Over the past decade, Siemens cooperated with more than 90 universities and research institutes on more than 800 R&D projects in Greater China.

In November 2020, Tsinghua University (Department of Computer Science and Technology) – Siemens Joint Research Center for Industrial Intelligence and Internet of Things (JCIOT) was officially inaugurated. The center focuses on the incubation of industry-oriented cutting-edge technologies and innovative solutions, highlights scientific research cooperation and talent cultivation, and explores key research areas including AI, simulation, IOT and future automation.

In November 2021, led by Siemens Technology China, Huazhong University of Science and Technology – Siemens Digital Twin Lab was officially established. The lab focuses

on the development of cutting-edge simulation and digital twin technologies and provides support to cultivate digital talents for the future.

In January 2022, Siemens signed a cooperation framework agreement with Tongji University to deepen cooperation in the fields of technological innovation and talent cultivation. In addition to jointly creating a new model of digital talent cultivation for “Industry4.0”, the two parties will also be committed to building an open innovation platform and a technology innovation ecosystem, which would provide innovation and talent support for the digital transformation and upgrading of the industry.

In 2016, Siemens renewed the MoU with the Ministry of Education in a bid to boost cultivation of innovation-oriented talents. By fiscal 2022, Siemens had built nearly 480 laboratories in China through cooperation with schools, trained over 4,200 teachers engaged in frontline teaching, and published over 2 million copies of textbooks. The company sponsored “Siemens Cup” China Intelligent Manufacturing Challenge for 16 sessions and cultivated nearly 0.1 million innovative engineering talents. Siemens also advocates the talent development concept “New Engineer” with partners to cultivate compound talents with multi-specialty and interdisciplinary in the era of digitalization.

Siemens Future Education Program, a support program with teachers and students in vocational training institutes in mind, was designed to enhance the cultivation of talent with innovative thinking and vocational skills. The program, set up in Sichuan province, will gradually be introduced across the country.

Every year, Siemens holds more than 30 technology lectures and career lectures, both online and offline, at universities countrywide. The company held a series of Siemens Open Day events and FindSiemens recruiting events in the last few years and established Siemens Student Circle at many universities. In addition, Siemens provides multiple internship and full-time job opportunities for undergraduates and graduates each year. Various trainee programs, such as Siemens Graduate Program, Siemens Advanta China Digital Talent Program and Star Generation Trainee Program, have

empowered a large number of graduates from top universities in China and abroad with career opportunities and systematic career development training, which promotes talent development with a growth mindset.

Siemens has established a new leadership narrative methodology in China, and driven by this has established a distinctive leadership program “Siemens China<sup>a</sup> Top 100s”, dedicated to cultivating the next generation of Siemens leaders for the global, regional and Chinese market. In 2022, based on an extensive review of Siemens’ leadership philosophy and practice in the past century, Siemens published “Leadership White Paper of Siemens China”, with insights into its management innovation achievements and exploring with business partners how to unleash organizational vitality in market competition.

Siemens supports small and medium-sized charitable organizations, provides social assistance to disadvantaged groups, actively supports environmental causes and provides timely technical and humanitarian assistance after the natural disasters. Siemens employees also actively participate in voluntary activities jointly organized by Siemens and non-profit organizations.

Siemens Employee Volunteer Association (SEVA) was launched in 2012 as a platform of volunteering and cooperation for the employees, the company and the society. By fiscal 2022, SEVA had organized near 500 volunteering events across China, benefitting hundreds of thousands of people.

As for primary education, Siemens I-Green Education Program, launched in 2009, targets migrant children in primary schools to raise their awareness of environmental protection and help them better integrate into city life. By fiscal 2022, the program had been rolled out in 11 schools of migrant children in 10 cities including Beijing and Shanghai, benefitting over 25,500 migrant children. Nearly 3,000 Siemens employee volunteers devoted over 30,500 hours to this program.

As one of the core projects of China Education Support Project, Siemens I-Green Education Program - University Students Summer Project was officially launched in 2018. By fiscal 2022, the project had supported over 1,250 student volunteers from 21 universities to teach classes at 69 sites in 29 provinces and autonomous regions across China. A total of over 2,330 hours of Siemens I-Green classes held by student volunteers benefited about 69,000 students and teachers in rural areas. Meanwhile, 169 experienced Siemens volunteers who are passionate about public welfare were recruited as I-Green mentors to empower students with professional skills.

“A Gift of Sound” is a charity project for left-behind and blind children. Through an audio recording platform and reading materials provided by Siemens, employee volunteers created audio gifts carrying knowledge, care and companionship to children in need. The first batch of audios have been donated to Shumugou School in Hinggan League, Inner Mongolia. In addition to the audio gifts, Siemens’ Winter Care Package were sent to more than 200 of the school’s boarding students.

“The Siemens China Disabled Support Program” has helped more than 100 disabled individuals in seven cities, including Beijing, Shanghai and Hangzhou, find a job in the Disability Employment Support Center, and has implemented innovative measures to ensure employment opportunities for those with a disability, for example, by providing sales channels for handicrafts made by those with a disability on the company’s internal e-commerce platform.

In April 2022, Siemens donated a batch of protective supplies including medical protective suits, protective face shields and N95 masks to the Red Cross Society of China Shanghai Yangpu district branch, to guarantee sufficient supply for front-line workers and support Shanghai in the fight against COVID-19. 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. For 16 consecutive years, Siemens

sponsored the fund and made contributions to promoting John Rabe's humanitarian and volunteering spirit.

Siemens' long-term commitment to corporate social responsibility is widely recognized by the Chinese society. With the outstanding performance of I-Green Education Program – University Students Summer Project, Siemens China received four honors at the 6th CSR China Education Award in November 2022, including “CSR China Top 100”, “Best CSR Contribution”, “Ecological Environment Special Award” and “Youth Impact Special Award”.