

Going Green, Investing Green



CSR Report



CECEP
CHINA ENERGY CONSERVATION AND
ENVIRONMENTAL PROTECTION GROUP

2017-2018

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Compilation Description

Period

This report contains CECEP's CSR performance from January 1, 2017, to December 31, 2018, with some information and data dating back earlier than the start of this period.

Edition

CECEP publishes a CSR report annually, and this is the company's 8th CSR report.

Report Boundary

This report covers CECEP and its subsidiaries.

Data Description

This report uses data obtained from analysis on relevant statistics. The business data mainly comes from the *Financial Settlement Report and Annual Report* of CECEP, while industry data mainly comes from authorities such as National Bureau of Statistics, the Ministry of Housing and Urban-Rural Development, the Ministry of Environmental Protection and the European Photovoltaic Industry Association (EPIA).

Reference Standards

Guiding Opinions on Better Fulfilling Social Responsibilities of State-owned Enterprises issued by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC)

Guidance on Social Responsibility Reporting (GB/T 36001-2015)

Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 4.0) issued by the Chinese Academy of Social Sciences (CASS)

Social Responsibility Evaluation Indicator System of China's Industrial Enterprises (Trial) issued by China Federation of Industrial Economics

Guide to Sustainable Development Reporting (G4 and G-standards) of Global Reporting Initiative (GRI)

ISO 26000: 2010 Guidance on Social Responsibility

Compilation Process

Issue collection	Internal collection: CECEP's administrative departments / CECEP's subsidiaries / CSR Office / report compilation group External collection: regular surveys on stakeholders / irregular symposiums with stakeholders / investigation on stakeholders' demand / specialized seminars
Content selection	External deliberation: outside experts' advice and stakeholders survey Internal deliberation: appraisal of CECEP outlook on CSR, sustainable development strategy evaluation and comparison of domestic and international report standards Substantive test: general issues, selective issues and substantive issues
Report compilation	Material collection and analysis—report structure planning—internal report assessment—soliciting stakeholders' opinions—report revision and improvement—approval by the company's leadership—report rating
Report release	Holding a press conference to release the report—report publication and dissemination—feedback collection—constant improvement of the report

Language and Version

This report is published in both Chinese and English languages, and the publication is available in both print and digital versions. A PDF version can be downloaded from CECEP's official website (www.cecep.cn). Readers who need a print version can contact us at (86) 010-62248552.

Appellation

For convenience of statement and reading, "China Energy Conservation and Environmental Protection Group" is referred to as "CECEP," "the company," or "we" in this report.

Statement

CECEP CSR Report 2017-2018 discloses the company's willingness to perform social responsibilities, its commitment to CSR and its CSR performance based on surveys on substantive issues. We ensure that the information and data in this report are reliable, accurate and timely. We hope the publication of the report will facilitate our communication with all stakeholders so that joint efforts will be made to promote sustainable development.

Our Greetings

The boundless universe fosters a great biodiversity. After 5,000-year evolution of Chinese civilization, every Chinese has been aware that ecological civilization is closely related to all. Hills and mountains are covered by lush forests, plains dotted with green fields and clear rivers, and cities with singing birds and blooming flowers... Nature is a system comprised of multiple components that rely on and impact each other. Chinese President Xi Jinping, also general secretary of the Central Committee of the Communist Party of China (CPC), has stressed on many occasions that mountains, rivers, forests, farmland, lakes and grasslands form a community of shared life, which not only brings beauty into people's lives but also lays a foundation for future development of mankind. As a large energy conservation and environmental protection enterprise covering multiple fields and businesses and with a great overall strength, China Energy Conservation and Environmental Protection Group (CECEP) has spared no efforts to make its own contributions to the creation of a "Beautiful China" that features clear waters and lush mountains.

Campaign to build a "Beautiful China": Adhering to new development ideas, CECEP has constantly pursued high-quality development and helped overcome difficulties to achieve green development and build a "Beautiful China." Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the guiding principles of the 19th CPC National Congress, CECEP has upheld the Four Consciousnesses, constantly enhanced the Four Matters of Confidence, resolutely safeguarded Xi Jinping's core status within the Party and its Central Committee, resolutely safeguarded the authority of the CPC Central Committee and its centralized, unified leadership, and closely kept in alignment with the CPC Central Committee with Xi Jinping at the core. Following the Jurong Strategy, CECEP focuses on serving national development plans and initiatives such as the great protection of the Yangtze River, the construction of Xiongan New Area, the coordinated development of Beijing, Tianjin and Hebei, the National Ecological Civilization Pilot Zone (Hainan), and the Belt and Road Initiative. Between 2017 and 2018, the total installed capacity of green power plants of CECEP increased from 9.4348 million kilowatts to 10.45 million kilowatts, the amount of electricity generated with clean energy grew from 11.755 billion kWh to 13.14 billion kWh, and the daily amount of treated sewage increased from 3.77 million tons to 3.9 million tons. In May 2018, CECEP was cited by the Leading Group for Promoting the Development of the Yangtze River Economic Belt as a "primary platform for pollution control along the Yangtze River Economic Belt" for the epoch-making "remedy" it prescribed for the pollution plaguing the Yangtze River.

Battle against poverty through targeted measures: CECEP focuses on meeting people's aspiration for a better life and extensively carried out targeted poverty alleviation. It is forming a joint force for poverty relief across its subsidiaries. From 2017 to 2018, CECEP invested 9.3 million yuan to help Songxian County of Henan Province and Fuchuan Yao Autonomous County of Guangxi Zhuang Autonomous Region shake off poverty. Based on their respective advantages, its subsidiaries inject endless impetus into local development that benefits poverty-stricken residents through providing green, clean energy. With poverty alleviation officials as the antenna, CECEP has taken root in local communities, surveying people's living situations, listening to their aspirations, understanding their needs and endeavoring to improve their livelihoods, with the focus on solving the most urgent and practical problems that poor people concern the most. These measures aim to ensure the full implementation of the policy of "removing worries about food and clothes and guaranteeing access to compulsory education, basic medical insurance and safe housing."

Chasing a dream of a bright future: Following its core philosophy of "Going Green, Investing Green," CECEP has been chasing its dream of becoming a world-class conglomerate integrating energy conservation, environmental protection and health industry with great ambition and steady steps. A number of environmental protection measures it has taken are making mountains greener and rivers clearer in China. In the future, CECEP will remain true to this great cause with greater determination and write a more brilliant chapter with greater innovation, strive to build a "Beautiful China" with lush mountains and lucid waters that inspire people's nostalgia of their hometowns, add color to the celebration of the 70th birthday of the People's Republic of China, and make greater contributions to realizing the Chinese Dream of national rejuvenation.



About Us

About CECEP

The predecessor of China Energy Conservation and Environmental Protection Group (CECEP) was the Energy Conservation Bureau of the former State Planning Commission of China, which was restructured into Energy Conservation Company of China Energy Investment Corporation in 1988. In 1994, it was renamed China Energy Conservation Investment Corporation, under the direct administration of the State Planning Commission. In 2003, the corporation was put under the supervision and administration of the State-owned Assets Supervision and Administration Commission of the State Council (SASAC). In 2010, CECEP was founded after the merger between China Energy Conservation Investment Corporation and China New Era Group Corporation. In 2017, it was reorganized into a corporation with limited liability.



Number of CECEP subsidiaries

500



Business operating in
107 countries and regions



Number of employees

48,000

After more than three decades of development, CECEP has successfully transformed from a national policy investment company into a large energy conservation and environmental protection enterprise covering multiple fields and businesses and with great overall strength in China. It has established a "4 + 1" business layout featuring energy conservation, environmental protection, clean energy and health plus relevant comprehensive services as its major businesses. . Currently, CECEP has more than 500 subsidiaries at various levels, including 26 secondary subsidiaries and five listed companies, and its business has reached all provinces, municipalities and autonomous regions of China and 107 foreign countries and regions. It now has 48,000 employees.

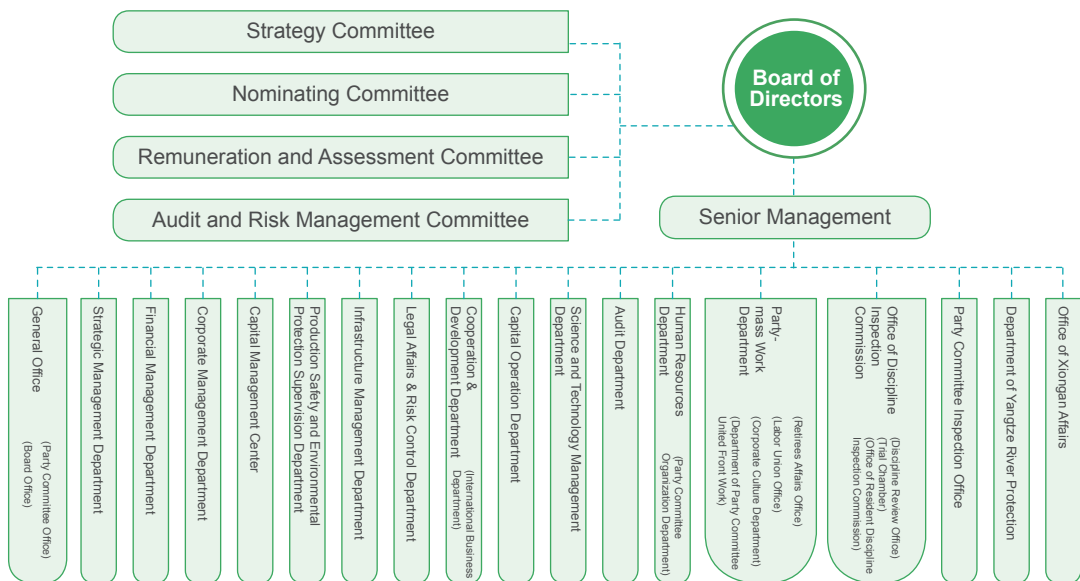
CECEP has resolutely followed the decisions and deployments of the CPC Central Committee and taken an active part in the implementation of national plans such as the coordinated development of Beijing, Tianjin and Hebei, the construction of Xiongan New Area and the development of the Yangtze River Economic Belt. In 2018, CECEP treated 10.21 million tons of solid waste and 809 million tons of sewage, reduced more than 180,000 tons of COD emissions, and generated green power of 13.2 billion kWh, which helped reduce 10.223 million tons of CO2 emissions and save 4.1 million tons of standard coal.



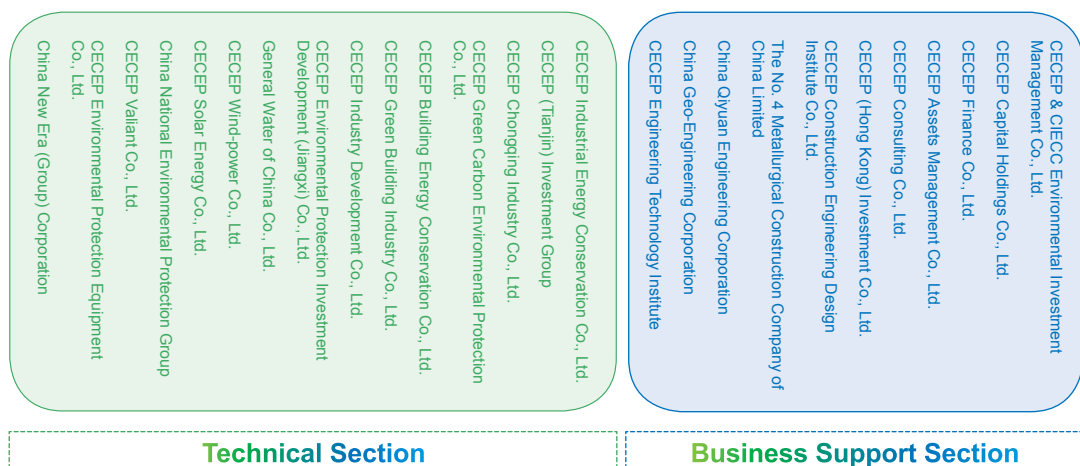
▲ On April 24, 2018, Hao Peng, then secretary of the Party committee of the SASAC, visits an exhibition hall of CECEP during his inspection of the company, where he learned about the history of CECEP and its operation and spoke highly of the achievements made by the company after close communication with its staff.



Organizational Structure



Second-level Management





Corporate Governance

CECEP complies with laws and regulations such as the Company Law, and has taken active actions to improve and standardize the construction of the Shareholders' Meeting, Board of Directors, Board of Supervisors and the management team, build and improve the corporate governance mechanism, improve the legal person governance structure, strengthen the disclosure of major information to protect investors' right to know and supervise, clarify the nomination and selection process of the Board of Directors, deepen the pilot reform of the power and duties of the Board of Directors, and form a corporate governance mechanism featuring top-down coordination and effective communication.

Moreover, CECEP is advancing a special campaign aiming to enhance quality and efficiency by streamlining corporate governance, carrying out the program of "transforming a batch of large state-owned enterprises into enterprises with mixed ownership, transforming a batch of key state-owned enterprises into private enterprises, and transforming a batch of private enterprises into the spearhead of economic development," and reducing and controlling accounts receivable and stocks. It has reduced 115 legal-person units and completed the reorganization of 40 "zombie enterprises."

Legal Compliance

Managing enterprise by law: CECEP has formed a leading group to advance the rule of law in the group, improve the legal work system and the contract management mechanism, strengthen the training and publicity of legal compliance awareness, and push forward the construction of a long-term legal management mechanism.

Risk control: CECEP focuses on strengthening and enhancing risk control concerning key management and pivotal links. It carried out a comprehensive systematic risk appraisal in 2018, screening out two major risks, and its 22 subsidiaries found out 70 major risks.

Internal compliance audit: CECEP compiled the *Key Points of Internal Audit for 2018*, improved the closed-loop management of the internal system, simplified and standardized operation and decision-making processes, strengthened factor management, and completed its comprehensive internal appraisal for 2017.

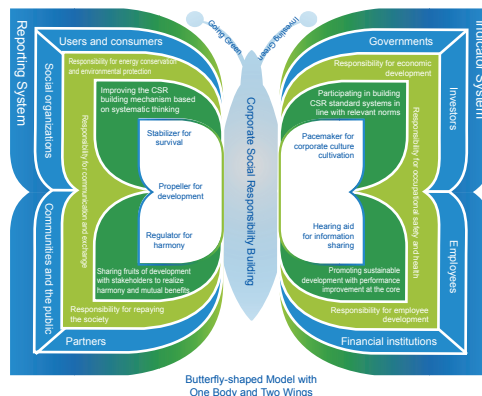
Anti-corruption: Taking discipline inspections and rectifications as the opportunity, CECEP has further strengthened the responsibility for Party building and governance, and taken solid steps in improving Party conduct and clean governance. With duty performance, remuneration and business expenditure management as the priorities, it keeps a close eye on key points such as vehicle usage, official receptions, and consumption with public money, gives a play to its supervision mechanism and internal control system, and promotes strict governance of the Party comprehensively.

CSR Management

CECEP focuses on the three mainlines of economy, environment and society, and fulfills its essential responsibilities of profitability and efficiency, inborn industrial responsibilities of energy conservation and environmental protection, and consistent original responsibilities of harmony coexistence. CECEP is committed to assuring investors, satisfying customers, sharing common benefits with stakeholders, earning a reputation in society, promoting employees' welfare, and making the earth and people's life better, in order to build a world-class service group of energy conservation, environmental protection and health care.

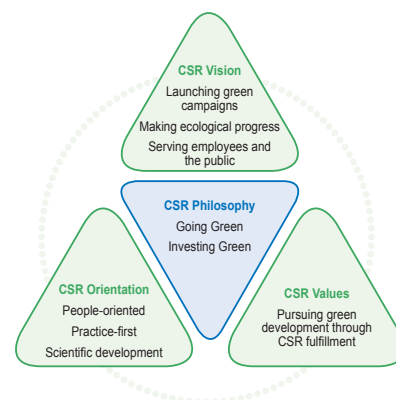
CSR Model

CECEP keeps firmly in mind the mission of "achieving bluer skies, greener mountains, clearer waters and a better life," deepens the connotation of "Going Green, Investing Green," and implements six fundamental responsibilities including energy conservation and environmental protection and economic development. CECEP gives play to the five functions of social responsibility such as accelerating corporate development and promoting social harmony, and has built a model of "Butterfly with One Body and Two Wings" to guide the fulfillment of social responsibility.



CSR Philosophy

Based on sustainable development, CECEP takes “Going Green, Investing Green” as its CSR philosophy, regards value creation as the core, and pursues comprehensive values of economy, society and environment, striving to realize the CSR vision of “launching green campaigns, making ecological progress, and serving employees and the public.”



CSR Promotion

CECEP further improves the social responsibility management system and promotes the integration of the concept of social responsibility into its strategic development. CECEP improves the social responsibility planning, and the social responsibility report and index system. CECEP has maintained a leading position in CSR fulfillment ratings by social responsibility rating authorities.

CSR Governance

CECEP has established a leading group on social responsibility work, which is led by its chairman. CECEP enhances the building of social responsibility organizations, identifies the boundaries between authorities and responsibilities, and realizes top-down coordination and effective communication.



Main Functions of the CSR Leadership Group	Main Functions of the CSR Promotion Office
Work out CSR strategies and overall objectives for CECEP	Implement CSR decisions and deployment of CECEP
Make CSR-related decisions and work arrangement	Coordinate the building and implementation of CECEP's CSR management system
Lead the building of CECEP's CSR management system	Work out CECEP's CSR programs and plans
Review and approve CECEP's CSR work plans	Formulate and implement CSR training programs
Review and release CECEP's CSR reports	Organize researches on CECEP's key CSR research subjects
Review and approve CECEP's major CSR events	Organize the development of CECEP's CSR management tools
	Organize the compilation of CECEP's CSR reports
	Participate in domestic and overseas CSR exchanges



CSR Planning

CECEP observes SASAC's requirements of promoting social responsibility management, practice and communication in centrally-administrated SOEs. Based on actual situations, CECEP timely adjusts its planning and promotes the comprehensive integration between social responsibility and other work.

Implementation phase Content	2014-2015 Philosophy Introduction	2016-2017 System Improvement	2018-2020 Overall Integration
To further improve the CSR organizational system	Build the CSR Leadership Group and the CSR Promotion Office, and then identify CSR part-time/contact persons at all departments	Improve the top-down CSR organization system to cover all departments and subsidiaries of CECEP	Carry out pilot projects of CSR management and integrate CSR requirements into routine operations of all business sectors of CECEP
To further improve the CSR index system	Improve the CSR index system according to the requirements of the SASAC	Organize the guidance on the compilation of the CSR reports in accordance with the <i>Guidance on Social Responsibility</i> (GB/T 36000-2015), the <i>UN 2030 Agenda for Sustainable Development</i> and other relevant standards	Incorporate the philosophy and requirements of CSR from related standards into current institutional documents
To enhance the CSR capability building	Regularly carry out CSR training sessions to popularize CSR knowledge	Guide and organize subsidiaries to carry out CSR training and communication	Urge subsidiaries to continuously promote CSR integration into employees' post responsibilities in a comprehensive and profound way
To continuously conduct stakeholder management	Identify and sort out CECEP stakeholders in each business sector	Conduct surveys on stakeholders to understand their expectations and requirements	Conduct categorized management of stakeholders, and continuously improve communication strategies for different stakeholders

CSR Integration

CECEP integrates social responsibility into its corporate development strategy, routine operation management, supply chain management and internationalized operation to promote the transformation of social responsibility into the endogenous power of corporate development. CECEP encourages its subsidiaries to innovate social responsibility management, carry out special practices of social responsibility practices, and build a social responsibility brand in order to achieve improvement of the group's social responsibility level. CECEP Wind-power Corporation Co., Ltd. and CECEP Chengdu Renewable Energy Co., Ltd. were granted the title of Demonstration Bases for CSR Fulfillment by the Chinese Academy of Social Sciences.

CSR Communication

CECEP continuously enhances communication with stakeholders. Through compiling and releasing high-quality social responsibility reports, and organizing CSR communication activities, CECEP creates opportunities to engage stakeholders in corporate operation management, and improves operation transparency.

Information Notification: Expand information disclosure channels including CSR report release to disclose relevant operating information

Dialogue and Communication: Accept stakeholders' opinions, suggestions and appeals, and regularly conduct stakeholder satisfaction surveys

Joint Actions: Invite stakeholders to formulate and implement CSR action plans

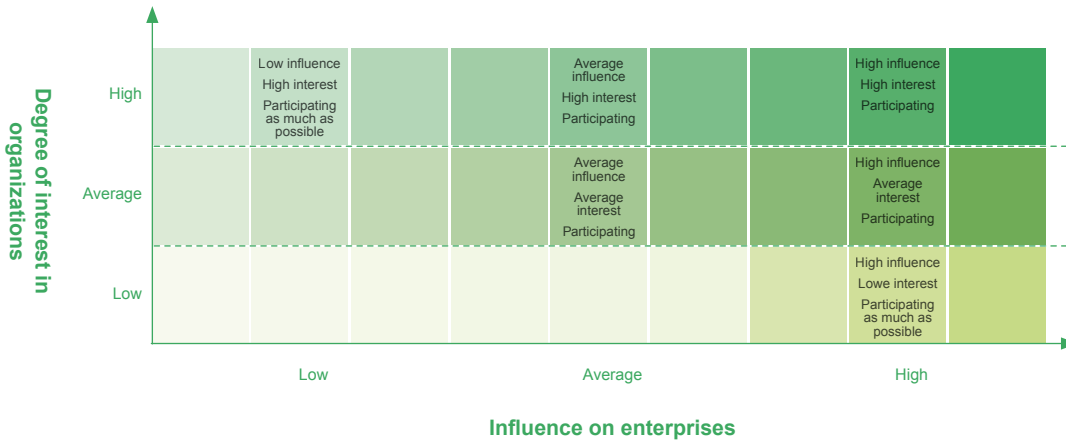
Information Disclosure: Gain a full understanding of stakeholders' expectations and appeals, effectively identify topics such as serving national strategies, advancing scientific and technological innovation, promoting the Belt and Road Initiative, carrying out safe production, achieving win-win cooperation with partners, promoting the well-being and personal development of employees, participating in targeted poverty alleviation, implementing the concept of green development, and jointly building a harmonious society, so as to enhance the practicability of CRS reports.

Stage	Work
Identification	<ul style="list-style-type: none"> • Analysis of standards and guidelines. Align benchmark with relevant standards and guidelines such as the 17 goals of the UN 2030 Agenda for Sustainable Development, G4 Sustainability Reporting Guidelines (G-Standards) issued by the Global Reporting Initiative (GRI) and Guidance on Social Responsibility Reporting (GB/T 36001-2015) • Industry benchmarking. Analyze CSR information of industrial counterparts at home and abroad and identify issues that are closely related to the energy conservation and environmental protection industry • Analysis of public opinions. Interpret relevant national policies of the energy conservation and environmental protection industry, analyze media reports related to CECEP this year and identify issues of common concerns • Communication & dialogue. Draw on surveys, questionnaires, daily communication with stakeholders, and internal and external experts' suggestions to identify hot issues in the industry
Sequencing	<ul style="list-style-type: none"> • Influence on CECEP. The impact on CECEP's strategy, operation, management, etc. • Influence on stakeholders. The importance of issues to stakeholders
Review	<ul style="list-style-type: none"> • Preliminary identification. The CSR report compilation team preliminarily determines core issues • Review. The CSR Promotion Office reviews relevant issues • Finalization. The CSR Leadership Group reviews and finalizes issues to be disclosed in the CSR report

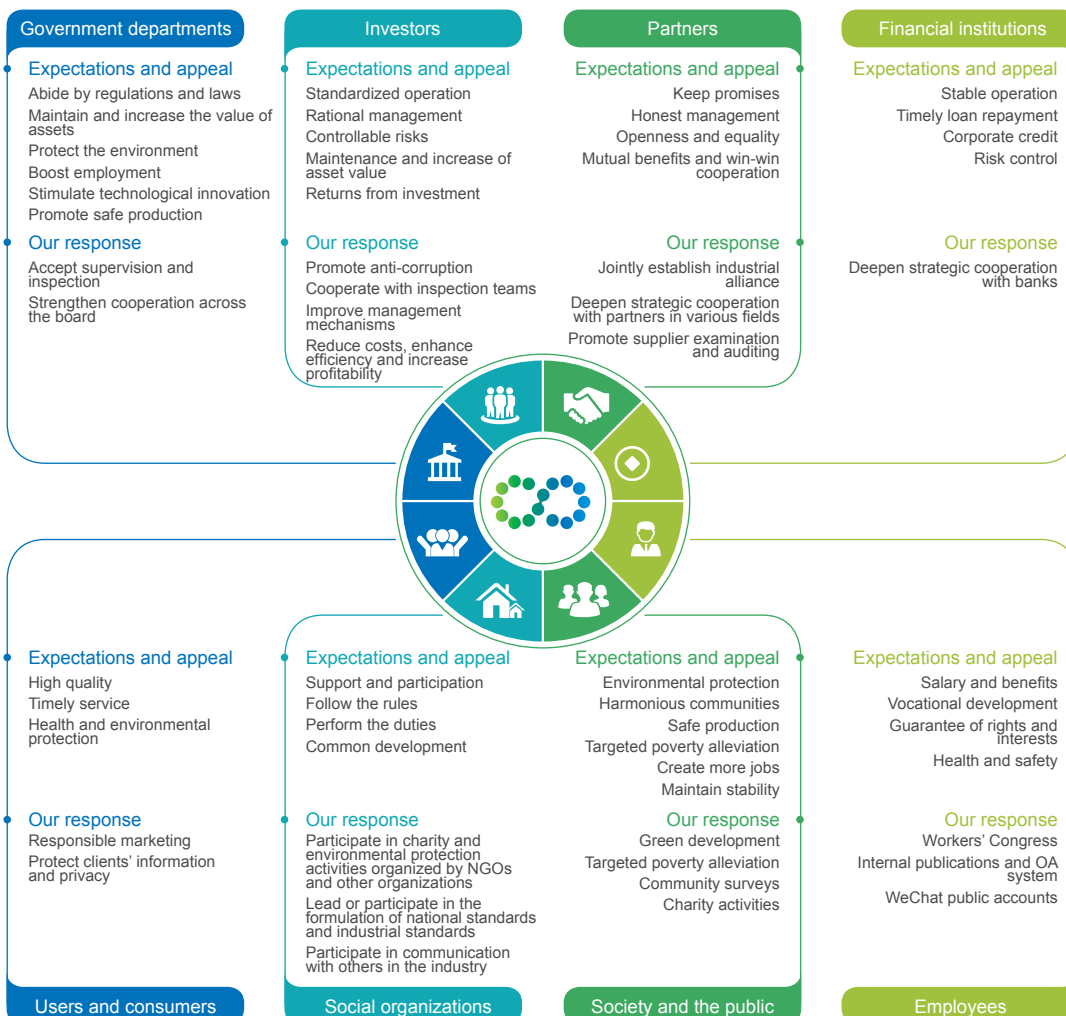


Communication and Participation: Starting from major businesses, CECEP takes into account the actual situation of corporate operation management, identifies stakeholders' expectations and appeals, and chooses the best communication tools and approaches to realize effective communication with stakeholders.

Principles for selecting shareholders



Communication with Shareholders

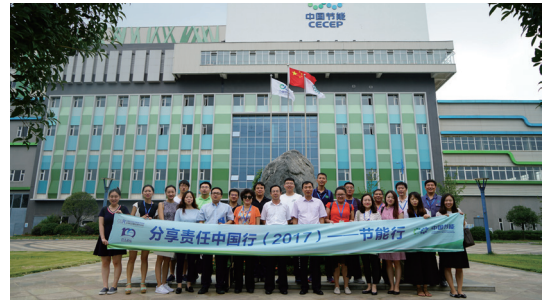


CSR Sharing: CECEP has been actively advancing the sharing and communication of responsibilities and promoting CSR development in the industry. Based on its own operational characteristics, it formulated the Integrated Index System of Corporate Social Responsibility, filling in the blank of the industry. It also participated in the formulation of the Guides on How to Write Social Responsibility Reports for Energy Conservation and Environmental Protection Enterprises, and is striving to be a role model for its peers in the industry.



“Shared Responsibility China Tour” investigation delegation visits CECEP Chengdu Renewable Energy Co., Ltd.

On July 31, 2017, an investigation delegation comprised of experts and representatives from enterprises and the media visited CECEP Chengdu Renewable Energy Co., Ltd. Through communicating with relevant staff in the company, members of the delegation gained an insight into the profound connotations of the company's social responsibilities, and spoke highly of the company's efforts and contributions in energy conservation and environmental protection.



“CECEP made us fully understand the operational process of garbage-fueled power generation through materials such as precise data and vivid photos, inspiring everyone to become an ambassador to promote the concepts and practice of energy conservation and environmental protection.”

——Liu Yanghe, director of the Culture Publicity Center of State Development & Investment Corporation (SDIC)

“Waste incineration itself isn't a problem, but it is crucial what kinds of enterprises take up this undertaking. It will benefit locals if a responsible enterprise like CECEP takes up the job. Meanwhile, it reflects the necessity and importance of active communication with the public.”

——Guo Yi, professor at the School of Economics, Beijing Technology and Business University



Six persons earned the title of “Technical Experts in Central SOEs”

Five persons earned the title of “CECEP Model Workers”

10 persons earned the title of “CECEP Technical Experts”

Gou Xianfang, director of the Department of Scientific and Technological Development at CECEP Solar Energy Co., Ltd., earned the title of “National March 8th Red-Banner Pacesetter of 2018”



Putting Ecology First

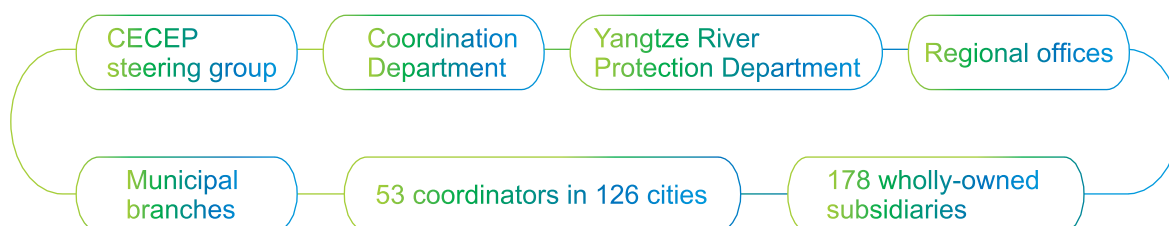
Enterprises are the main forces in conserving and improving the ecosystem of the Yangtze River. They should assume due responsibilities and improve their capabilities of ecological conservation by speeding up technological upgrading, phasing out outdated production capacity, and developing clean production.....Ecological restoration should remain a priority in boosting the development of the Yangtze River Economic Belt. We should make all-out efforts to protect the Yangtze and forbid large-scale development of the river.

— Chinese President Xi Jinping

The Yangtze is the mother river of Chinese nation and has nourished China's development throughout history. The Yangtze River Economic Belt covers 11 provinces and municipalities, namely Shanghai, Jiangsu, Zhejiang, Anhui, Jiangxi, Hubei, Hunan, Chongqing, Sichuan, Guizhou and Yunnan. Measuring some 2.05 million square kilometers, the region has both the population and production outputs exceeding 40 percent of the national total. With rolling mountains, forests, waters, farmland and pools, the region is of great significance to the nation as an ecological treasure trove. The Yangtze River Economic Belt Development Plan is a major strategic decision made by the Communist Party of China (CPC) Central Committee. It is related to China's social and economic development as well as the sustainable development of the Chinese nation. Boosting the regional development is both a tough battle and a protracted war.

In May 2018, CECEP was designated by the leading group for promoting the development of the Yangtze River Economic Belt as a primary platform for pollution control along the Yangtze River Economic Belt. It is an honor and a heavy responsibility as well. The CECEP took swift measures and established an operating network hierarchically involving a leading group in the leadership, a coordination department at the corporation level, a special department for Yangtze protection, regional offices and municipal branches. A total of 53 coordinators in 126 cities and 178 wholly-owned subsidiaries are dedicated to the mission with pragmatic cooperation on the unified platform of the group. By the end of 2018, CECEP had carried out 254 projects worth 62.72 billion yuan along the Yangtze River Economic Belt, making a pioneering contribution to the greater protection of the Yangtze River in a holistic manner.



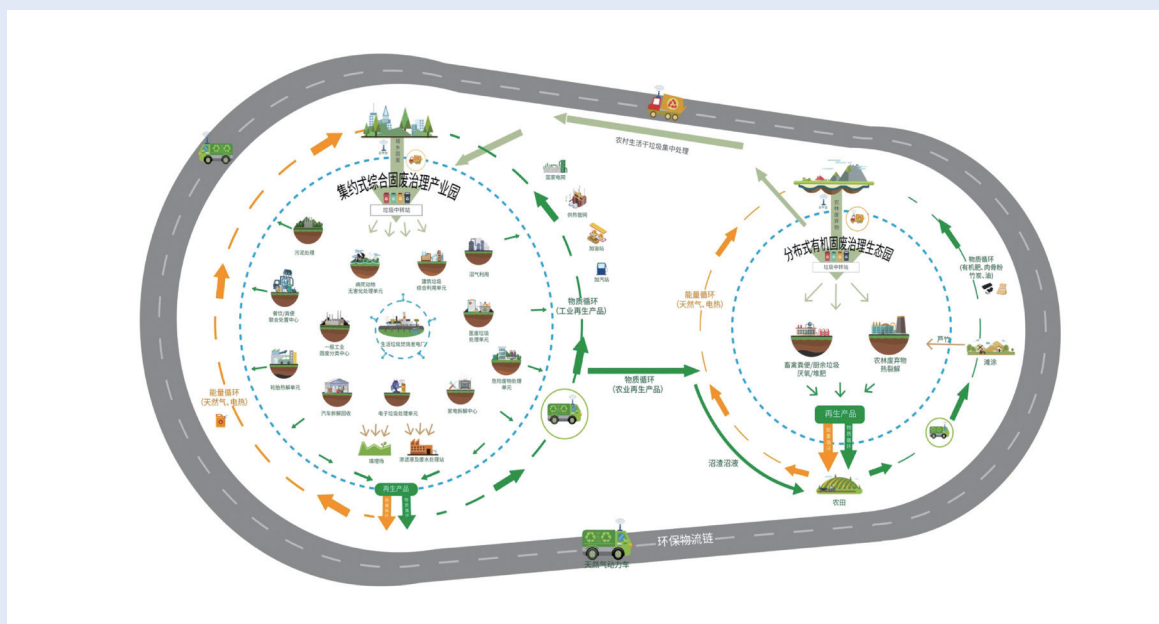


Solid Waste Treatment Solution in ‘Two Parks and One Chain’

Solid waste treatment along the Yangtze River Economic Belt faces difficulties including large waste base, scattered treatment facilities, vast rural non-point source pollution and fractured industrial chain. CECEP highlights projects of solid waste treatment in its operation and came up with an innovative solution to treatment in “two parks and one chain.” The solution has been applied on a trial basis in cities like Bijie and Xianning. The group plans to roll out four or five demonstration projects in 2019 and spread it to all regions in 2020 so as to protect the watershed of the Yangtze River in an integrated way and make contribution to the eternity of the mother river.

Keyword ‘Two Parks and One Chain’

The term refers to an industrial park for comprehensive solid waste treatment, an ecological park for distributed organic solid waste treatment, and an environment-dedicated logistic chain. Based on refuse sorting and driven by an intelligent logistic chain, the solution goes beyond borders in solid waste treatment. Those suitable for long-distance transport go to the industrial park for intensive and efficient recycling. Organic waste that is unsuitable for long-distance transport would be treated in the ecological park in a pollution-free manner.





In Jiangxi

80-MW fishery-solar hybrid power plant in Wannian County with an installed capacity

100^{MW}



Annual generation of clean energy

100 million kWh



Building Pastoral Complexes Integrating Farming, Photovoltaics, Fishery and Agricultural By-product Processing

CECEP has been experimenting with pastoral complexes integrating farming, photovoltaics, fishery and agricultural by-product processing in provinces and municipalities in the watershed of the Yangtze River. With farming as the foundation, the efforts aim to promote intensive integration of the photovoltaic industry and agricultural by-product processing.

In Jiangxi Province, the group established an 80-MW fishery-solar hybrid power plant in Wannian County. Integrating photovoltaic power generation, scientific research, fishery and tourism, the power plant with an installed capacity of 100MW generates 100 million kWh of clean energy annually.



In Huzhou

Tiger Pool reservoir and water diversion work has impounded water of 915 million cubic meters from the upper reach

9.15 million cubic meters

and opened the sluice on

34 occasions



discharging water

3.17 million cubic meters



Regional Integration of Water Utilities

CECEP has implemented an operation and management model featuring integrated water supply and drainage, unified water pipeline network and integrated water supply in rural and urban areas in cities like Xiangtan, Bengbu and Xiangyang. With regional water plants as the core, an integrated layout for water utilities has been established to provide water-related services to surrounding areas.

In Huzhou, CECEP set up two sewage treatment plants and one raw water supply project. Among them, the sewage treatment plant at the new area of east Wuxing District of Huzhou mainly treats domestic sewage with a daily capacity of 100,000 tons. The one in the sand washing industrial park deals with trade effluents from dyeing and printing enterprises. Its daily treatment capacity is 15,000 tons. The reservoir and water diversion work in the Tiger Pool of Huzhou has impounded water of 915 million cubic meters from the upper reach, and opened the sluice on 34 occasions, discharging water of 317 million cubic meters.



In Guizhou

Future Ark can annually save
standard coal

45,000 tons 

reducing carbon dioxide
emissions

119,000 tons 

reducing mixed particulate
matter emissions

6,000 tons 

Exploring Distributed Heating Supply in the Yangtze River Basin

In Guizhou, CECEP has built the first residential community with a green heating system in southwest China. It is named Future Ark. Taking the geographical advantage at the lower reaches of the Nanming River, CECEP blazed a new trail in applying the principle of distributed power supply and harness power from low-grade energy sources such as river water, sewage and air. The innovation reduces dependence on conventional fossil fuels and enables zero pollution and zero emission. Annually, 45,000 tons of standard coal can be saved, avoiding carbon dioxide emissions of 119,000 tons and mixed particulate matter of 6,000 tons. Since November 2015, property owners in the Future Ark have spent four cozy winters.

“It is chilly and humid in winter in Guiyang. We used to wear heavy coats even indoors, but it was still cold. I even didn’t want to get up every morning. Since we had the heating system, room temperature has been kept around 20 to 22 degree Celsius during winter. The coziness makes our life much happier.”

- Li Yonghong, a property owner
in the Future Ark





Five Poverty Alleviation Programs Empower Dreams

Since the 18th CPC National Congress, China has set new records in poverty reduction, a feat that has amazed people around the world. The countdown has begun for ending the lingering poverty issue. The current moment is most critical. CECEP puts poverty reduction high on its agenda. With great sense of responsibility and urgency, it is dedicated to pragmatic and great contribution to the national poverty eradication campaign. From 2017 to 2018, CECEP invested 9.3 million yuan in Fuchuan Yao Autonomous County and Songxian County to support poverty reduction efforts.

Targeted Poverty Relief

By the end of 2018

Fuchuan's poverty headcount ratio reduced to

2.48%



Songxian's poverty headcount ratio reduced to

1.3%



In Songxian County of Henan Province and Fuchuan Yao Autonomous County in Guangxi Zhuang Autonomous Region, CECEP carries out five programs of poverty eradication with infrastructure improvement and industrial development as the focuses of efforts. By the end of 2018, a total of 191 poor people had been lifted out of poverty, and the poverty headcount ratio reduced to 2.48 percent in Fuchuan with the assistance of CECEP. In Songxian County, the group assisted 446 people in 108 poor households in ridding themselves off the shackles of poverty at Shichang Village, and the poverty headcount ratio was down to 1.3 percent.

'Village Illumination' Program

In the "village illumination" program, CECEP installed 346 solar street lamps, built squares for cultural activities and garbage pools for the two counties in an effort to improve the local living environment. It also launched a program of poverty reduction through Party building. Culture squares for Party building activities were built in the resettlements for Shichang Village and Shibangou Village of Songxian County to rekindle local residents' hope for a prosperous life.



▲ Solar street lamps now available for villagers

'Education Support' Program

Each June, CECEP kicks off donation events to schools in poverty-stricken areas. Each August, it hosts a donation ceremony for newly-enrolled college students in Songxian County. Over the past five years in a row, the company has provided financial support of 2.5 million yuan to more than 500 college students from impoverished households. It has also launched Spring Sprout initiative, purchasing school uniforms for more than 150 students in Shichang Village of Songxian County and Xinshi Village of Fuchuan. CECEP invited 14 students from poor families to a summer camp event called Capital Dream Tour. A paring program to support poor children in Shichang Village of Songxian County and Xinshi Village of Fuchuan was launched. At an initial round, 20 students from poor families were designated with helpers. In total, a 95,240-yuan charitable fund was raised and 1,285 books, 1,326 pieces of clothes and 913 sets of stationery were donated.



▲ Caring for elementary education in poverty-stricken areas



▲ Summer camp "Capital Dream Tour"

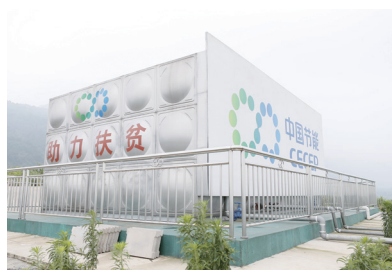
In Shibangou Village, Songxian,
and Xinshi Village, Fuchuan

CECEP dug wells for access to
clean drinkable water, benefiting

2,000 people 

‘Clean Water’ Program

CECEP dug wells for residents in Shibangou Village of Songxian County and Xinshi Village of Fuchuan, enabling nearly 2,000 people to gain access to clean drinkable water. The wells also provide irrigation water for more than 300 mu of farmland, laying foundation for the development of local tourism, farming as well as fish breeding and poultry raising. They also facilitate local residents to launch homestay services and grow organic vegetables and fruits.



▲ Clean drinkable water project in
Fuchuan Yao Autonomous County



▲ CECEP-aided clean drinkable water
project

‘Industrial Poverty Alleviation’ Program

CECEP funded the building of a tourist service center, gate to the scenic area, a scenic boardwalk, and a stone culture museum to help boost rural tourism in Shichang Village of Songxian County in Henan Province. The village has emerged from a poor place to a state AAA-grade tourist destination. CECEP set up a planting base of fructus forsythia and established cooperatives for Chinese medicinal herbs planting. In Xinshi Village of Fuchuan, the company assisted the village CPC committee in establishing a service center for industrial development and employment. A total of 85 mu of land has been used to grow commercial crops. At the same time, CECEP uses the e-commerce platform of Guozhen App to help sell local agricultural products by combining offline customer experience and online sales.



▲ Helping rural residents in Shichang Village of Songxian County raise hens for eggs
targeting tourists



Assistance to Xinjiang, Qinghai and Tibetan-Inhabited Areas in Gansu

By the end of 2018

In Xinjiang and Qinghai, CECEP launched new energy and clean energy projects

18



with a total investment of

11

billion yuan



providing jobs

400+



'Major Project' Program

Taking advantage of its own technological and capital strengths, as well as local resources, CECEP helps foster large-scale projects to be pillars of the county economy as a way to root out poverty. It invested 100,000 yuan to remold a workshop in Xinshi Village and introduced a 2-million-yuan production line for USB cables. The project has injected vitality to local economy. In addition, CECEP plans to invest 1.6 billion yuan to build an eco-park in Songxian County to improve the development quality and overall image of the county. It also plans to invest 700 million yuan for a wind farm in Jiugao Township of Songxian County. While powering the county economy with clean energy, the project will utilize barren mountains, hills and idle rooftops to create incomes for impoverished households.

CECEP has given full play to its unique advantages in energy conservation and environmental protection. By the end of 2018, it had launched 18 new energy and clean energy projects in Xinjiang and Qinghai, with a total investment of 11 billion yuan, which provided more than 400 jobs to the local population and boosted the economic and social development of the poverty-stricken areas.

Assistance to Xinjiang

CECEP has built wind power and photovoltaic power plants to provide the autonomous region with stable power supply. The 200,000 kw wind power plant of CECEP Wind Power Corporation's Hami Jingxia No. 3 Wind Farm began operation at the end of 2018. This is the corporation's second wind power project in Hami, providing it with 505.26 million kWh of green clean energy each year, reducing carbon emissions by about 330,000 tons. Meanwhile, CECEP has seized the opportunity of the construction of the project to create jobs for the local population, recruiting 38 employees from minority ethnic groups in 2017-2018.



▲ Tuoli Wind Farm in Urumqi, Xinjiang

Assistance to Qinghai

CECEP has actively joined forces with the local industries to build wind power and solar power plants. It has also attached great importance to cultivating talents for the province and taken an active part in public welfare undertakings.

2016-2018

CECEP donated a fund to Qinghai

110,000 yuan



From 2016 to 2018, CECEP donated 110,000 yuan to the local people and created 25 job opportunities for the local surplus workforce. CECEP Wind Power Corporation sponsored the 5th "CECEP Wind Power Cup" for the children at Delingha Kindergarten to celebrate Children's Day with their parents. The corporation also participated in the "Caring for Tomorrow on Campus" charity program by donating 300 books to the local schools and providing a scholarship of 6,000 yuan to three university students from poverty-stricken families in villages of Delingha.



▲ Delingha Wind Farm in Qinghai



▲ Children at Delingha Kindergarten celebrate Children's Day with their parents at the 5th "CECEP Wind Power Cup"

In Gansu

CECEP Wind Power Co. invested a sum in Tianzhu County

443 million yuan



Lanzhou Nonferrous Metallurgy Design and Research Institute under China Geo-engineering Corporation invested a fund

30,000 yuan



Assistance to Tibetan-inhabited Areas in Gansu

CECEP Wind Power Corporation invested a total of 443 million yuan on the 50,000-kw wind power plant at Yingpan Wind Farm in Tianzhu County, Gansu Province, providing it with 225.6892 million kWh of green energy in 2017-2018, reducing carbon emissions by about 96,000 tons, which gave a powerful impetus to the local economic and social development. The Lanzhou Nonferrous Metallurgy Design and Research Institute under China Geo-engineering Corporation, a subsidiary of CECEP, donated a fund of 30,000 yuan to its "pairing assistance" three Tibetan-inhabited villages of Tongwei County to help them with infrastructure construction, as well as four computers and one printer to the villages to improve their office environment.



▲ Gansu Jiuquan Wind Farm-China's first wind farm base with a capacity of 10 million kilowatts

With the construction of new houses amid industrial development, the poverty-stricken villages have taken on a new look and embrace a new vision. Under the guidance of the decisions and plans of the CPC Central Committee and the State Council on poverty alleviation, CECEP will coordinate with local governments on poverty-alleviation projects. We will work harder on poverty alleviation through developing local industries. We will give full play to the role of resident officials to make sure that the tasks of poverty alleviation are accomplished in a down-to-earth manner. We will make new and greater contribution to winning the battle against poverty.

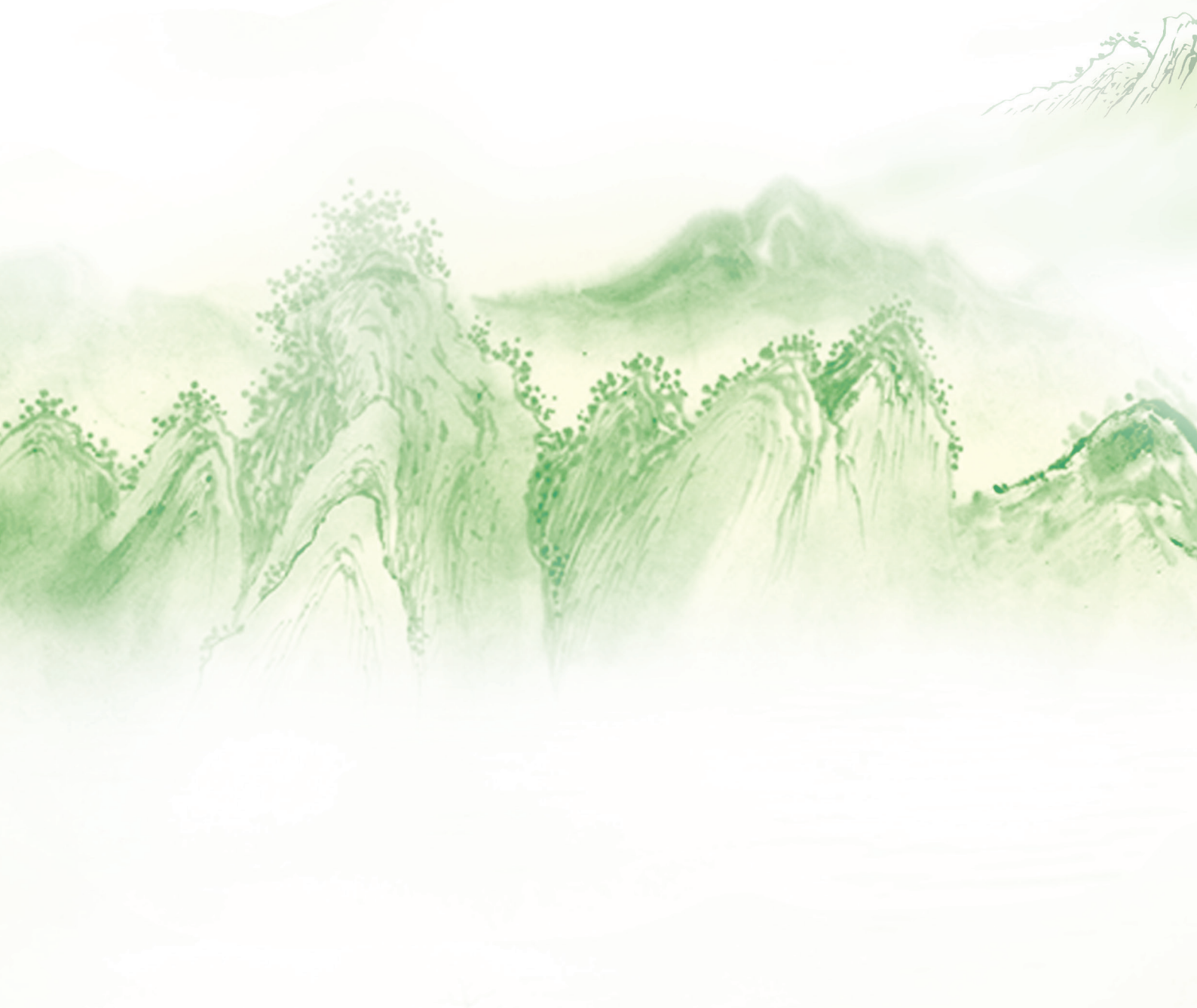
Laying Cornerstones for the Realization of Our Dreams

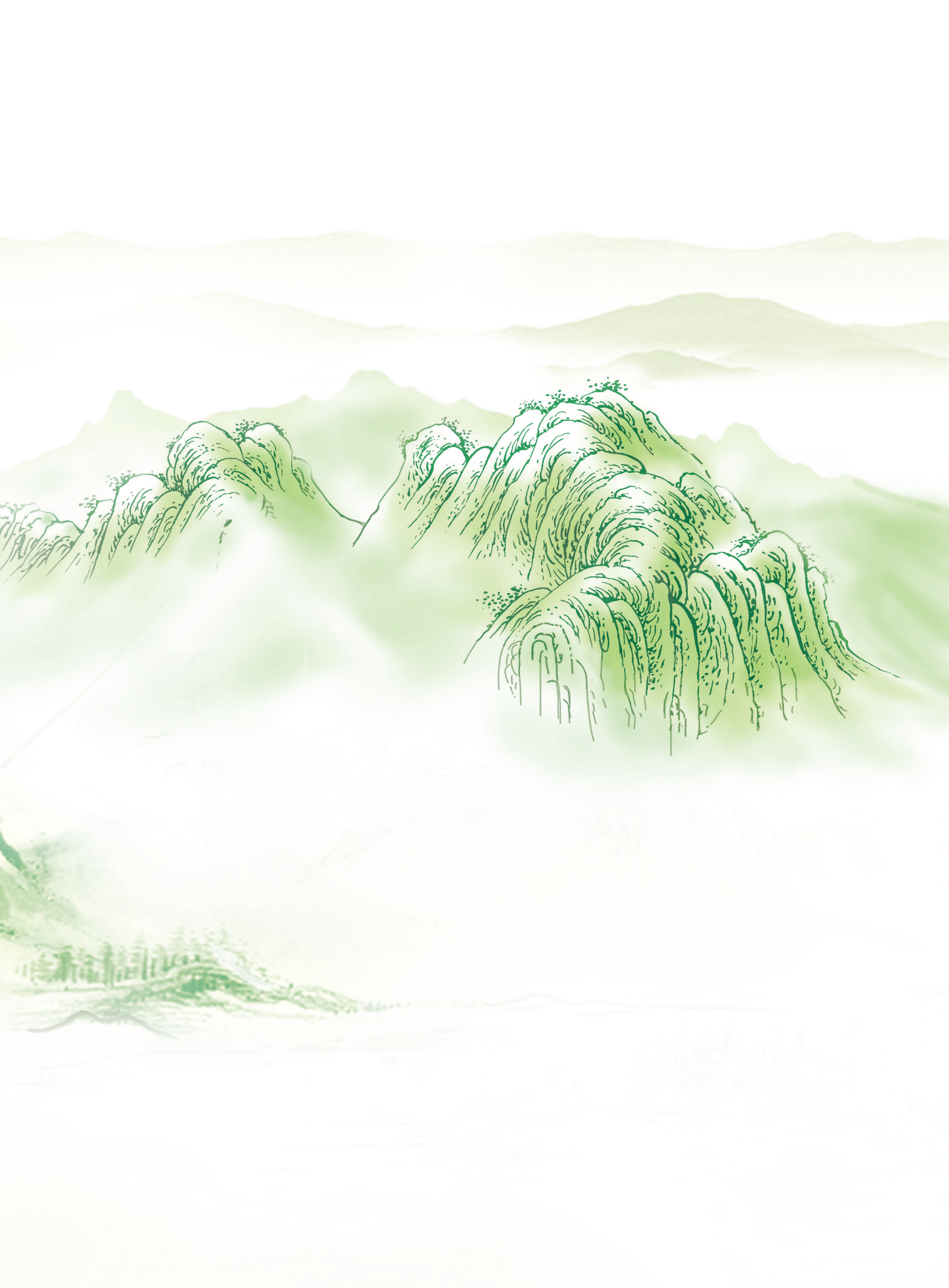
Chapter I

I. Implementation of National Strategies

II. Focusing on Green Development

III. Creating an Eco-friendly Environment







Implementation of National Strategies

Yangtze River Economic Belt

CECEP has actively carried out the national development strategy of the Yangtze River Economic Belt by promoting environmental protection, with major progress made in the construction of the coordinating platform. We have set up a Yangtze River Economic Belt Environmental Protection Leading Group and a Department of Yangtze River Protection. We have sent liaison teams to 126 cities at the prefecture level and above and signed liability agreements with their leaders. We have also dispatched our chief representatives to the major cities along the Yangtze to promote the coordination of relevant work. We have carried out a special research program on the current situation and requirement of environmental protection in the Yangtze River Economic Belt to accumulate data for the pollution prevention and control along the belt in the future. With the experimental projects in the pilot cities of Huzhou, Xianning, Hengyang and Bijie, CECEP has focused on the priority areas and explored innovative pollution treatment models, such as the Jiayu County shoreline protection and restoration model, the "Two Parks One Chain" solid waste comprehensive treatment model, which have systematically pushed forward the environmental protection and restoration along the Yangtze River. To give full play to its role as a major pollution treatment coordination platform, CECEP has accumulated extensive resources and joined forces will all the stakeholders to push forward the pollution treatment in the Yangtze River Economic Belt in a comprehensive manner.



Agreement on a recycling project for 100,000 tons/year of waste mineral oil in Xiangtan, Hunan

On December 16, 2018, CECEP New Era Group and the Xiangxiang Municipal Government signed a cooperation agreement on a recycling project for 100,000 tons/year of waste mineral oil in Xiangtan City, Hunan Province. CECEP thus became the first centrally-administered SOE to venture into the area of waste mineral oil recycling.



By the end of 2018

CECEP owned nearly 20 solid waste treatment projects in the Beijing-Tianjin-Hebei region

20



with a processing capacity

30,000 tons/day



Xiongan New Area

CECEP has taken an active part in the construction of Xiongan New Area and the environmental protection and treatment in the Beijing-Tianjin-Hebei region. By the end of 2018, CECEP had owned nearly 20 solid waste treatment projects in the Beijing-Tianjin-Hebei region with a processing capacity of 30,000 tons per day, playing a very important part in pollution treatment in the region.

- We have completed the design and construction of an integrated energy supply system and domestic sewage treatment system for Xiongan Citizen Service Center. We have explored and put into practice the innovative solution of "energy supply + environmental treatment" in the new area, which has saved energy equivalent to 600 tons of standard coal and reduced carbon dioxide emissions by about 1,510 tons.



▲ Integrated energy supply system at Xiongan Citizen Service Center



- We have reached an intent of cooperation with Tianjin Municipality on waste incineration, sewage treatment, soil remediation, scientific and technological research and development, etc. We have put forward the idea of building a systematic project "to activate Tianjin's water." We won the bid for Dongli District's domestic waste comprehensive treatment plant with a daily capacity of 3,200 tons. We also undertook the initial ecological environment management for the Xinli Demonstration Town project in the district.
- We have accelerated the implementation of the ADB's Beijing-Tianjin-Hebei regional emission-reduction and pollution-control fund. We have also cooperated with the Ministry of Science and Technology to promote the implementation of the major projects of comprehensive environmental management in the region.

Hainan Ecological Experimental Zone

CECEP has actively participated in the construction of the Hainan Ecological Experimental Zone. We have pushed forward cooperation on the projects of headquarters economy, ecological environmental protection, health and medical care, beautiful rural villages, rural human settlement environment improvement, and so on, to advance the building of ecological civilization in Hainan.



Case

CECEP's strategic cooperation agreement with Hainan Provincial People's Government

On September 14, 2018, CECEP signed a strategic cooperation agreement with Hainan Provincial People's Government, according to which the two parties will carry out extensive and in-depth cooperation in the priority areas of ecological environmental protection, energy conservation and health care and join forces in the construction of a national ecological experimental zone and an international tourism and consumption center, so as to write a brilliant Hainan chapter of "Beautiful China."



2018

China Geo-engineering Corporation signed contracts on international engineering projects

66



valued at

US\$ 767 million



up year-on-year

75 %



Belt and Road Initiative

CECEP has continuously pushed forward its global expansion, with new progress achieved in the construction of the Belt and Road. In 2018, China Geo-engineering Corporation under the group signed contracts for 66 new international engineering projects valued at US\$767 million, an increase of 75 percent over 2017. China Qiyuan Engineering Corporation strengthened cooperation with relevant departments to improve the mechanism of foreign assistance projects. It has signed contracts for foreign assistance projects in Tanzania, Rwanda, Nepal and Comoros, the total value of which increased by 88 percent over 2017.



◀ The Vanuatu Pacific Mini Games Stadium designed by China Qiyuan Engineering Corporation won the 2018 Global Best Sports Engineering Award. The project has been highly commended by the Chinese Ambassador to Vanuatu and the Prime Minister of Vanuatu as a fruit of the strategic partnership of mutual respect and common development between the two countries.



Focusing on Green Development



▲ Scan here for more information about CECEP



Energy Conservation



Case

China's first whole-process test platform for integrated multi-pollutant control built at CECEP's Shanxi Lu'an Thermal Power Plant

Industrial energy conservation

CECEP has actively carried out the R&D of energy conservation and environmental protection technologies and products. We have provided comprehensive solutions such as energy-saving diagnosis, evaluation, technical transformation, operation and management and financing for large-scale energy-consuming enterprises and energy-saving projects, including metallurgy, building materials, petroleum, electricity, chemicals and coal. We have actively carried out the comprehensive utilization of all kinds of industrial residual heat, pressure and gas, as well as energy management contract (EMC) projects, to promote energy conservation and emission reduction. From 2017 to 2018, CECEP Industrial Energy Conservation Co., Ltd. participated in the R&D of lithium tellurium copper alloy material — an energy-saving and environment-friendly high technology material, which has made an important breakthrough in the field of new energy-saving materials and further extended the industrial chain for industrial energy saving.

On March 30, 2018, after one and a half years of research and repeated tests, CECEP Industrial Energy Conservation Co., Ltd. built China's first whole-process test platform for integrated multi-pollutant control, providing a guarantee for the pollutant removal test and demonstration project design of national key projects, and an experimental base for the study on atmospheric treatment and pollutant removal in scientific research institutions and universities.





Building energy conservation & green building

CECEP is devoted to the promotion and large-scale application of combined energy technology (CET) featuring “clean energy” and “mutual complementation.” By integrating the building energy conservation resources of the whole society, we provide comprehensive services of eco-friendly cities, with technology, service, brand and capital as the core.

CECEP has developed 27 green demonstration parks, with a built-up area of more than 5 million square meters, of which nearly 1.5 million square meters have obtained the LEED (Leadership in Energy and Environmental Design, a widely used green building rating system) certification of the United States, and the Green Building Design Label (also known as “Three Star”) certification of China’s Ministry of Housing and Urban-Rural Development. In 2018, a total of 24 energy stations with an actual energy supply area of 15.35 million square meters went into operation, consuming renewable energy of about 330,000 MWH and reducing carbon dioxide emissions by about 329,000 tons in the whole year.

CECEP Hangzhou Green Building Science and Technology Museum

Hangzhou Green Building Science and Technology Museum in Hangzhou, Zhejiang Province, integrates the most advanced and suitable energy-saving technology systems at home and abroad, with a comprehensive energy-saving rate as high as 76.4 percent. It is a model of eco-friendly and people-oriented architecture with low energy consumption. In 2018, the museum was named a “Double Ten Best” project of China’s best energy saving technology and best energy-saving practice (best energy-saving practice in construction), and was submitted to the International Partnership for Energy Efficiency Cooperation (IPEEC) as a candidate for the second international “best energy saving technology and best energy-saving practice.”





Environmental Protection

2018

Disposal capacity of urban solid waste and agricultural and forestry residues increased to

85,200 tons/day



Solid waste disposal

CECEP has improved the business layout of solid waste disposal and enriched the upstream and downstream business chain. We have enhanced our disposal capacity in food waste, construction waste, kitchen waste, medical waste and other waste in full force. The disposal capacity of urban solid waste and agricultural and forestry residues has increased from 75,500 tons per day in 2017 to 85,200 tons per day. The Multi-waste Recycling and Treatment Industrial Park built with our investment in Linyi, Shandong Province, is China's first "vein industrial park" in the real sense, recognized by industry peers and experts as "creating a new model of centralized disposal of urban solid waste in China."



▲ Linyi Multi-waste Recycling and Treatment Industrial Park: an animal harmless treatment project

2018

Water treatment capacity

9.3149 million tons/day

Water production and supply capacity

5.41 million tons/day



Sewage disposal capacity

3.9 million tons/day



Water resources management

CECEP has taken water resources management as a priority of its business operation. With the key technology and equipment at our sewage disposal works, such as biological deodorization, high-efficiency biological nitrogen removal, sludge crushing and biological fermentation, we are dedicated to improving water source quality and water environment by professional means. In 2018, our water treatment capacity was 9.3149 million tons per day, water production and supply capacity was 5.41 million tons per day, sewage disposal capacity was 3.9 million tons per day, and the reduction of COD was 181,400 tons, an increase of 234,900 tons per day, 90,000 tons per day, 130,000 tons per day, and 26,500 tons over 2017 respectively. General Water of China Co., Ltd. won 16 consecutive awards for China's "Top 10 Influential Enterprises in the Water Industry."



▲ Anhui Bengbu Water Supply Plant



▲ Fujian Xiamen Municipal Wastewater Treatment Plant

Air pollution control

CECEP has the integrated treatment technology for a number of flue gas desulphurization, denitrification, and other acid gases. Based on our own development and numerous advantages in business and scientific research, we have effectively addressed air pollution and protected the blue water and the blue sky. In 2017 and 2018, CECEP signed the contracts for the design and supply of complete equipment of sulfur recovery tail gas denitration device, the environment-friendly reconstruction of the residual heat boiler of Shandong Yuhuang Chemical Co., Ltd., and other projects. We also undertook the World Bank's research project of "air pollution control in 2+26 cities (in the Beijing-Tianjin-Hebei region) and the implementation plan of ultra-high energy efficiency and ultra-low emission of urban coal-fired boiler."

Soil remediation

CECEP has rich experience in ecological restoration, and has independently developed heavy metal monitoring equipment and biological methods to tackle heavy metal pollution at advanced international levels. We are in the leading position in heavy metal treatment and soil remediation technology in China. In 2017 and 2018, CECEP actively carried out the construction of an information platform for soil pollution prevention and control, and launched land reclamation, mine geological environment and geological disaster management and ecological environment restoration projects in Beijing, Xinjiang, Hebei, Shanxi and Guangxi. On June 23, 2018, the National Environmental Protection Industrial Pollution Site and Groundwater Remediation Engineering and Technology Center affiliated with CECEP was examined and approved by experts from China's Ministry of Ecology and Environment.



Case

Guojiagou Lead-Zinc Mine of Jinhui Mining transformed into a tourist attraction

At Guojiagou Lead-Zinc Mine, the percentage of the tailings used to fill the worked-out section

70 %



In March 2018, Guojiagou Lead-Zinc Mine of Gansu-based Jinhui Mining was upgraded into a national 4A tourist area, thanks to the efforts by CECEP Lanzhou Metallurgical Design Institute. The mine is located in Huixian County, Longnan City, Gansu Province. From the very beginning of planning and design, Lanzhou Metallurgical Design Institute aimed at transforming it into an eco-friendly tourism mine which would integrate green ecology, tourism, environmental protection and digital production. According to the design plans, 70 percent of the tailings are used to fill the worked-out section, a large number of fully-automatic machinery are used to avoid noise and dust pollution, and all the water used for mining, mineral processing and tailings is recycled in a close circuit to achieve zero discharge of wastewater.





Recycling of resources

CECEP has actively carried out the recycling of all kinds of waste and explored the circular economy development model, striving to build the whole industrial chain of energy-saving and eco-friendly new materials, in order to reduce environmental pollution and realize circular development and green development.



Qingbaijiang District Waste Incineration Power Generation Plant in Chengdu, Sichuan

Qingbaijiang District Waste Incineration Power Generation Plant has the disposal capacity of 1,800 tons of domestic waste per day. With biogas from waste incineration used for power generation, steam used for laundry, slag used as the raw material of building materials and flying ash transported to the landfill after innocent treatment, the plant achieves zero emission of pollutants.



Disposal capacity of domestic waste at the Waste Incineration Power Generation Plant in Qingbaijiang District of Chengdu, Sichuan

1,800 tons/day



Clean Energy

By the end of 2018

CECEP's installed capacity of wind power

2.6147 million kilowatts

Up year-on-year

11.79 %



Wind power

CECEP is one of the first centrally-administered SOEs to be engaged in the business of wind power with high-quality wind resources. In 2017 and 2018, CECEP made breakthroughs in offshore wind power and overseas projects, with the Yangjiang Nanpeng Island Offshore Wind Farm officially approved and the White Rock Wind Farm completed and put into operation in Australia. By the end of 2018, CECEP's installed capacity of wind power exceeded 2.6 million kilowatts, with a year-on-year increase of 11.79 percent.

Photovoltaic power

CECEP has made an in-depth analysis of the development trend of the energy storage industry to promote the energy storage project development and energy storage industrialization cooperation with domestic users, power generation enterprises and power grids. The pilot projects of photovoltaic new technologies, such as unmanned operation and maintenance aerial vehicle, cleaning robot and SGG nano-membrane layer, are in full swing. In 2018, CECEP's installed capacity of photovoltaic power reached 3.1373 million kilowatts, with a year-on-year increase of 20.08 percent.



"Heronsbill" bloom in the desert

CECEP Dalad Banner Solar Farm is the first pilot photovoltaic project built in Inner Mongolia. It is a typical project that we have built to answer the nation's call for pilot project construction to improve the desert environment by fixing sand with windbreaks. With a total installed capacity of 100 megawatts, the solar farm will make full use of the land for both forestry and power generation to promote the integrated development of desert clean energy economy, desert ecological management and desert organic agriculture. After the solar farm is put into operation, it is expected to provide 180 million kilowatt-hours of green energy to the power grid every year, saving 50,000 tons of standard coal and reducing 500 tons of carbon dust emission, 700 tons of sulfur dioxide emission and 1,500 tons of carbon dioxide emission.



▲ Inspection of SVG reactor



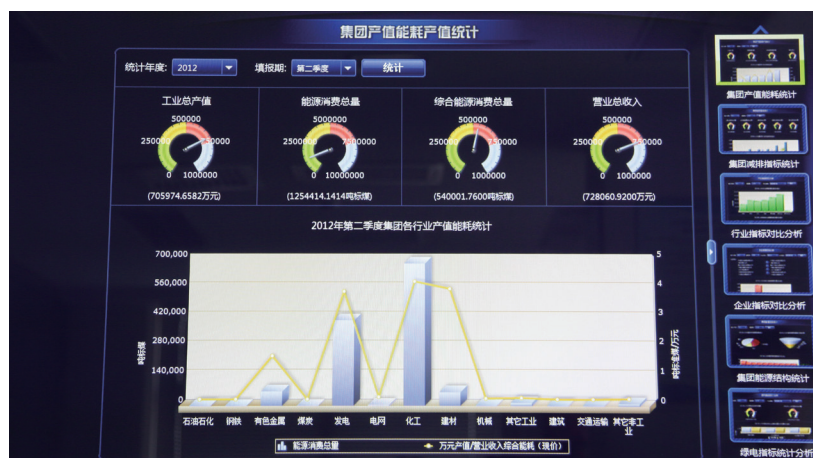
▲ Supporting pile foundation laid out

Energy Conservation Comprehensive Service

Research and consultation

In 2017 and 2018, CECEP completed research reports on 11 industries, including wind power generation, photovoltaic power generation, solid waste treatment, soil remediation, industrial energy conservation and green building, as a comprehensive analysis of the overall situation in various fields for reference by relevant departments.

Entrusted by the State-owned Assets Supervision and Administration Commission (SASAC), National Development and Reform Commission, Ministry of Ecology and Environment, Ministry of Industry and Information Technology, etc., CECEP completed *State-owned Enterprises Energy Conservation and Emission Reduction Report* and other research report. The State-owned Enterprises Energy Conservation and Emission Reduction website maintained and operated by CECEP Consulting Co., Ltd. has become an important platform for SASAC and SOEs to exchange information on energy conservation and emission reduction.



▲ SOEs Energy Conservation and Emission Reduction Supervision Center

Material and equipment manufacturing

CECEP has actively built a professional manufacturing base of high-end energy conservation and environmental protection equipment and electrical equipment to create "whole industrial chains" and provide comprehensive solutions for energy conservation and environmental protection. CECEP Environmental Protection Equipment Co., Ltd. has been authorized to operate and maintain the Urban Environmental Air Automatic Monitoring Station of the National Environmental Air Monitoring Network, providing services to 26 cities in the four provinces of Zhejiang, Shandong, Jilin and Yunnan. The operation and maintenance of state-administered monitoring stations will effectively serve the development of the Yangtze River Economic Belt and the campaign for air pollution prevention and control in the Beijing-Tianjin-Hebei region.



Creating an Eco-friendly Environment

Environmental Protection Management

To construct a green and low-carbon recycling industry system, CECEP defined a three-year (2018-2020) development goal of energy conservation and environmental protection industry and revised the *Regulations on the Administration of Environmental Protection*. We have strengthened the prevention and control of environmental protection risks and pollution control and the supervision and control measures of environmental protection. We have improved the control of environmental hidden dangers and reclassified the environmental protection supervision and environmental protection events. We have also promoted green manufacturing, green technology and green finance. In 2017 and 2018, no major pollution incident occurred in our group.



Building a green financial system to support the development of green industry

As the only licensed financial institution of the group, CECEP Finance Co., Ltd. has continuously innovated its management model to support the group's efforts in developing the real economy of green industry.

It has carried out green financial system construction and established a green credit evaluation system to provide priority financial guarantee for key development business areas and major projects of the group.

It has built the Green Finance College to cultivate excellent inter-disciplinary green financial talents knowledgeable in finance, industry and management, to implement the spirit of the 19th CPC National Congress and the strategy of Great Protection of the Yangtze River with practical actions.

Carbon Asset Management

Establishment of a carbon asset management system

We organized our subsidiaries to strengthen the study of carbon trade policy and carbon verification. We have been proactive in communicating with local governments and relevant departments to deal with carbon trade. Within the group, we organized key energy consumption enterprises to carry out carbon dioxide emission verification for timely information on the carbon emission level of our subsidiaries, providing accurate and reliable data support for the management of carbon assets of the group.

Participation in the construction of a national unified carbon trading mechanism

We have actively participated in the construction of the Beijing Carbon Trading Market and provided services to nearly 100 enterprises in low-carbon transformation. We carried out and completed research and analysis on the policy trend of domestic carbon trading market and its impact on CECEP. We completed the on-site verification and report compilation of the carbon dioxide emissions by 73 key pollutant discharging units in Beijing in 2017.



2017

Sold green power certificates

5,602



2018

CECEP carried out various environmental protection training sessions

5,844

Total number of trainees

96,012



Low-Carbon Operation

CECEP has positively responded to and applied for the issuance and voluntary subscription transaction of the National Renewable Energy Green Power Certificate. We actively promoted voluntary emission reduction, cultivated the awareness of green development, and called on our employees to purchase the green power certificates. In 2017, a total of 5,602 green power certificates were sold in our group, accounting for a quarter of the national total, ranking first in the country.

Besides, we have actively carried out various forms of environmental protection publicity activities. By organizing special activities such as environmental protection lectures, "100 Days of Up-to-standard Environment" and Environmental Protection Publicity Week, we advocate the concepts of green office and green lifestyles. We worked to build a water-conservation and energy-conservation enterprise, and our headquarters building is completely powered by green energy. In 2018, the whole group carried out 5,844 environmental protection training sessions, with a total number of 96,012 trainees.

Activating the Momentum of Innovation



Chapter II

I. Improving the Innovation System

II. Accelerating the Application of R&D Achievements

III. Promoting Talent Cultivation







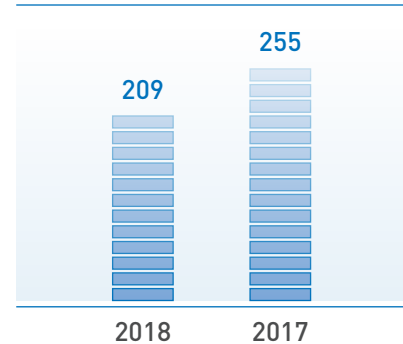
Improving the Innovation System

The year 2018 marked CECEP's "Year of Technological Innovation." We further strengthened the idea that science and technology has a pivotal role to play in our past, present and future development. Technological innovation has been upgraded to a higher level. By the end of 2018, CECEP had received 2,209 authorized patents alongside 358 honors at or above the municipal level.

Environmental R&D investment Unit: RMB 100 million



Number of authorized patents Unit: items



Improving organization to strengthen leadership. We have constructed a pragmatic and efficient organizational structure of scientific and technological innovation by setting up a leading group for scientific and technological innovation and reorganizing CECEP's science and technology committee.

Defining overall plans to guide action. We compiled and published CECEP's *Action Plan for Scientific and Technological Innovation (2018)* and "Year of Scientific and Technological Innovation" Work Plan. Based on the needs of the main business of the group, we identified 18 major projects of 2018 and worked out the Measures for the Management of Major projects (Trial) and relevant regulations.

Carrying out assessment to boost morale. We have commended the major scientific and technological achievements, capacity-building achievements and technological innovation achievements of the subsidiaries in the past three years with four innovation achievement awards and three innovation honorary awards.

By the end of 2018

CECEP's patent authorizations

2,209 

Honors at or above the municipal level

358 



▲ 2018 Conference on Scientific and Technological Innovation

Accelerating the Application of R&D Achievements

By the end of 2018

CECEP's R&D institutions

101



Number of technological innovation alliances joined by CECEP

14



Progress has been made in the construction of R&D platforms. We have built a scientific and technological platform supporting the Yangtze River ecological environment protection, and actively promoted the establishment of postdoctoral workstations and academician workstations. CECEP Valiant Co., Ltd. is a state-level technology center, a state-level high-tech enterprise and a national technological innovation demonstration enterprise. It has undertaken a number of national key projects for new products and National Torch Plan projects. By the end of 2018, CECEP owned 101 R&D institutions, including three at the national level and 34 at the provincial and ministerial level.

The collaboration between enterprises, universities, research institutes, and end-users has been actively promoted. We have established close ties with government departments such as the Ministry of Science and Technology and SASAC. We have built cooperative bonds with Peking University, Tsinghua University, Chinese Academy of Sciences and other higher education and scientific research institutions to carry out joint scientific research and personnel training. By the end of 2018, CECEP had joined 14 technological innovation alliances.

A technological achievement management information system has been built. The system has come into official use online, which has realized the systematic, automatic and visualized analysis and management of scientific and technological achievements. The statistical analysis and visual display of the achievements of CECEP subsidiaries at all levels provide effective protection and respect for intellectual property rights, thus improving the accuracy, timeliness and convenience of inquiry and the management efficiency of science and management staff at all levels.



Case

CECEP Honored with Second Prize of National Scientific and Technological Progress Award

At the 2017 National Science and Technology Award Conference held on January 8, 2018, the "key technologies of rotating multi-stage pyrolysis and incineration of hazardous waste and cooperative control of pollutants", a joint project of CECEP Dadi (Hangzhou) Environmental Remediation Co., Ltd., Zhejiang University and other partners, was awarded a Second Prize of the National Scientific and Technological Progress Award.



Promoting Talent Cultivation

By the end of 2018

Number of scientific and technological researchers

2,305



CECEP has strengthened its efforts to build a high-level scientific and technological team while taking good care of its scientific and technological talents. By the end of 2018, the group had 2,305 scientific and technological researchers and two national-level scientific and technological personnel, one of whom is a National Scientific and Technological Progress Award winner and the other is an expert under the Ten-Thousand Talents Program named by the Organization Department of the CPC Central Committee.

Perfecting the management mechanism of scientific and technological talents. We have established and improved the mechanisms for the introduction, employment, training, assessment and evaluation, exchange and promotion of scientific and technological talents, so as to make sure that the talents can be introduced, retained and developed, with their sense of belonging and benefit effectively improved.

Respecting and pooling talents. We have combined internal training with external introduction, opened up green channels for the introduction of scientific and technological talents, and formed a multi-purpose team of talents with reasonable ladder structure, high quality and stability.

Establishing Technological Innovation Talents Studios. We set up a number of technological innovation studios named after the leading talents in CECEP's main business, formulated measures for the management of such studios, and organized and encouraged our employees to play an active part in technological innovation and creation activities in their daily work.

Strengthening Production Safety

The background of the page features a soft, watercolor-style illustration of misty, rolling mountains in shades of light blue and teal. In the lower-left corner, there is a small, dark teal island with several stylized trees. The overall aesthetic is clean and professional, with a focus on natural elements.

Chapter III

I. Meticulous Safety Management

II. Enhanced Emergency Response

III. Safety Culture Publicity and Education






Meticulous Safety Management

We adhere to the principle that “development must not be at the expense of safety”, strictly implement the responsibility for production in terms of safety and environmental protection, and ensure that production safety is conducted in details and thoroughly. We established an organization system of production safety, formulated and implemented a production safety system, strengthened the standardization of the system, and strictly implemented production safety by strengthening efforts to identify hidden dangers, rectifying problems, and making emissions meet standards. From 2017 to 2018, CECEP increased investment in production safety from 170 million yuan (US\$24 million) to 203 million yuan (US\$28.6 million), and the recordable accident rate and the number of employee casualties remained at zero.

2017-2018

CECEP increased investment in production safety from 170 million yuan to

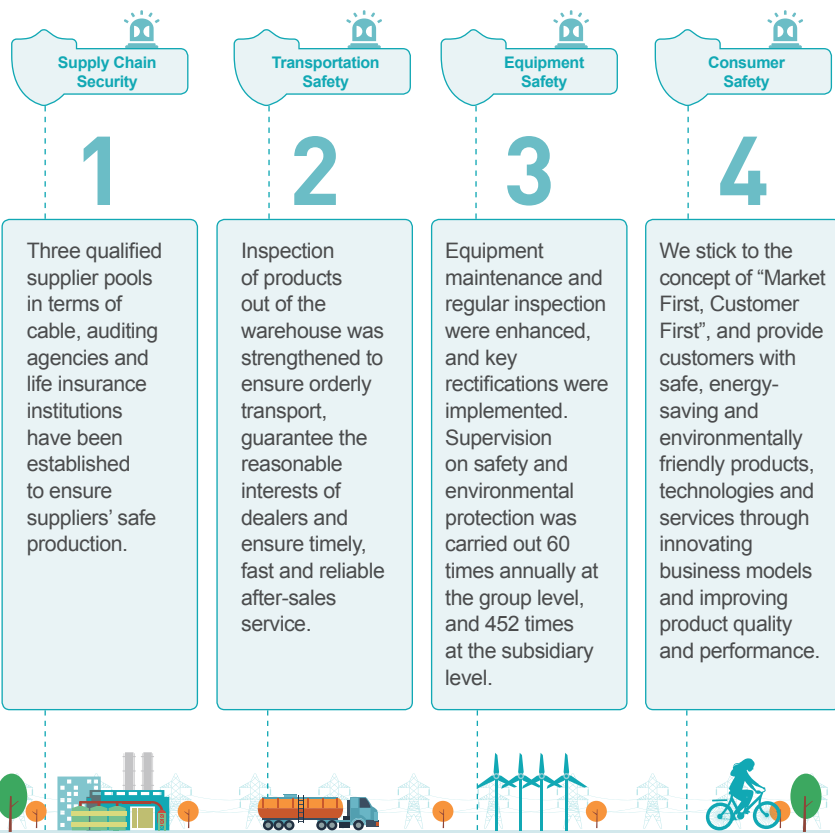
203 million yuan 

The recordable accident rate and the number of employee casualties remained at

0 



▲ Online monitoring equipment



Enhanced Emergency Response

CECEP has made efforts to advance prevention, carried out the identification of safety risks, established emergency management teams, standardized emergency treatment procedures and formulated optimized contingency plans, thus making solid progress in emergency management and achieving notable results in the control of major risk factors. We completed the on-site assessment of the control effect in eight key tertiary companies. In 2018, CECEP conducted a total of 1,060 emergency drills.



Case

CECEP Emergency Drill 2018

On June 7, 2018, CECEP held the annual emergency drill in Jiaying, Zhejiang Province. The drill simulated a fire accident occurring in a crowded electronic factory, and a series of subjects were carried out in terms of emergency evacuation, reporting fire, rescuing workers trapped in the upper floors, fire fighting and first aid, and post-fire environmental monitoring and treatment. After the rescue, a mock press conference was held to clarify the cause of the accident and announce the fire-fighting process, so that the public opinion can be controlled.

Safety Culture Publicity and Education

2018

CECEP Wind-power Corporation held training program on transportation safety, attended by

Over **1,500** employees



Case

A Successful Safety Knowledge Competition

CECEP (Guangxi) Clean Tech Development Co., Ltd. organized a safety and environmental protection knowledge competition from May 8-9, 2018. By encouraging employees to actively participate in the study and practice of safety and environmental protection knowledge, employees' awareness in this regard was effectively enhanced.





Seeking Common Development

Chapter IV

I. Strengthening Industry Exchanges

II. Improving Customer Service

III. Implementing Responsible Purchasing







Strengthening Industry Exchanges

CECEP combed through

50 key projects



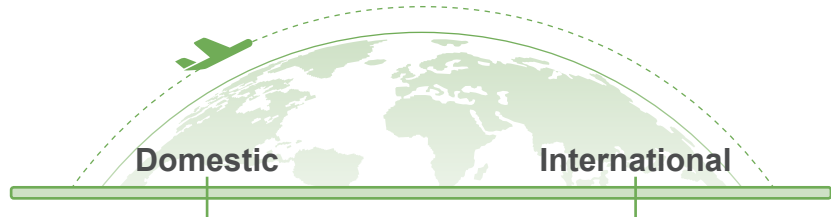
Economic contract execution rate

100%



Expanding Exchange and Cooperation

CECEP adheres to fair competition, fair trade and honest management. Relying on the technological advantages of the group's green industries, it has vigorously developed the key regional markets at home and abroad, and complied with the market rules of various countries in order to enhance international influence.



Seizing the important opportunity of the development of environmental protection industry, CECEP has actively undertaken various energy conservation and environmental protection projects, and has carried out project cooperation with provinces of Hainan, Shaanxi, Fujian, Sichuan and Jiangsu. It has provided technological and service support to local governments in terms of environmental monitoring, water pollution control, waste incineration for power generation, and sludge disposal. CECEP has combed through nearly 50 key projects, and economic contract execution rate was 100 percent.

In active response to the Belt and Road Initiative, CECEP has enhanced cooperation with the United Nations Environment Program and joined the International Coalition for Green Development on the Belt and Road. It attended the World Economic Forum Annual Meeting 2018, Boao Forum for Asia Annual Conference 2018 and other important international conferences, through which the group has continued to expand its network of relationships with political, academic, and media circles in other countries around the world.



CECEP at the World Economic Forum Annual Meeting 2018

From September 18 to 20, 2018, the World Economic Forum Annual Meeting of the New Champions was held at Meijiang Tianjin Convention and Exhibition Center. During the event, CECEP gave interviews to China Central Television and the Reuters, participated in the "Circular Economy" forum and delivered a speech, proactively making China's voice heard, conveying its willingness to cooperate, and demonstrating that CECEP is committed to enhancing cooperation through extensive consultation, joint contribution and shared benefits, as well as contributing to the building of a community of shared future for mankind.



2018

CECEP hosted or participated in the compilation of seven national, industrial and local standards

7



Improving Customer Service

CECEP (Guizhou) Building Energy Co., Ltd.

Customer satisfaction remained at above

95%



Leading Industrial Development

CECEP advocates the concept of integrity management and fair competition and actively participates in industry exchange activities. It has opened up communication channels between universities, research institutes, suppliers and technology companies, organically linked governments with associations and technological intermediaries, and taken an active part in the compilation of national and industrial standards so as to regulate and lead the industrial development. In 2018, CECEP hosted or participated in the compilation of seven national, industrial and local standards.

Adhering to the service philosophy of "wholeheartedly and meticulously serving customers", CECEP abides by the quality commitment, strengthens the construction of management system, strictly controls the quality of process, and effectively protects the legitimate rights and interests of consumers. The group ensures the security of customer information, provides consumers and clients with adequate product information, prohibits false publicity, guarantees consumers and clients' right to know, and creates more value for clients. CECEP has worked to develop brand-name products, continuously improve the quality of products and services and provide customers with high-quality services, so as to meet the diversified needs of global customers.



Case

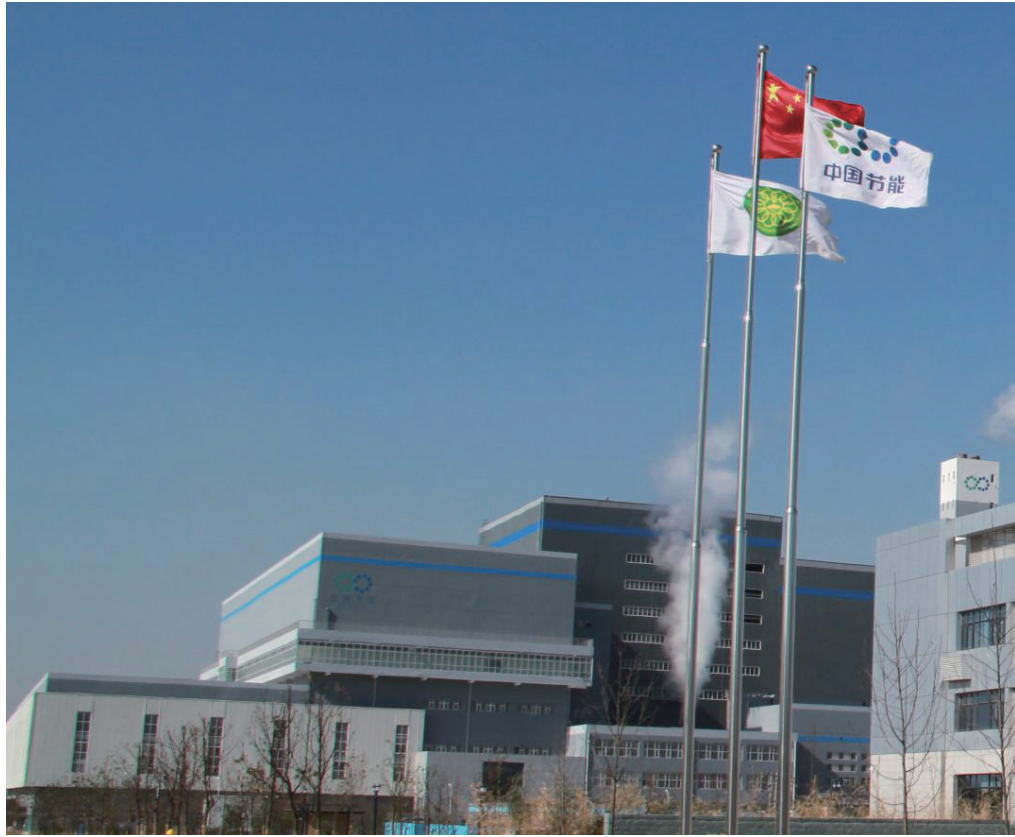
Thumbs-up on Customer Service: "This Central Enterprise Is Reliable!"

CECEP (Guizhou) Building Energy Co., Ltd. has continued to improve the customer service system for years and enhance the ability of troubleshooting for consumers, winning widespread praise from customers, and customer satisfaction has remained above 95 percent.

A customer service center has been set up, and its affiliated call center provides prompt services in terms of consulting, repair and complaint for consumers.

Customer information and privacy are protected. In addition to the electronic information included into the corresponding systems, all paper documents are collected, classified and stored in an archives room and managed by a filing clerk.





Implementing Responsible Purchasing

Improving the Procurement Management System

CECEP adheres to the concept of green and transparent procurement, and strengthens the management of suppliers in terms of environment, safety and health.

- CECEP regularly holds a procurement leading group meeting to improve the procurement system;
- CECEP has formulated *Interim Measures for Centralized Procurement Management* and other procurement rules and regulations, and supplemented and issued *Notice of*

Supplementary Opinions on Implementing the Interim Measures for Centralized Procurement Management, which clarified the specific rules and procedures of procurement and ensured the smooth implementation of the original procurement system;

- CECEP works to promote the construction of electronic procurement platform and qualified supplier pools, and has established three qualified supplier pools in terms of cable, auditing office and life insurance institutions;
- CECEP regularly organizes meetings for bidding agencies to evaluate the bidding process in order to create a centralized, unified, transparent and open procurement process.



▲ A procurement management research group of SASAC holds a meeting with the CECEP on April 12, 2018.



Establishing Open Procurement Platform

CECEP has been making every effort to build an e-procurement platform in order to ensure that the procurement process is clear and traceable and the procurement price is fair and reasonable. By far, it has completed the demonstration of an e-procurement platform construction mode, prequalification, selection of platform test pilot, test of platform function, and evaluation of platform construction and operational projects.

Strengthening Supplier Management

While fulfilling its procurement responsibility, CECEP intensified management of suppliers' social responsibility and established a complete supplier evaluation system to periodically conduct ratings on suppliers. Firms that fail to meet the requirements would be eliminated.

- CECEP has actively expanded high-quality supply channels and launched an "international technology strategic partnership program," which annually selects a dozen companies advanced in technology, research and development from Europe, the U.S. and Japan into the technology supply chain of CECEP's main businesses to form a long-term supply source of technology.
- CECEP has maintained contact and regular communication with various suppliers, and worked with upstream and downstream enterprises to jointly fulfill social responsibilities so as to build a green supply chain.

Caring for Employees

Chapter V

I. Safeguarding Employees' Rights and Interests

II. Building Flagship Teams

III. Creating a Happy Workplace







Safeguarding Employees' Rights and Interests

Basic Rights and Interests

CECEP strictly abides by the Company Law, Labor Law and Labor Contract Law. We establish recruitment procedures according to law, sign labor contracts with employees and conduct equal employment. We also encourage communication between employees and protect their basic rights and interests. We strive to establish a sound compensation and benefits system, implement paid vacation policies and diversify the staffing structure. We strongly oppose any form of forced labor, child labor, gender discrimination and abuse of labor. Our male and female employees enjoy equal pay for equal work as well as good protection for privacy, which helps promote the sustainable and healthy development of CECEP.

Occupational Safety and Health

CECEP's measures to ensure employees' health include collecting health information, compiling occupational health records and improving occupational safety and health management system. We also provide psychological counseling and training courses on mental health and occupational disease prevention and control. Efforts have been made to reduce the harm of occupational diseases and create a working environment conducive to the health of employees.

Democratic Management

CECEP attaches importance to the democratic management of employees. We have a sound dialogue mechanism and provide multiple channels for employees to safeguard their rights and interests. We encourage employees' involvement in corporate management and respect their right to know, right to participate and right of supervision. We implement democratic management by holding the workers congress, conducting business information disclosure, broadening the channels of employees' participation in democratic management affairs and appreciating employees' advice and suggestions. We promote the establishment of labor unions in subsidiaries to motivate employees to take part in corporate management.

Building Flagship Teams

CECEP adheres to its central task and strives to perform its duties to serve the overall interests. We strengthen team building and promote the hardworking spirit. At the CECEP Seventh Team Building Award Ceremony and the Second Model Worker Award Ceremony, a series of awards were granted to individuals or groups, including five CECEP Model Workers, 15 Outstanding Labor Unions, 20 Flagship Teams, 30 Model Team Leaders and a Model Worker Innovation Studio.

Training and Exchange Programs

CECEP makes annual staff training plan and decides key training programs according to the needs of employees in different departments and at different levels. We carry out graded and classified training to make sure the programs are well targeted and effective.

We launched the Blue Sky Talent Training Plan, including serial training programs titled Green Sapling, Green Pine, Green Mountain and Green Cloud, to cultivate executives and professional managers, improve employees' professional knowledge and skills and carry forward the craftsman spirit. A total of 1,846 CECEP employees attended 17 training events in 2018.

2018

Training events

17



CECEP attendees

1,846





Case

The Third Phase of Green Sapling and Green Pine Training Programs under the Blue Sky Talent Training Plan 2018 Completed Successfully

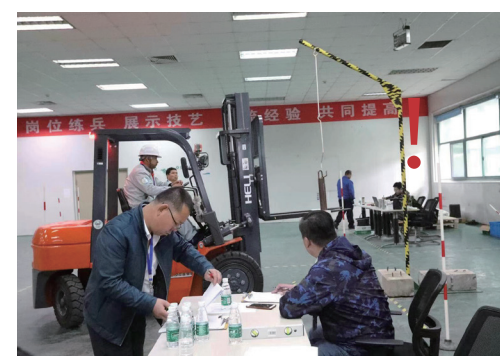
The third phase of Green Sapling and Green Pine Training Programs under the Blue Sky Talent Training Plan took place on October 15-19, 2018. The programs were targeted at young backbone employees and aimed at comprehensively enhancing their political awareness, improving their overall managerial and professional skills and facilitating their career development in the CECEP.



Case

Workers Skill Competition

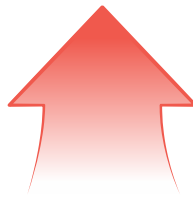
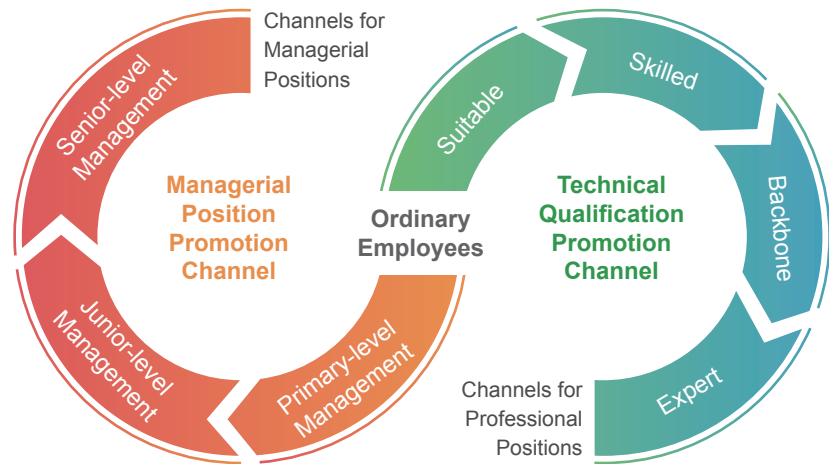
The Third "Solar Energy Cup" Workers Skill Competition was held on November 8-9, 2018. Contestants competed in two types of skills: electrical skills and forklift driving. After a day and a half of intense competition, Ouyang Kuncheng and five other contestants won the title of "Technical Experts in Central SOEs," and Su Zhenhua and nine other workers won the title of "CECEP Technical Experts."





Career Development

CECEP has formulated sound compensation policies and improved its promotion mechanism. For the purpose of cultivating qualified executives, a clear development path has been defined, featuring dual promotion channels for managerial and technical personnel and performance evaluation standards specific to each position.



We strengthened our top-level planning by revising the *Regulations on Positions and Ranks Management of Employees in CECEP Headquarters* and the *Guideline on Personnel Selection and Appointment in CECEP Subsidiaries* as well as drawing up the *CECEP Action Plan for Cultivation of Executives and Talent Pool Building*.



Focusing on our central task, we steadily advanced the selection and promotion of executives through multiple methods such as targeted training, internal competition and recruitment from outside.



We carried out strict supervision and management of executives and paid close attention to personal affairs reporting and personnel files review. We completed the collection of a total of 177 personal affairs reports within the organization.



Creating a Happy Workplace

CECEP practices humanistic management of employees with the aim of creating a healthy, comfort and cozy workplace. To further enhance the soft power of CECEP and make it a spiritual home for our employees, we have made efforts in fostering a sound corporate culture and increasing the employees' sense of belonging and cohesiveness.

- Baby care rooms, reading corners and green channels have been set up to meet different types of demands.
- To promote a healthy work-life balance and the employees' attachment to CECEP, a number of cultural and sports clubs have been founded in accordance with the employees' interests and hobbies and a variety of cultural and sports events have been organized, such as staff games, table tennis and badminton matches and lectures on children education.
- Continuous efforts have been made to improve the assistance mechanism for employees in need and provide them with practical help.



▲ Dumplings Cooking Contest



▲ "Flying Youth" Staff Games

May 2017

Fifth CECEP Staff Games

1,000 participants



Case

The Fifth CECEP Staff Games & the Second Table Tennis Tournament a Great Success

For the purpose of uplifting the employees' spirit, fostering a good corporate culture and encouraging the employees to take part in sports activities, the Fifth CECEP Staff Games & the Second Table Tennis Tournament took place on May 11-12, 2017. Nearly a thousand employees participated in the event.



Embracing a Better Life Together



Chapter VI

I. Targeted Poverty Alleviation

II. Community Engagement Overseas

III. Building a Harmonious Society





Targeted Poverty Alleviation

Poverty Alleviation Management

CECEP established a steering group for targeted poverty alleviation. Led by the company's top leadership, the steering group set up an office under the Party-Mass Work Department, designated the personnel in charge and defined their specific responsibilities. We formulated annual plans for targeted poverty reduction and implemented a mechanism of quarterly and annual reports. We strengthened our communication with key villages in two designated poverty-stricken counties and realized information sharing and quick response at the earliest time. To ensure transparency, CECEP also set up a steering group for supervision over fulfillment of duties, job performance and ethical conduct in the implementation of poverty alleviation programs.

Cadres for Poverty Alleviation

The cadres responsible for poverty alleviation act as a bridge between CECEP and the recipient areas. Three cadres were selected to take temporary official posts in designated villages and counties in 2017 and four in 2018 to fully understand the local conditions and give advice for improvement accordingly. CECEP organized intensive training for the selected cadres and established a mechanism of regular reporting to keep the headquarters informed of their progress in carrying out poverty reduction programs. Two meetings were held to hear their work report and work out solutions for major problems in poverty alleviation, providing strong support for the poverty-stricken areas.



Case

2018

CECEP enabled access to clean drinking water for Shichang Village, benefiting

2,000 villagers



Villagers' Dream of Clean Drinking Water Comes True

It was getting cold in late fall in Shichang Village of Jiugao Town in Songxian County, Henan Province, but residents here felt spring-like warmth. Thanks to the efforts made by Hao Chengtao, deputy governor of Songxian, and Hao Jiahua, Party chief of the village, both stationed by CECEP, a 600-meter-deep well in Shibangou was constructed with a supply of 40 tons of water per hour. Before this, a 300-meter-deep well already began operation in Lizhuang. The two wells ended a thousand-year history of drinking rainwater in the village. Now more than 2,000 villagers are enjoying clean drinking water that meets the safety standards.



▲ Scan here for more information

"I've never seen well water spout out like this all my life in the village. With sweet water pouring out of the ground, I have sweet dreams at night."

—Villager Ding Baojian

Poverty Alleviation at the Grassroots Level

In addition to the efforts at the Group level, CECEP subsidiaries have also launched poverty alleviation programs in response to the call of local governments and made their contributions to the national anti-poverty campaign.

In Shaanxi

CECEP constructed a reservoir that supplies drinking water for

200 households 



China Qiyuan Engineering Corporation helped increase the income of local villagers by providing funds (nearly 300,000 yuan) for training programs on tea tree and mushroom growing. In Shuangsheng Village of Haoping Town in Ziyang County, Ankang City, Qiyuan invested 40,000 yuan in constructing a reservoir that supplies drinking water for nearly 200 households. It also donated a heavy-duty printer and two computers to improve the office environment in the village and donated 35,000 yuan to build a public service center for the villagers.

In Tianjin

CECEP Tianjin Company updated over 300 street lamps in Dongtianwuzhuang Village of Haogezhuang Town, Baodi District

 **300+** street lamps



CECEP Tianjin Company invested 300,000 yuan in updating over 300 street lamps in Dongtianwuzhuang Village of Haogezhuang Town in Baodi District. It also supported the local government campaign "10,000 Party Members Uniting with 10,000 Households" by visiting poor families and presenting them gifts.

In Hebei

CECEP Chengde Company helped raise poverty alleviation funds for Bagualing Village of Dayingxi Township, Chengde County

268,000 yuan 



CECEP Qinhuangdao Company invested 55,000 yuan in paving village roads of 380 square meters and drilling a pumping well, helped raise the income of 47 poor households by signing contracts on growing 577-mu crops, and completed renovations of 15 dilapidated houses and six old buildings. It also visited 135 poor families and presented them with gifts worth 15,100 yuan. In Bagualing Village of Dayingxi Township, Chengde County, CECEP Chengde Company helped raise poverty alleviation funds of 268,000 yuan, helped villagers sell home-made products worth 23,000 yuan, and built seven garbage dumping sites at the cost of 25,700 yuan and a sign board near the main village road that the villagers had long expected.

In Jiangxi

CECEP Jiangxi Company constructed a 200-mu Evodia rutaecarpa plantation with a fund of

 **300,000** yuan



CECEP Jiangxi Company provided 100,000 yuan for livelihood projects in Nanshan Village of Huayuan Township, Ruichang City. It completed the first street lamp installation project in the village, upgraded old and damaged bridges, hired 20 villagers from poor households in its "poverty alleviation workshop", as well as invested 300,000 yuan in developing a Evodia rutaecarpa plantation with an area of nearly 200 mu. The No. 4 Metallurgical Construction Company of China provided 85,700 yuan to help Hushi, Zhiguang and Baishan Villages of Zhiguang Town, Guixi City, to fight against poverty.

In Xinjiang Uygur Autonomous Region

CECEP Solar Energy Company allocated a targeted poverty alleviation fund

60,000 yuan 



CECEP Solar Energy Company invested more than 60,000 yuan in poverty alleviation programs launched in three poverty-stricken villages. It made regular visits to poor families and presented them with rice, flour, cooking oil and milk. It also helped villagers purchase sheep and cows, build sheep pens, upgrade their kitchens and pave their yards.



Community Engagement Overseas

CECEP attaches great importance to community involvement overseas. We actively participated in community activities, purchased local products and helped with local community development. We encouraged cross-cultural communication among employees, strengthened skill training and sent message of good wishes to employees during holidays. We also promoted localized operation and adopted labor standards in line with local conditions.

China Qiyuan Engineering Corporation helped build hospitals, photovoltaic power stations, government buildings and civil buildings in Jamaica, Nepal, Cuba, Peru and Kyrgyzstan. It also participated in the China-aid Vanuatu Pacific Mini Games Project, where the 2017 Pacific Mini Games were successfully held.

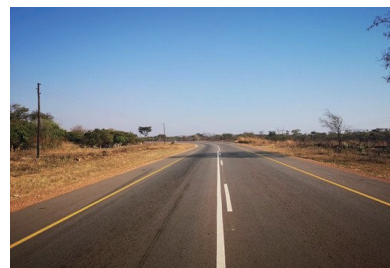
On December 12, 2018, China Geo-engineering Corporation under CECEP was honored as an Excellent Example of State-Owned Enterprise Global Image Building for its efforts in promoting localized operation in Sri Lanka at the Chinese Enterprise Global Image Summit 2018.



◀ Certificate of Excellent Example of State-Owned Enterprise Global Image Building 2018



◀ CECEP's White Rock Wind Farm Project in Australia formulated and implemented its community engagement plan in strict accordance with the project approval requirements. The White Rock Project Fund was established to provide financial support for community activities and to boost the local economy. The project was recognized by local residents and the annual Farm Open Day attracted thousands of visitors from the project site and surrounding areas, contributing to CECEP's corporate image building in Australia.



▲ The T005 Highway Project constructed by CECEP in Zambia adopted advanced technologies and tight quality control and helped break a transportation bottleneck. The project attracted leaders of many African countries to conduct a field investigation.



▲ The public water projects we launched in Sri Lanka employed more than 10,000 local people and helped significantly increase the income of residents around the project sites.

Building a Harmonious Society

By the end of 2018

CECEP environmental education base had received visitors from local communities and schools

50,000 person-times 

Promoting Environmental Protection

CECEP has made constant efforts to improve the development of its environmental education base and organize promotional events related to energy saving and environmental protection. Our goal is to transform every employee to a practitioner of green life and an ambassador for environmental protection and to have CECEP's role recognized by the public. By the end of 2018, the CECEP environmental education base had received over 50,000 visitors from local communities and schools, boosting the publicity of green concepts.



Case

Campaign Themed on 'Promoting Water Saving among Students'

On March 21, 2017, a campaign themed on "promoting water saving among students" was jointly launched by Suifenhe Water Authority, General Water of China (Suifenhe) under CECEP and Suifenhe Experimental Primary School. A total of 120 students visited the Third Water Purification Plant of Suifenhe and learned about the processing of tap water and conservation and utilization of water, which helped them better understand the importance of water saving and water safety.





Safeguarding Public Health

With the health industry as a main business, CECEP cares about the public health and strives for raising public awareness of living a healthy life and spreading knowledge of health care by sponsoring a variety of events, such as the Guozhen Hiking Club and the New Era Health Care Classroom.



Support for Cultural and Educational Undertakings to Promote Social Progress

On April 21, 2017, the Guozhen Reading Day was held by New Era Health Industry Group on the Great Wall at Juyong Pass. More than 10,000 participants recited in chorus during the event, which was recognized by Guinness World Records as the world's largest reading lesson.





Voluntary Service

By the end of 2018

CECEP had sponsored

50 charity events



and donated nearly

10 million yuan



CECEP actively funds voluntary programs focusing on poor children, the elderly and other groups of people in need and strives for developing flagship charity projects. By the end of 2018, we had sponsored about 50 charity events and donated nearly 10 million yuan.





A Look into 2019

The year 2019 marks a critical year for CECEP to accelerate transformation and upgrading, comprehensively deepen internal reforms, foster new driving force of growth and achieve its strategic goal of high quality development. In the new year, CECEP will continue to follow the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, implement the guiding principles of the Central Economic Work Conference and the meeting of executives of local state-owned assets supervision and administration commissions, focus on key links and fundamental factors, take solid measures and seek actual effect, propel high quality development with steady steps and strive for building a world-class conglomerate for energy conservation, environmental protection and health industry.



Leverage main business strengths

Under the guidance of Xi Jinping Thought on Ecological Civilization, CECEP will accelerate the implementation of key tasks concerning greater protection of the Yangtze River, continue our role as a major player in pollution management and control for the Yangtze River, expand collaboration with cities along the Yangtze River in ecosystem governance, increase investment in energy conservation and environmental protection and develop new environmental technologies, so as to make a contribution to the national campaign of winning the battle against pollution and the goal of building a beautiful China.



Promote scientific research and innovation

Prioritizing innovation and following the guiding principles of the scientific and technological innovation conference and the action plan, efforts will be focused on key and major technological innovation projects, aiming to improve the company's technological innovation capacity, promote the establishment of a technological innovation system that involves production, education and research and strengthen our core competitive edge in technology.





Expand global influence

CECEP will actively implement the Belt and Road Initiative, strengthen our capability of exploring the international market and make our environmental technologies to go global. We will enthusiastically integrate our overseas operations with local communities, improve our overall global image and advance towards the goal of a world-class conglomerate for energy conservation, environmental protection and health industry.



Enhance safety management

Efforts will be made to promote safety management standardization, strengthen the company's role as a main entity responsible for production safety and improve our capacity in risk management and control and in hidden trouble investigation and management, in a bid to further enhance our awareness of safe production, consolidate the foundation of sustained security and guarantee vocational health and safety for employees.



Share development achievements

We will continue to fulfill our social responsibility, perform our duty in targeted poverty alleviation and paired-up aid, maintain friendly and harmonious relationships with all sectors of society to win even more extensive trust and support. We will provide better care to our employees, take an active part in community building and carry out various charitable and volunteer campaigns so as to better fulfill our social responsibility as a central SOE.





Appendix

Core Performance

Indicator	Unit	2018	2017	2016
Economic Performance				
Total assets	RMB100 million	1563.58	1444.82	1487.84
Business revenue	RMB100 million	468.40	522.13	481.93
Total profit	RMB100 million	34.02	25.33	24.67
Asset-liability ratio	%	69.54	69.95	67.62
Total tax	RMB100 million	42.20	44.33	42.65
Environmental R&D investment	RMB100 million	7.19	9.32	8.43
Proportion of environmental R&D investment in business revenue	%	1.45	1.78	1.29
Sci-tech staff	persons	2305	2077	2067
Number of major scientific and technological platforms	items	3	3	89
Number of science and technology awards at provincial and ministerial level	items	20	13	16
Commercialization of scientific and technological achievements	%	100	100	90
Number of newly-developed products	items	79	85	254
Sales of new products	RMB10,000	496945	536913	812647
Patent applications	items	291	380	494
Number of authorized patents	items	209	255	319
Number of hosting or participation in the formulation of national, industry and local standards	items	7	1	3
Number of newly-launched projects	items	38	29	48
Competitive bidding rate for infrastructure projects	%	99.89	99.51	96.67
Environmental Performance				
Drinking water for production and domestic use (water production and supply)	100 mln tons	8.31	8.17	7.7
Domestic and industrial sewage treatment	100 mln tons	8.09	7.14	6.65
Solid waste management	100 mln tons	1021.5	872	868.4

Indicator	Unit	2018	2017	2016
Smoke treatment	10,000 cubic meters	44816000	1200000	11608000
COD reduction	10,000 tons	18.14	15.49	14.6
Wind power generation	10,000 kWh	599570	487953	365200
Solar power generation	10,000 kWh	378410.5	311297.47	207975.24
Waste biomass power generation	10,000 kWh	295815.01	249508.46	250976.43
Green power generation	100 mln kWh	131.43	117.55	98.25
Organizing environment training	times	5844	3396	2292
Total trainees	person/times	96012	58879	27402

Social Performance

Total staff	persons	36188	36299	40707
Signed labor contracts	%	100	100	100
Proportion of women in employment	%	28.50	27.65	42.45
Proportion of women in leadership	%	27.82	26.80	31.02
Proportion of ethnic minorities in employment	%	3.27	3.60	4
Per capita paid vacation	days	10.5	10	10
Employee satisfaction	%	98.26	98.10	98.45
Stuff loss	%	9.89	9.78	9.77
Newly-recruited staff	persons	6863	5765	7457
Employee training	times	17	16	16
Total trainees	person/times	1846	1157	1211
Coverage of employee training	%	100	100	100



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Five Poverty Alleviation Programs Empower Dreams		Goal 1, Goal 2, Goal 4, Goal 10	P3.2、S1.5、S4.2、S4.4-S4.6、S4.9、S4.12-S4.16
Laying Cornerstones for the Realization of Our Dreams	Implementation of National Strategies	Goal 8, Goal 12, Goal 17	S1.4、E1.9、E2.8、E2.10
	Focusing on Green Development	Goal 6, Goal 7, Goal 9, Goal 11, Goal 12, Goal 13, Goal 15	E1.9、E1.11、E1.12、E2.1-2.12、E2.15、E2.18-E2.20、E3.3
	Creating an Eco-friendly Environment	Goal 12, Goal 17	E1.1、E1.10、E2.18、E2.19、E2.39、E2.40、E3.1、E3.6
Activating the Momentum of Innovation	Improving the Innovation System	Goal 12, Goal 16	M2.5-M2.7
	Accelerating the Application of R&D Achievements	Goal 9, Goal 17	M2.5、M2.10
	Promoting Talent Cultivation	Goal 4, Goal 8	M2.5、M2.18
Strengthening Production Safety	Meticulous Safety Management	Goal 3, Goal 8, Goal 12, Goal 16	S3.1、S3.2、S3.5-S3.12
	Enhanced Emergency Response	Goal 3, Goal 12	S3.2
	Safety Culture Publicity and Education	Goal 4, Goal 12	S3.3、S3.4
Seeking Common Development	Strengthening Industry Exchanges	Goal 8, Goal 12, Goal 17	M3.1-M3.9
	Improving Customer Service	Goal 3, Goal 12, Goal 16	M2.18-M2.20、M2.23
	Implementing Responsible Purchasing	Goal 12, Goal 16, Goal 17	M3.11-M3.16
Caring for Employees	Safeguarding Employees' Rights and Interests	Goal 3, Goal 4, Goal 16	S2.2、S2.4、S2.5、S2.11、S2.12
	Building Flagship Teams	Goal 4, Goal 12, Goal 16	S2.16-S2.18
	Creating a Happy Workplace	Goal 3, Goal 4, Goal 5, Goal 8	S2.19、S2.20
Embracing a Better Life Together	Targeted Poverty Alleviation	Goal 1, Goal 2, Goal 3, Goal 6, Goal 10	S4.5、s4.8、s4.12-s4.15
	Community Engagement Overseas	Goal 3, Goal 6, Goal 10, Goal 17	S4.3-S4.5
	Building a Harmonious Society	Goal 1, Goal 3, Goal 4, Goal 5, Goal 16	S4.9-S4.11
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Rating Report

Rating Report on CECEP Corporate Social Responsibility Report 2017-2018

Entrusted by China Energy Conservation and Environmental Protection Group (CECEP), a panel of experts from the Chinese Expert Committee on CSR Report Rating has conducted the rating on the *CECEP Corporate Social Responsibility Report 2017-2018* ("the report" for short).

I. Rating Basis

The Chinese Corporate Social Responsibility Report Guide (CASS-CSR 4.0) issued by the Chinese Academy of Social Sciences and *The Chinese Corporate Social Responsibility Report Rating Standards (2019)* issued by the Chinese Expert Committee on CSR Report Rating

II. Rating Process

1. The panel reviews and confirms *The CSR Report Procedural Information Confirmation Document* and relevant supporting materials presented by the compiling team of the report;
2. The panel assesses the compilation process and disclosed contents of the report and prepares the rating report;
3. The vice chairman of the Expert Committee, leader of the panel and members of the panel jointly review and approve the rating report.

III. Rating Conclusion

Procedure (★★★★★)

The CECEP established a Social Responsibility Committee headed by the company's top leader, who is responsible for the final approval of the report. Deputy secretary of the Party committee of CECEP coordinated the compilation of the report, and the CSR Office (Party-Mass Work Department) set up a task force to compile the report. The report has been defined as an important tool to disclose information about the company's CSR performance, enhance communication between stakeholders, promote the company's CSR image and create a corporate cultural atmosphere. The report has identified substantive issues based on research on relevant national policies, analysis of major matters of the company and analysis of industry standards. The company plans to hold a launching event and release the report on its official website as well as the group release of CSR reports of central SOEs. The report will be presented in electronic, printed and long chart versions, with excellent procedural performance.

Substantivity (★★★★★)

The report has systematically elaborated on the key issues of the energy conservation and environmental protection industry, such as product quality management, product innovation, vocational health management, production safety, R&D and innovation in energy-efficient technologies, addressing climate change through energy saving and emission reduction, hazardous chemicals management, reduction of "three wastes" emissions, contracted energy management and liability procurement, with excellent substantive performance.

Integrity (★★★★★)

The report reveals 91.8 percent of the core indicators in the energy and environmental industry from the aspects of "Laying Cornerstones for the Realization of Our Dreams," "Activating the Momentum of Innovation," "Strengthening Production Safety," "Seeking Common Development," "Caring for Employees" and "Embracing a Better Life Together," with excellent integrity performance.

Balance (★★★★☆)

The report reveals some negative data and information such as "recordable accident rate" and "the number of employee casualties," with excellent balance performance.

Comparability (★★★★★)

The report reveals comparative data over three consecutive years in 41 key indicators including "business income," "environmental R&D investment," "commercialization of scientific and technological achievements," "solid waste management," "smoke treatment," "wind power generation," "employee satisfaction," "employee training," and "proportion of ethnic minorities in employment," with excellent comparability performance.

Readability (★★★★★)

The report is themed on CECEP's social responsibility philosophy "Going Green, Investing Green" and presents the company's CSR concepts, practice and accomplishments through "mountains, rivers, forests, farmland, lakes and grasslands" as the mainline, featuring a clear structure, distinctive characteristics and prominent issues. While responding to the expectations of stakeholders, it exhibits CECEP's thorough understanding of social responsibility. The cover and spread chapter openers feature a Chinese ink and wash painting style and incorporate elements of the company's main business, enhancing the profundity and identification of the report. Adoption of QR code allows for instant access to detailed information about the company's responsibility management and practice, which expands the content of the report and strengthens the communication of the report. All these prove the report's excellent readability performance.

Innovation (★★★★★)

The first chapter of the report focuses on "Putting Ecology First" and "Five Poverty Alleviation Programs Empower Dreams" to respond to important issues such as restoration of the ecosystem of the Yangtze River and targeted poverty alleviation, demonstrating a central SOE's commitment to its responsibility. Its participation in the compilation and amendment of *The Chinese Corporate Social Responsibility Report Guide (CASS-CSR 4.0) for Energy and Environmental Industry* is conducive to promoting the standardization of CSR reports in the industry. The CSR reports released by CECEP subsidiaries combine to form a multi-level report system. All these prove the report's excellent innovation performance.

Overall Rating (★★★★★)

After deliberation, the rating panel has rated the *CECEP Corporate Social Responsibility Report 2017-2018* a five-star report, as an excellent CSR report.

CECEP CSR Report has received five-star ratings for the past four years



中国企业社会责任报告
评级专家委员会
Chinese Expert Committee on CSR Report Rating

Suggestions for Improvement

The disclosure of negative information and weakness should be enhanced to improve the balance of the report.

Rating Panel

量沛

Vice Chairman of the
Expert Committee

钟宏武

Head of the
Rating Panel

张晓松

Leader of the
Rating Panel

Process evaluator Ren Jiaojiao

Date of issuance : August 22, 2019



Scan here for rating details

We look forward to hearing your suggestions

Dear readers:

Thank you for taking time to read this report. To further improve our CSR performance so that our next report would better meet your expectation, we look forward to your suggestions and feedback.

1. Are you satisfied with this report as a whole?

☐ Yes

☐ No

☐ So-so

2. Does this report include all the information you need?

☐ Yes

☐ No

☐ So-so

3. Do you think this report faithfully reflects the influence of CECEP's CSR practices to stakeholders?

☐ Yes

☐ No

☐ So-so

4. Can you easily find the information you want in this report?

☐ Yes

☐ No

☐ So-so

5. Are you satisfied with the design and layout of this report?

☐ Yes

☐ No

☐ So-so

6. Your suggestions and advice on our future CSR performance and CSR report:

☐ Yes

☐ No

☐ So-so

Contact us:

CSR Office (Party-Mass Work Department), China Energy Conservation and Environmental Protection Group

Address: CECEP Building, 42 Xizhimen North Street, Haidian District, Beijing

Contact: Zhang Yang

Postal code: 100082

E-mail: zhangyang@cecep.cn

Tel: 010—62248552

Please provide your contact information, which will be strictly kept confidential:

Name:

Organization/Occupation:

Phone:

E-mail:

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China Energy Conservation and Environmental Protection Group

Address: 42 Xizhimen North Street, Haidian District, Beijing (100082), P.R.C.

Website: www.cecep.cn