



中国核能电力股份有限公司
China National Nuclear Power Co., Ltd.



2017

China National Nuclear Power Co., Ltd.
Social Responsibility Report



About

Reporting period

The report covers activities from 1 January, 2017 to 31 December, 2017, and additional information beyond the stated period.

Publication cycle

The CSR report of China National Nuclear Power Co., Ltd. (CNNP) was first published in 2012 and has been published annually ever since. This is the sixth one.

References to China National Nuclear Power Co., Ltd.

In the report, we refer “China National Nuclear Power Co., Ltd” as “CNNP”, “the Company”, or “we”.

Scope

The report covers all relevant information of CNNP and its shareholding, joint venture and participating subsidiaries.

Data source

All the data are from official documents and statistical reports of the Company.

Principles

This Report is aligned with the Guiding Opinions of SASAC on Central Enterprises' CSR Performance, with reference to the Guide for Central Enterprises' CSR Report Compilation released by the Chinese Academy of Social Sciences (CASS-CSR3.0), the Sustainability Reporting Guidelines of Global Reporting Initiative (G4), and the Guidelines on Listed Companies' Environmental Information Disclosure issued by the Shanghai Stock Exchange.

Reliability assurance

The Company guarantees that the Report contains no false records, misleading descriptions or substantial omissions, and we will bear individual and joint liabilities for the authenticity, accuracy and integrity of any content contained herein.

Availability

The Report is available in both Chinese and English versions, all of which include paper and electronic editions.

Electronic edition can be downloaded from the official website of CNNP (<http://www.cnnp.com.cn>).

If you need the printed edition, please send an e-mail to cnnp@cnnp.com.cn or call 010-8357 6401.

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General Manager's Address

The 19th CPC National Congress successfully concluded in the golden autumn of 2017 established that the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era must be adhered to on a long-term basis, sounding the trumpets of securing a decisive victory in building a moderately prosperous society in all respects and embarking on a journey to fully build a modern socialist China. As China's first pure nuclear power company to go public on the A-share market, CNNP has earnestly studied the spirit of the 19th CPC National Congress, seized opportunities and rose to challenges, mapped out the plan for and pushed forward nuclear power reform and development in the new era under the guidance of the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, and thus achieved new breakthroughs and results in all areas of work. In 2017, the Company's power output passed the 100 billion kWh mark for the first time, 6 units were ranked No. 1 in the world by the World Association of Nuclear Operators (WANO), and a number of industrial platforms including CNNP Jiangsu Nuclear Power, and the traveling wave reactor and offshore nuclear reactor projects were launched. CNNP has honored its commitment to creating value for shareholders, creating happiness for employees, and creating wealth for the society with its actions. In 2017, the Company was accorded such awards as the China Securities Golden Bauhinia Award for Best Listed Company, National Management Innovation Award, and National Corporate Culture Outstanding Achievement Award.

We take upholding leadership by the Party as the basic principle. We have closely followed and implemented the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the spirit of the 19th CPC National Congress, advance Party building in all aspects, and further enhanced the consciousness of the need to maintain political integrity, think in big-picture terms, follow the leadership core, and keep in alignment. We have strengthened primary-level Party organizations, stepped up efforts to improve Party conduct and moral integrity, and effectively combated corruption, regularized and institutionalized the requirement for all Party members to have a solid understanding of the Party Constitution, Party regulations, and related major policy addresses and to meet Party standards, and ensured strict discipline. We have taken the lead in embedding Party building in corporate governance, and established the management system featuring the integration of Party building and corporate governance, providing strong political guarantee for the healthy development of the Company.

We regard ensuring national energy security as our significant mission. We have strictly abided by the Nuclear Safety Law, upheld the safe development concept, cultivated an atmosphere that puts life and safety first, stuck to the ten principles of nuclear safety, and consolidated the line of defense for nuclear safety. In 2017, our operating units maintained safe operation for 133 cumulative reactor years, and Qinshan nuclear power base for 100 reactor years; Tianwan Nuclear Power Plant Phase I marked the tenth anniversary of safe commercial operation; and 6 operating units under CNNP were ranked No. 1 in the world with WANO index scores of 100.

We see it as our responsibility to contribute to the building of a "Beautiful China". We have embedded green development concept in the whole process including site selection, design, construction and operation of nuclear power stations, vigorously promoted new energy development, advocated low-carbon production and lifestyles, energetically protected biodiversity, and played an active role in creating a beautiful ecological environment. As of the end of 2017, the accumulative power output reached 717.5 billion kWh, equivalent to reducing standard coal consumption of 287 million tons, CO₂ emissions of 715.35 million tons, SO₂ emissions of 21.53 million tons, and NO_x emissions of 10.76 million tons, and planting 1.96 million hectares of forest, achieving significant environmental benefits.

We take providing quality power support as our fundamental purpose. On the basis of ensuring stable power supply, we have grasped the pace of unit operation, new unit construction, and overhauls, improved quality and efficiency, and expanded capacity to provide reliable energy for economic development. In 2017, our annual power output exceeded 100 billion kWh for the first time, and total power output increased 15.7% year on year, hitting a historical record. We had 17 units operating with a total installment capacity of 14.34 million kW, and 8 units under construction; and our power generation capacity grew steadily.

We regard meeting the people's needs for a better life as a noble pursuit. We have always put employees first, and made active efforts to protect their basic rights and interests, recruit and cultivate talent, promote the development of employees, and help them to fulfill themselves. In 2017, we provided training for 229,602 participants. In addition, we stick to helping people increase confidence in their own ability to lift themselves out of poverty and see that they can access the education they need to do so; help people work towards to their dreams, and advance educational and industrial development to combat poverty, and actively engage in public welfare undertakings. In 2017, the Company donated RMB3.3968 million to help people in need, and played an active role in improving social wellbeing.

We are dedicated to pursuing excellence and outdoing ourselves. Looking ahead into 2018, we will uphold leadership by the Party, stick to the corporate spirit that "Cause of nuclear power prevails over everything, responsibility for nuclear power outweighs everything, strict management permeates everything, and self-motivation achieves everything", consolidate the foundation for sustainable development, and work together with all sectors of society to shape a more beautiful future while endeavoring to develop ourselves into a first-class nuclear power company in the new era.

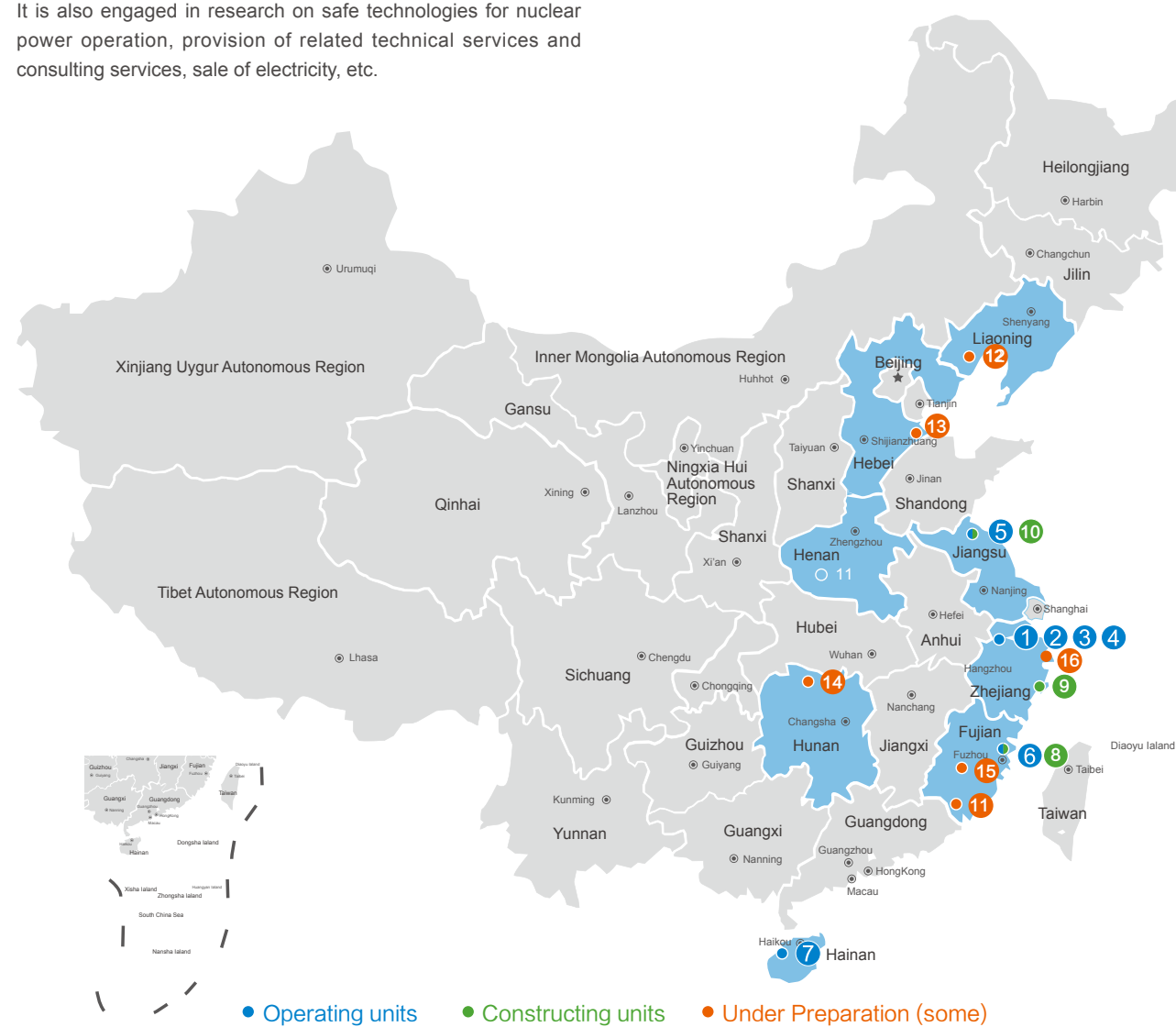


Introduction to CNNP

Company Profile

The Beijing-based China National Nuclear Power Co., Ltd. (SSE: 601985) is a joint venture between the China National Nuclear Corporation (CNNC), the China Three Gorges Corporation, the China Ocean Shipping (Group) Company (COSCO), and China Aerospace Investment Holdings Ltd., with CNNC as the controlling shareholder. Its business scope covers investment in and development, construction, operation and management of nuclear power projects and ancillary facilities, investment in and development of clean energy projects, as well as investment in and management of power transmission and distribution projects. It is also engaged in research on safe technologies for nuclear power operation, provision of related technical services and consulting services, sale of electricity, etc.

On June 10, 2015, CNNP became the first pure nuclear power company to go public, issuing A-shares. As of the end of 2017, CNNP had 25 holding subsidiaries, directly invested in 4 companies, and ran 2 joint ventures. It owned 17 operating nuclear power units with an installed capacity of 14,340 MW as well as 8 under-construction nuclear power units with an installed capacity of 9,287 MW. Its total assets exceeded RMB300 billion, and annual power output passed the threshold of 100 billion kWh for the first time.



Distribution of controlling units

1	Qinshan Nuclear Power Plant in Zhejiang Province	Type of reactor: PWR CNP300 Rated power: 1X310MWe	First nuclear power station in the Chinese mainland, and in safe operation for 26 years
2	Qinshan Nuclear Power Plant No. 2 in Zhejiang Province	Type of reactor: PWR CNP600 Rated power: 2X650MWe 2X660MWe	China's first large-scale commercial nuclear power station independently designed, built, operated and managed
3	Qinshan Nuclear Power Plant No. 3 in Zhejiang Province	Type of reactor: HWR CANDU700 Rated power: 2X728MWe	China's only commercial HWR nuclear power station
4	Qinshan Nuclear Power Expansion Project in Zhejiang Province (Fangjiashan Nuclear Power Project)	Type of reactor: PWR CNP1000 Rated power: 2X1089MWe	First 1,000 MW nuclear power unit in Zhejiang Province
5	Tianwan Nuclear Power Plant in Jiangsu Province	Type of reactor: PWR VVER1000 Rated power: 2X1060MWe	China's first nuclear power station with a fully digital instrumentation and control system
6	Fuqing Nuclear Power Plant in Fujian Province	Type of reactor: PWR CNP1000 Rated power: 4X1089MWe	China's first 1,000 MW nuclear power unit independently designed, built, operated and managed
7	Changjiang Nuclear Power Plant in Hainan Province	Type of reactor: PWR CNP600 Rated power: 2X650MWe	The southernmost nuclear power plant in China
8	Fuqing Nuclear Power Plant Units 5 & 6 in Fujian Province	Type of reactor: HPR1000 Rated power: 2X1150MWe	The world's first "HPR1000" reactor using China's self-developed third-generation nuclear power technology
9	Sanmen Nuclear Power Project in Zhejiang Province	Type of reactor: PWR AP1000 Rated power: 2X1250MWe	The world's first nuclear power unit of third-generation AP1000
10	Tianwan Nuclear Power Expansion Project in Jiangsu Province	Type of reactor: PWR VVER1000 Rated power: 2X1126MWe Type of reactor: PWR CNP1000 Rated power: 2X1118MWe	China's first nuclear power project starting construction during the 12th Five-Year Plan period
11	Zhangzhou Nuclear Power Project in Fujian Province		
12	Xudabao Nuclear Power Project in Liaoning Province		
13	Haixing Nuclear Power Project in Hebei Province		
14	Taohua River Nuclear Power Project in Hunan Province		
15	Sanming Nuclear Power Project in Fujian Province		
16	Jinqimen Nuclear Power Project in Zhejiang Province		



Corporate Philosophy

CNNP Spirit	Cause of Nuclear Power Prevails over Everything; Responsibility for Nuclear Power Outweighs Everything; Strict Management Permeates Everything; Self-Motivation Achieves Everything
CNNP Vision	Making the company an internationally first-class enterprise with utmost charm
CNNP Mission	Provide safe and highly efficient energy and create a clean and low-carbon life style
CNNP Values	Excellence is our pursuit; Self-transcendence is our tenet
CNNP Development Strategy	Large-scale-standardized and internationally-oriented development of nuclear power
CNNP Safety Concept	Safety---lifeline of the nuclear power, subsistence for the enterprise and key to the happiness of its employees.
CNNP Team Spirit	Act in unison and with united efforts
CNNP Showcasing Slogan	Charm of nuclear power contributes to the beauty of China
CNNP Brand Slogan	CNNP, a name card of China

Party Building

Upholding leadership by the Party and advancing Party building is the political guarantee for the Company's development. CNNP has earnestly studied and implemented the spirit of the 19th CPC National Congress, made all-round efforts to see the Party's political building enhanced, its theory strengthened, its organizations consolidated, its conduct improved, and its discipline enforced, with institution building incorporated into every aspect of Party building, and continuously strengthened primary-level Party organizations and advanced strict discipline.

Learning and implementing the spirit of the 19th CPC National Congress

CNNP Party Committee takes implementing the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the spirit of the 19th CPC National Congress as the primary political task. It organized Party members to watch the opening ceremony of the 19th CPC National Congress, and convened the central group enlarged meetings, thematic learning sessions, seminars and micro-classes, conveyed the voice and requirements of the Party to the primary level at the possibly earliest moment, and created a good atmosphere of learning and implementing the spirit of the 19th CPC National Congress.

Strengthening Party building

Using the spirit of the 19th CPC National Congress to arm the mind and guide practice, CNNP has continuously strengthened primary-level Party organizations, regularized and institutionalized the requirement for all Party members to have a solid understanding of the Party Constitution, Party regulations, and related major policy addresses and to meet Party standards, and ensured strict discipline.

Strengthening primary-level Party organizations. In 2017, we reinforced Party building at primary level, and ensured that the Party committees effectively performed their functions; guided member units to hold elections and Party member meetings, and consolidated Party organizations across the board.

Strict discipline. We regularized and institutionalized the requirement for all Party members to have a solid understanding of the Party Constitution, Party regulations, and related major policy addresses and to meet Party standards, and enhanced the consciousness of the need to maintain political integrity, think in big-picture terms, follow the leadership core, and keep in alignment. We organized special inspections on the Party building work of member units, oversaw and guided member units to fulfill the responsibilities for upholding party integrity and improving Party conduct; strictly implemented the principles of Party building, and managed newly established Party organizations in a dynamic manner; stepped up efforts to improve Party conduct, and oppose corruption in all forms; upheld Party leadership over officials, improved the selection process, strengthened the proper use of officials, and ensured strict discipline.

Party spirit education. According to the requirements of the CPC Central Committee and the SASAC Party Committee, we conducted Party member media literacy training programs, organized Party members to take part in Party spirit training, and guided member units to carry out Party spirit education and training, thematic educational activities marking the CPC Founding Day, and training in Yan'an, thus improving the professional competence and political quality of Party members and strengthening their ability to unite and energy to fight.



Party spirit training workshop for primary-level Party secretaries



Patriotism-themed educational activity



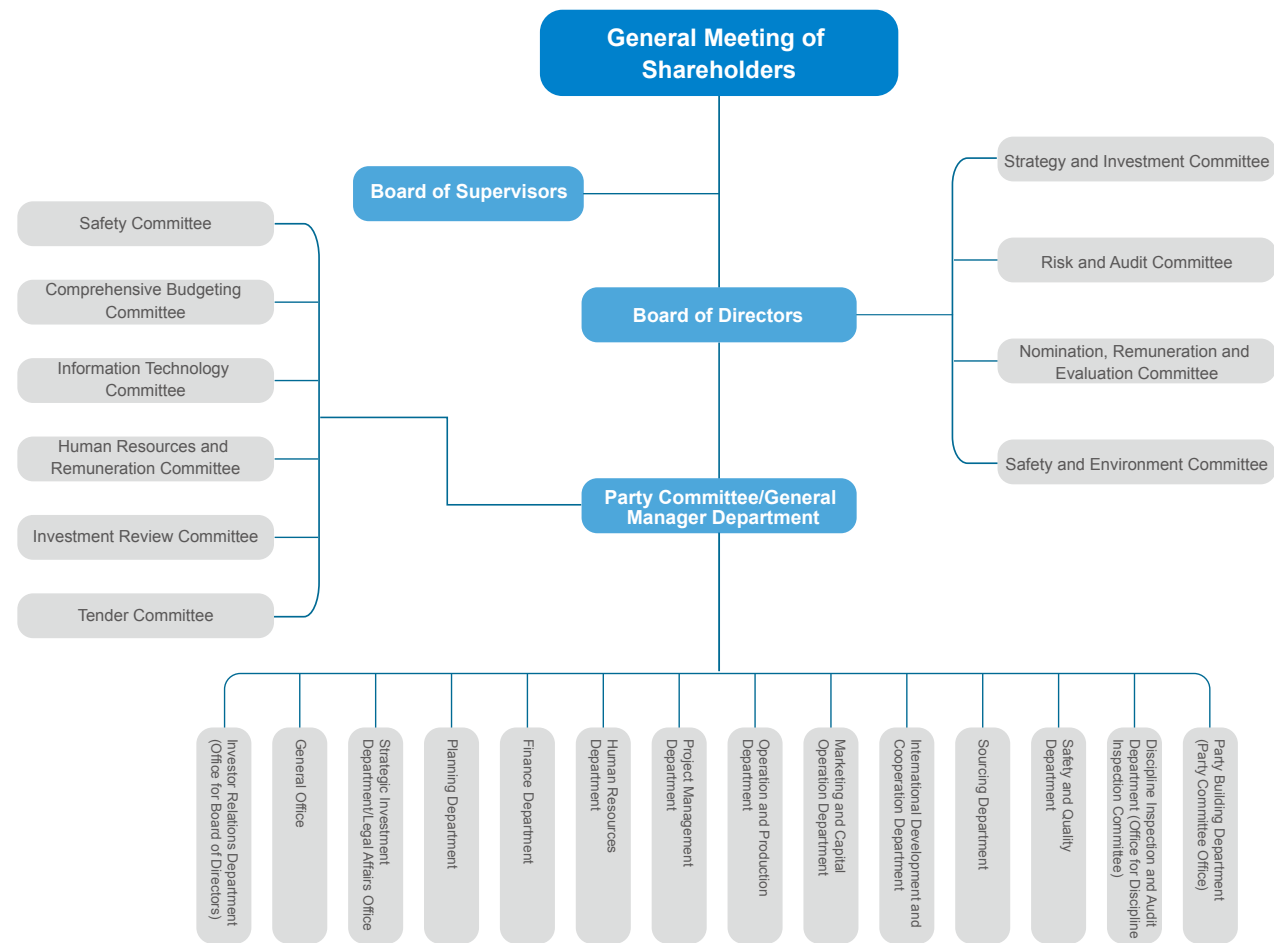
Patriotic activity of the Party Branch

Corporate Management

Governance Structure

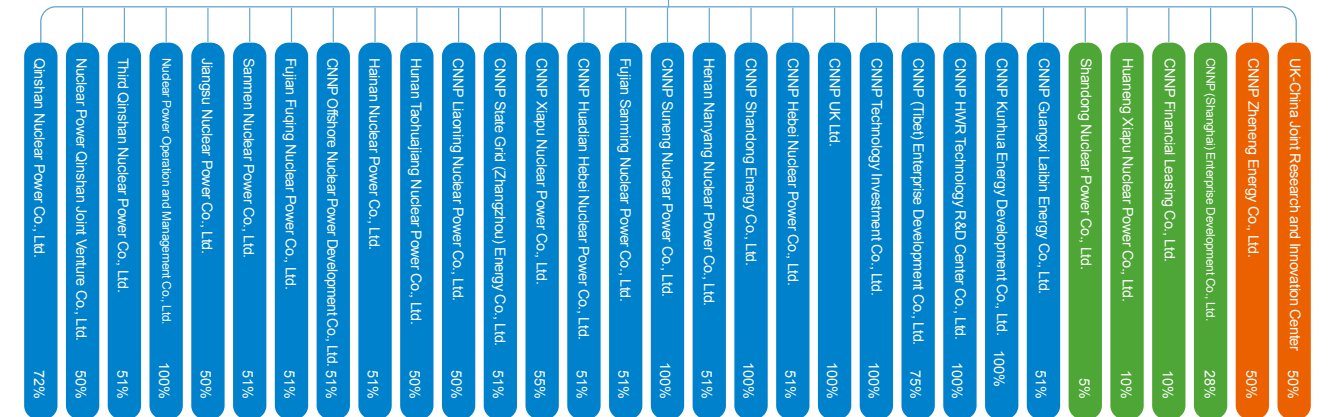
In accordance with applicable laws and regulations, we formulated and revised rules and regulations including the Decision-making Regulations on Major Issues, Administrative Measures for the Authorization of the Board of Directors, Rules of Procedure on the Board Meeting, and Rules of Procedure on the General Manager's Work Meeting, further specified the rights and duties of the Chairman and General Manager, defined the decision-making scope and contents of the General Manager's Work Meeting, the Board Meeting, and the General Meeting of Shareholders, refined the governance rules and administrative measures for authorization and decision-making, and optimized the decision-making procedure.

We embedded Party building in all aspects of corporate governance, adopted the Proposal on Revisions to the Articles of Association, incorporated leadership by the Party in the Company's management, decision-making and governance systems, upheld the legal position of Party organizations in the Company's legal person governance structure, established the management system featuring the integration of Party building and corporate governance, and upgraded the corporate governance structure in an all-round manner.



Corporate governance structure

China National Nuclear Power Co., Ltd.



■ 25 holding subsidiaries ■ 4 companies with direct investment ■ 2 joint ventures

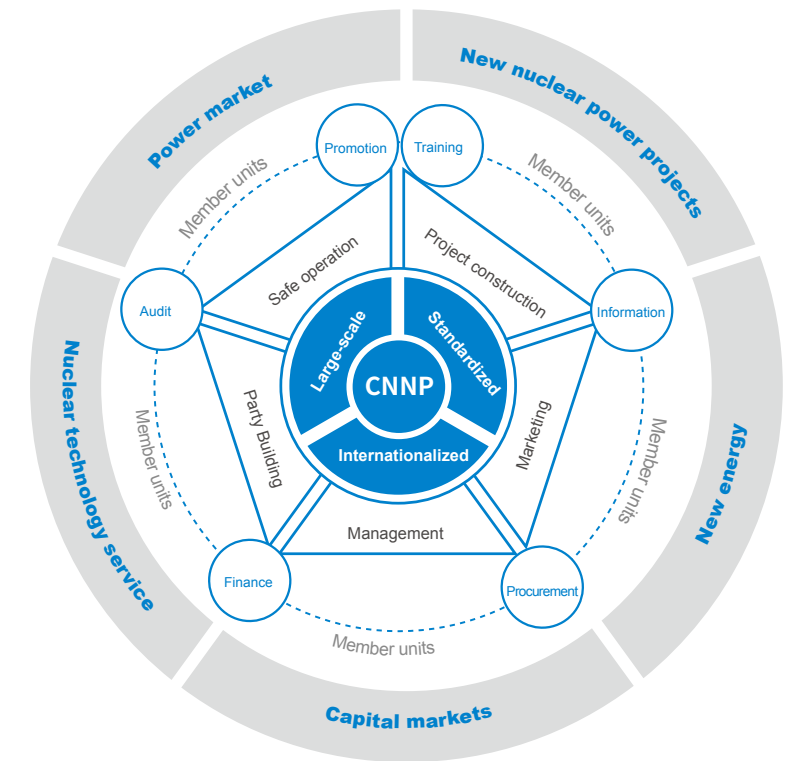
Corporate Investment map

"3655" Management System

CNNP has brought forward the "3655" management system, developed 3 strategies for large-scale, standardized and internationalized development, established 6 centers for training, information, procurement, finance, audit, and promotion and culture, and focused on the 5 main lines and 5 markets of strategic operation, in a bid to achieve sustained development and promote high-quality development.

Integrated JYK Management

Following the requirements of "streamlining process, and improving quality and efficiency", we continued to promote the integrated JYK (planning, budgeting and assessment) management. We improved performance appraisal in a coordinated way, and linked quarterly target assessment to pay; implemented cost control and cost transparency management, and improved quality and efficiency through lean management. We strengthened dynamic JYK supervision and management, and ensured that annual business targets were met. In 2017, we saw our annual power output pass the 100 billion kWh mark for the first time, and smoothly achieved our profit targets, capacity targets, and other targets.



"3655" management system

Risk Management and Internal Control

We attach great importance to normalizing and standardizing the risk management and internal control system. In 2017, we revised and improved the legal affairs management policy, incorporated law-based governance into the Articles of Association, and implemented the “four 100%” requirements for legal review to guard against legal risks. Through the TOPX/Y rolling plan management mechanism, we strengthened management of key issues and major risks, established the major risk quantified assessment model, and conducted major project risk assessments; carried out management review, internal control evaluation, fee management, expenditure review, and other special audits on a regular basis, and comprehensively improved our risk management and control ability to secure the steady development of the Company.

Investor Relations Management

We give high attention to the protection of the legitimate rights and interests of investors, and work energetically to protect investor interests with outstanding business performance, standardized information disclosure and diversified communication channels, making remarkable contributions to maintaining and increasing the value of assets and promoting the healthy development of capital markets.

Business performance. We seize development opportunities in the market to promote normalized and standardized operations, advance brand building, increase brand value, and create economic benefits. In 2017, the Company registered an operating income of RMB33.59 billion, an increase of 11.93% year on year.

Information disclosure. We keep shareholders and investors informed of our business performance and financial status in a timely, reliable and accurate manner through releasing annual reports, semi-annual reports, quarterly reports, and temporary announcements. In 2017, we released four regular announcements and hundreds of temporary announcements, and were given a Class-A rating for information disclosure by the Shanghai Stock Exchange.

Communication and interactions. We actively interact with investors and solicit opinions from shareholders in an effort to increase investor recognition and trust. We established the “Asking Secretary of the Board” channel on the WeChat platform, organized investors to participate in road shows and investigations in Qinshan and Fuqing, issued A Letter of CNNP to All Shareholders, and held investor meetings allowing investors to communicate face to face with the Chairman, General Manager and other senior executives. For our exceptional performance in this regard, we won a number of awards and honors such as the China Securities Golden Bauhinia Award for Best Listed Company, Golden Round Table Board Green Governance Award, “Best CEO in Leadership”, “Most Innovative Board Secretary”.



CNNP participating in Investor Relations Summit



CNNP receiving China Securities Golden Bauhinia Award for Best Listed Company

The company registered an operating income of RMB

33.59 billion

An increase of

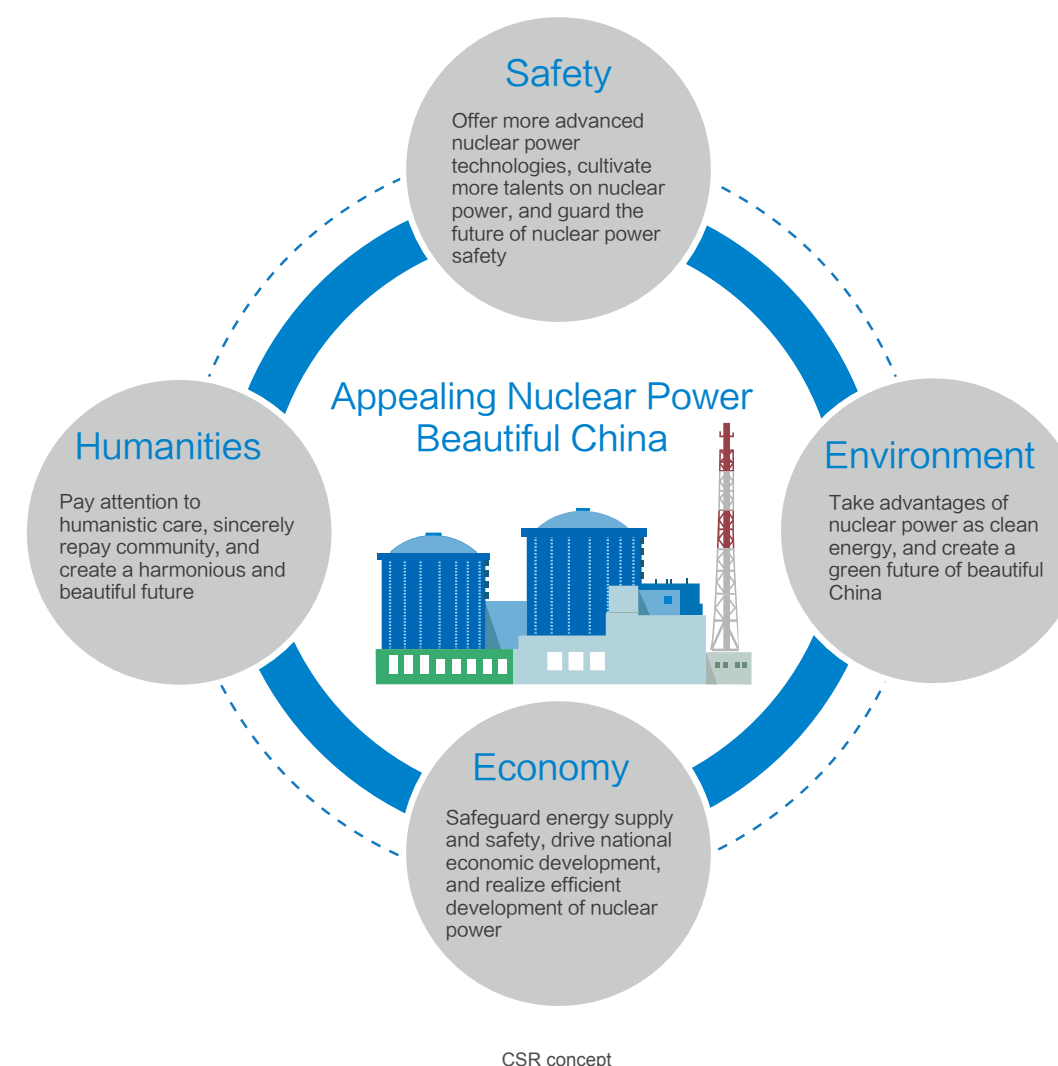
11.93% year on year.

Social Responsibility Management

For the purpose of sustainable development, CNNP has strengthened CSR management based on its own development strategy and operating mode. It has embedded sustainable development concept into all businesses and all links of operation, continuously improved the CSR work mechanism, actively communicated with stakeholders, and endeavored to create the maximum value for stakeholders and contribute to sustainable development.

Our Concept of Social Responsibility

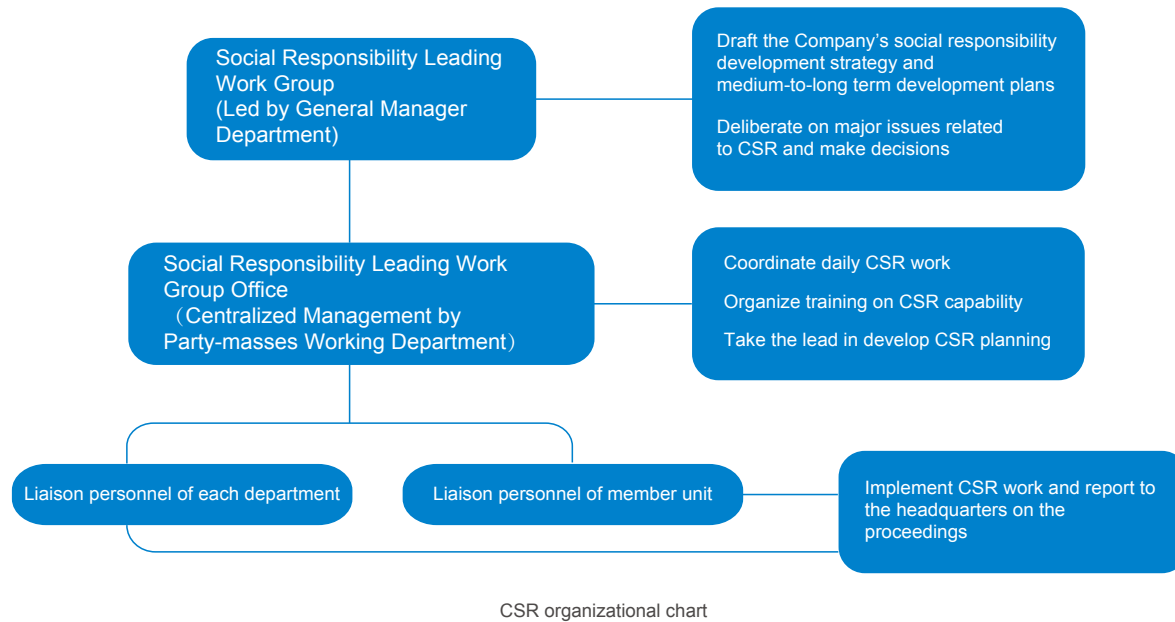
Responsibility is the cornerstone of a nuclear power enterprise’s development. We are committed to becoming a charismatic global leader in nuclear power, providing safe and efficient nuclear power for the society, creating a clean, low-carbon living environment for people, and working together with partners for a better future of a beautiful China.



Social Responsibility Management System

Organizational and Management for CSR

We continued to improve the organizational structure and system for CSR, upheld the unified leadership by the Party Committee and the General Manager Department, set up the promotion and culture center, further specified the duties for CSR practice, and urged member units to fulfill social responsibilities. The Company now has a sound CSR mechanism featuring well-defined responsibilities, collaboration, and full coverage to provide organizational support for CSR practice.



Promoting CSR

Based on the Company's culture of excellence, we have promoted the implementation of social responsibilities, refined SCR work plans, fulfilled responsibilities to stakeholders, timely conducted CSR information disclosure and communication, and ensured that the CSR work proceeds in an orderly manner. In 2017, we won the "National Corporate Culture Outstanding Achievement Award", and were honored as the "Corporate Culture Model Unit in China's Electric Power Industry" and "Golden Bee 2017 CSR Leader".

Improving responsibility management

- Developed annual CSR project plan based on the CNNP Plan on Corporate Culture, Social Responsibility and Brand Communication for the 13th Five-Year Plan Period
- Advanced CSR and cultural brand building, and embedded CSR into daily operation and management
- Carried out the 601985 responsibility ambassador selection, and created a good atmosphere for CSR implementation

Implementing social responsibilities

- Combat poverty by advancing educational and industrial development, and help people in need to realize dreams
- Care for employees and provide assistance to disadvantaged groups
- Organize volunteer services and participate in public interest activities

Expanding CSR communication

- Developed China's first Guide on Public Communication
- Established the largest nuclear power museum in China
- Released CSR report
- Held the "Appealing Light" national nuclear power outreach activities for five consecutive years, attracting more than 1.2 million participants in total

Management of Substantial Issues

CNNP conducts analysis and assessments on the external environment and its own development strategy and sustainable development ability, identifies the expectations and appeals of stakeholders, sorts out substantial issues in every aspect of the Company's internal management and business operation, determines key issues in each area, and ensures that the CSR work is carried out extensively.

Identification of Substantial Issues

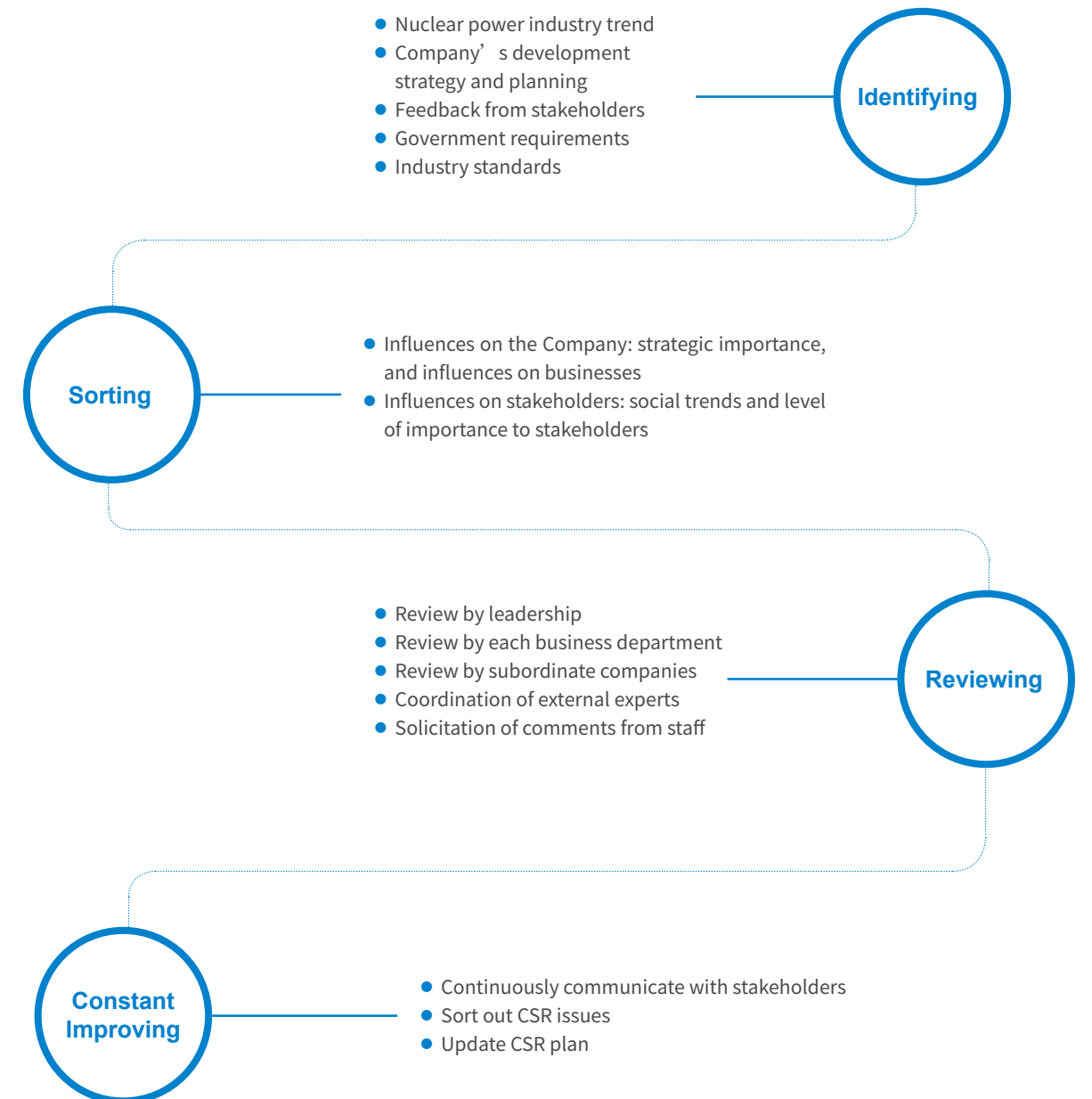


Table of Substantial Issues

CNNP Material Issues	Corresponding GRI G4 Aspects	Aspect Boundaries (Internal)	Aspect Boundaries (External)	Page Numbers
Safety				
Safety culture	Occupational health and safety	CNNP and its holding, joint venture and equity participation companies	Not applicable	P24/P25
Safety management	Security practice	CNNP and its holding, joint venture and equity participation companies	Not applicable	P26/P27/P28/P29
Safe operation	Customer health and safety	Operating nuclear power units of CNNP	Government, community residents, regulators	P30/P31/P32
Safety improvement	Occupational health and safety	CNNP and its holding, joint venture and equity participation companies	Government, community residents, regulators	P33/P34
Environment				
Environmental impact assessment	Environmental impact of products and services	CNNP and its holding, joint venture and equity participation companies	Government, community residents	P41
Radiative substance management	Exhaust gas emissions	Operating nuclear power units of CNNP	Government, community residents, regulators	P41
Disposal of construction waste	Sewage and waste	CNNP and its holding, joint venture and equity participation companies	Government, community residents, regulators	P40
Water conservation	Water	CNNP and its holding, joint venture and equity participation companies	Government, community residents	P40
Protection of biodiversity	Biodiversity	CNNP and its holding, joint venture and equity participation companies	Government, community residents	P43
Development of clean energy	Energy	CNNP and its holding, joint venture and equity participation companies	Not applicable	P42
Promotion of low-carbon lifestyles	Energy, water	CNNP and its holding, joint venture and equity participation companies	Community residents	P44
Economy				
Stable power supply	Indirect economic impact	Operating nuclear power stations of CNNP	Community residents	P50
Equipment domesticization	Indirect economic impact	CNNP and its holding, joint venture and equity participation companies	Suppliers	P51
Scientific and technological innovation	Indirect economic impact	CNNP and its holding, joint venture and equity participation companies	Not applicable	P52
Standardization of procurement management	Procurement behavior	CNNP and its holding, joint venture and equity participation companies	Suppliers	P54
Supplier management	Supplier social impact assessment	CNNP and its holding, joint venture and equity participation companies	Suppliers	P54
Partnership	Indirect economic impact	CNNP and its holding, joint venture and equity participation companies	Peers, industry associations	P54
International cooperation	Indirect economic impact	CNNP and its holding, joint venture and equity participation companies	International organizations, industry associations	P53
Employees				
Safeguard rights and interests of employees	Employment	CNNP and its holding, joint venture and equity participation companies	Not applicable	P62
Support employee growth	Training and education	CNNP and its holding, joint venture and equity participation companies	Not applicable	P63
Society				
Contribution to community development	Local communities	CNNP and its holding, joint venture and equity participation companies	Government, community residents	P66
Public interest activities	Public policy	CNNP and its holding, joint venture and equity participation companies	Government, community residents	P67

Transparent Communication

We take the initiative to communicate and strengthen cooperation with stakeholders, invite them to take part in relevant projects, and safeguard their rights to know, to participate and to supervise, thus establishing harmonious relations with stakeholders.

Philosophy of Transparent Communication

We have continuously enhanced communication skills, gained public trust with our strengths, and always held fast to our safety commitment; expanded information communication channels, and established close connection with the public with a transparent and open attitude to strength public recognition; and actively collaborated with the government, industry peers, media and other stakeholders to promote the healthy development of nuclear power and shape a beautiful future.



3C model of transparent communication philosophy

Management System

We give high attention to stakeholder demand survey, have a multi-tier and multi-channel communication mechanism, and strive to create a good atmosphere and social environment for the healthy, rapid and sustainable development of the nuclear power industry. In 2017, the Company's project on "public communication management aimed at increasing public recognition of nuclear power" won a second prize of the National Management Innovation Award.

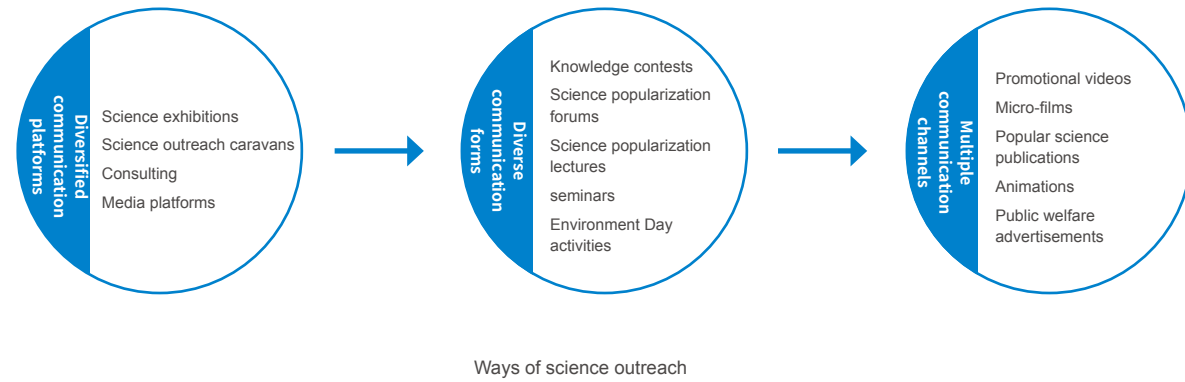
Major Stakeholders	Expectations and Requirements	Communication and Response
Shareholders and investors	Performance rewards	Constantly improve profitability
	Protection of rights and interests	Timely disclose information
	Corporate governance	General meeting of shareholders, annual reports
Government	Compliance with laws and regulations	Corporate management according to law and regulations
	Pay taxes according to law	Take the initiative to pay taxes
	Drive local economic development	Provide job opportunities
	Promote sustainable development	Accept guidance and supervision
Customers	Safe and stable power supply	Raise the level of technology
	Quality service	Improve service capacity
	Smooth communication channels	Improve platform service
Partners	Honest contractual performance	Strictly comply with contracts
	Responsible procurement	Disclose procurement information
	Mutually beneficial cooperation	Multi-channel cooperation and research

Major Stakeholders	Expectations and Requirements	Communication and Response
Employees	Remunerations and benefits	Pay salaries in full and on time, purchase social security for employees
	Health and safety	Organize regular physical examinations, and establish the occupational health system
	Career development	Enhance team building
Environment	Humanistic care	Care for employees
	Energy saving and emission reduction	Green and low-carbon production
	Ecological protection	Protect biodiversity
Society	Response to climate change	Develop clean energy
	Promote community development	Participate in community development
	Contribute to public welfare	Help to improve people's lives
	Volunteer service	Promote sustainable development of society

Communication with stakeholders

Science Popularization

To increase public understanding of nuclear power and remove misunderstandings, CNNP attaches high attention to science outreach programs in an effort to popularize knowledge about nuclear power, and create a good atmosphere for the implementation of nuclear power projects.



CNNP unveils China's largest nuclear power museum

Dedicated to promoting education on nuclear science and popularizing knowledge about nuclear power, CNNP has established the largest and most practical and distinctive nuclear power museum in China that offers the richest experiences to the public. Through delivering a variety of experiences such as the reproduction of nuclear safety and environmental protection scenes, the museum helps the public to learn more about nuclear science and the development history and achievements

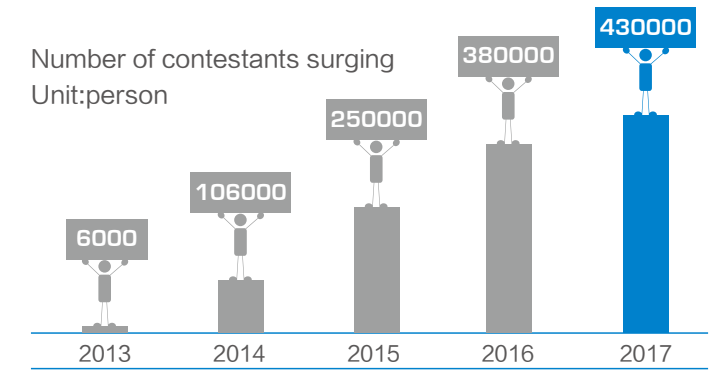
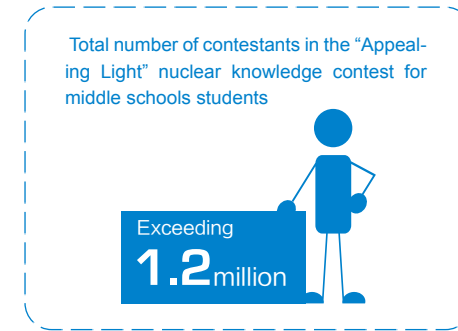
of China's nuclear power industry, guides the public to take a correct attitude toward nuclear power, and demonstrates the charm of nuclear power in an all-round manner. On the first day of its trial operation, the museum opened up a live streaming channel, which was watched by more than 200,000 people online. In 2017, the museum received more than 44,000 visitors in over 460 batches.



External view of CNNP Nuclear Power Museum

"Appealing Light" National Nuclear Power Outreach Platform

We have held the "Appealing Light" National Nuclear Power Science Popularization Knowledge Contest and Summer Camp for five consecutive years to spread nuclear power knowledge around the country, increase public understanding and recognition of nuclear power, and create a good social environment for the development of nuclear power. The 2017 "Appealing Light" contest attracted more than 430,000 contestants from the Chinese mainland, Hong Kong, Macau and Taiwan, as well as 19 foreign countries including the United States, Italy, Japan, and New Zealand. As of the end of 2017, the total number of participants in the "Appealing Light" activities had exceeded 1.2 million.



"Appealing Light" Summer Camp



American sisters participating in the 5th "Appealing Light" contest

CNNP holds the 2nd summer camp for college students

To increase college students' understanding of nuclear power, CNNP held the second nuclear power-themed college student summer camp in Fuqing, allowing the teachers and students to get a close look at the "HPR1000" reactor, the first of its kind in the world, and experience the charm of the demonstration project. During the five-day camp, Fuqing Nuclear Power Plant explained the principles of nuclear power to the participants, gave lectures on the development of nuclear power industry, nuclear safety, radiation protection, and the "HPR1000" reactor, and organized visits, alumni seminars, and outward bound, and invited enterprises to provide employment guidance and consulting for students, thus promoting the normalization of nuclear power science popularization and expansion of enterprise-school cooperation. The summer camp attracted 86 outstanding college students from 20 well-known universities across the country.

Public Engagement

To safeguard people's rights to know, to participate and to supervise, we try to get an in-depth understanding of people's needs, pay high attention to communication with residents near our projects, actively organize nuclear power-themed activities, and strengthen interaction and communication with the public, so as to increase public recognition of the benefits and value of nuclear power.

“Little U” Science Workshop

To demonstrate the charm of nuclear science and promote public engagement, Qinshan Nuclear Power Plant, in response to the call of CNNC for the “Nuclear Power Together With You” public open week, organized local teachers and students to carry out the “Little U” Science Workshop. The students watched the promotional video showing the harmonious development of the nuclear power plant and Haiyan County, visited the large multimedia sand table, and built model nuclear island and conventional island plants under the guidance of experts. During the workshop, they learned about nuclear science while having fun, and acquired knowledge while sharing joy. The workshop attracted 90 teachers and students from Haiyan Bocai Experimental Middle School, Wuyuan Middle School, and Haiyan Experimental Middle School.



Students building model nuclear island plant together

Jiangsu Nuclear Power holds science popularization activities for children

To allow the children to experience the charm of nuclear power and learn more about nuclear power, Jiangsu Nuclear Power Co., Ltd. invited fourth graders of Xugou Primary School to participate in science popularization activities marking the Children's Day. Through knowledge quizzes and interesting Q&As, the children got close to and acquired knowledge about nuclear power in a joyful atmosphere.



Students showing a great interest in nuclear power

Nuclear science popularization on the first day of the new semester

To bring the new generation close to nuclear power and allow them to understand and support nuclear power, Fuqing Nuclear Power Plant held the first class of the new semester for more than 90 students in the sixth grade of Qianxue Primary School. Featuring lively and lighthearted interactions, the class intended to popularize nuclear knowledge encouraged the students to stand up and speak out, enabling them to realize that nuclear power is a clean, safe and efficient energy. Moreover, the children also got a glimpse of the work of nuclear energy practitioners.



Science popularization on the first day of the new semester

Hainan Nuclear Power carries out nuclear tourism

Since 2015, Hainan Nuclear Power has organized nuclear power-themed tours for three consecutive years, allowing the participants to directly experience the nuclear safety culture, get a basic understanding of nuclear energy and its applications, and establish a correct attitude towards the country's nuclear emergency response system. As of December 2017, nuclear tourism had received nearly 20,000 tourists, students and media workers, giving them a good understanding of nuclear power and playing an important role in popularizing knowledge about nuclear power.

Students from Overseas Chinese Middle School visiting Changjiang Nuclear Power Plant



Information Disclosure

Open and transparent information disclosure is the prerequisite and basis for growing together with stakeholders. Through press conferences, annual CSR reports and other carriers and forms which are easy to understand and access, CNNP demonstrates a healthy corporate image to the public, and creates a good atmosphere and social environment for the sustainable development of nuclear power.

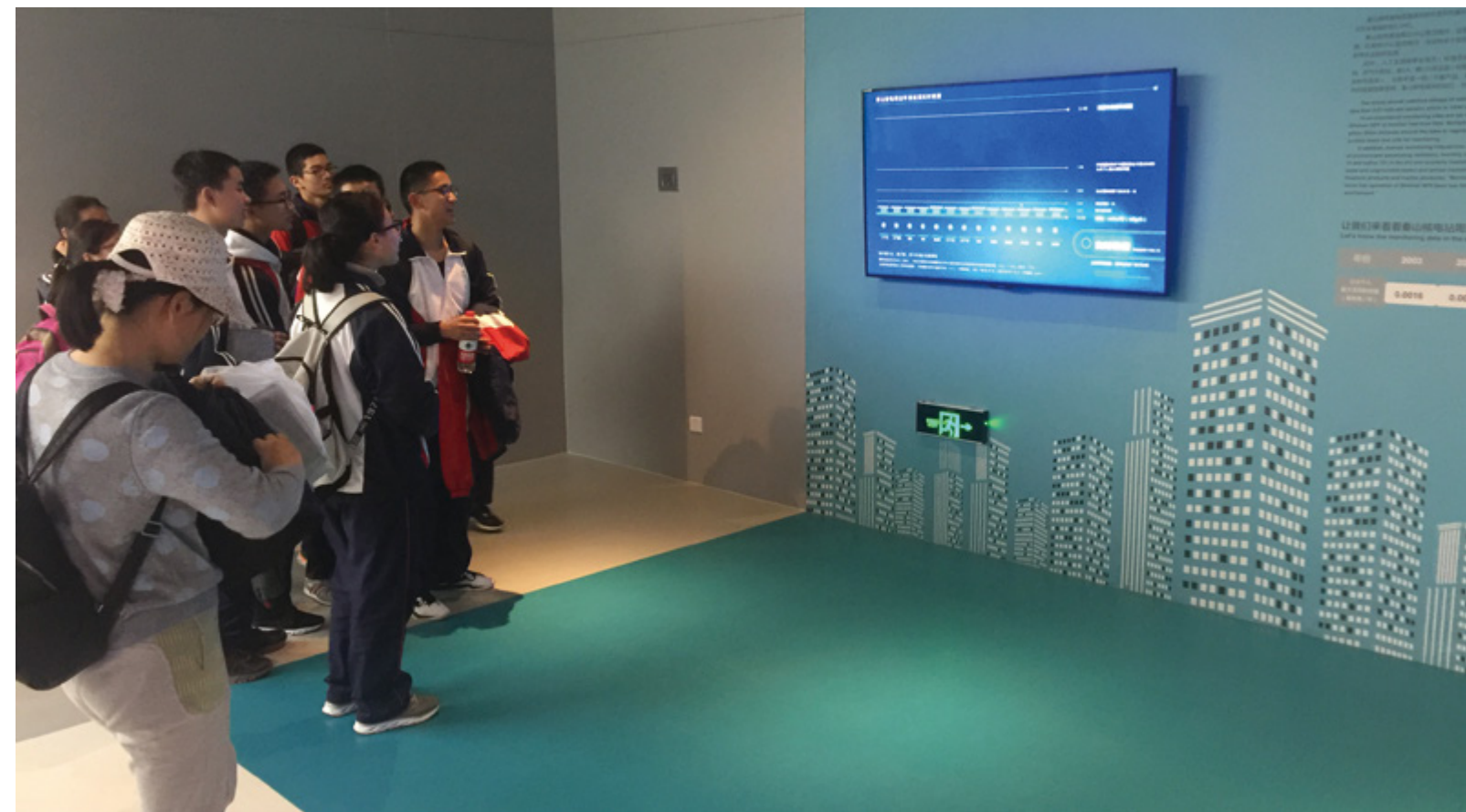
CNNP issues the industry's first guide on public communication

To improve the effects of public communication, CNNP developed a standardized guide on public communication based on the effective methods of work and innovative measures in practice. Focusing on the four modules of publicity, public engagement, information disclosure and public opinion management, the guide sets out standard operating procedures in terms of implementation steps, practical purposes, time and place of implementation, target groups, and expected effects, with the aim of boosting information and experience sharing within the Company, promoting industry-wide experience sharing, and strengthening cooperation and exchanges.

CNNP holds CSR report release event themed on “A Bite of Nuclear Power”

To expand public communication channels and maximize the disseminative value of CSR reports, CNNP unveiled for the first time the theme of “A Bite of Nuclear Power” for the launching event of its 2016 CSR report. The event featured specialties around nuclear power plants such as the Kudzu powder of Tianwan, small snails of Sanmen, and selenium-rich tea of Fuqing, showing to the public the strict safety practice, beautiful environment, economic benefits and humanistic care of nuclear power plants. The event demonstrated in diverse forms the Company's responsibility concept of “Charm of nuclear power contributes to the beauty of China”, and its commitment to promoting sustainable development together with stakeholders.

CNNP Nuclear Power Museum showing real-time environmental monitoring data



Dedicated to Safety for Better Development Quality

Safety is of crucial importance to nuclear power. CNNP always adheres to the safety concept that “safety is the lifeline of nuclear power, subsistence for the enterprise and key to the happiness of its employees,” and the policy of “safety first, quality first,” and takes nuclear safety seriously with a strong sense of mission and responsibility to ensure safe operation of nuclear power stations. In 2017, the WANO composite index of the Company’s 6 units reached 100, the highest in the world and the best ever.



Accumulated safe operation duration of operating units

133 Reactor year



Load factor of units in stock

84.97 %



Rate of certification for special operations personnel

100 %

Focus on Safety Responsibility

Follow the New Strategy of Energy Safety and Strive for “100th Reactor Year” and “10th Year” of Safe Operation

We will promote safe development, and raise public awareness that life matters most and that safety comes first; we will improve the public safety system and the responsibility system for workplace safety; we will take resolute measures to prevent serious and major accidents, and build up our capacity for disaster prevention, mitigation, and relief.

General Secretary Xi Jinping’s speech at the 19th National Congress of the Communist Party of China

With the implementation of the Nuclear Safety Law and the higher requirements of the 19th CPC National Congress for workplace safety supervision and management, China’s nuclear industry has met important opportunities of safe and sustainable development. Yet, opportunities and challenges coexist. The nuclear power industry is confronted with the challenges of preventing human unsafe factors, managing and monitoring equipment health, supporting and guaranteeing equipment safety, and improving other safety-related aspects.

Nuclear safety culture is the soul of CNNP’s corporate culture, and ensuring nuclear safety is the eternal theme of it. Always keeping in mind that nuclear safety is above everything else, the Company looks upon nuclear safety with a high sense of mission and responsibility to ensure production safety, public health, and social harmony.

Load factor of units in stock

84.97%

Average capacity factor

90.01%

The WANO composite index of

6 units was 100

CNNP has seen no accident for 133 reactor years

The Company always puts nuclear safety in the first place, continuously promotes the development of excellent nuclear safety culture, improves the experience feedback and peer evaluation system, pays constant attention to human error management, equipment reliability management, and defect and overhaul management to reduce unplanned shutdown and enhance the safety management level of nuclear power units. In 2017, the load factor of units in stock and the average capacity factor reached 84.97% and 90.01%, respectively, and the accumulated safe operation duration of nuclear power units extended to the 133rd reactor year. The WANO composite index of the Company’s 6 units reached 100, the highest in the world and the best ever.



Qinshan Nuclear Power Base achieved an accumulated safe operation duration of 100 reactor years

In 2017, the Qinshan Nuclear Power Base achieved 100 reactor years of safe operation, the first of its kind in China to attain that milestone. As the birthplace of nuclear power mainland China, it is equipped with 9 operating units that generate about 50 billion KWH of electricity annually, being a nuclear power base with the largest number of units, the most types of reactors, and the highest installed capacity in China. In the whole year of 2017, the Qinshan Nuclear Power Base saw no nuclear event of Level 1 or above; the WANO composite index of 4 units was 100; the average load factor of the nine units exceeded 90%; and their average capacity factor was 91.38%.



A panoramic view of Qinshan Nuclear Power Station

Phase I project of Tianwan Nuclear Power Plant in safe commercial operation for 10 years

2017 was the 10th year of safe commercial operation of Phase I project of Tianwan Nuclear Power Plant, which is China’s most advanced nuclear power station praised by General Secretary Xi Jinping as “a model project of Sino-Russian nuclear cooperation.” Since put into commercial operation, the No.1 and No.2 units have safely generated more than 160 billion KWH of electricity, which is well enough for 100 million Chinese households to use for 1 year. The 10th outage of No.1 unit lasted only 27.1 days, the shortest duration for VVER units. In the 7 consecutive calendar years from 2010 to 2017, No.2 unit experienced no unplanned suspension.

The average load factor of Qinshan Nuclear Power Base’ s nine units exceeded

90%

The average capacity factor was

91.38%

The WANO composite index of

4 units was 100

The 10th outage of No.1 unit of Tianwan Nuclear Power Plant lasted only

27.1 days




No.2 unit experienced no unplanned suspension in

7 consecutive calendar years from 2010 to 2017

Nuclear Safety Culture

We firmly adhere to the concept that “everyone is both the first and the last defending line for production safety,” conscientiously practice the culture of excellent nuclear safety, infuse the concept of nuclear safety into our blood, and carry it out in our daily work.

We uphold the ten principles of excellent nuclear safety culture and put forward strict requirements for individuals, the leadership, and the organization. We have assessed the nuclear safety culture of Qinshan Nuclear Power and Hainan Nuclear Power, and continuously enhanced the level of nuclear safety culture of all nuclear power plants under CNNP. By giving full play to our leading advantages in fostering nuclear safety culture, we have built a big brand of excellent nuclear safety culture, and the Company’s standard and practice of safety culture assessment have been highly recognized by the State Administration of Science, Technology, and Industry for National Defense and the National Energy Administration.

 <p>Requirements for Individuals</p> <p>Everyone should the responsibility for nuclear safety Foster an attitude of questioning Communicate safety concerns</p>	 <p>Requirements for the Leadership</p> <p>Leaders should serve as good examples in ensuring safety Build a high degree of trust within the organization Put safety first in decision-making</p>	 <p>Requirements for the Organization</p> <p>Understand the uniqueness of nuclear technology Identify and solve problems Advocate the establishment of a learning organization Build a harmonious public relationship</p>
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Ten principles of excellent nuclear safety culture

The Company attaches great importance to embedding nuclear safety culture in daily operation. Through a series of nuclear safety cultural activities covering awareness enhancement, capacity building, culture evaluation, and daily management, all employees’ nuclear safety awareness and capability as well as the Company’s level of nuclear safety culture have been improved.



A meeting for the “2017 Nuclear Power Safety Management Promotion Year”

Types of Nuclear Safety Cultural Activities	Main Measures
Awareness enhancement	<ul style="list-style-type: none"> ● Launched a special campaign of “strengthening the sense of responsibility and standing against habitual violation,” to improve staff’s sense of responsibility and awareness of nuclear safety ● Carried out a questionnaire survey on nuclear safety culture, conducted data statistics, induction, and analysis according to the survey results and on this basis, worked out a well-targeted follow-up nuclear safety culture promotion plan ● Organized a “CNNP Cup” campus safety knowledge speech contest ● Organized a variety of activities such as safety knowledge contests, solicitation of essays on safety, and watching safety-warning educational movies
Capacity building	<ul style="list-style-type: none"> ● Thoroughly carried out activities of the “2017 Nuclear Power Safety Management Promotion Year” ● Organized the promotion of and education in Nuclear Safety Law ● Provided training classes for nuclear safety culture evaluators
Culture evaluation	<ul style="list-style-type: none"> ● The World Association of Nuclear Operators (WANO) conducted a peer review of and paid a follow-up visit to CNNP ● Evaluated the nuclear safety culture of Qinshan and Hainan Nuclear Power Plants
Daily management	<ul style="list-style-type: none"> ● Evaluated the operational performance of all plants under CNNP by means of trend analysis ● Promoted the standardization, benchmarking, self-evaluation, and rectification of all power plants under CNNP in the field of production safety

Zhangzhou Energy Holds Nuclear Safety Culture Debating Contest Themed “Shouldering Responsibility, Fulfilling Mission”

In December 2017, Zhangzhou Energy held the first nuclear safety culture debating contest with the theme of “Shouldering Responsibility, Fulfilling Mission.” Consisting of 3 parts - preliminary, semifinal, and final contests, and lasting for a month, the activity was designed to thoroughly implement the Nuclear Safety Law of People’s Republic of China promulgated in 2017, the CNNP Special Plan for the Development of Nuclear Safety Culture in 2017, and the Ten Principles of Excellent Nuclear Safety Culture, enhance employees’ awareness of nuclear safety culture, and promote the development of the culture.



The scene of Zhangzhou Energy’s nuclear safety culture debating contest themed “Shouldering Responsibility, Fulfilling Mission”

Nuclear Safety Management

The company always puts nuclear safety management in the first place. By improving organizational setup and operation, implementing the mechanism of supervising and handling typical safety problems, and strengthening whole-process safety management and emergency management, CNNP has continuously improved the level of nuclear safety management to ensure the safe and stable operation of all units.

Nuclear Safety Management System

In accordance with the deployment of the national "Nuclear Power Safety Management Promotion Year," we launched a safety management promotion campaign themed "Strengthening Safety Awareness and Competence." A Special Plan for the 2017 Nuclear Power Safety Management Promotion Year was issued with the aim of strengthening the construction and continuous improvement of the safety management system from the aspects of organization, system, and procedure, which has promoted the level of safety management in an all-round way. In 2017, Qinshan Nuclear Power passed the review of first-class compliance with work safety standard; No. 1 unit of Hainan Nuclear Power retained the title of "golden unit."



Qinshan Nuclear Power passed the review of first-class compliance with work safety standard

Improving the Safety Management Organizations

We strengthened the top-level design of safety management, re-adjusted the safety work committee, re-appointed the chief safety inspector, and set up a taskforce under the safety work committee. The new committee gathered the technical power of all power plants to solve common and difficult problems.

Supervising and Handling Typical Safety Problems

To solve and manage major safety problems more effectively and coordinately and ensure the safe operation of units, the Company has established a sound mechanism of supervising and handling such problems. The governing principle for managing major safety problems is "allocating responsibility to specific persons, performing qualitative monitoring, and implementing closed-loop control," based on which 11 major safety problems including "non-high-strength fasteners" have been identified and the level of work safety management has been further improved.

Whole-process Safety Management

We continuously improve our whole-process safety management mechanism and implement the policy of "safety first, quality first" in all stages of nuclear power development from planning, site selection, design, construction, to operation so that every stage is covered by safety management and nuclear safety is guaranteed in a scientific and standard manner.

Site-selection Stage

- Safety assessment of nuclear power site selection
- Experts' demonstration

Design Stage

- The concept of safety design
- The adoption of advanced technology
- Selection of high-quality units

Construction Stage

- Qualifications of contractors and builders
- Engineering quality supervision
- Acceptance of work

Operation Stage

- Key equipment supervision
- Emergency support
- Management of human errors
- Safety-team building

Whole-process safety management



Management of Nuclear Safety Emergencies

We have strengthened the emergency management of nuclear power plants, established a sound emergency document system, enhanced the maintenance of emergency facilities and the reserve of materials, improved the emergency support capacity for adjacent nuclear power plants and the construction of channels of technical support for emergency response, and raised the preparedness for such response. We have also optimized the management of every link of emergency drill and promoted no-script drill. In 2017, the Company organized a series of emergency drills including 19 nuclear accident drills at Hainan Nuclear Power, 1 comprehensive emergency drill, and 20 emergency plan drills, and the total number of participants reached 1,825.

Qinshan Nuclear Power Holds 2017 Annual Comprehensive Emergency Drill

An annual comprehensive emergency drill was organized at Qinshan Nuclear Power in November 2017, which lasted for about 5 hours with the participation of over 700 employees. The drill was triggered by a simulated fire accident which coincided with a rupture of the steam generator's heat transfer tube, a burst of the upstream pipeline of the main steam isolation valve, and a large break of the reactor coolant system. Without any delay, the workshop, the entire plant, and the peripheral area of the plant went into the emergency state one by one. When designing the drill scenario, the designers took into full consideration the experience gained from the Fukushima nuclear accident and the comprehensive drills over the years. The accident sequence was unfolded gradually on a full-range simulator. Guided by accident scenario, the emergency personnel at all levels take corresponding measures autonomously, through which emergency response actions such as fire intervention, accident diagnosis and prediction, emergency state judgment and so on were tested, and the interface between the emergency management department and the superior department was verified.



An emergency drill carried out at Qinshan Nuclear Power

Jiangsu Nuclear Power Carries out an Emergency Drill Before Core Loading of its No.3 Unit

In April and May of 2017, Jiangsu Nuclear Power respectively carried out an on-site/off-site joint emergency drill and an on-site comprehensive emergency drill before core loading of its No.3 unit. The drill was based on a scenario where the steam generator's heat transfer tube leaked and the main steam isolation valve failed to close. At once, nearly 20 emergency facilities were activated, including the new emergency command center, the main control room (simulator room), the start points of emergency response taskforces, and the electronic head counting system, with the participation of nearly 200 employees. The latter drill, adopting a scenario where a typhoon and a severe accident occurred simultaneously, was performed with the participation of more than 400 employees, which reflected the experience gained from the Fukushima nuclear accident. The two drills basically verified Tianwan Nuclear Power Plant's nuclear emergency preparedness before the initial core-loading of its No.3 unit



Jiangsu Nuclear Power carries out an on-site/off-site joint emergency drill in 2017

Sanmen Nuclear Power Holds an On-site/Off-site Joint Emergency Drill Before Initial Core Loading

In July 2017 an on-site/off-site joint emergency drill was conducted at Sanmen Nuclear Power before initial core loading, which involved more than 1200 people (some of them were emergency personnel; others were non-emergency personnel) from Zhejiang Provincial Nuclear Emergency Committee, Sanmen County Nuclear Emergency Committee and member units of the two committees, expert advisory groups, emergency response taskforces, the local community, and the emergency organizations of Sanmen Nuclear Power. Focusing on simulated on-site and off-site emergency states, the drill activated the emergency facilities equipment of Zhejiang Nuclear Emergency Command Center, Sanmen County Nuclear Emergency Command Center, Sanmen Nuclear Power Plant Emergency Command Center, emergency shelters, decontamination points, temporary resettlements, traffic control points, monitoring & sampling points, etc. Through the drill, Sanmen Nuclear Power fully demonstrated its professional ability of emergency response, including radiation monitoring, meteorological monitoring, communication support, traffic control, public protection, evacuation and resettlement, decontamination and cleaning, public opinion response and power support.



Sanmen Nuclear Power holds an on-site/off-site joint emergency drill before initial core loading

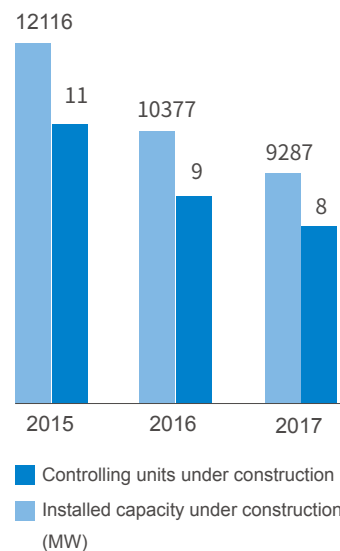
Fuqing Nuclear Power Effectively Deals with Two Typhoons to Ensure Safe and Stable Operation

On July 30 and 31, 2017, the city of Fuqing in Fujian province was successively hit by Typhoons No. 9 "NESAT" and No. 10 "HAITANG." In close contact with the provincial meteorological service center, Fuqing Nuclear Power released early warnings in advance, conducted safety inspections, and sent anti-typhoon personnel on duty. During the anti-typhoon period, all weak links were strengthened, emergency organizations were activated, on-site command posts were set up, emergency personnel were put on duty, and the typhoon path, wind speed, rainfall amount, and water leakage of workshop buildings were closely watched. During the period when Fuqing Nuclear Power was affected by the two typhoons, the operation of units was safe and stable and no personal injury or equipment damage occurred, with production, commissioning, construction, and other processes all in a safe and controllable state.

Nuclear Safety Practice

CNNP's intrinsic safety has been constantly improved throughout entire process from planning, design, construction, to operation. The Company attaches great importance to identifying, controlling, and preventing hidden dangers and continuously improves the effectiveness of experience feedback to ensure nuclear safety.

Key performance data of under-construction nuclear power units of CNNP in 2017



Safe Construction

During the construction period of nuclear power plants, the Company established and adhered to the concept that "Being safe is being good and being good is being fast," based on which the safety management of engineering and construction has been strengthened continuously. We continuously improve the safety control level in engineering design, equipment manufacturing, construction, installation, commissioning, and all other links, laying the quality foundation for the safety of nuclear power plants. As part of the special actions for the "2017 Nuclear Power Safety Management Promotion Year," we further standardized contractor management and work safety in order to ensure the construction quality of nuclear power plants.

- Raise employees' consciousness of and reverence for safety and strengthen the publicity and implementation of operation control requirements and red/yellow lines in various ways
- Set up special groups to realize networked management of construction sites
- Fundamentally improve the safety level of construction sites and formulate fundamental corrective measures targeted at specific problems
- Creatively improve the on-site personnel management mode and implement two-dimensional code management of special types of work and special equipment



Successful hoisting of the dome of No.5 unit of Fuqing Nuclear Power, the world's first "HPR1000" demonstration project "Hualong No.1"

Safety and quality performance data of under-construction nuclear power projects of CNNP in 2017

Indicator	2017
Rate of certification for special operations personnel	100%
Major equipment quality accidents due to human errors	0
Major explosions of high pressure equipment	0
Incidents of dangerous or combustible materials being stolen or lost	0
Major or grave fire accidents	0
Major or grave traffic accidents	0

Safe Operation

Every detail of the operation of a nuclear power plant is associated with safety. The Company continuously strengthens nuclear power operation safety management from all aspects ranging from personnel quality, operation environment, to equipment status so as to ensure safe and stable operation of power plants. In 2017, one new unit was put into operation and 17 units were already in service, with a total installed capacity of 14,340 MW.

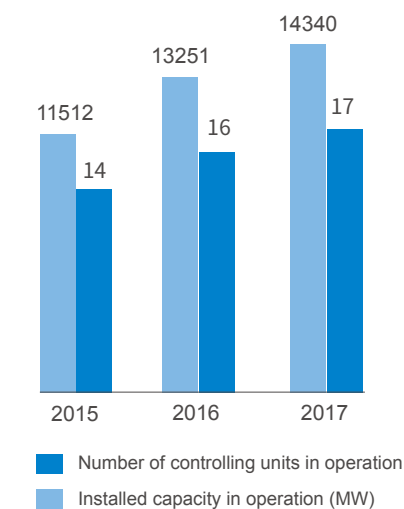
Unified application of EAM realized at Qinshan Nuclear Power

In December 2017, the switch for the five-stage working element and isolation module of the No.1 and No.2 units of Qinshan Nuclear Power No.2 Plant was put into operation. After three years of hard work, Qinshan Nuclear Power succeeded in promoting and applying the N1-EAM (a production management information system for nuclear power plants) for 9 units. With that, Qinshan Nuclear Power unified the management of units of different reactor types, which marked a new height of operation management and IT capacity.



A conference held at Qinshan Nuclear Power to announce full application of N1-EAM for 9 units

Key performance data of operating nuclear power units of CNNP in 2017



Hainan Nuclear Power takes measures to ensure nuclear safety during simultaneous overhaul of two units

To make full use of the capacity of the units on the basis of ensuring safety, Hainan Nuclear Power performed the first overhaul of No.2 unit and the second overhaul of No.1 unit simultaneously by taking the opportunity when the power grid was in maintenance. In China, this was the first simultaneous overhaul of two units at one nuclear power plant, which lasted for 36 days. To ensure the safety of the double-unit overhaul and prevent people from going into the wrong compartment, the Power Plant took a series of measures, such as all operators wearing an armband, each workshop building being provided with a special entrance, different overhaul documents having different colors and shapes, working areas being physically isolated, voice and light hints being provided at each entrance, etc. All these measures ensured the safety of units during the double-unit overhaul period.

Operational safety

Sufficient attention is paid to the management, prevention, and rectification of human errors, application of the 11 human-error prevention tools is deepened, the mechanism of operation personnel access, selection, training, and assessment is improved, and job training is organized for operators to enhance their operational skills, through which the impact of human errors on safety has been avoided. Qinshan Nuclear Power continued to strengthen the prevention of human errors, took special actions to identify potential human risks, offered skill training for this purpose, and standardized the identifiers of workshop buildings to eliminate the possibility of operators going into the wrong compartment. Jiangsu Nuclear Power set up a special taskforce which is responsible for enhancing human error management from various aspects such as classification of equipment, identification of key sensitive equipment, delineation and identification of key areas, application and promotion of anti-human-error tools, etc., through which major human-error events were avoided. Hainan Nuclear Power improved its personnel behavior norms and procedures in 11 fields, and eliminated 116 human-error traps.



Equipment safety

With high attention paid to the top-level design of equipment reliability management, we optimized and adjusted the Equipment Reliability Management Committee's organizational structure and responsibilities, setting up an ER (equipment reliability) promotion group and an expert group separately. Focusing on the construction of the equipment reliability database (ERDB) platform, we continued to normalize, standardize, and routinize equipment management. An equipment management team was built and good practice of equipment management was promoted, laying a solid foundation for upgrading the management of all units. By strengthening the management of key sensitive equipment and major technical problems and improving the equipment reliability indicator system, we have further consolidated the reliability of all units.

Safety Improvement

Safety self-examination is carried out in coordination with superior department inspection and the problems found are corrected in a timely manner. We continue to promote experience feedback to improve intrinsic safety. Peer reviews are organized regularly to learn advanced experience and raise the level of safety management.

Safety Supervision and Inspection

With the "2017 Nuclear Power Safety Management Promotion Year" special campaign as an opportunity, we strictly implemented relevant requirements and organized self-examination and self-correction, covering the development of safety culture, the control of unit safety, equipment reliability, project safety, and project quality, and the management of network security, nuclear power plant security and emergencies, so as to troubleshoot and eliminate hidden dangers and risks. Hainan, Tianwan, Fuqing, Sanmen, and Qinshan Nuclear Power Plants received safety inspections by four ministries of the Central Government, and rectified the problems found in the inspections without delay. In 2017, we rectified 1,097 problems found in self-examination and 432 problems found in ministerial inspections.

1,097 problems found in self-examination were rectified.

432 problems found in ministerial inspections were rectified.



A safety inspection

Peer Review

All of our nuclear power plants are subject to regular peer reviews by WANO and CNEA experts, through which we draw advanced international experience, strengthen internal study, and improve our weaknesses. In 2017, WANO conducted a formal peer review of and made a follow-up visit to CNNP, the results of which were satisfactory. A number of good practices of CNNP were recognized by WANO as worthy of promotion in the industry.

We lay a lot of stress on the cultivation of peer-review talents. In 2017, we hosted a WANO peer review training course, inviting an expert from the Research Institute of Nuclear Power Operation who has the experience of working at the WANO Tokyo Center and another expert from Qinshan Nuclear Power who has rich experience in peer review to give lectures. More than 30 people attended and satisfactorily completed the course.



A follow-up visit to Qinshan Nuclear Power No.2 Plant after WANO peer review

More than **30** people attended and satisfactorily completed the course.

Qinshan Nuclear Power represents and demonstrates China's capability and level of nuclear safety management

To keep China's nuclear safety and security work in line with international standards, Qinshan Nuclear Power, representing China's nuclear facilities, held an international nuclear safety and security assessment for the first time in August 2017. Nuclear safety and security experts from the International Atomic Energy Agency, the United States, the United Kingdom, France, Russia, Finland, Holland, Pakistan, and other countries and organizations provided two days of physical protection consultation services for Qinshan Nuclear Power through conference introduction, on-site observation, and person-to-person exchanges. They found some good practices put forward a number of rectification proposals for reference. The assessment further promoted Qinshan Nuclear Power's safety and security capability, and better demonstrated China's image as a responsible big country.



Qinshan Nuclear Power represents China's nuclear facilities to hold an international nuclear safety and security assessment for the first time

Experience Feedback

Upholding the concept of "serving operation and safeguarding security," the Company constantly improves the effectiveness of internal and external experience feedback. In 2017, the Company's experience feedback committee evaluated the operational performance of all plants by means of trend analysis, set up domain zero points and event zero points, and found 5 adverse trends. We established a Class-A event feedback

mechanism, selected 12 Class-A events and fed them back to our subsidiaries. 365 plant-level corrective actions were taken, with a closing rate of 80%. We held 12 monthly experience feedback video conferences, at which 53 typical events were analyzed and 168 actions were proposed. Through these efforts, the requirements for safety management were effectively implemented.

Pre-start unit review (PSUR) concluded for Sanmen Nuclear Power's No.1 unit

In August 2017, the WANO Tokyo Center paid a second follow-up visit to the No.1 unit of Sanmen Nuclear Power after the pre-start unit review (PSUR), the peer experts were satisfied with the rectification results of the AFIs pointed out in the first follow-up visit, marking that all PSUR activities for the No.1 unit was concluded successfully.



PSUR for Sanmen Nuclear Power's No.1 unit



Spokesperson's
Safety
Opinions



In our work, my colleagues and I always hold the beliefs that "development must never be at the expense of safety and health" and that "the safest way is the fastest way." I am well aware that my current happy life and comfortable working environment cannot do without a powerful enterprise. In order for this happiness to last long and for CNNP to grow stronger, bigger and better, what I can do is to be as responsible for my work as for my family, fulfill my duty diligently, and be brave to correct anyone or even an authority as long as he is in violation of safety rules.



Du Wensheng

No. 1 Maintenance Department, Jiangsu Nuclear Power

Support the Environment with More Greenness

CNNP regards "providing safe and efficient nuclear energy and creating a clean and low-carbon living environment" as its mission, and effectively embeds the concept of green development in the whole process including site selection, design, construction and operation of nuclear power stations, contributing to achieving new goals for ecological civilization construction and building a beautiful China.



Equivalent to reducing CO2
emissions of

7441 ten thousand tons



Equivalent to planting of forest

29 ten thousand hectares



Equivalent to reducing standard coal
consumption of

3129 ten thousand tons



In 2017, CNNP's annual power output was

100.747 billion kWh



Focus on Environmental Responsibility

Adhere to New Requirements of Ecological Civilization and Enable Nuclear Power to Help Open a New Chapter of Building a Beautiful China

“The modernization that we pursue is one characterized by harmonious coexistence between man and nature. In addition to creating more material and cultural wealth to meet people’s ever-increasing needs for a better life, we need also to provide more quality ecological goods to meet people’s ever-growing demands for a beautiful environment.”

—Extracted from the speech delivered at the 19th National Congress of the Communist Party of China by General Secretary Xi Jinping



The 19th National Congress of CPC has opened a new page of the transformation and upgrading of energy in the new era. To achieve green development and improve the quality of the energy supply system, the state will vigorously develop clean energy, presenting major development opportunities to wind power, PV, hydropower and nuclear power. Meanwhile, in the clean utilization of nuclear power, it is required to properly handle such issues as the utilization of uranium resources and treatment and disposal of spent fuel and radioactive waste.

Nuclear Power is in Line with the Trend of Low-Carbon Development of Future Energy

Nuclear power, hydropower, and thermal power constitute the three pillars of world energy. Compared with fossil fuel and other traditional energy, nuclear power has the advantage of being cleaner, greener and recyclable. In 2017, IEA issued the World Energy Outlook 2017, pointing out that nuclear power shall provide at least 15% of the world’s electric power by 2040 to achieve the UN’s sustainable development goal.

CNNP Endeavors to be a Leader of Green Development

The Company actively promotes the development of the clean energy of nuclear power, contributing to achieving new goals for ecological civilization construction and building a beautiful China. As of the end of 2017, the Company’s accumulative power output reached 717.5 billion kWh, equivalent to reducing standard coal consumption of 287 million tons, CO2 emissions of 715.35 million tons, SO2 emissions of 21.53 million tons, and NOx emissions of 10.76 million tons, and planting 1.96 million hectares of forest, achieving significant environmental benefits.

As of the end of 2017, CNNP’s accumulative power output reached 717.5 billion kWh, equivalent to	Reducing standard coal consumption of (ten thousand tons)	28700
	Reducing CO2 emissions of (ten thousand tons)	71535
	Reducing SO2 emissions of (ten thousand tons)	2153
	Reducing NOx emissions of (ten thousand tons)	1076
	Planting (ten thousand hectares) of forest	196

Green and Low-Carbon Production

In the entire life cycle of site selection, design, construction and operation of nuclear power stations, the Company has paid attention to environmental protection and low-carbon production. Prior to the construction of nuclear power stations, the Company has conducted the environmental impact assessment and made public the EIA results at each stage of site selection, design, construction and operation. During construction and operation of nuclear power stations, the Company has established an effective environmental protection management system and promoted energy conservation and emission reduction as well as efficient utilization, so as to minimize the impact of nuclear power stations on the local ecology. In 2017, Jiangsu Nuclear Power Co., Ltd. won the title of "Advanced Energy-saving Unit in the Power Industry", the only company in the nuclear power industry to receive such honor.

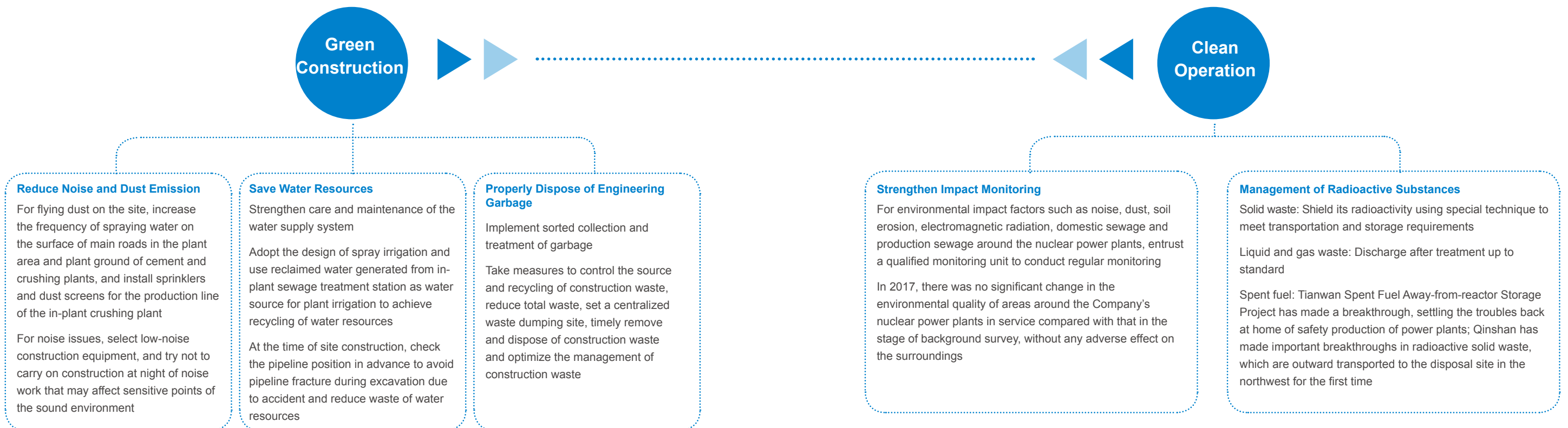


In 2017, Haiyan County (where Qinshan Nuclear Power Co., Ltd. is located) had 334 days of fairly good air quality and the good rate was 91.5%, both ranking first solidly in Jiaxing

Main Environmental Monitoring Data of CNNP's Nuclear Power Plants in Service in 2017

Nuclear power plant/area	Monitoring item		Monitoring result	
			Max	Avg
Qinshan Nuclear Power Co., Ltd.	Continuous monitoring of dose rate in plant environment (μGy/h)	γ radiation	0.166	0.097±0.005
		Total α	0.224	0.087±0.040
	Aerosol radioactivity of plant air (mBq/m³)	Total β	3.54	1.65±0.81
Tianwan Nuclear Power Co., Ltd.	Continuous monitoring of dose rate in plant environment (μGy/h)	γ radiation	0.128	0.109±0.002
		Total α	0.303	0.092±0.029
	Aerosol radioactivity of plant air (mBq/m³)	Total β	3.30	1.44±0.65
Fuqing Nuclear Power Co., Ltd.	Continuous monitoring of dose rate in plant environment (μGy/h)	γ radiation	0.164	0.104
		Total α	0.0575±0.0128	0.0217±0.0076
	Aerosol radioactivity of plant air (mBq/m³)	Total β	1.44±0.06	0.600±0.033
Hainan Nuclear Power Co., Ltd.	Continuous monitoring of dose rate in plant environment (μGy/h)	γ radiation	0.28	0.15±0.020
		Total α	0.18±0.025	0.057±0.0033
	Aerosol radioactivity of plant air (mBq/m³)	Total β	2.7±0.082	0.86±0.010

According to the environmental radiation monitoring results in 2017, the environmental quality of surrounding areas of all the operating nuclear power plants saw no obvious changes compared to that during background investigations. The Company had no adverse effect on the surrounding environment.



Develop Clean Energy

The Company innovatively proposed the “3655” Management System, and vigorously promoted the construction of a new energy development and management platform in accordance with the “3655” platform strategy. In 2017, new energy reserves reached 5 million kWh, and the new energy project reaching the approval process amounted to 400,000 kWh.

- Feasibility certification of Taihai PV Project Phase I, Xudabao Distributed Wind Power, Distributed PV Project in Hainan Plant and Distributed PV Project in Qinshan Plant was completed, PV Project of Nuclear Science Museum was completed, Tibet Company was established, geothermal industry was incubated and special geothermal development team was set up
- Research achievements of “clean energy model island” development strategy of Hainan Nuclear Power Co., Ltd. were incorporated into Hainan’s strategy of “ecology-based provincial development”, providing a reference for Hainan to accelerate the construction of a clean energy system dominated by clean electric power and natural gas and supplemented by renewable energy sources
- The pumped storage project of Zhangzhou Energy in Yunxiao County was included in national plan



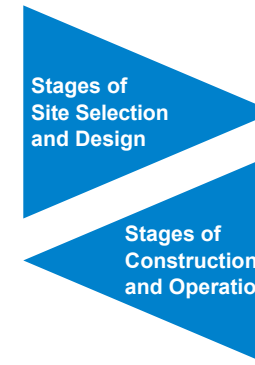
The First Domestic Distributed Wind Power Project Developed by Liaoning Nuclear Power Co., Ltd

Biodiversity Protection

The Company is dedicated to promoting the harmonious coexistence of enterprise operation and the nature. In different stages of site selection, design, construction and operation of nuclear power stations, it takes a variety of effective measures to actively protect terrestrial ecology, aquatic ecology and water area environment, so as to minimize the impact of nuclear power stations on the ecological environment. In 2017, Zhangzhou Energy continued to carry out marine ecological compensation and fisheries resource stock enhancement activities. The activities were carried out for 5 times in total throughout the year, during which 4 million large yellow croakers, about 500,000 fry of bighead carps, 317 million penaeus penicillatus, 400,000 saddletail groupers and 833,400 chubs were released into the water areas; to evaluate the impact of the operation of power plants on sea creatures, Hainan Nuclear Power Co., Ltd. conducted special tasks of remote sensing monitoring of thermal discharge, biological investigation of water intake blockage and biological entrainment effect.

Keep away from natural habitats and wetlands, forests, wildlife corridors and farm land

Optimize the design of retaining dams to minimize the impact of operation of a nuclear power plant on the local marine ecology



Conduct an ecological background survey on the sea area of the plant site and a monitoring survey on basic temperature to monitor environmental changes in surrounding sea areas

Carry out stock enhancement and other activities, increase the amount of natural aquatic biological resources in the water areas around the plant site, boost the productivity of water areas, improve the structure of biological communities and restore marine biological resources.



Egrets Flying over the Nuclear Power Plant



Publicity Activity on the International Biodiversity Day



Activity of Stock Enhancement

Advocate Low-Carbon Living

The Company actively promotes green office, encourages employees to develop low-carbon living habits starting from the trifles of work and life. Taking the opportunity of the Arbor Day and the World Environment Day, the Company organizes a variety of environmental protection activities, aiming to advocate the practice of green and environmentally friendly lifestyles and raise the environmental protection awareness of employees and the public.

- **Save water:** Post water-saving slogans; implement the management of turning off water before leaving; generalize water-saving appliances
- **Save electricity:** Use energy-saving lamps and eliminate the use of “incandescent lights”; implement the management of turning off lights and cutting off power before leaving; make sure that computers and printers are in the dormant state after idling for a certain period of time
- **Save energy:** Actively participate in the National Energy-saving Awareness Week of “Everyone Being Devoted to Energy Conservation and Green Sharing”; encourage double-sided printing, save paper and pay attention to reclamation of waste paper; promote information technology, videoconferencing and paperless office



Activity of “Loving Our Home and Removing Trash”



Activity of “Green Walk”



Spokesperson's
Green Opinions

“

At work, I am one of the few women senior operators in the nuclear power industry and a teacher who guides more than 200 operators of Fuqing Nuclear Power Co., Ltd. As a member engaged in the nuclear power industry, I am deeply aware that we are shouldering the obligatory mission of providing the society with clean energy. To embed such low-carbon and green concept in the lives of more people, I have established Fuhe Running Association and “Nuclear Running Bar”, aiming to advocate the green and healthy lifestyles to people around in the form of running and publicize the idea that “everyone has the responsibility to advocate low-carbon environmental protection and start from little things”.

”

Peng Jing

Training Division of Fuqing Nuclear Power Co., Ltd.

Powering Economy for Mutual Prosperity and Win-Win Results

Devoted to being a pioneer in the nuclear energy industry, CNNP focuses on the development requirements of the nuclear energy industry in the new era and improves quality and efficiency, and its annual power output has exceeded 100 billion kWh for the first time, providing power support for local prosperity, offering reliable energy for economic development, shaping a competitive national image and boosting the realization of China dream based on the nuclear power dream.



Annual revenue

33.590 billion yuan



Annual energy output

100.747 billion kWh



Annual profit

9.413 billion yuan

Focus on Economic Responsibility

Fulfill the development concept in the new era and build a world-class nuclear power company

“China’s economy has shifted from a high-speed growth stage to a high-quality development stage. It is now in a critical period of changing the development mode, optimizing the economic structure and transforming the growth momentum. The construction of a modern economic system is an urgent demand to get over the threshold and a strategic goal for China’s development.”

—Extracted from the speech delivered at the 19th National Congress of the Communist Party of China by General Secretary Xi Jinping

As one of the three pillars of world energy, nuclear power plays an important part of global economic development and is an important cornerstone of national security. In the context of global energy shortage, various countries in the world are vigorously developing nuclear power. Compared with the global average of nuclear power output of 11%, China’s nuclear power output still has broad space for development as it accounts for only 3.56%.

It is clearly stated in the State Council’s Energy Development Strategic Action Plan (2014-2020) that the nuclear installed capacity of China’s nuclear power shall reach 58 million KW and the capacity under construction shall be more than 30 million KW by 2020. During the “13th Five-Year Plan Period”, the installed capacity to be commenced shall reach 36 million KW. Besides, China will play a leading role in the future growth of nuclear power, expected to become the world’s largest nuclear power producer by 2030.

Confronted with the new challenges posed by the international nuclear power development situation and new goals for the development of domestic nuclear power, CNNP continues to expand its industrial scale, accumulates power generation capacity, actively carries out technological service innovation and industrial upgrading, releases development potential, makes use of its own advantages to promote the development of global nuclear power, shapes the national image, and promotes China’s transition from a big nuclear county to a nuclear power, contributing to the realization of global sustainable development.

Accumulate Power Generation Capacity

Bearing in mind the historical mission of realizing the Chinese nation’s great rejuvenation, CNNP has built Qinshan Nuclear Power Base with the largest number of nuclear power units, the most abundant reactor types and the largest installed capacity. It has a variety of nuclear power reactor types, such as the world’s first reactor demonstration project, that is, its own third-generation nuclear power “Hualong One”, the world’s first reactor AP1000, heavy water reactor and VVER, etc. From Qinshan to Tianwan, Sanmen, Fuqing and Hainan, it continues to promote large-scale operations, and has achieved a total installed capacity of 14.34 million KWh. Its annual energy output exceeded 100 billion kWh for the first time, and accumulative energy output amounted to 717.5 billion kWh, making it the pioneer and leader in China’s nuclear power business.

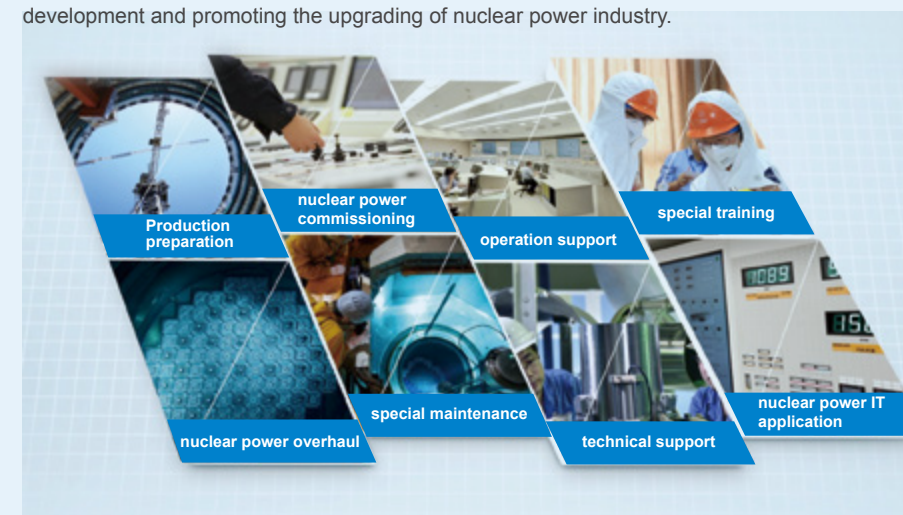
Total installed capacity of
14.34 million KW

Annual energy output of
100.7 billion kWh

Accumulative energy output of
717.5 billion kWh

Release Development Potential

On the basis of steady power supply, CNNP is proactive in innovation and has solved a number of key problems and industrial gaps. It has developed the fourth-generation nuclear power technology for pressurized water reactors, heavy water reactors, fast reactors and TWRs. In addition, it has shaped eight products of CNNP’s technical services represented by production preparation, commissioning and operation, refueling overhaul, special maintenance, professional training, technical support, heavy water reactor support and information system construction and operation and maintenance, exploring new directions and new impetus for nuclear power development and promoting the upgrading of nuclear power industry.



Eight Products of CNNP’s Technical Services

Shape the National Image

“China has been among the world’s most advanced countries in terms of nuclear power. CNNP now has been recognized in the world.”

—Said Lin Chengge, former Standing Deputy Director of State Bureau of Nuclear Safety & former Senior Nuclear Safety Specialist of International Atomic Energy Agency

In response to the country’s “Belt and Road” Initiative, CNNP has formulated and implemented the “internationalization” strategy, and actively explored its international market and international business. It makes use of its own professional advantages to promote nuclear power products and technical services to go global, achieve global sharing and form a co-prosperity circle from Great Britain to the Arabian Sea and from Sudan, France, Malaysia to South Korea and other countries and regions, so as to enhance its influence in the world and bring more splendor to the world stage of nuclear power.

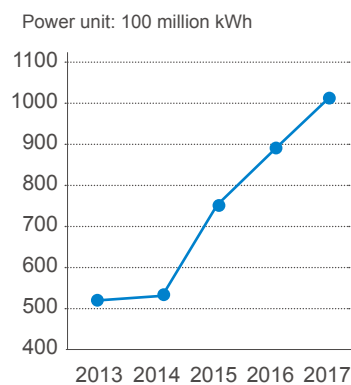
Guarantee Reliable Power Supply

CNNP adheres to the concept of sustainable energy development, continuously expands its industrial layout, enhances production capacity, continuously optimizes overhaul management, and ensures steady and efficient operation of the units, providing steady and reliable power for social and economic development.

Power Supply

With the help of management improvement and technical progress, CNNP constantly improves the operating efficiency of existing units. As of the end of 2017, the energy output exceeded 100 billion kWh for the first time with a year-on-year growth of 15.7%, and the tasks of ensuring power supply during the 19th National Congress of the Communist Party of China, the Internet Summit in Wuzhen and BRICS Summit in Xiamen were successfully completed.

Guided by the strategy of "large-scale, standardized and international development", CNNP constantly expands its total installed capacity, having achieved 17 units in services and 8 nuclear power units under construction, as a result of which its energy output keeps increasing.



Energy Output Trend of CNNP's Units in Service

Carried out overhaul for **10** times throughout the year

Accumulatively optimized and reduced the overhaul duration by **47.9** days

Increased energy output by **1.112** billion kWh

Standardization of Overhaul Management

CNNP has formulated the Guidelines for the Management of CNNP's Overhaul Projects and CNNP's Maintenance Standard Time Quota Manual to organize the implementation of overhaul standardization. It has implemented a "three-inspection" system for overhaul preparation

and TOP10 management for overhaul. Through special inspection and evaluation, contingency plan and overhaul experience exchange, it has continuously optimized the overhaul management, shortened the overhaul duration and improved the overhaul efficiency, escorting steady power supply. In 2017, it carried out overhaul for 10 times, optimized and reduced the overhaul duration by 47.9 days cumulatively and increased energy output by 1.112 billion kWh.



Qinshan Nuclear Power Co., Ltd. Completed Overhaul for 6 Times in Total Throughout the Year

Tianwan Nuclear Power Station hit another record of minimum duration of overhauling VVER units of the year

Jiangsu Nuclear Power Co., Ltd. has always been improving the overhaul efficiency. With regard to refueling overhaul of Unit No.1 T110 completed on June 25, 2017, it shortened the duration to 27.1 days, and hit another record of optimal annual overhaul duration and the record of minimum annual overhaul duration of VVER units, constantly pushing overhaul management to a new level.



Overhaul of No. 1 Unit of Tianwan Nuclear Power Station

Promote Industrial Development

CNNP takes it as its own duty to promote the development of CNNP's cause, aiming to boost industry progress on the basis of maintaining its own high-quality development trend. It also continues to advance equipment localization, strengthens technical research and development and talent reserve, further enhances the level of scientific and technological innovation, pushes itself to go global and promotes the sound and sustainable development of the nuclear power industry.

Promoting the Use of Domestic Equipment

The Company continues to promote the equipment localization strategy. It makes use of information-based and automated methods to vigorously introduce and foster scientific research talents, breaks through the monopoly of foreign key equipment and technologies through independent research and development and gets hold of the key manufacturing technologies of nuclear power. In addition, it also supports domestic suppliers to research and develop international monopoly products, preferentially purchases domestic nuclear equipment and achieves self-sufficiency of equipment, striving to have a say in core equipment in the world and complete a leap from a follower to a leader.

In 2017, Hainan Nuclear Power Co., Ltd. achieved localization or expanded the localization for the first time of over 20 primary devices (such as main pumps, etc.), electrical instruments and equipment, valve equipment and pump equipment and 3139 sets of important equipment. As China's third-generation self-owned nuclear power brand, "Hualong One" insists on adopting Chinese standards, Chinese technology and products made in China to independently develop key equipment and parts, and the localization rate of equipment is over 85%.

Achieve replacement of control gripper of refueling machine with domestic product

Tianwan Nuclear Power Co., Ltd. bravely shoulders the responsibility to promote the equipment localization strategy, actively brings forth new ideas, independently researches and develops and transforms to replace the control gripper of refueling machine with domestic product, which solves the jamming issues of the gripper of the control rod, greatly enhances gripper reliability, shortens the insertion time of the control rod and effectively improves the overhaul efficiency, walking out an unique way of localization and independence.



Scientific Research Innovation

CNNP actively promotes the construction of its nuclear power technology R&D platform, organizes the formation of a centralized R&D mechanism consisting of CNNP's leaders + equipment reliability experts, optimizes the top-level design of the Research Institute of Nuclear Power Operation, establishes the "Nuclear Power Reliability Assurance Material Engineering Research Academician Workstation" and promotes the smooth development of aging management of nuclear power plants, license extension technology, R&D of nuclear fuel components with proprietary intellectual property rights and other major technical projects, so as to effectively improve the Company's scientific research strength and brand influence. In 2017, its independent research input reached 580 million yuan, accounting for 1.75% of its operating revenue, and it was granted over 700 national patents.



Launch Ceremony of "Nuclear Power Reliability Assurance Material Engineering Research Academician Workstation"

Its independent research input reached

580 million yuan

It was granted over

700 national patents

Establish the Joint R&D Center of Nuclear Power Technology

CNNP is committed to bettering and strengthening the nuclear power business. In December 2017, it established the Joint R&D Center of Nuclear Power Technology jointly with China Nuclear Power Engineering Co., Ltd. With the focus on the research and development of standardized technical transformation projects during the full-life period, supporting research and development of standardized digital power station technology, supporting research and development of standardized technical transformation and other fields, CNNP works together with China Nuclear Power Engineering Co., Ltd. to share R&D achievement and achieve the alliance between giants in the nuclear power industry, making breakthroughs in nuclear power technology.



Launch Ceremony of Joint R&D Center of Nuclear Power Technology

Liaoning Nuclear Power Co., Ltd. obtained China's first patent licensing of nuclear power heat supply technology

To further promote industrial upgrading, Liaoning Nuclear Power Co., Ltd. is proactive in scientific research innovation. On February 17, 2017, it passed the patent licensing "a cogeneration method based on large-scale commercial nuclear power units" of SIPO, and obtained China's first nuclear power heat supply patent. As a result, it achieved heat supply based on power supply and greatly improved the comprehensive utilization of the thermal energy of nuclear power plants, effectively alleviating environmental pollution caused by coal-fired heating and improving the life quality of the people in the northern areas while increasing economic returns.

Nuclear Power "Going Global"

Adhering to the concept of economic globalization, the Company constantly explores its international market and sets up an international platform system. In fact, it has registered and established China Nuclear Investment Co., Ltd. in the Shanghai Free Trade Zone, actively promoted Sino-US, Sino-Russian and Sino-Canadian cooperative projects, continuously deepened international exchange and cooperation in nuclear field, actively guided the development of international rules and standards in nuclear field and improved CNNP's international influence.

CNNP vigorously promotes skill training to go global while enabling products and services to go out. It has provided Pakistan, UAE, Saudi Arabia, Arab League, Sudan, France, Malaysia, South Korea and other countries with nuclear power knowledge and skill training in succession, shaping the national image one after another based on the "Belt and Road" Initiative.

Promote WANO's Fifth Center to Settle in Shanghai

CNNP adheres to the strategy of internationalization and globalization and actively promotes the construction of a global connectivity platform. To satisfy the impact of the rapid rise of CNNP's nuclear power business on the adjustment of global nuclear power pattern, CNNP vigorously promotes the establishment and operation of the World Association of Nuclear Operators (WANO), Shanghai Center. To promote the establishment of WANO's Fifth Center in Shanghai is a typical practice for CNNP to implement General Secretary Xi Jinping's statement of "taking an active part in global governance", and also an important platform for China to turn into a nuclear power from a big nuclear country, which will contribute more Chinese wisdom and strength to the safe and reliable operation of the global nuclear power.

Training of Pakistan's K2K3 operation and maintenance personnel

Qinshan Nuclear Power Co., Ltd. actively fulfills the international development responsibilities for the "Belt and Road" Initiative to promote technical services to go global while exporting equipment. In December 2017, it organized a series of training for K2K3 operation and maintenance personnel at the Karachi nuclear power plant in Pakistan concerning basic safety, intermediate and advanced systems, positions in Fangjiashan, simulators and differentiation of "Hualong One", aiming to guarantee the normal operation of overseas nuclear power equipment and enhance CNNP's international influence in an all-round way.



Training of Pakistan's Operation and Maintenance Personnel

Responsible Supply Chain

The Company adheres to the development concept of “innovation, coordination, green, openness and sharing” to actively promote mutual improvement in the industry while achieving self-development. It also carries out the construction of procurement standardization, establishes the procurement center to regulate procurement and supplier management, shares development experience with partners, and builds a responsible supply chain.

Procurement Management

It continuously optimizes procurement management, strengthens cost control and supplier management through the construction of organization, system and procurement standardization, and takes a variety of measures to regulate procurement behavior and improve the management level of supply chain.

Strengthen Organization and System Management

- Promote the implementation of the top-level design plan for centralized procurement. In July 2017, it established the Procurement Center, Procurement Management Center and other Procurement Branch Centers such as Qinshan, Jiangsu and Fuqing of CNNP
- Issue 23 copies of management system for commercial procurement, and specify the requirements for procurement process management, stock management and centralized procurement management

Push Procurement Standardization

- Establish data standardization and achieve unified management of master data of materials
- Enhance procurement plan management and strengthen plan control
- Enhance procurement IT application management and promote secondary supply chain IT application of ERP

Strengthen Procurement Cost Control

- Push centralized and electronic procurement, centralized procurement rate reaches 70% and electronic procurement rate is expected to reach 68%
- Store spare parts jointly and sign an agreement with CGN on joint procurement and storage of spare parts of steam turbines

Enhance Supplier Management

- Carry out supplier standardization research and management platform construction
- Regulate open tendering and bidding procedures
- Detail the management requirements for single-source procurement, contract renewable and regulating contract performance

Driving the Development of Partners

The Company continuously pays attention to the growth and development of its partners, and works together with the government, nuclear power peers and equipment manufacturers to carry out technical exchanges and strategic cooperation. It also undertakes a major research project of the National Energy Administration, that is, A Study on Nuclear Power Development Strategy, cooperates with CGN to promote the strategic cooperation on joint procurement and storage of spare parts, actively promotes experience exchange and resource sharing and jointly drives sustainable development in the field of nuclear power.

Qinshan Nuclear Power Co., Ltd. undertakes “the Third Nuclear Power Plant Corrosion and Protection Technology Experience Exchange Seminar”

To constantly tackle industry problems and make progress together with its partners, Qinshan Nuclear Power Co., Ltd. held the “Third Nuclear Power Plant Corrosion and Protection Technology Experience Exchange Seminar” in Haiyan, Zhejiang from October 30 to November 1, 2017. It also built up the platform for corrosion and protection technology exchange in the nuclear power industry, went deep into the common concerns such as basic theory research and new technology and products for corrosion and protection as well as monitoring and detection, pushed for solutions of nuclear power corrosion, and enhanced the professional technical level.



The Third Nuclear Power Plant Corrosion and Protection Technology Experience Exchange Seminar



Spokesperson's Innovation Opinions



As a worker long engaged in the operation and construction of nuclear power, I was privileged to participate in the great development of CNNP, with the historical mission of nuclear safety always being our guiding light. Meanwhile, we draw an inexhaustible drive for work from tracking and learning the advanced nuclear power management concepts at home and abroad to advancing shoulder to shoulder, so as to finally achieve innovation and transcendence. On the basis of summing up years of experience in nuclear power construction, we have brought forth new ideas to the management concept of nuclear power commissioning, established the management mode “commissioning-production integration” throughout the construction safety-commissioning-production management process, improved the construction safety and quality level of nuclear power and repeatedly brought about high-quality projects in terms of nuclear power construction. In addition, we have brought forth new ideas to nuclear power commissioning technology, optimized nuclear power construction plan and constantly hit a record of nuclear power commissioning duration, injecting new vitality into the development of nuclear power and making contributions to the construction of first-class nuclear power enterprises.



Hong Yuanping


General Manager Department of Jiangsu Nuclear Power Co., Ltd.

Committed to Humanity for a Better Life

CNNP pays great attention to the development of employees and is dedicated to promoting their comprehensive growth and creating a career stage for realizing value and a comfortable and happy work atmosphere. It proactively fulfills social responsibility, shapes a harmonious cultural environment and provides effective support for public welfare, so as to facilitate sustainable development together with the public.



Participants in training
229602



Total number of employees
12620



Input into trainingRMB
149.4178million



Focus on Social Responsibility

Facilitate to Win the Battle against Poverty and Join Hands to Build the Moderately Prosperous Society

"We should mobilize the energies of our whole Party, our whole country, and our whole society, and continue to implement targeted poverty reduction and alleviation measures. We will pay particular attention to helping people increase confidence in their own ability to lift themselves out of poverty and see that they can access the education they need to do so. We will provide focused assistance to areas of extreme poverty. We must ensure that by the year 2020, all rural residents living below the current poverty line have been lifted out of poverty, and poverty is eliminated in all poor counties and regions. Poverty alleviation should reach those who truly need it and deliver genuine outcomes."

--- Speech made by President Xi Jinping at the 19th CPC National Congress

As science and technology advance considerably, wealth gap and the gap between the North and the South caused by world multi-polarization and economic globalization are widening and poverty still threatens the peace and development of humankind. Eliminating poverty and realizing prosperity are a long-cherished goal of human and also the perpetual practices of human in pursuit of justice, fairness and equality. To fight against poverty is a sacred responsibility of all countries and the international community.

Over years, China has explored a path of poverty reduction with Chinese characteristics and conducted multi-dimensional work in an all-round way in systems and mechanisms etc. It becomes the first developing country in the world to realize the poverty reduction goal in the Millennium Development Goals, makes remarkable contribution to world poverty reduction and wins wide recognition of the international community.

CNNP proactively responded to the call of the Central Committee of the Party and the State Council and earnestly carried out national policies and guidelines on poverty alleviation and development. It dispatched 7 cadres to villages for targeted poverty reduction and alleviation, comprehensively conducted field conveys, understood needs on poverty in depth and helped address local poverty difficulties via multiple modes, fulfilling the responsibility of a central enterprise.

Infrastructure Construction and Industrial Development

The Company actively assisted areas in poverty in improving auxiliary facilities in communities, paid back to local society in road building, lighting, irrigation and flood prevention and explored modes of industrial poverty reduction adapted to local conditions, so as to improve welfare of local residents.

Qinshan Nuclear Power: Helping two villages in Jinyun County in Zhejiang to build bridge, road and cultural auditorium.

Jiangsu Nuclear Power: Pairing with Xingsi Village to support local infrastructure projects such as road building, house construction, lighting and electric pumping station. It built a 200kW collective PV power station and two standard delivery rooms and promoted aquaculture of lobster in shallow-water lotus root field and planting in and purchase of vegetable greenhouse, contributing over RMB200,000 to the village's collective economy annually and helping each low-income household increase income by more than RMB3,000 each year.

Fuqing Nuclear Power: Pairing with Xiaodong Village, Kengdi Town, Shouning County in Ningde City and dispatching Mr. Zhang Jingbo, member of Party Committee of Fuqing Nuclear Power, as first secretary of Xiaodong Village to help build river embankment against flood, repair tractor-plowing road and irrigation channels, set up road lamps, build passing bays and develop agricultural sightseeing garden, it helps the village's revenue reach to over RMB100,000.

Hainan Nuclear Power: Supporting Yidong Village, Qicha Town, Changjiang County to repair road lamps, build a cultural square, promote planting of cowpea, corn and sweet potato for nearly 130 mu and establish cooperatives on pheasant and wild boar. It was planned to breed over 1,000 pheasants and more than 50 wild boars for phase one.



Education Development

Education is the footstone of national revitalization and social advance. The Company took support for educational development as an important act for performing social responsibility and continued to subsidize students in poverty, care for left-behind children and conduct operation with schools for years, making contribution to development of local education.



"March Ahead with Love" student subsidy activity



Donating books to Liu'ao Primary School



Donating stationery to students in poverty in Yidong Village



Teaching football at Wushi Middle School in poverty-stricken Qiongzong County

Support to Realize Dream

Support to realize dream is a new-type poverty reduction method originated by CNNP in the form of nuclear power summer camp by tapping into its own business advantage.

The Company organized featured activities including popularization of science on nuclear power and visits to exhibitions to help broaden the horizon of teachers and students, improve scientific and cultural quality in impoverished areas, light up the dreams of children and help students in need change destiny and make achievements in the future. In 2017, the Company supported 102 teachers and students from two national-level poverty-stricken counties, Tongxin County in Ningxia Hui Autonomous Region and Shizhu County in Chongqing, to realize dreams.



Summer camp on nuclear power

Donations

In order to help local areas cope with poverty, the Company constantly stepped up financial support for areas in poverty and made donations in cash and in kind to care for and support those in need. In 2017, the Company donated RMB3,396,800 in total.

Donated RMB
3,396,800 in total

Offer Support and Warm Heart

In order to further promote targeted support and assistance and practice integration between enterprise and local areas, in 2017, Qinshan Nuclear Power offered paired support to 30 households in need. On the basis of surveys conducted on conditions of the support target, it organized two or more visits every year and maintained regular contact with paired households for normalized assistance. The activity tightened ties of Qinshan Nuclear Power with surrounding communities, deepened mutual understanding and trust and reflected the Company's performance of social responsibility.



Visiting households in need near the power station

Support Employee Growth

Committed to the “people-oriented” philosophy, the Company protects employees’ rights and interests, promotes career development, cares for employees’ life, strives to provide every employee with sound life support, diversified study opportunities and broad development space and continues to enhance their sense of happiness and belonging.

Protect Employees’ Rights and Interests

Basic Rights and Interests

The Company strictly observes international conventions on human right and labor, upholds equal employment, forbids employment discrimination and eradicates employment of child labor and forced labor. In 2017, it signed labor contract with all employees.

It upholds the principle of equal pay for equal work, pays full remunerations for employees in time and has established a multi-layer benefit system to enhance employees’ sense of happiness and belonging. In 2017, all employees were covered in social security.

The Company pays great attention to occupational health of employees, regularly organizes physical examinations and channels employees’ negative emotions to relieve their work pressure, so as to improve employees’ occupational health and safety. In 2017, it arranged physical examinations for all employees.

The rate of labor contracts reached

100%

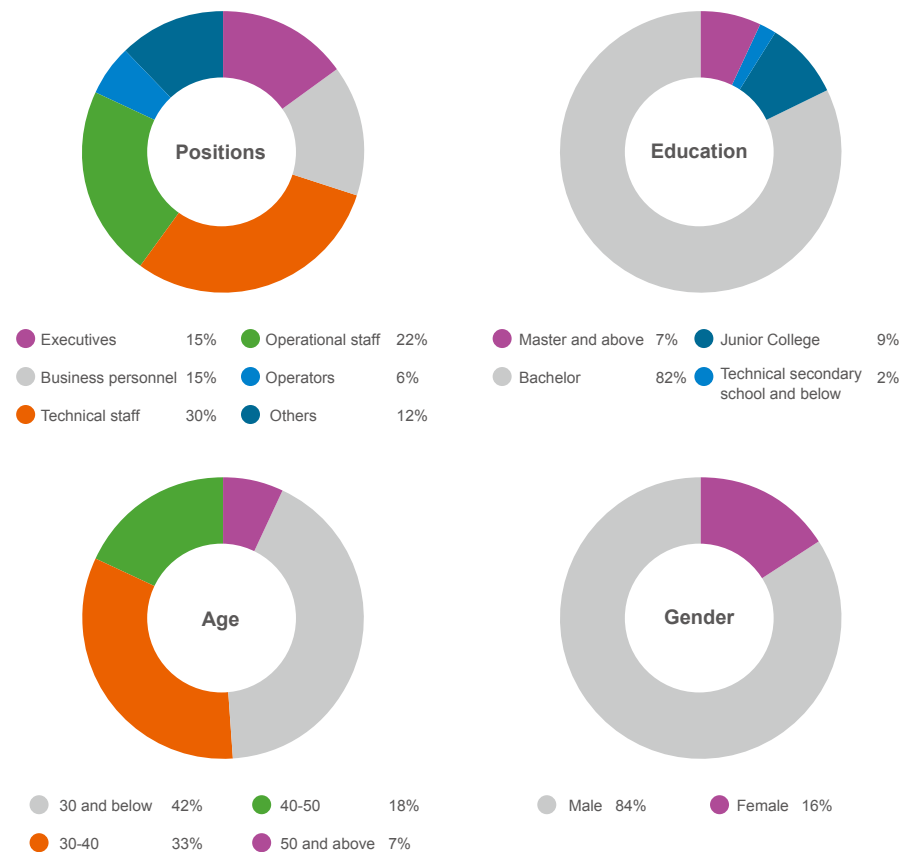
The rate of social insurance coverage reached

100%

The rate of physical examinations for all employees reached

100%

Staff Structure



Democratic Management

The Company continued to deepen democratic management, improved communication channels for employees, perfected the system of employees’ congress, safeguarded employees’ right to know, participate, express and supervise and established equal and harmonious labor relationship. All employees joined the labor union. From 2016 to 2017, surveys on enterprise culture and ideological trend of employees were conducted for two consecutive years to care for and reflect their thoughts. In 2017, evaluation on implementation of outstanding culture was launched twice to listen to employees’ opinions and suggestions.

Support Employee’s Growth

Improve Development Path

Through supplementary service at temporary positions, secondment and re-organization of job responsibility, the Company established smooth channels of career development, expanded career paths and built up a free platform for personnel cultivation and exercise of reserve cadres. In 2017, it re-organized job responsibilities of all positions at the headquarter, initiated post authorization and selected 23 persons for serving temporary positions and secondment, creating a fair competition environment and opportunities of free development for employees.

Strengthen Building of Three Teams in “Management, Technology and Skill”

In order to cultivate a reasonably-structured high-quality talent team of a proper quantity, build an influential and leading nuclear power talent pool and build up competitive advantage of CNNP in talent, CNNP fosters three talent teams in “management, technology and skill”, improves use efficiency and innovation ability of personnel and creates broad space for employees to improve their own value.

Personnel Cultivation

The Company establishes sound training mechanisms and offers diversified serial trainings in business ability, work capability, employee quality and leadership to cultivate a high-quality talent echelon and promote career development of employees. In 2017, it invested RMB149,417,800 into trainings, which were participated by 229,602 person-times of employees.

Qinshan Training Base Inaugurated to Promote the Personnel Training Mechanism

In order to perfect the personnel training system and provide employees with a broader career stage, Qinshan Nuclear Power inaugurated the CNNC Training Base on Nuclear Vocational (Job) Skills. By the end of 2017, the base completed license issuance and renewal for 295 operators, skill training for 16,000 person-times and basic safety re-training for over 10,000 person-times, laying a solid personnel foundation for sustainable development.

It invested RMB
149,417,800
 into trainings,
 which were participated by
229,602 person-times
 of employees

Sanmen Nuclear Power Organizes Management Training for Cadres

In order to improve the management level of employees, Sanmen Nuclear Power invited lecturers with rich experience in enterprise management and training to offer management training themed "decision-making management and execution" on scientific decision-making and highly effective execution in the form of class lecture and interactive dialogue. In 2017, Sanmen Nuclear Power provided employees with trainings themed on management role perception and effective communication, decision-making and execution and corporate systematic operation to promote their career development.



Sanmen Nuclear Power organizing management training for cadres

Care for Employees

Enrich employees' life.By putting into full play of the role of cultural and sports associations, the Company organized various cultural and entertainment activities to relieve work pressure of employees and enrich their life after work.



Spring outing of employees



Mothers' Association organizing a story-telling activity



Youth music festival



The 2nd "Liotong Cup" basketball game



Youth speech contest themed "Our Responsibility in Our Time"



Fun sports game

Care for employees.The Company organized various activities to care for female employees and retirees and support employees with difficulties, so as to stimulate their activity and optimism in coping with challenges in work and life and improve their sense of happiness.

Low-carbon Life in Elegance and Beauty

With the coming of Women's Day, CNNP invited professional image artists into the "Elegant Working Female with Beautiful and Smart Life" image salon for working women among its female employees. Each female employee received image guidance and the gift of a pot of rose. The activity not only promoted the concept of low carbon and beautiful life, but also improved the sense of happiness of female employees.



Female image salon

Jiangsu Nuclear Power Invites Employees' Family to Spend the Spring Festival Together

In order to create a happy and cozy family atmosphere, Jiangsu Nuclear Power invited family of its employees to Tianwan Nuclear Power Station to spend the Spring Festival together. The event enhanced the employees' sense of belonging and happiness and enabled their family to know about their working environment and feel the company's cozy atmosphere.



Jiangsu Nuclear Power inviting employees' family to visit Tianwan Nuclear Power Station

Sanmen Nuclear Power Organizes the 4th Open Day for Family

Sanmen Nuclear Power organized over 200 family members of its employees from more than 80 families to visit site of projects to experience and know more about nuclear power. By the end of 2017, over 800 person-times of family members had visited the site, which enhanced communication between its employees and their families and enabled the family members to feel warmth of the Sanmen Nuclear Power family.



Family members visiting a nuclear power project site

Facilitate Community Development

The Company actively participated in community building, helped solve development difficulties in surrounding areas, comprehensively supported local development in taxation, public facility construction and local employment and was dedicated to realizing common prosperity of enterprise and community.

Haiyan Nuclear Power Village Becomes National AAA Tourist Attraction

In order to promote scientific, technological and cultural development of surrounding areas, Qinshan Nuclear Power invested to build Haiyan Nuclear Power Village, which integrated industrial tourism, agritourism and beautiful countryside and combined first, secondary and tertiary industry. The Village was approved as national AAA tourist attraction at the end of 2017 and built up China's largest nuclear power science museum that was highly applicable to the public with the richest public experience and unique characteristics.

Integrate into Local Development to Promote Industrial Interaction and Common Prosperity

Since its settlement in Lianyungang, Jiangsu Nuclear Power strictly observed the concept of "win-win mutualism and common prosperity" for integrated development between enterprise and local area and actively performed its social responsibility, paying around RMB15 billion taxes and fees accumulatively, contributing RMB4 billion to local finance of Lianyungang City and Jiangsu Province and providing jobs to more than 17,000 people. In order to facilitate coordinated and sustainable development of surrounding communities in economy, environment and society, in May 2017, Jiangsu Nuclear Power and Lianyungang City held the signing ceremony on projects in nuclear power-related industries, where 6 framework cooperation agreements were signed, including 50% investment to build Nuclear Power South Road together with the city government. By doing so, Jiangsu Nuclear Power made important contribution to the development of Lianyungang and was presented the "Integrate into Local Development to Promote Industrial Interaction and Common Prosperity" pennant by the city government.



Jiangsu Nuclear Power and Lianyungang cooperating on nuclear power-related industrial projects

Public Welfare and Charity

Cultural Education

Education is an important approach to change destiny of a person, family and country. The Company greatly supported cultural and educational undertakings and actively helped students in need with access to equal education by providing scholarship and voluntary teaching.

Qinshan Nuclear Power Constantly Offers Support to Students in Need

The voluntary team of Guo Mingyi from Environment Emergency Department of Qinshan Nuclear Power offered paired support and assistance to students in Qinshan Primary School and regularly sent study articles and care. So far, they have been offering warm support to the students for five years.

Jiangsu Nuclear Power Offers "Tianwan Nuclear Power Spring Bud Scholarship" to Outstanding Students

Tianwan Nuclear Power Station inputs fund and energy to community educational development for years in order to aid students and promote their development in an all-round way. Since 2015, a total of 221 students received "Tianwan Nuclear Power Spring Bud Scholarship" and 8 of them received the scholarship for 5 consecutive times. This effectively stimulated the students' initiative for studying hard.



Tianwan Nuclear Power granting scholarship to students

Aid Students through "Autumn Grant"

In order to help students in need with access to equal education, Fuqing Nuclear Power subsidized college students in poverty for finishing schooling through the "Autumn Grant" activity. By the end of 2017, it subsidized 84 person-times of college students in total with RMB252,000 input.

Volunteers of Zhangzhou Energy Teach at Baishi Primary School

In order to improve the shortage of teaching resources and teachers in Baishi Primary School located in remote mountainous area, Zhangzhou Energy set up a voluntary team to teach at the school every week, so as to enrich knowledge and broaden horizon of the students, create a loving and warm educational atmosphere and deliver positive energy to the society. On July 27, the voluntary team celebrated their first anniversary by bringing study articles and extracurricular books and organizing a series of constructive interaction games, enriching the summer vocation of the students. In 2017, over 40 voluntary teaching activities were organized, benefiting 40 students.



Voluntary teaching by Zhangzhou Energy

Care for the Vulnerable

The Company carried forward the traditional Chinese merits of respecting for the elderly, loving for the young, mutual support and fraternity and actively cared for the vulnerable by offering them assistance, so as to pay back to the society for its support for CNNP.

In Jiangsu, volunteers from Tianwan Nuclear Power Station played with children at a language training center for deaf children and listened to the sound of spring together.

In Fuqing, before the Double Ninth Festival, Fuqing Nuclear Power organized over 50 elderly residents in Fuqing International Huacheng Qinghua Community to visit science museum on nuclear power.

In Liaoning, the science promotion team of Liaoning Nuclear Power participated in the elderly fun sports game of Huludao Binhe Community in celebration of the Double Ninth Festival to accompany and warm the elderly residents.

In Zhejiang, Party members of Sanmen Nuclear Power donated goods and materials to Sanmen Home for the Elderly.



Elderly community residents invited to a nuclear power museum during the Double Ninth Festival

Volunteer Activities

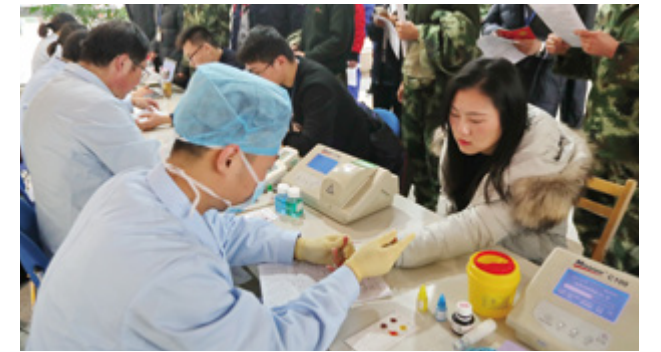
The Company paid great attention to people's livelihood and continued to share its development achievements with the society during its own growth. By organizing various volunteer activities such as donation, blood donation and voluntary services, it passed on the message of charity and promoted social harmony.

Qinshan Nuclear Power Organizes the 2017 Charity Sale

In order to raise fund for students in poverty in Haiyan County, Qinshan Nuclear Power organized a charity sale in September 2017 and actively called upon its employees and community residents to participate and contribute to the society. More than 200 people joined the charity sale to contribute to realizing the sustainability target of "eliminating poverty and starvation".

Jiangsu Nuclear Power Organizes Blood Donation

In order to pay back to the society, Jiangsu Nuclear Power invited a blood collection vehicle of Lianyungang Blood Center to Tianwan Nuclear Power Station and called upon its employees to donate blood without repayment. The employees actively responded and 119 people participated in the activity, donating around 30,000 ml blood in total. Jiangsu Nuclear Power was named the "Advanced Unit for Blood Donation in Lianyungang" for several consecutive years.



Employees donating blood without repayment

Youth Volunteers of Sanmen Nuclear Power Take Action to Protect the Environment

In order to improve the natural landscape around Luo'an Reservoir in Sanmen County and create a harmonious eco-environment, Sanmen Nuclear Power took action to practice the concept of "lucid waters and lush mountains are invaluable assets" and organized an environmental-protection volunteer activity among youth volunteers at Luo'ao Reservoir. They set up environmental-protection signs and promoted knowledge on clean nuclear power and environmental protection to local villagers to highlight the importance of protecting water source among more people.



Youth volunteers of Sanmen Nuclear Power in a volunteer activity on protecting water source

Protect Ancient and Precious Trees and Develop Green Nuclear Power

In the echo to President Xi Jinping's call of "lucid waters and lush mountains are invaluable assets", Hebei Nuclear Power adhered to the concept of "developing nuclear power to benefit local areas" and set up volunteer teams to protect 4 ancient trees aged 500. The volunteers set up promotion signs, regularly fertilized and weeded the trees, popularized history of ancient trees and knowledge on protection, organized "Green and Nuclear Power" science lectures and launched a photographic exhibition on ancient and precious trees.



Volunteers in Hebei Nuclear Power maintaining and protecting the ancient trees

Jiangsu Nuclear Power planting trees at "Tianwan Nuclear Power Youth Forest" in Dayi Mountain in Guanyun County



Spokesperson's
Responsibility
Opinions

“

I am the Chief Technician of China National Nuclear Corporation and the winner of Chinese Skill Award and enjoy the Special Government Allowances of the State Council. I work at the front line of nuclear power maintenance, safeguarding the security and health of nuclear reactors. Innovating and growing in practice, my team and I master complicated maintenance technologies under the high-radiation environment of nuclear reactors, escort the development of Chinese nuclear power undertakings and bring nuclear maintenance of China to the advanced level in the world. In the future, I will remain true to my original aspiration, firmly guard and carry forward the glory of the country and shine the "CNNC, Name Card of the Nation".

”

He Shaohua

Operation and Maintenance Division No.1 of CNNC

Outlook

2018 marks the 10th anniversary of CNNP. We will “remain true to our original aspiration and keep our mission firmly in mind” and comprehensively carry out Xi Jinping’s thoughts on socialism with Chinese Characteristics for a new era. Under the “large-scale, standardization, internationalization” strategic guidance, we will focus on the 3655 operation and management system to better perform political, safety, economic, environmental and social responsibilities, striving to grow into a first-class nuclear energy enterprise in the new era.

Better Perform Political Responsibility

We will arm our mind and guide our practice with the spirit of the 19th CPC National Congress, make great efforts in implementation, seek breakthrough in overcoming difficulties and proactively shoulder the historical mission of empowering the country with nuclear power. We will safeguard the “Glory of the Country”, polish the “Name Card of the Country” and facilitate realization of the CNNC dream and the Chinese dream with CNNP dream.

Better Perform Safety Responsibility

Focusing on safe operation, we will further enhance safety management and standardization, reduce unplanned outage, defects and safety hazards, strengthen safety supervision and improve equipment reliability, so as to augment the ability in safe operation.

Better Perform Economic Responsibility

We will improve configuration efficiency of production factors, rely on innovation in technology and system to increase the input/output efficiency of all factors, streamline systems, reduce cost and increase benefit, so as to realize continuous growth of safe power generation.

Better Perform Environmental Responsibility

We will continuously improve the environmental management system, enhance protection of eco-system and bio-diversity and advocate resource conservation and green office to contribute to building of beautiful China.

Better Perform Social Responsibility

Always putting people first, we will perfect the growth mechanism of employees, care for their life and further press ahead with targeted poverty reduction and public welfare.



Appendix

Appendix 1 Explanation

Nuclear energy	Nuclear energy (or atomic energy) is the energy released from the atomic nucleus through mass conversion, in line with Albert Einstein's equation $E=mc^2$, wherein, e = energy, m = mass, and c = constant of light velocity.	IAEA	Abbreviation of International Atomic Energy Agency. Founded in 1957 and headquartered in Vienna, Austria. IAEA keeps a close relationship with the United Nations, and serves as a platform for scientific and technical cooperation of all countries in the field of atomic energy.
Nuclear power	Nuclear power is a way of electricity generation by using the thermal energy released by nuclear fission in nuclear reactors.	Equivalent dose	A product of multiplying radiation weighting factor by the average dose absorbed by tissues or organs, with the unit of sievert (Sv).
Pressurized water reactor	A nuclear reactor in which water is not boiling, with pressurized light water (ordinary water) as coolant and moderator.	Millisievert	International unit; used to measure the effective dose of radiation and reflects the degree of personal injury due to exposure to ionizing radiation.
Heavy water reactor	A nuclear reactor, using tritium as moderator, with natural uranium used as its fuel directly, and water or tritium water coolant, is divided into two types by pressure vessel and pressure pipe respectively.	Absorbed dose	Volume of radiation energy absorbed by unit mass of tissue or organ.
Reactor year	One reactor year equals to one year of operation for one reactor in nuclear power plant.	Gy	International unit of absorbed dose, $1\text{Gy}=1\text{J/Kg}$, meaning the energy generated by radiation to tissues or organs of a kilogram is one joule.
WANO	Abbreviation of the World Association of Nuclear Operators, which was founded in 1989 in Moscow.	Effective dose	Effective dose equivalent is the sum of product of the appropriate tissue weight factor and the average dose equivalent acceptable to all organs and tissues of the human body under the condition of stochastic effect as the radiation effect of human tissue or organ, and of inhomogeneous exposure of the whole body.
WANO performance indicators	WANO organized the establishment of a series of indicators to evaluate all member power stations. Each member can objectively compare with other power plants by performance indicator ranking.	Environmental background	Environmental factors in unpolluted natural environment, which includes original basic chemical composition and energy distribution of environmental factors such as atmosphere, water, soil and biology during their natural formation and development before the disturbance from human activities.
Capacity factor	It is the ratio between the power capacity actually generated by a unit within a certain period and the power capacity calculated by nameplate capacity, and it reflects the safety operation and management level of a unit.	Bq	With a full name of "Becquerel" in French. It is an SI derived unit of radioactivity, used to measure radioactive materials or radioactive sources. GBq is equivalent to 10^9 Bq; TBq is equivalent to 10^{12} Bq.
INPO	Abbreviation of Institute of Nuclear Power Operations which was founded in 1979 after the Three Mile Island accident to promote the information exchange, share the experience of operating nuclear power plants, periodically assess nuclear power plants, establish performance goals and help train personnel for nuclear power plants.		

Contributions to Sustainable Development Goals

Sustainable Development Goals (SDGs)	CNNP's Action Framework	CNNP's Measures and Actions
Goal 1 End poverty in all its forms everywhere	Push forward targeted poverty reduction and elimination to help the country end poverty by 2020	<ul style="list-style-type: none"> Sponsored summer camp for 102 teachers and students in Tongxin County in Ningxia and Shizhu County in Chongqing, two national-level poverty-stricken counties. Helped Xiaodong Village reduce poverty.
Goal 2 End hunger, achieve food security, improve nutrition and promote sustainable agriculture	—	—
Goal 3 Ensure healthy lives and promote wellbeing for all at all ages	Attach importance to employees' physical and psychological well-being, and put in place the occupational health and safety management system as well as occupational disease prevention and control accountability system	<ul style="list-style-type: none"> Established staff health records and organized regular physical examinations for all employees. Established the "Soul's Harbor Workshop" and provided psychological counseling service for employees.
Goal 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Provide strong support for culture and education, and improve local educational conditions through multiple channels and targeted measures such as setting up scholarships; pay high attention to the education of children from impoverished families, and provide grants to help them complete their education	<ul style="list-style-type: none"> Jiangsu Nuclear Power set up the Tianwan Nuclear Power Spring Bud Scholarship and Tianwan Nuclear Power Spring Bud Grant to help poor students complete their education. Liaoning Nuclear Power made donations to students in poverty. Qinshan Nuclear Power offered support to students in need.
Goal 5 Achieve gender equality and empower all women and girls	Ensure equal pay for equal work for male and female employees, provide benefits for nursing mothers, and support the career development of female employees	<ul style="list-style-type: none"> Organized special activities for female employees such as the celebration of International Women's Day.
Goal 6 Ensure availability and sustainable management of water and sanitation for all	Emphasize efficient use and management of water resources, strengthen the maintenance of water supply systems, and ensure green construction and clean operation of nuclear power stations to create a livable environment for residents nearby	<ul style="list-style-type: none"> Used recycled water from sewage treatment stations for landscape irrigation through sprinkler systems. Monitored factors such as noise, dust, soil loss, radiation, domestic sewage and industrial sewage around nuclear power plants.
Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all	Follow the national energy development strategy and planning, steadily expand nuclear power generating capacity, and ensure reliable power supply	<ul style="list-style-type: none"> Innovatively proposed the 3655 operation management system and promoted new energy development and building of the operation management platform. Reserved 5 MKW new energy and 0.4 MKW new energy projects were under approval.
Goal 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Drive the development of partners in the nuclear power industry and local economy to achieve common development; provide equal employment opportunities regardless of race, religion, region and color	<ul style="list-style-type: none"> Formed nuclear power industry alliance, provided energy support for local economic development and promoted industry clusters.
Goal 9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Strengthen safety management and control throughout the process of nuclear power projects including project design, equipment manufacturing, construction, installation and commissioning; boost scientific and technological innovation	<ul style="list-style-type: none"> Held the "Year of Management Improvement on Nuclear Power Safety" event. Invited WANO and China Nuclear Energy Association for security evaluation over subsidiary nuclear power stations.

Sustainable Development Goals (SDGs)	CNNP's Action Framework	CNNP's Measures and Actions
Goal 10 Reduce income inequality within and among countries	—	—
Goal 11 Make cities and human settlements inclusive, safe, resilient and sustainable	Place nuclear security above everything else, manage nuclear security with a high sense of mission and responsibility, and ensure the safe operation of nuclear power stations	<ul style="list-style-type: none"> On the basis of the "Year of Management Improvement on Nuclear Power Safety" event, added two parts in contractor management and safe production standardization to ensure construction quality of nuclear power stations.
Goal 12 Ensure sustainable consumption and production patterns	Take "provide safe and efficient nuclear power, and create a clean, low-carbon living environment" as corporate mission, and integrate environmental protection concept into the process of nuclear power plant site selection, construction and operation	<ul style="list-style-type: none"> Conducted self-evaluation according to the ISO 14000 environmental management standards. Constantly improved nuclear power generation capacity, with accumulative power generation reaching 717.5 billion kWh, equivalent to a reduction of 287 million tons of standard coal consumption.
Goal 13 Take urgent actions to combat climate change and its impacts	Establish a sound environmental management system and promote energy conservation and emission reduction in an efficient manner	<ul style="list-style-type: none"> Accumulative power output exceeded 717.5 billion kWh, equivalent to planting 1.96 million hectares of forest. Treated gaseous waste by dedicated treatment units inside nuclear islands, and then discharged the waste after the tested samples were found to meet due standards.
Goal 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development	<ul style="list-style-type: none"> Pay high attention to biodiversity protection, constantly strengthen cooperation with animal and plant research institutions, and keep a close eye on ecological balance in surrounding areas of nuclear power stations 	<ul style="list-style-type: none"> Promoted member units to preserve fishing resources. Zhangzhou Energy conducted 5 activities in total and released a total of 4 million large yellow croakers, 500,000 bighead carps, 317 million young shrimps of Penaeus penicillatus, 400,000 Epinephelus coioides and 833,400 chubs.
Goal 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Pay attention to soil and water conservation and nuclear power station landscaping, and take various measures to protect ecosystem	<ul style="list-style-type: none"> Established dedicated soil and water conservation organizations, enacted soil and water conservation monitoring and supervision plan and implementation rules and took actions.
Goal 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Comprehensively disclose financial and non-financial information, increase transparency and strengthen communication with stakeholders; take anti-corruption and anti-bribery as core contents of corporate governance	<ul style="list-style-type: none"> Released the Public Communication Whitepaper. Strengthened efforts in improving Party conduct and upholding integrity.
Goal 17 Strengthen the means of implementation and revitalize the global partnership for sustainable development	Carry out the "going global" initiative and "internationalization" task, undertake overseas development business capitalizing on our expertise in nuclear power, and cooperate with various countries and regions	<ul style="list-style-type: none"> Provided knowledge and skill training on nuclear power for Pakistan, UAE, Saudi Arabia, League of Arab States, Sudan, France, Malaysia and South Korea and built up one and another national name card along the "Belt and Road".

Appendix 3 GRI G4 Indicator Index

General Standard Disclosures	GRI Index	Page	External Assurance	General Standard Disclosures	GRI Index	Page	External Assurance
Strategy and analysis	G4-1	P2/P3	No	Governance	G4-34	P8	No
	G4-2	P11	No	Ethics and integrity	G4-56	P6/P11	No
Organization profile	G4-3	P4	No	Economics	G4-EC1	P10/P46-P50	No
	G4-4	P4	No		G4-EC2	N/A	No
	G4-5	P4	No		G4-EC3	No statistics available	No
	G4-6	N/A	No		G4-EC4	No statistics available	No
	G4-7	P4	No		G4-EC5	No statistics available	No
	G4-8	P4	No		G4-EC6	No statistics available	No
	G4-9	P4	No		G4-EC7	P58/P59/P66	No
	G4-10	P62	No		G4-EC8	P58-P61/P66-P69	No
	G4-11	N/A	No	Environment	G4-EN1	P54	No
	G4-12	P54	No		G4-EN2	No statistics available	No
	G4-13	P4/P5	No		G4-EN3	N/A	No
	G4-14	P10	No		G4-EN4	P37	No
	G4-15	P76/P77	No		G4-EN5	No statistics available	No
	G4-16	P33	No		G4-EN6	P36/P37	No
Identified material aspects and boundaries	G4-17	Inside front cover	No		G4-EN7	N/A	No
	G4-18	P13	No	G4-EN8	No statistics available	No	
	G4-19	P14	No	G4-EN9	No statistics available	No	
	G4-20	P14	No	G4-EN10	No statistics available	No	
	G4-21	P14	No	G4-EN11	P42	No	
	G4-22	inside front cover, no revision during the reporting period	No	G4-EN12	P42	No	
	G4-23	inside front cover, no major change during the reporting period	No	G4-EN13	P42	No	
Stakeholder engagement	G4-24	P15	No	G4-EN14	No statistics available	No	
	G4-25	P15	No	G4-EN15	N/A	No	
	G4-26	P15	No	G4-EN16	N/A	No	
	G4-27	P15	No	G4-EN17	N/A	No	
	G4-28	Inside front cover	No	G4-EN18	P36/P37	No	
Report profile	G4-29	Inside front cover	No	G4-EN19	P36/P37	No	
	G4-30	Inside front cover	No	G4-EN20	No statistics available	No	
	G4-31	Inside front cover	No	G4-EN21	N/A	No	
	G4-32	P78/P79	No				
	G4-33	N/A	No				

General Standard Disclosures	GRI Index	Page	External Assurance	General Standard Disclosures	GRI Index	Page	External Assurance	
Environment	G4-EN22	P40	No	Human rights	G4-HR3	N/A	No	
	G4-EN23	P40	No		G4-HR4	N/A	No	
	G4-EN24	N/A	No		G4-HR5	N/A	No	
	G4-EN25	No statistics available	No		G4-HR6	N/A	No	
	G4-EN26	N/A	No		G4-HR7	N/A	No	
	G4-EN27	N/A	No		G4-HR8	N/A	No	
	G4-EN28	N/A	No		G4-HR9	No statistics available	No	
	G4-EN29	N/A	No		G4-HR10	No statistics available	No	
	G4-EN30	N/A	No		G4-HR11	No statistics available	No	
	G4-EN31	No statistics available	No		G4-HR12	No statistics available	No	
	G4-EN32	P54	No		Society	G4-SO1	P58-P61/P67-P69	No
	G4-EN33	No statistics available	No			G4-SO2	No statistics available	No
	G4-EN34	No statistics available	No	G4-SO3		No statistics available	No	
	Labor practices and decent work	G4-LA1	P62/P63	No		G4-SO4	No statistics available	No
G4-LA2		P62/P63	No	G4-SO5		No statistics available	No	
G4-LA3		P64/P65	No	G4-SO6		P66	No	
G4-LA4		N/A	No	G4-SO7		N/A	No	
G4-LA5		P62/P63	No	G4-SO8		N/A	No	
G4-LA6		No statistics available	No	G4-SO9		No statistics available	No	
G4-LA7		No statistics available	No	Product responsibility	G4-S10	P50	No	
G4-LA8		N/A	No		G4-S11	No statistics available	No	
G4-LA9	P56	No	G4-PR1		N/A	No		
G4-LA10	P56	No	G4-PR2		N/A	No		
G4-LA11	No statistics available	No	G4-PR3		N/A	No		
G4-LA12	P54/P55	No	G4-PR4		N/A	No		
G4-LA13	No statistics available	No	G4-PR5		N/A	No		
G4-LA14	No statistics available	No	G4-PR6		N/A	No		
G4-LA15	No statistics available	No	G4-PR7		N/A	No		
G4-LA16	N/A	No	G4-PR8	N/A	No			
Human rights	G4-HR1	P50	No	G4-PR9	N/A	No		
	G4-HR2	N/A	No					

Appendix 4 Expert Comments

The 2017 Social Responsibility Report of China National Nuclear Power Co., Ltd. is the sixth CSR report issued by CNNP. The report comprehensively reflects the practice and achievements of CNNP in fulfilling responsibilities with clear logic and detailed content. It can be seen from the report that CNNP constantly deepens and improves its social responsibility system, not only carrying forward previous excellent projects, but also making explorations in the new era. Several highlights of innovation are displayed as follows.

First, management innovation. The report shows CNNP's achievements in management innovation in an all-round way. CNNP innovatively proposes the "3655" operational management system. Centered on the strategies of large-scale development, standardization and internationalization, the Company integrates social responsibility management into business, performs its social responsibility comprehensively and continuously promotes safe, effective and clean development of nuclear power in China in top-level design for corporate management.

Second, form innovation. The section "Message from Spokesman on Responsibility" is included in the report for the first time, vividly introducing CNNP's noticeable achievements from the perspective of an employee representative in key sectors and fully displaying the atmosphere of "social responsibility performed by all". The section "Focus on Social Responsibility" is included to integrate responsibility management into safety, environment, economy and culture, thoroughly reflecting the responsibility performance of a central enterprise and the brand image of a major power.

Third, channel innovation. CNNP constantly expands channels for performing social responsibility. On the basis of social responsibility report, it innovates in modes of operation and communication, establishes the communication system with stakeholders, uses innovative ways for popularizing science, issues the first Public Communication Guide of CNNP and sets up China's largest science museum on nuclear power. In doing so, it shows its sincerity to the public and substantially safeguards stakeholders' right to know, supervise and participate.

As a leading player in the nuclear power industry and also in corporate social responsibility in China, CNNP hopes to continue to give full play to its professional advantages, so as to lead the industrial development, build up the name card of China and contribute more to sustainability of humankind and the society.

Cheng Duosheng

Director of Enterprise Management Modernization Office, China Enterprise Confederation

Appendix 5 Relevant Reports and Publications



CNNP System of Culture Excellence



CNNP Employee Code of Conduct



CNNP Training Material on Culture Excellence



Redefining Safety



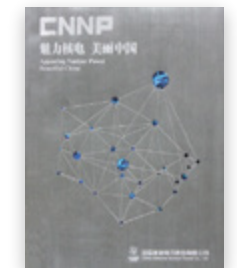
CNNP's 10 Principles of Excellent Nuclear Safety Culture



CNNP Story



Visual Image Recognition Manual of CNNP



Publicity Pamphlets of CNNP



Nuclear Power Tide



Ideals and Culture



Taiwan Nuclear Power Plant



Youth of Hainan Nuclear Power



Story of Fuqing Nuclear Power



Growth with Hainan Nuclear Power



Youth of Hainan Nuclear Power

Appendix 6 Feedback from Readers

Dear readers,

Thank you for reading our report!

This is the sixth Corporate Social Responsibility Report that we have published. We look forward to your opinions and recommendations to help us improve in the future.

Please answer the following questions and fax the table to 010-6855 5928 or mail it to us.

Please tick ✓ the appropriate answer.

	Yes	Partially	No
Do you think the report highlights our economic, social and environmental work and our significant impacts?			
Do you think the information and indicators provided in the report are clear, accurate and complete?			
Do you think arrangement of the content and style of the report are clear and help with your reading and understanding of the report?			

Open questions:

Which part of the report are you most interested in?

What information do you think needs to be provided about CNNP that is not provided in the report?

What are your recommendations for our future social responsibility reports?

If you don't mind, please provide us with the following information:

Name: _____ Company: _____

Tel: _____ E-mail: _____

Address: _____



Scan the code to give us your feedback on the report online!

CNNP

Name Card of China



China National Nuclear Power Co., Ltd.

Add: No.1, Nansixiang, Sanlihe, Xicheng District, Beijing

Postal Code: 100045

Tel: 010-8357 6401

Fax: 010-6855 5928

Email: cnp@cnp.com.cn



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