



中国广核电力股份有限公司

CGN Power Co., Ltd. *

(A joint stock company incorporated in the People's Republic of China with limited liability)

H-share Stock Code : 1816
A-share Stock Code : 003816



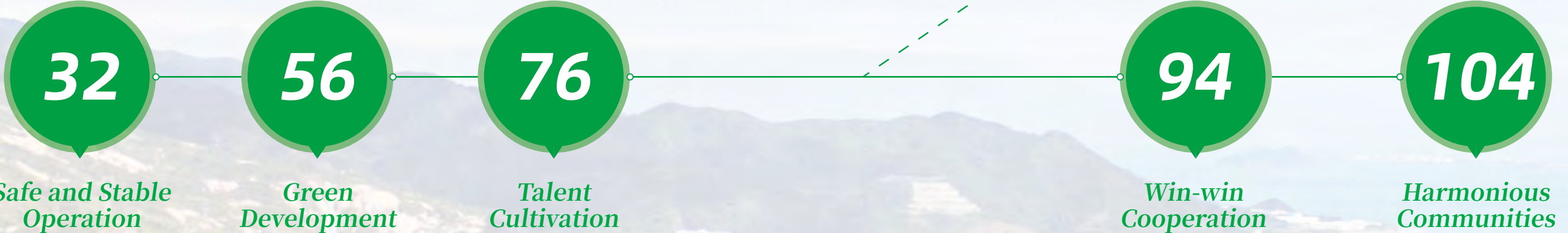
2021 CGN Power Co., Ltd*

Environmental, Social and Governance Report

* For identification purpose only

Contents

About This Report	4	CSR Feature 1: Fighting COVID-19 and Securing Power Supply	28	Outlook 2022	112
About Us	6	Guarding the Line of Defense against COVID-19	28	Independent Assurance Report	113
Our Business	8	Securing Power Supply	29	Key Performance Indicators	116
Corporate Governance	11			Contribution to the UN SDGs	119
Our Responsibilities	19			ESG Index	120
Our 2021	25			Feedback Form	124



Safety Management	34	Response to Climate Change	58	Employee Care	78	Strengthening Supply Chain	96	Strengthening Community Communication	106
Safe and Stable Operation	40	Environmental Management	60	Occupational Health	83	ManagementImproving Performance of Suppliers	100	Boosting Common Prosperity	109
Building Quality Construction	48	Pollutant Emissions Reduction	62	Employee Development	87	Fostering Industry Development	102	Giving Back to the Community	111
Guarding Information Security	50	Efficient Use of Resources	68						
Leading Nuclear Power Innovation	51	Green Nuclear Power Ecology	70						



About This Report

This is the seventh Environmental, Social and Governance (**ESG**) report published by CGN Power Co., Ltd. By openly and transparently presenting our ESG performance in 2021, we aim to disclose our sustainability vision, strategy and practices to stakeholders in a more comprehensive and objective manner, and facilitate their understanding of our thoughts and practices on corporate social responsibility.

Reporting Period

This Report covers data and information of the Company, our subsidiaries and major affiliated companies from January 1, 2021 to December 31, 2021. The reporting coverage remains unchanged compared with that of 2020.

In order to keep the report continuity and comparability, some information in this Report will be dated back to previous years or refer to later years. If applicable, historical data will also be presented.

Reporting Standards

This Report is prepared in accordance with the Appendix 27 Environmental, Social and Governance Reporting Guide of the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited ("**Listing Rules**") and the Shenzhen Stock Exchange(**SZSE**)'s *Guidelines No. 1 for Self-Regulation of Listed Companies- Standardized Operation of Companies Listed on the Main Board and Self-discipline Supervision Guide for Listed Companies No. 1 - Business Handling*. In strict compliance with all "comply or explain" provisions in the *Environmental, Social and Governance Reporting Guide*, we prepare this report based on reporting principles of materiality, quantitative, balance and consistency and disclose climate related issues with reference to the *Guidance on Climate Disclosure* of the Stock Exchange of Hong Kong Limited(**SEHK**).

This Report also strictly adheres to the relevant requirements of SZSE to disclose our fulfillment of social responsibility. We also refer to the reporting standards or principles including the *GRI Sustainability Reporting Standards* ("**GRI Standards**") issued by Global Reporting Initiative (GRI), the United Nations Global Compact, *ISO 26000: 2010 Guidance on Social Responsibility* of the International Organization for Standardization(ISO), the *Guidelines to the State-owned Enterprises Directly under the Central Government on Fulfilling Corporate Social Responsibilities* of the State-owned Assets Supervision and Administration Commission of the State Council(**SASAC**), the *Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprise (CASS-CSR3.0) for Electric Utilities* and the *Basic Framework of the Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprise (CASS-CSR4.0)* of Chinese Academy of Social Sciences.

Name Description

For better expression, CGN Power Co., Ltd. in this Report is also expressed as "**CGN Power**", the "**Company**", or "**We**". CGN Power and its subsidiaries are also expressed as the "**Group**". Unless otherwise defined, the terms used in this Report shall have the same meanings as defined in the H-share *Annual Report 2020* published by the Company on April 8, 2021.

Reliability and Assurance

The contents of this Report are compiled from internal documents, statistical reports or relevant public information. The Company assures that the contents of this Report, for which the Company accepts full responsibility for its truthfulness, accuracy and completeness, are free of any false statement, misleading representations or material omissions.

To ensure truthfulness and reliability, this Report has been submitted to Ernst & Young Hua Ming LLP (Special General Partnership) for a third-party assurance, which was conducted in accordance with the *International Standard on Assurance Engagements 3000 (Revised): Assurance Engagements other than Audits or Reviews of Historical Financial Information ("**ISAE3000**")* with an independent assurance report and statement provided on pages 113 of this Report.

Access to This Report

This Report is available in simplified Chinese, traditional Chinese and English. The electronic copy can be downloaded from the websites of SEHK (www.hkexnews.hk), SZSE (www.szse.cn), CNINFO (www.cninfo.com.cn) and our official website (www.cgnpc.com.cn). For discrepancy between different versions, the simplified Chinese version shall prevail.

Feedback

Your precious opinions and suggestions are critical to our sustainable development. Please contact IR@cgnpc.com.cn if you have further enquiries or any comments and suggestions regarding this Report and sustainable development of the Group.

About Us



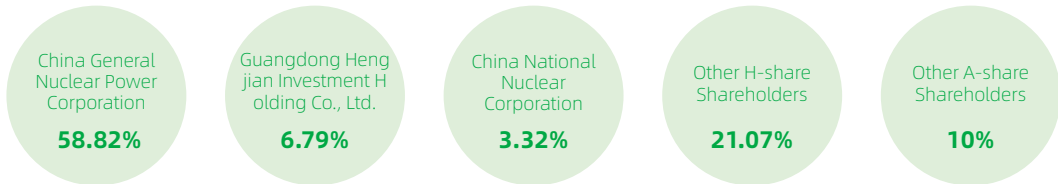
Our Business

CGN Power (SEHK stock code: 1816, SZSE stock code: 003816) was incorporated on March 25, 2014. Its main businesses include construction, operation and management of nuclear power plants (**NPPs**), nuclear power sales, and management of design and R&D at NPPs. After the H-share were officially listed on the main board of SEHK in December, 2014, CGN Power issued its A-share and listed on SZSE in August, 2019, becoming the first nuclear power company dually listed in A-share and H-share markets. It is also the first listed company in the world with only nuclear power generation business.

Upon the completion of Daya Bay NPP, the Company has accumulated rich experiences through introduction, digestion, assimilation and innovation in nuclear power construction and operation for more than 30 years. The Company has established professional systems in nuclear power maintenance and operation, design & construction, R&D and personnel training in line with international practices. Over the decades, it has developed the ability to simultaneously construct, operate and manage multiple nuclear power projects in different regions and bases across the PRC. The Company currently manages 8 nuclear power bases, 25 units in service and 7 units under construction¹, with a total installed capacity of more than 35 GW.

CGN Power continues developing nuclear power efficiently on the basis of safety. With safe, economical and reliable power supply, we strive to become a leader in the development and application of new nuclear energy technologies, maintain a leading position in domestic nuclear power generation, and improve our competitiveness in the international nuclear power market.

Equity Structure²



Main Affiliated and Associated Companies

Name	China Nuclear Power Operations Co., Ltd. (CGN Operations)	China Nuclear Power Engineering Co.,Ltd. (CNPEC)	China Nuclear Power Technology Research Institute Co., Ltd. (CNPRI)	Suzhou Nuclear Power Research Institute (SNPRI)	Ling Ao Nuclear Power Co., Ltd. (Ling'ao Nuclear)	Lufeng Nuclear Power Co., Ltd. (Lufeng Nuclear)	Power Sales Company
Shareholding ratio	100%	100%	100%	100%	100%	100%	100%

Name	Lingdong Nuclear Power Co., Ltd. (Lingdong Nuclear)	Daya Bay Nuclear Power Operations and Management Co., Ltd. (DNMC)	Guangdong Nuclear Power Joint Venture Co., Ltd. (GNPJVC)	Yangjiang Nuclear Power Co., Ltd. (Yangjiang Nuclear)	Taishan Nuclear Power Co., Ltd. (Taishan Nuclear)	Hongyanhe Nuclear Power Co., Ltd. (Hongyanhe Nuclear)	Fangchenggang Nuclear Power Co., Ltd. (Fangchenggang Nuclear)	Ningde Nuclear Power Co., Ltd. (Ningde Nuclear)
Shareholding ratio	93.14%	87.5%	75%	61.2%	51%	38.14%	36.6%	32.29%

¹ Including units that are under entrusted management
² Equity structure of the company as of December 31, 2021

Business Presence³

25
Nuclear power units in operation

7
Nuclear power units under construction⁴

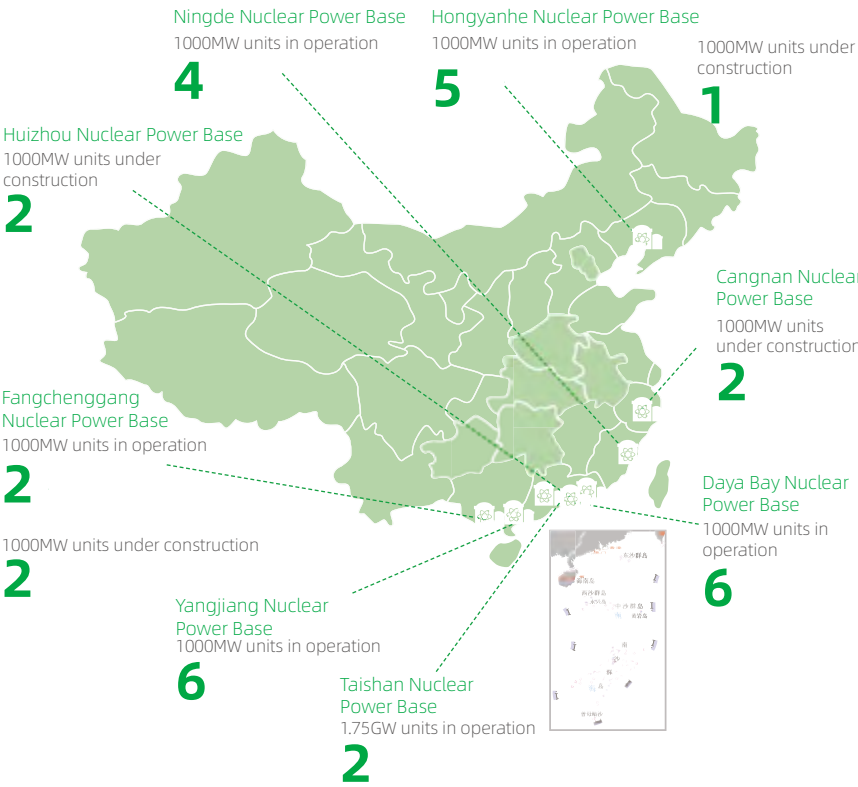
28,261MW
In-service installed capacity

8,299MW
Installed capacity of units under construction

53.01%
CGN Power's share of installed capacity in China

41.01%
CGN Power's share of installed capacity under construction in China

CGN Power keeps investing in the construction of safe and efficient nuclear power units and develops clean nuclear power energy. In July 2021, Hongyanhe Unit 5 was put into commercial operation with high quality. In December 2021, Cangnan Unit 2, which was entrusted by the controlling shareholder, officially started construction. As of the end of 2021, our businesses are as follow.



Nuclear Power Units in Operation and Under Construction

Company	Shareholding	Unit	Model	Commercial Operation date	Installed Capacity(MW)
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Consolidated Subsidiaries					
Ling'ao Nuclear	100%	Ling'ao Unit 1	M310	May 2002	990
		Ling'ao Unit 2	M310	January 2003	990
Lingdong Nuclear	93.14%	Lingdong Unit 1	CPR1000	September 2010	1,087
		Lingdong Unit 2	CPR1000	August 2011	1,087
GNPJVC	75%	Daya Bay Unit 1	M310	February 1994	984
		Daya Bay Unit 2	M310	May 1994	984

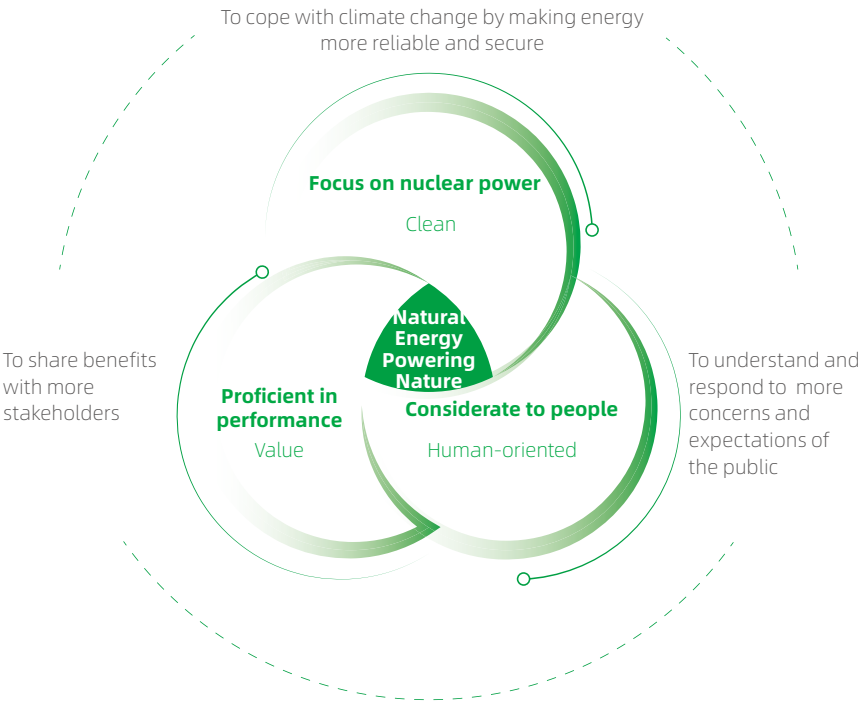
³ For more details on our businesses (excluding nuclear power projects entrusted by the controlling shareholders), please refer to the H-Share *Annual Report 2021*.
⁴ Including units that are under entrusted management

Company	Shareholding	Unit	Model	Commercial Operation date	Installed Capacity(MW)
Consolidated Subsidiaries					
Yangjiang Nuclear	61.2%	Yangjiang Unit 1	CPR1000	March 2014	1,086
		Yangjiang Unit 2	CPR1000	June 2015	1,086
		Yangjiang Unit 3	CPR1000+	January 2016	1,086
		Yangjiang Unit 4	CPR1000+	March 2017	1,086
		Yangjiang Unit 5	ACPR1000	July 2018	1,086
		Yangjiang Unit 6	ACPR1000	July 2019	1,086
Taishan Nuclear	51%	Taishan Unit 1	EPR	December 2018	1,750
		Taishan Unit 2	EPR	September 2019	1,750
Fangchenggang Nuclear	36.6%	Fangchenggang Unit 1	CPR1000	January 2016	1,086
		Fangchenggang Unit 2	CPR1000	October 2016	1,086
		Fangchenggang Unit 3	HPR 1000	Under Construction	1,180
		Fangchenggang Unit 4	HPR 1000	Under Construction	1,180
Ningde Nuclear	32.29%	Ningde Unit 1	CPR1000	April 2013	1,089
		Ningde Unit 2	CPR1000	May 2014	1,089
		Ningde Unit 3	CPR1000	June 2015	1,089
		Ningde Unit 4	CPR1000	July 2016	1,089
Associates					
Hongyanhe Nuclear	38.14%	Hongyanhe Unit 1	CPR1000	June 2013	1,119
		Hongyanhe Unit 2	CPR1000	May 2014	1,119
		Hongyanhe Unit 3	CPR1000	August 2015	1,119
		Hongyanhe Unit 4	CPR1000	June 2016	1,119
		Hongyanhe Unit 5	ACPR1000	July 2021	1,119
		Hongyanhe Unit 6	ACPR1000	Under Construction	1,119
Companies entrusted by the controlling shareholders					
Huizhou Nuclear	Not applicable	Huizhou Unit 1	HPR 1000	Under Construction	1,202
		Huizhou Unit 2	HPR 1000	Under Construction	1,202
Cangnan Nuclear	Not applicable	Cangnan Unit 1	HPR 1000	Under Construction	1,208
		Cangnan Unit 2	HPR 1000	Under Construction	1,208

Corporate Governance

Corporate Philosophy

In line with the philosophy of "Natural Energy Powering Nature", CGN Power keeps safe and steady nuclear power operation, and incorporates sustainable development and ESG principles in the decision-making process and daily operations based on the brand characteristics of low-carbon and green nuclear power. With these efforts, we strive to build a responsible enterprise management model to develop clean energy that facilitates economic and environmental development as well as social progress.



Mission	Vision
Developing Clean Energy to Benefit Mankind	A World-class Nuclear Power Company with Global Competitiveness
Committed to power supply and services by nuclear power generation, we follow the principles of "safety first, quality foremost and pursuit of excellence" and work style of "strict compliance, prudent decision-making, detail-oriented and fact-based approach " to create the best values for customers, shareholders, employees and the society.	Targeting the domestic and international markets, we pursue a higher level of public trust, responsibility, technology, strength, sustainable development and value to become a well-respected world-class nuclear power company.
Basic Principles	Working Style
Safety First, Quality Foremost and Pursuit of Excellence	Strict Compliance Prudent decision-making Detail-oriented Fact-based Approach
We adhere to the basic principles of "safety first, quality foremost and pursuit of excellence" and make them the guiding principle of all decision-making in production and operation management.	"Strict compliance, prudent decision-making, detail-oriented and fact-based approach" is our work style and attitude. Only in this way can we ensure safety, quality, excellence, and realize our mission and vision.

Governance Framework

A good corporate governance structure is the important foundation for the Company to implement sustainability development strategies and improve ESG management. In compliance with the *Company Law of the People's Republic of China*, *Securities Law of the People's Republic of China*, and *Corporate Governance Code set out in Appendix 14 of the Listing Rules* of SEHK, we have developed a series of policies, including the *CGN Power Articles of Association*, with an aim to keep improving the corporate governance structure and management system, maintain a high level of corporate governance management, as well as transparent and efficient operations, and safeguard the rights and interests of shareholders and other stakeholders. Since the listing of A-share in 2019, we have revised the governance regulations in accordance with the relevant regulatory requirements of SEHK and SZSE, improving our corporate governance system on an ongoing basis.

Our internal governance mainly consists of the General Meeting of Shareholders, the Board of Directors and Board committees, the Supervisory Committee, internal auditors as well as management and staff members. In addition, external auditors are engaged to conduct independent reviews of the Company's governance performance to help improve our internal governance continuously. Meanwhile, we maintain long-term and good partnership with our stakeholders (customers, partners, media, regulatory bodies, etc.) to enable sound business development.



Board of Directors

The Board of Directors (**the Board**) is responsible for improving the Company's governance system, formulating an overall strategic plan, setting long-term performance and management targets, assessing business performance and monitoring the management's performance, and identifying risks, so as to maintain a high standard of governance. We have formulated the *Articles of Association* in accordance with the *Guidelines for Standardized Operation of Main Board* of SZSE and the *Corporate Governance Code* set out in Appendix 14 of the *Listing Rules* of SEHK. Based on the latter regulation, the *CGN Power Code of Corporate Governance* is formulated by combining the Company's corporate governance structure and incorporating the relevant content of the *Governance Rules for Listed Companies* issued by the China Securities Regulatory Commission. This code explains how we ensure that the corporate governance meet requirements and expectations through a range of policies, procedures and measures. During the reporting period, we revised the *CGN Power Rules of Procedure of the Board of Directors*, adjusted the composition of the Board, and revised relevant content according to the SZSE standardized operation guidelines, strengthening the standardization of the operation of the Board.

As of the end of 2021
the Company's Board consists of

10
members, of which

4
were independent non-executive
directors,

4
were non-executive directors and

2
were executive directors,

with a high degree of
independence.

According to the *Articles of Association*, the Board has established the Audit and Risk Management Committee, the Remuneration Committee and the Nomination Committee. According to the characteristics of the industry, we also set up the Nuclear Safety Committee to ensure safe and stable operation of the Company, and to steadily improve our ability of corporate governance. Chairmen and members of Audit and Risk Management Committee, Remuneration Committee and Nomination Committee are undertaken by independent non-executive director, and Chairman of Nuclear Safety Committee is undertaken by non-executive director. As of December 31, 2021, the Audit and Risk Management Committee has 1 non-executive director and 2 independent non-executive directors; the Nomination Committee has 1 non-executive director and 2 independent non-executive directors; the Remuneration Committee has 1 non-executive director and 2 independent non-executive directors; the Nuclear Safety Committee has 1 executive director, 3 non-executive directors and 1 independent non-executive director.

According to the *Articles of Association*, Board directors shall be elected at the General Meeting of Shareholders and each of them serves for a term of three years. Upon expiration, the term is renewable through re-election. Candidates for Board directors other than independent non-executive directors shall be nominated by the Board, the Supervisory Committee, or shareholders who individually or jointly holding more than 3% of the Company's voting share, and be elected at the General Meeting of Shareholders.

Aspiring to establish a Board with diverse backgrounds, we have formulated the *Diversity Policy for Board Members* and *Working Rules of the Nomination Committee of the Board of Directors*, and authorized the Nomination Committee to regularly review the policy. The current Board members have backgrounds in power industry management, financial accounting management, audit, macroeconomics, safety management and supervision and management of state-owned enterprises with over 20 years of experience in their respective industries. We take their professional skills, industry experience, age and qualifications into consideration, which embodies our efforts in promoting diversity in many aspects. We practice the principle of diversity and gender equality and accordingly nominate candidates for the Board at the General Meeting of Shareholders, which will be determined by the General Meeting of Shareholders through elections. In 2021, Mr Tang Chi Cheung joined the Board as an independent non-executive director lived in Hong Kong, and Mr Wang Hongjun, General Manager of Guangdong Hengjian Investment Holding Co., Ltd. (shareholder of CGN Power) joined the Board as a new non-executive director of the Company. Their membership makes the professional background and work experience of the board members more diversified.

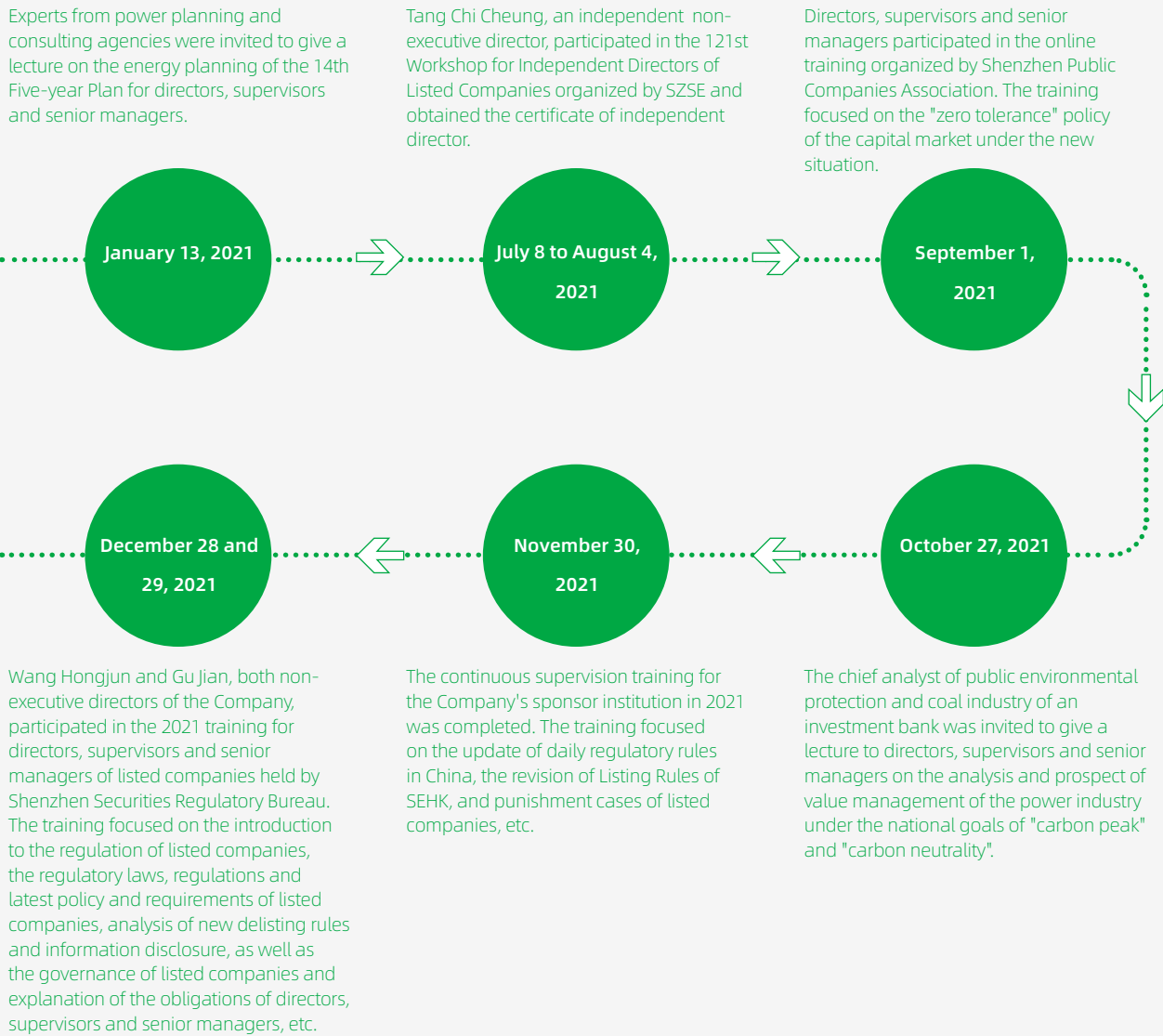
During the reporting period, the Board held 9 meetings, on which 57 resolutions were deliberated and 8 resolutions reviewed. The specialized committees held 17 meetings, on which 36 resolutions were deliberated and 5 resolutions reviewed. For more details on our corporate governance, please refer to the section "Corporate Governance" of the H-Share *Annual Report 2021*.

Board Members

Yang Changli	Chairman of the Board, Non-executive Director, Chairman of Nuclear Safety Committee and member of the Nomination Committee
Gao Ligang	Executive Director and President, and member of Nuclear Safety Committee
Jiang Dajin	Executive Director and Vice President
Shi Bing	Non-executive Director
Wang Hongjun	Non-executive Director, member of Nuclear Safety Committee and member of Remuneration Committee
Gu Jian	Non-executive Director, and member of Nuclear Safety Committee and Audit and Risk Management Committee
Li Fuyou	Independent Non-executive Director, Chairman of Nomination Committee and member of Nuclear Safety Committee
Yang Jiayi	Independent Non-executive Director, Chairman of Audit and Risk Management Committee and member of Remuneration Committee
Xia Ceming	Independent Non-executive Director, Chairman of Remuneration Committee and member of Nomination Committee
Tang Chi Cheung	Independent Non-executive Director and member of Audit and Risk Management Committee

Trainings for Board members

During the reporting period, we organized the Board members to participate in relevant trainings to improve governance efficiency and operation efficiency of the Board.



Standardized Governance

We attach great importance to effective implementation and operability of documents for standardized governance, which guides the Company's corporate governance practices. During the reporting period, we revised and updated documents including the *Articles of Association*, *Rules of Procedure for the Board of Directors*, *Information Disclosure Management Case System*, and *Working Rules of the Nomination Committee of the Board of Directors*, *Regulations on the Management of Raised Fund*, and *Measures for the Regulations of Guarantee*, etc, furthering our corporate governance. For details on the revised corporate governance documents during the reporting period, please refer to the "corporate governance" section of H-Share *Annual Report 2021*.

Risk Management

The ever-changing market, regulatory requirements and other factors have put forward higher requirements for the Company on its risk management capability. We closely focus on the corporate strategy and management theme to continuously enhance our risk management ability, develop a robust risk management culture, and improve our risk management system. We have been incorporated risk management throughout all steps of business processes. In accordance with the risk management provisions of IAEA-TECDOC-1209 and the risk management framework of Committee of Sponsoring Organizations of the Treadway Commission ("**COSO**"), and we include environmental, social, economic, development prospects and other important factors and have established a risk management system under "Unified Leadership and Hierarchical Management", which consists of risk management strategies, risk management organizational function system and risk management information system. A dedicated risk management team is set up analyze and categorize the identified risks through dynamic identification, regular evaluation, and active management, a combination of qualitative and quantitative methods and according to the possibility and degree of risk occurrence. While improving operation efficiency, we adopt risk management strategies such as reduction, evasion, transfer and control, to guide each unit to predict risk in advance during its business process, and transform early warning risks into proactive risk management, which will consolidate the first line of defense for risk management and thus secure healthy and sustainable development of the Company. In addition to risks related to the business and development of the Company, we also pay great attention to the risk identification and management of ESG issues such as construction safety, employee occupational health, industrial safety and fire risks, climate change risks and natural disasters affecting nuclear safety. In the annual *Comprehensive Risk Management Report*, we summarize the work of the past year and put forward ideas, goals, plans and major risk assessments for the next year. The Report would be submitted to the Board for approval after being reviewed by the Audit and Risk Management Committee, ensuring the Board's understanding of and participation in the Company's risk management.

Reasonable risks that are acceptable to the Company must be in line with its development strategy, be fully recognized and managed, and will not cause the following risk situations to the Company:

Subversive impact on the development of the Company	Serious accidents that results in the interruption of operation/supply
Incidents affecting safety and health of employees, contractors and the society	Significant financial loss that results in a damage on the Company's ability on business development or a serious impact on the Company's ability on financial management
Serious violations of laws and external regulations that result in suspension of operations or licenses, or substantial fines	Some behaviors affecting the Company's reputation and brand

To effectively manage risks from various areas such as strategy, finance, market, operation and legality, CGN Power has established an effective and reliable internal control system. In accordance with basic specifications and evaluation guidelines, the internal audit department conducts internal audits for the Company's functional departments, business centers, subsidiaries and major associated companies in aspects of finance, commerce, engineering, production, information transfer, and economic responsibilities, and to check and evaluate the effectiveness of the internal control system's design and operation of all departments. Therefore, our internal control and management is continuously improved. In 2021, the internal audit department carried out special audits on key management areas such as the Company's internal control, production and operation management, business management, R&D management risk management and financial management, and conducted special inspections on matters of concern to the management. The audit results were notified to the senior management, and the annual internal control evaluation report were reviewed by the Audit and Risk Management Committee of the Board and submitted to the Board for approval.

Regarding the major risks and countermeasures identified by CGN Power in business development during the reporting period, please refer to the section "Risk Management Report" in the H-share *Annual Report 2021*.

Compliance Management

To achieve "Comprehensive Coverage, Enhanced Responsibility, Collaboration, Independent and Objective Judgment", we have formed a top-down compliance organizational system covering all business departments, from the governance level to implementation level. The governance level consists of the Board and the Supervisory Committee, the senior executives for compliance management is the management level, and the legal affairs department belongs to the implementation level. All business departments of the Company are responsible for compliance management, and the department head is the person responsible for compliance management of his/her department. Targeting employees, suppliers, customers, external consultants, etc., our compliance management system is composed of compliance management measures, special compliance management regulations, compliance code of duct and compliance management procedures. At the same time, we have established a compliance review mechanism to effectively control compliance risks and regularly evaluate the effectiveness of compliance management to ensure the proper operation of the compliance management operation mechanism through continuous improvement.

During the reporting period, we continued to promote the establishment and improvement of the Group's compliance management system. After comprehensively analyzing our business processes, we further integrated compliance management into the business and embedded compliance reviews into the every process by adhering to the principle of "compliance by self-inspection before the business flows out of the unit, and before the legal relations between the business units and the third-party entities".

In addition, we organize online and offline compliance training courses for different training targets. We include hot topics on compliance into our multi-level and multi-mode trainings for compliance personnel and ordinary employees on publicity of compliance concepts. Besides, we have enhanced the promotion of compliance culture. All these efforts will exert a subtle influence on employees and help create a favorable atmosphere of compliance and integrity.

Case

Special training on the *Personal Information Protection Law*

On November 24, 2021, we organized a special training on the *Personal Information Protection Law* for relevant personnel to strengthen their legal compliance awareness of information security, safeguard the Company's information network security and protect the legitimate rights and interests of our employees. The training interpreted the legal system of personal information protection, especially its framework and key points; offered detailed suggestions for compliance to personal information protection; and addressed practical concerns raised by subsidiaries. This training deepened the participants' understanding on protecting personal information, and further enhanced their risk-prevention capabilities, contributing to the high-quality development of the Group.



Anti-corruption

We focus on institutional and cultural development, and reinforce the use of electronic information system to completely eradicate suspected corruption and violations. In strict accordance with Chinese laws and regulations related to anti-bribery, extortion, fraud and money laundering, including the *Criminal Law*, the *Law for Countering Unfair Competition*, the *Anti-money Laundering Law*, and the *Interim Provisions on Banning Commercial Bribery* issued by State Administration for Industry and Commerce, as well as judicial interpretations including *Several Suggestions Concerning Applicable Law in Handling Criminal Commercial Bribery Cases* and the *Interpretation for Several Suggestions Concerning the Applicable Law in Handling Criminal Corruption and Bribery Cases* issued by the Supreme People's Court and the Supreme People's Procuratorate, etc., we have formulated the Group-wide *Discipline Handbook of Listed Companies and the Implementation Rules of Eight-Point Decision Made by the CPC Central Committee on Improving the Party and Government Conduct*. The two documents clearly stipulate the rules and methods for handling violations of regulations and disciplines.

We promote a better risk prevention and control mechanism of corporate integrity by formulating a strict supervision system and establishing clear reporting channels. The Integrity File Binder and the *Gift Reporting Regulation* have been established to record and dynamically monitor employees' integrity, violations of rules and disciplines during employment. *The Gift Reporting Regulation* requires employees to declare gifts that they cannot refuse or return for any reasons at work to the Company within 15 days upon the receipt of gifts.

To nurture clean employees, the Company has established regulations for supervision and discipline, and formulated working procedures for receiving and handling whistle-blowing and set up secure whistle-blowing channels to make employees and related third parties report any violations to the disciplinary investigation department through calls, in-person visits, or emails with confidentiality. After receiving whistle-blowing reports, the disciplinary investigation department proceeds with proper recording and initiates an internal investigation process while keeping relevant information confidential. If the reported object involves the personnel of the Company, the disciplinary investigation department shall handle the matter in accordance with relevant procedures. If the reported subject is an employee of its subsidiary, he or she will be referred to the disciplinary investigation department of the subsidiary according to procedures.

According to the Company's confidentiality policy, information of whistle-blowing and appealing parties is confidential, and disclosure on privacy of the informant is prohibited. The Company has clarified response requirements and protection provisions for real-name informants in relevant systems and procedures. We will prioritize the handling of real-name informants, and strictly protect real-name informants. If the informant is found to make false accusation or retaliate, we will firmly and seriously hold such informant accountable.

We make efforts to promote the corporate culture of integrity. In 2021, we stepped up our efforts on the reporting mechanism of typical corruption cases and regular warning education to create and strengthen the integrity atmosphere within the Company. In 2021, we organized semi-annual meetings on integrity education to remind employees of keeping integrity. At the meetings, we reported 16 typical cases of employees' violating rules, disciplines and laws in the Company and the subsidiaries, analyzed root causes of these misconducts, and put forward requirements of keeping clean and disciplined for all staff including management personnel as well as key roles in tendering and bidding. A former department deputy manager of Yangjiang Nuclear, committed job-related crimes. We compiled this case into the education material and launched 623 educating activities, covering 16,000 people. These warning measures worked well. We used the Company Intranet, TV stations and diverse new media platforms to make daily publicity and integrity education in a way welcomed by employees. In 2021, we released 13 articles and videos on Party conduct and clean governance on the Company Intranet Column "Window to Integrity", and continued to carry out trainings on cases of violating corporate regulations and disciplines to enhance employees' self-disciplines.

In this reporting period, the Company's integrity system functioned well, and no litigation was filed against the Company or our employees for violations such as bribery, extortion, fraud and money-laundering.

Case

Conference on Party Conduct and Clean Governance and Anti-corruption

In 2021, DNMC, Fangchenggang Nuclear and other subsidiaries held the 2021 Conference on Party Conduct and Clean Governance and Anti-corruption to summarize the work in 2020, and make plans for key work in 2021. The Conference also put forward that Party organizations at all levels and all Party members shall follow the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era; fully implement the guiding principles of the 19th CPC National Congress and the second, third, fourth and fifth plenary sessions of its 19th Central Committee and the fifth plenary session of the 19th Central Commission for Discipline Inspection; and fully implement the requirements of the SASAC and the Conference on Party Conduct and Clean Governance of the Group. Our party members shall strengthen the consciousness of the need to maintain political integrity, think in big-picture terms, follow the leadership core, and keep in alignment with the central Party leadership; stay confident in the path, theory, system, and culture of socialism with Chinese characteristics; uphold General Secretary Xi Jinping's core position on the Party Central Committee and in the Party as a whole, as well as the CPC Central Committee's authority and its centralized, unified leadership; and take coordinated action to prevent employees from corruption. The Company will improve the supervision system and enhance the efficiency of supervision and governance to combat corruption and promote healthy development. We effectively implemented the decisions and requirements of the CPC Central Committee and the resolutions of higher level Party organizations to pursue high-quality development through strict discipline inspections.

Shareholder Communication

18 mid-term results roadshow

Teleconferences held to communicate with 47 investors

29 annual results roadshow meetings held to communicate with 40 investors

5 quarterly and interim results teleconferences held to communicate with 249 analysts and investors

About 740 investors received through on-site investigation and telephone communication

304 investor questions answered through the interactive platform of SZSE

To maximize value of shareholders is our principle. In line with the philosophy of open and transparent business, we continue to enhance interaction with investors to receive their opinions and suggestions, in the hope of safeguarding the rights and interests of investors and creditors, getting the recognition from the market and investors on the Company's value, and promoting healthy development of the capital market.

According to the rights of decision-making prescribed by the *Articles of Association*, the General Meeting of Shareholders is entitled to legally exercise its voting rights on major matters such as operation policies and profit distribution of the Company. All general meetings of shareholders held by the Company have met the requirements of relevant laws and regulations and the *Articles of Association*. In terms of profit distribution, the Company comprehensively considers current-year business performance, future development plans, relevant commitments and other factors, and approves them at the General Meeting of Shareholders to provide stable dividend returns for the Company's shareholders. In 2021, the Company's plan of shareholders' dividend distribution and return for the next five years (2021-2025) was approved by the 2020 General Meeting of Shareholders. It was hoped that on the basis of the dividend distribution ratio in 2020, a moderate increase in the annual dividend distribution ratio will be achieved.

We value the opinions and feedback of shareholders and investors. We keep ongoing and multiple ways of communication with shareholders and investors through roadshows⁵, teleconferences and results announcement conferences. These efforts help us know more about their suggestions or opinions with respect to the Company's development strategy, production and operation. Later, we provide feedback to the Board, management and related departments through our briefings, special reports and other methods, promoting the unity between the Company's development and shareholder value.

Case

2021 Annual Results Announcement

In 2021, we held live-streaming 2020 Annual Results Announcement to facilitate the communication of domestic and foreign investors. A teleconference joined by famous investment bank analysts at home and abroad was held to help investors know what mainly concerns analysts in the capital market and the Company's responses to corresponding issues. Such interactions were helpful for investors' deeper understanding of the Company. To deliver an insightful announcement, we surveyed investors' concerns at the same time. The Company's chairman, president and chief financial officer respectively explained the Company's performance, and replied the investors' key concerns, fully respecting investors' right to know.



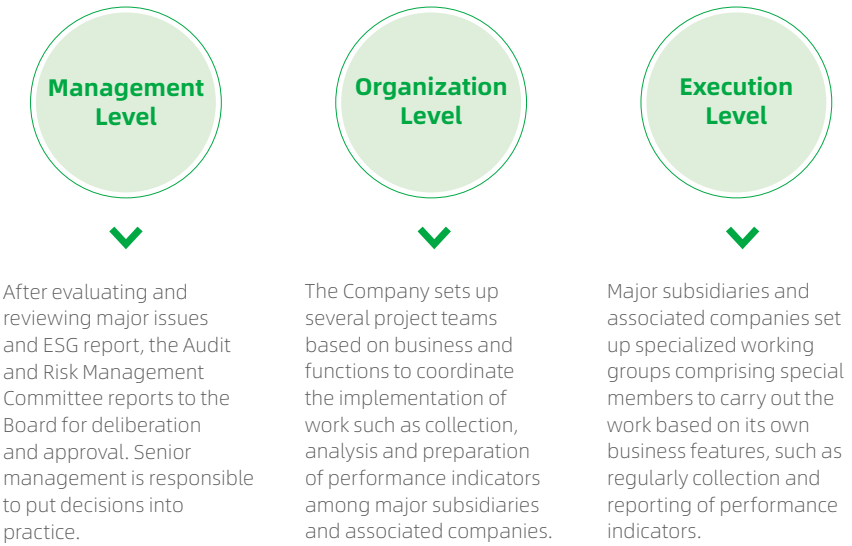
⁵ In 2021, due to COVID-19, there was no reverse roadshow.

Our Responsibilities

ESG Management

We have established the three-tier management system to improve our strategic, standardized and institutionalized sustainability management. We invite experts to provide training on sustainability trends and have taken targeted measures to incorporate relevant disclosure into our daily operation and management according to the reality of each department. By consolidating the three-tier management system, we promote the deep involvement of the management, the coordination between business departments and implementation of ESG indicators monitoring by subordinate units, furthering the ESG management.

We have also established an ESG improvement team responsible for the following issues: internal and external ESG materiality assessments, ESG goal setting, goal analysis, improvement of ESG data collection system, promotion of goal achievements, continuous peer benchmarking, ESG management improvement and ESG disclosure.



Board Announcement on ESG Management

ESG Supervision

The Board regularly receives briefings on ESG topics such as operational and safety management, and puts forward ESG requirements at the Board meetings. During the recess of the Board, Board members will receive monthly corporate management reports, including ESG topics. As the management of the ESG team, the Audit and Risk Management Committee shall report to the Board after reviewing major issues and ESG reports. The Board shall make decisions after deliberation to strengthen its supervision on ESG topics.

ESG Management Principles and Strategies

Adhering to the concept of "Natural Energy Powering Nature", the Board and its subordinate committees integrate ESG topics such as corporate governance, operation, nuclear safety, climate change and social responsibility into the management, deliberation and decision-making processes. The responsibilities of the Audit and Risk Management Committee include ESG risk management. The annual internal control evaluation report shall be submitted to the Board for approval after being reviewed by the Committee to establish an effective and reliable internal control system. The relevant issues of the Nuclear Safety Committee and the concerns and suggestions raised by the Board members also involve ESG topics.

ESG Progress Management

The Board is responsible for improving the Company's governance system, formulating overall strategic plans, setting long-term performance and management objectives, evaluating business performance, supervising management performance and identifying risks to maintain a high governance level. The Board sets ESG key performance objectives according to the *Environmental, Social, and Governance Reporting Guide* issued by the SEHK and the actual situation of the Company, and regularly evaluates the implementation and completion of the objectives to ensure the solid and continuous implementation of ESG policies.

The Board reviews the identification and selection results of ESG material topics through "identification-selection-survey-review", participates in the questionnaire survey of material topics, and selects topics key to the Company's business.

The annual *Comprehensive Risk Management Report* shall be submitted to the Board for approval after being reviewed by the Audit and Risk Management Committee. The Report includes: the summary of risk management work of the last year, and ideas, objectives, plans and major risk assessment of the next year. The Committee regularly supervises and evaluates climate-related risks (such as high temperature and extreme weather) and reports to the Board. The progress and implementation of the Company's Three-year Action Plan on *Safety, Quality and Environment ("SQE")* is reported to the Board and its Nuclear Safety Committee to improve the overall management level and performance in SQE protection.



Stakeholder Communication

Our main stakeholders include government and regulatory bodies, shareholders, customers, suppliers, employees, media, community residents and the public. We attach great importance to the daily communication with stakeholders, and have established a sound stakeholder communication mechanism through regular and continuous communication in various channels, in hope of soliciting and responding to their expectations and concerns. We timely disclose our information on production, operation and development strategy to enhance stakeholders' understanding and recognition of the Company. In addition to daily communication, we also invited stakeholders to have a questionnaire survey during the reporting period to understand their expectations for the Company, and integrated their expectations and concerns into our strategy and operation management, striving to win their support for CGN Power. To disclose our sustainability progress to the internal and external stakeholders in a complete, accurate and objective manner, we have been publishing the *Environmental, Social and Governance Report* annually since 2015. We implement ESG management and actions, and comprehensively carry out the implementation and improvement of ESG topics.

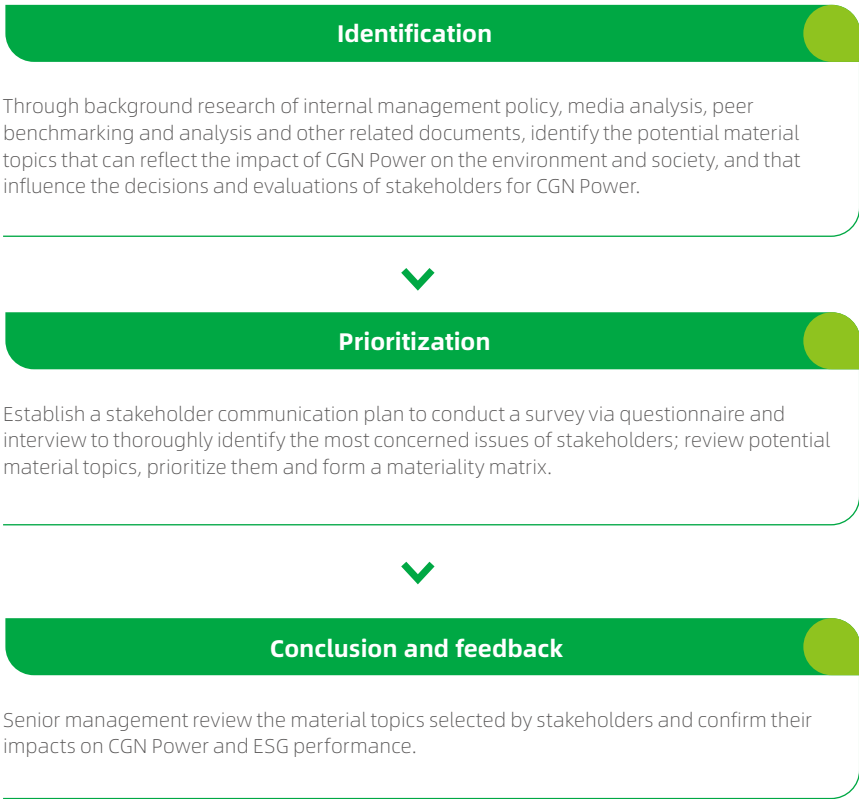
Stakeholders	Expectations and Concerns	Methods of Communication and Response
 Government and Regulatory Authorities	Ensuring nuclear safety Optimizing energy structure Legal compliance and tax payment Value preservation and appreciation of state-owned assets Energy conservation and emission reduction	Compliance with laws and regulations Execution of national energy policies Improvement of corporate governance Supervisory review Regular reporting
 Shareholders and Investors	Constant and steady return Transparent information disclosure Protection of shareholder's rights Enhancement of communication	Timely disclosure of information Regular reporting of operating information Improvement in daily management Various communications activities from time to time
 Customers	Stable supply Quality management and service guarantee	Effective communication Active cooperation for power grid dispatching
 Suppliers and Partners	Commitment fulfillment Open, fair and just procurement Experience sharing	Strategic cooperation Public disclosure of procurement information Regular communication activities
 Employees	Competitive remuneration package Employee health and safety Fair promotion and development Employee care	A healthy working environment Fair promotion channels Strengthening training for employees Caring for distressed employees
 Media	Transparent information disclosure Enhancement of communication	Regular press conferences Interview arrangement Timely disclosure of public information
 Community Residents	Environmental protection in the community Nuclear power operation safety Promoting community development	Community communication meetings Enhancement of environmental monitoring and protection Participation in community construction
 The Public	Charity Public relations Popularization of nuclear power science	Participation in rural vitalization Promotion of employment Education and promotion of nuclear power

Materiality Analysis

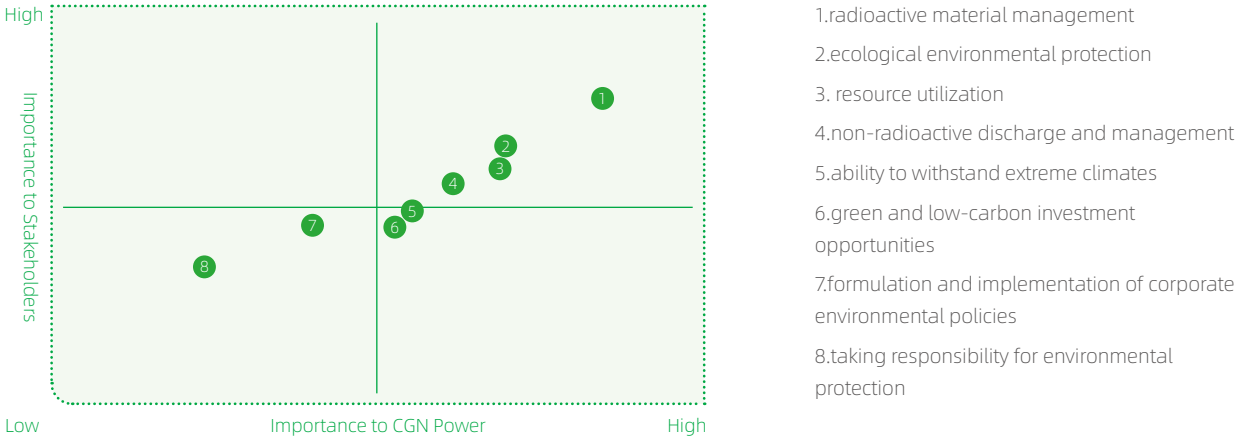
Material topics are those that reflect the significant economic, environmental and social impacts of the Company's business operations, and that reflect expectations from stakeholders. Based on development plans for the industry and for ourselves and the annual business plan, and following the materiality principle, we continuously improve the process of identifying and determining ESG topics, fully disclose material ESG topics, respond to the concerns of stakeholders regarding our CSR fulfillment and strengthen the ESG management and fulfillment in daily operations.

We identify relevant ESG topics based on results of the past materiality assessment, with reference to the disclosure guidelines of SEHK, other international sustainability reporting standards and peer benchmarking analysis. To get the materiality analysis results, we would evaluate and select potential material ESG topics in the reporting period by fully considering the Company's business nature and development strategy, while collecting stakeholder opinions through questionnaires. This questionnaire survey in 2021 involved board directors compared with previous years. According to the analysis of the results, the identification results of material topics by the directors based on the "importance to CGN power's development" are basically consistent with the results of material topics by other stakeholders based on "importance to their vital interests". It helped the Company to better respond to the expectations and demands of stakeholders, strengthen stakeholders' recognition on the Company's efforts in ESG, and promote corporate ESG governance in the ESG management and practices.

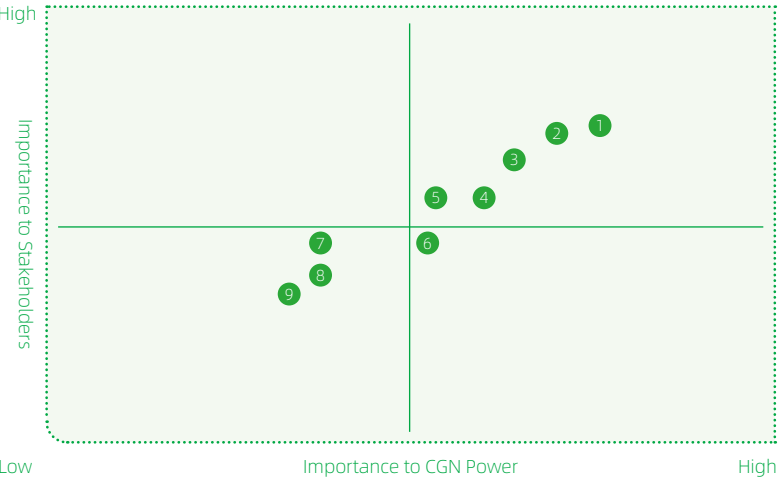
As nuclear power safety is the most vital topic to the Company, it is directly listed as a material topic, and thus is excluded in the scope of the materiality survey. In the evaluation process, we not only consider the impact of topics on the Company and stakeholders, but also take into consideration of their impacts on the economy, environment and society. The results of analysis are then reviewed by the senior management of the Company.



Environmental Materiality Analysis

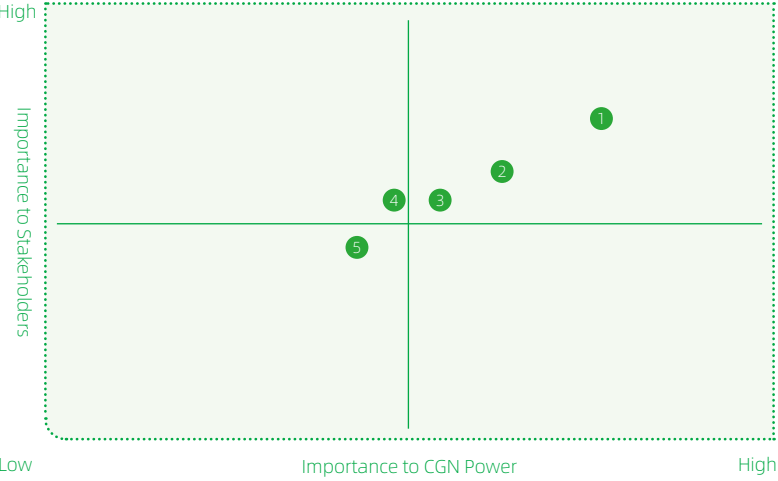


Social Materiality Analysis



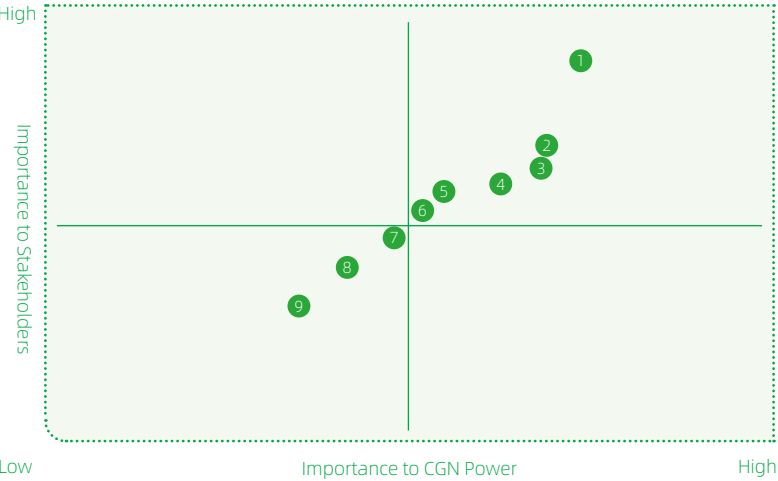
- 1.responsible supply chain management
- 2.transparency and accuracy of public information
- 3.responsible supply chain management
- 4.cybersecurity and data security
- 5.intellectual property protection
- 6.community engagement and contribution
- 7.promoting community development
- 8.international exchanges and cooperation
- 9.the public and media opinion

Governance Materiality Analysis



- 1.corporate governance and risk control
- 2.anti-corruption
- 3.strengthening independent innovations
- 4.risk management of investment projects
- 5.investor relations

Employee Materiality Analysis



- 1.employee compensation and benefits
- 2.occupational health and safety
- 3.employee development and training
- 4.employee incentive mechanism
- 5.work-life balance
- 6.employee satisfaction
- 7.employment and labor rights protection
- 8.diversity and equal opportunities
- 9.labor standards

Our 2021

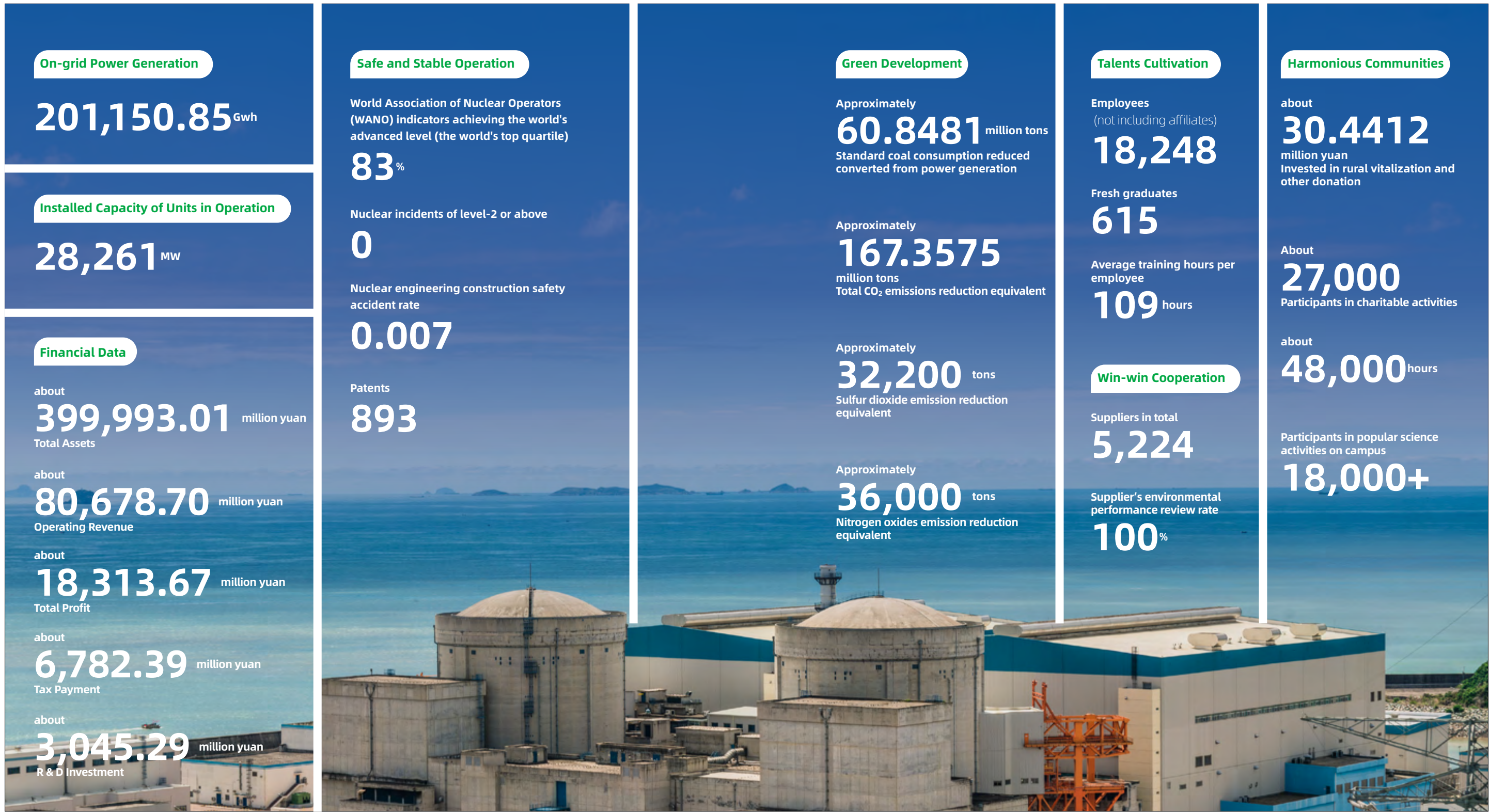
Major Awards 2021

Governance	<p>CGN Power won China Top 100 Enterprises Award 2021.</p> <p>CGN Power was granted Grade A in information disclosure assessment from Shenzhen Stock Exchange</p> <p>CGN Power Annual Report received the LACP Gold Award for the sixth consecutive year and ARC Honor Award for the first time.</p> <p>CGN Power won the Excellence Award in ESG Reporting from the Hong Kong Management Association.</p>
Safe Operation	<p>Hongyanhe Nuclear won the 19th China Quality Award, and its safety culture case was included among the "First Best Practice Cases of Safety Culture Building" by the Ministry of Emergency Management.</p> <p>DNMC was granted the title of Excellent Enterprises in Pollution and Carbon Reduction in Guangdong Province in the first batch.</p>
Safe Engineering	<p>Ningde Nuclear obtained several achievement awards from the engineering construction quality management group in the nuclear industry.</p>
Technological Innovation	<p>DNMC won the first prize of 2021 Electricity Staff Technological Innovation Award.</p> <p>CGN Engineering's three patents won Chinese Patent Excellence Awards.</p> <p>CNPRI's one patent won Nuclear Science and Technology Achievement Award of China Nuclear Society and one patent won Guangdong Patent Golden Award.</p>
Employee	<p>Employees of Ningde Nuclear won the First Prize of National Skills Competition for Individuals.</p> <p>Employees of CGN Operations won the title of China Grand Skill Award.</p>
Society	<p>Daya Bay Nuclear Power Base was granted the Top Ten Science Popularization and Education Bases in Guangdong Province.</p> <p>CNPRI's "Lighthouse Project" was listed as an excellent case of social responsibility of power enterprises in 2021.</p>

Major ESG ratings 2021

International ratings				
S&P ESG rating	FTSE ESG rating	MSCI ESG rating	CDP- Climate Change	Sustainalytics ESG risk index
44	2.40	BB	B ⁻	29.0
Domestic ratings				
Wind ESG rating	Sino-Securities Index ESG rating	Sino-Securities Carbon Neutrality ESG rating	ESG rating of International Institute of Green Finance, CUFE	ESG rating of SynTao Green Finance
A	AA	AAA	A ⁺	A ⁻

Overview of Key Figures 2021



CSR
Feature

Fighting COVID-19 and Securing Power Supply

2021 was an extraordinary year. The global COVID-19 prevention and control situation is still severe, and the domestic thermal coal supply is of shortage. CGN Power implemented the decisions and arrangements of the State Council and the SASAC, and prioritized the routine COVID-19 response and seasonal power supply. We coordinated with employees at all levels to strengthen the routine COVID-19 prevention and control, protecting the health and safety of every employee and guarding defense line against the pandemic. We guaranteed the energy supply, making greater contributions to the sound economic and social development.

Guarding the Line of Defense against COVID-19

Always being prepared for any danger, CGN Power made prevention and control plans based on the latest situation of COVID-19 containment at home and abroad and strictly implemented measures at all levels. All subsidiaries quickly upgraded their pandemic response guidelines for the routine production and disease control to ensure the safe and orderly production and operation as well as stable power supply.

Fulfilling due responsibilities

Each base fulfilled their due responsibilities by setting up special groups for COVID-19 prevention and control. Meetings are held to make containment plans and emphasize the continuous implementation of routine measures to curb COVID-19, ensuring the safe and steady progress of the overall base construction.

Upgrading control requirements

Subsidiaries updated their prevention and control measures based on the latest requirements and the actual situation. The upgraded regulations of regular response to COVID-19 set specific requirements from multiple sides, including employee health management, vaccination, personnel access control, containing COVID-19 in public areas, travelling and meetings, as well as control, quarantine and nucleic acid testing requirements for employees' family members.

Responding rapidly to emergency

After being informed by the local center for disease control that there was a secondary close contact, the Company and its local subsidiaries immediately activated emergency response by organizing emergency teams to conduct epidemiological surveys, nucleic acid testing and quarantines to relevant personnel.



Nucleic acid testing in Yangjiang Nuclear

Protecting the health of employees

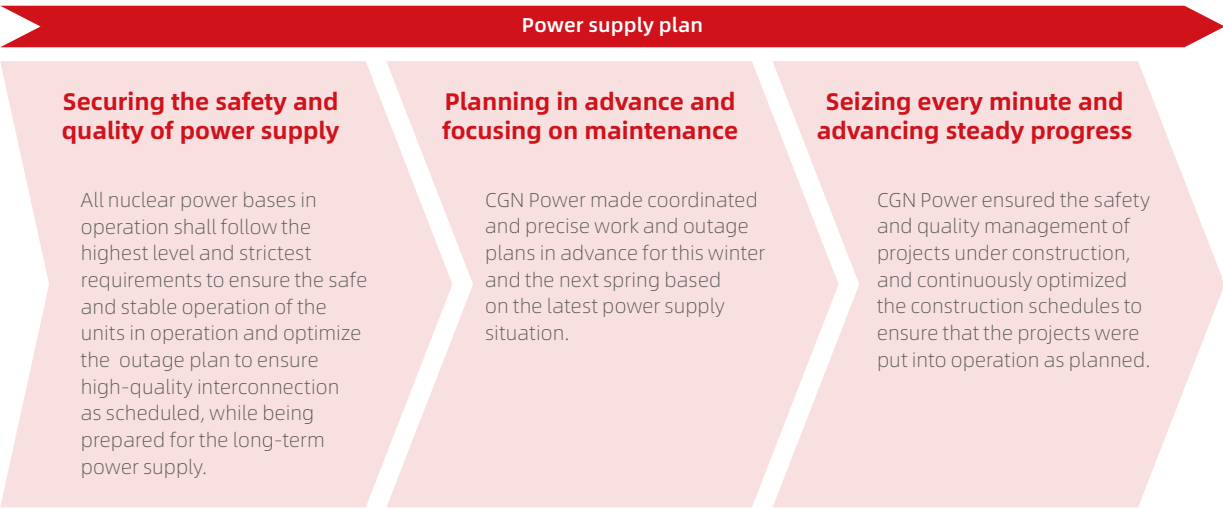
All employees eligible for vaccination were required to get vaccinated as soon as possible. The employee tracking and information reporting system was strictly implemented. Employees who once living in or travelling to medium- and high-risk areas were obligated to ensure their personal protection and take nucleic acid testing as required.



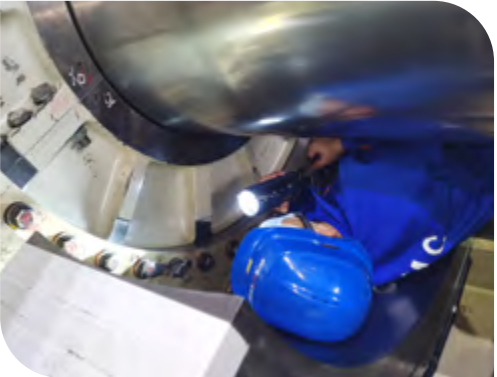
COVID-19 prevention and control measures by Ningde Nuclear

Securing Power Supply

Energy supply matters to the smooth operation of the economy, environmentally friendly development, and people's livelihood. China underwent continued tight energy supply in 2021 due to several factors. CGN Power took multiple measures to secure the power supply of this winter and the next spring with safe, reliable, low-carbon and economical electricity for the society.



Power supply actions



Daya Bay Nuclear Power Base

While strictly implementing the CCM equipment responsibility system and QC responsibility system, the base carried out the outage of the Ling Ao NPP as planned, aiming to complete on time with high quality. The base also completed all other tasks to a high standard, securing the safe and stable operation of the nuclear power units and providing strong support for the economic development of the Guangdong-Hong Kong-Macao Greater Bay Area.

Yangjiang Nuclear Power Base

The base conducted risk and process analysis for each work to ensure the power supply. Pre-job briefings were organized before key tests to guarantee that each work was to be completed, each operation was assigned and each instruction was properly implemented, providing the most basic and solid guarantee for the power supply.





Ningde Nuclear Power Base

The base set up a leading group for power supply and held a special meeting to make a comprehensive power supply plan during this winter and next spring. The base also launched a special winterization action in 2021, checking the preparation of materials and personnel as well as the adjustment of operating parameters due to the dramatic temperature drop, with special follow-up reminders. For this year's cold winter warning, the base had inspected its outdoor instrumentation and pipeline anti-freezing tube in advance to strengthen the protection of insulation materials.

Hongyanhe Nuclear Power Base

The base set up a team to guarantee power supply during this winter and next spring. Professional and technical personnel fully implemented the requirements and plans on ensuring the power and security, and sorted out tasks such as the daily production of units, outage and commissioning. The base also promoted the outage of unit 2, aiming to complete on time with high quality, so that it could soon be connected to the grid to increase the power supply.



Fangchenggang Nuclear Power Base

The base set up a special organization to ensure power supply, formulated the *Fangchenggang NPP 2021-2022 Power Supply Work Plan*, and called on all departments to strictly implement the plan. It also carried out in-depth self-examination and correction of safety risks and hidden dangers, as well as comprehensive investigation and treatment on hidden dangers. The base properly arranged the activities of power supply for the safe and stable operation of the units and made sure that the power supply met the demand, helping make up for located province's shortage of both power supply and quantity.

Taishan Nuclear Power Base

The base utilized all resources to meet the demand of power, and upgraded the control standards based on the existing management process and system. It also formulated special work plans to ensure the safe and stable operation of Unit 2 as well as the overhaul of Unit 1 of Taishan NPPs.



Case Fighting against snow to ensure power supply



In early November, confirmed cases of COVID-19 in Dalian continued to increase. With a sharp temperature drop, first snowfall hit Hongyanhe Nuclear Power Base, and the snow was knee-deep in some areas. In the face of COVID-19 and severe weather, employees of Hongyanhe Nuclear Power Base stayed at the front line of unit operation, outage and commissioning, to contribute to securing the power supply.

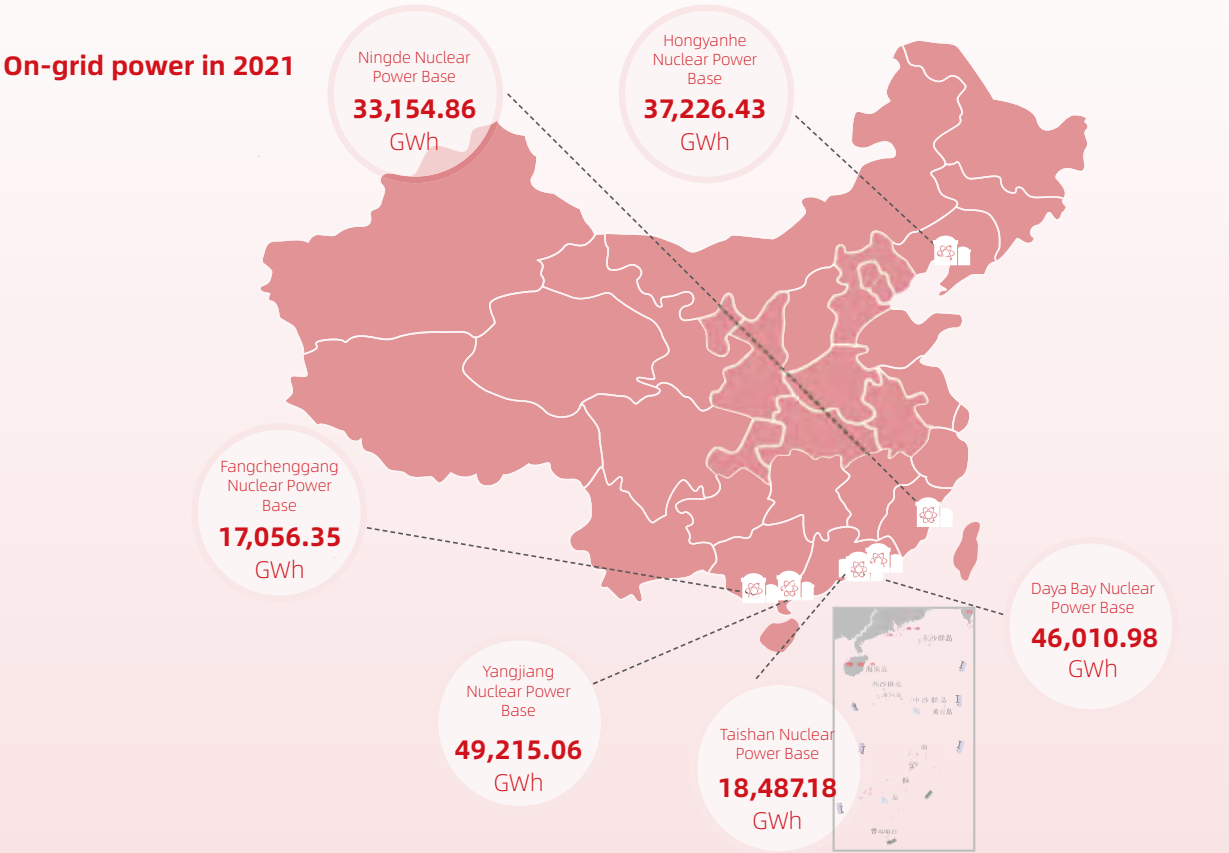
COVID-19 prevention and control

The base made prevention and control plans quickly based on the epidemic situation and the requirements from superior departments. It strengthened the investigation of personnel information to synchronize accurate COVID-19 updates. All employees in Dalian completed the nucleic acid testing with negative results.

Securing Power supply in winter

Responding to the cold and inclement weather, all departments immediately activated the anti-freezing plan to deal with the risks brought by the rapid temperature drop to the transmission lines. The operation and electric departments conducted real-time monitoring of the status of the transmission lines inside and outside the plant and maintained close contact with the power grid. It secured the stable operation of Unit 1, 3, 4 and 5, and the outage of Unit 2 was carried out as planned while preparatory work for fuel loading of Unit 6 was being moved forward. All equipment was in safe and stable operation.

Power supply



Safe and Stable Operation



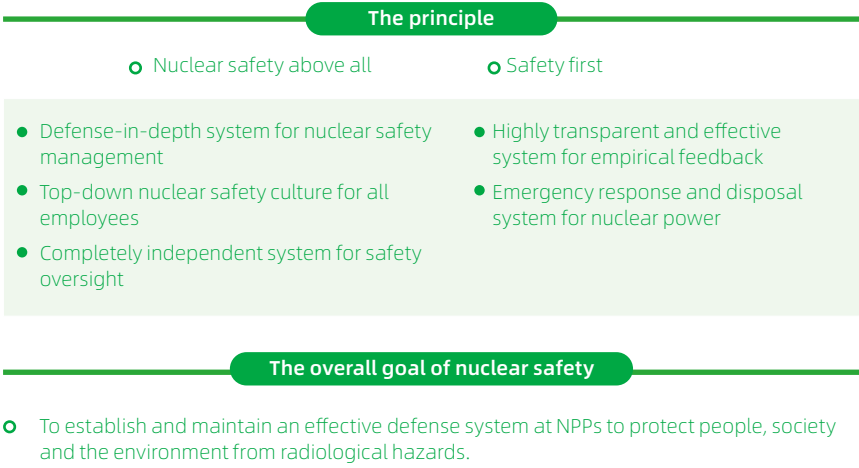
CGN Power always adheres to the lifeline of nuclear safety and ensures the safe nuclear power construction and operation by continuously improving its safety management, so as to realize the long-term safety and stability of commercial operation units. We stick to the strategy of innovation-driven development to further technological innovation, supporting the high-quality development of nuclear energy.



Safety Management

During the 14th Five-Year Plan, China would enter a new stage of development and put forward higher requirements for the development of the nuclear energy industry. In order to ensure the high-quality development of nuclear energy, we always regard nuclear safety as our first responsibility and strictly abide by the Chinese nuclear safety regulations such as the *Nuclear Safety Law*, the *Regulations on Civil Nuclear Facility Safety Supervision and Administration*, the *Regulations on the Safety of Site Selection for Nuclear Power Plants*, the *Safety Requirements for Nuclear Power Plant Operation*, the *Regulations on Safety of Management Systems of Nuclear Power Plants*, and the *Electric Power Law*, etc. We have also implemented the *Opinions of Communist Party of China Central Committee and State Council on Promoting Reform and Development of Work Safety*, the *Three-year Action Plan for the Rectification of National Work Safety* and other requirements of regulatory authorities on work safety. For details regarding laws and regulations, please refer to the part "Laws and Regulations of the Nuclear Power Industry" in "Section 6 Business and Technology" of the A-share prospectus published by the Company in August 2019.

By introducing and absorbing the world's advanced safety management experience, we have established and improved the Company's safety management system. To improve the safety management continuously and achieve the goal of nuclear safety, we implement it in the design, manufacturing, construction and operation of NPPs. We believe that "a safe NPP is also an economical NPP, with which the Company can achieve sustainability." All operation units have maintained safe and stable operation for years, meeting the requirements of international advanced standards with an average capacity factor of more than 92% for four consecutive years.



CaseHongyanhe Nuclear gets the SHE Standardization and International Benchmark 9 Certificate

Hongyanhe Nuclear got the Safety, Health and Environment ("SHE") Standardization and International Benchmark 9 Certificate, becoming China's first level-9 enterprise registered and certified by the ISRS Product Center of DNV GL. Standardization of SHE of Nuclear Operation and International Benchmarking Assessment is an evaluation system developed based on international standards to measure and improve safety, health and environmental management of NPPs. This certificate is the mark for taking a lead in achieving the international first-class level in SHE management.



Safety Culture

Everyone is a safety barrier. In line with the basic principle of "Safety First, Quality Foremost and Pursuit of Excellence", we integrate the safety culture into employees' daily work by educating, cultivating and transforming them with the establishment of a top-down nuclear safety culture.

Safety culture system

CGN Power's *Guiding Plan for Nuclear Safety Culture Cultivation* stipulates the basic principles of nuclear safety culture, and fosters and practices the principles and requirements of nuclear safety culture. To advance the cultivation of nuclear safety culture in an institutionalized manner, we continuously learn successful international experiences in cultivation of nuclear safety culture to internalize good practices, and continuously improve the nuclear power safety.

During the reporting period, we have drawn on the experience of good practices in the industry and integrated the nuclear safety culture with the management system through a series of trainings. We carried out seed instructor training and curriculum certification, and conduct nuclear power leadership training in subsidiaries; we invited WANO experts to conduct demonstration training and coach the nuclear power leadership training. Each subsidiary thus developed its own training materials and conducted cross-field, multi-level leadership trainings, winning WANO's recognition.

Casethe first session of "WANO Nuclear Safety Leadership" by Ningde Nuclear

From May 17 to 21, 2021, Ningde Nuclear launched the first "WANO Nuclear Safety Leadership" internalization training, which taught leadership concepts, methods and tools such as brain chemicals, positive reinforcement Antecedent-Behavior-Consequence (ABC) Model, nuclear safety onion charts, performance cycles, etc., and the participants discussed how to solve thorny management problems in practical work. This training is an active exploration of Ningde Nuclear to comprehensively improve the level of leadership, and lays the foundation for the comprehensive promotion of nuclear safety leadership in the future.

Safety demonstration

Adhering to the principle of leadership, the management takes the lead in demonstrating and implementing the safety management responsibilities and ensures all employees have a "sense of awe" for safety. The safety culture education on typical domestic and international events of the industry is conducted by general managers of each NPP, in the way of hosting safety and quality meetings, conducting regular site inspections and implementing safety culture assessments. "Leaders On-site" is the safety culture promotion activity of CGN Power that has been held for many years in a row. The chairman and business executives of the company regularly visit all NPPs and supervise the operation for on-site inspections to solve specific problems, improving the safety management and promoting safety culture practically.

7.71 times
per person per month

Onsite visits by the members of the General Management Department of each subsidiary in 2021

CaseLeaders On-site

In April 2021, Chairman Yang Changli, President Gao Ligang, Vice President Su Shengbing, Vice President Qin Yuxin, Vice President Jiang Dajin and Huang Xiaoheng, Deputy Director of Safety, respectively led teams to the six nuclear power bases in Fangchenggang, Hongyanhe, Yangjiang, Ningde, Taishan and Daya Bay to carry out special safety management inspections.



Chairman Yang Changli inspects the special nuclear safety management in Fangchenggang Nuclear Power Base.

President Gao Ligang inspects the nuclear safety management in Hongyanhe Nuclear Power Base.

Safety cultural activities

The cultivation of safety culture requires the participation of all employees. Through planning and implementing various types of nuclear safety cultural activities including awareness enhancement, capabilities building, culture evaluation and daily management, we continuously enhance the nuclear safety awareness and responding ability of employees so that the concept of "nuclear safety above all" can be internalized.

CaseHongyanhe Nuclear selected among the First Best Practice Cases of Safety Culture Building

Hongyanhe Nuclear's case with the theme of "Interpreting Safety with Awe, Achieving Excellence with Focus" was selected among the First Best Practice Cases of Safety Culture Building in the third place, becoming the only nuclear power company in the industry. The collection, evaluation and promotion of best practice cases of safety culture building are guided by the Ministry of Emergency Management with the aim of providing companies with a systematic model of best safety culture practice through best practices. This honor is a recognition for the experience and achievements of Hongyanhe Nuclear safety culture, providing a better opportunity for the Company to continue safety culture research and sharing.

CaseSafety Education House

By establishing the Safety Education House, Yangjiang Nuclear allows participants to face dangers and accidents directly to feel the sense of awe and urge operators to abide by the safety management regulations of the power plant, which may reduce the frequency of violations, eliminate safety accidents, and is conducive to the transformation from "they want me to be safe" to "I want to be safe".

Outstanding Safety Performance

2021 CGN Power Unit Capacity Factor

"Unit Capacity Factor" is mainly used to measure the availability of nuclear power units and serves as an important indicator that reflects the electricity generation capacity of nuclear power units. It is also recognized by the international nuclear power industry as the indicator that can best reflect the business performance of nuclear power operation and the level of nuclear power safety management.



CGN Power Annual Comparisons in WANO Indicators (2019-2021)

The WANO indicator is an important international statistical indicator for nuclear power operation performance and an important reference for evaluating the safety and reliability of nuclear power project operations. The dozens of assessment indicators directly reflect the nuclear power unit's operation safety level. Members of WANO organization formulate internationally accepted performance indicators for unified management and coordination, which is conducive to strengthening the exchange on nuclear power technology, experience and accident information, and continuously improving the safety and reliability of NPPs worldwide. In 2021, compared with the same period in 2020, 10 of our 12 WANO indicators improved and 1 kept the same. Although the indicator of capability factor decreased slightly, it still reached the world's advanced level.

	2019	2020	2021
Ratio of indicators achieving the world's excellent level (the world's top decile) in WANO indicators	72.22%	69.79%	80.33%
Ratio of indicators achieving the world's advanced level (the world's top quartile) in WANO indicators	76.39%	72.57%	83.00%

Case

Hongyanhe Nuclear wins the China Quality Award

Hongyanhe Nuclear won the China Quality Award at the 19th China Quality Award Ceremony held in Beijing on December 2, 2021, after DNMC won it in 2016. The award was Hongyanhe Nuclear's new achievement in promoting the excellent performance model for high-quality development.



Nuclear power units in operation

25

Average capacity factor of units in operation, reaching the world's advanced level

92%

Operational incidents at level-2 or above in INES6 occurred at our NPPs

0

Safe operation of Daya Bay Unit 1, the first nuclear power unit of CGN Power operating for

27year

5,622days

Continuous safe operation of Ling'ao Unit 1 as of December 31, 2021

Customer complaints on our products and services received during the reporting period

0

Occupational safety performance in the field of nuclear power operation

NPP	Industrial safety accident rate of employees per 200,000 man hours ⁷			Industrial safety accident rate of contractors per 200,000 man hours ⁸		
	2019	2020	2021	2019	2020	2021
Daya Bay NPP	0	0	0	0	0.117	0
Ling'ao NPP	0	0	0	0	0.107	0
Lingdong NPP	0	0	0	0	0	0
Yangjiang NPP	0	0	0	0	0	0
Fangchenggang NPP	0	0	0	0	0	0
Ningde NPP	0	0	0	0.0389	0	0
Hongyanhe NPP	0	0	0	0	0	0
Taishan NPP	0	0	0	0	0	0

⁶ According to the INES, nuclear incidents are classified into seven levels. Level 1 or above are referred to as "incidents" or "accidents", while events without safety significance are classified as "Level 0".

⁷ Industrial safety accident rate of employees per 200,000 man hours=200,000×(Annual employee accidents/annual employee hours)

⁸ Industrial safety accident rate of contractors per 200,000 man hours=200,000×(Annual contractor accidents/annual contractor hours)

Safe and Stable Operation

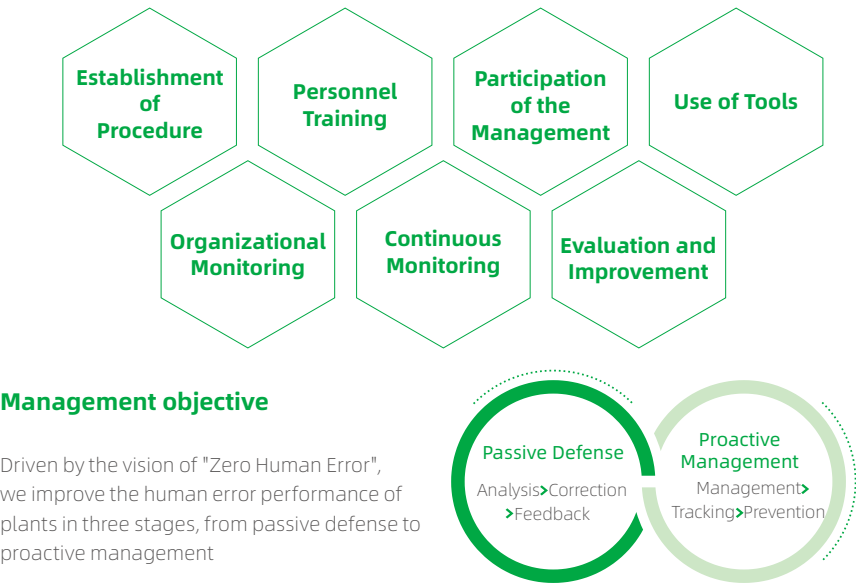
The safe and stable operation of units is fundamental to nuclear power companies. Adhering to the job requirements of "Always Act Based on Rules, Be Responsible, and Keep Supervision and Documentation", CGN Power strictly implements operating procedures, and maintains equipment in a regular and orderly manner. We have improved our nuclear emergency response system, and can comprehensively analyze and provide incident experience feedback, in an effort to maintain and improve the excellent safety performance and ensure the safe and stable nuclear power operation.

Human error is a vital factor that results in unit safety issues. In order to reduce human error, we have continuously enhanced professional skill training for employees and incorporated safety and quality requirements into employee management on violations of rules and regulations. We also implement the accountability system and the reporting system, thereby ensuring the timely reveal of fraud and concealment and continuous improvement of the human error management.

Stringent Standardized Operation

Human Error Prevention Management Model

A human error prevention management model has been established to improve the human error management. Accordingly, we carry out special rectification for human error, improve the mechanism for admission, selection, training and assessment for operating personnel, and organize job training for production operation personnel to strengthen their operational skills, thus reducing the safety impacts caused by human error greatly.



During the reporting period, we continued to improve our zero single-point failure of human error, with priorities including:

Updating of Knowledge system

Introduce new technology theory of preventing human error such as internalized single-point failure, carry out "Performance Improvement for Zero Human Error" training for key groups, update the knowledge system of preventing human error, and reach a consensus of ideological cognition.

Improve of informatization of human error management in plants

Benchmark international enterprises; establish a human error database, and realize the information management of typical human error event analysis, good practice sharing, on-site observation and guidance, human error management maturity benchmarking and human factors status tracking.

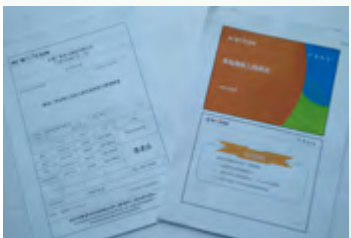
Comprehensive promotion of single-point failure identification and barrier repair

Summarize the experience and achievements of single-point failure identification and barrier repair work in 2020 in CGN Operations and Ningde Nuclear, with zero single-point failure as the core goal. Comprehensively promote in all plants and outages.

Deep cooperation with strategic contractors

For strategic contractors with long-term cooperation, each NPP separately formulates talent support policies, builds a skill appraisal management model, compiles the "Requirements for The Training and Management of Personnel Prevention for Nuclear Power Plant Contractors", and carries out the standardization of the whole process management of talent level identification, assessment and evaluation, effectively helping the realization of the excellent performance goal of zero single-point failure of group factories.

Case Human error prevention training of plants contractors mutually recognized



To solve the pain points such as repeated training on human performance prevention and long waiting time for employees of plants contractors to work on the production site, CGN Power compiled the Standard Procedure *Human Error Prevention Training and Management Requirements for Nuclear Power Plants Contractors*, and successfully established and improved the standard system of human error prevention training for plants contractors, realizing the standardization of the whole-process management of "training, assessment, authorization and equivalence" of human factor prevention for plants contractors. This move promotes the realization of the excellent performance goal of zero single-point failure for plants.

Case Establishing the on-site dynamic perception system

Ningde Nuclear has established the Industrial Safety and Radiation Protection On-site Dynamic Sensing Center to realize on-site real-time monitoring, multi-point monitoring and mobile monitoring. By sensing the on-site state in advance and making response soon, the Center can identify the unsafe behaviors and on-site operational abnormalities, which will ensure the on-site safety under control and improve the intelligence level of safety management.



Equipment Safety

16

refueling outages were carried out and completed during the reporting period,

including 1 initial outage,

2 10-year outages

The overall safety and quality are in good conditiona

The reliability of equipment is of great importance for NPP operation. In order to ensure that nuclear power equipment operates in high stability, NPPs have considered equipment features and specifications at the design phase. Following the regulatory requirements including NPPs operation technical specifications, we strengthen risk prevention management of major sensitive equipment, regularly monitor and maintain nuclear power equipment, and adjust and optimize equipment reliability to achieve normalized, programmed and standardized equipment management.

Refueling Outage

Based on the design of PWR NPPs, the nuclear reactor of each unit in operation must be shut down for refueling after a certain period of time. Taking safety and economic factors of NPPs into consideration, nuclear power operators usually arrange some preventive and corrective repairs, inspections, tests and partial modification projects of the unit during the refueling period, which is commonly referred to as the refueling outage. we have uniformly planned, organized and rationally deployed personnel to perform outage activities. Meanwhile, NPP equipment has been categorized and analyzed to continuously improve efficiency of refueling, detect equipment abnormalities in real time and ensure outage activities are carried out in an orderly manner.

During the reporting period, we carried out the "visualization of safety standards" to achieve the visualization of typical high-risk operations and general work safety specifications on site. We promoted the "quantifiability of quality standards", established the first quantifiable standard for process quality at key points of maintenance and implemented it into maintenance procedures. In 2021, the number of safety and quality index events on the equivalent 100 outage days decreased by 15% and 48% year-on-year, and the quality index events declined for three consecutive years, and no downtime due to outages throughout the year.

Equipment management

During the reporting period, we promoted equipment management in depth, continuously improved equipment management capabilities, and ensured the safety and stability of the equipment. During the reporting period, we promoted equipment management in depth, continuously improved equipment management capabilities, and ensured the safety and stability of the equipment.

Optimization of device management

- Through a variety of measures to improve the shutdown incident caused by the failure of major sensitive equipment year by year, in 2021, there was one shutdown of the reactor due to the failure of major sensitive equipment, and the forced loss rate was 0.15%, the best level since 2014.
- Keep improving the "8+1" operation mechanism for major equipment. In 2021, the status of "8+1" major equipment has steadily improved, and the outstanding goals such as the number of shutdowns and stack shutdowns caused by major equipment and the forced loss rate have reached the best level in the past five years.

Optimization of the handling of major common technical problems

- Improve the handling efficiency of major common technical problems, rely on the technology management platform, increase resource coordination, properly deal with major equipment hidden dangers, and ensure the safety and stability of the equipment.

Effective Multi-site Management

Based on the characteristics of our multi-technology platform and multi-site operations, we have established the standardized, specialized and centralized plants management system, providing support for safety management.

Standardized

We built the OPST model (the operation standard management system) in the core areas of operations, and achieved the unified organizational management system, the unified technical standards and procedures system, the unified post qualifications and the authorized training system, as well as the unified operation management tools.

For example, we strengthen the overall planning of informatization, organize the formulation of smart operation plans for nuclear power, and promote the implementation of smart operations through SRT (the IT-enabled operation screening team). During the reporting period, the multi-site preventive maintenance outline management system was put into operation in multiple bases, realizing the "one-click acquisition" of technical information for the evaluation of the maintenance outline, and the outline optimization time can be shortened by an average of 1 month. The multi-site remote monitoring system for safe production is connected to the 12 sets of surveillance cameras of the six nuclear power bases to realize the visual management of key equipment and operation of the power plant. The multi-site mobile application system realizes the comprehensive electronic and mobile maintenance, which improves the overall efficiency. The second phase of the multi-site intelligent warehouse management system realizes the real-time monitoring of inventory indicators, the optimization of the operation process, and the continuous reduction of costs in terms of reducing staff and increasing efficiency, revitalizing the storage capacity, and avoiding human errors.

Specialized

Specialized companies such as CGN Operations, CNPRI, SNPRI, CGN Engineering, provided professional services for NPPs in refueling outage, engineering modification, equipment management, spare parts management, and NPP design and construction. According to the characteristics of the production and operation management of NPPs, we have concentrated the superior resources of NPPs and specialized companies, and established a number of functional field peer groups ("PG groups"), each of which is composed of professional and technical managers of companies, NPPs and specialized companies. The PG group focuses on cross-organizational overall planning and coordination management in terms of sharing and communication, problem-driven, capacity building, etc., concentrates professional forces to solve the common technical problems of each NPP, promotes and applies new tools, new technologies and good practices, enhances the professional capabilities in various fields, and pursuits excellence in each NPP.

Centralized

We continued to maximize the overall value through centralized management like resource allocation, joint contribution, sharing benefits and business coordination. We set up a unified bidding center, continuously promoted the standardization and informatization construction of bidding management and spare parts management, made full use of big data to improve management efficiency, gradually expanded the scope of centralized procurement of spare parts and public materials, implemented the overall allocation of resources, enhanced the bargaining power of centralized procurement, optimized procurement channels, and achieved significant cost-effectiveness.

During the reporting period, the average arrival rate of spare parts for outage throughout the year reached 97.91%, a record high for 8 consecutive years, and the guarantee rate of important spare parts remained 100%; we comprehensively built the core business functions of the digital operation platform for spare parts, realized the visualization, intelligence and digitalization of the whole operation process of spare parts, increased the efficiency of spare parts demand reporting by 30%, and increased the allocation efficiency by 80%.

Emergency Safety Management

In response to nuclear emergencies quickly and effectively, NPPs must have a thorough overall emergency plan and sufficient emergency preparedness, with the establishment of an organization system for nuclear emergency response. CGN Power attaches great importance to the NPP emergency management, continuously improving the organization system for nuclear emergency response. We have formed the across-the-aboard emergency plan system as well as a multi-level emergency defense mechanism equipped with specialized emergency equipment, facilities, and sufficient and qualified personnel. To effectively organize emergency responses, we have set up an emergency command center to hold regular emergency drills and conduct comprehensive drills with local authorities, striving to improve the capabilities to respond to emergencies and ensure the safety of people surrounding NPPs.

Nuclear emergency supporting system

In strict compliance with the *Emergency Response Law of the People's Republic of China* and the *Regulations on Emergency Measures for Nuclear Accidents at Nuclear Power Plants*, our nuclear emergency supporting system combines the characteristics of technical support from multi-platforms and multi-bases operation to establish a comprehensive nuclear accident emergency response system. It provides material, personnel, equipment and technical support for emergency incidents, further enhancing the emergency response capabilities of NPPs and minimizing the impacts of emergency accidents on the public and environment.

Emergency preparedness system

All of the NPPs we managed have established a comprehensive emergency preparedness system for timely emergency drills of different scales. We implement the system of 24-hour on-call duty to ensure the emergency organization responds around the clock.

Emergency response experience feedback

We have established a network platform for technical support and experience feedback and exchange on the multi-base emergency response. It helps us to achieve unified reception and handling of generic technical issues, share experience and practices of emergency incidents, and timely respond to incidents, standardizing the emergency management.

Case

Nuclear power bases in Guangdong respond to Cempaka

Cempaka, the seventh typhoon of 2021, landed along the coast of Jiangcheng District, Yangjiang City at 21:50 on July 20, with the maximum wind force near the landing center reaching 12. CGN Power's nuclear power bases in Guangdong responded quickly and made detailed precautions measures, ensuring that the units in operation, the personnel and equipment were safe.



Case

DNMC carries out joint emergency drill on and off the site

On December 9, 2021, DNMC carried out the joint emergency drill on and off the Daya Bay / Ling'ao NPP's nuclear accident site and the 11th nuclear accident emergency drill of Guangdong Province. The drill simulated the loss of all off-site AC power supply of Daya Bay Unit 1 due to wild fire, resulting in the large-scale release of radioactive substances to the environment and leading the power plant to off-site emergency status. This drill focused on testing the effectiveness of response, information reporting, support and coordination of all emergency teams on site as well as the rapid response ability of off-site emergency organizations, as well as the public opinion control, guidance and response, on-site control, land and sea evacuation and on-site monitoring ability of local governments in the case of nuclear accidents.



Case

Three-in-one emergency management becomes a benchmark for emergency management in East China

Ningde Nuclear's emergency management has set the innovative goal of "standardized emergency personnel ability, informatized emergency equipment and diversified emergency management strategies" to comprehensively improve its emergency management. It has been highly praised by East China Nuclear Safety Oversight Station for four consecutive years, becoming a demonstration and benchmark in the emergency response field in East China.

Safety Supervision

CGN Power actively complies with relevant international and national nuclear safety regulatory requirements, and accepts irregular inspections and supervision of NPPs by national regulatory agencies, to ensure that the indicators of units fulfill or exceed the national and international regulatory requirements. To further strengthen the safety supervision of units, we have established both internal and external safety supervision systems to continuously improve our safety management through effective safety supervision.

Independent internal safety supervision system

We have established a multi-tiered and comprehensive nuclear safety supervision system consisting of NPP safety engineers, safety authorities and the Center of Independent Supervision and Assessment for Nuclear Safety ("**Nuclear Safety Supervision Center**") to independently monitor and evaluate the safety management of nuclear power bases. The scope of safety supervision and evaluation covers safety culture cultivation, unit safety management, equipment reliability, project safety and quality control, network safety, NPP security and emergency management.

Level	Scope of Supervision
On-site safety supervision team with NPP safety engineers as the core	Ensuring the effectiveness of NPP daily production in terms of safety
The safety authority with the basic functions of the safety and quality management of NPPs	Ensuring and overseeing the effectiveness of safety management system at the organizational level
Nuclear Safety Supervision Center monitoring multiple sites	Carrying out independent safety supervision and evaluation at each NPP

During the reporting period, our Nuclear Safety Supervision Center conducted independent nuclear safety supervision and assessment for Ningde Nuclear, Fangchenggang Nuclear and DNMC, covering ten major areas such as nuclear safety, operation, maintenance, outage and spare parts management, technical support, equipment reliability and experience feedback, radiation protection, fire protection, chemical environment, industrial safety and nuclear security. In the preliminary preparation stage, the assessment team conducted pre-assessment of document procedures, records, etc. offline, and collected facts through on-site activity observation, personnel interviews and document consultation. All on-site supervisions are carried out to meet the requirements of pandemic prevention and control.

External supervisions

Externally, our NPPs accept the national nuclear safety regulators' irregular, targeted inspection, and the independent safety assessments by international industry organizations, including IAEA and WANO. Through experience exchange with peers, we keep improving our safety management of nuclear power.

Level	Scope of Supervision
National Nuclear Safety Administration	Supervising and inspecting compliance with nuclear safety regulations
International peers' independent safety assessments (including IAEA & WANO)	Evaluating and supervising the safe operation in NPPs

Case Performance observation of operators at Hongyanhe Units 5 and 6 by WANO

In March 2021, WANO Shanghai office set up an evaluation team to successfully complete the performance observation of the three scenarios of the operation team of Hongyanhe Units 5 and 6, and the WANO Paris Center synchronously formed a shadow team to participate remotely. The evaluation results were three strengths and one Area for Improvement ("AFI").

According to Wano on-site evaluation, the operation team has made great progress and the overall performance is excellent. Although there is a monitoring related AFI, the relevant fact items are subtle; the three operating values can control the unit well in the face of complex scenarios such as pandemic barriers, heavy tasks, and manpower shortages, and the difficulty of multiple failures, which fully proves the high skill of the operation team.



Case nuclear safety inspection of Fangchenggang Nuclear by The National Nuclear Safety Administration

From May 6 to 9, 2021, the National Nuclear Safety Administration inspected the control point before the first circuit cold functional test (CFT) of Fangchenggang Unit 3. The inspection team believes that the commissioning organization of Fangchenggang Unit 3 is sound, the post responsibility is implemented, and the quality assurance system is operating effectively; the handover of the CFT related system has been completed, and the construction, installation and commissioning of Unit 3 are under control; the conditions of the construction permit and the rectification requirements proposed in the previous nuclear safety inspections have been implemented; and the preparation work before the CFT of unit 3 is acceptable.

Experience Feedback

The experience feedback system is an important part of safe NPP operation. We continue the collection of internal and external historical experiences to analyze the root causes of accidents, develop plans to correct our actions and form a dynamic and transparent experience feedback system to prevent any reoccurrence. While focusing on the feedback of problems found and lessons learned in the operation and management of NPPs, we also regularly summarize and solidify good practices, conduct regular exchanges with peers for learning external experience feedback to promote the improvement of safety management.

Feedback between engineering and operations departments

The two-way experience feedback mechanism between the engineering and operations departments helps both parties share and use experiences, promoting nuclear power unit improvement in areas such as design, supplier process, equipment replacement, construction and commissioning management, operation optimization, maintenance strategy and regular safety reviews, etc.

Feedback among power plants

We actively conduct experience feedback analysis among NPPs, regularly organize the screening of experience feedback and arrange professionals from power plants to learn from each other. At the same time, we have compiled a series of historical experiences and lessons in industrial safety, fire safety, environmental safety, operation and maintenance, etc. into publications.

External feedback

To learn more from and implement the significant experiences of international peers, we carry out SOER (Significant Operating Experience Report) and WANO performance analysis. We timely track the issues related to safe nuclear operation in WANO assessment results, and continuously verify and optimize the improvement measures, so as to provide support for managers to make reliable decisions. Meanwhile, we have organized a comparative analysis of SOER among plants to identify common issues and improvement directions, with an aim to enhance the management's awareness of risk management and improve their risk management capabilities.

Building Quality Construction

The engineering quality of nuclear power units under construction is crucial to the safe and efficient operation of the units after they are put into production. Strictly implementing relevant laws and regulations on nuclear power construction projects, CGN Power takes the target of "Zero Behavior Violation, Zero Quality Defect", insists on building projects with the highest standards and requirements, and actively implements the quality management measures to continuously improve the safety and quality of engineering construction.

Engineering Safety Management

We have strictly implemented the *Zero-Defect Scheme for Safety Quality*. Based on the international benchmark of safety and quality construction and team building, we adopt three measures including "zero defect team", "elimination of quality hazards" and "behavioral improvement" and four tools of "risk analysis", "work package", "operation disclosure" and "human error prevention" to comprehensively control the quality, process, technology and environment, comprehensively improving the safety and quality management of engineering construction and achieving the world's leading level regarding safety and quality performance of nuclear power projects.

Zero Defect Team

Zero-defect teams are organized to resolve acute problems through management, better process guidance and evaluation. Members are urged to improve and prevent key issues at construction sites through team evaluations.

Quality Hazards Identification

Continuous efforts have been made in identifying potential quality hazards. Responsibility of each level in potential hazard identification and management regulations has been defined and implemented. Meanwhile, specific employees with defined responsibilities have been assigned to monitor the potential hazard identification system, thereby improving capabilities in screening hidden dangers.

Behavioral Improvement

The "Behavioral Improvement Action" was launched and the *Implementation Guide to Quality Behavior Observation* was prepared and published to encourage all employees to observe quality behavior, eliminate unregulated behaviors and ensure engineering construction quality.

Quality Engineering Construction

Construction of quality management system for nuclear power projects

During the reporting period, we continued to strengthen the construction of the quality management system for nuclear power projects, and the key tasks include:

Outline of the nuclear power projects

With the quality management system as the core, a nuclear power project construction outlines with six elements such as safety, quality, environment, technology, progress and cost. Define the responsibilities of all parties in the project construction, and improve the operational effectiveness of the project management system.

On-site quality director of engineering projects

Establish a on-site quality director system for nuclear power engineering projects, issue a work plan for quality directors, and send a quality director to the nuclear power project under construction to perform independent quality supervision duties on behalf of the company, carry out quality supervision and inspection, ensure the implementation of various quality management requirements on the spot, and report directly to the company's safety, quality and environmental protection department.

Management and control of risks in quality and integrity

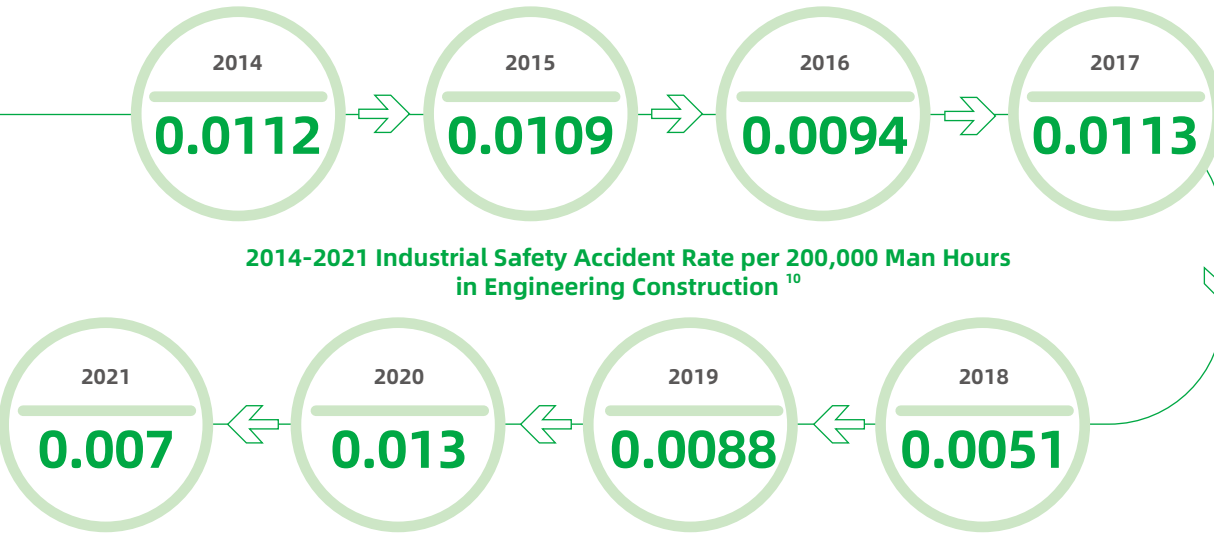
Promote the implementation of quality and integrity risk management and control measures. Relevant units of engineering construction combine major incident feedback and make improvement. Focus on rectification in strengthening quality supervision and controlling quality and integrity risks.


Overall Safety, Quality and Environment Benchmarking Rating of Nuclear Power Projects Under Construction

For nuclear power projects under construction, the regulatory authority conducts a comprehensive assessment on project safety, quality, and environmental impact in terms of performance standards, site selection, and management level based on the *Standardized Management and World-class Benchmarking Assessment Manual for Nuclear Power Construction QHSE*. The rating system is divided into ten levels, of which level 5 and 6 are good, level 7 and 8 are advanced, level 9 and 10 are international benchmark.

Certification
Major CGN Power's subsidiaries were certified by ISO 9001 quality management system.

	Hongyanhe NPP	Fangchenggang NPP	Yangjiang NPP ⁹
2019	8	7	7
2020	8	7	/
2021	8	6	/



 Case

Ningde Nuclear wins numerous achievement awards of Engineering Construction QCC Activities in the nuclear industry

All seven QC groups of Ningde Nuclear won awards, including six second prizes and one third prize, at the 2021 Achievement Exchange Meeting of Engineering Construction Quality Control Circle (QCC) Activities in the nuclear industry. The award-winning projects are *Reducing the Oil Leakage of GRE High-pressure Valve Hydraulic Servo Motor*, *Reducing the Number of High-altitude Operations in Nuclear Power Plants*, *Research and Application of New Methods for Acaudina Molpadioides Disaster Warning and Prevention and Control in Coastal Power Plants*, *Reducing the Failure Rate of Guided Wave Radar's Level Gauge*, *R & D of Pressure Measuring Device at the Top of Pressure Vessel*, *Development of A Portable Intelligent Calibration Device for Temperature Sensor* and *Reducing the Failure Rate of Liquid Level Switch in NPPs*.

⁹ Yangjiang NPP has started commercial operation, and therefore no overall rating evaluation will be performed.
¹⁰ Industrial Safety Accident Rate per 200,000 Man Hours= 200,000× (number of accidents for both employees and contractors per year / total man hour of both employees and contractors per year). The 200,000 Man Hours is determined based on the Company's practice and actual situation.



Guarding Information Security

serious network security incidents at level II or above occurred

0¹¹

0

large-scale computer virus infections

The network and information security (NIS) of the nuclear industry are particularly crucial under critical task of national security system construction and increasingly severe NIS threats. We have established a corporate information security system and successfully obtained the information security system certification (GB/T22080- 2016/ISO/IEC 27001:2013) in accordance with the *Cyber Security Law of the People's Republic of China*, the *Data Security Law of the People's Republic of China*, the *Personal Information Protection Law of the People's Republic of China*, the *National Cyberspace Security Strategy*, the *Regulations on Security Protection of Critical Information Infrastructure*, the *Measures for Network Security Review*, the *Information Security Technology — Baseline for Classified Protection of Cybersecurity and the Implementation Guide for Cyber Security Classified Protection of Electric Power Information System*, as well as International Atomic Energy Agency (IAEA) Best Practices and other safety regulations.

In order to ensure the safe, stable and reliable operation of the network, communication and information systems, the Company has formed the network security and information technology commission. Through enhancing the network security inspection, notification and warning, coordinating and promoting digital transformation, the commission ensures the safe, stable and reliable operation of the Company's network, communication and information system, and thereby prevents information leakage. At the same time, we have set up a safe operation and management system for computers and related equipment to enhance the confidentiality and integrity of information, so as to effectively prevent the leakage of internal data and customer information, which protects our legitimate rights and interests and improves customer satisfaction for informatization.

During the reporting period, we completed the improvement of network security, including the reinforcement and isolation of network security, and the physical disconnection between the production management area (zone III) of the NPPs and the office area with intranet (zone IV) to guarantee the absolute security of the nuclear power industrial control system. We encouraged NPPs to reinforce network security according to the requirements of classified protection, and strengthened the cybersecurity protection in the design and R & D stage of the nuclear power to realize the safe, reliable, credible and real-time one-way data input. We organized the special trainings on related laws and regulations, continuously educated our employees about network security, updated and issued the *14 Rules on Network Security for CGN Employees*, which effectively improved the cyber security awareness and protection skills of all employees.

Case

"Storm-2021" comprehensive nuclear security drill

Yangjiang Nuclear, under the guidance of China Atomic Energy Authority and supported by CGN, launched the "Storm-2021" nuclear security drill in September 2021. It was the first comprehensive nuclear security drill mainly based on the cyber security, revealing the network security risks in nuclear facilities and possible consequences for the first time. The drill was linked with on-site nuclear emergency for the first time, ensuring the drill effect and the requirements of safe and stable operation for NPPs. It was of great significance to improve the network security of China's nuclear facilities.

¹¹ According to the National Contingency Plans for Cyber Security Incidents (CAC [2017] No.4), network security incidents of level III and above include extremely serious network security incidents (level I), serious network security incidents (level II), relatively serious network security incidents (level III).

Leading Nuclear Power Innovation

Layout of technological innovation

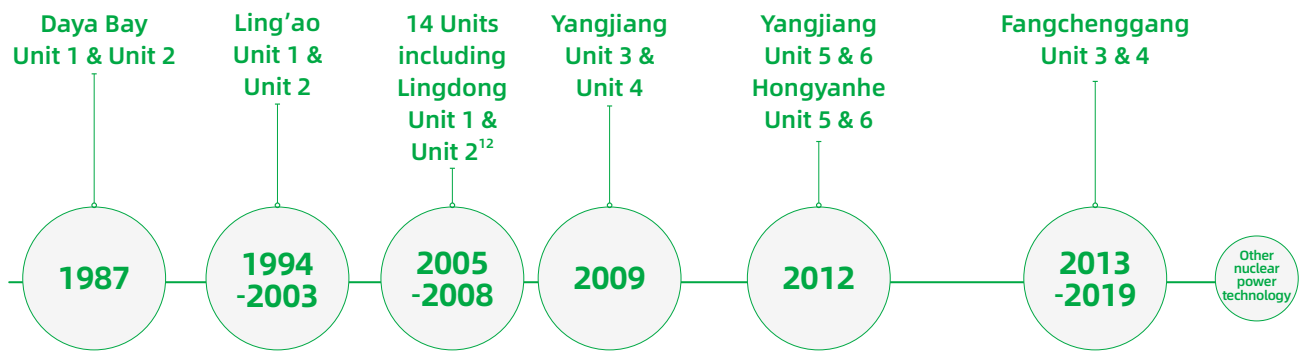
Technological innovation is an important driving force for CGN Power to achieve high-quality development. We firmly implement the "Innovation-driven Development" strategy and our overall layout in tech innovation. We continuously increase technological support, integrate ourselves into the overall national strategy and improve the system and mechanism of technological innovation to make technological achievements, laying the foundation for the safer, smarter and cleaner development of nuclear power and driving the high-quality development of the Company.

In accordance with the overall layout of "three-in-one" scientific and technological innovation, we have deployed and implemented three key tasks, namely strategy specials, autonomous specials, and top plan. Based on our independent third-generation nuclear power technology, we will continue to promote technology R&D, promote the comprehensive utilization of nuclear energy, and give full play to the role of nuclear energy in carbon emission reduction in fields like heating and gas supply. At the same time, we actively integrate into the overall strategy of national scientific and technological innovation, and strive to become an important part of the world's atomic energy tech innovation and the international scientific and technological innovation center in Guangdong-Hong Kong-Macao Greater Bay Area through constructing a batch of major nuclear energy infrastructure and demonstration projects.

R&D of the Nuclear Power Technology

Strong technical foundation and R&D capability is one of the core competitiveness of CGN Power. Since the adoption of M310 reactor technology at Daya Bay NPP in the 1980s, CGN Power has followed the technical guidelines of "Introduction, Digestion, Assimilation and Innovation", and promoted the R&D of nuclear power in line with the technological development roadmap "Leading Plan". We are committed to developing technological capabilities for the Company's future development and contributing to the high-quality development of nuclear power.





M310 Reactor Technology	M310 Reactor Technology 37 major technological improvements	CPR1000 16 safety technology advances	CPR1000 + 28 safety technology advances	31 safety technology advances	HPR 1000
Introduction	Digestion → Assimilation	Innovation			
Use internationally advanced PWR technology in the 1990s	Implement 37 major technical improvements based on Daya Bay NPP	CPR1000、CPR1000+			
		<ul style="list-style-type: none">Make 16 and 28 safety technology advances respectively and achieve "self-design, self-manufacturing, self-construction and self-operation". Major improvements include:60-year designed lives for reactor pressure vessel and containment18-month refueling cycleMain control room habitability improvementUse LBB technology etc.			
		ACPR1000			
		<ul style="list-style-type: none">Core Damage Frequency (CDF) less than 1X10-5 / (Reactor year)Fulfill safety requirements for newly built NPP under the "12th Five-Year Plan (Fulfill 14 improvement requirements of national regulatory authorities after the Fukushima accident)			
		HPR 1000			
		<ul style="list-style-type: none">Single-reactor layout, double-layered containmentThree safety loopsCDF less than 1X10-6 / (Reactor year)Large Early Release Frequency (LERF) less than 1X10-7 / (Reactor year)Core thermal safety margin larger than 15%Design basis seismic rating raised to 0.3gProprietary nuclear-class digital control product system platform FirmSys			

System of Technological Innovation

RMB3.045 billion
R&D investment during the Reporting Period

With **4,795**
R&D personnel

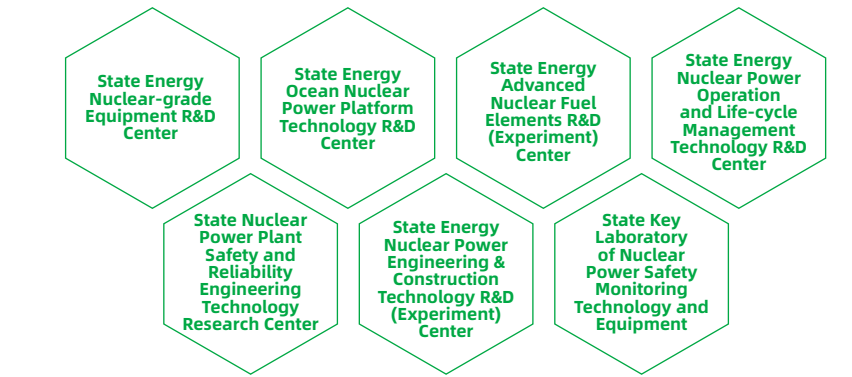
Innovation Mechanism

In order to further enhance the ability of independent innovation, we continue to improve the Company's scientific and technological innovation mechanism to stimulate vitality for innovation. During the Reporting Period, we optimized the top-level design of technological innovation system in the field of nuclear energy. The positioning and division of labor of major R&D departments are clarified to focus on technological innovation, perform their due responsibilities and improve their core capabilities. We also optimized the system and mechanism according to the principles of "better managing" and "further empowering", reducing unnecessary management processes with no added value, and effectively improving the overall operating efficiency of scientific research activities.

Innovation Platforms

We have established a R & D platform system at national, group and company levels. At present, we have seven national-level R & D centers and key laboratories, and have built multiple large-scale advanced laboratories in the industry, including thermal-hydraulic and safety research laboratories, material performance analysis laboratories, and inaccessible equipment laboratories. The establishment of independent R&D platforms introduces, digests and absorbs international advanced technologies to provide technical support for the Company. It is expected to shorten the technological achievement transformation cycle, improve the maturity, matching and engineering level of existing technologies and promote technological upgrading.

CGN Power's Seven State-level R&D Centers and Key Laboratories



Intellectual Property Protection

CGN Power attaches great importance to the protection of intellectual property rights and incorporates intellectual property protection into project approval, execution, interim inspection and final acceptance inspection. We continuously improve the construction of intellectual property management organization and procedures, laying a solid foundation for more R&D achievements.

During the Reporting Period, in order to thoroughly implement the requirements of China's intellectual property protection, we upgraded the intellectual property management system, trademark management standards, international intellectual property application process and other procedures based on our own management situation. We also formulated patent classification standards and promote the classified management of intellectual property rights; we classified our technological innovation achievements and reserved high-value patents and high-quality copyrights in key technology fields; we strengthened intellectual property risk analysis of major scientific research projects and overseas market projects, enhanced the construction of scientific research integrity system, promoted intellectual property publicity and training so as to improve employees' awareness of intellectual property protection, and safeguard the legitimate rights and interests of the Company to the greatest extent.

¹² Including Lingdong Unit 1 & Unit 2, Hongyanhe Unit 1-4, Ningde Unit 1-4, Yanjiang Unit 1 & Unit 2 and Fangchenggang Unit 1 & Unit 2.

Application of Scientific and Technological Innovation

191

independent R&D projects

based on our independent R&D platforms during the Reporting Period

1,282

patent applications,

893

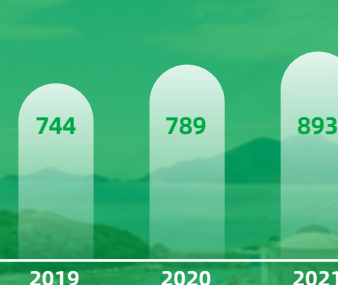
of which have been approved

Patents Application and Approval

Patents Applied



Patents Approved



3 patents of CNPEC won **Chinese Patent Excellence Awards**

Ningde Nuclear won the **third prize of Patent Award of Fujian Province**

Fangchenggang Nuclear won the **Patent Award of Guangxi Zhuang Autonomous Region**

One patent of CNPRI won the **China Patent Excellence Award**, one patent won the **Nuclear Science and Technology Achievement Award of the China Nuclear Society**, one patent won the **Guangdong Provincial Patent Gold Award**, and two achievements won the **second prize of the China Quality Association Quality Technology Award**

Safe and Stable Operation

Green Development

Talent Cultivation

Win-win Cooperation

Harmonious Communities

Case HPR1000

HPR 1000, Gigawatt-level Generation-III nuclear power technology with proprietary intellectual property, is developed by CGN Power, based on the rich experience accumulated in design, construction, operation and R&D of NPPs for decades and combined with the latest domestic and foreign safety requirements. HPR 1000 is equipped with three series of physical isolation and adopts safety systems combining active and passive features to greatly improve its ability to cope with internal and external disasters. The main technical indicators meet or exceed the latest international safety standard. The proprietary innovation lays a technical foundation for the development of the Company's subsequent nuclear power technology. HPR 1000 is now applied to multiple nuclear projects.



Case Nuclear power robot solving the problem of underwater operation

In 2021, CGN Power successfully developed intelligent equipment for the collection and collection of marine organisms in cold-source sea structures, and cooperated with the marine organism cleaning robot to realize the efficient collection and transfer of marine organisms, and solve the problem of cleaning seabed water tunnels. At the same time, we completed the design and development of the NPP cold source underwater operation robot, and put it into the on-site environment for on-site functional verification, one by one to overcome the technical problems, including "high requirements for corrosion resistance, waterproof performance and definition of underwater camera, as well as difficult underwater positioning.



Case Multi-sequence safety display, touch screen system, and control method for NPPs

In June 2021, CGN Power's invention patent of "a multi-sequence safety display, touch screen system, and control method for NPPs" was authorized. The patent optimizes the digital human-machine interface of the control room of the NPP by using a several-for-one method to add a cutting screen module, through which the equipment status and operation interface of multiple safety processing units are switched to display on the same screen, to further improve the working efficiency.

Case Study on the abrasion of incore flux thimble

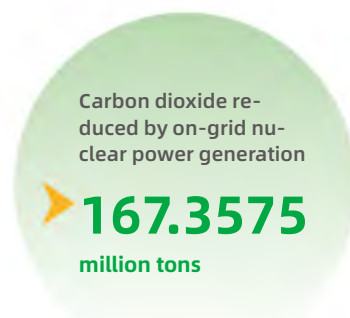
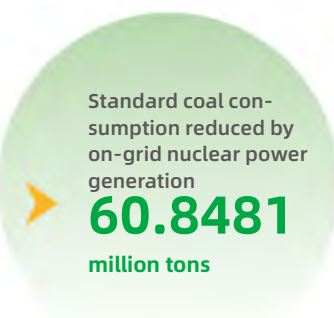
Incore flux thimble is mainly used to provide a measurement channel for the neutron flux detector of the reactor core, and the outer wall is in contact with the first-loop medium to withstand the reactor operating pressure. During the operation of the unit, the incore flux thimble is prone to micro-vibration abrasion at the cross-section of the channel, and damage and leakage may occur in severe cases, affecting the safe and stable operation of the unit.

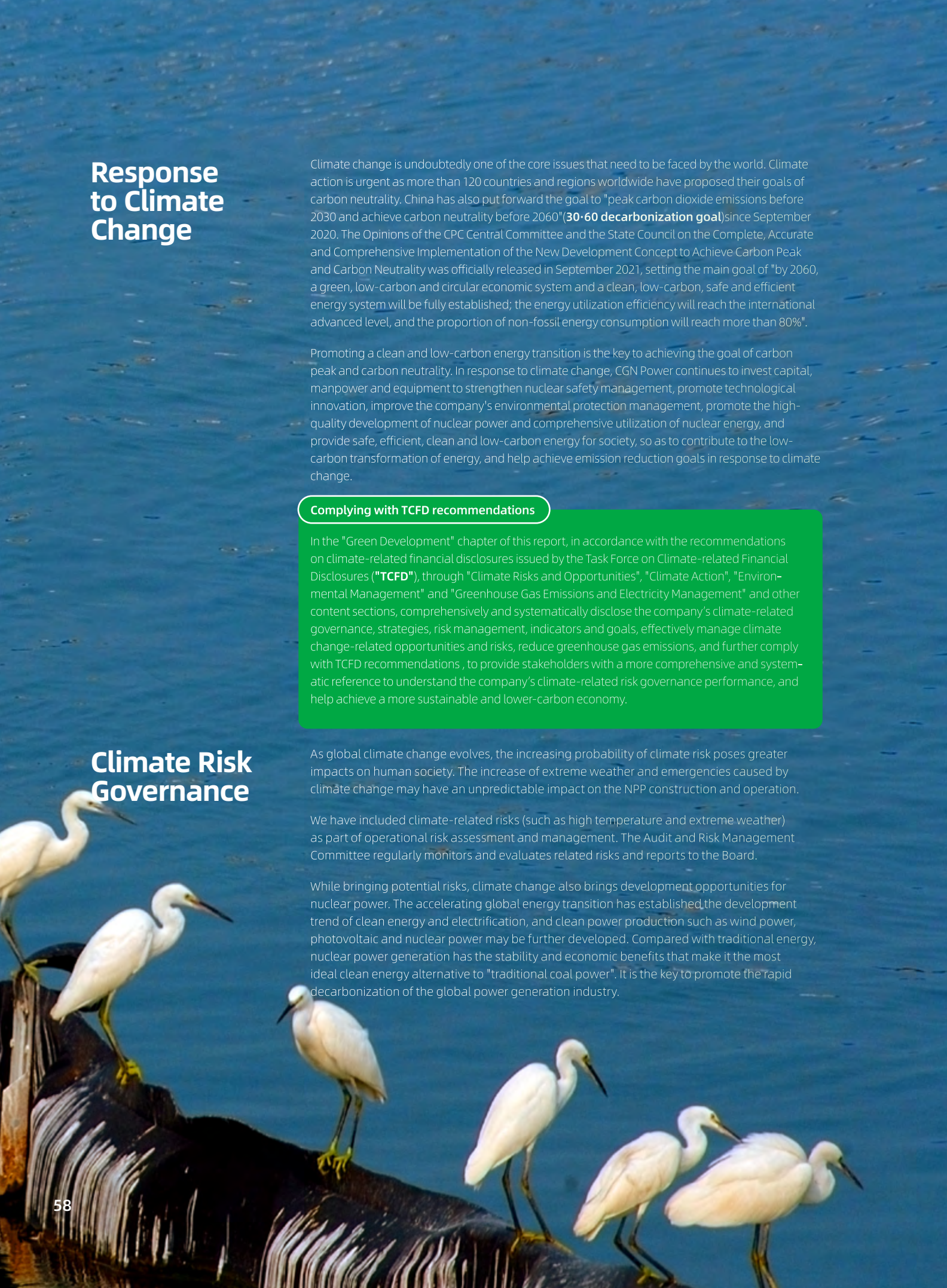
In November 2021, a number of subsidiaries of CGN Power collaborated to complete the research and development of "Study on the abrasion of incore flux thimble". This project has developed the accurate measurement of abrasion of incore flux thimble and the automatic cutting and grinding tools, completed the development of the its maintenance, and established a new standard for abrasion treatment, which is of great significance for prolonging the service life of incore flux thimble, improving equipment reliability, reducing operation and maintenance costs, and ensuring the safe and stable operation of the unit. The achievement has completely independent intellectual property rights and reach the international advanced level of research, which is the first in China and has been promoted and applied in many nuclear power bases.

Green Development



CGN Power implements strict environmental management across the whole process of construction and operation. Upholding the concept of ecological nuclear power, we protect the ecology in and around our NPPs to promote the high-quality development of the Company with green development and provide safe, reliable, low-carbon and economic electricity for the society, so as to help achieve China's goal of carbon peak and carbon neutrality as well as promote the green and sustainable social development.





Response to Climate Change

Climate change is undoubtedly one of the core issues that need to be faced by the world. Climate action is urgent as more than 120 countries and regions worldwide have proposed their goals of carbon neutrality. China has also put forward the goal to "peak carbon dioxide emissions before 2030 and achieve carbon neutrality before 2060" (**30-60 decarbonization goal**) since September 2020. The Opinions of the CPC Central Committee and the State Council on the Complete, Accurate and Comprehensive Implementation of the New Development Concept to Achieve Carbon Peak and Carbon Neutrality was officially released in September 2021, setting the main goal of "by 2060, a green, low-carbon and circular economic system and a clean, low-carbon, safe and efficient energy system will be fully established; the energy utilization efficiency will reach the international advanced level, and the proportion of non-fossil energy consumption will reach more than 80%".

Promoting a clean and low-carbon energy transition is the key to achieving the goal of carbon peak and carbon neutrality. In response to climate change, CGN Power continues to invest capital, manpower and equipment to strengthen nuclear safety management, promote technological innovation, improve the company's environmental protection management, promote the high-quality development of nuclear power and comprehensive utilization of nuclear energy, and provide safe, efficient, clean and low-carbon energy for society, so as to contribute to the low-carbon transformation of energy, and help achieve emission reduction goals in response to climate change.

Complying with TCFD recommendations

In the "Green Development" chapter of this report, in accordance with the recommendations on climate-related financial disclosures issued by the Task Force on Climate-related Financial Disclosures ("**TCFD**"), through "Climate Risks and Opportunities", "Climate Action", "Environmental Management" and "Greenhouse Gas Emissions and Electricity Management" and other content sections, comprehensively and systematically disclose the company's climate-related governance, strategies, risk management, indicators and goals, effectively manage climate change-related opportunities and risks, reduce greenhouse gas emissions, and further comply with TCFD recommendations , to provide stakeholders with a more comprehensive and systematic reference to understand the company's climate-related risk governance performance, and help achieve a more sustainable and lower-carbon economy.

Climate Risk Governance

As global climate change evolves, the increasing probability of climate risk poses greater impacts on human society. The increase of extreme weather and emergencies caused by climate change may have an unpredictable impact on the NPP construction and operation.

We have included climate-related risks (such as high temperature and extreme weather) as part of operational risk assessment and management. The Audit and Risk Management Committee regularly monitors and evaluates related risks and reports to the Board.

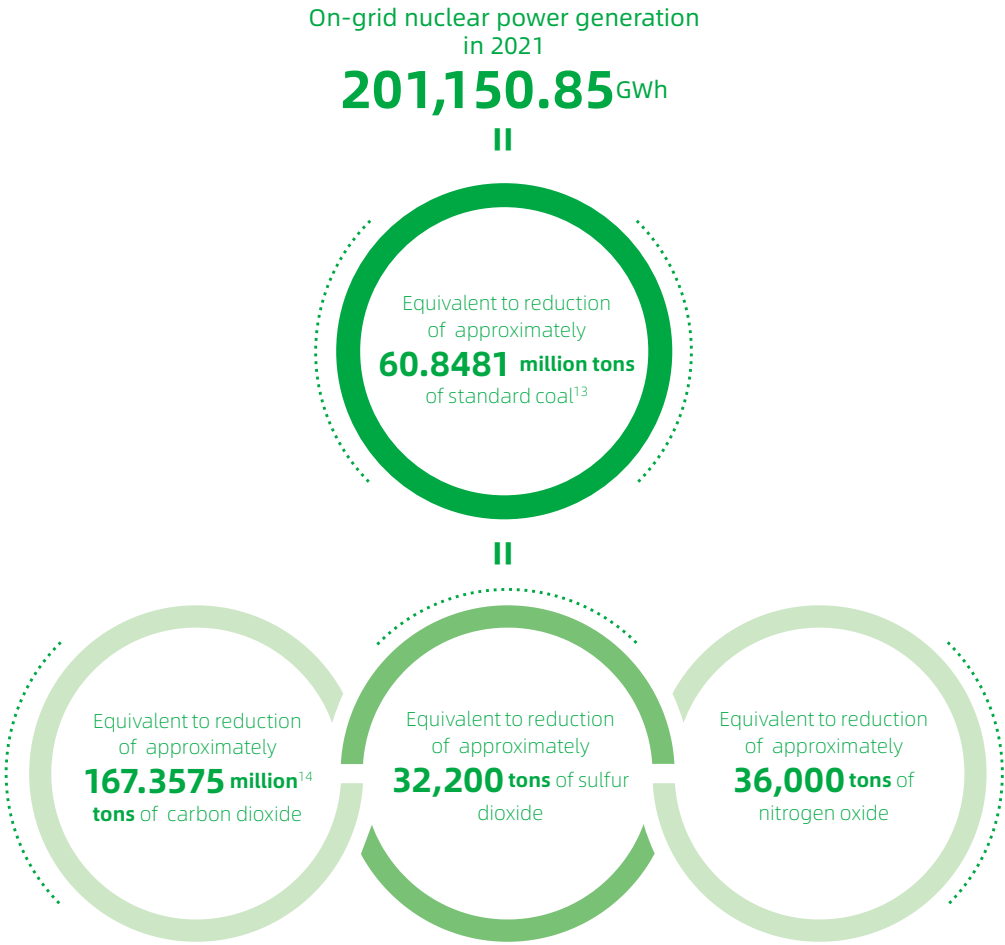
While bringing potential risks, climate change also brings development opportunities for nuclear power. The accelerating global energy transition has established the development trend of clean energy and electrification, and clean power production such as wind power, photovoltaic and nuclear power may be further developed. Compared with traditional energy, nuclear power generation has the stability and economic benefits that make it the most ideal clean energy alternative to "traditional coal power". It is the key to promote the rapid decarbonization of the global power generation industry.

Climate Actions

To practice the development strategy of excellence and stability, we implement China's relevant nuclear safety regulations, guidelines and technical specifications in the design, construction and operation of NPPs in operation and under construction to meet the requirements of national nuclear safety supervision. In design of NPPs, we take into account the impact of climate change on parameters, which means the parameters related to nuclear safety have been designed to include certain safety margins to cope with the impact of uncertainties such as climate change. In the operation, the NPPs formulate emergency plans for climate risks (such as typhoons, blizzards and other extreme weather), and launch regular drills. In accordance with domestic nuclear safety regulatory requirements, we conduct safety assessments, and review all design parameters related to nuclear safety in each assessment every ten years to prevent and respond to climate risks caused by extreme weather and emergencies, and thus to ensure the safe and stable operation of NPPs.

Based on the global demand for climate change and low-carbon energy development, we continuously promote nuclear power development and comprehensive utilization of nuclear energy with our strong technical reserves and operational experiences, increase energy conservation and emission reduction, and work together with multiple parties to effectively respond to global climate change and provide safe, clean and low-carbon energy.

Currently, the installed capacity of our 25 sets of nuclear units in operation has reached 28,261 MW.



¹³ According to the 2021 National Electric Power Industry Statistics Express released by China Electricity Council in January 2022, the coal consumption of thermal power supply in China is 302.5 grams of standard coal/kWh.

¹⁴ According to the Annual Development Report 2021 of China's Electric Power Industry issued in July 8, 2021 by China Electricity Council, based on the assumption that nuclear power has net-zero carbon emission, 100 million kilowatt- hours nuclear power electricity is equivalent to reducing carbon dioxide emissions of coal power by about 83,200 tons, reducing sulfur dioxide emissions by 16 tons, and reducing nitrogen oxide emissions by 17.9 tons.

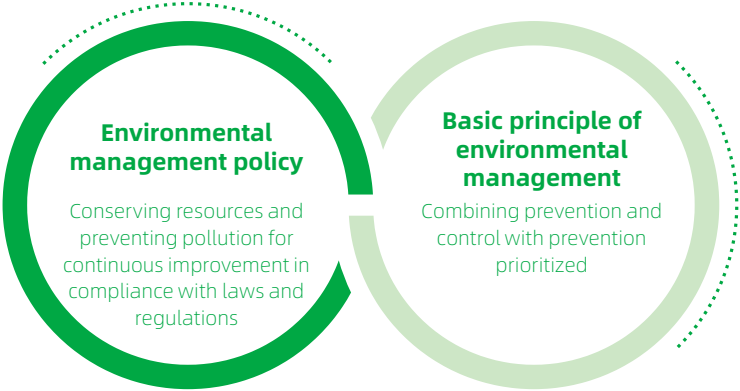


Environmental Management

CGN Power strictly abides by Chinese environmental laws such as the *Environmental Protection Law*, the *Law on Prevention and Control of Radioactive Contamination*, the *Water Law*, the *Law on Environmental Impact Assessment*, the *Atmospheric Pollution Prevention and the Control Law*, the *Marine Environment Protection Law*, and the *Law on Prevention and Control of Solid Waste Pollution*, as well as and local regulations. Accordingly, we adhere to the bottom line of compliance, constantly improve our environmental protection management system and combine environmental management with the production management system, striving to provide safe, reliable, low-carbon and economic energy for the society.

Environmental Protection Concept

In accordance with national laws and local regulations, and the concept of "lucid waters and lush mountains are invaluable assets", CGN Power has developed the environmental management policy of "conserving resources, preventing pollution for continuous improvement in compliance with laws and regulations". Following the basic principle of "combining prevention and control with prevention prioritized ", we carry out ecological conservation throughout the whole process of planning, construction, production and operation, committed to building a benchmark for ecological nuclear power companies by achieving environmental management objectives such as efficient resource utilization, reduction of pollution emissions, waste regeneration and continuous radioactive waste discharge reduction.



Environmental Management Goals

According to the changes in national laws and local regulations, we regularly identify and control environmental factors to publish our environmental management objectives and indicators every year. Based on the characteristics of the nuclear power industry and the Company's environmental factor identification principles, we adopt various methods, including expert assessment, special matter assessment and multi-factor assessment, to fully identify and evaluate environmental factors and risks and then develop corresponding control and improvement plans.

Identification and Evaluation Process of Environmental Factors

Determine the identification and evaluation unit of environmental factors	Identify environmental factors of each unit
Personnel	Discharge to the atmosphere
	Discharge to water
Equipment	Use of raw materials and natural resources
	Discharge to land
Work activities	Energy use
	Energy release
All workplaces and environment	Generation of waste or by-products
	Use of space

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Major environmental pollution and ecological damage accident(s)

In order to make our environment management more scientific, standardized and specific, we have set up and update short, medium and long-term environmental protection targets to promote environmental protection in a scientific and efficient manner.



Environmental Management System

All our NPPs have obtained **ISO 14001** environmental management system certification.

The Company continuously improves the environmental management system in accordance with the ISO 14001 standard and national laws and regulations such as the *Law on Prevention and Control of Radioactive Contamination* and the *Atmospheric Pollution Prevention and Control Law*. We have also formulated and improved the environmental management system to integrate environmental management with the production management system so that the objectives in safety, economy and environment can be realized synchronously.

Each NPP of CGN Power has established the network of environmental management: the environmental management departments are set up with full-time managers, environmental management systems and manuals. They coordinate the implementation of environmental management work among all units, and regularly organize joint meetings to analyze environmental laws and regulations, important environmental factors and management measures to improve the environmental management.

During the reporting period, we continued to promote the improvement of environmental management, carried out environmental protection inspections of six nuclear power bases, and organized improvement working groups based on the inspection results to further upgrade the environmental management systems, and standardize the environmental management work of subsidiaries. We also carried out special campaigns on environmental management work based on the improvement working groups to make the Company's environmental protection work more systematic, scientific and refined.

Pollutant Emissions Reduction

We strictly abide by national laws and regulations, and properly manage and dispose of the radioactive waste produced in operation. We have a complete set of radioactive waste treatment mechanism, and integrate radioactive pollution control into the whole operation process. Meanwhile, a strict environmental monitoring system is used to help our plant operations minimize the impact on the surrounding environment.

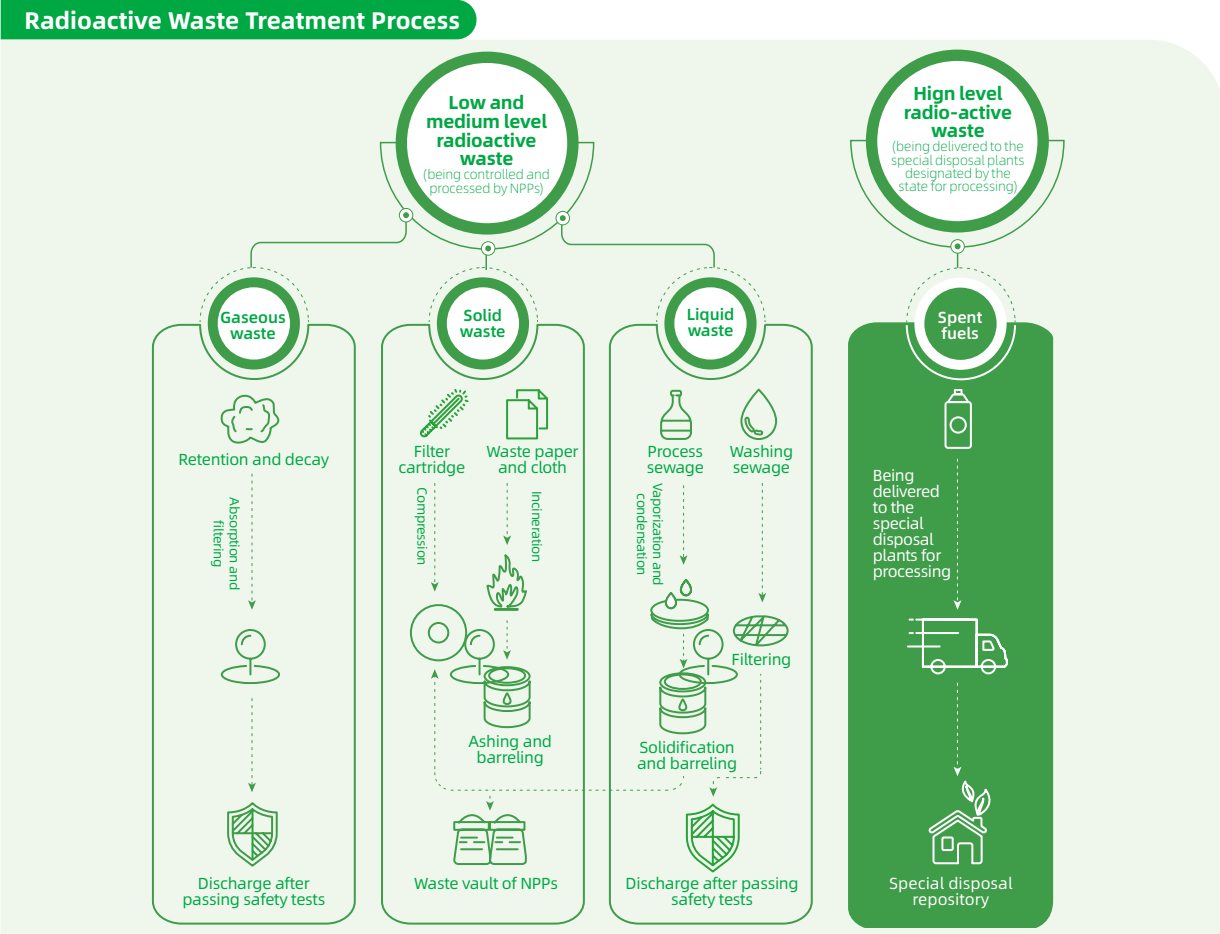
Radioactive Waste Management

We strictly abide by the *Law of Prevention and Control of Radioactive Contamination*, *Nuclear Safety Law*, *Regulations for Safe Radioactive Waste Management*, *Regulations for Environmental Radiation Protection of Nuclear Power Plant* (GB 6249-2011), and *Technical Requirements for Discharge of Radioactive Liquid Effluent from Nuclear Power Plant* (GB 14587-2011) to strictly control the treatment and discharge of radioactive waste.

Disposal of Wastewater, Exhaust Gases and Solid Waste

The operation and production activities of NPPs will produce solid, liquid and gaseous wastes ("three wastes"). Following the basic principles of radioactive substances management - ALARA (As Low As Reasonably Achievable), we have established a waste management organization structure, formed a complete set of radioactive waste control and treatment mechanisms throughout the plants' production and operation. The most stringent emission standards including advanced international technologies and standards are adopted to control and process radioactive waste. We also continuously enhance the ability to treat "three wastes", and our radioactive waste discharge is far below national standards.

Meanwhile, we minimize the production of radioactive waste. While meeting national laws and regulations, we also actively benchmark ourselves against the annual output of radioactive solid waste in the world's major nuclear power countries. We have set clear long-term goals, formulate overall management strategy at NPPs, and reduce radioactive waste through source control and the application of volume reduction technology.



Each power plant is equipped with advanced facilities for treatment of radioactive waste. The chart above outlines the classification and treatment of each radioactive waste. According to relevant national regulations, spent fuel (used fuel assembly taken from reactors) is a highly radioactive waste, which cannot be disposed of by the NPP itself, and must be sent to a designated special disposal plant for further treatment. After treatment, 97% of the spent fuel can be reused. The "three wastes" management system of each plant has been designed, constructed and put into operation simultaneously with the main body construction. The whole process of storage, transportation and disposal of radioactive waste strictly follows the relevant provisions of national laws and regulations.

During the reporting period, all NPPs strictly carried out discharge management of radioactive effluent in accordance with national laws, regulations and standards. The "three wastes" management system operated normally, and the total amount of radioactive effluent from NPPs was far below the applicable national limits.

	Year	Ratio of liquid effluent (nuclides but tritium) to state annual limit	Ratio of gaseous effluent (inert gases) to state annual limit	Generation of radioactive solid waste (m3)	Environmental monitoring results
Daya Bay Nuclear Power Base (including Daya Bay NPP, Ling'ao NPP and Lingdong NPP)	2019	0.27%	0.43%	244.8	Normal
	2020	0.24%	0.42%	230.3	Normal
	2021	0.24%	0.46%	166.7	Normal
Yangjiang NPP	2019	0.55%	0.30%	60.8	Normal
	2020	0.41%	0.21%	102.4	Normal
	2021	0.39%	0.19%	88.6	Normal
Fangchenggang NPP	2019	0.29%	0.29%	67.6	Normal
	2020	0.30%	0.30%	74.0	Normal
	2021	0.20%	0.29%	72.2	Normal
Ningde NPP	2019	0.24%	0.28%	124.8	Normal
	2020	0.37%	0.30%	110.4	Normal
	2021	0.40%	0.27%	63.6	Normal
Hongyanhe NPP	2019	0.19%	0.20%	118.4	Normal
	2020	0.15%	0.14%	120.0	Normal
	2021	0.26%	1.87%	92.4	Normal
Taishan NPP ¹⁵	2019	3.02%	1.59%	0	Normal
	2020	4.85%	2.19%	0	Normal
	2021	6.24%	8.67%	0	Normal

¹⁵ Taishan NPP's annual emissions limit is different from other plants, and there is no comparison between NPPs.

Non-radioactive Sewage Discharge

We strictly manage and control the treatment and emission of non-radioactive sewage according to national laws and regulations and local standards including the *Environmental Protection Law of the People's Republic of China* and the *Marine Environmental Protection Law of the People's Republic of China*.

All our NPPs have developed non-radioactive sewage management procedures to provide detailed requirements for sewage collection, construction, operation, maintenance management, water quality analysis and testing. In each plant, professional sewage treatment facilities have been set up to treat radioactive and non-radioactive wastewater separately through independent systems under online real-time monitoring. At the same time, we have entrusted professional organizations to test the quality of the discharged water to make sure it meets relevant standards.

According to the different requirements of the region or province, our NPPs have adopted different control measures for non-radioactive sewage discharge.

Some NPPs are equipped with sewage outlets. Online monitoring equipment and flow meters are installed at the sewage outlets to monitor relevant data in real time, and measure the discharge flow of wastewater to ensure that the water quality meets the discharge standards.

Some NPPs upgrade the sewage treatment facilities. Part of the treated water is used for plant greening, dust prevention spray treatment etc., for water recycling.

Each NPP regularly monitors the sewage treatment station and uses monitoring files to ensure effective sewage treatment.

During the reporting period, the non-radioactive wastewater treatment facilities of each NPP were operating normally, and the treatment met the regulatory standards and requirements.

Non-radioactive Waste Management

For disposal of non-radioactive waste, we strictly comply with the *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste*, *Pollution Control Standard for Storage and Landfill of General Industrial Solid Waste* (GB 18599-2020) and *Pollution Control Standard for Hazardous Waste Storage* (GB 18597-2001). The Company's non-radioactive waste mainly comes from engineering construction and daily production, including construction waste, office waste, domestic waste, and building greenery waste. Because the total amount has a small impact on the Company's business operation, we have not collected relevant data.

All NPPs formulate *Regulations on Industrial Solid Waste Management* to reduce waste from the source, and supervise and manage the entire process of classification, collection, storage, handling, transportation, utilization, and disposal. Wastes are sent to qualified professional agencies for disposal after sorting and recycling to ensure proper treatment for each type of waste.

As for the disposal of non-radioactive hazardous waste, we strictly conform to relative regulations and their amendments, including the *Regulations on Safety Management of Hazardous Chemicals and Pollution Control Standard for Hazardous Waste Storage* (GB 18597-2001). We have set up up-to-standard hazardous waste storage room and standardized management of waste disposal to ensure the generation, storage, transport, utilization and treatment of hazardous wastes conform to laws and regulations and prevent environmental risks.

During the reporting period, the hazardous solid waste storage facilities of each NPP operated normally. The treatment and disposal of non-radioactive waste met the relevant laws and regulations, as well as regulatory requirements.

Case

Fangchenggang Nuclear recycles solid wastes

By investigating and analyzing the components of domestic sludge, Fangchenggang Nuclear evaluates the recycling site of domestic sludge in the sewage station to recycle and reduce sludge. The treated sludge is expected to be reused for water conservation, greening and landscaping at the plant. This method will also be applied in greening the living areas of the Phase II Project.

Case

Yangjiang Nuclear develops APG waste resin regeneration device

Every year a large amount of Steam Generator Blowdown (APG) waste resin produced by NPPs needs to be treated as hazardous waste. Yangjiang Nuclear has developed an APG waste resin regeneration device to make sure the treated resin meet the national standard, making it a reused resource instead of hazardous waste. Through this technology, Yangjiang Nuclear reduces about 70 m3 of APG waste resin every year, saving the processing cost for the Company and reducing the generation of hazardous waste.

GHG Emissions and Electricity Management

Nuclear power does not produce greenhouse gas in the process of power generation. The Company's minor amount of greenhouse gases generate from the electricity purchased for construction, refueling outages and activities in office and living areas which fall into Scope 2- Energy Indirect GHG Emissions¹⁶.

To further cut back on greenhouse gas emissions, we have strengthened carbon emission management. We insist environmental protection throughout the project construction and operation. Technical means and management measures are used to save energy and reduce emission.

In order to further improve energy management level, our five nuclear power bases including Daya Bay, Yangjiang, Taishan, Fangchenggang, and Hongyanhe have rolled out certification for usage and management of energy input, storage, conversion, distribution, use, and recycling processes involved in production activities. The Company has become one of the first batch of nuclear power companies to set up and pass the energy management certification standard.

Each NPP has set up an energy-saving management team responsible for coordinating the energy conservation work of various departments, and optimizing the plant operation by replacing energy-intensive equipment, improving equipment operation, launching energy conservation upgrades, promoting green office, and deepening energy saving awareness to further save energy and reduce emission.

¹⁶ In accordance with the Appendix 27 the GHG Protocol of the Environmental, Social and Governance Reporting Guide of the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited.

Electricity Consumption Management in the Operation and Engineering Construction of NPPs
Optimizing operation mode and energy efficiency for safety and environmental concerns. Improving or replacing high energy consumption equipment if possible.

- Closely tracking units' output changes, timely tracking system anomalies and carrying out analysis and evaluation.
- Optimizing operation mode of production equipment to reduce power consumption scientifically and reasonably.
- Carrying out energy-saving renovation of production equipment.

Electricity Consumption Management in Office and Living Areas
Regulating the power consumption of employees in office and living areas and promoting their energy-saving awareness.

- Carrying out energy saving publicity to strengthen employees' awareness of conserving electricity, and maintaining good living and office habits.
- Setting electricity consumption quota and recording electricity consumption.
- Managing energy saving and controlling the use of air conditioners and water heaters.
- Adjusting elevator operating schedule.
- Switching to energy-efficient air conditioners and LED lights.
- Shutting off unnecessary lights and power. Turning office equipment such as computers, printers, etc. into sleep mode when unused.
- Advocating video conferences.
- Promoting electric vehicles as the shuttle bus for employees.

Power-saving Measures at Nuclear Power Bases

DNMC

On the basis of safe and stable operation of units, DNMC adopts multiple energy-saving measures, such as the operation optimization of major power-consuming equipment during the outages and thermal shutdown, replacement of energy-intensive equipment and lighting upgrading in the main plant, saving more than 15 GW electricity in recent three years.
DNMC escalates the use of clean energy in the office and living areas, and powers the restaurants with electricity rather than diesel, reducing the diesel consumption by about 3.12 million liters. DNMC widely uses new energy vehicles by replacing petrol vehicles with 14 electric shuttle buses, reducing fuel consumption by about 6,000 liters per month.

Hongyanhe Nuclear

Hongyanhe Nuclear is all heated by heat transfer of the nuclear steam, saving about 20,000 tons of standard coal and reducing CO₂ emissions by about 73,300 tons per year. Water heaters and lights at living areas are also upgraded to save energy. Outdoor electric lights are upgraded by adding photosensitive modules and light control switches, to achieve energy-saving. 17 water heaters of primary energy efficiency are installed in the living area. Assuming that each water heater supply 1 hour of hot water, it is expected to save about 3.5 MWh of electricity throughout the year.

Taishan Nuclear

Taishan Nuclear has established an energy-saving group, to carry out supervision and inspection of energy-saving technology, and formulate a series of improvement measures for problems. It has made thermal insulation transformation of high and medium pressure cylinders, bypass system valves of steam engine, main steam system valves, etc. of steam turbines to reduce heat loss.

Yangjiang Nuclear

Yangjiang Nuclear has replaced and phased out energy intensive equipment actively. It carries out the feasibility analysis of frequency conversion for energy-saving of condensate extraction system and power control of single-row operating units of circulating water system with external experts, so as to provide technical support for reducing operational energy consumption.

Ningde Nuclear

The ventilation system of the steam engine plant was verified to be feasible in the Unit 3. Ningde Nuclear promotes the relevant operating procedures of the Unit 1 and 2, and the annual electricity consumption of 2.3 million kWh is expected to be saved after the implementation of all units. It sorts out, checks and eliminates old equipment, and plans to replace energy-intensive motors, and encourages to replace halogen lamps with energy-saving lamps.

Fangcheng-gang Nuclear

Fangchenggang Nuclear formulates energy-saving management work plans, and replaces energy-intensive motors as planned. The transformation into energy-saving lamps is expected to save 500 MWh of annual electricity consumption.

Efficient Use of Resources

We implement the *Energy Conservation Law of the People's Republic of China* and the *Water Law of the People's Republic of China*, attach great importance to resource management and utilization, introduce advanced technology worldwide, constantly optimize production management, and improve resource utilization to help build a resource-saving and environment-friendly society.

Nuclear Fuel Utilization Efficiency

Increasing the use efficiency of nuclear fuel is the key task to save nuclear fuel resources and promote sustainable development. improve nuclear power economy. Based on the advanced technologies both home and abroad, we gradually improve the efficiency and effectiveness of nuclear fuel use through technological R&D and fuel management, and strengthen quality control to ensure the safe and stable operation of nuclear power units.

Technological R&D

Continue to develop reliable and economical fuel cycling and refueling models, and cooperate with relevant institutions to carry out R&D and upgrading of nuclear fuel to improve the use efficiency of nuclear fuel.

After a series of technological development and upgrading, the current nuclear fuel cycle in our NPPs ranges from 12 to 18 months. Most of the units have been upgraded to 18-month refueling. This has greatly reduced the number of refueling outages, and effectively improved the unit availability and utility rate of nuclear fuel.

Optimization of fuel management

During the reporting period, new fuel assemblies with different enrichment levels were adopted in some NPPs to improve the use efficiency while increasing the economy of NPPs.

Water Resources Management

Water resource is one of the key risk factors in the nuclear power industry. We attach great importance to saving and protecting water resources by adopting water saving management, applying advanced water-saving technology, strengthening maintenance of water supply system, and protecting water sources to ensure the sustainability and efficiency of water supply and reduce risks.

¹⁷ The purchased electricity is mainly used for engineering construction, refueling outages, and activities in office and living areas at the NPPs of CGN Power.

¹⁸ According to the "China Power Industry Annual Development Report 2021" released by the China Electricity Council on July 8, 2021, nuclear power is calculated according to net zero carbon emissions, and the equivalent thermal power carbon emissions of nuclear power with 100 million kWh of on-grid electricity are reduced by 83,200 tons, sulfur dioxide emissions by about 16 tons, and nitrogen oxide emissions by about 179 tons. The 2019 data has been calculated and updated based on the updated purchased electricity and the conversion formula disclosed in the 2019 ESG report. The 2020 data was calculated and updated based on the conversion formula disclosed in the 2020 ESG report.

More Sustainable Water Supply

The water we use is sourced from municipal water supply, power plant reservoirs and sea water, with no problems in sourcing suitable water. The reservoirs are equipped with an automatic integrated video and satellite monitoring system to track water level, dam seepage, leakage pressure, and rainfall, ensuring their stable operation. In order to strictly manage reservoir water, the power plant reservoir has been managed in accordance with the *Regulations on Water Saving Management of Bases* and as the first-level water source protection area. We implement systems on water extraction permit, water use plans, water use declaration, and water use tracking system with statistics.

To further improve the sustainability of water supply, we have regularly assessed the safety and stability of water supply and formulated water-related management regulations and emergency plans, including the *Emergency Plan for Water Shutdown in Water Supply Pipeline* and the *Emergency Plan for Reservoir Collapse* to ensure timely and effective handling of water source anomalies with standardized measures. We have rationally allocated water resources and implemented comprehensive environmental protection measures in special freshwater reservoirs of the plants and adjacent water areas' ecological environment.



Xinsong Reservoir of Taishan Nuclear Power Base

Higher Water Use Efficiency

All bases have formulated water-saving management requirements, advocated water conservation and reasonable water use, and promptly intervened in and urgently repaired abnormal water use and burst pipes to avoid wasting water.

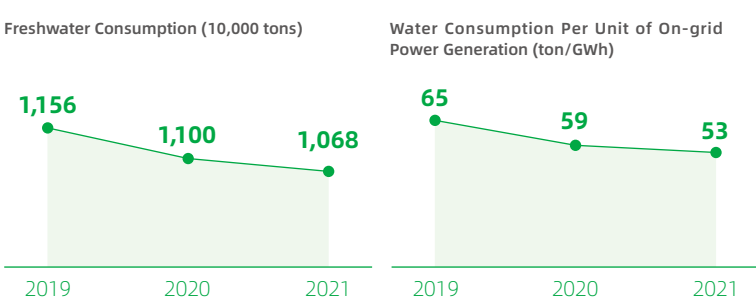
For seawater utilization, we have continuously promoted seawater desalination technology, and established a seawater desalination system based on actual conditions of different nuclear power bases, thereby reducing the consumption of fresh water by plants, and improving the efficiency of water utilization.

Case

Hongyanhe NPP's Sewage Treatment & Reuse System

The domestic sewage treatment station of Hongyanhe NPP is located at the heavy cargo wharf in the front area of the plant, which is used for sewage and reclaimed water treatment. The domestic sewage of the power plant is collected in the grid room of the sewage treatment station and sent to the main unit area for treatment after pre-treatment. When the effluent reaches the reuse standard, some is reused for plant greening and toilet flushing, and the rest is used for further reclaimed water treatment. After further disposal, the water is used for landscaping, neutralizing anti-foaming agents at the Phase II outlet, and as production water after being processed by the Demineralized Water Production of the plant. Through this treatment project, the sewage in the plant can be collectively treated and fully reused to reduce the environmental impact of waste water discharge and improve the utilization rate of water resources.

Water resources are mainly used for engineering construction, production and operation, and working and living activities. During the Reporting Period, we have reduced the consumption of fresh water and improved the utilization efficiency of water resources by saving and protecting water. During the reporting period, freshwater water consumption decreased by 2.91% compared with the same period of last year. The freshwater water consumption per unit of on-grid electricity decreased by 10.17%.



Green Nuclear Power Ecology

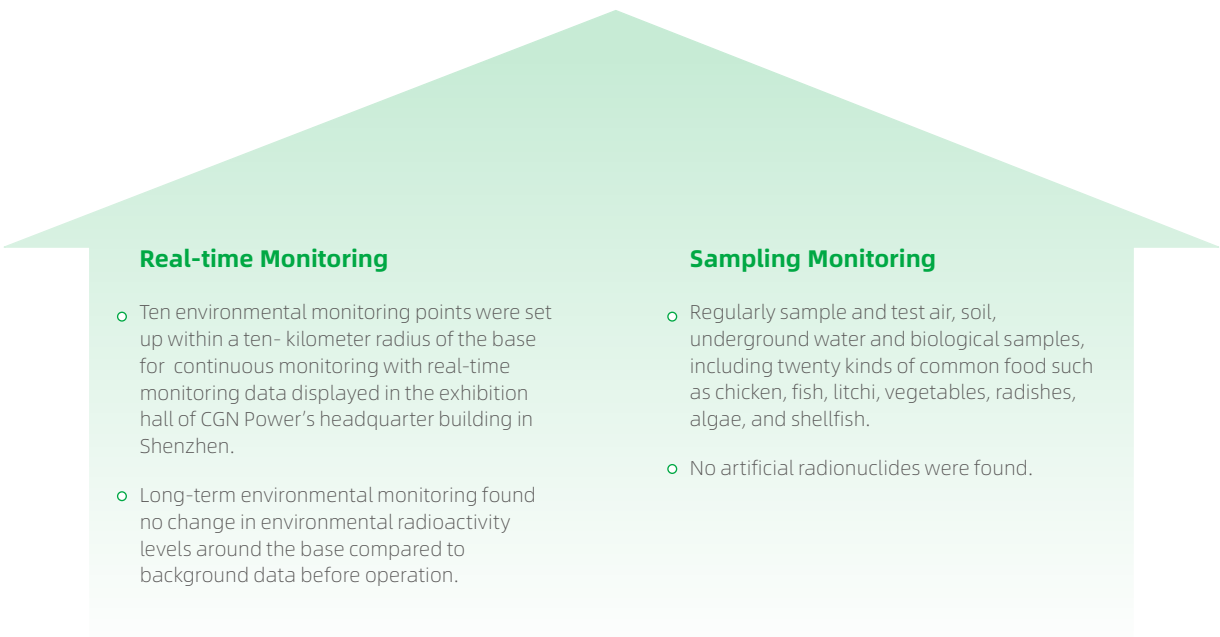
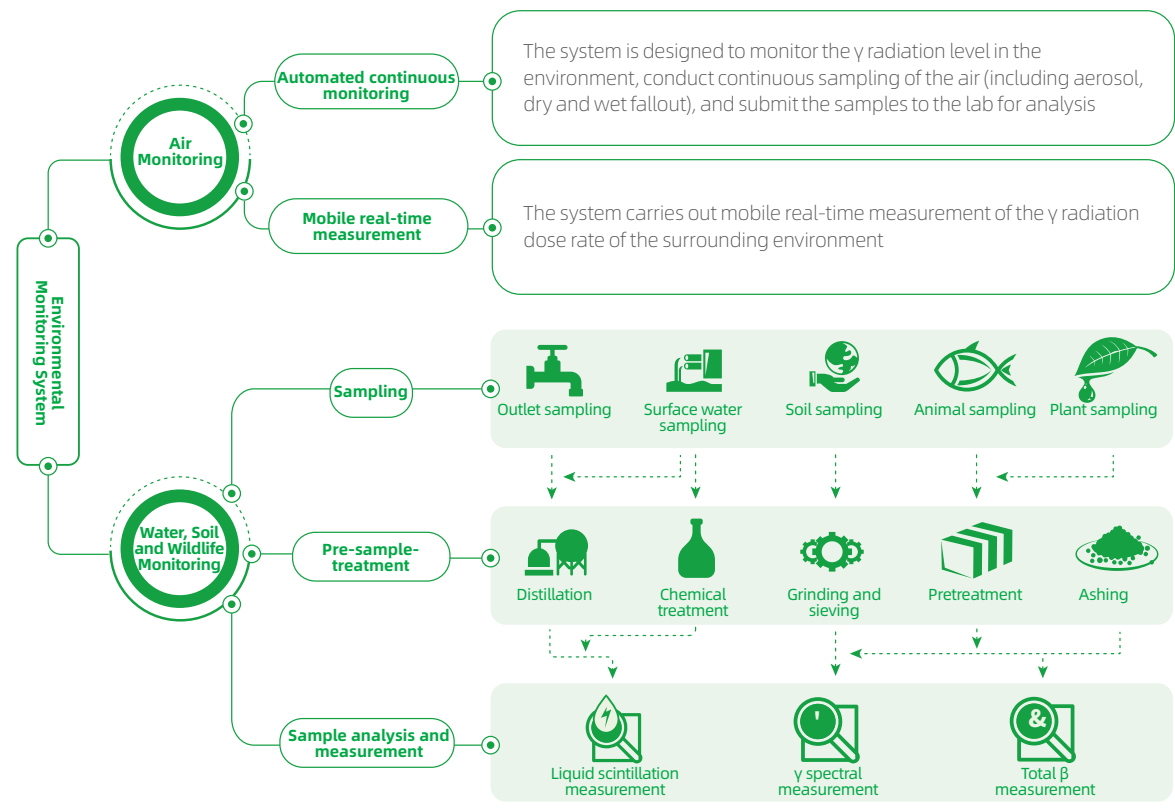
CGN Power upholds the philosophy of harmonious coexistence of nuclear power operation and the ecology, taking full consideration of the impact of planning, design, construction, operation and maintenance of the NPPs on the surrounding environment. We build a comprehensive environmental monitoring system to supervise and track environmental impacts and avoid damage to the ecology. Meanwhile, we incorporate biodiversity protection into our development strategy, and combine business operation with biodiversity protection to push for sustainable development and win-win results of the economy, society and environment.

Environmental Monitoring

Conformed to laws, regulations and other regulatory files including *Regulations for Environmental Radiation Protection of Nuclear Power Plant* and *Regulations for Environmental radiation Monitoring of Nuclear Power Plant*, we effectively monitor the surrounding environment of operating plants, track the environmental impact and take timely actions. We disclose the monitoring data in time, and regularly submit the monthly and annual environmental monitoring reports. We accept the supervision of regulatory authorities at all levels and the public to ensure that the operation has no impact on the environment and the public.

Internal Monitoring

Each nuclear power base has established stringent environmental monitoring systems and environmental survey recording systems according to the requirements of national regulators and the *Outline for Environmental Supervision and Monitoring*. We have set up a full set of professional environmental monitoring facilities to monitor surrounding noise, dust, soil erosion, domestic sewage, production sewage and other environmental factors. We have conducted monitoring and analysis for air, water quality, terrestrial biological and marine biological environment changes in the vicinity of nuclear power bases. In the meantime, we focus on monitoring the level of environmental radioactivity in and around the plants, and timely released relevant data to the public.

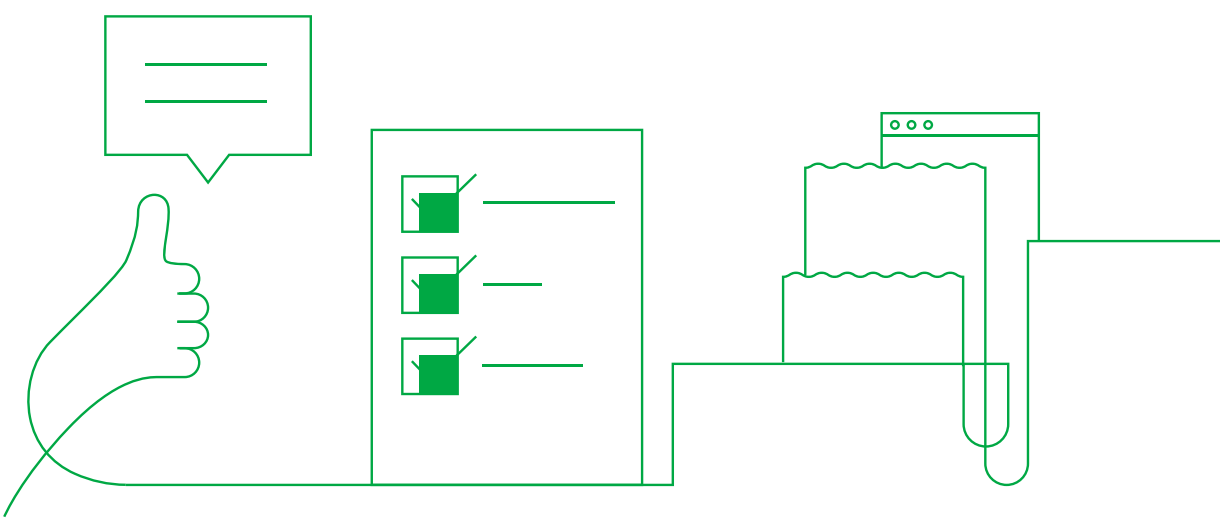


External Supervision

We actively cooperate with national regulatory authorities and external supervisory bodies to monitor the environment around the plants. National regulators conduct strict supervision over radioactive substances of NPPs and introduce a "dual track" monitoring of gaseous and liquid effluents and the peripheral environment, which is carried out by the operating unit of the plants and provincial environmental radiation monitoring organizations where the plant is located.

According to the monitoring results in 2021, the air absorption rate around each NPP in operation is within the range of local natural fluctuations, and the radionuclide concentration in environmental media such as water, soil and organisms around NPPs has not changed compared with previous years, which has no negative impact on the environment and public health.

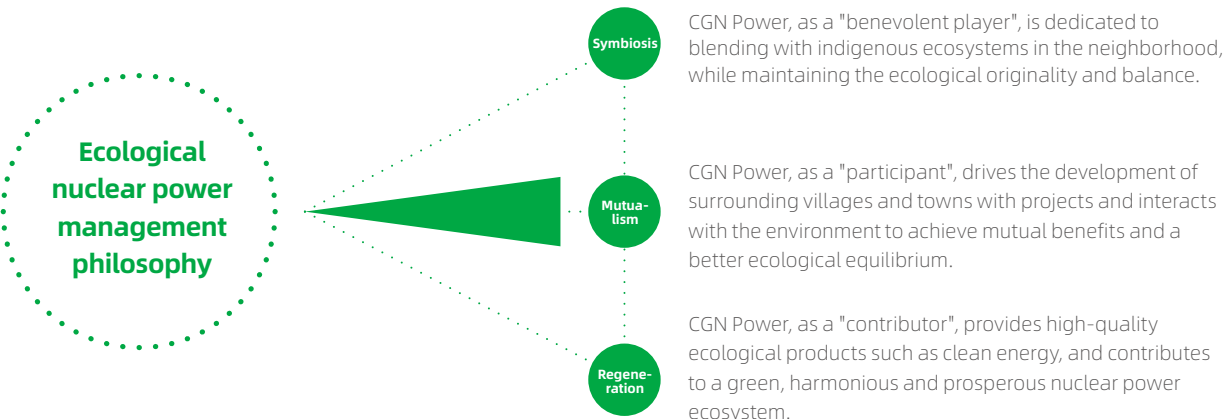
The Hong Kong Observatory and other monitoring departments have set up environmental radiation monitoring stations since the operation of Daya Bay NPP. A total of twelve radiation monitoring stations have been set up in HK to continuously monitor environmental gamma radiation dose rates for 24 hours every day. Annual reports have been issued to inform the public of the status of environmental radiation levels in HK. Years of monitoring results have indicated that no increase of artificial radionuclides is found during the operation of Daya Bay NPP.









Biodiversity Conservation

Biodiversity conservation not only brings responsibilities for mankind, but also important opportunities for enterprises towards sustainable development. We have always followed the philosophy of ecological nuclear power management. We adopt a "four-step" management approach of "avoidance-reduction-mitigation-compensation" to protect biodiversity throughout different stages of site selection, design, construction, and operation and maintenance of NPPs, striving to reduce the impact on biodiversity with a variety of effective measures to protect ecological resources and the surrounding natural environment, and achieve harmonious coexistence with the surrounding natural environment.



Four-step biodiversity conservation approach

 <ul style="list-style-type: none">Science-based site selection and constructionHabitat protection <p>In order to achieve the goal of biodiversity conservation, priority should be given to the design and construction scheme that avoids negative disturbance, so as to avoid the impact on the key areas of biodiversity conservation.</p>	 <ul style="list-style-type: none">Waste managementSpecies protection <p>When disturbance cannot be avoided, the impact of projects on biodiversity should be minimized by formulating and implementing the strict environmental management system, monitoring the surrounding environment and protecting species.</p>	 <ul style="list-style-type: none">Development of clean energy, such as nuclear power, to mitigate climate change <p>To tackle the global ecological, environmental and climate change crisis, mitigation measures should be taken to help mitigate regional/global environmental change as much as we can.</p>	 <ul style="list-style-type: none">Ecological restoration and compensation <p>Biodiversity compensation measures should be taken when appropriate for better biodiversity conservation.</p>
Reduction		Mitigation	
Avoidance		Compensation	

Site Selection and Design

- Conduct field investigation to assess the impact of construction on local biodiversity, and avoid natural habitats and wetlands, forests, wildlife corridors, and agricultural land
- Determine project scope to minimize the impact of construction on wildlifes

Engineering Construction

- Implement woodland transformation and green the plant area to maintain the original ecology
- Carry out ecological environment background survey and basic water temperature monitoring survey for monitoring environmental changes in the surrounding sea area

Nuclear Power Operation

- Establish and implement rigorous discharge disposal processes and regulations and monitor surrounding environment in real-time to ensure no impact on the surrounding species by radioactive discharges and thermal discharges

Case An "ecological" nuclear power plant with tea garden

At the beginning of Ningde NPP's construction, in order to protect the local pillar industry, more than 200 mu of tea garden was preserved in the plant and handed over to the landscape company established by local residents for maintenance. Ningde NPP has become the only NPP with a green tea garden in the world, which not only protects the regional ecological environment, but also increases the income of local residents. We implement the ecological development concept of "lucid water and lush mountains are invaluable assets" with practical actions.



Case Co-planting the mangrove forest

Mangrove is one of the important factors of ecological environment of tropical coast. In order to protect the growing environment of mangroves, Fangchenggang NPP conserved mangrove on the beach near the plant, established protection archives, and carried out mangrove planting projects which boasted a planting area of 2.3 hectares. We enriched mangrove plant community configuration, and formed a comprehensive mangrove wetland vegetation community with the surrounding environment.



Environment-oriented Charity

We actively carry out green public welfare activities to make the green, low-carbon and environmentally friendly concept strike root in the hearts of the people, convey green values, and involve more people in the ecological environment protection.

Case Less garbage, more blue oceans

During the World Environment Day, volunteers of Fangchenggang Nuclear cleaned up garbage to protect the marine ecology in the seaward side of the breakwater in the south of the Fangchenggang nuclear power base. They were divided into groups to collect garbage such as foam, plastic bottles, fishing nets and lumber, and take them away to effectively maintain a clean marine environment and contribute to the safe and stable operation of the nuclear unit.

Case 2021 World Environment Day - Ocean Day Outreach Activity in Daya Bay nuclear power base

Under the theme of "relieving the earth's carbon", Daya Bay Nuclear Power Base carried out the World Environment Day - Ocean Day Outreach Activity. It informed the public of our efforts in biodiversity conservation, marine and terrestrial biodiversity survey, and photography of biodiversity preservation in Dapeng New Area and Daya Bay Nuclear Power Base, further deepening the public's awareness of environmental protection.

Talent Cultivation

3

GOOD HEALTH AND WELL-BEING

5

GENDER EQUALITY

8

DECENT WORK AND ECONOMIC GROWTH

In line with the concept of "talent-first corporate development", CGN Power adopts equal and diversified employment policies, strengthens democratic management and democratic communication, cares for the health and safety of employees, and builds a comprehensive talent training platform, aiming to create a high-quality development and growth environment for talents to achieve shared development with employees.



Employee Care

Employees are the most treasurable wealth and the core driving force to maintain the sustainable development of the Company. We strictly comply with relevant Chinese laws and regulations such as the *Company Law*, the *Labor Law* and the *Labor Contract Law*, and have formulated the *Labor Management System*, the *Recruitment and Employment Staffing Management System*, the *Professional and Technical Staff Recruitment Management System*, the *Management Staff Selection and Appointment Management System*, the *Salary Management System*, the *Employee Performance Management System* and other internal rules and regulations. We adhere to legal employment, respect employees and protect their legitimate rights and interests.

Talent Attraction

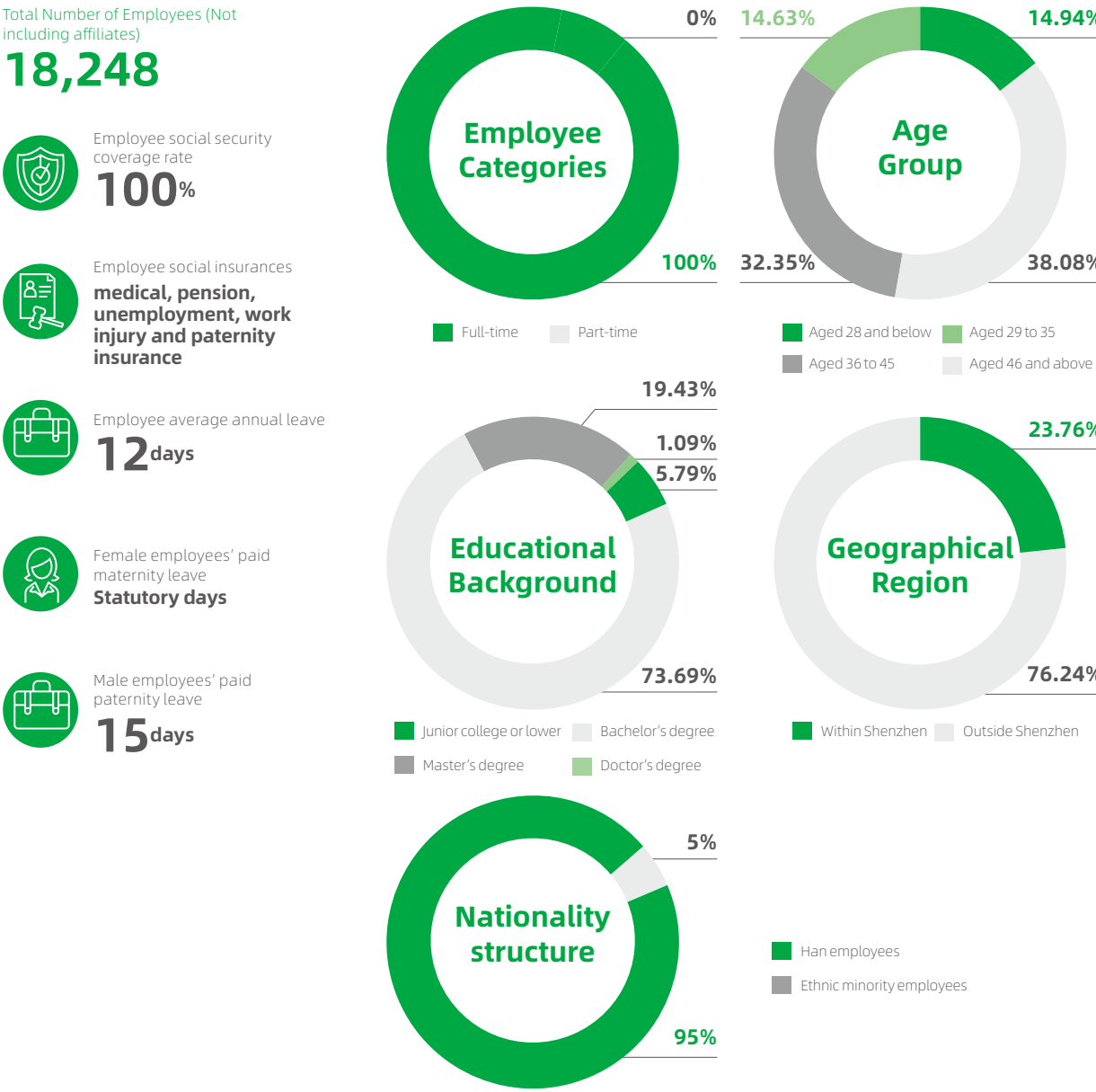
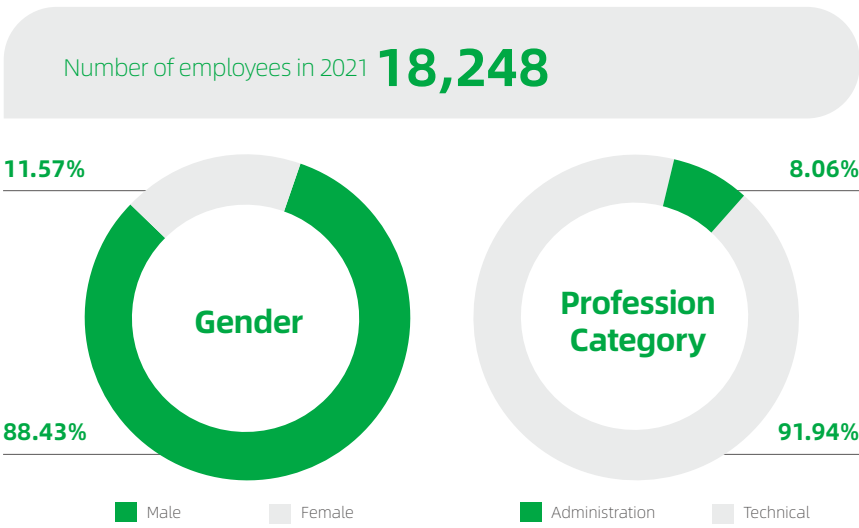
Attracting and gathering highly qualified professionals is the key to the nuclear power operation. We have strictly implemented the fair, just and open human resources management system, and formulated the *Human Resources Plan* to standardize the recruitment and dismissal process and provide competitive compensation and benefits. We have also gradually strengthened the planning and building of high-level talents in accordance with the national energy development plan and in combination with our own business development and market conditions of the industry.

We recruit talents through combinations of campus recruitment and social recruitment, screen the resumes of the candidates in the principle of openness, fairness and impartiality, and select the candidates through telephone interviews, written tests and background review. During the recruitment process, we strictly examine the applicants' identity information to prevent candidates under the age of 16 during the process, eliminate child labor and all forms of forced labor, and ensure the legitimate rights and interests of each employee as well as human rights. During the reporting period, there was no human rights violation, child labor or forced labor.

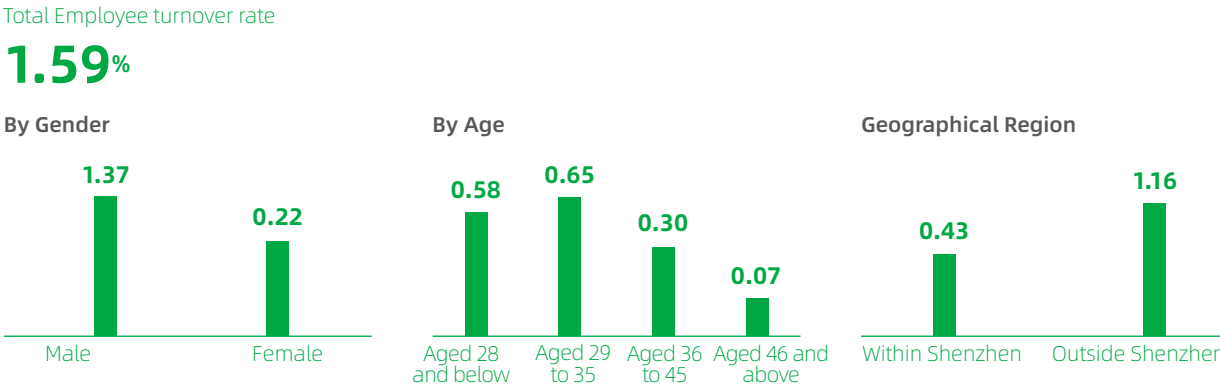
Equality and Diversity

The equal and diversified staff team makes CGN Power more creative and creates more development opportunities for the Company. We attach great importance to the internationally acknowledged human rights norms, adhere to equal and diversified employment policies to continuously promote fairness and inclusiveness in the workplace, oppose any discrimination and put an end to differential treatment due to differences in employees' gender, ethnicity and belief, to ensure the diversity of talent team. By the end of the reporting period, the total number of employees of CGN Power (excluding associated companies) was 18,248, all of which were full-time employees, which can meet the personnel needs for the simultaneous operation of dozens of nuclear power units.

Staff composition



Employee turnover rate (%)



Employee Incentive System

In order to motivate key talents and create greater value for the Company and shareholders. The Company approved the H-shares Appreciation Rights Scheme at the 2014 general meeting of shareholders. The Scheme was expected to be conducted in three grants with each grant taking effect in three tranches. For details, please refer to the Company's H-share Annual Report 2021.

Except the above incentives, CGN Power provides employees with competitive compensation in the industry, in order to attract talent and avoid talent loss as well as motivate them. The Company has formulated and improved the compensation and benefit system and reward mechanism, constantly optimized the performance management system, and created a benign win-win reward mechanism for employees and the Company.

Democratic Management

Democratic company management can better safeguard employees' right to know, enhance their sense of ownership, guide employees to participate in corporate management, and better promote the higher-quality development. Complying with the *Regulations on Democratic Management of Enterprises* (ACFTU [2012] No. 12), the *Regulations on Workers' Congress of Industrial Enterprises under the Ownership of the People*, the *All-China Federation of Trade Unions on Strengthening the Democratic Management of Corporate Enterprises Opinions* (ACFTU [2012] No. 78), the *Guiding Opinions of the State-owned Assets Supervision and Administration Commission Party Committee and the State-owned Assets Supervision and Administration Commission on Establishing and Improving the Staff and Workers Congress System of Central Enterprises* (SASAC Party Committee [2007] No. 120), the *Notice on Regulations of the Grassroots Trade Union Member Conference issued by the All-China Federation of Trade Unions* (ACFTU [2019] No. 6) and other rules and regulations, we have established a workers congress. We have constantly broadened the channels of democratic management, continuously improved the democratic management system, and implemented the system of employee director and supervisor, and encourage employees to make suggestions and participate in business decision-making, management, supervision of management team and exercise of democratic rights, thus fully guaranteeing employees' rights to know, participate, express and supervise, and promoting the healthy development of the Company.

Case Holding a lecture on the protection of women workers' rights and interests

On April 27, 2021, Hongyanhe Nuclear invited a third-party legal expert to give a lecture on the protection of women's rights and interests. The expert believed that the Company's collective contract meets the requirements of laws and regulations. In terms of the scope of protection and the welfare of female employees, the Company's collective contract is superior to the protection regulations, which fully shows the Company's protection of the rights of the majority of female employees. The expert also interpreted provisions on marriage, property, real estate and debt in the *Civil Code*, and selected several typical cases for analysis.



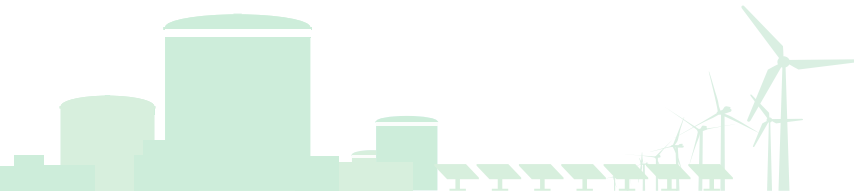
Carrying out multi-channel communication

To strengthen the democratic communication mechanism, CGN Power have established a multi-channel regular communication mechanism between the management team and employees. The management team regularly visits various projects to understand employees' needs, and to improve the workplace environment based on the suggestions.

When employees formulate and implement their individual performance plans, and conduct year-end performance appraisal, the management team of the Company will have interviews with employees to get feedback in time, which not only promotes mutual understanding of problems and requirements in work, but also unify employee performance and corporate performance as well as common development of employees and the Company.

Employees can provide their opinions or suggestions to their superiors through channels such as forum, mailbox from leaders, the Party Branch, Labor Union, and League branch.

We regularly hold organizational meetings, democratic meetings for management team and etc., to seek employees' opinions and suggestions regarding company strategy, operation management, reform and personal development, compensation and benefits, and other aspects.



Work-life Balance

A good balance between work and life can stimulate employees' creativity and improve work efficiency. People-oriented, we carry out diversified cultural and sports activities, festival celebrations, family activities and etc. Employee activity room and youth home in the living area of the nuclear power base are set up to help enrich the daily entertainment activities of employees and their families at the base, and encourage and support employees to shoulder their responsibilities for the families. By so doing, we strive to enhance vitality of employees, enrich the life of employees, alleviate work pressure of employees, cultivate employees' interests and improve team cohesion.

During the reporting period, the Company adjusted the leave management according to the newly revised *Guangdong Province Population and Family Planning Regulations*: the Company added 10 days of parental leave each year since December 1, 2021 for parents with kids under the age of 3; in order to alleviate the caring pressure of employees who are the only child in their families, the Company provided 5 days of nursing leave for the only-child employees whose parents are over 60 years old; employees will also be given no more than 15 days of nursing leave each year if their parents are hospitalized.

Honors

In 2021, Fangchenggang Nuclear's labor union won the honorary title of National Model of Worker's Home awarded by All-China Federation of Trade Unions.

Honors

In 2021, the branch labor union of Fangchenggang Nuclear's safety protection department won the honorary title of National Model of Worker's Family awarded by All-China Federation of Trade Unions.

Case Fangchenggang Nuclear establishes a staff activity room and youth home

To enrich the amateur life of employees, on June 29, 2021, Fangchenggang Nuclear's "staff bookstore (youth home)" and "staff activity room" were officially put into use. Both are set up at the downstairs of the dormitory in the living area of the base for 24-hour service, no reservation required and available to employees at any time. The staff activity room is equipped with a variety of indoor recreational facilities for employees to use. There are more than 2,000 books in the staff bookstore. The bookstore is divided into reading area and discussion area according to functions, creating a good atmosphere for employees to read and communicate.



Occupational Health

The health and safety of employees is the cornerstone of the sustainable development of enterprises and the guarantee of employees' happiness. We strictly comply with relevant Chinese laws and regulations such as the *Work Safety Law*, the *Fire Control Law*, the *Law on Prevention and Control of Occupational Diseases* and the *Interim Provisions on the Supervision and Management of Work Safety at Central State-Owned Enterprises*. In response to the "implementation of the Healthy China Initiative" put forward at the 19th CPC National Congress, we carry out the building of healthy enterprises in accordance with a series of documents such as *Healthy China Action (2019-2030)*, the *Notice on Promoting the Building of Healthy Enterprises* and the *Norms for Building Healthy Enterprises (Trial)*, to improve employee's occupational health prevention awareness and skills. Implementing the management policy of "Safety First, Prevention-oriented and Comprehensive Governance", and the principle of "Safety Management Must Be Included in the Production Management", we actively adopt measures to secure employees' health and safety, track the health of employees and create a healthy working environment, striving to become a healthy and excellent enterprise.

Sound Occupational Health Management System

A complete occupational safety management system can guarantee the life safety and occupational health of employees to the greatest extent. We have benchmarked with domestic and foreign peers, continuously promoted safety operation standardization, and developed the occupational health and safety management system and culture of the Company. We have adopted a series of measures such as technology, management and personal protection to reduce and control occupational health and safety risks according to the onsite work time limit required by the occupational hazard evaluation. We continue to conduct self-checking and occupational health evaluation to identify and evaluate occupational hazards in each work process, and manage identified hazards according to the Company's risk levels.

To promote the culture of occupational health in all aspects of production and operation, we encourage communications about occupational health and safety, and implement safety promotion, training and warning. Since all NPPs have involved contractors in construction, power generation, equipment maintenance and other activities, the occupational health and safety management system is also applicable to contractor personnel and whoever carries out work at the operating sites apart from employees of the Company.

Humanistic Care

Corporate humanistic care can improve employees' sense of identity and loyalty to the Company, as well as enhance employees' sense of pride for the Company, thus laying a cornerstone for the building corporate culture. To assist employees in difficulties, we try our best to solve difficulties and relieve life pressure of employees, and visit front-line employees, as well as employees in need and their families, which improves employees' sense of belonging and enhances the cohesion of the Company.

Family members of employees with difficulties and on long-term business trips visited

255

Employees and their family members visited

3,329

Case Six bases carry out Spring Festival visit activity

During the Spring Festival of 2021, CGN Power actively organized Spring Festival visit activity, sending greetings and blessings to employees in the frontline. The leaders of DNMC, Yangjiang Nuclear, Ningde Nuclear, Hongyanhe Nuclear, Fangchenggang Nuclear, and Taishan Nuclear went to their respective NPPs and nuclear power bases to visit employees on duty during the Spring Festival, and extended Spring Festival greetings to the staff, the employees of all departments and partners of the Company and their families responding to the national call to stay put during the Spring Festival.



Certification

All our NPPs have established a dedicated department to manage occupational health and safety, on the basis of obtaining the OHSAS 18000 occupational safety management system certification, all NPPs have gradually passed the certification of the standard, ISO 45001 Occupational Safety Management System newly issued by the International Standardization Organization.

Case Yangjiang Nuclear continues promoting its occupational health management system

In February 2021, Yangjiang Nuclear established a leading group for building healthy enterprise. The group successively formulated the *Regulations of the Leading Group for Building Healthy Enterprise*, the *Five-year Plan for Building Healthy Enterprise*, the *Outline of Yangjiang Nuclear Health Promotion Action Plan (2021-2030)*, the *Implementation Plan of Yangjiang Nuclear Health Promotion Action Plan (2021-2030)*, and allocated special funds. In May 2021, the company carried out the first selection of "occupational health experts" with reference to the *Notice on Carrying out the Activity of Striving to be "Occupational Health Experts"* issued by the general office of the National Health Commission and the general office of All-China Federation of Trade Unions. A total of 35 people were selected, and arranged in labor union branches, giving full play to their exemplary role and creating a good atmosphere of "health experts by your side".

Employee
Occupational Health

Retired employees served with health management

650

Retired employees provided tracking services

810

The occupational health and safety of employees is crucial to the healthy and safe development of the Company. We have formulated the *Occupational Safety Management System* and relevant management measures to standardize safety operations, thus ensuring health and safety of employees in daily work. The Company always attaches importance to the occupational health management of employees, and strictly carries out occupational health "three Simultaneities (the occupational-disease-prevention facilities of the construction project shall be designed, constructed, put into operation and use at the same time with the main part of the project) ", occupational hazard detection and evaluation, occupational health monitoring and occupational health training in accordance with the Law on the "Prevention" and *Control of Occupational Diseases* and relevant regulations and standards and continues to promote training of employees' awareness of occupational health prevention.

We provide annual routine health check-ups as always and have established personal health files for all employees. We have engaged with third-party professional organizations to conduct additional occupational health inspections (including audiometry, pure tone audiometry, lung function, visual, long bone X-rays, etc.) for some front-line employees (including work involving radioactivity, noise, high temperature, chemicals, electricians, operations at height, etc.). For retired employees, we also provide comprehensive health check, health check management and tracking services to protect their physical condition after retirement. At the same time, the Company pays close attention to the prevention of sudden death, actively explores the health monitoring technology means before work and in the workplace, and makes every effort to ensure that employees "come to work happily and go home safely".

There are international and domestic requirements on the maximum radiation dose for personnel (including employees, contractors and other personnel) in the control area of nuclear power bases. During the reporting period, we maintained good performance on occupational health and safety. There were no diagnosed or suspected cases of occupational diseases among our employees and outsourced personnel. No subsidiaries were punished by the regulatory authorities due to improper occupational disease and health management, and the maximum individual radiation dose¹⁹ was far lower than the standard requirements.

Maximum Radiation Dose Received by
Personnel in NPPs (in millisieverts)

NPP/ Unit	2021	2020	2019
Daya Bay NPP		5.02	9.14
Ling'ao NPP	11.854 ²⁰	6.77	6.94
Lingdong NPP		4.70	5.81
Yangjiang NPP	8.83	12.05	11.82
Hongyanhe NPP Unit 1-5	5.98	6.43	8.79
Ningde NPP	7.33	11.22	8.72
Fangchenggang NPP Unit 1-2	3.60	6.36	4.10
Taishan NPP	8.50	7.10	1.01

¹⁹ The annual refueling outage is a key factor affecting the Maximum Individual Radiation Dose of all NPPs.

²⁰ Starting from 2021, the Daya Bay NPP, Ling'ao NPP and Lingdong NPP in the same Daya Bay Nuclear Power Base will be aggregated.

Case Yangjiang Nuclear holds a special lecture on the *Law on Prevention and Control of Occupational Disease* and occupational health knowledge training

On April 29, 2021, Yangjiang Nuclear invited the director of the Occupational Disease and Occupational Health Evaluation Center of Guangdong Occupational Disease Prevention Institute and provincial occupational health science popularization expert to give a lecture and training on occupational health management of employers, for more than 200 attendees, including department managers, safety officers, employee representatives and management representatives of major partner units at Yangjiang Nuclear Power Base.



Employee Physical
Health

Adhering to the principle of "full coverage, hierarchical management, full intervention, moving forward", we have established a complete health service system for all employees. We have formulated the *Procedure for Employee Health Management*, set up the Health Management Committee and the part-time Health Management Coordinator Team to generate a management mechanism of overall planning, hierarchical management and division of responsibilities.

CGN Power continues to provide health management services for core talents, including health record management, physical examination management, serious disease screening, risk assessment, health intervention tracking, intervention effect assessment and other services. We regularly carry out health lectures and training and release health science articles to help employees improve their health management ability.

To strictly implement COVID-19 response requirements of the nation and the Company, We have made pandemic prevention and control policies, set up a 7/24 health hotline for overseas employees, arranged professional medical institutes to provide door-to-door nucleic acid tests, provided anti-flu soup, and formulated health guideline with professional, scientific and effective medical treatment for employees.

Case Yangjiang Nuclear sets up a temporary vaccination site

On June 15, 2021, the COVID-19 response working group of Yangjiang Nuclear Power Base practiced the spirit of "delivering good services to the people". Through multi-party communication, the Health Management Building was used as a temporary vaccination site. The vaccination of 1,200 doses was completed on the day.



The COVID-19 response working group of Yangjiang Nuclear Power Base established a vaccination promotion group, strictly sorting out the vaccination taboo personnel according to the vaccination guidelines. They accelerated implementation of the requirement of "all can be vaccinated get vaccinated" to further improve the vaccination rate. To ensure a solid immune defense line for the Yangjiang Nuclear a temporary vaccination site was set up in the workpalce, which was convenient for the employees and their families to be vaccinated nearby.

Case

CNPEC provides TCM health lectures and free clinic services

On July 20, 2021, CNPEC held the activity of "delivering good services to the people " at Daya Bay Nuclear Power Base, providing health lectures and free clinic services for employees of the company. During the activity, CNPEC and Shenzhen Hospital of Beijing University of Chinese Medicine signed a cooperation agreement on jointly health building, and held the unveiling ceremony of traditional Chinese medicine (TCM) health studio. After the lecture, 15 TCM experts provided free clinic, consultation and physiotherapy services for more than 80 employees of the company. Huizhou project department carried out this activity at the same time. On July 21, the activity continued in Daya Bay Nuclear Power Base, and more than 100 employees participated in the free clinic and physiotherapy activity.



Employee Mental Health

2,060
Times of psychological counseling provided for employees

4
Special EAP lectures by psychological experts organized

9 On-site consultations,
8 Theme group assistance and
2 Training courses for health management coordinators carried out


17,255 personnel
(77% of our employees)
took the psychological health screening in 2021
Over
5,900
participants involved in the fourth 5.25 EAP Psychological Care Festival

Mental health is a part of employees' personal health as well as the occupational health management of the Company. Adhering to the principle of "physical and mental health both matters", CGN Power have continuously held the Employee Assistance Program (EAP) to provide employees with 7/24 counselling services. It helps to understand the physical and mental conditions of employees, relieve their pressure of life and work, and therefore advocate a positive and healthy lifestyle.

Case

The fourth 5.25 EAP Mental Care Festival

In May 2021, we launched the fourth 5.25 EAP Mental Care Festival. The event included EAP lecture, overseas session, offline tour, coordinator training, EAP soul radio and interactive games, with a record high of more than 10,000 participants. These online and offline activities helped improve employees' mental health awareness and self-adjustment skills continuously.



Employee Development

Training System

The sustainable development of the Company is inseparable from the development of every employee. We adhere to the "talent-first corporate development" concepts and commit to building a multi-level, all-round and full cycle comprehensive talent training mode. We keep optimizing the talent training platform to provide employees with a high-quality environment for development, and build a high-quality nuclear power talent team, promoting the development of the Company and our employees.

We constantly promote standardized training, insist on carrying out the Egret Program covering all employees, and set up a scientific, diversified and institutionalized training system for new employees, professional staff, middle and senior management members, which covers leadership training, engineering training, operation training, etc., to comprehensively improve the talent team's career qualifications and professional skills. In combination with the COVID-19 response requirements of the nation and the Company, we continue to promote online training and test.

109
Average training hours per employee

100%
Training rate of male employees

100%
Training rate of female employees

100%
Training rate of middle management member

100%
Training rate of senior management member



Practice training

Complying with the *Nuclear Safety Law*, we have actively carried out relevant training for nuclear power licensed personnel to make sure that NPP operation must be performed by licensed personnel.



Leadership training system

We continue to promote the building of leadership training system targeted for senior managers. We add training for middle and junior managers to expand the coverage of leadership training.



Egret Program

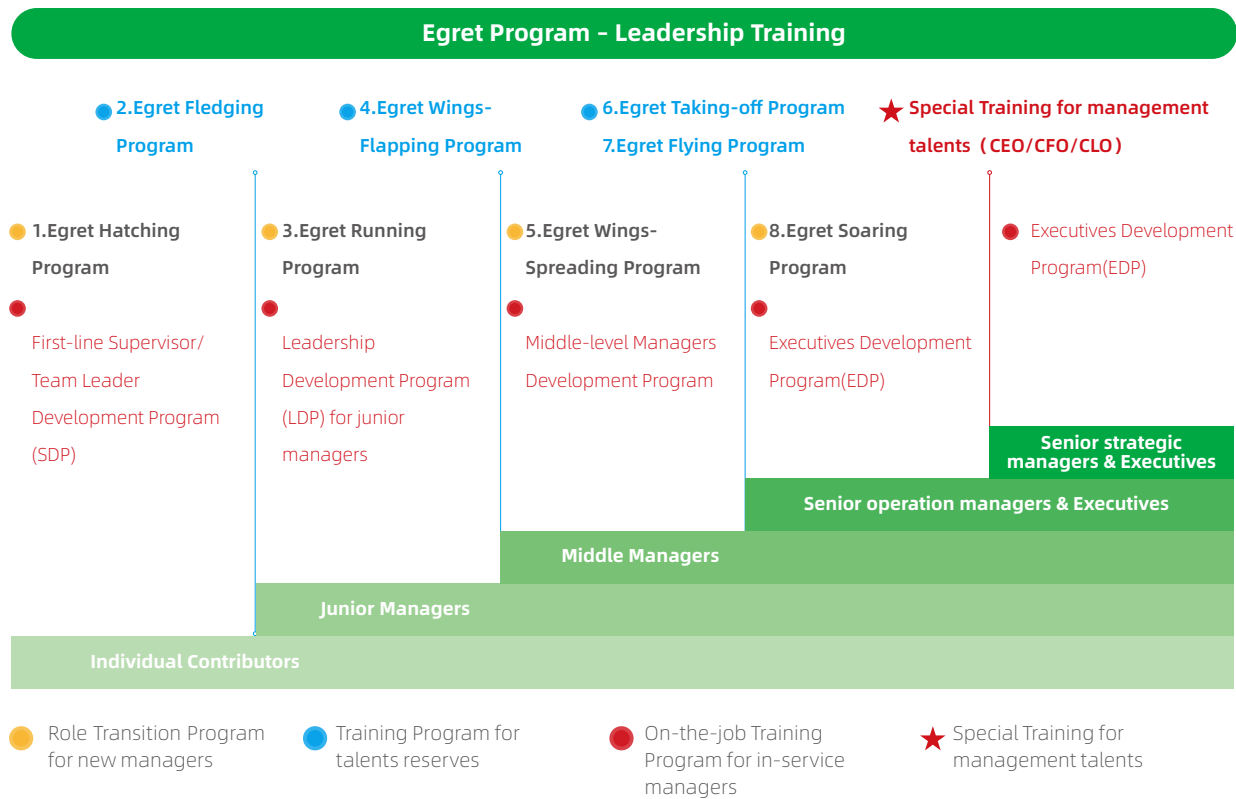
We continue to carry out transformation training program for each management level. The program is designed based on characteristics of business needs and management structure and aspects of role change, managerial skills, organizational knowledge and skills to ensure smooth transition for managers at all levels during the transition period.



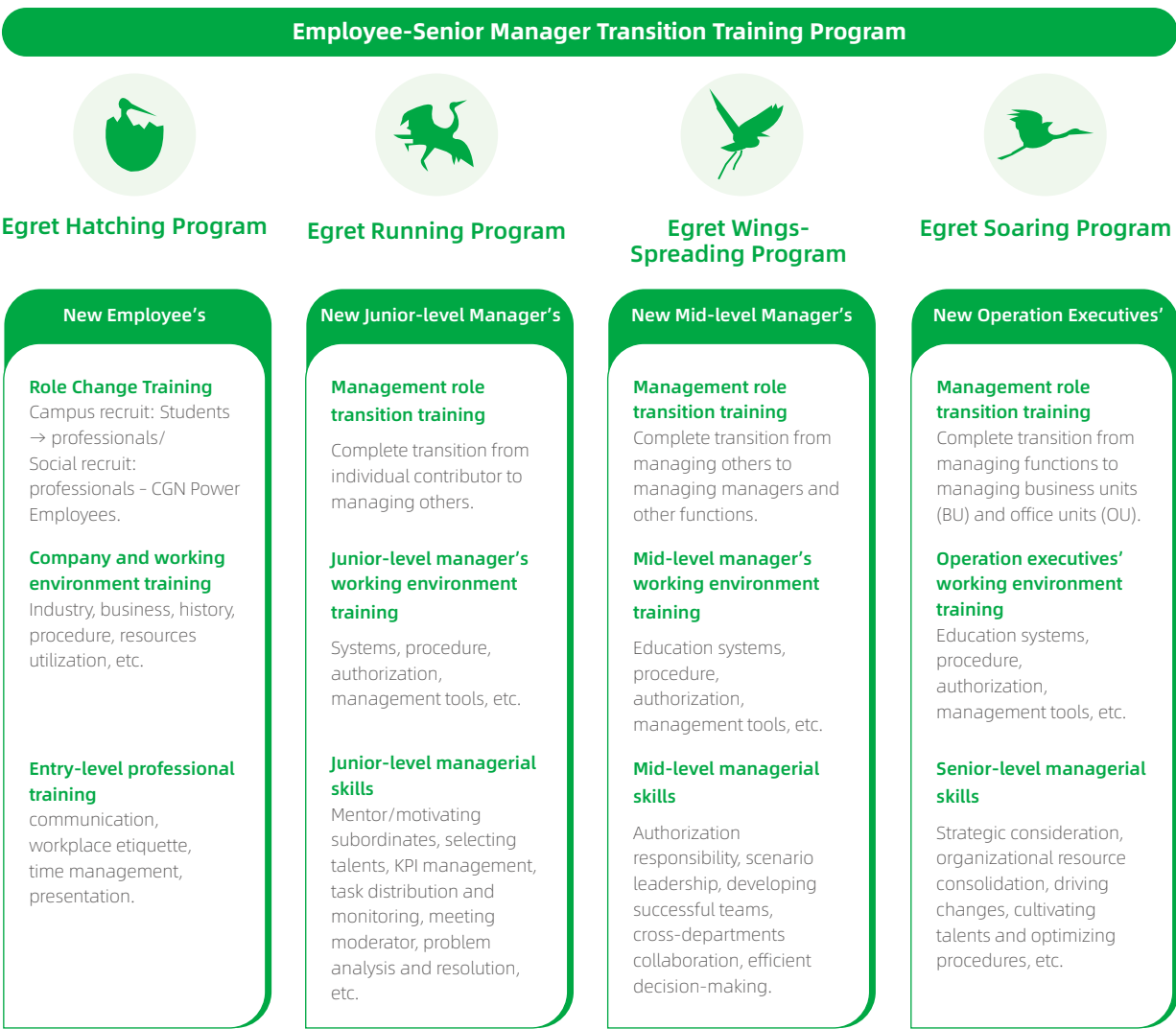
Engineering and operational training system

We have established standardized engineering and operational training systems to continuously improve the professional skills of relevant employees.





Egret Program - CGN Leadership Training		
No.	Program	Targeted Trainee
1	Egret Hatching Program	New Employee (Campus Recruitment/social Recruitment)
2	Egret Fledging Program	Reserved talents for Junior management positions
3	Egret Running Program	New Junior managers
4	Egret Wings- Flapping Program	Reserved talents for middle management positions
5	Egret Wings-Spreading Program	New middle managers
6	Egret Taking-off Program	Reserved talents for medium and long-term projects
7	Egret Flying Program	Reserved talents for senior management positions
8	Egret Soaring Program	New Operation Executives



2021 Egret Program Achievement ²¹		
	Target	Progress
Egret Hatching Program	Accelerating the role transition of new employees with consecutive sessions throughout the whole year	2 sessions
Egret Running Program	Improving the personnel management ability of new junior-level managers	6 sessions
Egret Wings-Spreading Program	Improving the personnel management ability of new mid-level managers	2 sessions
Egret Soaring Program	Improving the management skills of new executives and broaden their thinking and horizons	Under preparation and will be implemented in 2022

²¹ Due to the COVID-19 pandemic, the sessions of Egret Program in 2021 were reduced compared with that in 2020, in order to ensure the health and safety of employees as well as the smooth operation of the Company.

Case

DNMC's first Management/Leadership Development Program

On June 8, 2021, DNMC held the first Management/Leadership Development Program (MDP / LDP) for junior and middle-level managers. More than 140 middle and junior managers and future managers and reserve managers, divided into four classes to complete the training in batches and phases. The training lasted for half a year, covering three modules: Party building & strategy, managerial skills and human resources management. Through senior managers' full participation and trainees' action learning, it promoted the exchange of management experience across levels and fields, helping middle and junior managers improve their management ability and leadership.



Case

Training of enterprise leaders and safety managers

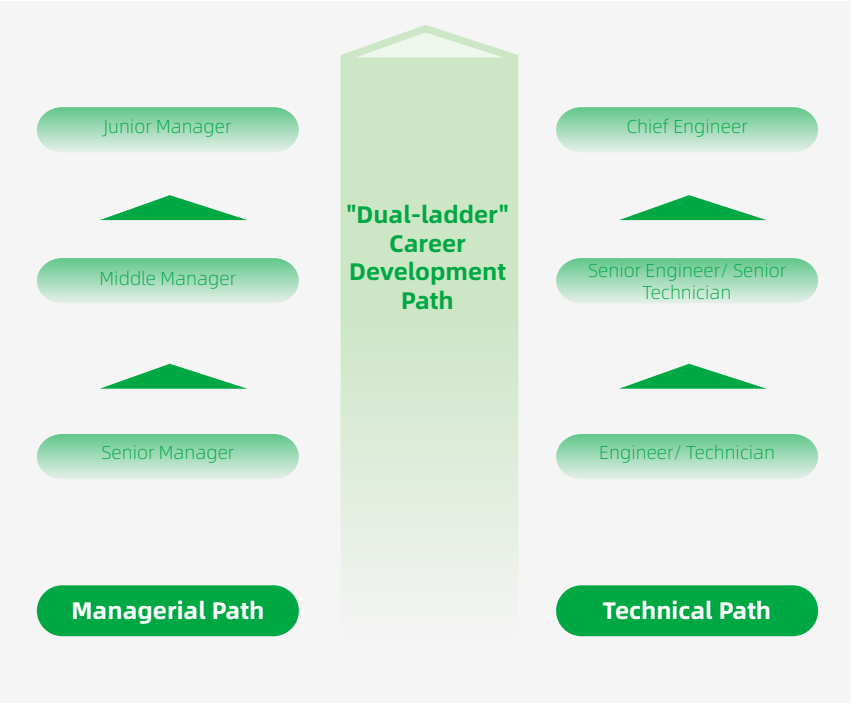
From November 26 to 27, 2021, the 2021 training of enterprise leaders and safety managers organized by CNPEC and coordinated by DNMC and CGN Operations was held in Daya Bay Nuclear Power Base. The training adopted measures such as "cloud teaching" and "two-way livestreaming". Shang Wenqi, Deputy Director of the Department of Safety Law Enforcement Department, Ministry of Emergency Management (MEM); Wu Yanyun, Deputy Director of the Department of Policies and Regulations of the MEM; Yin Dejian, Chief of the Division of General Affairs, Department of Nuclear Power Safety Supervision, Ministry of Ecology and Environment (MEE); and Li Jingyun, Chief of the Division of Policies and Technologies, Department of Nuclear Facility Safety Regulation of the MEE, were invited to give lectures on four courses, including "Work Safety Law Enforcement & Risk Management, Interpretation on the New *Safety Production Law (Revised)*, Understand Nuclear Safety Governance Regarding Risk, and Summary of Environmental Legal Liability".



Unblocked Development Path

An unblocked career development path can not only boost staff enthusiasm, but also ensure smooth transition between new and old employees. Adhering to the principle of fairness, impartiality and openness, we guarantee that all employees enjoy equal and fair promotion opportunities. We work with employees to customize their development plans. To meet employees' different development needs and facilitate their career development based on their personal abilities and career planning, we have established the dual-ladder career development path of "managerial path" and "technical path", and these two paths can be interconverted. It forms a link of "Position Sequence - Development Path - Employee Aspiration - Employee Flow", helping employees achieve self-fulfillment.

During the reporting period, the Company added posts such as the deputy chief engineer and senior shift supervisor as the core posts of the operation sequence, expanded the vertical career development path of operators, and encouraged experienced and willing personnel with the nuclear power license to work hard in the front line and keep improving their skills to ensure the safe and stable operation of nuclear power units. We have made skilled talents as a separate sequence and set up posts such as the chief technician to further expand the career development path for skilled talents. We ensure the springing up of skilled talents by setting directions and policies.



Carry Forward Craftsmanship

The craftsman's spirit of craftsmanship reveals a concept of dedication, fineness, meticulous care and pursuit of excellence. Adhering to the work style and attitude of Strict Compliance, Prudent Decision-making, Detailed-oriented and Fact-based Approach, we advocate employees to treat every task with a meticulous and dedicated work attitude like craftsmen. We are committed to building a platform and environment for nuclear power craftsmen to grow their talents, nurturing a number of outstanding teams with exceptional talents, and constantly reaching new heights in nuclear power projects, and achieving the corporate vision of "building a world-class nuclear power supplier and service provider with international competitiveness".

Case Wang Jiantao and Zhang Chunyu awarded "China Skills Award" and "National Technical Expert" respectively

On June 22, 2021, Wang Jiantao from CGN Power won the China Skills Award, becoming one of the only 30 winners in this recognition. He is the second CGN engineer to win this award after Zhou Chuangbin who won the 14th China Skills Award. At the same time, Zhang Chunyu from Hongyanhe Nuclear was among the 293 winners of National Technical Expert.



Wang Jiantao



Zhang Chunyu

Case One group and four individuals win "Guangdong Provincial May Day Labor Award"

In 2021, the Department of Accident Tolerant Fuel R&D, CNPRI was awarded "May Day Labor Award", and Yang Man from Lufeng Nuclear was awarded "May Day Labor Medal" by the Guangdong Provincial Federation of Trade Unions. Zhou Jianping from Fangchenggang Nuclear was awarded "May Day Labor Medal" by the Guangxi Zhuang Autonomous Region Federation of Trade Unions. Sun Peng from CGN Operations and Huang Lei from CGN Engineering were awarded "May Day Labor Medal" by the Shenzhen Federation of Trade Unions.



Case Zhao Yue's studio rated as the first batch of "Guangdong March 8th Red Flag Studio"

On the eve of the International Women's Day in 2021, the Guangdong Women's Federation issued the *Notice on Naming the First Batch of Guangdong March 8th Red Flag Studios*. The studio led by Zhao Yue from Yangjiang Nuclear was on the name list.



Case An employee of DNMC serves as Chair of International Performance Indicator Industry Working Group Sub-committee for WANO CPI

On December 20, 2021, Zhang Yu, an employee of Chemical Environmental Protection Department of DNMC, received a letter from WANO headquarters in London, confirming that he was selected as the Chair of International Performance Indicator Industry Working Group Sub-committee for the Chemistry Performance Indicator (WANO CPI), which was a demonstration of the ability of Chinese technicians.



Win-win Cooperation



CGN Power continues to improve supply chain management and supplier performance based on win-win cooperation, promotes the sustainable supply chain, and actively explores external cooperation to jointly improve the quality management of the industrial chain and lead the development of the nuclear power industry.



Strengthening Supply Chain Management

Excellent supplier management mechanism can not only ensure the stable corporate operation, but also drive the common progress of upstream and downstream of the supply chain. CGN Power strictly complies with relevant laws and regulations such as the Law on Tenders and Bids and has formulated policies such as the Supplier Management Measures and the Supplier Misconduct Management Process. Based on the principles of fairness, openness and justice, and transparent procurement, we have always maintained close cooperation with suppliers to promote prosperity and development for the nuclear power industry, creating a new and win-win situation.

Following the "four principles" (honesty and integrity, easy entry and strict management, overall planning and sharing, and win-win cooperation), CGN Power has created a supplier management policy of "five unifications" (unified organization, unified system, unified process, unified platform and unified classification), and advocated the nuclear safety culture of honesty and transparency, so as to work together with suppliers for mutual benefit. The Company has realized centralized supplier business management, resource sharing and real-time control through the supplier database and the supplier management platform. We have formed a perfect supplier management system and established the supplier management standards and business processes through the establishment of the strategic supplier management system, supplier evaluation system, hierarchical management system and incentive mechanism. The bidding (management) center is able to control online in key links. All of this has enabled the hierarchical, centralized and unified whole lifecycle management of suppliers.

Supplier Management Platform

Qualified suppliers, including
5,224

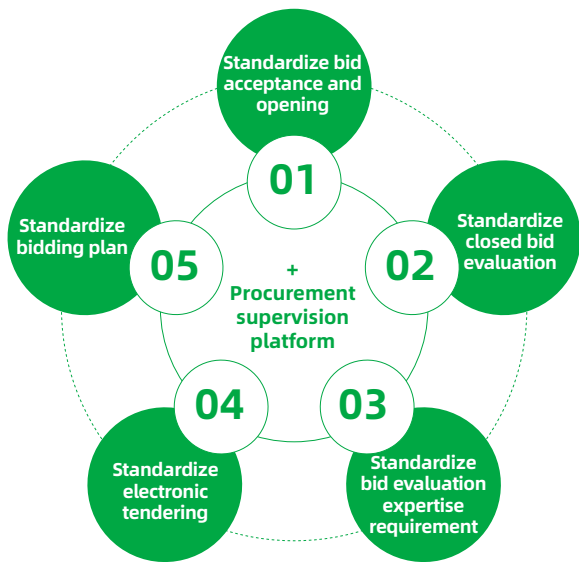
Domestic suppliers
4,820

Foreign suppliers
404

Newly-introduced suppliers
323

CGN Power have conducted specific supplier management business through the E-commerce Platform ("ECP"), supplier business work platform and data platform, supplier online certification platform, and supplier intelligent push platform to achieve unified supplier management and standardized procurement categories, centralized and unified expert management, electronic bidding and procurement, automatic contract management, and effectively standardize supplier management. We unify the acceptance and opening of bids through the electronic platform and conduct completely closed bid evaluation to continuously improve standardization and transparency of the bidding work. The platform operates in accordance with the "Five Standardizations and One Supervision", in which the expert pool is composed of more than 5,100 experts from 121 specialties who are responsible for supervising the bid evaluation process to ensure fairness and justice.

Five Standardizations and One Supervision

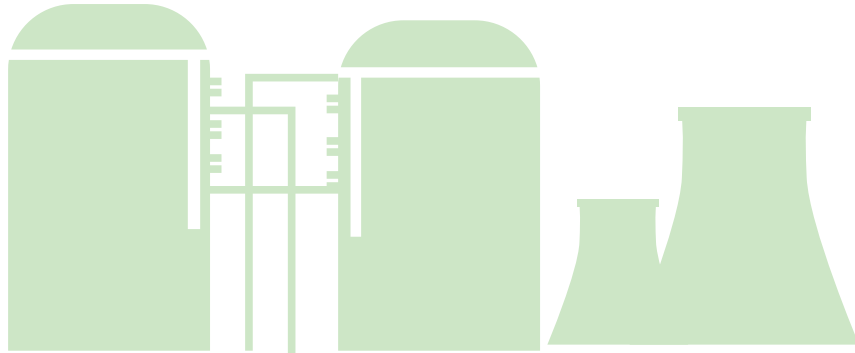


Supplier Review Mechanism

Supplier Review

Case The 8th bid evaluation expert training

The 8th bid evaluation expert training was held in Beijing New Energy Headquarters Building on November 24, 2021. More than 2,000 bid evaluation experts from subsidiaries participated in the training in the main venue, branch venues or through online live stream. Mr. Shi Guohu, vice president of China Tendering & Bidding Association, was invited to give lectures, including the interpretation of the Law on Tenders and Bids and the latest policies of the State Council, and bid evaluation practices; besides, the Bidding Center of CGN Engineering also publicized the expert management requirements, bid evaluation sites, expert travel expense reimbursement guidelines and expert behavior management.



The strict audit of suppliers is conducive to the safety and stability of the Company's operation. We have set up a strict supplier review mechanism, in which potential suppliers will be qualified and assessed by technical, safety and quality assurance, and business-related personnel. The methods include document review, source review and other qualification reviewsto ensure that our suppliers comply with laws, regulations and various requirements.

Document Review

We send qualification documents to suppliers and determine whether they are qualified for bidding and performing the contract according to their returning documents. The main evaluation factors include basic qualification, supplier performance, safety, quality, environment and technical level, financial situation, etc.

Source Review

For suppliers that require source review, after passing the document review, source review will be conducted at the supplier's location as needed, including factors such as safety, quality, environment, technology and business. According to the supplier's intended supply category, the corresponding review strategy is adopted and independent written opinions are issued.

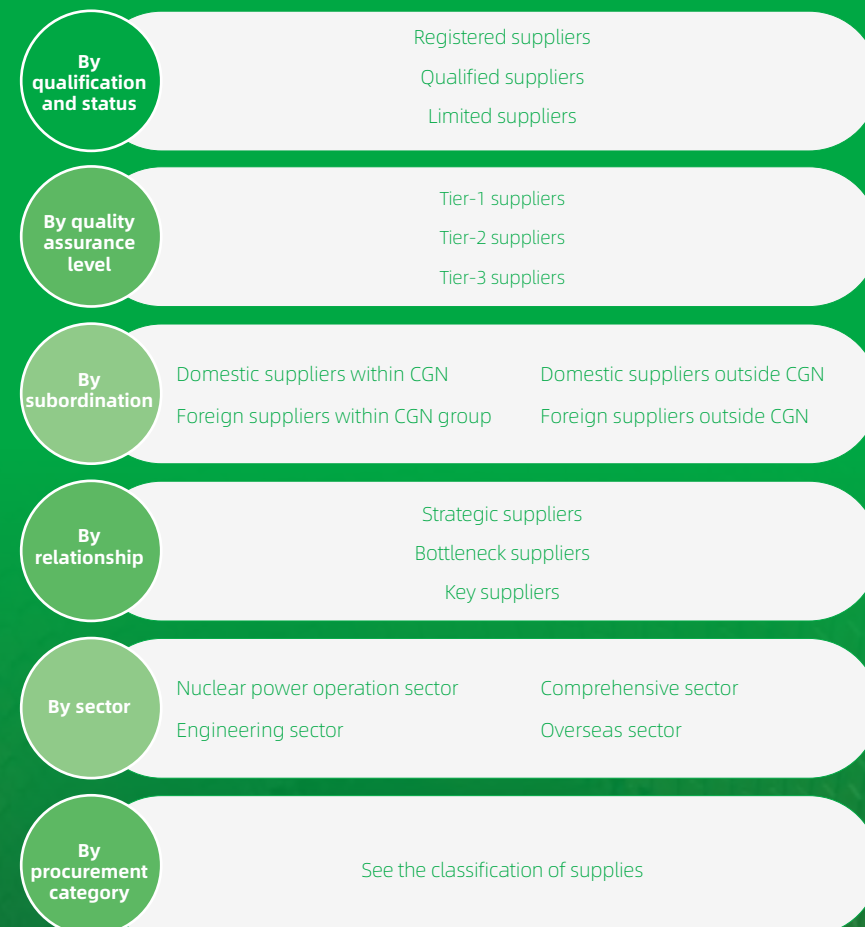
Other reviews

Due to the nature of different businesses, subsidiaries and subsidiaries can freely choose to engage with external agencies to assess, simplify the process or use other special methods. Each subsidiary and subsidiaries should clearly stipulate the corresponding provisions in the detailed implementation rules.

Supplier Classification

CGN Power has formulated the *Supplier Management Measures* to further clarify the subdivision control measures. To classify qualified suppliers, we have built a supplier classification system that meets the business needs, adapts to a variety of management and statistical scenarios and is dynamically maintained, thus unifying the "language" and "dimension" of supplier management to ensure efficient supplier management.

Supplier classification system



Supplier elimination and withdrawal

CGN Power has formulated the *Supplier Misconduct Management Process* to select and eliminate suppliers based on evaluation results, and has issued the lists of suppliers requiring special attention and blacklisted suppliers. Based on the supplier risk monitoring platform, the Group shares the misconduct of suppliers in real time, and jointly punishes dishonest suppliers with China Electricity Council and China Nuclear Energy Association, thus building a credit and punishment pattern of "one misconduct behavior leads to restrictions in every aspect". During the reporting period, 141 suppliers were blacklisted and banned by the Company, 473 suppliers recorded misconduct in the system, and 34 dishonest suppliers submitted to China Electricity Council for joint punishment within the industry.

Removing suppliers without cooperation needs



The supplier qualification is valid for 3 years. Evaluations on cooperation needs will be carried out regularly based on the procurement strategy of different categories and no review will be made for suppliers with no more cooperation needs, which means the withdrawal of these suppliers.

Eliminating suppliers with poorer performance



Based on the procurement strategy of different categories, suppliers with poorer performance will be eliminated according to the supplier evaluation results on the premise that suppliers still remain competitive.

Removing suppliers with serious misconduct



Suppliers with serious misconduct or major business risks will be blacklisted after being reviewed and publicized, and their qualification will be automatically cancelled.

Prohibiting suppliers under special situations



Suppliers that are punished or restricted by regulatory authorities, blacklisted by relevant government authorities or other departments, and included in the joint punishment list as well as those violating relevant political standards and with invalid or expired special qualification certificates will be prohibited.

Handling procedure of blacklisted suppliers

If the blacklisted supplier's misconduct does not materially hinder the execution of the existing contract, it shall ensure the normal performance of the contract; When it is blacklisted, suppliers that are in the course of bidding or submission of offers will be disqualified. Blacklisted suppliers are banned from procurement activities for three years.

When a blacklisted supplier turns into a potential supplier after the ban, our subsidiaries and associated companies should use this supplier with caution.

During the period when the blacklisted supplier is banned, if our subsidiaries and associated companies have to use the supplier due to special needs, they shall evaluate the risks and clarify the countermeasures, obtain the approval of the Company's management and report to the CGN Bidding Center. The application for signing a one-time cooperation plan can be submitted after repassing the qualification review.

Protection of Rights and Interests of Suppliers

Open and transparent evaluation and recording can effectively ensure the legitimate rights and interests of suppliers. To ensure partners' compliance with laws and requirements along the supply chain, after strict qualification review, performance evaluations are conducted by CGN Power for all suppliers at least once a year, covering seven dimensions: technology, quality, cost, delivery, service, environmental protection and social responsibility. All evaluation results are recorded and archived on ECP to ensure suppliers' basic rights with fairness and justice. All subsidiaries and associated companies also conduct contract evaluations for suppliers on a regular basis to ensure a continuous record of evaluations throughout the contract execution cycle. For suppliers participating in operational maintenance and engineering construction of NPPs, a standardized performance evaluation system has been established by CGN Power based on business characteristics of suppliers, which is consistent with the Company's procurement strategy.



Improving Performance of Suppliers

The good performance of suppliers can not only improve the production and operation safety of the Company, but also increase the supply value of the whole chain. We attach great importance to the performance of suppliers, and continue improving the quality of suppliers by launching supplier trainings. We integrate the concept of environmental protection into the whole supply value chain through measures such as setting environmental protection qualification requirements for suppliers, requiring suppliers to follow green construction, and implementing green industry chain management and review, so as to enhance the overall environmental protection performance of the industry.

We actively promote the "quality coordination mechanism" of the equipment supply chain in bidding and procurement management, and strengthen the process control of equipment manufacturing quality, in a bid to build a win-win industrial chain ecological cycle. In the field of nuclear power engineering construction, through experience feedback platform, we timely feedback equipment problems during nuclear power engineering construction to similar equipment suppliers, and promote the effective implementation of experience feedback on nuclear power equipment quality along the supply chain. In the field of operation, each subsidiary has established a supplier management committee to promptly report safety and quality issues such as on-site operation and maintenance to suppliers, and track their implementation.

Supplier Training

Regular supplier training can improve the quality of supply services, equipment and engineering to meet the Company's requirements and standards. We regularly provide training for suppliers, including corporate culture, supplier management, ECP implementation, CA application, procurement and bidding management, etc., thereby helping suppliers improve their quality, and enhance culture recognition and cooperation efficiency. We focus on cultivating core suppliers, and strengthen cooperation with first-time localized equipment suppliers and contractors by assigning full-time personnel, quality monitoring, business exchanges. Besides, we provide training for suppliers to raise their quality awareness, and guide suppliers to improve their quality management capabilities for subcontractors.

Green Supply Chains

The Company puts forward environmental protection requirements for suppliers and spreads the environmental protection concept through the supply value chain. To fully implement the concept of green operation, we have signed contracts with suppliers that require them to conduct green operation in compliance with relevant laws and regulations. To protect the ecology at all aspects, suppliers shall control materials, resources consumption, wastes generation, adopt environmentally friendly processes and improve recycling and utilization efficiency leverage in accordance with relevant standards and requirements of ISO 14001, with an aim to reduce the impacts of operation on the environment.

We strictly follow the principle of green construction and have implemented the *CGN Engineering Green Industrial Chain Management Rules*. It requires each business center and

Coverage of environmental factors in the qualification reviews for suppliers

100%

project implementation unit to designate departments responsible for the green industry chain, arrange special personnel to promote the effective implementation of management rules and incorporate the green industry chain management requirements into departmental procedures or systems. These efforts will contribute to the standardized and procedural green industry chain management and realize the green industrial chain management in engineering construction.

CGN Power focus on the supplier management among the green industry chain management and adopt effective measures in the aspects of qualification review, bid evaluation, contract execution, supplier evaluation, spare parts management, etc., promoting the co-development of the green supply chain. Besides, we have incorporated environmental factors in the qualification reviews for suppliers. In the tender document, we require bidders to include green nuclear power elements in the submitted technical proposals. In order to build green supply chain and improve the environmental protection performance of suppliers, green elements of design proposals, raw material selection, subcontractor selection, manufacturing processes, packaging, recycling and other aspects are also included into the scoring criteria.

CaseCGN Engineering's efforts in building a green supply chain

CGN Engineering has carried out the green supply chain assessment on key suppliers, covering environmental certificate, main processes of production, emergency plan for environmental incidents, environmental management and control procedures or systems, and annual environmental assessment report. In performance evaluation, CGN Engineering carries out the green supply chain evaluation on over 400 suppliers and more than 1,500 contracts every year, and downgrades or restricts suppliers that have major environmental incidents and those being punished by the Ministry of Ecology and Environment. CGN Engineering adds "green nuclear power" in the bid evaluation method and guides bidders at the bidding stage to apply energy-saving and environmental protection concepts and measures in design schemes, raw material selection, subcontractor selection, manufacturing process, packaging, and recycling; the company also requires suppliers in contracts to submit the "summary of implementation plan of green nuclear power equipment supply" after the execution of contracts, and clearly requires suppliers to use green packaging materials. In addition, it organized more than 200 professional lectures on green supply chain evaluation in different forms in 2021 to facilitate a green supply chain.

CaseTaishan Nuclear publishes the *Technical Guidelines for Environmental Protection*

The *Technical Guidelines for Environmental Protection* published by Taishan Nuclear puts forward management requirements for green procurement and implementation of green procurement. It requires to prioritize the procurement of energy-saving and environment-friendly products that have passed the certification of environmental labeling, energy conservation or other certification recognized by the state, as well as environment-friendly and energy-saving services, so as to promote a resource-saving and environment-friendly society, and facilitate green circulation and sustainable development. In the process of supplier introduction and review, the key elements of environmental management shall be delivered to suppliers, and the feedback of environmental management is required as another main management link of supplier introduction in addition to business, technology, quality assurance and safety.

Fostering Industry Development

It is the bounden duty of excellent enterprises to foster the development of the industry. By virtue of diverse external cooperation, we join hands with partners and upstream and downstream partners along the supply chain to promote the steady progress of the nuclear power industry, and facilitate the development of national nuclear power security and energy supply.

Diverse Cooperation

Peer exchanges and cooperation are conducive to the common progress of both enterprises and the industry. Through various forms of consortium, we actively explore opportunities for external cooperation and establish close cooperation with governments, enterprises and specialized institutions to achieve mutual complementarity and mutual benefit, leading the development of the nuclear power industry. As a leader in the nuclear industry chain, the Company is an important member of multiple industry organizations. We have established the *International Benchmarking Evaluation Standard for Quality Management of Equipment Industrial Chain* and have jointly established the Major Equipment Quality Risk Prevention Group with suppliers in the nuclear equipment industrial chain to improve the quality management for nuclear power equipment industrial chain.

CaseContract Signing Ceremony of the 4th CIIE

On November 6, 2021, the CGN Trading Group Contract Signing Ceremony at the 4th China International Import Expo (CIIE) was held in the National Convention and Exhibition Center (Shanghai). Taking CIIE as an opportunity, many subsidiaries under CGN Power further deepened cooperation with overseas enterprises, and continuously optimized the procurement mode for import demands in strict compliance with the principle of "being systematic, authentic, scientific and practical" as well as the concept of mutual benefit. On the basis of in-depth, effective, and friendly negotiation in the early stage, they signed procurement contracts and cooperation agreements with a number of foreign partners, involving high-end equipment, emerging technologies, intelligent technology and etc., in an bid to strengthen the cooperation with supply chain partners in industrial optimization, technology upgrading, trade and investment, and people-to-people exchanges, and achieve win-win results and common development while contributing to the recovery of global economy.



CaseExchange with Shin-Hanul NPP in South Korea

On July 20, 2021, the China-Korea typhoon, rainstorm and thunderstorm prevention plan exchange was held online where DNMC and Shin-Hanul NPP introduced their typhoon, rainstorm and thunderstorm prevention plans respectively. The two sides discussed on the emergency organization, plan startup conditions, unit operation strategy and experience feedback of historical events, so as to deal with the increasing extreme weather caused by climate change.



CaseYangjiang Nuclear signs a memorandum of understanding on cooperation with Yangjiang campus of Guangdong Ocean University

On December 1, 2021, Yangjiang Nuclear and Yangjiang campus of Guangdong Ocean University signed a memorandum of understanding on cooperation. Given that NPPs are now facing the changes of marine ecological environment, the two sides will strengthen cooperation in terms of technology and personnel training to further promote NPPs to solve problems such as the safety of coolant sources of NPPs and the anti-corrosion of marine equipment



CaseNingde Nuclear becomes the off-campus practice and education base of Xiamen University

On July 8, 2021, the Off-campus Practice and Education Base of Xiamen University was opened in Ningde Nuclear Power Base. The two sides will cooperate in the fields of talent training, R&D, technological innovation and so on.

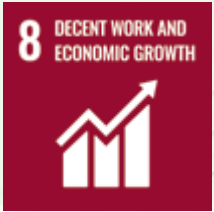


Exchange with Suppliers

The supplier management of CGN Power has completed the transformation from competitive relationship to win-win cooperation. The long-term and effective cooperation and two-way communication mechanism with suppliers are established to promote experience exchange and resource sharing, so that suppliers can further understand our requirements and culture, improve their management and product quality, reduce supply chain costs, and jointly promote the sustainable development of the supply chain. In order to enhance the exchange and common progress of the nuclear power industrial chain, CGN Power has also established an experience sharing and exchange platform for suppliers of same category, improved the experience feedback mechanism for the nuclear power equipment industrial chain, and strengthened the coordination mechanism and platform of industrial chain quality management based on the advantages of upstream and downstream enterprises. The Company has expanded our international supply chain while ensuring the stability of the domestic supply chain.

CGN Power has set up the CGN Joint R & D Center for Import Substitution of Nuclear Power Equipment, and established supply chain cooperation with more than 70 domestic nuclear power equipment manufacturing and R & D enterprises through ECP bidding and procurement. The Company holds regular exchange meetings on the improvement of import substitution capacity, builds an industrial chain of nuclear power equipment, and promotes the import substitution of nuclear power equipment, so as to realize the common progress of the industrial chain and promote the overall equipment manufacturing level of China's nuclear power industry.

Harmonious Communities



Pursuing the "3N community development concept of "safe, friendly and warm neighbor", CGN Power strives to popularize nuclear knowledge to the public, boost rural vitalization, foster community development, and participate in community public welfare activities, in hope of promoting balanced regional growth and build a harmonious society.





Strengthening Community Communication

Upholding the philosophy of 3N Harmonious Community and guided by "Safe Neighbor" concept, we continuously strengthen safety information disclosure and safety communication activities, constantly innovate in communication methods with stakeholders to expand multiple communication channels, by which we popularize nuclear safety knowledge to the society to build trust with public and strengthen their understanding of nuclear power.

Multiple Communication Channels

The public can better learn about our operation and enhance their trust with the society through multiple communication channels in a timelier and fuller manner. CGN Power expands communication channels and builds effective mechanisms while establishing platforms to interact with stakeholders based on their characteristics. Each NPP has also established a nuclear power safety reporting and disclosure system to further the openness and transparency of information disclosure and enhance public understanding and trust in the operation of nuclear power. After in-depth research and confirmation, considering the information access habits and preferences of people of different ages, we use channels like press conferences, Weibo, WeChat and short video platforms and open days to respond to the major concerns of the public about nuclear power development, ensuring the public's right to know the safe operation of nuclear power and enabling public supervision on our operation.

The operating data and nuclear safety information of NPPs managed by the Company will be published online every month. Any occurrence after fueling of a nuclear power unit must be published within two natural days (excluding the occurrence day) from the date on which such occurrence is defined.

Case Fangchenggang Nuclear invited to the 14th China International Exhibition on Nuclear Power Industry

From April 14 to 16, 2021, China Nuclear Energy Sustainable Development Forum - 2021 Spring Summit and the 14th China International Exhibition on Nuclear Power Industry was held in China National Convention Center in Beijing. Fangchenggang Nuclear was invited to the opening ceremony and some relevant forums. Fangchenggang NPP Roaming System and HPR 1000 Master Control Room Roaming System were exhibited at the nuclear industry exhibition for the very first time. With the theme of "Nuclear Safety Development, Public Communication and Digital Transition", the exhibition carries out interactive exchanges on nuclear safety development, nuclear public communication, nuclear digital transition and intelligent upgrading. Fangchenggang NPP Roaming System and HPR 1000 Master Control Room Roaming System attracted so many experts, foreign guests and public visitors once they appeared in the exhibition area of public communication.



Case China's first Cloud Science Popularization Museum for Nuclear and Radiation Safety

On June 4, 2021, China's first Cloud Science Popularization Museum for Nuclear and Radiation Safety went online in the Liaoning Nuclear Safety Activity of the June 5 Environment Day held by Hongyanhe Nuclear. That was our latest measure to innovate on public communication, expand science popularization mode, further adapt to the development trend of social media and better respond to social concerns after the outbreak of COVID-19. Liao Weiming, General Manager of Hongyanhe Nuclear, shared the work of the company in carrying out nuclear safety work, promoting biodiversity in plant area, strengthening energy conservation management and promoting public communication. More than 100 representatives from the ecological and environmental departments of Liaoning and Dalian, Dalian Science and Technology Association, environmental protection volunteer association, other nuclear power companies in Liaoning Province, Dalian University of Technology and news media in Dalian witnessed the launch of the cloud science popularization museum.



Popularizing Nuclear Power Science

13
Permanent exhibition halls

500,000+
Public visitors

115 million
Views of live stream of online experience day on August 7

18,750+
Students from
68 schools participated in the "popularization of nuclear science in schools" campaign

Guided by the philosophy of "3N Harmonious Community", each NPP has set up its exhibition hall for nuclear power science popularization to enable the public to understand the development history of nuclear power and raise their nuclear power safety, low-carbon and eco-friendly awareness in a variety of interesting forms. Various activities such as experience days and nuclear power summer camps are held to continuously increase public's knowledge on nuclear power. In this reporting period, we launched a number of online live streams covering popular science and education, among which the "August 7 CGN Virtual Open Day " live stream got more than 115 million views.

We continuously promote the "popularization of nuclear science in schools" campaign for primary and secondary school students, which is beneficial to train qualified personnel in nuclear technology for the country. Through our efforts over the years, this campaign has been promoted in schools nearby the NPPs, including Guangdong Province, Liaoning Province, Fujian Province and Guangxi Zhuang Autonomous Region with continuous expansion. As of December 31, 2021, more than 18,750 students from 68 schools participated in the campaign.

Case CGN Power keeps promoting "Lighthouse Program"

The "Lighthouse Program" aims to contribute its own light to illuminate the route for teenagers like a lighthouse. It cultivates children's environmental awareness and scientific thinking, contributing to China's goals of carbon peak and carbon neutrality. Since its launch in 2015, the Program has been carried out for over six years. CGN Power and Shenzhen Middle School have established multi-channel, diversified and deep cooperation. To achieve the purpose of "leading young people" and based on the clean energy innovation experience center of "CGN-Shenzhen Middle School", we have opened a series of high-quality popular science courses of "Approaching NPP" covering 30,000 students, and established a popular science teaching team of nearly 200 members to lead students to participate in research topics, competitions and academic conferences. Students guided by the team have won several awards at home and abroad.

Case Fangchenggang Nuclear attracts many teenagers at the main venue of the National Science Popularization Day in Guangxi

From September 17 to 23, 2021, the 2021 National Science Popularization Day Guangxi Activity and the main event of Bagui Science Popularization Campaign co-organized by Fangchenggang Nuclear and Guangxi Science& Technology Museum was held in Nanning. The company brought the photoelectric model of HPR1000 nuclear island and popular science exhibition boards to the public, which was highly praised by the public and the media.

Since 2021, Fangchenggang Nuclear had continuously enriched the exhibits of the museum with the help of the nuclear power science popularization zone of Guangxi Science& Technology Museum. It continued to publicize and display nuclear power to the public in Youth Science Festival, April 15 National Security Education Day, National Science Popularization Day and etc., bringing public attention and recognition to nuclear power generation.



Honor

CNPRI's "Lighthouse Program" was selected as an excellent case of social responsibility of power companies in 2021.

Case Popularizing nuclear knowledge for children during International Children's Day

On June 1, 2021, the science popularization volunteers of Ningde Nuclear went to Baiyang Primary School to popularize environmental protection for the students during the International Children's Day. The company also joined hands with the Nuclear and Radiation Safety Center of the Ministry of Ecology and Environment, East China Nuclear and Radiation Safety Oversight Station, Fujian Radiation Environment Oversight Station, Fujian Society For Environmental Sciences, Ningde Ecology and Environment Bureau, Ningde Marine Environment Monitoring Station, Ningde Society for Environmental Sciences, Ningde Fuding Ecology and Environment Bureau and Ningde Xiapu Ecology and Environment Bureau to carry out a series of science popularization activities with the theme of "harmonious coexistence between man and nature and environmental management for better development", with a special lecture held on June 2.



Boosting Common Prosperity

28.9036 million yuan
Invested in rural vitalization and assistance funds

20
Rural vitalization assistance projects launched

CGN Power with a sense of social responsibility not only focus on their own economic development, but also leverage their advantages in capital, technology, talents and management to serve the national strategy on common prosperity. In order to implement General Secretary Xi Jinping's important instructions on consolidating the results of poverty elimination and promoting rural vitalization, CGN Power actively respond to the call of the state and provide rural vitalization assistance in Guangxi Zhuang Autonomous Region, Guangdong and Fujian Provinces etc, in accordance with the *Opinions of the CPC Central Committee and the State Council on Comprehensively Pushing forward Rural Vitalization and Accelerating the Modernization of Agriculture and Rural Areas*, and the *Implementation Opinions on Accelerating Transformation and Development of Rural Energy to Boost Rural Vitalization* (GNF Planning [2021] No. 66).

In Guangxi Zhuang Autonomous Region, CGN Power has expanded the industrial chain and formed a market-oriented assistance model across the whole industrial chain. In 2021, we assisted Leye County to achieve a high yield of kiwi fruit, and all 16 turbines of the wind power project phase I were put into operation for power generation. We also assisted in the production of 14,000 tons of high-quality and efficient organic fertilizer and completed the first order of the electron-beam irradiation project. We will continue to implement as planned the new silkworm industry upgrading project and the demonstration project of harmless disposal of silkworm sand, as well as the construction of the agricultural and sideline products processing industrial park in Leye County and the wind power project phase II etc.

In Guangdong Province, CGN Power follows up its poverty alleviation in Kongtong Village, Yangjiang City to consolidate the achievements in poverty alleviation and promote rural vitalization. Besides, we set up a task force to assist towns and villages in improving the poverty alleviation achievements, public infrastructure and public services in towns and villages, as well as rural industries and Party building so as to promote rural vitalization. In 2021, we were rated as the advanced collective and individual for poverty alleviation in Guangdong Province by the Guangdong Provincial Party Committee and the Guangdong Provincial Government. Yangjiang Nuclear was awarded as the Star of Fundraising of the Guangdong Poverty Alleviation Day for four consecutive years.

In Fujian Province, CGN Power assists Yujing Village, Xiamenshezu Township, Fuding City by consuming local products. In 2021, we helped fruit farmers in Chixi Village sell more than 2,800 kg of unmarketable red pomelos, and helped tea farmers in Yujing Village sell more than 100 kg of tea. The sales of special agricultural products in Tian County reached 48,300 yuan.

Case Yangjiang Nuclear organizes free clinic for residents of Dongping Town

On November 25, 2021, Yangjiang Nuclear held a free clinic for residents of Dongping Town at Dongping cultural station in cooperation with Dongping Town government, Yangjiang Municipal Hospital and the working team in Dongping Town. The town is the recipient for the company's paired-up rural vitalization. More than 200 residents participated in the free clinic, which was highly praised by the patients.

The free clinic provided medical services of 11 specialties urgently needed by local middle-aged and elderly people and fishermen, such as neurology, cardiovascular medicine, gastroenterology, galactophore, urology, orthopedics and ophthalmology. The expert team composed of 20 members from Yangjiang Municipal Hospital, including some big names in the medical field, provided residents nearby with high-quality and scarce medical resources.



Case Phase II summer camp of CGN - Egret Class for Minority in Leye County, Baise, Guangxi

From May 27 to May 30, 2021, the Phase II summer camp of CGN - Egret Class for Minority in Leye County, Baise, Guangxi was held in Leye County's Tongle Junior Middle School. During the four-day summer camp, students visited Guangxi Zhuang Museum in Chongzuo, Buhua village, Xinhe Town, a national rural vitalization demonstration village, Nixing Pottery Museum, a national primary and secondary school students' research and practice base, Beihai Window of Ocean, a national youth science popularization and education base, and Cloudventure, an industrial research base. They experienced the profound history and culture, understood the development of rural vitalization, and appreciated the important development process of modern construction industry. During this process, they felt the great changes in Guangxi, established self-confidence and became determined to serve the country.



Giving Back to the Community

48,000 hours
Volunteering and charitable activities in 2021

27,000
Employee participants in volunteering activities in 2021

Holding fast to the spirit of "Dedication, Love, Mutual Assistance, Progress", CGN Power engages in volunteering services and charity. Thorough multiple communication channels, we get to know, identify, discuss and determine the priorities and specific measures and plans of charitable activities, such as provision of poverty-stricken household assistance, student aid, science popularization, tree planting and voluntary blood donation to bring care to those in need.

Case Yangjiang Nuclear holds its 4th voluntary blood donation activity

On June 14, 2021, Yangjiang Nuclear held its 4th voluntary blood donation activity. A total of more than 70 employees and their family members donated about 15,200 ml of blood. Since 2018, the voluntary blood donation activity has been held four times, with a total of more than 40,000 ml of donated blood.



Outlook 2022

Stable Operation

- Promote the construction of NPPs as planned on the premise of safety and quality
- Drive technology-led and market-oriented new business growth driven by technological innovations

Safety and Innovation

- Fully implement nuclear safety management and responsibilities, strengthen safety culture, promote nuclear power safety management and publicity and ensure safe operation of NPPs in operation.
- Further enhance the safety performance of nuclear power units and continue to promote sustainable corporate development through R & D innovation and technology transformation, etc.

Green Development

- Actively participate in the research on topics related to certifications on green nuclear power and zero carbon , promote the active and orderly development of nuclear power, and help achieve the national goals of "carbon peak" and "carbon neutrality".
- Further promote the safe and efficient use of nuclear energy, develop the benefits of comprehensive utilization of nuclear energy, use the nuclear fuel efficiently, and continuously control and reduce waste emissions to reduce the impact on the environment.
- Protect the ecosystem in the surrounding area of nuclear power bases and maintain a good ecological environment by implementing continuous environmental monitoring with advanced technologies and management approaches and deepening cooperation with research institutions.

Employee Growth

- Emphasize occupational health and safety of employees, and implement safety guidelines to protect their rights, benefits and welfare.
- Continue to improve our personnel training programs, enrich our staff training format and resources, optimize our performance appraisal and promotion system, motivate our employees and promote staff growth.


Win-win Cooperation

- Strengthen fair competition and continue to promote quality and anti-corruption in supply chain.
- Promote safe and eco-friendly nuclear power supply chain, and strengthen cooperation with the nuclear power industry alliances to enhance competitiveness.

Social Contribution

- Continuously open up communication, carry out stakeholder surveys in various forms, actively accept public supervision, and consistently improve public recognition and acceptance on nuclear power to build a harmonious relationship.
- Deepen community engagement, jointly improve the environment of surrounding communities, drive local employment, promote local economy and build harmonious community relations; continue helping rural vitalization, and support disaster relief and social welfare undertakings.

Independent Assurance Report



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China General Nuclear Power Co., Ltd.

2021 Environmental, Social and Governance Report

Independent Assurance Report

安永华明(2022)专字第 60806422_A01 号

To the Board of China General Nuclear Power Corporation:

I. Scope of Our Engagement

The 2021 Environmental, Social and Governance Report (the "ESG Report") of China General Nuclear Power Co., Ltd. (the "company") has been prepared by the company. Management of the company (the "Management") is responsible for the collection and presentation of information within the Appendix 27 *Environmental, Social and Governance Reporting Guide* of the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited and Shenzhen Stock Exchange's *Guidelines No. 1 for Self-Regulation of Listed Companies-Standardized Operation of Companies Listed on the Main Board*, and for maintaining adequate records and internal controls that are designed to support the ESG reporting process.

Our responsibility is to carry out limited assurance procedures in accordance with *International Standard on Assurance Engagements 3000 ("ISAE3000"): "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information"* issued by the International Federation of Accountants and issue the assurance statement for the key performance information in the ESG Report for the year ended 31 December 2021 in accordance with the Management's instructions and the terms of the Engagement Letter signed in February 2022.

II. Work Performed

Our review has been planned and performed in accordance with ISAE3000. In order to form our conclusions, we carried out the following procedures:

According to the Management's instructions, we performed limited assurance procedures in:

- China General Nuclear Power Co., Ltd. Headquarters
- Yangjiang Nuclear Power Co., Ltd.

We did not perform limited assurance procedures on other sites.

The limited assurance procedures were performed over the following key performance indicators in the ESG Report for the year ended 31 December 2021:

Safety

- Level 2 or above Nuclear events

1

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- Percentage of WANO indicators entering the world's top 1/10 (excellent level)
- Percentage of WANO indicators entering the world's top 1/4 (advanced level)

Environment

- The installed capacity of nuclear power in operation (MW)
- On-grid nuclear power generation (GWh)
- On-grid nuclear power generation equivalent to reduction of standard coal consumption (million tons)
- On-grid nuclear power generation equivalent to carbon dioxide reduction (million tons)
- Purchased electricity (MWh)
- Purchased electricity equivalent to carbon dioxide emissions (ten thousand tons)
- Freshwater consumption (ten thousand tons)
- Water consumption per unit of on-grid power generation (ton/GWh)

Social

- Number of employees
- Number of ethnic minority employees
- Number of fresh graduate employees
- Percentage of employees by gender
Male
Female
- Percentage of employees by job type
Executives /Administrative staff
Technicians
- Percentage of employees by age
Aged 28 and below
Aged 29 to 35

- Aged 36 to 45*
Aged 46 and above
- Percentage of employees by education
Undergraduate and below
Undergraduate
Postgraduate
Doctorate
- Percentage of employees by region
Within Shenzhen
Outside Shenzhen

In response to the above key performance indicators, the company has applied the Environmental, Social and Governance reporting guidelines in the Appendix 27 *Environmental, Social and Governance Reporting Guide* of the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited and Shenzhen Stock Exchange's *Guidelines No. 1 for Self-Regulation of Listed Companies-Standardized Operation of Companies Listed on the Main Board* to prepare.

The limited assurance work includes interviews with persons in charge of selected key performance indicators, execution of analytical procedures and other limited assurance procedures, etc.

The limited assurance procedures we carried out are following:

- Interviewing the company's Management and staffs responsible for the selected key performance information;
- Performing analytical review procedures;
- Performing sample inspection on the selected key performance information;
- Performing recalculation procedures on the selected key performance information;
- Other procedures we considered necessary.

2

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We believe that the evidence obtained is sufficient and appropriate as the basis for issuing limited assurance conclusions.

III. Limitations of Our Scope

Our scope of work did not include:

- Assessing the accuracy or fairness of information (including financial information) other than the selected key performance information;
- Reviewing the forward-looking statements made by the Management;
- Reviewing and consequently providing assurance on historical data.

IV. Level of Assurance

Our evidence gathering procedures have been designed to obtain a limited level of assurance (as set out in ISAE 3000) on which to base our conclusion. The procedures conducted do not provide all the evidence that would be required in a reasonable assurance engagement and, accordingly, we do not express a reasonable assurance opinion or an audit opinion. While we considered the effectiveness of the Management's internal controls when determining the nature and extent of our procedures, our review was not designed to provide assurance on internal controls.

V. Our Conclusions

Subject to the limitations of scope and based on the procedures specified above for this limited assurance engagement, we provided the following conclusions:

Nothing has come to our attention that causes us to believe that the key performance indicators selected in the company's 2021 ESG Report are unfairly expressed in any material respect according to the criteria defined above.

VI. Our Independence

We are in compliance with the Ernst & Young Global Independence Policy which was designed to comply with the requirements of the IFAC Codes of Ethics for Professional Accountants (the IFAC Code). We believe that there were no events or prohibited services provided which could impair our independence.

VII. Our Assurance Team

Our assurance team has been drawn from our ESG Report assurance service network, which undertakes similar engagements to this with a number of domestic or international businesses. Our assurance team has met the requirements of competence and work experience of this engagement.

Ernst & Young Hua Ming LLP
Ernst & Young Hua Ming LLP
Beijing, China
15 March 2022

3

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Key Performance Indicators

Safety

Item	Indicator	2019	2020	2021
Nuclear Safety	Number of nuclear power units in operation	24	24	25
	Ratio of WANO indicators achieving the world's advanced level (the world's top quartile)	76.39%	72.57%	83.00%
	Unplanned shutdowns (times)	3	5	1
	Number of nuclear incidents of level-2 or above ²²	0	0	0
Personal Safety (including employees and contractors)	Death	0	0	0
	Death rate per 100,000 persons in engineering construction	0	0	0
	Number of serious injuries	1	0	0
Fire Safety	Number of fire accidents	0	0	0
Radiation Protection	Accidental overexposures (times)	0	0	0
	Loss of radiation sources (times)	0	0	0
	Number of internal contamination accidents (cases)	0	0	0

Environmental

Indicator	2019	2020	2021
Equivalent to CO ₂ emissions reduction from clean energy (10,000 tons)	15,051.35	15,627.64	16,735.75
Equivalent to SO ₂ emissions reduction from clean energy (10,000 tons)	\	3.49	3.22
Equivalent to NO _x emissions reduction from clean energy (10,000 tons)	\	3.64	3.60

Water Resources Management

Indicator	2019	2020	2021
Fresh water consumption (10,000 tons)	1,156	1,100	1,068

²² Nuclear incidents are classified into seven levels in the INES. Event of levels 1 to 3 are terms as "incidents" while levels 4 to 7 are classified as "accidents". Events without safety significance are classified as "below scale/ Level 0".

Social

Indicator		2019	2020	2021
Number of employees		18,383	18,264	18,248
Number of ethnic minority employees		783	763	842
Proportion of employees				
Gender	Female	11.58%	11.68%	11.57%
	Male	88.42%	88.32%	88.43%
Profession category	Administration	7.69%	7.80%	8.06%
	Technical	92.31%	92.20%	91.94%
Employment category	Full-time	100%	100%	100%
	Part-time	0%	0%	0%
Age	Aged 28 and below	19.66%	16.20%	14.63%
	Aged 29 to 35	42.13%	40.60%	38.08%
	Aged 36 to 45	25.48%	29.19%	32.35%
	Aged 46 and above	12.73%	14.01%	14.94%
Academic background	Junior college or lower	6.28%	6.00%	5.79%
	Bachelor's degree	73.74%	73.58%	73.69%
	Master's degree	19.00%	19.44%	19.43%
	Doctor's degree	0.98%	0.98%	1.09%
Geographical region	Within Shenzhen	23.22%	23.36%	23.76%
	Outside Shenzhen	76.78%	76.64%	76.24%

Indicator		2019	2020	2021
Employee turnover rate				
Gender	Female	0.28%	0.16%	0.22%
	Male	1.96%	1.52%	1.37%
Age	Aged 28 and below	0.97%	0.59%	0.58%
	Aged 29 to 35	0.89%	0.73%	0.65%
	Aged 36 to 45	0.32%	0.30%	0.30%
	Aged 46 and above	0.06%	0.05%	0.07%
Geographical region	Within Shenzhen	0.38%	0.44%	0.43%
	Outside Shenzhen	1.86%	1.24%	1.16%
Employee training				
Average training hours per employee		146	93	109
Senior managers training rate		100%	100%	100%
Middle managers training rate		100%	100%	100%
Training rate for male		100%	100%	100%
Training rate for female		100%	100%	100%
Public welfare and social communication				
Total rural vitalization and other donations (10,000 yuan)		1,949.07	7,091.58	3,044.12
Volunteering hours		28,131	43,413	48,000
Sessions of press conference		10	4	9

Contribution to the UN SDGs

SDGs	UN SDGs	CGN Power’s Actions	Chapter
	End poverty in all its forms everywhere	Actively care about the socially disadvantaged groups to boost rural vitalization and create a harmonious and warm society	Harmonious Communities
	Ensure healthy lives and promote well-being for all at all ages	Adhere to the management policy of "safety first,prevention-oriented, comprehensive governance", and actively take measures to ensure employees' health and safety	Talent Cultivation
	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Implement education alleviation to improve education resources and quality in underdeveloped areas	Harmonious Communities
	Achieve gender equality and empower all women and girls	Adhere to the principle of open, fair and equal competition, and implement gender equality	Talent Cultivation
	Ensure access to affordable, reliable, sustainable and modern energy for all	Promote nuclear power development and access to clean energy and ensure the safe operation of nuclear power	Safe and Stable Operation
	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Respect and protect employees' rights and interests, and build a diversified workforce with adequate development support	Safe and Stable Operation Win-win Cooperation Harmonious Communities
	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Construct power infrastructure, enhance innovation capabilities and optimize energy development technologies	Safe and Stable Operation
	Ensure sustainable consumption and production patterns	Improve overall nuclear power efficiency, reduce resources consumption and waste disposal, ensure radioactive waste emissions meet national standards	Safe and Stable Operation
	Take urgent actions to combat climate change and its impacts	Adhere to nuclear power development and promote low-carbon energy structure to reduce carbon emissions	Green Development
	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Attach importance to the impacts of power plant construction and operation on surrounding underwater life, and take measures to protect the underwater life around the community	Green Development
	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Attach importance to the impacts of power plant construction and operation on surrounding terrestrial flora and fauna, and take measures to protect the terrestrial life around the community	Green Development
	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	Enhance competitiveness and synergy in the nuclear power industry chain, establish a mutually beneficial strategic partnership with upstream and downstream companies	Win-win Cooperation

ESG Index

The Company has complied with the "Comply or Explain" provision set out in Appendix 27 *Environmental, Social and Governance Reporting Guide* of the *Listing Rules* of SEHK. The table below provides a summary of the report compliance.

Aspect	Indicator	Indicator description	Disclosure	Chapters/ Remarks
Environmental				
A1 Emissions	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non- hazardous waste	●	Pollutant Emissions Reduction
	A1.1	The types of emissions and respective emissions data	●	Pollutant Emissions Reduction
	A1.2	Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	●	Pollutant Emissions Reduction
	A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	●	Pollutant Emissions Reduction
	A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	●	Pollutant Emissions Reduction
	A1.5	Description of emission target(s) set and steps taken to achieve them	●	Pollutant Emissions Reduction
	A1.6	Description of how hazardous and nonhazardous wastes are handled, and a description of reduction target(s) set and steps taken to achieve them	●	Pollutant Emissions Reduction
A2 Use of Resources	General Disclosure	Policies on the efficient use of resources including energy, water and other raw materials	●	Efficient Use of Resources
	A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in'000s) and intensity (e.g. per unit of production volume, per facility)	●	Pollutant Emissions Reduction
	A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility)	●	Efficient Use of Resources
	A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them	●	Efficient Use of Resources
	A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them	●	Efficient Use of Resources
	A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced	●	Not applicable for electricity products

Aspect	Indicator	Indicator description	Disclosure	Chapters/ Remarks
Environmental				
A3 Environmental and Natural Resources	General Disclosure	Policies on minimizing the issuer's significant impact on the environment and natural resources	●	Green Development
	A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them	●	Green Development
A4 Climate Change	General Disclosure	Policies on identification and mitigation of significant climate-related issues which have impacted, and those which may impact, the issuer	●	Response to Climate Change
	A4.1	Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them	●	Response to Climate Change
Social				
B1 Employment	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare	●	Talent Cultivation
	B1.1	Total workforce by gender, employment type (for example, fullor part-time), age group and geographical region	●	Employee Care Key Performance Indicators
	B1.2	Employee turnover rate by gender, age group and geographical region	●	Employee Care Key Performance Indicators
B2 Health and Safety	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards	●	Occupational Health
	B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year	●	Key Performance Indicators
	B2.2	Lost days due to work injury	●	Outstanding Safety Performance Key Performance Indicators
	B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored	●	Occupational Health
B3 Development and Training	General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities	●	Employee Development
	B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management)	●	Training System Key Performance Indicators
	B3.2	The average training hours completed per employee by gender and employee category	●	Training System Key Performance Indicators

Aspect	Indicator	Indicator description	Disclosure	Chapters/ Remarks
Social				
B4 Labor Standards	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labor	●	Talent Cultivation
	B4.1	Description of measures to review employment practices to avoid child and forced labor	●	Talent Attraction Equality and Diversity
	B4.2	Description of steps taken to eliminate such practices when discovered	●	Talent Attraction Equality and Diversity
B5 Supply Chain Management	General Disclosure	Policies on managing environmental and social risks of the supply chain	●	Strengthening Supply Chain Management Improving Performance Of Suppliers
	B5.1	Number of suppliers by geographical region	●	Strengthening Supply Chain Management
	B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored	●	Strengthening Supply Chain Management
	B5.3	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored	●	Strengthening Supply Chain Management Improving Performance Of Suppliers
	B5.4	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	●	Strengthening Supply Chain Management Improving Performance Of Suppliers
B6 Product Responsibility	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	●	Safe and Stable Operation Occupational Health Privacy: Information Security Not applicable for electricity products
	B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons	●	Not applicable for electricity products
	B6.2	Number of products and service-related complaints received and how they are dealt with	●	Outstanding Safety Performance
	B6.3	Description of practices relating to observing and protecting intellectual property rights	●	Leading Nuclear Power Innovation
	B6.4	Description of quality assurance process and recall procedures	●	Product recall is not applicable for electricity product

Aspect	Indicator	Indicator description	Disclosure	Chapters/ Remarks
Social				
B6 Product Responsibility	B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored	●	Information Security
B7 Anticorruption	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering	●	Anti-corruption
	B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases	●	Anti-corruption
	B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	●	Anti-corruption
	B7.3	Describe of the anti-corruption training provided to directors and employees.	●	Trainings for Board members Compliance Management Anti-corruption
B8 Community Investment	General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests	●	Harmonious Communities
	B8.1	Focus areas of contribution (e.g. education, environmental concerns, labor needs, health, culture, sport)	●	Boosting Common Prosperity Giving Back to the Community
	B8.2	Resources contributed (e.g. money or time) to the focus area	●	Key Performance Indicators

Feedback Form

Dear readers,

Thank you for reading the *2021 Environmental, Social and Governance Report* published by CGN Power. In order to provide you with more valuable information, and for our continuous improvement in performance of ESG/social responsibility, capacity and level of fulfillment of corporate social responsibility, we sincerely invite you to provide us with feedbacks as below via email, fax or mail. We eagerly look forward to your precious opinions.

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Your evaluations on this Report: (please tick "√" where appropriate)

1. Our efforts and impact on economic, environmental and social aspects highlighted in this Report

☐ Very good ☐ Good ☐ Acceptable ☐ Bad ☐ Very bad

2. Clarity, accuracy and completeness of information and indicators disclosed in this Report

☐ Very good ☐ Good ☐ Acceptable ☐ Bad ☐ Very bad

3. Readability from the perspective of content layout and design of this Report

☐ Very good ☐ Good ☐ Acceptable ☐ Bad ☐ Very bad

4.Which part(s) of this Report are you most interested in?

5. What additional information would you expect to be provided in this Report?

6. Do you have any suggestions for our future ESG reports?

Nature Energy Powering Nature

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