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CGN Global Sustainability Report 2018

Developing Clean Energy to Benefit Mankind

China General Nuclear Power Group

Postcode: 518026
Fax: 86- 755- 8369 9900
Website: www.cgnpc.com.cn
Address: CGN building, No.2002, Shennan Boulevard, Shenzhen, China

Interpretation of the Report's cover:

The cover is designed based on CGN's main business (represented by nuclear power, wind power, solar energy, etc.), people (represented by the French employee of Chinese Taishan Nuclear Power Plant, his Chinese wife and their children), and the environment (represented by the egret, a typical protected animal of Chinese Daya Bay Nuclear Power Plant). The cover illustrates the harmonious coexistence of the three in the form of watercolor painting, showing CGN's sustainable development concept of the coordinated development of economy, society and environment.

For the story of the employee in Taishan Nuclear Power Plant, please see the Report P56.

CGN

Clean Energy Lightening A Brighter Future

2018 CGN
Global Sustainability Report

About this Report

This is the China General Nuclear Power Group's 2018 Global Sustainability Report. Based on the principles of objectiveness, standardization, transparency and comprehensiveness, the report discloses CGN's performance in economic, social, environmental and other aspects. The report is available in both English and French. In case of any discrepancy, the English version shall prevail.

Reporting Period
This report covers the period from January 1, 2018 to December 31, 2018 with some dating back to previous years or referring to later years, in order to enhance the comparability and perceptiveness of the report.

Reporting Scope
The report focuses on China General Nuclear Power Group, including its branches, subsidiaries, and directly-administrated organizations.

Compilation Conformance
GRI Sustainability Reporting Standards (GRI Standards);
ISO 26000:2010 - Guidance on social responsibility;
Guidelines to the State-owned Enterprises Directly under the Central Government on Fulfilling Corporate Social Responsibilities issued by State-owned Assets Supervision and Administration Commission of the State Council (SASAC).

Data Source
All data in this report is from documents and reports officially issued by CGN and other agencies.

Reliability Assurance
The Group guarantees that there is no false record, misleading statement or major omission in the report.

References
For better expression and readability, "CGN", "the Group" and "we" are used in this report to refer to China General Nuclear Power Group.

Report Access
You can download the electronic version of this report from our website www.cgnpc.com.cn.

Please scan the QR code for feedback

Contents

Message from the Chairman

"CGN, with a mission to 'Develop Clean Energy to Benefit Mankind' and a vision of 'Building a World-class Clean Energy Group', strives to create a safer, cleaner, and greener world by making best use of natural energy."

Climate change has become a crucial problem of our time, and we're now standing at a critical moment when action must be taken. The challenge we are facing is: how can we reduce global carbon emissions and tackle climate change while also meeting the world's ever-growing demand for energy?

Using more clean energy to realize a transition to a low-carbon economy is an important way to address global climate challenges. As a global clean energy producer and service provider, China General Nuclear Power Group (CGN) boasts a business model that enables us to make contributions to promoting the global energy transformation. We take "Developing Clean Energy to Benefit Mankind" as a mission to develop our own. By developing clean energy drawn from nature with reliable, mature, and safe energy technologies, we provide more people with sufficient clean energy, while also contributing to addressing climate change.

CGN started its business from nuclear power development. After nearly 40 years of development, over 20% of our business is now present overseas. We provide wind power, solar power, nuclear power, and other clean energy to a total of 16 countries, including France, the UK, Belgium, and Malaysia, supporting their low-carbon development. Especially, we have been working with France for nearly 40 years: at first, we introduced technologies from France to build the Daya Bay Nuclear Power Plant, and then we worked with France in building Taishan Nuclear Power Plant. Later, we also partnered with France in developing nuclear power projects for the UK and building clean power plants in many regions of France. Our bilateral cooperation has not only promoted the international development of the nuclear power industry, it has enabled clean power to be transmitted to more countries around the world as well, mobilizing global forces to participate in the campaign to reduce carbon emissions.

Safety, the Core and Lifeblood of Energy Transformation

We hope that sustainable development will enable CGN to become a permanent contributor to addressing climate change. The prerequisite for sustainable development is to ensure nuclear safety. Without nuclear safety, there will be no CGN. We always prioritize nuclear safety and regard safety as CGN's primary social responsibility. Only a safe nuclear power plant is able to be economically and environmentally sustainable, and only by ensuring safety can we truly promote changes in the global energy structure. We adhere to the principles of "Nuclear Safety is Top Priority" and "Safety First, Quality Foremost, Pursuit of Excellence". We maintain safe and stable operations for the 22 nuclear power generating units we own throughout the years.

Clean Energy, the Driving Force of Energy Transformation

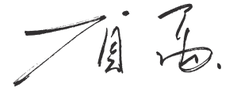
The essence of energy transformation is the replacement of traditional fossil energy sources and fundamental changes in methods of energy development and utilization. CGN has always been committed to the production and supply of zero-emission clean energy, supplying clean energies such as nuclear power, wind power, and solar power persistently, developing more advanced energy utilization methods continuously. In 2018, our on-grid power generated from clean energy was 220.5 TWh, and the total carbon dioxide emissions equivalent reduction from on-grid power generated from clean energy was 161.86 million tons, which is equivalent to a 443.4 thousand hectares of afforestation. We are making a positive contribution to building a green, efficient, low-carbon, and modern energy system and tackling global climate change.

Innovation, the Support of Energy Transformation

Without the support of innovative technologies, any attempt at realizing energy transformation will only be on paper. CGN sees sustainable innovations as a key driving force for its business development, and we are committed to using advanced technologies to expand the scope of applications for clean energy, thereby promoting global energy transformation. We have been closely keeping up with the international advanced technologies and have independently developed a number of advanced products that have gained a significant degree of international influence, including the HPR1000 nuclear power technology (or HPR1000), the FirmSys, and the electron beam industrial wastewater treatment technology. In the future, we will continue to explore innovative technologies and strive to use more advanced technologies to provide new ideas for clean energy development.

Today, CGN has grown into a multinational operator that provides clean energy and services on a global scale. We supply safe and efficient clean energy while also preserving the ecological environment through refined environmental management, to promote global participation in carbon-reduction initiatives with green and sustainable development.

In the future, we hope to work together with all the countries of the world in addressing global climate change. We firmly believe that the joint efforts of all countries in the world will allow the tackling of climate change to become more than just a slogan, instead becoming a common mission that all the peoples of the world will strive to achieve. We will unite our efforts to make the world safer, cleaner, and greener to provide future generations with a better world.



He Yu
Chairman of CGN
August 7, 2019

About CGN

Company Profile

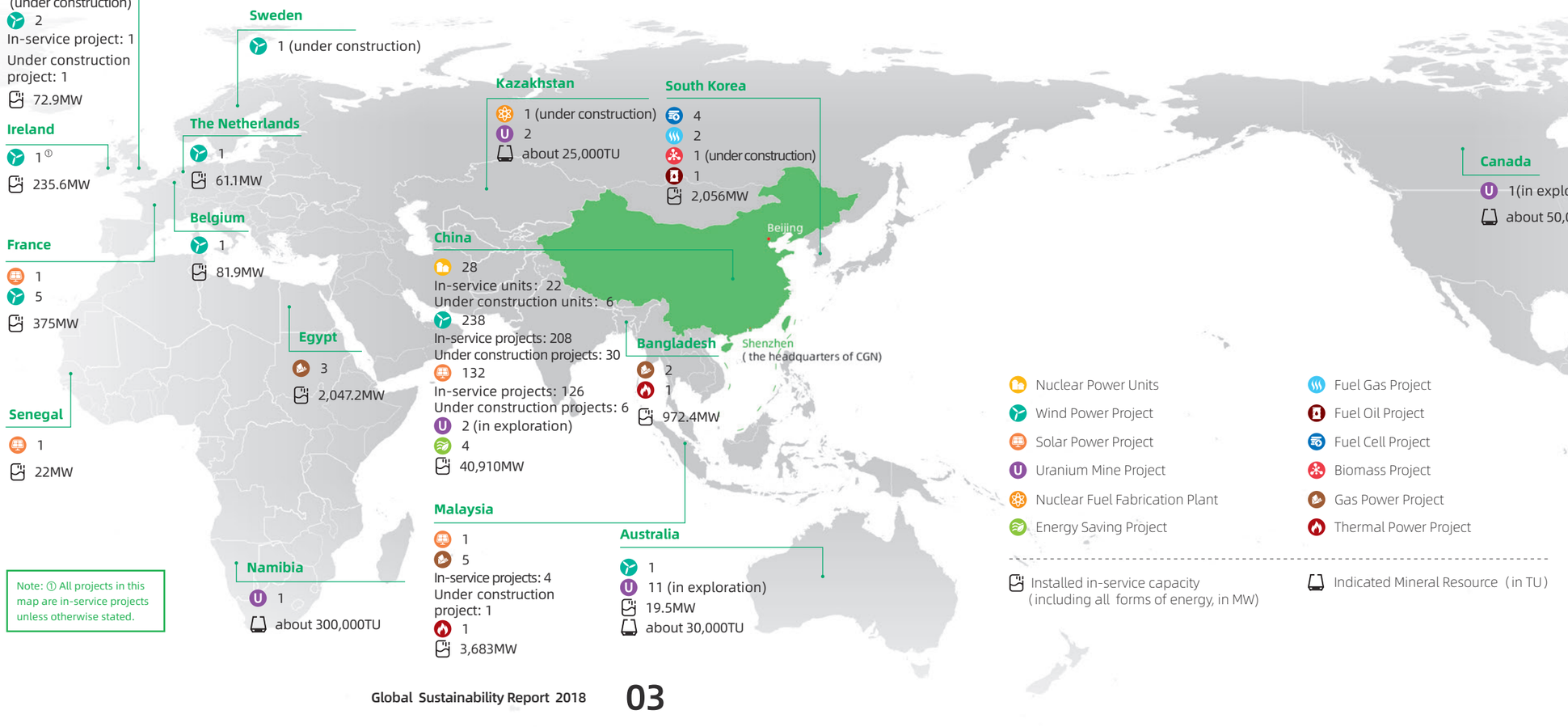
China General Nuclear Power Group (CGN) was founded in September 1994, is made up of the core company, China General Nuclear Power Corporation (CGNPC), and 45 major member companies. While building and managing many clean energy projects in multiple bases across the world, including nuclear power, wind power, and solar power projects, we are also involved in actively expanding business in financial services, nuclear technology, energy conservation services, and environmental protection services, and have achieved significant growth in these fields.

As of the end of December 2018, CGN had a gross in-service installed capacity of clean energy of 49,677 MW. Our business covers 16 countries across 5 continents, showing that we have gradually formed a global business network. We continue to make every effort to move toward being a "world-class clean energy group".

Overview of Global Business Layout

4+X Business Layout

	Listing platforms
Nuclear power	CGN Power Co., Ltd. 01816.HK
Nuclear fuel	CGN Mining Co., Ltd. 01164.HK
New energy	CGN New Energy Holding Co., Ltd. 01811.HK
Financial services	
New emerging businesses	CGN Nuclear Technology Development Co., Ltd 000881.SZ



Note: ① All projects in this map are in-service projects unless otherwise stated.

Key Performance Indicators in 2018

Safety Performance

78.2 %
Ratio of WANO (World Association of Nuclear Operators) indicators for the 21 in-service units achieving the world's advanced level (the world's top quartile) (%) ②

As of December 31, 2018, Unit 1 of Ling Ao Nuclear Power Plant had been operating for more than
4,603
days without automatic shutdowns

The number of level-2 or above incidents defined in the International Nuclear Event Scale
0 incidents

Business Performance

Total Group's assets
670
billion RMB
(about 85.8 billion EUR) ③
5.5% ④

Total overseas assets
111
billion RMB
(about 14.2 billion EUR)
9.7%

Overseas operating income
20.9
billion RMB
(about 2.7 billion EUR)
25.4%

Revenue from overseas business accounts for
21.4%
of the total
1.8%

CGN's Contribution to Environmental Protection

Gross in-service installed capacity of clean energy
49,677 MW
10.0%

Total Carbon Dioxide Emissions Equivalent Reduction from On-grid Power Generated from Clean Energy
161.86 million tons
1.2%

Overseas on-grid power generated from clean energy
35.49 TWh
4.5%

Workforce Diversity

The number of employees
42,085
2.5%

The number of accumulated recruited overseas employees
3,392 ⑤
18%

Percentage of female employees
16.9 %
5.6%

Community Contributions

33.83 million RMB
(about 4.33 million EUR)
in global charity donations
18.4%

344
The number of local suppliers for overseas projects
115%

Note: ② WANO performance is used to quantitatively measure the safety, reliability and efficiency of nuclear power units and personal safety. It is a uniform performance indicator set by WANO, and there are twelve indicators for each unit. Unit 1 of Guangdong Taishan Nuclear Power Plant was put into operation on December 13, 2018, so it has not been counted.
③ All conversions for the USD, GBP, RMB, etc. to the EUR in the report are converted according to the 2018 annual average exchange rates. According to the 2018 annual average exchange rates, EUR / GBP exchange rate was 0.887; EUR / RMB exchange rate was 7.81; EUR / USD exchange rate was 1.18; EUR / MYR exchange rate was 4.76.
④ In this report, the trend of all data is the year-on-year data compared with 2017.
⑤ By December 31 of 2018, the total accumulated number of expatriate and foreign employees recruited by the Company in projects outside of mainland of China.

Governance

A standardized governance structure and effective board of directors are the basis and guarantee for achieving good corporate governance. CGN has established a modern enterprise system. The board of directors earnestly performs the duties assigned by the shareholders and makes scientific, effective decisions to achieve sustainable development.

Executive Team ⑥

He Yu
Chairman of CGN

Zhang Shanming
President of CGN

Tan Jiansheng
Senior Vice President of CGN

Shi Bing
Senior Vice President of CGN

Gao Ligang
President of CGN Power

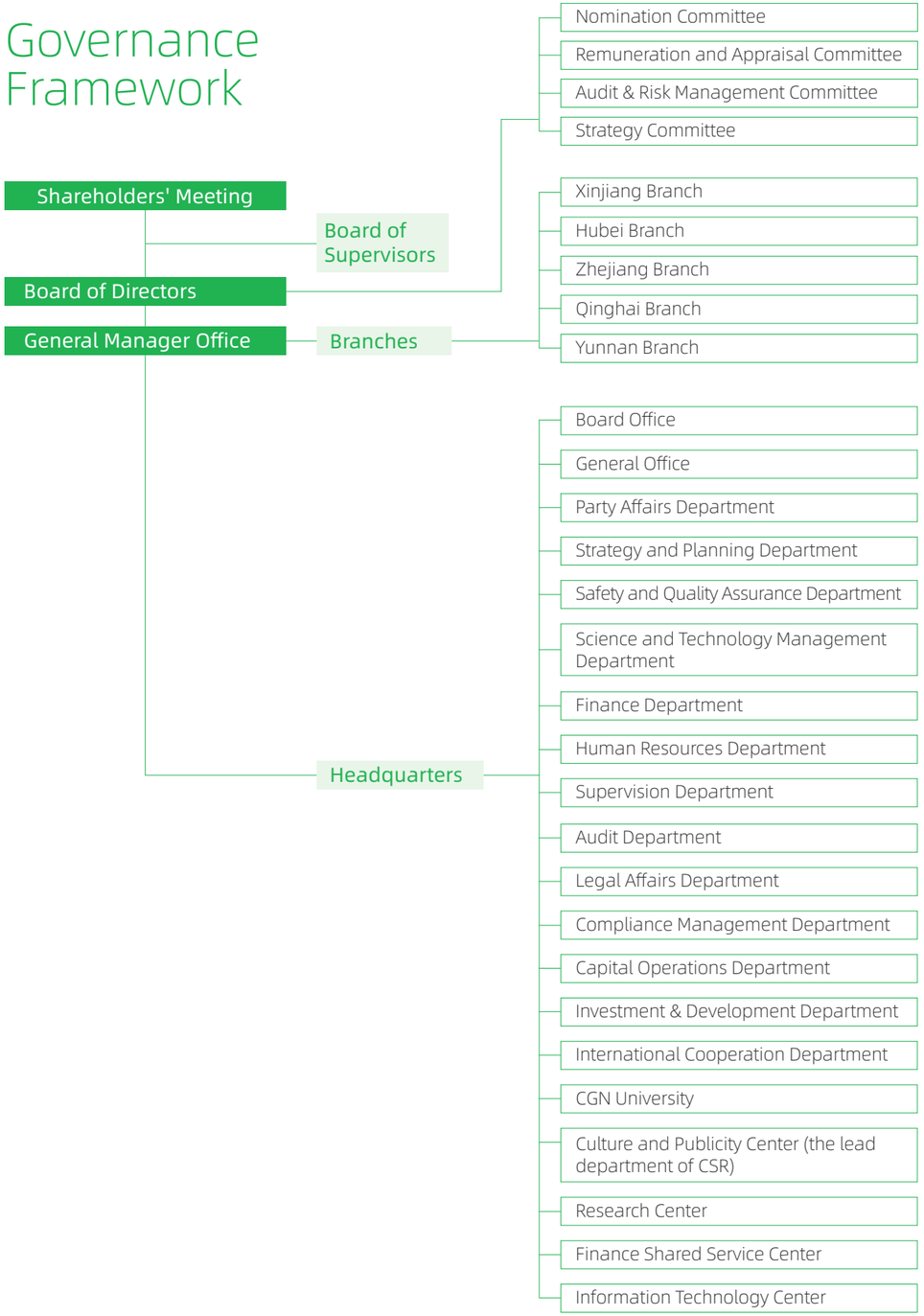
Li Yourong
Secretary of Discipline Inspection Committee

Pang Songtao
Senior Vice President of CGN

Wu Junfeng
CFO of CGN

Note: ⑥ All of the positions and titles above were effective as the end of 2018.

Governance Framework



Board of Directors

Board Composition

According to the *Articles of Association of CGN*, the board of directors consists of 9 directors, of whom there are 7 directors recommended by State-owned Assets Supervision and Administration Commission of the State Council (SASAC), including 4 outside directors; 1 director is recommended by Guangdong Hengjian Investment Holding Co, Ltd.; 1 is an employee director, elected at the workers' congress. In 2018, the board of directors had 8 in-service directors, 2 outside directors and 1 employee director, and the secretary of the board changed.


The Brenig Project (UK)

Board Operation

Carrying out pilot work on authorities

A pilot implementation program is made for the authorities of the board of directors of the Group to strengthen its performance ability from 9 aspects, including the rules of procedure of the board of directors and the method for the assessment of managers' performance, improve the supervision and accountability system, and hierarchically set up a board of directors in subsidiaries.

Upgrading the governance system

The *Management System of Board of Directors and Board of Supervisors of the Group's Subsidiaries* is revised; four supporting business processes, including proposal review, appointment of shareholder representatives, appointment and dismissal of directors and supervisors and registration of outside directors, and agenda reporting by the board of directors, are released to make corporate governance more standardized and rigorous.

Compliance Management

CGN attaches great importance to compliance management, fully abides by relevant international treaties and conventions and applicable local laws. Its practice in corporate governance, anti-monopoly, anti-bribery, anti-money laundering, import and export control and personal data protection meets the requirements of the applicable local laws and regulations. It also keeps updating its practice to maintain consistency with the latest laws and regulations.

Compliance Organizational Management System

Thinking highly of the effective implementation and operability of normative documents, according to the Group's articles of association, CGN has formulated documents related to compliant internal control, including the *Management Policy of China General Nuclear Power Group, Group's Regulations on Corporate Governance and Authorization*, Assessment Measures for the *Compliance and Integrity Practices of Member Companies, Rules of Procedure of the Board of Directors of CGN and Internal Audit System of CGN*, in order to ensure that the member companies' various business practices meet the requirements.

Compliance Management Practice

In order to fully meet the requirements of the ISO 19600 International Compliance Management System Guidelines and ISO 37001 International Anti-bribery Management System Standard, CGN Energy International Holdings Co, Limited has set up a compliance committee and appointed a Chief Compliance Officer for the overall construction of a compliance and integrity risk prevention and control system.

According to the EU's new policy General Data Protection Regulation (GDPR), any organization that collects, transmits, retains or processes personal information in EU member states shall obey GDPR. CGN Europe Energy (CGNEE) and UK Companies carry out compliance activities in terms of system construction and risk assessment to protect employees' privacy.

Risk Management

CGN actively identifies and manages various internal and external risks arising during business development, and improves the operational efficiency while taking measures to reduce, avoid, shift and control risks in order to maintain the sound, sustainable development of the Group.

Target strategies for risk management

According to the Group's values, goals and resources as well as the laws and regulations, the board of directors works primarily on assessing how much the Group is willing to bear a risk. The reasonable risks acceptable to the Group must be consistent with the development strategies and can be fully understood and controlled. Moreover, these risks will not cause the Group to face the following risky circumstances:

- A risk that may produce a disruptive impact on company development 01
- A risk that may cause a severe accident to disrupt operation/supply 02
- A risk that may affect employees, contractors or the society's safety or health 03
- A risk that may cause a major financial loss and therefore seriously affect the Group's ability to develop its business or financial management capacity 04
- A risk that may cause the Group to seriously violate laws and regulations so that it may be asked to stop operation or licensing or heavily fined 05
- A risk that may cause something to damage the Group's reputation or brand reputation 06

We have set up a risk management team, which holds a monthly meeting to assess and sort out the risks, and regularly reports to the board of directors and the management. Moreover, the team asks every business unit to identify the consequences and possibilities of risks, set risk management goals and adopt corresponding risk prevention strategies.

01 Assisting the Global Energy Transformation

Global Trends in Energy Development

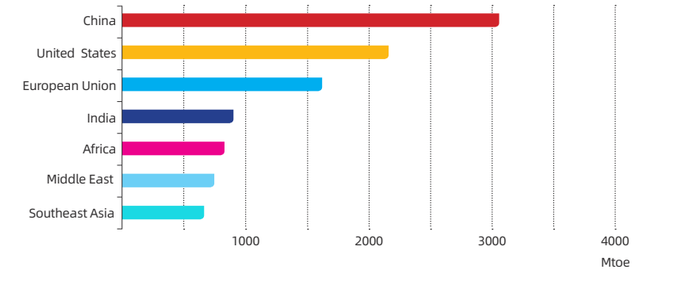
In the present day, climate change is a serious challenge faced by all people in the 21st century. As such, "climate action" was listed among the 17 Sustainable Development Goals (SDGs) at the United Nations Sustainable Development Summit 2015⑦. At the 2018 United Nations Climate Change Conference, all member countries reaffirmed their focus on fighting climate change and their willingness to transit to a green and low-carbon economy in order to jointly address global climate change.

Despite the enormous challenge from impending global climate change, energy demand will continue its long-term growth worldwide. According to BP's latest *Statistical Review of World Energy*, global primary energy consumption grew at a rate of 2.9% in 2018, almost double its 10-year average of 1.5% per year, and the fastest since 2010. According to the International Energy Agency's (IEA) *World Energy Outlook 2018*, global energy demand will grow by 25%-35% by the year 2040. Given that the present energy structure is dominated by fossil fuels, this growth in energy demand will inevitably lead to an increase in fossil fuel consumption, thus accelerating the process of climate change.

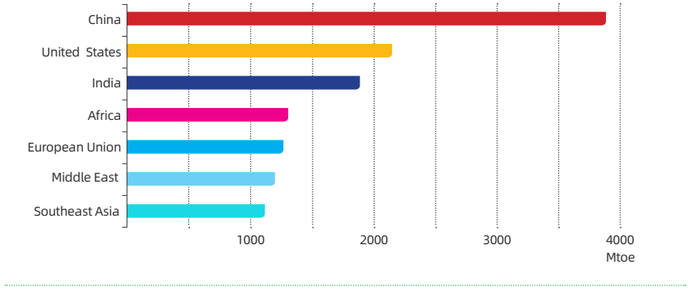
A global consensus has therefore been developed regarding climate change, centered around the accelerated transformation of energy systems towards low-carbon sources and the construction of a green and clean global energy system.

Note: ⑦ The 17 SDGs were affirmed *in Transforming our World: The 2030 Agenda for Sustainable Development*, which was released at the United Nations Sustainable Development Summit 2015.

Energy demand 2017



Energy demand 2040



The IEA's *World Energy Outlook 2018*

Using Clean Energy to Assist the Global Energy Transformation

CGN is a clean energy producer and service provider with a mission of "Developing Clean Energy to Benefit Mankind". We are committed to producing and supplying the world with clean energy with zero carbon emissions, and to enabling energy savings, emission reductions, and the utilization of clean energy. By providing a large quantity of high-quality, high-performance, and sustainable clean energy products and services, the Group aims to assist in the global energy transformation and contribute to addressing global climate change. We mainly focus on the following areas:

- Focusing on Nuclear Power Generation
- Extending the Nuclear Fuel Industry
- Non-nuclear Clean Energy Business
- Innovations in Civil Nuclear Technology

The Green Rigg Wind Farm of Clover Project (UK)

Focusing On Nuclear Power Generation

Nuclear power is a typical kind of low-carbon energy and plays an important role in addressing climate change®. With 40 years of abundant experience in the nuclear power sector, CGN specializes in the construction and operation of nuclear power projects and the delivery of services, aimed at continuously providing safe, clean nuclear energy for low-carbon development around the world.

In 2018, Unit 5 of Yangjiang Nuclear Power Plant and the Unit 1 of Taishan Nuclear Power Plant were put into operation, which increased the number of in-service nuclear power units to 22 and gross installed capacity to 24,300 MW, accounting for a 54.4% of China's gross in-service installed nuclear power capacity. There are 6 nuclear power units under construction, with an installed capacity of 7,430 MW.

Phase II of Guangxi Fangchenggang Nuclear Power Project, built with China's self-developed third-generation nuclear power technology HPR1000, and is serving as a reference for the British BRB Nuclear Power Plant.

Nuclear Power Projects in China

Projects in Operation

- Guangdong Daya Bay Nuclear Power Base: 2 units at the Daya Bay Nuclear Power Plant, 2 units at Phase I of Ling Ao Nuclear Power Plant, and 2 units at the Phase II of Ling Ao Nuclear Power Plant
- Units 1-5 of Guangdong Yangjiang Nuclear Power Plant
- Unit 1 of Guangdong Taishan Nuclear Power Plant
- Units 1-4 of Liaoning Hongyanhe Nuclear Power Plant
- Units 1-4 of Fujian Ningde Nuclear Power Plant
- Units 1-2 of Guangxi Fangchenggang Nuclear Power Plant

Projects under Construction

- Unit 6 of Guangdong Yangjiang Nuclear Power Plant
- Unit 2 of Guangdong Taishan Nuclear Power Plant
- Units 5-6 of Liaoning Hongyanhe Nuclear Power Plant
- Units 3-4 of Guangxi Fangchenggang Nuclear Power Plant

Approved Projects

- Phase I of Guangdong Taipingling Nuclear Power Project

Nuclear Power Projects in the UK

In 2018, on-grid power generated from nuclear power

157.04

TWh

equivalent to a reduction of

132.5

million tons of carbon dioxide emissions.

Note: ® According to NASA's report: Prevented Mortality and Greenhouse Gas Emissions from Historical and Projected Nuclear Power, nuclear power generation assisted in reducing carbon dioxide emissions by about 64 billion tons from 1971 to 2009.

Extending the Nuclear Fuel Industry

Abundant nuclear fuel supply is an important guarantee for the long-term stable operation of nuclear power plants. CGN adheres to a development pathway focused on the industrialization of nuclear fuel, and has made major breakthroughs in uranium resource development, nuclear fuel processing, back-end processing and the transportation of radioactive materials.

Namibia Husab Uranium Mine

Husab Uranium Mine is the third-largest uranium-only mine in the world with total reserves of approximately 290,000 tons of natural uranium. The project is China's largest physical investment in Africa, with a total investment of more than 4 billion dollars (about 3.4 billion EUR). Husab Uranium Mine is also the only large-scale uranium mine to have been purchased and held abroad by China. In 2018, it produced a total of over 3,500 tons of U_3O_8.

Husab Uranium Mine (Namibia)

Sino-Kazakhstan Nuclear Fuel Fabrication Plant

The Sino-Kazakhstan Nuclear Fuel Fabrication Plant is jointly constructed by CGN and Kazatomprom. The project officially started in December 2016, this marks CGN's official entry into the field of nuclear fuel fabrication processing. In 2018, the Sino-Kazakhstan Nuclear Fuel Fabrication Plant was in the primary facility construction and production preparation stage.

Non-nuclear Clean Energy Business

Clean energies such as wind and solar power will be major fields of development for new energy in the future, and will have the greatest and most direct impact on assisting the transformation of the global energy structure. In 2018, CGN built new overseas energy facilities with an installed capacity of 1,670 MW, providing bigger volumes of clean power to these areas than ever before. By the end of 2018, CGN's global installed capacity of new energy had reached 25,060 MW, with projects across 16 countries on 5 continents.

Total on-grid power generation from non-nuclear clean energies

63.48 TWh

Equivalent to a reduction of

34.3

million tons of carbon dioxide emissions

The Esperance Project (Belgium)

The Melaka Combined Cycle Gas Power Generation Project (Malaysia)

Belgium's Largest Onshore Wind Power Project
—The Esperance Project

- A gross installed capacity of **81.9** MW with a single-unit rated power of **7.5** MW
- **0.143** TWh of estimated annual power generation, equivalent to reducing CO_2 emissions of **142.4** thousand tons

Europe's Single Largest Onshore Wind Farm
—The North Pole Project

- A gross installed capacity of **650** MW, with a capability of supplying power to **400,000** households
- **1.87** TWh of estimated annual power generation, equivalent to reducing CO_2 emissions of **18.7** thousand tons

Edra Solar Power Sdn Bhd's First Solar Power Plant
—The Kuala Ketil PV Project

- A gross installed capacity of **50** MW
- One of the **largest** solar power stations in Malaysia

The Largest Gas Power Generation Project in Southeast Asia
—The Melaka Combined Cycle Gas Power Generation Project

- A gross installed capacity of **2,240** MW
- Total investment of **1.5** billion USD (about 1.3 billion EUR)
- Constructed with the world's most advanced and efficient H-class gas turbine technology
- **40** months of construction period

Innovations in Civil Nuclear Technology

CGN's nuclear technology business covers four core units, including electron accelerator manufacturing, irradiation processing services, the supply of modified polymers, and the development of nuclear instruments.

Accelerator Technology

Electron accelerator is widely applied to the modification of industrial polymer materials, the development of new materials, and environmental management. CGN has opened up a new means of harmlessly processing antibiotic residue treatment using accelerator technology. As of the end of December 2018, the Group had exported a total of 24 accelerators to India, the United States, and South Korea.

Irradiation Processing Service

Irradiation processing aims to modify and sterilize materials with electron beams. In terms of sterilization, CGN has mastered the irradiation technologies that can be applied to the sterilization of food, high-end medical equipment and Chinese medicinal herbs.

Modified Polymer Technology

CGN has started developing cable polymer material businesses in countries including Indonesia, Thailand, Vietnam, and India. On August 28, 2018, by developing low-volatile organic compound (VOC) and low-odor interior material, CGN received a bulk order from Jaguar and Land Rover, becoming their regular supplier. Our self-developed high-strength and high-modulus long glass fiber reinforced polypropylene structural material was also successfully applied in dozens of mid- and high-end vehicle models produced by Chrysler and Volkswagen, offering improved energy savings, emissions reduction, and weight reduction, and have received a positive response from the market.

Nuclear Instrument Development

In terms of nuclear radiation monitoring, CGN provides professional technologies and instruments and value-added services, including online radiation monitoring, nuclear radiation protection and environmental monitoring and radioactive decontamination products, to offer supervisory support to the safe and green development of the nuclear industry. In terms of radiation imaging, CGN has a perspective scanning imaging technology that can be used for real-time online imaging inspection of various passenger vehicles. It's widely applied to the transport inspection of contraband goods by the customs and police.

The nuclear fuel assembly and its control rods

02 Sustainable Development Strategy

Mission-Driven:

Developing Clean Energy to Benefit Mankind

Using new energy, making best use of natural energy, and advancing the cause of clean energy including nuclear power; guaranteeing energy security, optimizing energy structure, and achieving coordinated and sustainable economic and social development. CGN aims at becoming a world-class clean energy group that generates safe and efficient power, devoting itself to allowing more and more people to enjoy clean energy in a green environment.

Core Value-based:

Doing Things Right in One Go

Our basic working attitude and direction in all our tasks are Doing Things Right in One Go; only in this way can we ensure safety, achieve a high level of quality, pursue excellence, and achieve the mission and vision of CGN.

Development Objectives

- Business Objectives: Striving to keep the first position in China and enter the top three worldwide in terms of the in-service nuclear installed capacity by 2020, and to enter China's top three in terms of comprehensive performance indicators for wind power and solar power.
- Brand Building Objectives: To realize the integration and promotion of culture, brand, and social responsibility activities, and to complete the transition from being a "production-oriented brand" to a "service-oriented brand."
- Sustainable Development Objectives: To become a world-class clean energy group that is trusted by the public, and has a strong sense of responsibility, advanced technology, better performance, high level of sustainability, and greater value.

Targets Path:

CGN's "1-2-3-4" Strategy

1 One comprehensively deepening reform

- Comprehensively deepening enterprise reform

2 Two principles to uphold

- Upholding the basic operation principle that "safety and quality are the lifeblood of an enterprise".
- Adhering to the core value of "Doing Things Right in One Go".

3 Strengthening three businesses

- Consolidating and strengthening current businesses (nuclear power sector, nuclear fuel sector, new energy sector, and financial services sector)
- Accelerating the creation of new businesses (nuclear technology application businesses)
- Actively creating new economic growth points (developing businesses such as biogas, hazardous waste treatment, automation, water & environment, and other new businesses)

4 Four practices to promote

- Promoting lean management
- Promoting professional management
- Promoting international development
- Promoting market-oriented operation

Building Enduring Partnerships with Stakeholders

Materiality Matrix

This matrix determines the relevant sustainability topics for CGN. The topics are clustered around the following sustainability enablers: employees, customers, community, regulatory authorities, and so on. We used existing international sustainability standards to identify a number of relevant topics:

— Global Reporting Initiative (GRI)
— ISO 26000 standard
The results of the materiality matrix are summarized on the right graph.

1 Improving nuclear power production and service capabilities
2 Promoting the development of the nuclear fuel industry chain
3 **Broadening the scope of new energy business**
4 Exploring the innovation of civil nuclear technologies
5 **Nuclear power cooperation with French Companies**
6 **New energy cooperation with French Companies**
7 Assisting Sino-French cultural exchanges
8 Engagement in French community construction
9 **Nuclear safety management systems**
10 Development of safety culture
11 Emergency response and disposal mechanisms
12 Safety supervision and evaluation systems
13 Engineering & construction quality management
14 Innovation of safety technology
15 Construction of environmental management systems
16 Sustainable products and services
17 Addressing climate change
18 **Resource recycling**
19 **Waste discharge management**
20 Biodiversity conservation
21 Anti-discrimination and vulnerable groups
22 Complaint handling
23 **Talent development**
24 Participation in social and corporate development
25 **Safe and healthy working environments**
26 Accident management
27 **Promoting economic development of the community**
28 Community participation
29 Community communications
30 Anti-competitive practices
31 Driving the development of value chain
32 Organizational structure and decision-making mechanisms
33 Anti-corruption and anti-bribery measures
34 Legal and compliant operations
35 Risk management
36 Stakeholder participation

Stakeholder Engagement

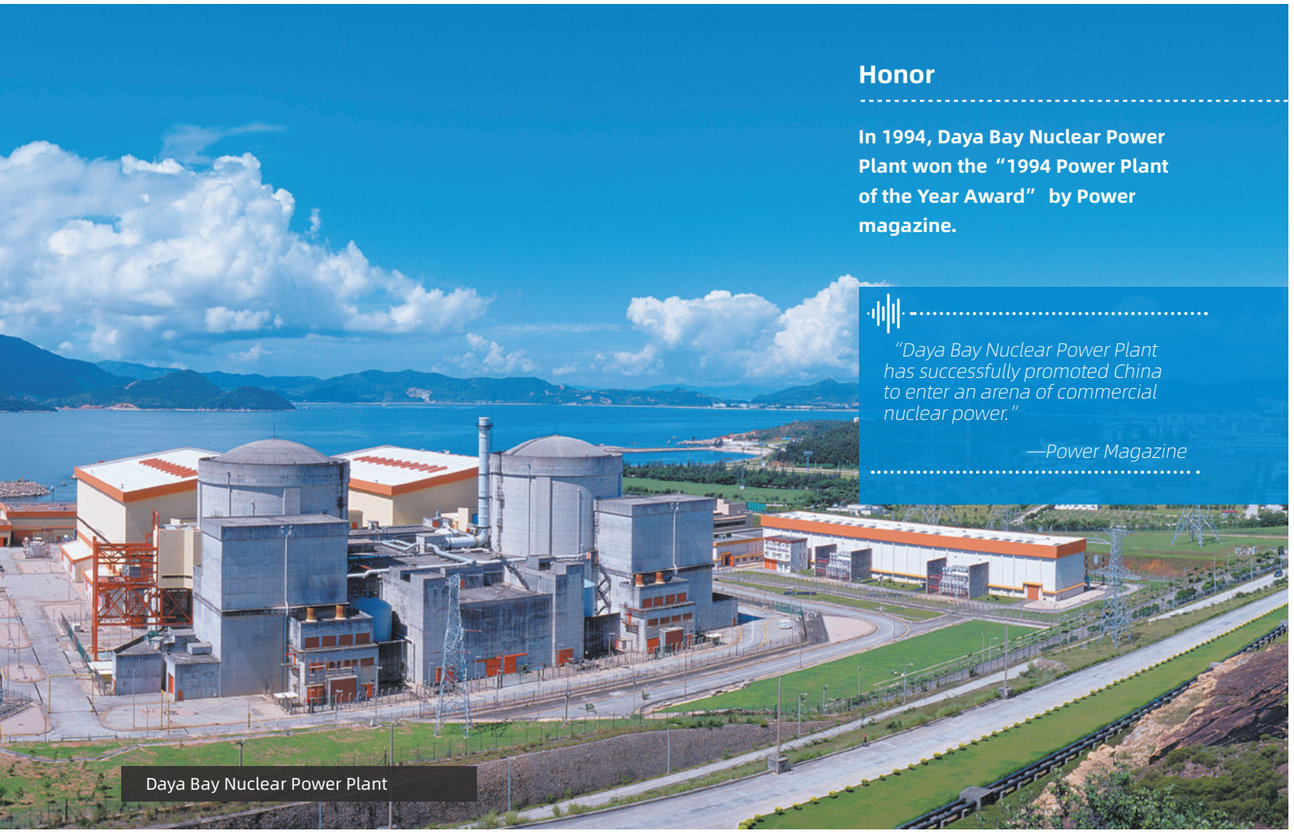
CGN focuses on listening to the voices of internal and external stakeholders, and has built multiple communication channels to deeply understand and respond to the expectations and demands of all parties.

Stakeholders	Expectations and Requirements	Communication Methods
Customers	○ Providing stable clean energy ○ Ensuring fair and transparent operational environment	○ Customer satisfaction investigation ○ Social media communication ○ Communication meeting
Community	○ Being integrated in community development ○ Protecting local environment ○ Ensuring the safety of community	○ Open Day ○ Pubic consultations ○ Disclosing nuclear power information
Employees	○ Guaranteeing wage and welfare ○ Protecting human rights ○ Assuring personal development ○ Health and safety	○ Workers' Congress ○ Training sessions
Partners	○ Ensuring fair cooperation opportunity ○ Disclosing purchasing information	○ Communication activities ○ Cooperation forum
Shareholders	○ Having good operating performance ○ Creating value to the society	○ Annual report of the Group ○ Shareholders' meetings
Regulatory authorities	○ Ensuring compliance management ○ Ensuring nuclear safety	○ Supervision and reviews

03 Cooperation with French Companies

As early as the 1970s, China began its exploration of peaceful uses of atomic energy. As its economic development has accelerated, China has experienced a gradually growing energy crisis, and nuclear power has become a new means to alleviate the energy crisis and achieve energy transformation. France was the first western power to establish formal diplomatic relations with China, and boasts world-class nuclear power technologies. Studying advanced nuclear power management techniques and technologies has been one of the useful channels allowing China to develop nuclear power. At the same time, the vast Chinese market for nuclear power generated by the inherent change in the energy structure was attractive to French nuclear power enterprises.

Based on the principle of mutual respect and collaborative development, China and France established their first cooperative efforts on nuclear power development in 1978. As a representative of Chinese nuclear power enterprises, CGN began to work with French enterprises in exploring a new way to promote the vigorous development of nuclear power and the transformation of the global energy structure.



Daya Bay Nuclear Power Plant

Honor

In 1994, Daya Bay Nuclear Power Plant won the "1994 Power Plant of the Year Award" by Power magazine.

"Daya Bay Nuclear Power Plant has successfully promoted China to enter an arena of commercial nuclear power."

—Power Magazine

Nuclear Power Cooperation: From Technology Introduction to Cooperative Development

Since China announced the application of French technologies in the construction of large-scale nuclear power plants in China in 1978, the partnership between CGN and French enterprises has experienced three major stages, including the Daya Bay Nuclear Power Plant, the Taishan Nuclear Power Plant, and the British Nuclear Power Plant.

Building Daya Bay Nuclear Power Plant with French Technologies

In the 1970s, China's reform and opening up helped quicken Guangdong's economic development, the imbalance between power supply and demand rapidly became apparent, and regional power shortages became the bottleneck of Guangdong's economic development. Hong Kong was also affected by the oil crisis of the time and suffered electricity shortages. In the 1980s, in order to relieve the stress of these power shortages, the Chinese government introduced the French M310 technology and built the Guangdong Daya Bay Nuclear Power Plant. The Daya Bay Nuclear Power Plant was also the largest Sino-foreign joint venture in China at that time.

Total investment: 4 billion USD

Constructing 2 units with single-unit installed capacity of 984 MW

Becoming **the first gigawatt-level large-scale nuclear power plant** in mainland China upon commercial operation

Our World-Class Partners

Électricité de France (EDF)	Providing engineering construction services
General Electric Company plc. (GEC)	Providing conventional island equipment
Framatome (FRA)	Providing nuclear island equipment and nuclear fuel assembly
Bechtel	Providing quality assurance consulting services

Supporting Economic Development with High-Quality Power

Total on-grid power generation of Daya Bay Nuclear Power Plant **350.9** TWh as of the end of 2018

Guangdong Province, China 20%

Total power transmission of Daya Bay Nuclear Power Plant

80% ⑨ Hong Kong, China

Note: ⑨ During the initial operations of the Daya Bay Nuclear Power Plant, 70% of its annually generated power was supplied to Hong Kong. Since December 2013, CGN, CLP Power Hong Kong Limited, and the Guangdong Power Grid Company Limited have agreed to increase the power transmission to Hong Kong from 70% to 80% beginning in the fourth quarter of 2014, accounting for about a quarter of Hong Kong's total electricity consumption.

[Case]

Longevity village near the nuclear power plant

Nuclear safety is our overriding priority above anything else. We always strive to ensure the safe and stable operations of nuclear power plants. The Daya Bay Nuclear Power Plant has been operating safely for 25 years, and the life expectancy of residents in the surrounding communities has not been affected. According to surveys, the average life expectancy of citizens in China is 77 years, the average life expectancy of residents in the Ling Ao community near the Daya Bay Nuclear Power Plant is 78 years. There are two centenarians in the surrounding communities; the oldest person is now 104 years old: she lived in the Ling Ao community before the Daya Bay Nuclear Power Plant was put into operation. Therefore, her age is much older than the age of Daya Bay Nuclear Power Plant.

"Daya Bay is our good neighbor."

——Li Weike, a resident of Ling Ao Village near Daya Bay Nuclear Power Plant

The third from the left is the 104-year-old woman

Training of Golden Persons

Talent development is an inseparable part of the safe operation of nuclear power, but at that time, China did not have nuclear power professionals, and the issue of safely operating nuclear power plants had become a truly urgent problem.

From 1989 to 1991, the Group sent 113 employees to France for one year of nuclear power technology training, and the average training expense per person was about 1.3 million francs, which was approximately equivalent to the price of 60 kg of gold at the time (the approximate body weight of a Chinese adult). Therefore, each of these individuals was called Golden Person. These Golden Persons served as "seeds" of CGN's nuclear power personnel, and returned home with the most advanced training in nuclear power operation, equipment maintenance, and technical services, and played an active role in training a larger talent pool.

2019 marks the 30th anniversary of the Golden Persons' completion of their studies, in the past 30 years, they played a golden role in developing China's nuclear industry, and they also served as a bridge of Sino-French friendship.

Golden Persons' graduation farewell party in 1990

Jointly Building Taishan Nuclear Power Plant

In the 21st century, CGN worked again with EDF in building Taishan Nuclear Power Plant with the third-generation of European Pressurized Reactor (EPR) technology.

Two EPR units were built in the first phase, each unit has an installed capacity of

1,750 MW

The world's **largest** standalone nuclear power unit

Unit 1 of Taishan Nuclear Power Plant is the world's **first** EPR Reactor

Taishan Nuclear Power Plant

Feature

C9 : the World's First Coordination Committee for EPR Projects

As the world's third pressurized water reactor nuclear power unit to have been built with third-generation EPR technology, in 2018, the Unit 1 of Taishan Nuclear Power Plant was able to catch up from behind and became the world's first EPR reactor. That was owed to the top-level coordination mechanism of this project.

Initiated by CGN, the 9 major Chinese and foreign participants in the Taishan Phase Ⅰ project established the Taishan CEPR Project Coordination Committee ("C9") based on the idea of "one team, one goal, we commit, we win". The members of the Coordination Committee were the heads of the companies involved, and they held regular meetings to maintain an updated understanding of the project's construction progress. Moreover, they aimed to advance all tasks related to project construction based on the principle of meeting all project needs. In case of conflicts between business and technology, quality or progress that could not be resolved together, the Committee first resolved the issues relating to technology, quality, and progress, greatly promoting the achievement of all stage goals, and providing reference for the construction of other EPR units across the world.

"EDF has maintained close exchanges and cooperation with CGN for more than 30 years, and the Taishan nuclear power project is a model for nuclear power cooperation between China and France."

—Xavier Ursat, Group Senior Executive Vice President of EDF

"Due to the sincere cooperation between CGN and China Nuclear Engineering & Construction Corporation Limited, Unit 1 of Taishan Nuclear Power Plant has been the benchmark for the construction of global EPR."

—Yang Zhenhua, Vice President of China Nuclear Engineering & Construction Corporation Limited

"The EPR is shaping the following 60-year prospect of Taishan. The Framatome team will work with CGN throughout the entire operation of the power station. We will remain committed to safe and stable operation."

—Bernard Fontana, Chairman and CEO of Framatome

"The Taishan Nuclear Power Plant is a microcosm of an era, and a typical representative of the stunning chapter in the construction of nuclear power being written together by China State Construction and CGN."

—Guan Qing, Chairman of China State Construction Engineering

"Through scientific organization and careful construction, we have jointly written a new chapter in the construction of nuclear power."

—Zhou Hougui, standing member of the Party Committee of China Energy and Deputy General Manager of China Energy

"Dongfang Electric is very happy to be participant in the construction of the Taishan Nuclear Power Plant."

—Zou Lei, Chairman of the Dongfang Electric Corporation

"The Taishan project has enhanced our ability to 'go global'."

—Lü Yachen, Vice President of Shanghai Electric

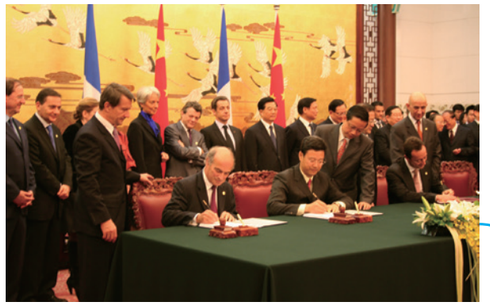
"It is a great honor for GE's Steam Power team to be part of the commercial operation of the Taishan Nuclear Power Plant. Without such partnerships, we would not be where we are today with such a project."

—Andreas Lusch, President and CEO of Steam Power, GE Power

Milestone Momenta（Taishan Nuclear Power Plant ）

2007

On November 26, 2007, CGN signed a cooperation agreement on the construction of Taishan EPR Nuclear Power Project with the EDF and AREVA Group in the Great Hall of the People, witnessed by Hu Jintao, then President of China, and Sarkozy, then President of France.

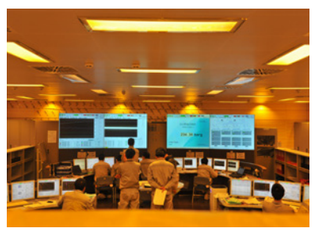


2009

On October 26, 2009, the first tank of concrete was poured in the nuclear island of Unit 1 of Taishan Nuclear Power Plant.

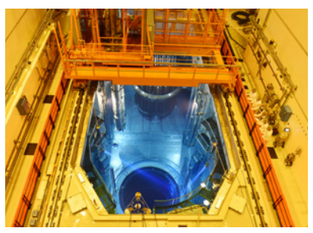
2016

On January 27, 2016, Unit 1 of Taishan Nuclear Power Plant completed its cold functional test.



2018

On April 10, 2018, Unit 1 of Taishan Nuclear Power Plant started its first fuel loading.



2018

On January 9, 2018, Chinese President Xi Jinping and French President Macron joined hands to unveil a plaque that declared Unit 1 of Taishan Nuclear Power Plant the “First EPR Reactor in the World”.

2018

On June 29, 2018, Unit 1 of Taishan Nuclear Power Plant was successfully connected to the grid for the first time.

2018

On December 14, 2018, CGN and EDF held a global press conference and announced that Unit 1 of Taishan Nuclear Power Plant had become the world’s first third-generation EPR nuclear power unit that had met conditions for commercial operation.

Joint Development of UK Nuclear Power Projects

On October 21, 2015, with Chinese President Xi Jinping and then British Prime Minister David Cameron in attendance, CGN and EDF signed a contract regarding the joint construction of three major nuclear power projects in the UK. That was the largest investment project undertaken by China in the UK and Europe, showing the strength of a Chinese nuclear power company on the international stage of nuclear power.

The Hinkley Point C Project

The Hinkley Point C Project is located in Somerset County in western England. It is planned to build two EPR units, and the Chinese project team led by CGN will work together with EDF on its investment and construction. China holds a stake of 33.5% in this project. In 2018, the first tank of concrete was cast to form the raft foundation of the nuclear island of the Unit 1, the construction work went well as planned.

The construction of this project is expected to provide 25,000 jobs which effectively promote the development of the nuclear power industry chains and personnel training systems, serving the development of nuclear power industry in UK. The project will also help China's nuclear power industry chain to expand internationally and serve the UK's nuclear power industry. Upon completion, the project will supply electricity for 7% of the UK's demand. Over its 60-year operating life, it will account for 9 million tons of annually reduced carbon dioxide emissions, thus offering the UK strong support in contributing to the global reduction of carbon dioxide emissions.

The Hinkley Point C Project

The Sizewell C Project

The Sizewell C Project is located in Suffolk County in southeastern England. It is proposed to build two EPR units. CGN will participate in the advanced development. EDF and CGN hold a stake of 80% and 20% respectively. The project is currently under its third public consultation.

According to preliminary assessments, the project will invest nearly 200 million pounds (about 226 million EUR) per year to the regional economy during the peak construction period, providing 25,000 temporary jobs. We invest 40 million pounds (about 45 million EUR) per year during the 60-year operation period, creating 900 permanent jobs.

The Bradwell B Project

The Bradwell B Project is located in Essex County, England. It is proposed to build two units by deploying China's self-developed third-generation nuclear power technology HPR1000, and will use Phase II of CGN's Guangxi Fangchenggang Nuclear Power Project as a reference. CGN holds a stake of 66.5% and EDF holds 33.5% in this project.

The project will begin construction around 2025, and a site survey is currently ongoing.

From introduction of French technology to build Daya Bay Nuclear Power Plant and Taishan Nuclear Power Plant, to cooperation with France in undertaking British nuclear power projects, CGN has grown through a constant process of study, gradually transforming Sino-French cooperation on nuclear energy to a deep strategic partnership. As HPR1000 is proposed to be deployed in the UK, CGN will make China's nuclear power industry chain go global, helping to fully promote Chinese technology, equipment, experiences, and services, promoting the development of the nuclear power industry in countries around the world through China's superior resources and key experiences.

The site of Bradwell B Project

New Energy Boosts Low-Carbon Development in France

2018, CGN has a total installed capacity of clean energies in Europe

863.8 MW

Total on-grid power generation from clean energies in Europe

1.53 TWh

The EU promised in the 2020 Energy Strategy: By 2025, the EU will have reduced its carbon emissions to 80%-95% of 1990 levels. In order to implement the 2020 Energy Strategy and actively address climate change, France is actively promoting the establishment of more diversified and low-carbon new energy structures, such as wind and solar power. At the end of 2018, French President Emmanuel Macron announced that the country would strive to triple its wind power electricity output by 2030, increase solar energy output fivefold, and reduce the share of nuclear power to 50% by 2035.

As a clean energy producer and service provider, CGN has abundant experience in the construction and operation of new energy, such as wind power and solar power, and has been new power to low-carbon development in France. In 2014, CGN founded CGNEE in Paris, and began to serve France's new energy market. CGNEE has gradually developed into France's fifth largest clean energy operator.

The Fujin Project - the first new energy project undertaken by CGN in Europe

- A gross installed capacity of **80.1** MW
- **0.15** TWh of total power generation in 2018, equivalent to reducing CO_2 emissions of **153.4** thousand tons

The Le Groix-Belle île Project - the first offshore floating wind power project in France and Europe

- A gross installed capacity of **24** MW
- **0.091** TWh of estimated total power generation, equivalent to reducing CO_2 emissions of **90.8** thousand tons

The Newco Photovoltaic (PV) Project

- A gross installed capacity of **6.6** MW
- **0.0080** TWh of estimated total power generation, equivalent to reducing CO_2 emissions of **7.9** thousand tons

The Alize Project

- A gross installed capacity of **70.8** MW
- **0.15** TWh of estimated total power generation, equivalent to reducing CO_2 emissions of **144.6** thousand tons

The Blueberry Project - the first overseas renewable energy greenfield development project built by CGN

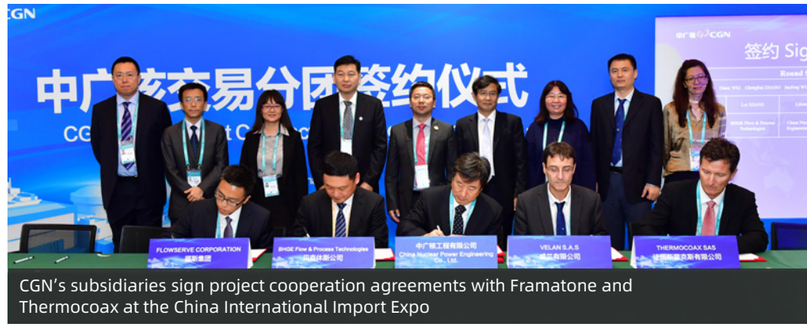
- A gross installed capacity of **30** MW
- **0.036** TWh of estimated total power generation, equivalent to reducing CO_2 emissions of **35.6** thousand tons

New Achievements in Cooperation and Exchanges in 2018

17 PARTNERSHIPS FOR THE GOALS

Signing Cooperation Agreements

On January 9, 2018, CGN signed a cooperation agreement on nuclear R&D with the French Alternative Energies and Atomic Energy Commission (the CEA), and both sides pledged to deepen cooperation on technologies including nuclear reactors and advanced fuel.



CGN's subsidiaries sign project cooperation agreements with Framatone and Thermocoax at the China International Import Expo

On November 6, 2018, CGN's subsidiaries signed project cooperation agreements with Framatone and Thermocoax. Both sides pledge further deepen their cooperation in the fields of industry, trade, technology, and personnel at the China International Import Expo.

CGN and EDF signed a phase II R&D cooperation agreement regarding severe accidents, being the first comprehensively integrated R&D project with EDF.

CGN attends the World Nuclear Exhibition

Cooperation & Communication

On June 26, 2018, CGN attended the World Nuclear Exhibition in Paris, bringing major high-tech products, including the HPR1000, digital instrument control systems, and nuclear power management robots, enhancing peer exchanges.

In 2018, CGNEE has established relations with more than 160 enterprises and organizations, including energy providers, engineering constructors, banks and fund corporations, to promote Sino-French bilateral trade and investment and offered help to Chinese enterprises that entered the French market in its capacity of the Representative Office of the Guangzhou Council for the Promotion of International Trade in France and the Representative Office of China Southern Power Grid in Europe.

Engagement in French Community

Throughout CGN's partnership with French enterprises, the Group has always persisted in combining development with the fulfillment of corporate social responsibilities, and actively integrates itself into the local community to promote joint construction and sharing, in order to build a community of common destiny together with France.

Contribution to Economic Development

- The cumulative installed capacity of wind power is 366.9 MW, and an estimated 0.78 TWh of electricity will be generated annually to account for 3.00 % of France's wind power generation (2.61 TWh of wind power was generated in France in 2018), providing strong power support for France's economic development.
- Local people are primarily employed to promote local employment. 72 jobs have been created by the French projects, and 78% of CGNEE's employees are from local.
- A local procurement and contract management team has been set up to take charge of local purchasing. During project construction, CGNEE works with 197 local suppliers; in 2018, CGNEE performed 348 purchasing contracts with a total value of over 27 million EUR.
- CGN cooperates with French nuclear power suppliers actively. In 2018, 20 new nuclear power equipment supply contracts were signed, with an amount of more than 7.23 million EUR. By the end of 2018, the total number of executed contracts of nuclear power equipment supply and consulting services reached 471, with a total amount of 1.69 billion EUR.

Contribution to Ecological Protection

- CGN strictly abides by the European environmental laws and regulations, and devotes itself to meeting the environmental protection requirements in all business activities by cooperating with the local government and professional environmental protection agencies.
- During project development, CGNEE actively communicates with the local authorities on cultural heritage conservation, sewage treatment and fire protection, and would not issue power station planning or a design drawing until an agreement is established.
- During project construction, CGNEE gives priority to protecting local rare species, observes the measures for land use planning and fauna and flora protection, and prefers to decrease the installed capacity rather than destroys species conservation areas during wind farm matrix design.

Contribution to Community Construction

- In October 2018, CGNEE held its Wind Farm Open Day and invited more than 40 teachers and students of the Oriak Primary School to the Charmon-Wotlek Wind Farm to view the internal part of a wind turbine, enhancing their understanding of new energy.
- In June 2018, our French and Chinese employees joined in a football game hosted by the French Wind Energy Association, to enhance the cultural exchanges between China and France.
- In June 2018, we participated in the first-day activities of Tour de France with Vix government, popularizing new energy knowledge and CGN's culture to local citizens.

The Open Day at Charmont Wind Farm(France)

04 Ensuring the Safety of Nuclear Power

Q&A

Q

What's CGN's view on nuclear safety ?

A

"Since the construction of the world's first nuclear power plant in the 1950s and after 60 years of rapid development, nuclear safety has always been the focus of nuclear power development. Since 2011, due to the impact of the Fukushima Nuclear Accident in Japan, the public has once again raised doubts about nuclear safety. However, according to the results of the nuclear safety inspection and evaluation of the United States, France, Russia, China and IAEA, the Fukushima Nuclear Accident did not change people's basic understanding of nuclear safety. As a major nuclear power country, China attaches great importance to nuclear safety and requires strict implementation of all steps to ensure nuclear safety. At CGN, nuclear safety is the overriding priority above anything else, and it is also the lifeblood of our development. We always regard nuclear safety as our primary responsibility, insisting on the principle of "safety first, quality foremost, and pursuing excellence" in the design, construction, and operation of nuclear power plants. We use advanced technology and scientific management to ensure the safe and stable operation of our nuclear power plants and to protect our personnel, societies, and environment."

Gao Ligang

President of CGN Power Co., Ltd.

Safety Management

11 SUSTAINABLE CITIES AND COMMUNITIES

The safety of nuclear power is of overriding importance, and ensuring nuclear safety is the primary condition for the development of nuclear power. A sound and systematic nuclear safety management system is the cornerstone for ensuring the safety of nuclear power. CGN has therefore built up a nuclear safety management system in accordance with the principles of defense-in-depth management, and has established multiple lines of defense to prevent, detect, and correct any possible failures of CGN equipment, personnel, and organizations, effectively controlling and ensuring safety and operation of our nuclear power plants.

In 2018, we comprehensively streamlined and improved our nuclear safety management system, continued to strengthen our nuclear safety technologies and management capacity. We have also continued to promote specialized, centralized, and standardized management in each of our nuclear power plants, and maintained the safe and stable operations of both new and existing units.

- Maintaining in-service units to operate safely and steadily
- Putting under-construction units into operation as planned
- Striving for a fast alignment of operational performance of all sites

Specialization

- specialized work divisions
- specialized talent teams
- specialized capacity development

Centralization

- centralized resource allocation
- centralized technical support
- centralized information sharing

Standardization

- standardized construction
- standardized management system
- standardized operational procedures

Stable Nuclear Power Operations

We try our best to ensure that our nuclear power operations do not affect or harm our employees, contractors, or other third parties. In order to achieve this goal, we promote the implementation of safety culture through the participation of all staff, strictly implement operational norms, and have established emergency response and disposal mechanisms in case of emergency conditions, as well as conducting completely independent safety supervisions and evaluation measures, performing continuous and transparent analysis and issuing feedback based on practical experience to ensure the safe and reliable operation of our nuclear power plants.

In 2018, our 22 in-service nuclear power units maintained safe and stable operation, no operation events of Level 1 or above occurred at our nuclear power plants, with only five® deviations below the International Nuclear Event Scale.

Note: ® According to the International Nuclear Event Scale (INES), nuclear events are classified at 7 levels: Level 1 to Level 3 events are referred to "incidents", Level 4 to Level 7 events are called "accident", and Level 0 (Below Scale) events are referred to as "deviations", which have no safety significance.

Safety Culture Building

The formation of a safety culture guides all employees to form correct thinking habits and working styles by educating and cultivating our workforce. This ensures that the critical areas of nuclear power safety receive necessary attention. We fully implemented *Nuclear Safety Law of the People's Republic of China* and conducted a special publicity program to continuously integrate the principle of "safety first, quality foremost" into the daily working habits of all our employees.

Executives take the lead

- Teaching safety culture
- "Leader on-site" management inspection activities
- Management supports and strengthens conservative decision-making mechanism and promotes the concept of "safety first"

Core employees' facilitation

- Establishing a safety culture promotion group
- Building an expert team for safety and quality supervision
- Building and promoting safety culture evaluation system

All employees' full involvement

- Building a safety and quality benchmarking team
- Implementing the STAR (short for Stop, Think, Act and Review) self-checking activities
- Conducting effective safety culture educational activities for all employees

Safety Performance

In 2018, we put two new units into commercial operation. The safety performance of our total 22 nuclear power units in operation is as follows:

	2017	2018
Average capacity factor of in-service units	89.59%	92.75%
Ratio of WANO (World Association of Nuclear Operators) indicators for the mature units achieving the world's excellent level (the world's top decile) (%)	72%	73.50%
Ratio of WANO (World Association of Nuclear Operators) indicators for the new units achieving the world's advanced level (the world's top quartile) (%)	72%	78.30%
Number of first prizes that the 6 units of Daya Bay Nuclear Power Base had won in EDF safety challenge competitions with similar nuclear power operators	36	38

In 2018, the 22 in-service units had shut down 3 times
The average times of shutdowns per unit:

0.14 /unit

As of December 31, 2018, Unit 1 of Ling Ao Nuclear Power Plant had been operating for more than

4,603

days without automatic shutdowns

[Case]
Feeling the safety through public open days

August 7, 1987 was the first day that Daya Bay Nuclear Power Plant started its construction. This day each year serves as CGN's "8.7 Public Open Day." As of 2018, CGN has held "Public Open Days" for six consecutive years, and has hosted a total of 650,000 visitors. On this day, all of CGN's nuclear power bases will host a variety of activities with distinctive themes and features, and will communicate with all stakeholders in a transparent and open manner to show them the safe and clean nuclear power.

"I hope that more such scientific popularization activities can be carried out in the future, and new media promotions can be used to help more people be closer to nuclear power and understand nuclear power. We can let nuclear power, the clean energy source light up our lives."

—Lang Yongchun, former news anchorman of China Central Television (CCTV), Green China's Person of the Year

"Fear is rooted from the unknown. Once you come to understand it, you will know that nuclear power plants are actually very safe."

—Liu Wei, a participant in 2017's Public Open Day

Ren Kaixuan and his wife Liu Wei were one of the 30 couples participating in CGN's Nuclear Power Plant Wedding Photography event on 2017 "8.7 Public Open Day"

Nuclear Emergency Response System

In order to ensure a rapid response to any emergencies, all of our nuclear power plants have established complete emergency treatment systems, including a full-coverage emergency response system, multi-level emergency defense mechanisms, and specialized emergency equipment and facilities. All locations are equipped with sufficient and qualified emergency staff and hold regular emergency drills to ensure rapid response and disposal in case of nuclear accidents.

Safety Supervision and Assessment

We have established a three-level nuclear safety supervision system consisting of nuclear power stations' safety engineers, safety management agencies, and nuclear safety supervision and evaluation centers, which independently supervise and evaluate the safety management level of nuclear power bases, and regularly invite international counterparts (including IAEA and WANO) to conduct safety assessments of our nuclear power plants. We will continue to improve our safety management methods by drawing on the practical experiences of our international counterparts.

The total number of emergency drills held in 2018 was

419

[Case]
Attending ConvEx-2e nuclear exercises

On December 4, 2018, the ConvEx-2e nuclear exercises jointly organized by China and IAEA were carried out at Yangjiang Nuclear Power Plant. The drill was fully conducted under the leadership of the Office of China's National Nuclear Emergency Coordination Committee. Yangjiang Nuclear Power Plant and all participating Chinese and international institutions completed the exercises successfully.

Reliable Project Quality

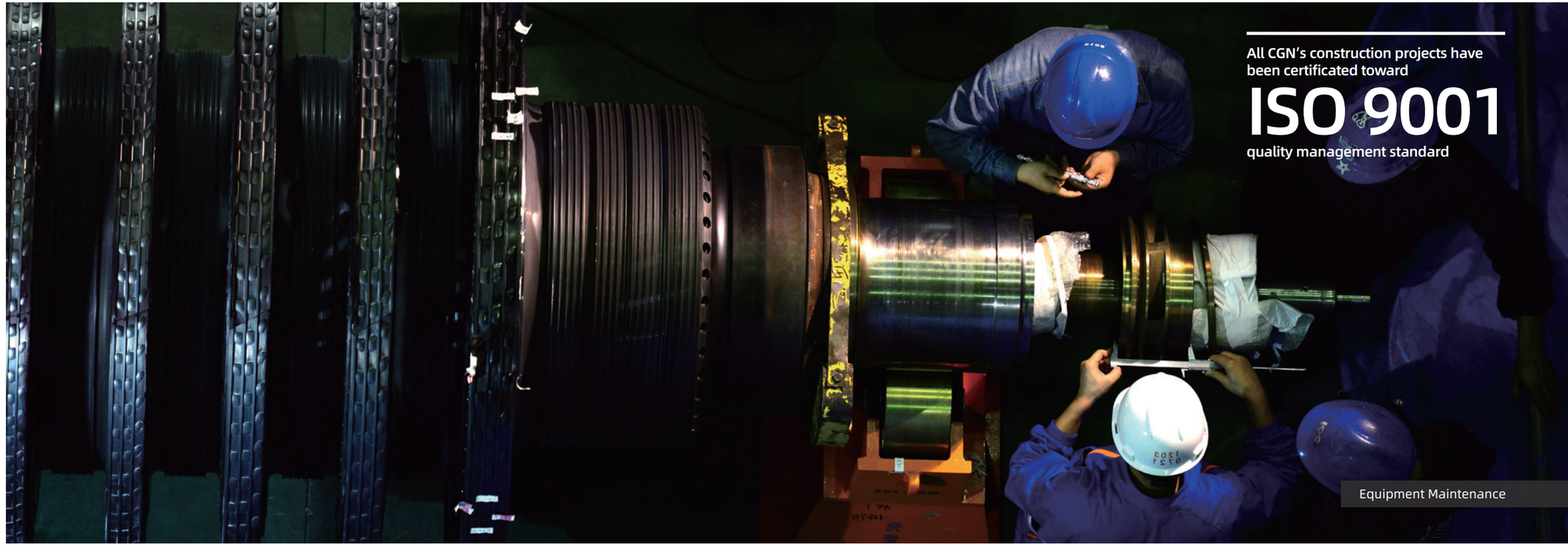
We adhere to the highest standards and strictest requirements in our work. We organize all projects with the strictest care, and continuously improve the safety management and level of control in our engineering designs, equipment manufacturing, construction and installation, commissioning, and other processes, sparing no efforts to ensure project quality and lay a solid foundation for the safe and stable operation of our nuclear power plants.

Intensifying Zero-Defect Management

We have planned and implemented 2018 Zero-Defects Management and Promotion Plan, strengthened our evaluation of hidden risks, team building, benchmarking, and other tasks, as well as facilitating the construction of cross-sector and interdisciplinary zero-defect teams, and solving key and difficult problems in health, safety, and environment (HSE) management to consolidate the foundation of our safety quality system.

Alignment of International Quality Standards

We have carried out quality benchmarking of the HPR1000 Demonstration Project against the nuclear power project in the United Kingdom, focused on more than 80 British legal requirements and quality standards, and formulated over 50 relevant documents such as implementation plans and specifications to improve the international level of CGN's project construction quality management.



All CGN's construction projects have been certificated toward

ISO 9001

quality management standard

Equipment Maintenance

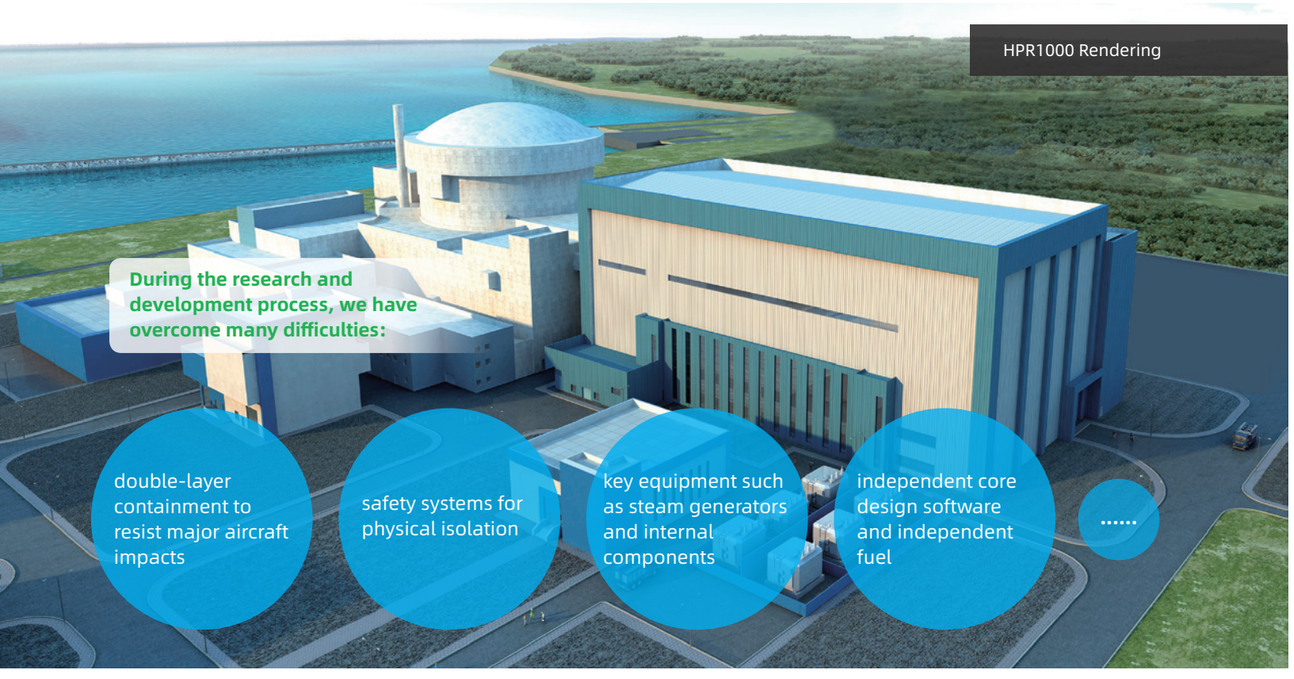
Improving Safety with Technology

HPR1000

The safe and efficient development of nuclear power requires innovative solutions to the technical problems. After the Fukushima Nuclear Accident in 2011, Chinese government required all new nuclear power plants to use the third generation nuclear power technology, in order to ensure the safer operation of nuclear power plants.

HPR1000 is a third generation nuclear power technology independently developed by CGN and China National Nuclear Corporation (CNNC). It has been designed to meet the world's highest safety standards and equipped with comprehensive severe accident prevention and mitigation measures in accordance with the latest domestic and international nuclear safety regulations. Learning from the lesson of Fukushima Nuclear Accident, we increased the role of its passive safety designs to ensure the seismic grade, thermal margin and major technical indicators to meet or exceed the highest international safety standards, so that its reliability, safety, and economy meet the requirements of the third generation nuclear power technology.

The HPR1000 will be applied in the Bradwell B project in the UK, and is currently undergoing the UK's Generic Design Assessment (GDA) process. This is the first time that independently developed Chinese nuclear power technology being tested by the global market. In November 2018, the HPR1000 entered Phase III of its GDA review ahead of schedule. The project's construction approval process and site study have both been actively promoted, and construction is expected to begin around 2025.



FirmSys

The Distributed Control System (DCS) is the "central nerve system" of a nuclear power plant, and it controls the operations of more than 260 systems and more than 10,000 sets of equipment in nuclear power plants, as well as the processing of various types of working conditions. It serves as the "guardian" of the safe operation of nuclear power plants.

Nuclear-class DCS technology is highly complex. It possesses strict quality standards and high identification requirements. CGN has independently researched and developed FirmSys, a universal platform for nuclear-class DCS, realizing China's independent development in this field of technology. Due to the high reliability, high safety level, and universal interoperability of the system, FirmSys possesses a strong international competitiveness. It has passed the evaluation, review, and certification process of many global authorities, including TÜV and ISTec in Germany and IAEA.

Applications

- First application in Unit 5 of Yangjiang Nuclear Power Plant, Guangdong
- Cooperation agreements or letters of intent signed with many world-renowned companies, including Doosan Heavy Industries & Construction Co., Ltd., Rolls-Royce Holdings plc
- A nuclear-grade instrument control equipment modification order obtained for a heavy water research reactor in Algeria

05 Managing Environmental Impacts

Q&A

Q

How does CGN guarantee the harmonious development of both its project operations and their surrounding environments?

A

“Before and during its business operations, an enterprise should identify the impact and risks of its own decisions and activities as well as its relationship with the surrounding environment, and should formulate relevant environmental protection measures to achieve sustainable and environmentally-friendly development. CGN has organically combined its environmental management system with its production management system, and formulated short-term, medium-term, and long-term environmental protection goals. We have adhered to performing pollution prevention work at the source, and engage in environmental protection throughout each stage of our projects, from project planning, to construction, production, and other aspects. Besides, we have continued to increase energy savings and reduce consumption, and have vigorously promoted the application of core technologies in pollution abatement, thereby helping to further economize the energy supply. Through a constant process of refined and standardized environmental management, we have achieved coordinated development between our business operations and the environment.”

Huang Huizhang

Head of the Department of Safety and Quality Assurance, CGN

Environmental Protection System

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

CGN's Short-term, Medium-term and Long-term Environmental Protection Goals

Short-term Goals (By the end of 2018)	Comprehensively identified all environmental protection risks, ensured the full control of these risks, and made sure that all issues were completely rectified. By the end of 2018, we have investigated and identified 43 ecological environmental protection issues of enterprises, and have clarified the management measures for each of them. 5 issues need to be rectified and 4 issues have completed the rectification work. The remaining 1 issue has been completed in stages and is scheduled to be completed by the end of 2019.
Medium-term Goals (2019-2020)	To further improve the environmental management system, develop the environmental supervision system; to build a basically sound risk prediction and early warning mechanisms, and improve the efficiency of the green industrial chain.
Long-term Goals	To advance the overall energy efficiency of CGN's nuclear power operations and emission levels of principal pollutants to a globally advanced level; to possess domestically or internationally leading technologies in ecological pollution prevention and control, to greatly raise employee awareness of environmental protection, and become a model in the industry.

Basic Principles

- Prevention-focused, integrating prevention and control
- Making comprehensive progress and key breakthroughs
- Assorted guidance & management measures
- Technology first; efficient development

Each of CGN's power plants has an effective and functional environmental management system, and all have been certificated towards the

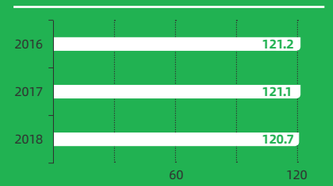
ISO 14001 environmental management standard

Feature

Eco-friendly Nuclear Power

CGN has opened a new pathway of eco-friendly nuclear power to further explore the healthy development of the nuclear energy industry. By using the numerous advantages of nuclear power; e.g., its cleanness, low carbon emissions, and environmental friendliness, CGN has gradually formed a coexisting, mutually generative, and regenerative relationship with its surrounding natural and social environments, to promote the coordinated development of nuclear power with local economies, societies, and environments.

Field testing radiation value of the Daya Bay Nuclear Power Plant (nGy/h) ⓫



Note: ⓫ The local radiation value around the nuclear power plant before its operation was 119 nGy/h.

"The surrounding residents are best qualified to speak on the question about whether the Daya Bay Base is safe or not, and whether developing nuclear power is good or not. When the nuclear power plant was built, they preserved the herbs we used to treat common diseases, as well as the natural environment and traditional culture of Ling Ao Village."

—Dong Xusu, a resident of Ling Ao Village near Daya Bay Nuclear Power Plant

Coexisting

Nuclear power enters ecosystems as a "friendly actor" and achieves a coexisting integration with it on the basis of maintaining the balance of the original ecosystem.

Mutually generative

From the perspective of the surrounding environments, nuclear power serves as a "participant" in promoting the development of surrounding villages and towns through project construction and interacting with the environment to ensure mutual regeneration and create a new and better ecological balance.

Regenerative

From the perspective of regional economic development, nuclear power serves as a "contributor" to the construction of a green, harmonious, and prosperous nuclear power industry chain ecosystem, by providing high-quality eco-friendly products such as clean electricity.

Egret

An ecological paradise -Daya Bay Base:

With an approximate area of 10 square kilometers, Daya Bay Base is home to many species of flora and fauna.

With the results of base volunteers' over 15 years' observation, we found that more than 200 species of flora and fauna have been discovered on the land and in the surrounding waters of Daya Bay Base, including 8 species of rare plants and animals protected by national law, such as calotes versicolors, egrets, bubulcus ibises, accipiter trivirgatus, mucuna birdwoodiana and more. This area serves as their ecological paradise. The picture of them playing and running in the grass and the water shows harmonious and beautiful image of the natural environment.

Crested Tree Lizard

White-throated Kingfisher

Visit of the Chinese White Dolphins:

The Chinese white dolphin, known as the "panda of the water", is a first-class national protected animal in China. They have very high requirements for the quality of water in their habitat. In 2018, Chinese white dolphins visited to the waters near the Yangjiang Nuclear Power Plant, and played with each other. This suggests that the quality of water around the Yangjiang Nuclear Power Plant is very high.

A large tea plantation at the Ningde Nuclear Power Plant:

At the Ningde Nuclear Power Plant in Fujian, there is a white tea plantation that covers an area of over 200 *mu* (about 33 acres) on a nearby hillside. This white tea plantation has stood there long before the project was built. We worked with the local government and hired horticultural experts to assist in the management of this tea plantation, greatly increasing the local villagers' income.

Reducing Greenhouse Gas Emissions

CGN is committed to reducing the emissions of greenhouse gas produced during operations and construction. Each power plant has an energy conservation management team, and this team is responsible for coordinating energy-saving work across all departments.

Saving energy in the construction and operation of nuclear power plants

On the basis of safety and environmental considerations, all machines not required to be operational have been switched off at any given time; operational modes have been optimized, and devices with heavy power draw have been upgraded or eliminated.

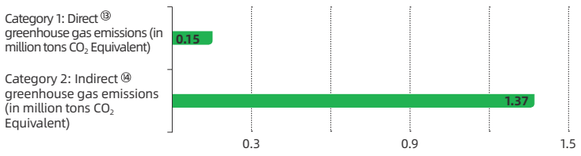
Saving electricity during mining

Solar heat exchangers have been installed in place of traditional fossil fuel systems for indoor heating to reduce carbon emissions and energy consumption; photovoltaic power plants have been constructed to provide standard lighting in the mines, allowing about 5% savings in electricity consumption.

Active participation in carbon neutralization

The CGN Carbon Asset Management (Beijing) Co., Ltd. applied its 21,000 tons certified emission reduction (“CER”) to the carbon neutralization program of the 2018 Pyeongchang Winter Olympics. By the end of 2018, the CGN Carbon Asset Management (Beijing) Co., Ltd. had accumulated a total of 229 million RMB (about 29.33 million EUR) in revenue from its carbon asset business.

Greenhouse gas emissions in 2018 (in million tons CO_2 Equivalent) ⑫



Note: ⑬ From 1 January to 31 December of 2018, the amount of greenhouse gas produced by the consumption of gasoline, diesel and natural gas at the Company's business sections including CGN Power, CGN New Energy, CGN Services Group, CGN Uranium (Beijing Office), Energy Conservation and Environmental Protection in China.

Note: ⑭ From 1 January to 31 December of 2018, the amount of greenhouse gas produced by the consumption of purchased electricity at the Company's business sections including CGN Power, CGN New Energy, CGN Services Group, CGN Uranium (Beijing Office), Energy Conservation and Environmental Protection in China.

Note: ⑫ In 2016 and 2017, the data collection system of greenhouse gas emissions of CGN was not perfect, so the collected data was not comparable with the data of 2018. In 2018, we further improved the data management system for operating greenhouse gas emissions in China. The direct greenhouse gas emissions and indirect greenhouse emissions are mainly from subsidiaries of CGN in mainland China. For a detailed subsidiary list, please refer to Note ⑬ and ⑭ . At present, overseas company of CGNPC Uranium Resources CO.Ltd., CGN Mining Company Limited has established a greenhouse gas emission statistics system. For emission data, please scan the QR codes down there to read CGN Mining Company Limited’s 2018 Annual Report.

Increasing Resource Utilization Rates

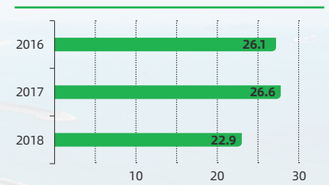
Increasing the Nuclear Fuel Utilization Rate

Nuclear fuel is the main raw material for generating nuclear power. In general, nuclear fuel in nuclear power plants has a life cycle of 12-18 months, and most units of CGN only need to have their fuel changed every 18 months. We have persisted in developing reliable and economical models for fuel cycles and refueling models, and have cooperated with relevant organizations in developing better fuels to gradually improve the efficiency and effectiveness of nuclear fuels.

Reducing water consumption

CGN has drawn water from municipal pipes, power plant reservoirs, and the sea. We have no difficulty in finding water resources, and these water supplies were mainly used for purposes of production, office work, and general consumption in the plant area. We have continued to monitor water consumption and output. We have reduced water consumption and output by purifying wastewater used in production with water recycling system and then reusing it for landscaping irrigation, road cleaning, and equipment cleaning.

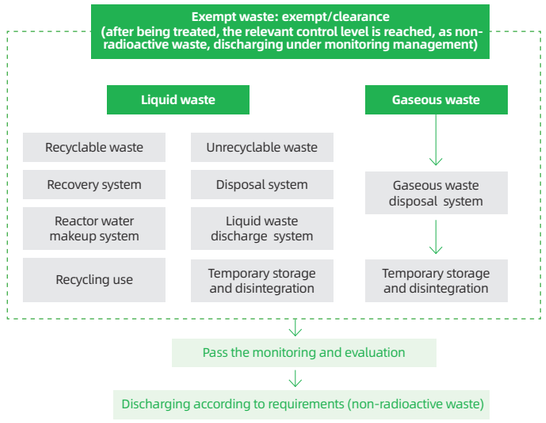
Total water consumption in million tons



Reducing Waste Discharge

Radioactive Waste Management

While operating nuclear power plants in China, CGN strictly abides by all relevant Chinese laws and regulations. We have established a complete set of radioactive waste disposal mechanisms and use advanced international technologies and standards for the control and disposal of radioactive waste. We also follow the most stringent emission standards, and control emissions to levels much lower than the national emission standard in China.



The near-surface disposal site's disposal area is 0-30 meters below the surface, with multiple heavy barriers put in place to ensure the low-level radioactive waste to remain isolated from the human ecosystem for centuries.

Medium- and high- level radioactive waste

Nuclear power plants produce a very small amount of medium-level radioactive waste, which is mainly from the activation products of core components when nuclear power plants are decommissioned. High-level radioactive waste mainly comes from the disposal process of spent fuel, which is generated by nuclear power plants. However, 97% of the spent fuel can be recycled for reuse. Other high-level radioactive materials will be solidified by glass, and will be made into high-level radioactive waste packages, which are finally sent to the deep geological disposal site for high-level radioactive waste. High-level radioactive waste is managed by Chinese government uniformly. The disposal site is 500-1000 meters below the surface, ensuring that high-level radioactive materials to be effectively isolated from the human ecosystem for tens of thousands of years until they decay to an acceptable level in the human ecosystem.

Discharge of Three Wastes [6]

Index Title	Daya Bay Nuclear Power Plant		Yangjiang Nuclear Power Plant		Fangchenggang Nuclear Power Plant		Ningde Nuclear Power Plant		Taishan Nuclear Power Plant		Hongyanhe Nuclear Power Plant	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Ratio of liquid effluent (nuclides but tritium) to state annual limit	0.47%	0.35%	0.38%	0.29%	0.78%	0.43%	0.38%	0.30%	Under construction	0.54%	0.22%	0.21%
Ratio of gaseous effluent (inert gases) to state annual limit	0.44%	0.56%	0.30%	0.24%	0.39%	0.35%	0.51%	0.30%	Under construction	0.71%	0.15%	0.21%
Generation of radioactive solid waste (m^3)	276.4	248.6	42.8	44.8	101.25	64.6	176.4	136.8	Under construction	0	196.8	159.6
Environmental monitoring results	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal

Note: [6] At present, the nuclear power plants operated by CGN are located in China. The three waste discharge standards of each nuclear power plant must comply with the requirements of GB 6249-2011: Regulations for Environmental Radiation Protection of Nuclear Power Plant. Due to the different number of units in each nuclear power base, and the difference in operating time and condition, each base applies to the Chinese regulatory authorities once every five years for the state annual limit of waste discharge and the final approved annual limit is also different. To increase the comparability of the data, we disclose the ratio of emissions to state annual limit. In recent years, the emissions data of each nuclear power base of CGN has been relatively stable, fluctuating within the range of 1%.

Waste Treatment Technology

CGN regards the innovation of environmental protection technology as a crucial way to solve environmental pollution problems, deeply engages and promotes the environmental protection industry, pursues environmental governance through the use of science and technology, and independently conducts or leads the development of various "super-technologies" for pollution control and waste disposal.

Plasma-Based Solid Waste Treatment Technology

The plasma-based solid waste treatment technology uses the extremely high temperatures generated by plasma, to quickly crack organic pollutants such as dioxin into small harmless molecules and solidify inorganic waste like heavy metals into a vitreous body, which can be used as a roadbed or building material. With this technology, solid waste will be reduced, be harmless, be stable and be recycled. This method heralds a new path for the treatment of hazardous wastes such as medical detritus, household garbage and mineral oil.

From 2014 to 2018, CGN's plasma-based solid waste treatment technology obtained 4 commercial project contracts in the field of civil environmental protection, amounting to a total of over 100 million RMB (about 12.8 million EUR).

Electron Beam Industrial Wastewater Treatment Technology

The electron beam industrial wastewater treatment technology was jointly developed by CGN and Tsinghua University. This groundbreaking and emerging technology can efficiently treat toxic and harmful effluent that contains hard-to-degrade chemicals. It breaks through current technical bottlenecks in wastewater treatment, and has been listed as the main research direction of Peaceful Uses of Atomic Energy of the Century by the IAEA.

A demonstration project was put into operation in China's Zhejiang Province in 2017, and it is the world's only electron beam industrial wastewater treatment project operating in the world. It combines traditional physicochemical and biological processes to meet environmental standards of directly discharged wastewater, which represents a technological leap in the field of industrial wastewater treatment in the world. In 2018, this technology had successfully achieved large-scale commercial operation.

Biodiversity Conservation

CGN always fully considers the impact of all actions during the planning, design, construction, operation, and maintenance of its projects on the surrounding animals and plants, and actively protects ecological resources.

Pre-construction

We conduct on-the-spot investigations to assess the impact of construction on local species diversity, identifying regions with high biodiversity, and defining a scope for the project that will protect animals and plants living in the construction area as much as possible.

During construction

We renovate forested areas and afforest the entire plant area to ensure that the local natural ecosystem remains unchanged.

During operations

We develop and implement a strict emission treatment process and system to monitor the surrounding environment, ensuring that radioactive emissions and warm-water discharge do not affect the surrounding ecological environment.

Feature

Cherishing All Life to Protect Biodiversity

In the desert around the Namibian Husab Uranium Mine, there are more than 52,000 Welwitschia plants, the national flower of Namibia. These plants living in the age of dinosaurs, have an average lifespan of over a millennium, and have been identified as one of the "world's eight rare plants" by the International Botanical Congress.

When developing the Husab Uranium Mine, CGN integrated the concept of protecting the desert environment and the local Welwitschia plants into its design and planning processes. When designing the permanent entrance road and waterlines, we fully considered the impact these elements would have on the Welwitschia. During the construction of a certain section of the permanent entrance road, we had planned to transplant more than 100 Welwitschia. However, the engineering team conducted multiple field investigations with the environmental department and successfully changed the roadway, avoiding the need to transplant the Welwitschia and ensuring their normal growth.

Carefully transplanting a Welwitschia plant

CGN fully considered the impact of the project construction on the local environment, and implemented the concept of environmental protection throughout the whole construction process, winning praise from the Namibian government.

06 Human Rights and Employee Development

Q&A

Q

What efforts have CGN made in order to safeguard human rights and help its employees develop?

A

“Our employees are our most important asset, and are the core driving force of the Group’s continuous development. With the rapid development of CGN's international business, we are faced with challenges of cross-cultural cooperation, communication and training of employees. We have adhered to the idea that talent development leads the development of an enterprise, and we have improved our employment and compensation system, provided equal employment opportunities for more than 40,000 employees around the world. We clearly set out the guide about protecting employees' rights and interests in employee management system to create a safe, inclusive work environment. At the same time, we have established an international talent training system to provide our employees with multiple learning opportunities and a broad development platform in order to allow them all to maximize their personal potential and realize their self-worth, thus laying a solid foundation for the global development of the Group.”

Chen Tai

Head of the HR Department, CGN

Global Talent Development System

In response to CGN’s global development, it is necessary for our employees to adjust their behavior and working styles according to different working positions and cross-cultural environment, in order for them to find their own development paths. CGN has built an international talent training system to help our employees worldwide to learn, grow, and succeed by improving their capabilities to obtain the decent work.

- **Combining Internal Training with External Recruitment**

  “Walking on two legs” , with internal training and external recruitment combined

- **Combining Quick Training with Talent Reserves**

  Short-term urgently needed talent training and long-term reserved talent training are conducted equally

International Talent Training System

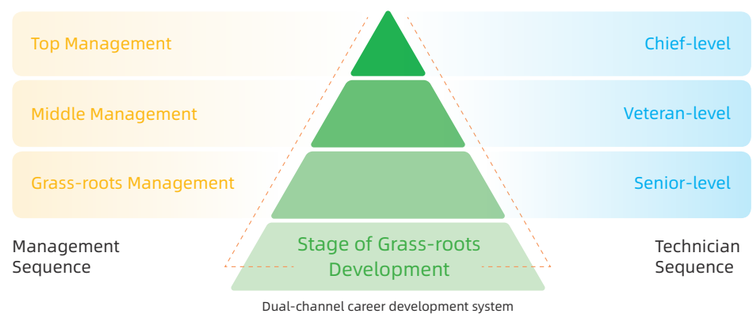
- **Combining Overall Planning with Decentralized Planning**

  The Group and member companies implement planning hierarchically with different focuses

- **Combining Quick Training and Talent Reserves**

  Learning for practice, with more opportunities offered to international talents for practice

CGN has a dual-channel career development system and has established a flexible conversion mechanism between these two channels, forming a model consisting of the stages of “position sequence—development channels—employee willingness—employee turnover” . This allows employees to achieve personal development through different career development channels according to their own abilities, potentials, and desires.



Dual-channel career development system

Human Rights Protection

As a business operator, we have the responsibility to conduct due diligence in order to identify, prevent, and address actual or potential impacts on human rights that result from the actions of ourselves or our related parties. CGN conducts fair recruitment practices, implements policies and takes actions which respect the rights of employees of different genders, nationalities, races, and religions, ensuring that employees enjoy equal treatment, and making every effort to be an "ideal employer". We have strictly obeyed local employment laws, and have not violated any employment laws or regulations nor received any complaints related to employment during the reporting period.

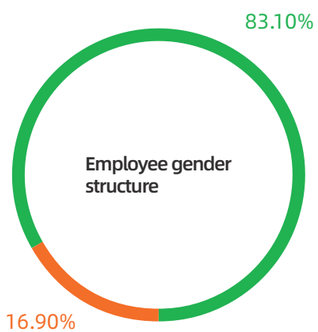
Labor Rights

In order to protect the employees' rights and interests, the Group complies with the relevant Labor Act (Labor Standards Act, Sexual Equality Employment Act, Framework Act on Employment Policy, etc.). CGN has established an employee management system in accordance with local laws and regulations, clearly setting out the conditions of employees' working hours, remuneration, hiring, dismissal, promotion, holiday arrangements, maternity leave, benefits, code of conduct, and professional ethics, etc., to ensure that every employee receives fair treatment by law, and is not discriminated against because of their race, skin color, gender, or age. In our recruitment and employee management policies, we expressly prohibit the employment of child labor and forced labor. We employed no child labor or forced labor and received no complaint during the reporting period.

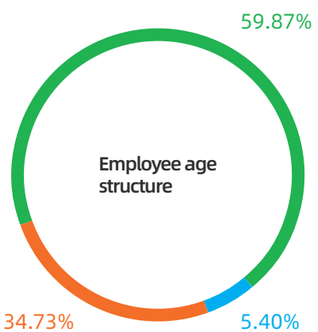
General Nuclear International Limited in UK has formulated Equal Opportunities and Anti-Discrimination Policy and Procedure, clearly defined about providing equal opportunities in all aspects of employment from recruitment, training and promotion of its employees, to build a culture of openness, fairness, transparency and where individual merit is valued. CGNEE has formulated Employee Handbook in UK, France, Belgium, etc., stipulated special care for women, disabled employees and anti-discrimination in the recruitment process. In 2018, we recruited 344 local employees in the UK, France, Namibia, and Malaysia, etc.

Note: ⑯ Please see Report Note ⑤ for details.

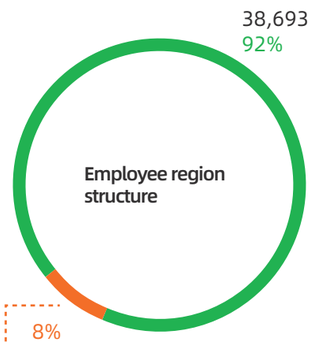
- Percentage of female employees
- Percentage of male employees



- Percentage of employees aged 30 and under
- Percentage of employees aged 31-50
- Percentage of employees aged 51 and above



- Percentage of overseas employees
- Percentage of Chinese employees



The number of accumulated recruited overseas employees ⑯ (Classification by regions):

Number of Asian employees
1,452

Number of European employees
312

Number of African employees
1,622

Number of Oceanian employees
5

Number of American employees
1

Occupational Health and Safety

Guaranteeing Health and Safety

If no effective protective measures have been put in place, employees who enter the control area of nuclear power plants may be exposed to radiation. To keep our employees, contractors, and any other people in the Group's workplace healthy and safe, we have established the CGN Safety Management System, CGN Nuclear Safety Management System, and an occupational health and safety management system, taken technical, management, and individual protection measures. Every year, we commission an external professional organization to perform occupational health examinations and establish personal health records for employees in some key positions (e.g. those who are exposed to radiation, noise, high temperatures, chemical toxins, and high atmospheric pressures).

In every nuclear power plant we manage, the highest radiation dosage received by any and all people who entered the control zone each year (including employees, contractors, and others) is lower than Chinese standards.

The safety management mechanisms of all CGN's nuclear power plants are Occupational Health and Safety Assessment Series certified

(OHSAS18000)

"The radiation dosage received during one year of work in a nuclear power plant is equivalent to the volume of natural background radiation, and has no effect on one's health. The nuclear power industry has strict safety protection and health management measures for its employees. I have worked in nuclear power plants all my life. I have a son and a daughter, all my family members are healthy, and my grandson is already in elementary school."

——Pu Jilong, the first Chinese plant manager of the Daya Bay Nuclear Power Plant

Maximum Personal Radiation Dose at each Nuclear Power Plant in Operation (unit: mSv) ⑰

Nuclear Power Plant /Unit	2017	2018
Daya Bay Nuclear Power Plant	6.756	5.114
Ling Ao Nuclear Power Plant Phase I	6.071	10.323®
Ling Ao Nuclear Power Plant Phase II (Lingdong Nuclear Power Plant)	7.668	5.247
Units 1-5 of Yangjiang Nuclear Power Plant	7.889	8.112
Units 1-4 of Hongyanhe Nuclear Power Plant	7.803	7.601
Units 1-4 of Ningde Nuclear Power Plant	8.624	7.998
Units 1 & 2 of Fangchenggang Nuclear Power Plant	8.034	3.588
Unit 1 of Taishan Nuclear Power Plant	/	0.288

Notes: ⑰ The annual maximum individual dose of each nuclear power station of CGN in 2018 was far below the target set by management as well as the maximum Chinese legal limit (50mSv/year).
® The increase of the maximum personal radiation dose for Ling Ao Nuclear Power Plant Phase I in 2018 was due to annual outage activities.

At the Namibia Husab Uranium Mine, CGNPC Uranium Resources Co., Ltd. has set up a safety department in order to improve the mine's safety management level. Department personnel enter the mine to examine employees' health conditions and the on-site safety situation every week, make timely reports on risks, implement targeted corrective measures, and continuously track the results of these measures to further decrease the accident rate.

In Malaysia, Edra Power Holdings Sdn Bhd (Edra) works with social security institutions to implement a social insurance awareness program to provide employees with more comprehensive and reliable security guarantees.

Focusing on work-life balance

We pay close attention to the work-life balance of our employees by formulating the CGN Employee Assistance Program (EAP) Management Regulations, conducting timely psychological training sessions covering areas such as occupational mental health, stress management and interpersonal communication, and providing employees with 24/7 psychological counseling services. In our employee manual, we expressly discourage employees from working overtime so that they are well and fully rested.

The Safety Accident Rate per 200,000 Work Hours in Nuclear Power Business ⑱

0.0051

Provided psychological counseling services in 2018: over

2,200

person times

Note: ⑱ The Safety Accident Rate Per 200,000 Work Hours = the number of annual incidents caused by employees and contractors divided by number of working hours of employees and contractors, multiplied by 200,000.

In 2009, Vincent LANCIEN from France went to Daya Bay Base and met his Wen Ting there. Two years later, he applied to join Taishan Nuclear Power Plant in China for work. The picture shows Vincent LANCIEN, Wen Ting and their two children in China, celebrating the Chinese New Year.

Supporting Employee Growth

8 DECENT WORK AND ECONOMIC GROWTH

CGN requires a high-quality workforce to meet our staffing needs and further the Group's stable development. To that end, we have established an independent talent training system and a standardized and efficient management system to strengthen the development and cultivation of our employees. Furthermore, we have also enriched incentive systems to maximize the motivation and creativity of employees.

Employees receiving training
409,541 person times

Total training hours for employees
4.61 million hours

Annual training hours per employee
108 hours

"Egrets Soaring Over Oceans" International Talent Training Program

"Egrets Soaring Over Oceans" Plan

- Local Employees
  - International Senior Management Personnel Training Class
  - International Pre-assigned Personnel Training Class
  - Language Training Class for International Personnel
- Expatriates and Proposed Employees
  - Finance Training Class for International Personnel
  - International Personnel Reserve Training Class
  - Practice Training Class for International Personnel
- Employees Beyond China
  - Cultural Fusion Training Class for International Personnel
- The International Personnel Pool of the Group

8 training classes offered throughout the year

More than **120** employees received trainings

Employee inspects equipment at nuclear power plant

Nuclear power technical talent training

Following the construction processes of third-generation nuclear power units, CGN has strengthened trainings for the operators, construction personnel and maintenance personnel of the third-generation nuclear power technology (HPR1000, the EPR, and the AP1000). In 2018, we completed the development and implementation of our new theoretical course on the Operation and Control of the HPR1000. We also developed and conducted refresher training courses for our first batch of EPR license holders to consolidate and enhance their professional and technical skills.

Intercultural Communication Training

In November 2018, CGN held its third phase of intercultural communication training for CGN Energy International foreign managers and the 2018 annual Health, Safety, & Environmental Protection Management Workshop, which were built around the theme of "Professionalism Cohesion, Powering-up Growth". This training incorporated classroom training, visits and exchanges, and professional communication exchanges, further deepening the understanding and trust between the head office and all branches to promote cross-cultural integration.

07 | Value to Society

Q&A

Q

How does CGN gain support from local communities for its global project operations?

A

“The trust and support from the public and community are important guarantees for global project operations. CGN adheres to the principle of “extensive consultation, joint contribution and shared benefits”, actively communicates with surrounding residents to learn about the developmental needs of the community. The Goup performs local recruitment and purchasing to advance local operations and promote local economic development, and drives community development by implementing support plans in fields such as education, culture, sports, environmental protection, health care, etc. This allows the construction of a harmonious and friendly community relationship and contributes to the development of “sustainable cities and communities”, one of the SDGs.”

Han Yunfei

Chief of Brand Management Division of Culture and Publicity Center, CGN

The 3N Community Construction Model

11 SUSTAINABLE CITIES AND COMMUNITIES

During the operation of all CGN projects, we participate in community support activities in accordance with the 3N community model of being “safe neighbor”, “friendly neighbor” and “warm neighbor” as we strive to develop harmonious and stable community relationships.

The 3N

Safe Neighbor	Friendly Neighbor	Warm Neighbor
Information transparency aims to build a “safe” neighborhood.	Care is shown for people’s livelihood in order to build a “friendly” neighborhood.	Help is offered to the community to build a “warm” neighborhood.
We regard “transparency” as an important precondition for realizing effective communication and winning public trust. We keep exploring a transparent communication mechanism for communication with the public to win public trust.	With friendly and respectful attitude, we maintain and improve the ecological environment of the community, respect and promote the development of the traditional community culture, including local customs, art and history.	We regard the construction of every project as an opportunity to share achievements in development with the community to provide the community residents with employment opportunities, promote infrastructure construction, participate in social welfare undertakings and repay the community with practical action to warm the people’s hearts.
○ Safety information disclosure ○ Safety communication activities	○ Protecting ecological environment ○ Protecting human development	○ Advancing community progress ○ Making residents more healthy

Supporting Economic Growth

CGN creates job opportunities and economic benefits through the operations of our own business projects, helping to eliminate regional poverty. We pay local taxes according to law, recruit local staff, and actively support local economic growth.

Namibia

Husab Uranium Mine:

After the project reaches design capacity, it will make Namibia the world's second largest producer and exporter of natural uranium; the country's national exports will increase by 20% and GDP will increase by 10%. At the same time, after the mine enters operation, it will offer 2,000 permanent jobs and provide tens of thousands job opportunities to Namibia.

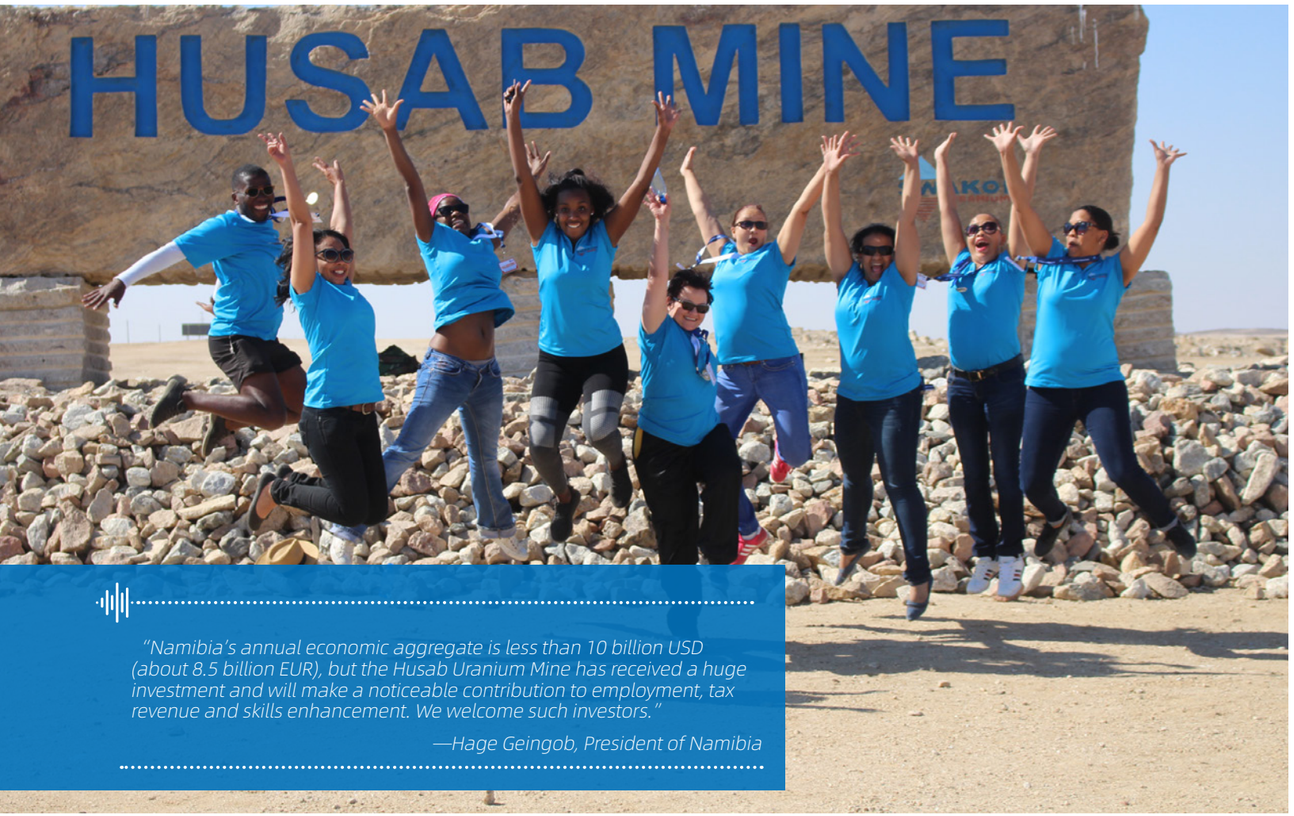
Malaysia

The Melaka Combined Cycle Gas Power Generation Project:

Total installed capacity of 2,242 MW, total investment of approximately 1.5 billion USD (about 1.3 billion EUR), with a local purchasing volume of 25%.

Kuala Ketil PV Project:

Total installed capacity of 50 MW with a local purchasing volume of over 30%; currently, it is one of the largest solar power stations in Malaysia.



"Namibia's annual economic aggregate is less than 10 billion USD (about 8.5 billion EUR), but the Husab Uranium Mine has received a huge investment and will make a noticeable contribution to employment, tax revenue and skills enhancement. We welcome such investors."

—Hage Geingob, President of Namibia

Community Investment and Participation

During the project construction process, enterprises should combine the needs of their projects with the needs and priorities of the community in which they operate, and actively get involved in the community development. CGN actively participates in community building, allowing the Group to deeply root itself in the local society and share the achievement of its development with the local people.

The total amount of overseas donations:

3.99 million RMB

(about 511,165 EUR)

The total amount of domestic donations in China:

29.84 million RMB

(about 3.82 million EUR)

Supporting Education

CGN implements scholarship programs in Malaysia, Bangladesh, and Egypt, and provides scholarships and grants for universities, primary, and secondary schools. Our scholarship program offers 22,000 MYR (about 4,617 EUR) per student per year to outstanding students from low-income families, providing job opportunities for a total of 120 scholarship recipients. Meanwhile, we also actively implement the Education Assistance Program (Sokongan Didikan Edra), providing donations of 3,000-5,000 MYR (about 630-1,050 EUR) to every student at the primary schools surrounding each of its power plants in Malaysia. The Group also donates teaching equipment, school uniforms, and stationery to impoverished community schools, allowing them to maintain and upgrade their facilities.

Every student at Negeri Sembilan Sekolah Jenis Kebangsaan (Cina) Yik Chiao smiles after receiving a schoolbag and a voucher for a pair of school shoes.

The Husab Marathon

Supporting Athletic Activities

"The marathon allows people from the Erongo region and other regions of Namibia to attend this healthy and happy event. The event has created job opportunities for local medium- and small-sized catering enterprises, reflecting Swakop's great efforts to promote Namibia's national development."

—Cleophas Mutjavikua, Governor of Erongo

The "Husab Cup" Marathon

On August 4, 2018, the CGN Swakop Uranium Foundation held the fourth "Husab Cup" Marathon in Namibia. As one of the largest marathons on the African continent, this year's event was attended by more than 600 professional competitors and amateur athletes from Namibia, South Africa, China, and other countries, promoting the integration of different national cultures. The proceeds were donated to local primary schools to allow them to improve their sports facilities and promote the sustainable development of Namibian athletics.


Melaka United

Sponsoring Melaka United

In 2018, Edra provided a donation of 1 million MYR (about 215 thousand EUR) to the Melaka United football team to support its development. Since 2016, Edra has provided a total of 5 million MYR (about 1.0 million EUR) in donations. Melaka United came out the first in the Malaysian Premier Football League in 2016 and successfully advanced to the Malaysia Super League in 2017 and 2018.

Taking Action for the Environment

Collecting Trash on the Beach

The UK Companies organized the BRB project team to collect trash on a beach in the community to help clean up the local environment, raise environmental awareness, and fulfill the corporate social responsibilities.

Implementing a Tree Planting Program

In Bangladesh, we annually distribute 6,000 tree seedlings to communities which host power plants, providing each family with 5 seedlings that can be planted around their house. The tree planting program benefits public areas such as local schools, playgrounds, mosques, and highways.

Responding to the "Arandis CleanUp Campaign"

In Namibia, Swakop employees attended the "Arandis CleanUp Campaign" organized by the Arandis City Hall. The campaign covered the town of Arandis and the area along the B2 road. The employees cleaned up trash along the road and separated them by type for recycling.

Improving Public Health

Establishing a Medical Camp for Women and Children

In Bangladesh, we regularly establish a periodical medical camp for women and children in the local community, and invite a medical team from a local general hospital to perform medical examinations for women and children. We also work with local schools and general hospitals in providing eye examinations for about 1,800 primary and middle school students.

Donating Hemodialysis Equipment and Supplies

In Egypt, CGN's PSEP Power Plant and SGP Power Plant have respectively donated hemodialysis equipment to the local El Hedaya Medical Center and the Suez Canal Public Hospital. The SKGC Power Plant has also renovated the only family clinic area and provided it with various medical supplies, such as a photocopier, a lab refrigerator, and waiting-room benches, benefiting approximately 8,000 local residents.

Feature

Joining WOW to Help Disadvantaged Women Start Their Businesses

One of our main social responsibilities is to help the disadvantaged groups improve their quality of life in a sustainable way. Over the years, Edra has worked with the Women of Will (WOW) in helping disadvantaged women start businesses and become self-sufficient, and the company has done so by implementing training programs, including a startup business program, a skill training program, and an agricultural entrepreneurship development program.

Organizing Community Markets to Help Women Enhance their Business Skills

Edra creates practical opportunities for women by engaging them in market and Community Day events in Kuala Lumpur and Selangor. This not only allows female entrepreneurs to sell homemade food and handicrafts to earn extra income, but also uses the marketplace to test the skills they have learned. Edra employees and WOW members help the women constantly enhance their business skills by assessing their skills of communication, product packaging, pricing, and presentation.

Purchasing Gift Baskets to Help Women Earn Extra Income

Before the start of Eid al-Fitr in 2018, Edra once again bought gift baskets produced by its female beneficiaries, and gave them out to Muslim employees and partners as Eid al-Fitr presents. 25 of these beneficiaries worked with Edra employees in packaging these baskets, fully proving that the skills they had gained through their training will allow them to earn extra income.

Edra employees wrap presents together with female beneficiaries

Community Communications

The process of promoting enterprise-community communications requires us to deliver objective, accurate, rational, and scientifically sound information to concerned organizations and the public in order to win their understanding and trust. CGN respects regional cultural differences and adheres to sincerity in its community communications to respond to the demands and expectations of all stakeholders.

Conducting Public Consultations

From January 4 to March 29, 2018, CGN participated in the stage 3 public consultation on the UK Sizewell C Project organized by EDF. The consultation engaged with approximately 7,000 members of the public on more than 100 issues, and the consulting website was visited more than 32,000 times. After consultation was complete, we individually reviewed all responses and advisory opinions.

Communication with Stakeholders

On March 24, 2018, we jointly organized a meeting on the Kuala Ketil PV Project with stakeholders in Kedah, Malaysia, to brief local residents about the project. Edra, the contractors, and the project would all play a positive role in promoting local development and economic growth. About 300 people attended the meeting, and conducted effective face-to-face communications regarding stakeholders' concerns.

Stakeholders' Visits

On August 17, 2018, 22 representatives from the Community Development Commission (CDC) of the region surrounding the power plant of the Rajjaprabha Dam in Surat Thani Province, Thailand, made a study tour of the Jimah Power Plant, one of CGN's projects in Malaysia. This visit was conducted in hopes of enhancing the representatives' understanding of the development of the energy industry by identifying the latest industry trends.

"I am grateful that Edra chose to develop its first solar power plant in the Baling District."

——Datuk Md Shuhaimie bin Abdul Rahman, Baling District Officer

Looking Ahead

In 2019, the Group will focus on international development, deeply integrate ourselves into the globalization process, participate in the international division of labor in a wider scope, wider field and higher level with an open and inclusive attitude, and continuously improve the global allocation capacity of resources, such as talents and capital, so as to serve economic, environmental and social development in a more sustainable manner. We will work on the following aspects:

- Improving the level of safety. We will ensure nuclear safety by strengthening safety culture and awareness, enhancing quality control of nuclear power projects, and improving the level of equipment management.
- Improving innovation capabilities. We will strengthen internal and external coordination and gradually improve the comprehensive innovation capabilities to achieve utilization of clean energy in a wider scope with more advanced technologies.
- Focusing on the key projects. We will make every effort to build key projects such as HPR 1000 demonstration project, nuclear fuel project, and new energy projects, in order to assist in the development of society with higher quality products and services.
- Promoting the improvement of quality and efficiency. We will uphold the market-orientated principle, improve operation quality and efficiency, and continuously improve the compliance level of overseas companies.
- Deepening reform and development. We will optimize our system and mechanism to stimulate employees' creativity and enhance the Group's development vitality.
- Fulfilling social responsibility. We will extensively mobilize the whole group to actively fulfill our social responsibility. In international projects, we will strictly abide by the local laws and regulations, respect the local culture, actively get involved in the development of the local communities, striving to become a part of the local communities.

At the same time, CGN will continue to expand cooperation with French enterprises in the fields of nuclear energy and new energy to serve the economic and social development of France. The year 2019 marks the 55th anniversary of the establishment of diplomatic relations between China and France, and it is also the 40th anniversary of Sino-French cooperation in nuclear energy. CGN will propose to establish an enterprise-led "China-France Friendship Foundation" with multiple parties' participation, in order to create a new platform for Sino-French non-governmental exchanges. The "China-France Friendship Foundation" will focus on climate change, energy transformation, human development and other topics, with personnel exchanges, research projects, and social responsibility activities to enhance the exchange, understanding and recognition of the Chinese and French.

The Malicounda Project (Senegal)

Performance Data

Safety

		2016	2017	2018
Nuclear Safety	Number of in-service nuclear power units	19	20	22
	Ratio of WANO (World Association of Nuclear Operators) indicators for the 21 in-service units achieving the world's advanced level (the world's top quartile) (%)	72.2	73.8	78.2[20]
	Automatic shutdowns (times)	1	2	3
	The Number of Level-2 or above Incidents defined in the International Nuclear Event Scale	0	0	0
	The Number of Level-0 Incidents defined in the International Nuclear Event Scale[21]	36	16	18
Workforce Safety	The safety accident rate per 200,000 work hours[22]	0.0094	0.0113	0.0051

Note: [20] In 2018, there were 21 in-service nuclear power units. Unit 1 of Taishan Nuclear Power Plant was put into operation on December 13, 2018, so it was not included here. In 2016, there were 19 in-service nuclear power units. In 2017, there were 20 in-service nuclear power units.
[21] Please see the Report P37 (note ⑩) for details.
[22] The indicator describes nuclear power business.

Operating Performance

	2016	2017	2018
Total assets (EUR billion)	66.7	81.1	85.8
Total overseas assets (EUR billion)	9.7	13.0	14.2
Operating income (EUR billion)	8.4	10.9	12.5
Overseas operating income (EUR billion)	1.7	2.1	2.7
Proportion of overseas business income (%)	20.20	19.53	21.35
Total tax payment (EUR billion)	1.1	1.2	1.3
Gross in-service installed capacity of clean energy (MW)	43,710	45,110	49,677
Gross in-service installed capacity of nuclear power (MW)	20,380	21,470	24,300
Gross in-service installed capacity of non-nuclear power (MW)	23,330	23,640	25,377

	Number of projects㉓	Installed in-service capacity (in MW) (including all forms of energy)	Indicated Mineral Resource（in TU）
China	Nuclear Power Units: 28 (In-service Units: 22; Under construction Units: 6) Wind Power Projects: 238 (In-service projects: 208; Under construction projects: 30) Solar Power Projects: 132 (In-service projects: 126; Under construction projects: 6) Energy Saving Project: 4 Uranium Mine Projects: 2 (in exploration)	40,910	Total amount of indicated mineral resource is still being explored
UK	Nuclear Power Units: 6 (under construction) Wind Power Projects: 2 （In-service project: 1; Under construction project: 1）	72.9	/
France	Solar Power Project: 1 Wind Power Projects: 5	375	/
Belgium	Wind Power Project: 1	81.9	/
Ireland	Wind Power Project: 1	235.6	/
The Netherlands	Wind Power Project: 1	61.1	/
Senegal	Solar Power Project: 1	22	/
Malaysia	Solar Power Project: 1 Gas Power Projects: 5 （In-service projects: 4; Under construction project: 1） Thermal Power Project: 1	3,683	/
Sweden	Wind Power Project: 1 (under construction)	/	/
Bangladesh	Gas Power Projects: 2 Thermal Power Project: 1	972.4	/
Egypt	Gas Power Projects: 3	2,047.2	/
South Korea	Fuel Cell Projects: 4 Fuel Gas Projects: 2 Biomass Project: (under construction) Fuel Oil Project: 1	2,056	/
Australia	Wind Power Project: 1 Uranium Mine Project: 11 (in exploration)	19.5	about 30,000
Kazakhstan	Nuclear Fuel Fabrication Plant: 1 (under construction) Uranium Mine Projects: 2	/	about 25,000
Namibia	Uranium Mine Project: 1	/	about 300,000
Canada	Uranium Mine Project: 1 (in exploration)	/	about 50,000

Note: ㉓ The numbers of projects in this table describe in-service projects unless otherwise stated.

Contribution to the environment

	2016	2017	2018
Total carbon dioxide emissions equivalent reduction from on-grid power generated from clean energy (in million tons)	142.10	160.00	161.86
Consumption of comprehensive energy (10,000 tons of standard coal)㉔	169.84	163.90	175.88
Synthetic energy consumption per 10,000 RMB (about 1281.1 EUR) of GDP (tons of standard coal with current price/10,000 RMB)㉕	0.3078	0.2019	0.1899

Note: ㉔ This indicator refers to the sum of the various energy-consumption converted to standard coals in the industrial production activities of the enterprise, and deducts the sum of the energy-production from energy processing converted to standard coals of the enterprise.
㉕ This indicator refers to the ratio of comprehensive energy consumption of enterprises to their total industrial output value. The formula is comprehensive energy consumption (tons of standard coal)/industrial gross output value (10,000 RMB).

Discharge of the Three Wastes												
Index Title	Daya Bay Nuclear Power Plant		Yangjiang Nuclear Power Plant		Fangchenggang Nuclear Power Plant		Ningde Nuclear Power Plant		Taishan Nuclear Power Plant		Hongyanhe Nuclear Power Plant	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Ratio of liquid effluent (nuclides but tritium) to state annual limit	0.47%	0.35%	0.38%	0.29%	0.78%	0.43%	0.38%	0.30%	Under construction	0.54%	0.22%	0.21%
Ratio of gaseous effluent (inert gases) to state annual limit	0.44%	0.56%	0.30%	0.24%	0.39%	0.35%	0.51%	0.30%	Under construction	0.71%	0.15%	0.21%
Generation of radioactive solid waste (m^3)	276.4	248.6	42.8	44.8	101.25	64.6	176.4	136.8	Under construction	0	196.8	159.6
Environmental Monitoring Results	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal

Employee development

		2016	2017	2018
The number of employees		37,857	41,040	42,085
By gender	Percentage of male employees	83.28%	84.00%	83.10%
	Percentage of female employees	16.72%	16.00%	16.90%
By age	Percentage of employees aged 30 and under	44.07%	40.27%	34.73%
	Percentage of employees aged 31-50	51.67%	55.04%	59.87%
	Percentage of employees aged 51 and above	4.26%	4.69%	5.40%
By region	Percentage of employees from China	92.53%	92.21%	91.94%
	Percentage of employees from beyond China	7.47%	7.79%	8.06%
Total training hours for employees (10,000 hours)		416	437	461
Annual traning hours per employee (hour)		130	103	108
Turnover rate (%)		3.91%	7.29%	7.18%
Number of new employees		4,148	4,306	4,056
Number of accumulated local employees for international projects		/	1,775	3,127

Maximum Personal Radiation Dose at each Nuclear Power Plant in Operation (unit: mSv)㉖		
Nuclear Power Plant /Unit	**2017**	**2018**
Daya Bay Nuclear Power Plant	6.756	5.114
Ling Ao Nuclear Power Plant Phase I	6.071	10.323㉗
Ling Ao Nuclear Power Plant Phase II (Lingdong Nuclear Power Plant)	7.668	5.247
Units 1-5 of Yangjiang Nuclear Power Plant	7.889	8.112
Units 1-4 of Hongyanhe Nuclear Power Plant	7.803	7.601
Units 1-4 of Ningde Nuclear Power Plant	8.624	7.998
Units 1 & 2 of Fangchenggang Nuclear Power Plant	8.034	3.588
Unit 1 of Taishan Nuclear Power Plant	/	0.288

Note: ㉖ Please see the Report P55 (note ⑰) for details.
㉗ Please see the Report P55 (note ⑱) for details.

Contribution to communities

	2017	2018
The total amount of global donations (EUR million)	5.31	4.33
The number of local suppliers for overseas projects	160	344

GRI Reference Table

GRI Standards	Pages
GRI 101：Foundation	
GRI 102：General Disclosures	
Organization profile	
102-1 Name of the organization	P3
102-2 Activities, brands, products, and services	P3
102-3 Location of headquarters	P3
102-4 Location of operations	P3-P4
102-5 Ownership and legal form	P3-P4
102-6 Markets served	P3-P4
102-7 Scale of the organization	P3-P4
102-8 Information on employees and other workers	P5-P6/P51-P58
102-9 Supply chain	P5
102-10 Significant changes to the organization and its supply chain	/
102-11 Precautionary Principle or approach	P39
102-12 External initiatives	/
102-13 Membership of associations	/
Strategy	
102-14 Statement from senior decision-maker	P1-P2
102-15 Key impact, risks, and opportunities	P1-P2/P10
Ethics and integrity	
102-16 Values, principles, standards, and norms of behavior	P17
102-17 Mechanisms for advice and concerns about ethics	/
Governance	
102-18 Governance structure	P7
102-19 Delegating authority	not applicable
102-20 Executive-level responsibility for economic, environmental, and social topics	/
102-21 Consulting stakeholder on economic, environment, and social topics	P20
102-22 Composition of the highest governance body and its committees	P6/P8
102-23 Chair of the highest governance body	P6
102-24 Nominating and selecting the highest governance body	P8
102-25 Conflicts of interest	/
102-26 Role of highest governance body in setting purpose, values, and strategy	/
102-27 Collective knowledge of highest governance body	/
102-28 Evaluating the highest governance body's performance	/
102-29 Identifying and managing economic, environmental, and social impacts	P19
102-30 Effectiveness of risk management processes	P9
102-31 Review of economic, environmental, and social topics	/
102-32 Highest governance body's role in sustainability reporting	/
102-33 Communicating critical concerns	P19
102-34 Nature and total number of critical concerns	P19
102-35 Remuneration policies	/
102-36 Process for determining remuneration	/
102-37 Stakeholders' involvement in remuneration	/
102-38 Annual total compensation ratio	/
102-39 Percentage increase in annual total compensation ratio	/
Stakeholder engagement	
102-40 List of stakeholder groups	P20
102-41 Collective bargaining agreements	/
102-42 Identifying and selecting stakeholders	P20
102-43 Approach to stakeholder engagement	P20
102-44 Key topics and concerns raised	P20
Reporting practice	
102-45 Entities included in the consolidated financial statements	/

GRI Standards	Pages
102-46 Defining report content and topic Boundaries	About this Report
102-47 List of material topics	P19
102-48 Restatements of information	About this Report
102-49 Changes in reporting	About this Report
102-50 Reporting period	About this Report
102-51 Date of most recent report	About this Report
102-52 Reporting cycle	About this Report
102-53 Contact point for questions regarding the report	About this Report
102-54 Claims of reporting in accordance with the GRI Standards	/
102-55 GRI content index	P71
102-56 External assurance	P73
GRI 200 Economic Standards	
GRI 103 Management Approach	
103-1 Explanation for the material topic and its Boundary	P17-P19
103-2 The management approach and its components	P17-P19
103-3 Evaluation of the management approach	/
GRI 201 Economic Performance	
201-1 Direct economic value generated and distributed	P5
201-2 Financial implications and other risks and opportunities due to climate change	P11-P12/P15-P16/P31
201-3 Defined benefit plan obligations and other retirement plans	/
201-4 Financial assistance received from government	/
GRI 202 Market Presence	
202-1 Ratios of standard entry level wage by gender compared to local minimum wage	/
202-2 Proportion of senior management hired from the local community	/
GRI 203 Indirect Economic Impacts	
203-1 Infrastructure investments and services supported	P62/P64-P65
203-2 Significant indirect economic impacts	P29-P30/P33/P61/P63
GRI 204 Procurement Practices	
GRI 103 Management Approach	
103-1 Explanation for the material topic and its Boundary	/
103-2 The management approach and its components	/
103-3 Evaluation of the management approach	/
204-1 Proportion of spending on local suppliers	P33/P61
GRI 205 Anti-corruption	
GRI 103 Management Approach	
103-1 Explanation for the material topic and its Boundary	P9
103-2 The management approach and its components	P9
103-3 Evaluation of the management approach	P9
205-1 Operations assessed for risks related to corruption	/
205-2 Communication and training about anti-corruption policies and procedures	P9
205-3 Confirmed incidents of corruption and actions taken	/
GRI 206 Anti-competitive Behavior	
206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	/
GRI 300 Environmental Standards	
GRI 103 Management Approach	
103-1 Explanation for the material topic and its Boundary	P19
103-2 The management approach and its components	P43-44
103-3 Evaluation of the management approach	P44
GRI 301 Materials	
301-1 Materials used by weight or volume	/
301-2 Recycled input materials used	/
301-3 Reclaimed products and their packaging materials	/
GRI 302 Energy	

GRI Standards	Pages
302-1 Energy consumption within the organization	/
302-2 Energy consumption outside of the organization	/
302-3 Energy intensity	/
302-4 Reduction of energy consumption	P47-48
302-5 Reduction in energy requirements of products and services	/
GRI 303 Water	
303-1 Water withdrawal by source	/
303-2 Water sources significantly affected by withdrawal of water	/
303-3 Water recycled and reused	P48
GRI 304 Biodiversity	
304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	P33/P45-46/P50
304-2 Significant impacts of activities, products, and services on biodiversity	P45-46/P50
304-3 Habitats protected or restored	P45-46/P50
304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	/
GRI 305 Emissions	
305-1 Direct (Scope 1) GHG emissions	P47
305-2 Energy indirect (Scope 2) GHG emissions	P47
305-3 Other indirect (Scope 3) GHG emissions	/
305-4 GHG emissions intensity	/
305-5 Reduction of GHG emissions	P12-P16/P31/P47
305-6 Emissions of ozone-depleting substances (ODS)	/
305-7 Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	/
GRI 306 Effluents and Waste	
306-1 Water discharge by quality and destination	/
306-2 Waste by type and disposal method	P49
306-3 Significant spills	/
306-4 Transport of hazardous waste	P48
306-5 Water bodies affected by water discharges and/or runoff	/
GRI 307 Environmental Compliance	
307-1 Non-compliance with environmental laws and regulations	/
GRI 308 Supplier Environment Assessment	
308-1 New suppliers that were screened using environmental criteria	/
308-2 Negative environmental impacts in the supply chain and actions taken	/
GRI 400 Social Standards	
GRI 103 Management Approach	
103-1 Explanation for the material topic and its Boundary	P51-P52/P59-P60
103-2 The management approach and its components	P51-P52/P59-P60
103-3 Evaluation of the management approach	/
GRI 401 Employment	
401-1 New employee hires and employee turnover	P53
401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	P53
401-3 Parental leave	P53
GRI 402 Labor/Management Relations	
402-1 Minimum notice periods regarding operational changes	/
GRI 403 Occupational Health and Safety	
403-1 Workers representation in formal joint management-worker health and safety committees	/
403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	P55-P56
403-3 Workers with high incidence or high risk of diseases related to their occupation	P55-P56
403-4 Health and safety topics covered in formal agreements with trade unions	/
GRI 404 Training and Education	
404-1 Average hours of training per year per employee	P57
404-2 Programs for upgrading employee skills and transition assistance programs	P52
404-3 Percentage of employees receiving regular performance and career development reviews	/
GRI 405 Diversity and Equal Opportunity	
GRI 103 Management Approach	

GRI Standards	Pages
103-1 Explanation for the material topic and its Boundary	P53
103-2 The management approach and its components	P53-54
103-3 Evaluation of the management approach	/
405-1 Diversity of governance bodies and employees	/
405-2 Ratio of basic salary and remuneration of women to men	/
GRI 406 Non-discrimination	
406-1 Incidents of discrimination and corrective actions taken	/
GRI 407 Freedom of Association and Collective Bargaining	
GRI 103 Management Approach	
103-1 Explanation for the material topic and its Boundary	/
103-2 The management approach and its components	/
103-3 Evaluation of the management approach	/
407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	/
GRI 408 Child Labor	
408-1 Operations and suppliers at significant risk for incidents of child labor	/
GRI 409 Force or Compulsory Labor	
409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	/
GRI 410 Security Practices	
410-1 Security personnel trained in human rights policies or procedures	/
GRI 411 Rights of Indigenous Peoples	
411-1 Incidents of violations involving rights of indigenous peoples	/
GRI 412 Human Rights Assessment	
412-1 Operations that have been subject to human rights reviews or impact assessments	/
412-2 Employee training on human rights policies or procedures	P53
412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	/
GRI 413 Local Communities	
GRI 103 Management Approach	
103-1 Explanation for the material topic and its Boundary	P59-P60
103-2 The management approach and its components	P59-P60
103-3 Evaluation of the management approach	/
413-1 Operations with local community engagement, impact assessments, and development programs	P33-P34/P61-P66
413-2 Operations with significant actual and potential negative impacts on local communities	/
GRI 414 Supplier Social Assessment	
414-1 New suppliers that were screened using social criteria	/
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GRI 415 Public Policy	
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GRI 103 Management Approach	
103-1 Explanation for the material topic and its Boundary	P35-P36
103-2 The management approach and its components	P35-P36
103-3 Evaluation of the management approach	P35-P36
416-1 Assessment of the health and safety impacts of product and service categories	P23/P37-P38
416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	/
GRI 417 Marketing and Labeling	
417-1 Requirements for product and service information and labeling	not applicable
417-2 Incidents of non-compliance concerning product and service information and labeling	not applicable
417-3 Incidents of non-compliance concerning marketing communications	not applicable
GRI 418 Customer Privacy	
418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	/
GRI 419 Socioeconomic Compliance	
GRI 103 Management Approach	
103-1 Explanation for the material topic and its Boundary	P9
103-2 The management approach and its components	P9
103-3 Evaluation of the management approach	P9
419-1 Non-compliance with laws and regulations in the social and economic area	/

Independent practitioner's assurance report

pwc 普华永道

2019/SH-0382
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Independent practitioner's assurance report

To the Board of Directors of China General Nuclear Power Corporation

We have been engaged to perform a limited assurance engagement on the selected 2018 key data as defined below in the 2018 Global Sustainability Report of China General Nuclear Power Corporation (the "Company").

Selected key data

The selected key data in the Company's 2018 Global Sustainability Report that is covered by this report is as follows:

- Total Carbon Dioxide Emissions Equivalent Reduction from On-grid Power Generated from Clean Energy (in million tons)
- Gross In-service Installed Capacity of Clean Energy (in MW)
- On-grid Power Generated from Clean Energy (in TWh)
- On-grid Power Generated from Nuclear Power (in TWh)
- Overseas On-grid Power Generated from Clean Energy (in TWh)
- Direct Greenhouse Gas Emissions (in million tons CO_2 Equivalent)
- Indirect Greenhouse Gas Emissions (in million tons CO_2 Equivalent)
- Total Water Consumption (in million tons)
- Ratio of WANO (World Association of Nuclear Operators) Indicators for the Mature Units Achieving the World's Excellent Level (the World's Top Decile) (%)
- Ratio of WANO (World Association of Nuclear Operators) Indicators for the New Units Achieving the World's Advanced Level (the World's Top Quartile) (%)
- The Number of Level-2 or above Incidents Defined in the International Nuclear Event Scale
- The Number of Employees
- The Number of Accumulated Recruited Overseas Employees
- The Number of Local Suppliers for Overseas Projects

Our assurance was with respect to the year ended 31 December 2018 information only and we have not performed any procedures with respect to earlier periods or any other elements included in the 2018 Global Sustainability Report.

Criteria

The criteria used by the Company to prepare the selected key data in the 2018 Global Sustainability Report is set out in the definitions of the key data on Page 76 of the 2018 Global Sustainability Report (the "basis of reporting").

普华永道中天会计师事务所(特殊普通合伙)
PricewaterhouseCoopers Zhong Tian LLP, 11/F PricewaterhouseCoopers Center
Link Square 2, 202 Hu Bin Road, Huangpu District, Shanghai 200021, PRC
T: +86 (21) 2323 8888, F: +86 (21) 2323 8800, www.pwccn.com

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The Board of Directors' Responsibilities

The Board of Directors of the Company is responsible for the preparation of the selected key data in the 2018 Global Sustainability Report in accordance with the basis of reporting. This responsibility includes designing, implementing and maintaining internal control relevant to the preparation of the selected key data in the 2018 Global Sustainability Report that is free from material misstatement, whether due to fraud or error.

Our Independence and Quality Control

We have complied with the independence and other ethical requirement of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Practitioner's Responsibilities

It is our responsibility to express a conclusion on the selected key data in the 2018 Global Sustainability Report based on our work.

We conducted our work in accordance with the International Standard on Assurance Engagements 3000 (Revised) "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information". This standard requires that we plan and perform our work to form the conclusion.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently the level of assurance in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance opinion about whether the Company's 2018 selected key data in the 2018 Global Sustainability Report has been prepared, in all material respects, in accordance with the basis of reporting. Our work involves assessing the risks of material misstatement of the selected key data in the 2018 Global Sustainability Report whether due to fraud or error, and responding to the assessed risks. The extent of procedures selected depends on our judgment and assessment of the engagement risk. Within the scope of our work, we have performed the

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following procedures in Shenzhen Head Office, Yangjiang Nuclear Power Plant of the Company:

1) Interviews with relevant departments of the Company involved in providing information for the selected key data within the Global Sustainability Report;
2) Analytical procedure;
3) Examination, on a test basis, of documentary evidence relating to the selected key data on which we report;
4) Recalculation; and
5) Other procedures deemed necessary.

Inherent Limitation

The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measures and measurement techniques and can affect comparability between entities.

Conclusion

Based on the procedures performed and evidence obtained, nothing has come to our attention that causes us to believe that the 2018 selected key data in the 2018 Global Sustainability Report is not prepared, in all material respects, in accordance with the basis of reporting.

Restriction on Use

Our report has been prepared for and only for the Board of Directors of the Company and for no other purpose. We do not assume responsibility towards or accept liability to any other person for the content of this report.

PricewaterhouseCoopers Zhong Tian LLP

Shanghai, China

August 15, 2019

Appendix: Basis of Reporting of Key Data

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Total Carbon Dioxide Emissions Equivalent Reduction from On-grid Power Generated from Clean Energy (in million tons): From 1 January to 31 December of 2018, total carbon dioxide emissions equivalent reduction from China General Nuclear Power Corporation (the "Company")'s on-grid power generated from nuclear power, wind power, solar energy, hydropower and natural gas ("clean energy").

Gross In-service Installed Capacity of Clean Energy (in MW): By 31 December of 2018, the total installed capacity of clean energy of the in-service power units at the Company's business sections including CGN Power, CGN New Energy and CGN Energy International.

On-grid Power Generated from Clean Energy (in TWh): From 1 January to 31 December of 2018, the total amount of on-grid power generated from clean energy at the Company's business sections including CGN Power, CGN New Energy and CGN Energy International.

On-grid Power Generated from Nuclear Power (in TWh): From 1 January to 31 December of 2018, the total amount of on-grid power generated from in-service nuclear power units of the Company.

Overseas On-grid Power Generated from Clean Energy (in TWh): From 1 January to 31 December of 2018, the total amount of on-grid power generated from clean energy at the Company's business section including CGN Energy International.

Direct Greenhouse Gas Emissions (in million tons CO_2 Equivalent): From 1 January to 31 December of 2018, the amount of greenhouse gas produced by the consumption of gasoline, diesel and natural gas at the Company's business sections including CGN Power, CGN New Energy, CGN Services Group, CGN Uranium (Beijing Office), Energy Conservation and Environmental Protection in China.

Indirect Greenhouse Gas Emissions (in million tons CO_2 Equivalent): From 1 January to 31 December of 2018, the amount of greenhouse gas produced by the consumption of purchased electricity at the Company's business sections including CGN Power, CGN New Energy, CGN Services Group, CGN Uranium (Beijing Office), Energy Conservation and Environmental Protection in China.

Total Water Consumption (in million tons): From 1 January to 31 December of 2018, total water consumption at the Company's businesses sections including CGN Power, CGN New Energy, CGN Services Group, CGN Uranium (Beijing Office), Energy Conservation and Environmental Protection in China.

Ratio of WANO (World Association of Nuclear Operators) Indicators for the Mature Units Achieving the World's Excellent Level (the World's Top Decile) (%): By 31 December of 2018, the percentage of WANO indicators of the Company's mature nuclear power units which are in-service and have conducted three fuel cycles has reached the excellent level (top 10%) of WANO member companies.

Ratio of WANO (World Association of Nuclear Operators) Indicators for the New Units Achieving the World's Advanced Level (the World's Top Quartile) (%) : By 31 December of 2018, the percentage of WANO indicators of the Company's new nuclear power units which are in-service and have not conducted three fuel cycles has reached the advanced level (top 25%) of WANO member companies.

The Number of Level-2 or above Incidents Defined in the International Nuclear Event Scale: From 1 January to 31 December of 2018, in the nuclear power plants operated by the Company, the number of incidents with international nuclear event defined scale 2 or above.

The Number of Employees: By 31 December of 2018, the total number of contract employees of the Company.

The Number of Accumulated Recruited Overseas Employees: By 31 December of 2018, the total accumulated number of expatriate and foreign employees recruited by the Company in projects outside of mainland of China.

The Number of Local Suppliers for Overseas Projects: By 31 December of 2018, the number of suppliers of CGN Europe Energy, Edra (projects under construction only) and UK Companies which are listed in the database of suppliers and located in the same countries where companies above operates.