

中广核  CGN

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CGN Power CO., LTD

2021 Annual Results



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Part I

Development Strategy





CGN Power

CGN Power has issued 50.5 billion shares and our controlling shareholder is CGN (supervised by SASAC of the State Council).

Core Business: We design, build, operate and manage nuclear power plants (NPPs), sell electricity generated by our NPPs, and organize R&D of NPPs.



Incorporated on March 25, 2014



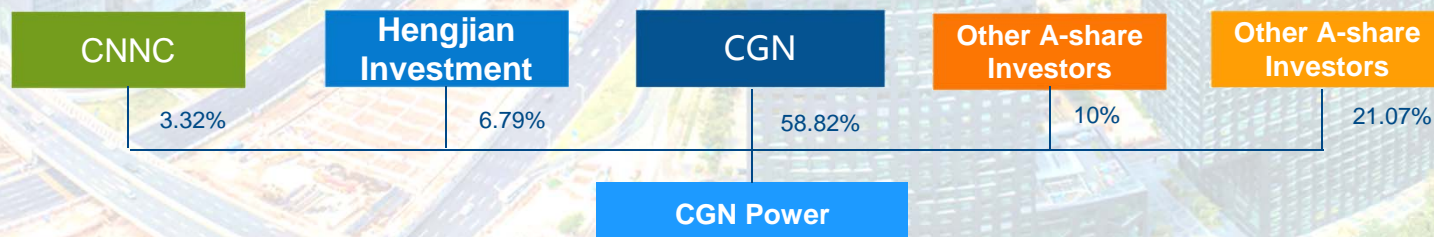
H-share IPO on December 10, 2014



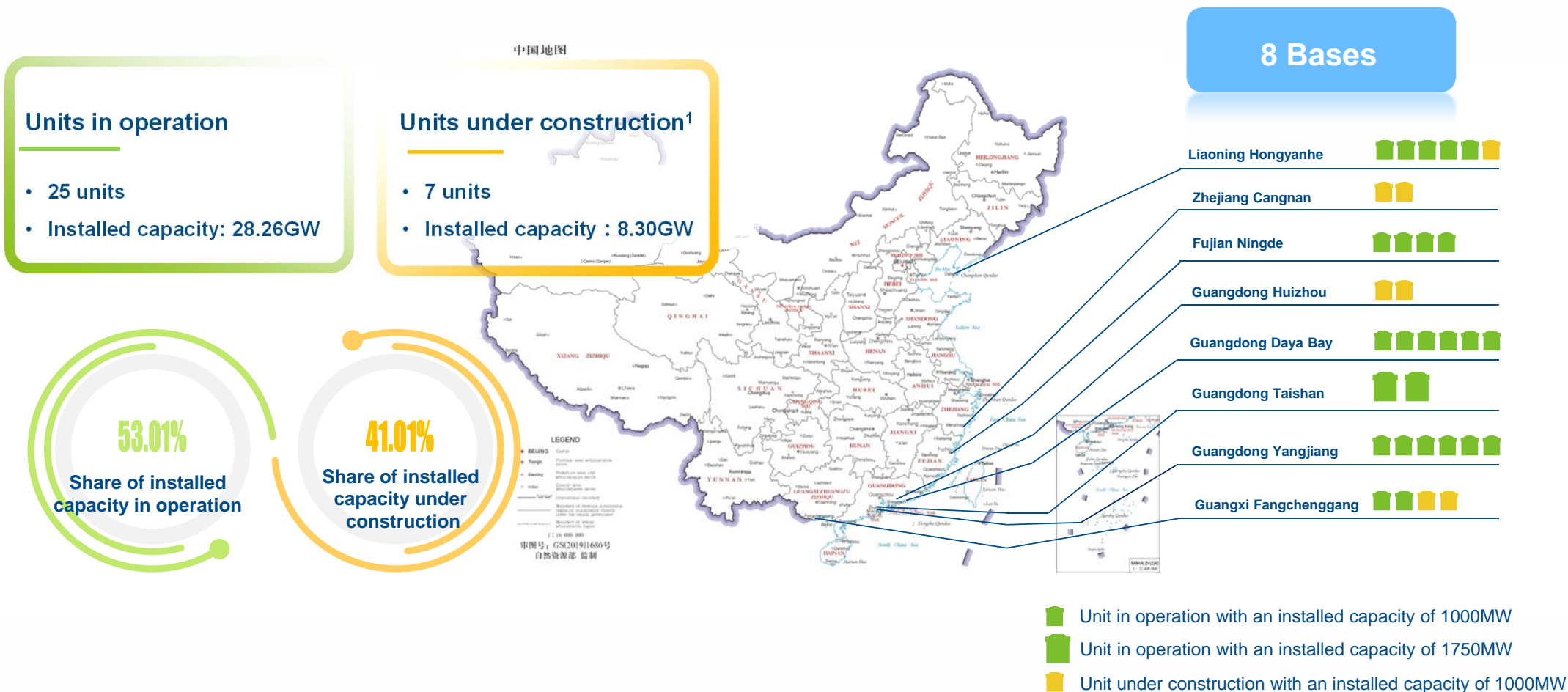
A-share IPO on August 26, 2019



Equity Structure



Note: As of December 31, 2021.



- Unit in operation with an installed capacity of 1000MW
- Unit in operation with an installed capacity of 1750MW
- Unit under construction with an installed capacity of 1000MW

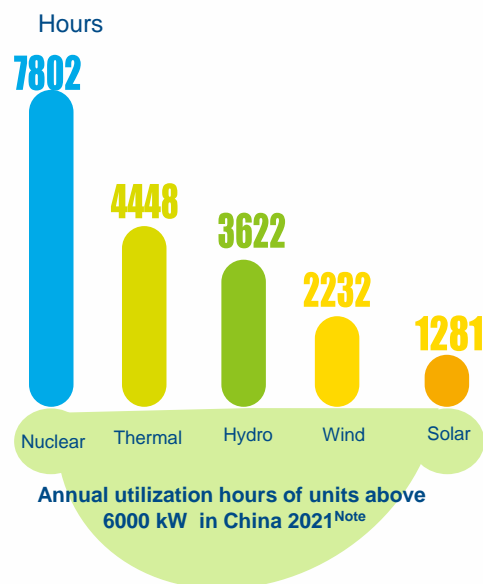
Note: Statistics only include the China's mainland and as of December 31st, 2021.

Note1: Units under construction include Huizhou Unit 1, Unit 2 and Cangnan Unit 1, Unit 2, which were entrusted to us by our controlling shareholder for management.



01	On-Grid Power Generation	• 201,150.85Gwh (Subsidiaries & Associates)	+7.86%yoy
		• 163,924.42Gwh (Subsidiaries)	+5.19%yoy
02	Revenue	• RMB 80,679M	+14.30%yoy
03	Net Profit Attributable to Shareholders of the Parent Company	• RMB 9,733M	+1.78%yoy
04	Net Profit Attributable to Shareholders of the Parent Company (Excluding the Effect of Non-Recurring Gains or Losses)	• RMB 9,730M	+3.42%yoy

Unique Advantages of Nuclear Power



Note: Data from the 2021 National Power Industry Statistics Overview issued by the CEC.

Government Work Report
the State Council

Take solid steps toward the goals of peaking carbon dioxide emissions before 2030 and achieve carbon neutrality before 2060. **Take active and well-ordered steps to develop nuclear energy on the basis of ensuring its safe use**

Guiding Opinions on
Energy Work for 2021
NEA

Strive to develop non-fossil energy. **To take active and well-ordered steps to develop nuclear energy on the basis of ensuring its safe use.**

the Action Plan for Carbon Dioxide
Peaking Before 2030
the State Council

To take active, safe and well-ordered steps to develop nuclear energy. Reasonably determine the layout and development sequence of NPPs, take well-ordered steps to develop nuclear energy on the basis of ensuring its safe, and maintain a stable construction step.

the 2022 National Energy Work
Conference
NEA

To accelerate green and low-carbon energy development. take active, safe and well-ordered steps to develop nuclear energy, orderly promote the approval for construction of NPP projects with reliable conditions on the basis of ensuring its safety.

2021年3月11日

2021年3月5日

2021年4月19日

2021年9月22日

2021年10月24日

2021年11月27日

2021年12月24日

2022年1月24日

the Outline of the 14th Five-Year
Plan for National Economic and
Social Development of the
People's Republic of China and
the Long-Range Objectives
Through the Year 2035

To actively and orderly push forward the construction of the Generation III nuclear power plants along the coast. To achieve installed nuclear power capacity of 70 GW.

the Working Guidance for Carbon
Dioxide Peaking and Carbon
Neutrality in Full and Faithful
Implementation of The New
Development Philosophy
the Communist Party of China
Central Committee, the State
Council

Strive to develop non-fossil energy.
To take active, safe and well-ordered steps to develop nuclear energy.

the Guiding Opinions on
Promoting the High-quality
Development of Central
Enterprises and Doing a Good Job
in Carbon Peaking and Carbon
Neutralization
the SASAC of the State Council

To accelerate the development of non-fossil energy, to take active, safe and well-ordered steps to develop nuclear energy, and cultivate high-end nuclear power equipment manufacturing industrial clusters.

the 36th Collective Study Session
of the Central Political Bureau of
the Communist Party of China

Ensuring energy security while reducing carbon emissions, the gradual withdrawal of conventional energy must be based on the safe and reliable new energy alternatives. **To take active, safe and well-ordered steps to develop nuclear energy.**



Chinese and global energy industry is shifting towards green and low-carbon development. China aims to peak carbon dioxide emissions before 2030 and achieve carbon neutrality before 2060. Nuclear power development presents broad prospects.

Share of Nationwide Nuclear Power Generation and Installed Capacity^{Note}

2.2%

Share of nationwide
installed nuclear capacity

4.9%

Share of nationwide nuclear
power generation

Note: Data from the 2021 National Power Industry Statistics Overview issued by the CEC.

Vision

A world-class nuclear energy enterprise with international competitiveness

- Robust business, achieving stable performance in operations and high-quality commercial operations of construction projects
- Financial stability, ensuring capital security, and stable operating performance
- Stable returns, keeping promises and maintaining long-term stable dividend payout

Purpose

Continuing to create optimal benefits for our customers, shareholders, employees and the society

- Keeping improving safety performance by benchmarking against world-class standards
- Adopting "centralization, specialization, and standardization" (CSS) strategy to enhance multi-unit management and control
- Implementing lean management, strictly controlling project construction costs and optimizing O&M costs



- Dedicated to developing clean energy, focusing on nuclear power and comprehensive use of nuclear energy
- Improving resources utilization rate and reducing resources consumption
- Controlling emissions strictly and protecting the environment

- Pushing ahead with the approval and kick-off of new projects to maintain leading position in installed capacity
- Accelerating the R&D of advanced nuclear power technology, improving the level of independent innovation
- Exploring investments in supportive energy storage projects related to nuclear power as appropriate



By 2035

- ✓ Achieving excellence in key performance indicators such as safety operations, project construction, and operational efficiency;
- ✓ Expanding the use of nuclear energy for services such as heating, steam supply to an appropriate extent to enhance the comprehensive benefits of the comprehensive use of nuclear energy.



14th Five-Year

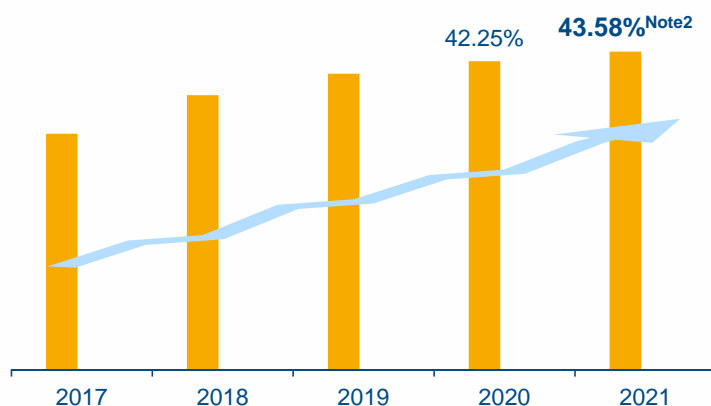
- ✓ Focusing on the five aspects comprising safety, quality and environmental protection, project construction, science and technology innovation, operational efficiency, and corporate management;
- ✓ To realize the quality commercial operation of Hongyanhe Unit 5&6, Fangchenggang Unit 3&4 and Huizhou Unit1;
- ✓ Striving to commence the construction of 2 to 3 new units every year.



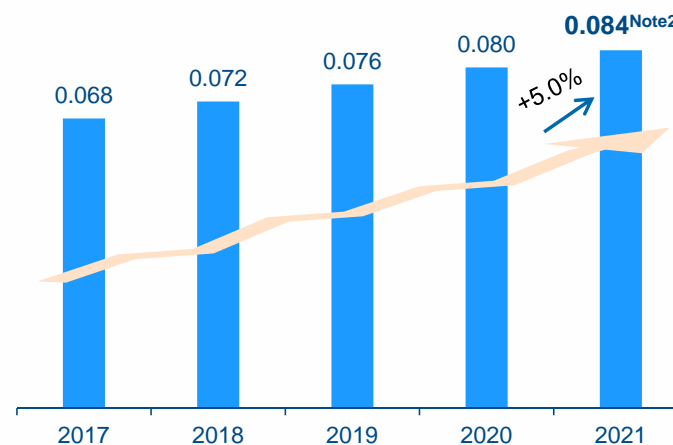
the Dividend Distribution Plan for 2021-2025^{Note1}

On the preconditions that no significant changes happen to our business, performance and finance, and approval is obtained from AGM of the relevant fiscal year, the Company aims to achieve a moderate increase in the annual dividend ratio based on the dividend ratio in 2020(42.25%), and provide shareholders with stable and reliable returns.

Dividend Ratio (total dividends/net profit attributable to shareholders of the parent company*100%)



Dividend RMB/share

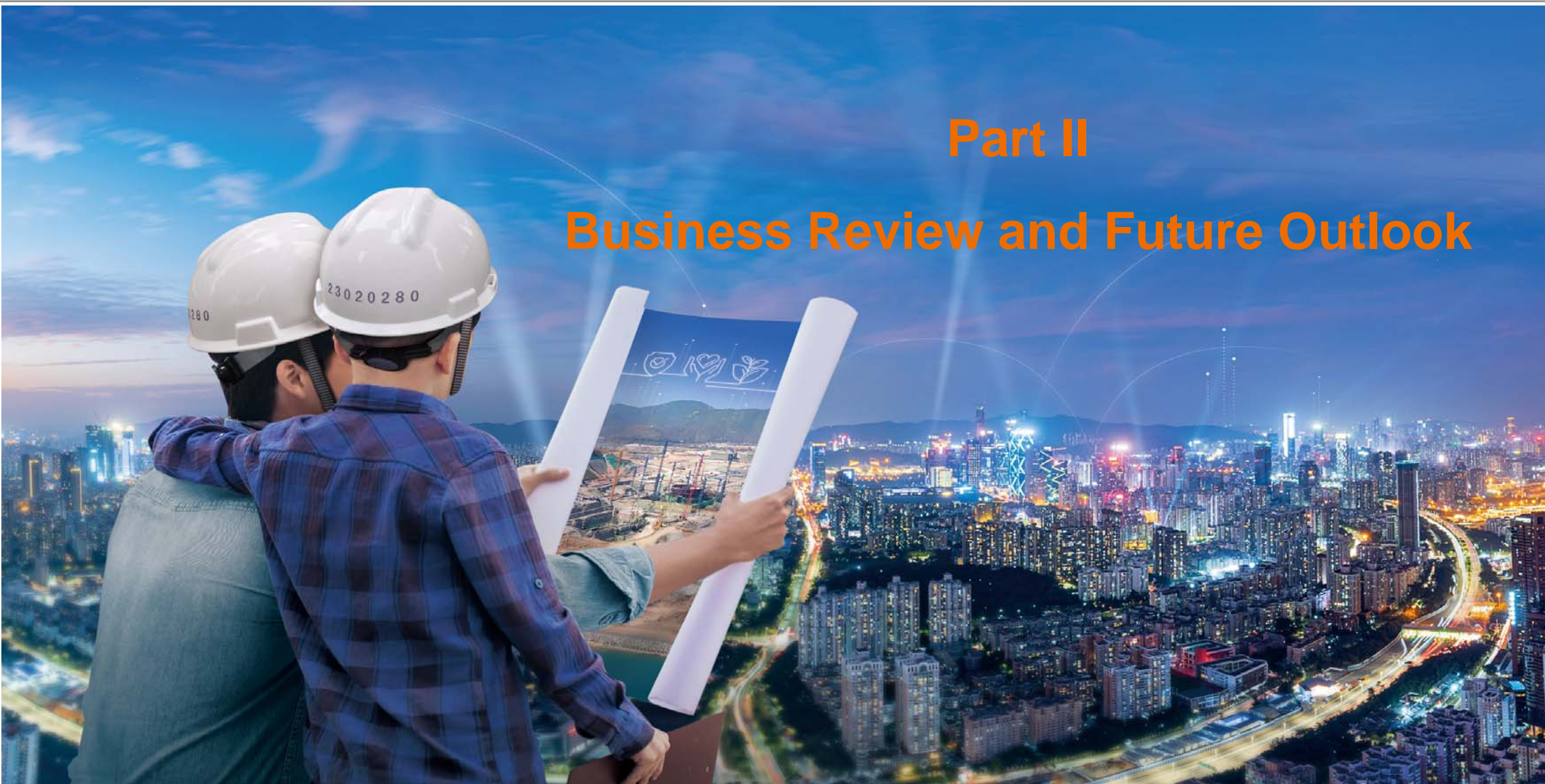


Note1: The Dividend Distribution Plan for 2021-2025 has been approved at the 2020 AGM.

Note2: All dividend in 2021 will be distributed after being approved by our shareholders at the 2021 AGM and is expected to be distributed on around July 7, 2022.

Part II

Business Review and Future Outlook



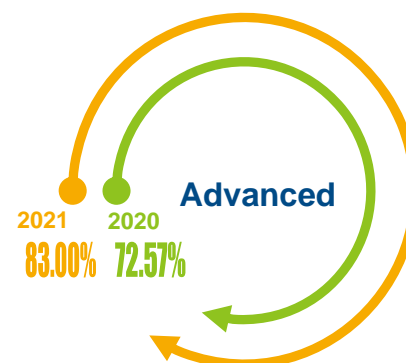
Nuclear safety is the cornerstone of the company's survival and development



On-site Management



the ratio of WANO^{Note} indicators achieves the world's advanced level and excellent level, leading among industry peers



achieving the world's top 1/4 level

0

No International Nuclear Event Scale(INSE) incidents at level 2 or above occurred.



achieving the world's top 1/10 level

5622 days

As of December 31, 2021, Ling'ao Unit 1 has been operating continuously and safely for 5622 days.

Note : WANO-World Association of Nuclear Operators, WANO organizations, through their members, use them to formulate internationally common performance indicators for unified management and coordination, which is conducive to strengthening the exchange of nuclear power technology, experience and accident information to continuously improve the safety and reliability of NPPs in the world.

广东省积极应对电力供应紧张局面 全力保障全省电力有序供应



2021年9月25日 证券时报e公司讯，广东省委省政府高度重视，精心组织并全力采取有效措施，积极应对近期电力供应紧张状况。全力增加电力供给，保障广东省电煤供应，督促天然气供应主体保障天然气供应...

人民资讯 百度快照

广西明确：限电不拉闸，限气(天然气)不关阀 腾讯新闻



2021年10月20日 今年以来,国内电力、煤炭供需持续偏紧,一些地方出现拉闸限电。广西能源供应基本平稳有序,但能源电力供需形势仍十分严峻。《通知》对做好广西能源电力保供工作进行了明确要求。坚决...

腾讯网 百度快照

福建启动阶段性有序用电,官方:不是拉闸停电



2021年9月28日 9月1日-24日全社会用电增长17.3%，平均气温比去年同期高3-4℃，降温用电居高不下，以及电煤紧张、来水特枯、罕见干旱、机组长时间高负荷运行导致缺陷增多，火电、水电发电出力严重受...

界面新闻 百度快照

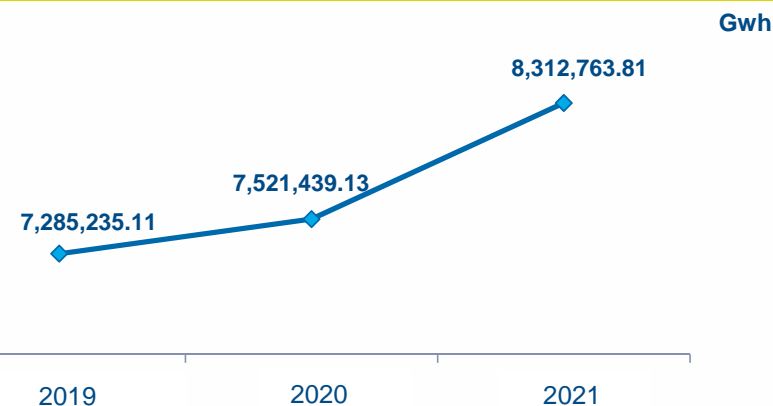
面对全国限电,东三省辽宁首当其冲,黑吉紧跟其后 腾讯新闻



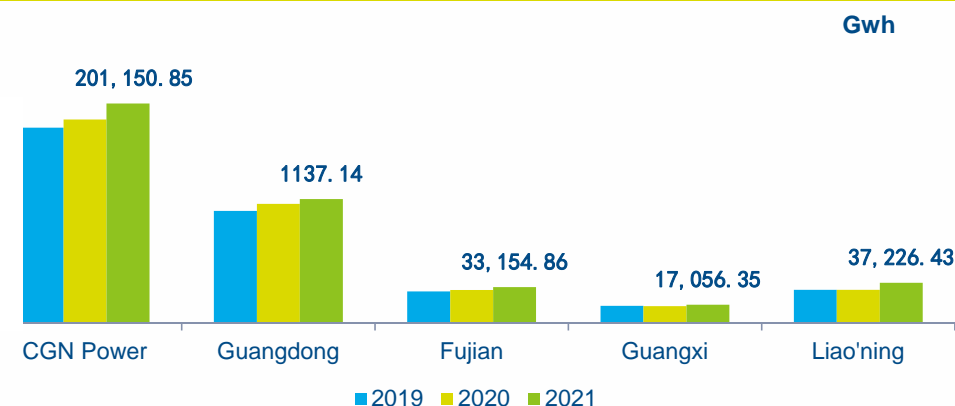
2021年9月25日 限电政策在辽宁出台以后,吉林,黑龙江也陆续开始限电。限电政策要从当前执行到年底,国家确实是高瞻远瞩。怎么做目的简单来说一下,并不是说国家没有钱了,用不起电了。是国际环境有变化...

腾讯网 百度快照

National Power Demand^{Note}



On-grid Power Generation in Total and by Region





2020

Total: 17 Outages, 553 days,
Including 15 refuelling outages
and 2 initial outages



2021

Total: 16 Outages, 557days
Including 13 refuelling outages,
2 ten-year outages and an initial outage



Created excellent records of refuelling outages

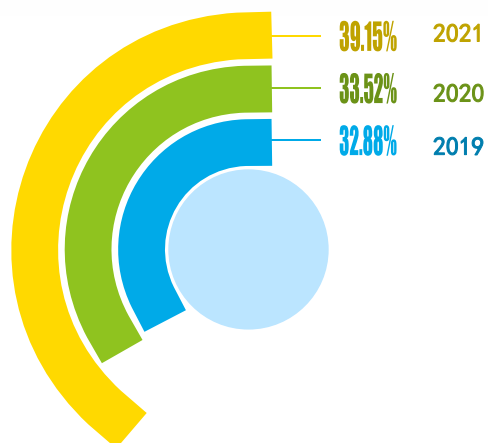
L409: ten-year outage
created the record of the shortest
duration for the refuelling outages
of the same type units

Y304: refuelling outage
created the record of the shortest
duration for the refuelling outages
of the CPR1000 units

NPPs	Utilization (Hours)		
	2019	2020	2021
Daya Bay	8231	8437	8369
Ling'ao	7589	7679	8212
Lingdong	7585	7288	7177
Yangjiang	7442	6953	8031
Taishan	7502	6605	5642 ^{Note}
Fangchenggang	7898	7752	8345
Ningde	7200	7519	8102
Hongyanhe	7314	7307	8014
Average	7507	7309	7731

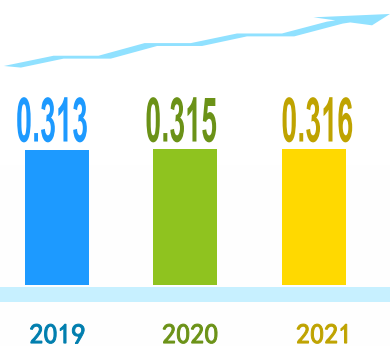
Note: Taishan Unit 1 began shutdown and inspection on July 30, 2021.

Share of Market-based Power Generation



Average Market-based Power Tariff (Tax Exclusive)

RMB/kWh





Hongyanhe Unit 5 commenced commercial operation on July 31, 2021.










Fangchenggang Unit4 completed the roof installation on January 24,2021.
Fangchenggang Unit3 commenced the cold functional test on May 15, 2021.



Cangnan Unit 2 officially commenced construction on December 30, 2021.



Huizhou Unit 1 completed the roof installation on December 24, 2021.

Units	Civil Construction	Equipment Installation	Commissioning	Grid Connection	Expected COD
<u>Hongyanhe Nuclear</u>					
Unit 6					2022H1
<u>Fangchenggang Nuclear</u>					
Unit 3					2022H2
Unit 4					2024H1
<u>Huizhou Nuclear*</u>					
Unit 1					2025
Unit 2					2026
<u>Cangnan Nuclear*</u>					
Unit 1					2026
Unit 2					2027

Note1: As of December 31, 2021.

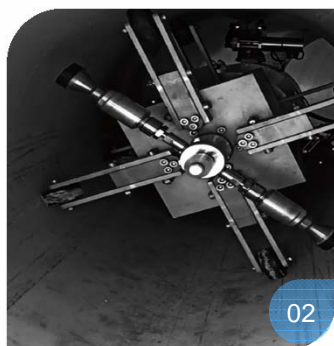
Note2: Civil construction phase refers to the process from the First Concrete Day ("FCD") to the proper roof installation of the main plant of the nuclear reactor.

Note3: Equipment installation phase refers to the process from the installation of nuclear island equipment upon the roof installation of the main plant of the nuclear reactor to the nuclear island main system meeting the conditions to conduct cold function tests.

Note4: Commissioning phase refers to the process of conducting cold function tests for nuclear island main system and commencing joint commissioning for the power plant.

Note5: Grid connection phase refers to the commissioning of generators upon the first grid connection with the power grid, demonstrating that the power generating units are capable for power generation.

Note*:Huizhou and Cangnan NPPs are managed by the Company as entrusted by the controlling shareholder.



Technical improvements and innovations solve key technical issues

- 01 Huizhou Unit 1 used 3D modeling to ensure roof installation was accurate and attained success in installation in one take.
- 02 During the 10- year outage, Lingdong Unit 1 used a robot in the anti-corrosion maintenance of the pipeline, which the effect of the maintenance is better than that with traditional technology. The safety is guaranteed and the reliability of pipeline is highly improved.
- 03 Hongyanhe NPP used the cold source safety comprehensive information management system, which improved the efficiency of cold source information acquisition and provided technical support for timely and effective cold source decision-making.

Intellectual property rights strengthen competitiveness

In 2021, the number of patents we have applied for reached 1,282, of which 893 obtained patent authorization. 4 invention patents won the 22nd WIPO-CNIPA Award for Chinese Outstanding Patented Invention & Industrial Design issued by the China National Intellectual Property Administration.



- 01 CNPRI: Fuel Assembly Loading and Unloading Method of Pressurized Water Reactor Nuclear Power Plant
- 02 CGN Engineering: Transient Test Control Method and System During the Commissioning and Start-up of a Nuclear Power Plant
- 03 CGN Engineering: Nuclear Power Plant Unit Frequency Control Method and System
- 04 CGN Engineering: Cable for High Temperature Resistant Nuclear Power Plant and its Manufacturing Method

ESG

ESG: Environmental, Social and Governance

ESG promotes sustainable development, focus on environmental, social and governance, highly consistent with the philosophy of new development in China, has become one of the most important development directions in the global responsible investment.

ESG is highly consistent with the management philosophy of CGN Power



E: Environmental

Natural energy powering nature, fulfill the responsibility of biodiversity conservation, adhere to green development, zero carbon emission, strive for a bluer sky and clearer water.



S: Social

Care for employees, multilateral cooperation, boosting the economy and benefiting the people there in which we conduct a construction project.



G: Governance

Credible and transparent communication, maintain a high level of corporate governance, protect the interests of shareholders and to enhance enterprise value.



ESG Rating



ESG Prize

Oversea

- ✓ S&P rating: 44
- ✓ FTSE rating: 2.40
- ✓ MSCI rating: BB
- ✓ CDP-Climate change: B-
- ✓ Morning Star index: 29.0

Domestic

- ✓ Wind Rating: A
- ✓ Huazheng Index rating: AA
- ✓ Huazheng Carbon neutrality rating: AAA
- ✓ Central Finance rating^{Note}: A+
- ✓ Business rating: A-

- ✓ ESG reporting Prize from Hong Kong Profession Management Association
- ✓ Rating A by Shenzhen Security Exchange for information disclosure
- ✓ The Company's ESG case was adopted into public company ESG cases Complied by China Association for Public Companies

Note: Central Finance rating refers to the rating of green finance school, Central University of Finance



In 2021, a total annual on-grid power generation of
201,150.85GWh,
 equivalent to **0.45 million hectares** of forest



Standard Coal
Consumption Reduction



approximately
60.85
million tons

CO₂ Emission
Reduction



approximately
167.36
million tons



SO₂ Emission
Reduction

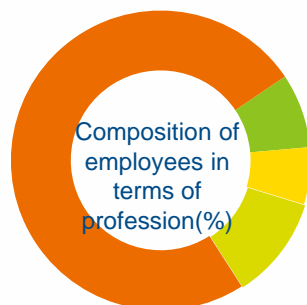
approximately
32,200 tons



Oxynitride
Emissions Reduction

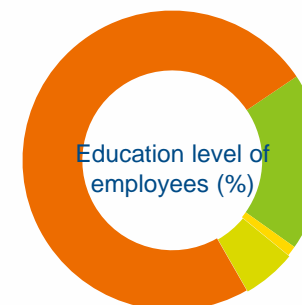
approximately
36,000 tons





Operation and management employees	8.06%
Business function employees	6.19%
On-site operation and support employees	11.02%
Other technicians	74.73%

- 443 reactor operators with valid licenses
- 891 senior reactor operators with valid licenses
- 139 employees obtain the qualification for fuel operators
- 1672 employees obtained or maintained registered qualifications in respect of construction projects



Doctor's degree	1.09%
Master's degree	19.43%
Bachelor's degree	73.69%
College and below	5.79%



Wang Jiantao won the honorary title of "China Skills Award" and "Guangdong Nanyue Technical Expert"

Cui Li and Zhang Chunyu won the honorary title of "National Technical Expert"

Wang Yan won the title of "Guangdong Nanyue Technical Expert"

Lan Yonghui was awarded "Guangdong Quality Craftsman"

Proactive Disclosure of Information
Transparent Public Communication
Win-win Community Development



The 18th China-ASEAN Expo



The 23rd China Hi-tech Fair



CNPRI Beacon Project---Promoting
NPP in Shenzhen Middle School



We actively participate
in social and charitable activities.

In 2021, we had over **12,700** employee volunteers
and nearly **27,000** persons participating in public
service activities for a total of over **48,000** hours.



8·7 Public Open Day in 2021



The Residing Children Assistance
and Care Campaign



Silkworm Breeding Skills Training
to Silkworm Raisers in the Village



Safety First
Quality Foremost
Pursuit of Excellence



01

To Safeguard nuclear safety



02

To Push forward construction of all units under construction



03

To ensure all in-service power units operate safely and stably



04

To strengthen electricity marketing



05

To promote development through self innovation



06

To implement Lean Management



07

To implement risk management

Part III

Financial Review



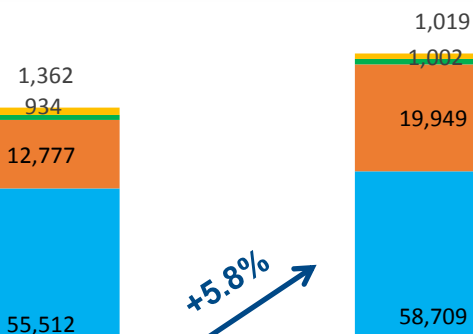
Revenue^{Note}

RMB M

70,585

+14.3%

80,679



2020

2021

- Sales of goods and others
- Rendering of services
- Construction, installation and design services
- Sales of electricity

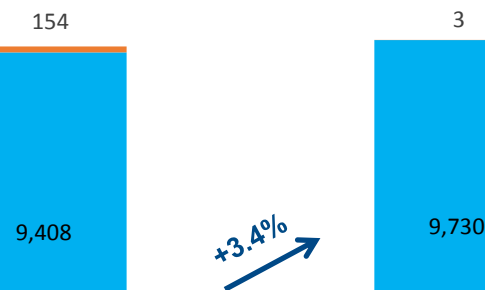
Profit Attributable to Shareholders of the Parent Company

RMB M

9,562

+1.8%

9,733



2020

2021

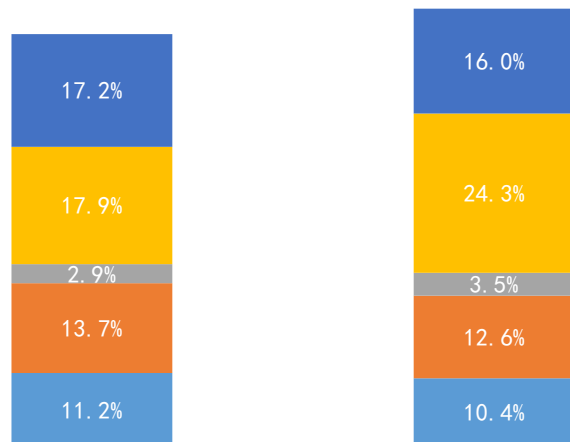
- Recurrent
- Non-recurrent

Note: Hongyanhe Nuclear is not included in the consolidated financial statements, therefore the revenue of Hongyanhe Nuclear is not included in the Company's revenue.

Cost as % of Revenue

62.9%

66.8%



2020

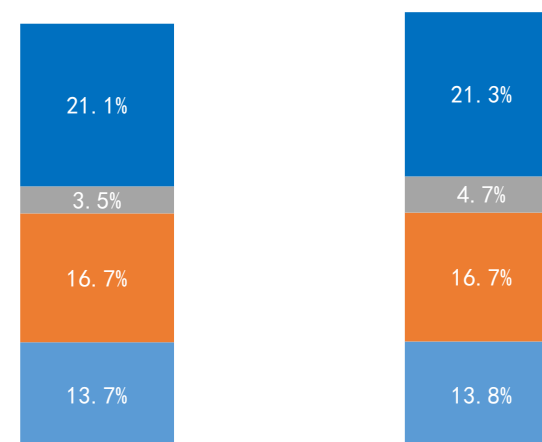
2021

- O&M and others
- Construction, installation and design services
- Provision for spent fuel management
- Depreciation of fixed assets
- Cost of nuclear fuel

Cost as % of Revenue (Excluding Construction, installation and Design Services)

55.0%

56.5%



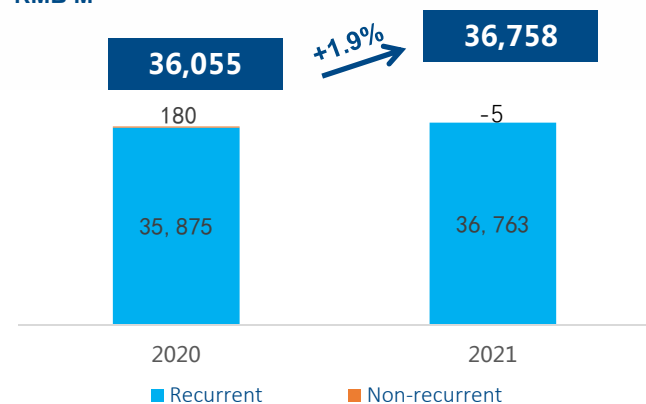
2020

2021

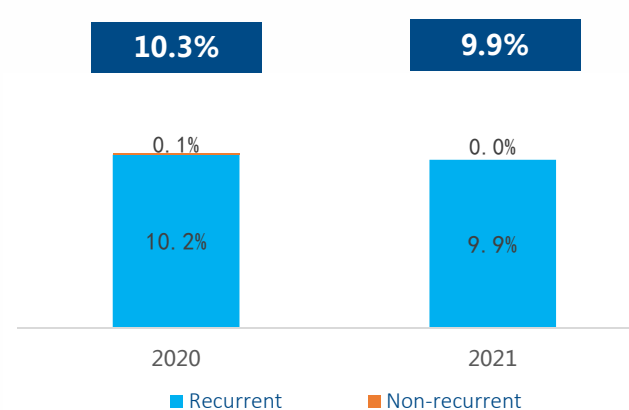
- O&M and others
- Provision for spent fuel management
- Depreciation of fixed assets
- Cost of nuclear fuel

EBITDA⁽¹⁾

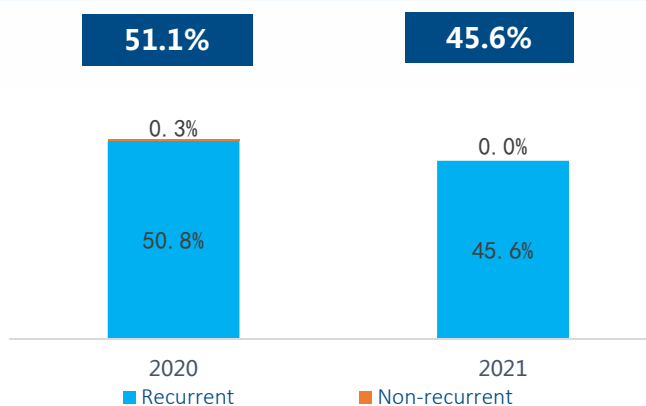
RMB M



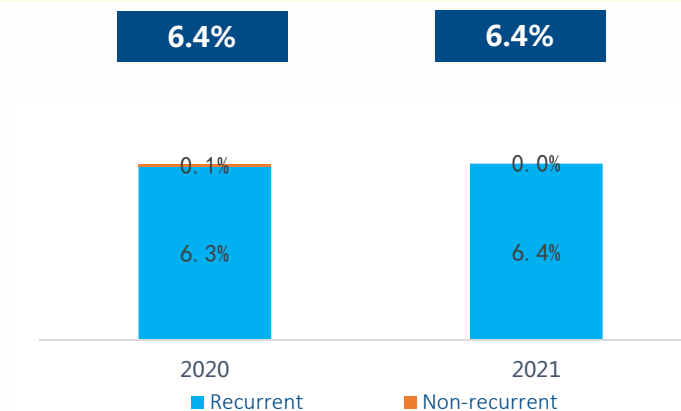
ROE (Excluding Non-controlling Interests)⁽³⁾



EBITDA Margin⁽²⁾



ROA⁽⁴⁾



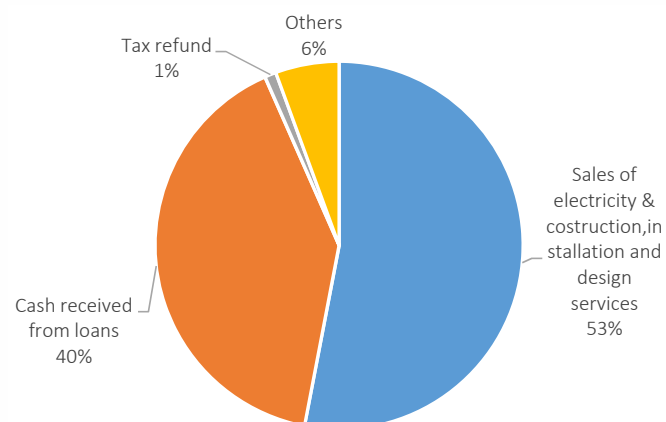
Note 1: EBITDA=Total profit + Interest expenses recognized in profit or loss + Depreciation and amortization

Note 3: ROE(Excluding non-controlling interests)= Net profit attributable to shareholders of the parent company/Average equity attributable to shareholders of the parent company (the arithmetic mean of the opening and closing balances) * 100%

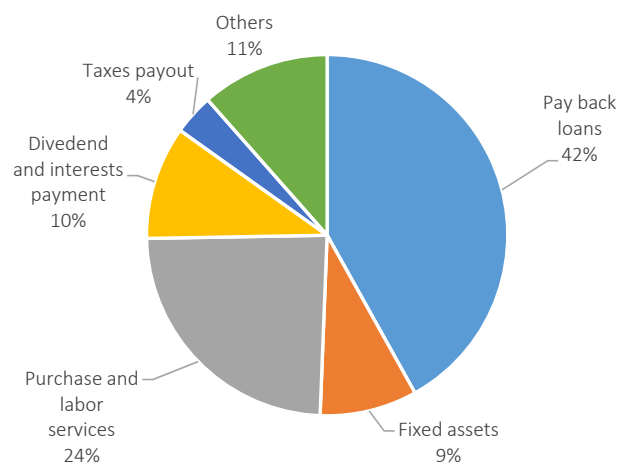
Note 2: EBITDA margin= EBITDA/Revenue * 100%

Note 4: ROA(Return on total assets)= (Total profit + Interest expenses recognized in profit or loss)/Average total assets (the arithmetic mean of the opening and closing balances) * 100%

Cash Inflow Structure in 2021

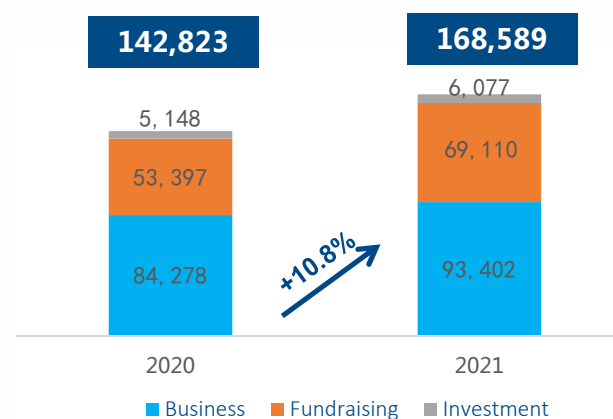


Cash Outflow Structure in 2021



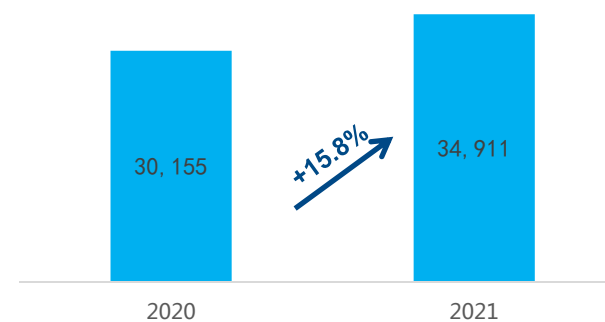
Cash Inflow in 2021

RMB M



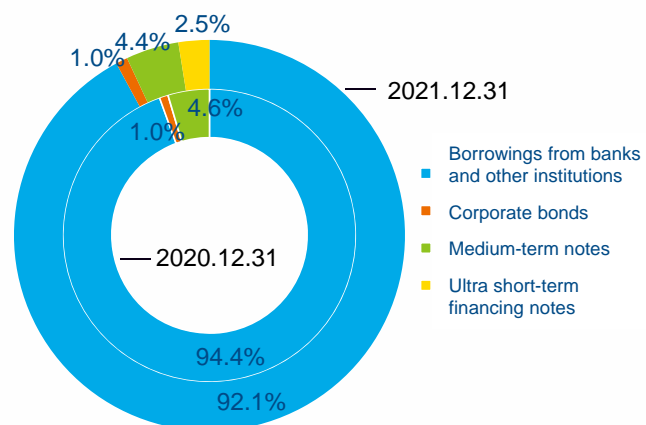
Net Operating Cash Flow in 2021

RMB M

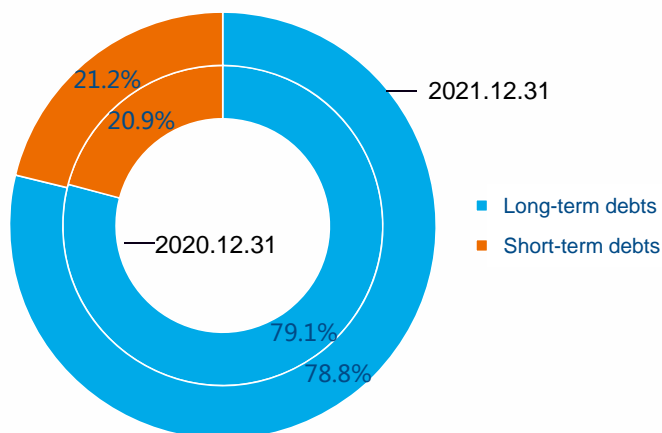




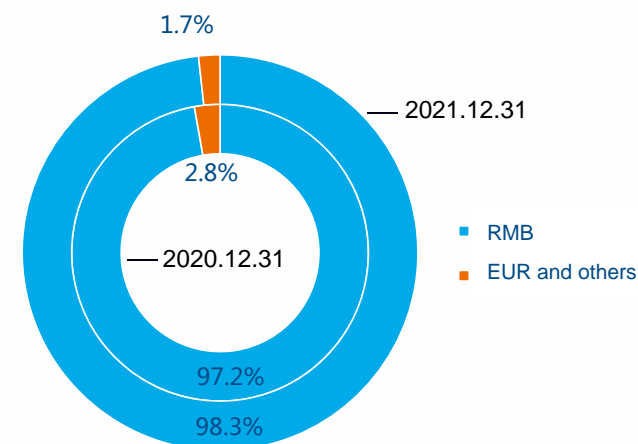
In 2021, the Company has issued a total of RMB11.5 billion of bonds.



Debts are mainly from bank borrowings

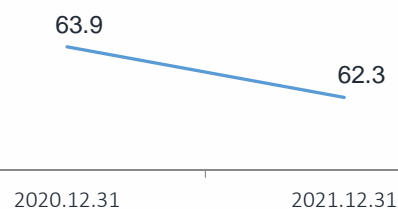


Long-term debt predominates

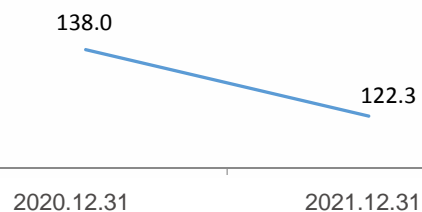


RMB debt predominates

Asset-Liability Ratio %⁽¹⁾



Debt to Equity Ratio %⁽²⁾



Capital Expenditure⁽⁴⁾

RMB M

15,408

16,328

456

162

14,952

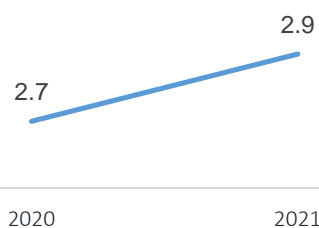
16,166

2020

2021

■ Investment in fixed assets
■ Major investment in equity

Interest Coverage⁽³⁾



Note1 : Asset-Liability ratio=(Total liabilities / Total assets)*100%

Note2 : Debt to equity ratio=Net debt (the total amount of bank and other borrowings less cash and cash equivalents and other deposits over three months)/Total shareholders' equity*100%

Note3 : Interest coverage=(Total profit + Interest expenses recognized in profit or loss)/(Interest expenses recognized in profit or loss + interest expenses capitalized)

Note4 : The capex here refers to cash flows.

中广核 CGN

| 严 | 慎 | 细 | 实 |

Thank you!

