

**SUSTAINABLE
DEVELOPMENT REPORT
2019**

Powering
Life with **Green
Energy**





2019



2018



2013



2014



2015



2012



2011



2010

About the Report



2017



2016

This is the 10th annual Sustainable Development Report published by China Resources Power Holdings Company Limited ("CR Power") for the year from January 1 to December 31, 2019. The currency used in the report are all expressed in renminbi ("RMB") unless otherwise specified as HK dollars ("HKD").

Basis of Preparation

This Report is prepared with reference to the Environmental, Social and Governance Reporting Guide as set forth in Appendix 27 of the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited issued by the Stock Exchange of Hong Kong Limited ("HKEx"), Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI Standards), Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises – Power Production Industry (CASS-CSR 3.0) and Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 4.0) – Basic Framework of the Chinese Academy of Social Sciences, Guidelines to the State-Owned Enterprises Directly under the Central Government on Fulfilling Corporate Social Responsibilities released by the State-Owned Assets Supervision and Administration Commission of the State Council (SASAC), CR Group Social Responsibility Program Management Rules, and CR Power Social Responsibility Program Management Standards.

Scope

This report relates to China Resources Power Holdings Company Limited and its affiliates (see Organizational Structure at page 17), referred to herein as "We," "the Company," or "CR Power."

We have engaged an independent third party to provide assurance of 13 performance indicators in this report. The scope of this engagement covers all operating thermal power plants that are wholly-owned, controlled by CR Power in 2019 (indicated by △, see pages 14–15 for details).

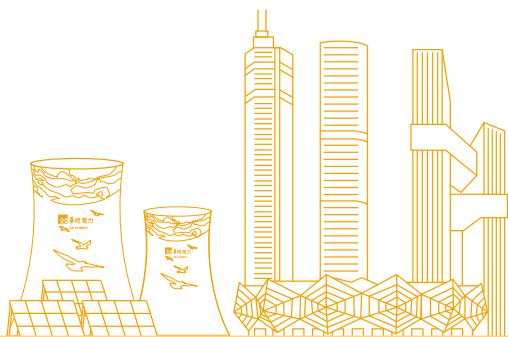
Access to this Report

This report is available on the HKEx website (www.hkexnews.hk) and the CR Power website (https://www.cr-power.com/power_en/SocialResponsibility/Sustainable/).

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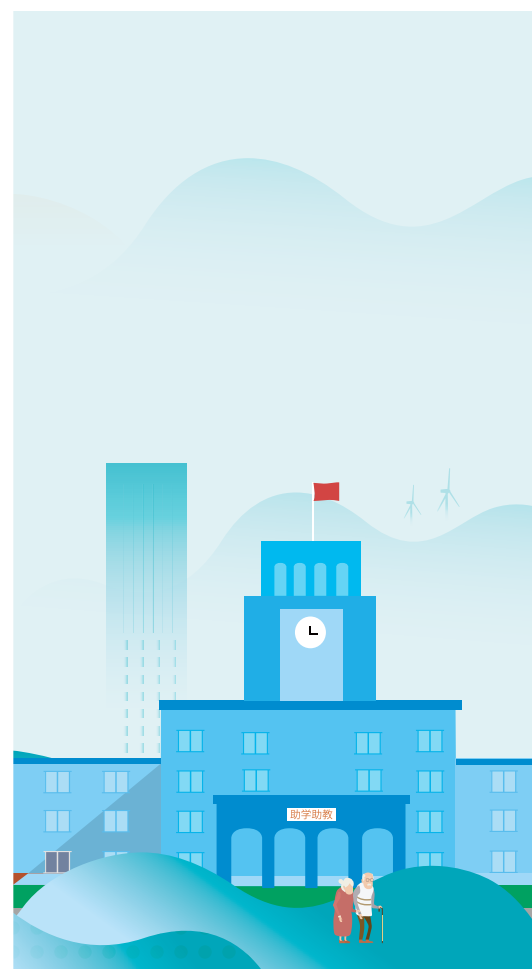
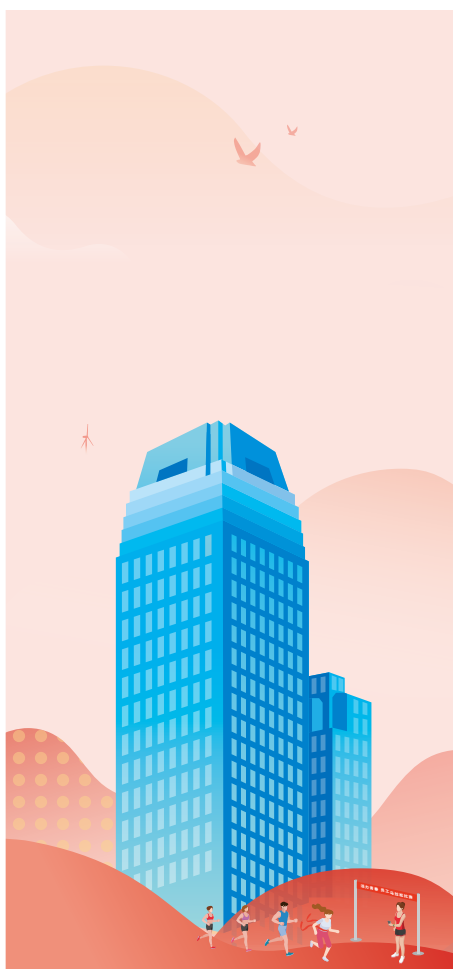
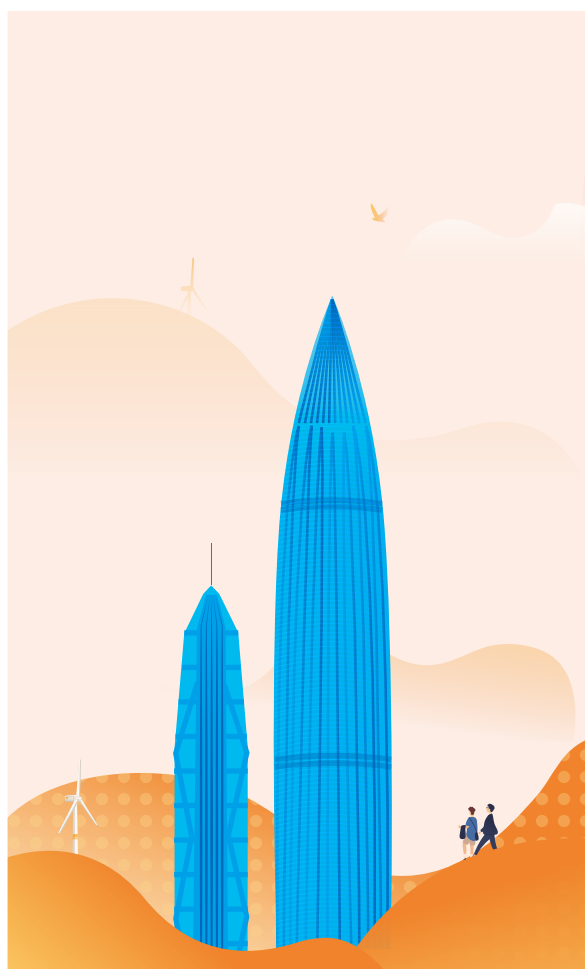
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Assurance Report

Independent practitioner's limited assurance report

To the Board of Directors of China Resources Power Holdings Company Limited

We have undertaken a limited assurance engagement in respect of the selected sustainability information of China Resources Power Holdings Company Limited (the "Company") listed below and identified with an asterisk (*) on pages 89 to 90 (the "Identified Sustainability Information") in the Company's sustainability report for the year ended 31 December 2019 ("the 2019 Sustainability Report").

Identified Sustainability Information

The Identified Sustainability Information for the year ended 31 December 2019 is summarised below:

- Nitrogen Oxides (NO_x) emissions (kt)
- Nitrogen Oxides (NO_x) emission rate (g/kWh)
- Sulphur Dioxide (SO₂) emissions (kt)
- Sulphur Dioxide (SO₂) emission rate (g/kWh)
- Particulates emissions (kt)
- Particulates emission rate (g/kWh)
- Installation rate of desulfurization device in coal-fired thermal power plants (%)
- Installation rate of denitrification device in coal-fired thermal power plants (%)
- Natural gas consumption (Million cubic meters)
- Diesel consumption (kt)
- Coal consumption (kt)
- Net generation coal consumption rate (g/kWh)
- Purchased electricity (MWh)

Our assurance was with respect to the year ended 31 December 2019 information only and we have not performed any procedures with respect to earlier periods or any other elements included in the 2019 Sustainability Report and, therefore, do not express any conclusion thereon.

Criteria

The criteria used by the Company to prepare the Identified Sustainability Information is set out in Note 3 of "Key Performance Index" on pages 89 to 90 of the 2019 Sustainability Report (the "Criteria").

The Company's Responsibility for the Identified Sustainability Information

The Company is responsible for the preparation of the Identified Sustainability Information in accordance with the Criteria. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation of Identified Sustainability Information that is free from material misstatement, whether due to fraud or error.

Inherent limitations

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.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the International 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.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Identified Sustainability Information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised), Assurance Engagements other than Audits or Reviews of Historical Financial Information issued by the International Auditing and Assurance Standards Board. That standard requires that we plan and perform this engagement to obtain limited assurance about whether the Identified Sustainability Information is free from material misstatement.

A limited assurance engagement involves assessing the suitability in the circumstances of the Company's use of the Criteria as the basis for the preparation of the Identified Sustainability Information, assessing the risks of material misstatement of the Identified Sustainability Information whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the Identified Sustainability Information. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

The procedures we performed were based on our professional judgement and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records.

Given the circumstances of the engagement, in performing the procedures listed above we:

- Made appropriate inquiries of management of the Company and its subsidiaries;
- Assessed the design of critical process and control for collecting and reporting the Identified Sustainability Information;

- Undertook limited analytical procedures over the Identified Sustainability Information;
- Reviewed relevant supporting information and documents for Identified Sustainability Information provided by management; and
- Did not perform any testing on the Continuous Emission Monitoring System of the Company.

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 obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether the Company's Identified Sustainability Information has been prepared, in all material respects, in accordance with the Criteria.

Limited Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Company's Identified Sustainability Information for the year ended 31 December 2019 is not prepared, in all material respects, in accordance with the Criteria.

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

Certified Public Accountants

Hong Kong, 7 May 2020



Wang Chuandong

Chairman of the Board
of Directors of CR Power

Letter from the Chairman

Energy powers economic and social development. In an era marked by unprecedented changes in the global economy as well as the energy and power industries, we are faced with issues and solutions, challenges and opportunities. In this context, CR Power has been pursuing sustainable development and energy business transformation by maintaining growth, improving business structure, promoting reforms and innovation, and strengthening corporate governance. In 2019, we further increased the proportion of renewable energy in

our business; enhanced governance, operation, and management, and strengthened risk prevention. We have had a stellar year with profit attributable to owners of the Company rising to HKD 6.59 billion, up 66.8% from 2018. We also won numerous Asian Power Awards, Environmental and Ecological Contribution Award, the inaugural Best Social Responsibility Award of the Chinese Enterprise ESG "Golden Responsibility Award," and multiple Hong Kong Green Awards.

Green development to combat climate change

The energy industry is a major contributor to greenhouse gas emissions and thus shoulders a major responsibility for energy conservation and emission reduction. Taking a proactive response to climate change, we have been increasing the mix of renewable energy, eliminating outdated production capacity, and making coal-fired power plants more eco-friendly. In transitioning more towards renewable energy, we are investing

heavily in onshore wind farms and also drawing up plans for offshore projects. As at the end of 2019, attributable operational generation capacity of our renewable energy projects reached 23.3% of our total installed capacity, up 3.2 percentage points from the year before. In the thermal power sector, we are upgrading our power plants for higher efficiency. The net generation standard coal consumption rate of our subsidiary coal-fired power plants was 296.64g/kWh in 2019, 2.9g/kWh lower than in 2018, equivalent to an annual savings of 408.9 metric kilotons of standard coal. In addition, to improve our environmental management system and environmental performance, we have been monitoring quantitative indicators, including the comprehensive energy consumption rate as well as emissions of SO₂ and NO_x, to contribute to clearer skies.

Improving safety management

Safe production and occupational health are essential to building a sustainable business and are a core commitment of an employer to its employees. Recognizing the paramount importance of safety, we have enhanced our safety management system and raised the safety awareness and skill of our employees and stakeholders. Additional improvements have come from our risk screening, safety teams, safety drills, occupational health management, and the development and application of safety-related technologies. As at the end of 2019, 14 subsidiaries of CR Power had a 10-year or longer safe production record, and 29 had a 5-10 year safe production record.

Transforming businesses for sustainable growth

Amid the structural reform of the domestic power industry and more rigorous industry supervision, we are actively aligning with national policies by strengthening management and compliance, seeking progress while ensuring stability, and driving business innovation and transformation, so as to achieve sustained business and profit growth. To this end, we have been promoting the upgrade of traditional energy systems in areas of smart power distribution, smart industrial parks, and industrial energy efficiency; the development and application of hydrogen

power, energy storage, and other latest energy solutions; as well as our Lingxi Smart Energy Cloud Platform built on IOT, big data, and AI technologies. To better serve our customers, we have set up differentiated power sales strategies, expanded sales programs, selectively developed power distribution services, and offered complementary and integrated energy solutions. In 2019, 22 of our provincial-level sales companies sold energy in regional electricity markets; total sales were 87.8 TWh, up 36% year-on-year; number of customers also went up 90% to 5,358.

Anti-poverty and community engagement

2019 was a critical year for China's targeted poverty alleviation program. CR Power has been committed to this endeavor by building photovoltaic (PV) power stations and wind farms in impoverished areas and giving the local community a share of the profit from these renewable energy projects. We also support agriculture and livestock industries and infrastructure projects, in a way that is appropriate for the local conditions, to create jobs and improve the quality of education to achieve sustainable poverty reduction.

As of the end of 2019, our wind farms and PV power stations in Hubei, Guangdong, and Sichuan were bringing RMB 36 million of income a year earmarked for poverty alleviation, or RMB 3,000 for each of the 12,000 poverty-stricken households in those areas. In addition, we are dedicated to charity programs, educational support, caring for special groups, and volunteer services. In 2019, we donated RMB 117 million in cash and supplies to support the anti-poverty campaign and the continued development of communities.

Strengthening communication

We take day-to-day communication with our stakeholders seriously and have opened various channels to receive comments and suggestions. We frequently share with our stakeholders the latest changes to our operations, culture and values, and future plans, to help them understand and appreciate our actions. At the same time, we incorporate their expectations and concerns in our corporate strategies and operations and

management. Internally, we report our work on social responsibility to the Board of Directors of the Company ("Board of Directors") each month and hold multiple meetings a year on sustainable development to review stakeholder feedbacks. Externally, for greater public engagement, we held our 4th Open Power Plant Month, which attracted over 2,000 visitors to 39 of our power plants. Also, for the first time ever, we invited 18 college students of media and related majors to visit our power plants and interview our employees, giving young people a first-hand look at modern Chinese energy companies.

The COVID-19 virus epidemic outbreak spread across the country as this Report was being prepared, touching the heart of every CR Power employee. We have quickly formed a leading group for epidemic prevention and control, and required all our subsidiaries to ensure employee wellbeing and the stable supply of heat and power, especially in the hardest-hit areas. Our employees showed the utmost dedication and alertness in monitoring generating equipment, resolving technical issues, and conducting on-site inspections, ensuring people in the affected areas have the power and heat they needed.

In 2020, we will continue to seize all available opportunities to promote sustainable development and act in the best interest of our stakeholders. With a strongest sense of mission, we endeavor to build CR Power into an international, trusted and preferred integrated energy service provider.

March 30, 2020

01 »

Wind Power Hits A New High

Following grid connection on December 12 by the #15, #16, and #18 wind turbines of Longquan Wind Farm in Sui County, Hubei, CR Power's grid-connected wind capacity reached 9,000 MW, only 198 days after hitting the 8,000 MW mark on May 28, 2019. In 2019, CR Power accelerated its investment in wind power and , further increasing the Company's contribution from renewable energy as well as a more optimized energy mix.

02 »

Hezhou-Guangdong Power Transmission Project

On April 19, the Hezhou-Guangdong anti-poverty project of the Company's Hezhou power Plant, which is situated in the poor county of Fuchuan, Guangxi province, was completed, and will supply 6 TWh of power to Guangdong province in 2019-2020 as planned, which will increase its local industrial output by RMB 1.98 billion and tax revenue by RMB 90 million, contributing to the Fuchuan economy and lifting the county out of poverty. This project is also the first in China to transmit excess power from a poverty-stricken region to an economically developed region, serving as a model for targeted poverty alleviation by central enterprises or energy companies.

Milestones in 2019



10 «

Two Generators for UHV Project in Operation

The #1 and #2 generators of Xilingol Power Plant completed their 168-hour full-load trial operation on November 11 and December 28, respectively. As part of CR Power's first ultra-high voltage (UHV) power transmission project, this power plant will supply electricity to the 1,000 kV UHV AC transmission line from Xilingol to Shandong. Being one of China's first coal-electricity integration projects, the plant will help alleviate the power shortage in Beijing-Tianjin-Hebei region and in Shandong, improve regional air quality, and optimize the geographical distribution of power generators.

09 «

Issuance of RMB 9.8 billion of Corporate Bonds and Perpetual Notes in China

On March 18 and August 16, CR Power issued RMB 4.8 billion of three-year corporate bonds on the Shanghai Stock Exchange with an average coupon rate of 3.56%. On December 17 and 24, CR Power issued RMB 5 billion of "3+N year" perpetual notes in the NAFMII market with an average coupon rate of 3.97%. Both instruments provide long-term, cost-effective capital for the Company to achieve sustainable growth, optimize capital structure, and advance strategic transformation.

03»

First Offshore Wind Farm Received Government Approval

On December 17, CR Power's Cangnan #1 Offshore Wind Power Project received government approval, unveiling a new chapter in the Company's renewable energy business and offshore wind projects. This project located to the east of Cangnan County in Wenzhou, Zhejiang province, has a total installed capacity of 400 MW and is complemented by a 220 kV offshore substation and an onshore central control center.



08«

Winner of International and Regional Awards

In 2019, CR Power won 5 Asian Power Awards, including Coal Power Project of the Year (Asia), Wind Power Project of the Year (China), Photovoltaic Power Project of the Year (China), Power Plant Upgrade of the Year (China), and Information Technology Project of the Year (China), becoming the biggest winner in terms of number of awards and award categories. Moreover, CR Power and its subsidiaries have received 11 Hong Kong Green Awards including Corporate Green Governance Award – Corporate Mission, Environmental, Health and Safety Award – Platinum, Green Management Award (Corporate) – Gold, and Sustained Performance (5 years+) Certificate.

04»

Carbon Capture Test Platform commenced operation

On May 15, CR Power's Multi-technology Carbon Capture Test Platform (CCTP) at Haifeng Power Plant, the first Carbon Capture, Utilisation and Storage (CCUS) project in Asia and the third in the world, commenced operation. Designed for ultra-supercritical thermal generating units, CCTP is an open platform that allows customers to test their own carbon-capture technologies. Featuring testing areas, chemical laboratories, and an international exchange center, Phase I of the project is able to capture 20,000 metric tons of carbon dioxide each year.

05»

Runyoushi Won First Prize of Safety Award

On December 20, the Runyoushi Intelligent Safety Control System developed by CR Power won the First Prize of the inaugural Safety Technology Progress Award conferred by the China Association of Work Safety, out of a crowd of 1,113 competing projects. The system received numerous upgrades in 2019 as part of its Phase II development, including new functionalities such as indoor-outdoor positioning and 3D visualization, as well as 22 new or updated video processing algorithms. This system has received 4 invention patents, 1 utility patent, and 5 counts of software copyright, and is recognized as an internationally leading technological achievement by China Occupational Safety and Health Association.

06»

Poverty Alleviation through Wind Farms

CR Power released the Guidelines for Models of Poverty Alleviation through Wind Power Projects to guide and encourage its regional companies to build more wind farms for poverty reduction. In Guangdong and Hubei, an additional 235 MW of capacity from such wind projects came online in 2019, bringing the total to 425 MW. These wind farms are expected to contribute RMB 28.4 million of anti-poverty funds annually, or RMB 3,000 a year for each of the 9,467 poverty-stricken households totaling 28,400 people. They will also generate 900 GWh of renewable energy and reduce carbon dioxide emissions by 0.47 million metric tons each year.

07«

Profitability in All Coal-fired Power Companies

CR Power launched a group-wide campaign to turn around loss-making subsidiaries. The Company developed tailored and flexible strategies for the six coal-fired power companies in Banqiao, Shenyang, Liyujiang, Gucheng, Dengkou, and Lianyuan. By transferring power generation rights, expanding market, using more economic coal, and optimizing costs, CR Power achieved profitability in all its coal-fired power plants.

Assurance
Report

Letter
from the
Chairman

Key
Performance
Indicators

About Us

Responsibility
Governance

2019

Key Performance Indicators

Environmental Performance



Net Generation Standard Coal
Consumption Rate

296.64

g/kWh



Investment in Efficiency
and Emission Upgrade

1.511

RMB bn

SO₂

Sulfur Dioxide
Emission Rate

0.07

g/kWh



NOx Emission Rate

0.12

g/kWh



Particulate
Emission Rate

0.01

g/kWh

Economic Performance



Total Assets

215.74

HKD bn

Attributable Operational
Generation Capacity
40,392

MW



Turnover

67.76

HKD bn

Profit Attributable to Owners of
the Company
6.59

HKD bn

Net Generation Volume of
Operating Power Plants
193,607

TWh



Total Heat Supply

102.48

kJ

Social Performance

Total Number of
Employees
21,746

employees

New Graduates
Employed
331


Safety Investment

112

RMB mn



Charitable donations

117.4

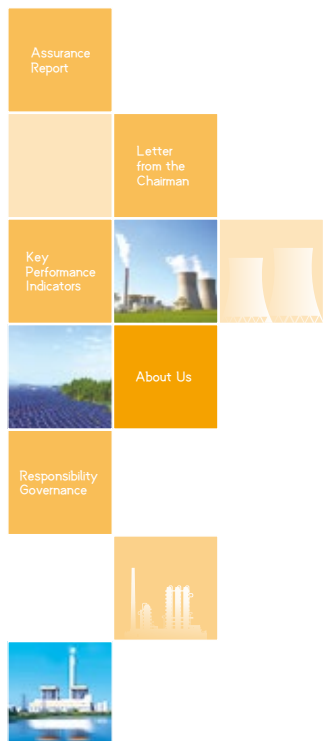
RMB mn



Total Tax Paid

6,334

RMB mn



About Us

CR Power was established in August 2001 and listed on the Main Board of the HKEx in November 2003 (stock code 836). CR Power is a subsidiary of China Resources (Holdings) Co., Ltd. ("CR Group"), is one of the most efficient and profitable integrated energy companies in China. Its businesses mainly cover wind power, thermal power, hydroelectric power, photovoltaic power, distributed energy, power sales, integrated energy services, and coal mining.

Within 18 years since its establishment, CR Power has grown into an integrated energy provider with total assets of HKD 215.736 billion, attributable operational generation capacity of 40,392 MW, and businesses in 30 provinces, autonomous regions, municipalities and the special administrative region. The Company has been listed in the S&P Global Platts Top 250 Global Energy Companies and Forbes Global 2,000 for 13 consecutive years, ranking 147th and 1,170th, respectively, in 2019.

Photovoltaic Power ☺



Thermal Power



Wind Power



Integrated Energy Services



Hydroelectric Power



Distributed Energy



Business Distribution

Our businesses cover 30 provinces, autonomous regions, municipalities (including the special administrative region) across China.

Jiangsu

Changshu(3×650MW) △
Changzhou(2×630MW)
Changzhou Gas(103MW) △
Huaxin(2×330MW) △
Nanjing Banqiao(2×330MW) △
Nanjing Chemical Industry Park(2×35+2×300MW) △
Nanjing Thermal(2×600MW) △
Tongshan(2×1,000MW) △
Xuzhou(4×320MW) △
Yangzhou No. 2(2×630MW)
Zhenjiang(2×630+2×140MW) △
Nantong Wind(65.5MW)
Yancheng Wind(44MW)
Huai'an Photovoltaic(10MW)
Suqian Photovoltaic(20.4MW)

Guangdong

Guangzhou Thermal(2×300MW) △
Haifeng(2×1,000MW) △
Huilai Wind(133.5MW)
Lianzhou Wind(278MW)
Lufeng Wind(66MW)
Leizhou Wind(100MW)
Shantou Chaonan Wind(145.9MW)
Shantou Haojiang Wind(18MW)
Shantou Wind(29.3MW)
Xinfeng Wind(50MW)
Xinyi Wind(39MW)
Xuwen Wind(100MW)
Yangjiang Wind(89.8MW)
Yangjiang Wind Phase II(45.5MW)
Haifeng Photovoltaic(4MW)
Yingde Photovoltaic(29.2MW)

Henan

Dengfeng(2×320+2×600MW) △
Gucheng(2×300MW) △
Jiaozuo Longyuan(2×660MW) △
Shouyangshan(2×600MW) △
Anyang Wind(156.2MW)
Biyang Wind(175MW)
Huaxian Wind(156MW)
Lushan Wind(22MW)
Neihuang Wind(390MW)
Queshan Wind(34MW)
Tanghe Wind(122MW)
Wugang Wind(36MW)
Yanshi Wind(30MW)
Yexian Wind(60.7MW)

Hebei

Bohai Xinqu(2×350MW) △
Cangzhou(2×330MW) △
Caofeidian(2×300MW) △
Caofeidian (Phase II)(1,000MW) △
Tangshan Fengrun(2×350MW) △
Chengde Weichang Wind(246MW)
Qinhuangdao Wind(100MW)
Mulanweichang Wind(150MW)
Handan Wind(100MW)
Caofeidian Photovoltaic(11.4MW)

Liaoning

Panjin(2×350MW) △
Shenhai Thermal(3×200MW) △
Beipiao Wind(240.1MW)
Fuxin Wind(99MW)
Fuxin Wind Phase II(97.5MW)
Jianping Wind(99MW)
Jinzhou Wind(48MW)
Linghai Wind(90MW)

Shandong

Heze(2×600MW) △
Dongying Wind(100MW)
Feixian Wind(80MW)
Haiyang Wind(194MW)
Jining Wind(49.5MW)
Linyi Wind(86MW)
Penglai Daliuhang Wind(49.8MW)
Penglai Daxindian Wind(49.8MW)
Juxian Wind Phase I(50MW)
Juxian Wind Phase II(50MW)
Qingdao Wind Phase I(50MW)
Qingdao Wind Phase II(50MW)
Rizhao Wind(48.6MW)
Weihai Huancui Wind(50MW)
Weihai Wind(50MW)
Wulian Wind Phase I(50MW)
Wulian Wind Phase II(50MW)
Yantai Penglai Wind(46.6MW)
Yantai Wind(48MW)
Zibo Wind(38MW)
Zoucheng Wind(44MW)
Qingdao Wind(50MW)

Inner Mongolia Autonomous Region

Dengkou(2×300MW) △
Xilinguole(2x660MW) △
Jingneng Xilinguole(2x660MW)
Bayinxile Wind(198MW)
Manzhouli Wind(49.5MW)
Manzhouli Wind Phase II(49.5MW)
Wulanchabu Hongmu Wind(49.5MW)

Hubei

Hubei(2×300MW) △
Hubei Phase II(2×1,000MW) △
Yichang(2×350MW) △
Guangshui Wind(109.8MW)
Suixian Tianhekou Wind(315.8MW)
Suizhou Fengming Wind(76.5MW)
Suizhou Wind(49.8MW)
Yicheng Wind(149.8MW)
Zaoyang Bailu Wind(40MW)
Zaoyang Wind(129.3MW)

Guangxi Autonomous Region

Hezhou(2×1,000MW) △
Beiliu Wind(46.2MW)
Rongxian Wind(97MW)
Hezhou Photovoltaic(6MW)

Anhui

Fuyang(2×640MW)
Mingguang Wind Phase I(50MW)
Huaibei Photovoltaic(5.9MW)
Huoshan Photovoltaic(18MW)

Hunan

Liyujiang A(2x300MW) △
Liyujiang B(2x650MW) △
Lianyuan(2×300MW) △
Linwu Wind(68MW)

Zhejiang

Cangnan (2×1,000MW) △
Wenzhou Telluride(2×300MW)
Wenzhou Photovoltaic(12.1MW)

Yunnan

Honghe Hydro(210MW)
Midu Photovoltaic(20.3MW)
Zhaotong Photovoltaic (20.1MW)

Sichuan

Yazuihe Hydro(260MW)
Heishui Photovoltaic(30MW)

Gansu

Guazhou Wind (201MW)
Huanxian Wind (50MW)

Beijing City

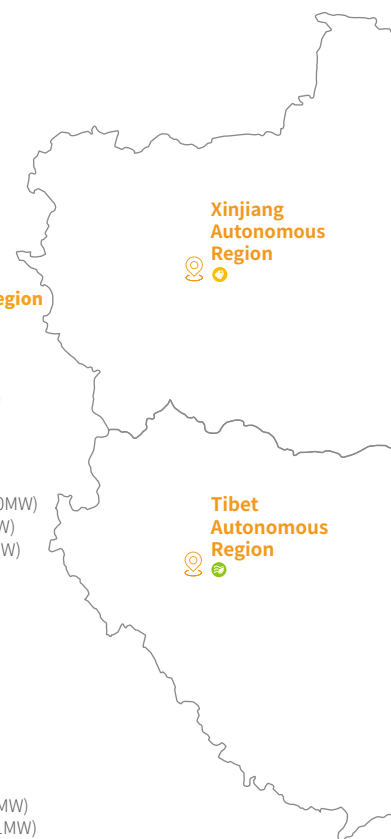
Beijing Thermal(2×75MW) △

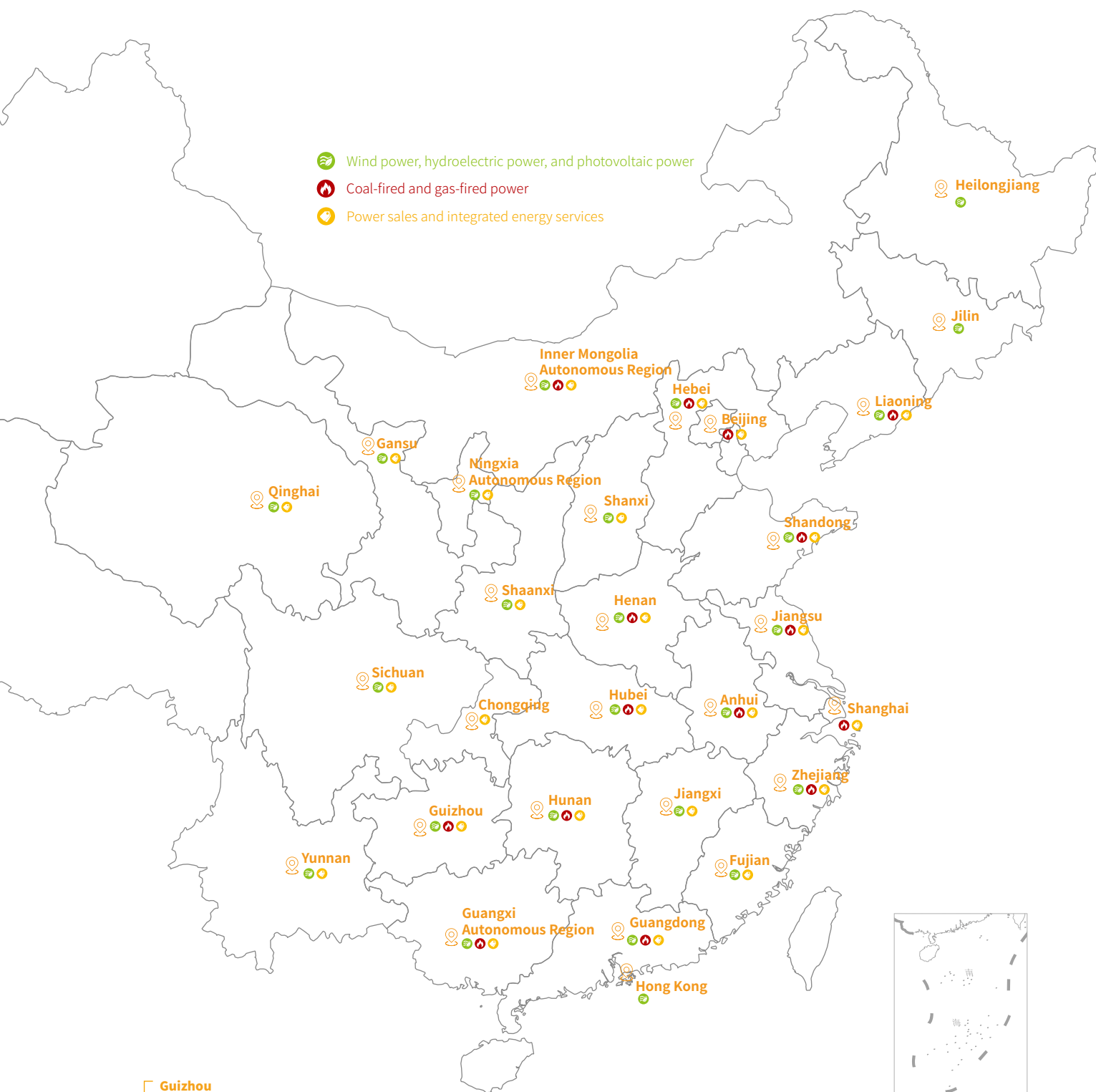
Heilongjiang

Fujin Wind(50MW)
Jiamusi Wind (43.5MW)
Anda Photovoltaic (120MW)
Tailai Photovoltaic(20MW)

Shanxi

Datong Guangling Wind(100MW)
Datong Wind(198MW)
Datong Yanggao Wind(129MW)
Guxian Wind (19.5MW)
Linfen Wind(99MW)
Xinzhou Wind(120MW)
Zhongyang Wind(170MW)
Datong Photovoltaic(20MW)
Lanxian Photovoltaic(30MW)
Xinrong Photovoltaic(50MW)



**Guizhou**

Guizhou Liuzhi (2×660MW)
 Jianhe Wind(94.5MW)
 Jinping Wind(22MW)
 Liping Wind(202MW)

Ningxia Autonomous Region

Haiyuan Wind(300MW)

Jiangxi

De'an Wind(48MW)
 Ganzhou Nankang Wind(64MW)
 Ruichang Wind(36MW)

Tibet Autonomous Region

Jiangzi Photovoltaic(20.2MW)

Qinghai

Dachaidan Wind(50MW)
 Delingha Photovoltaic(20MW)

Shaanxi

Baoji Wind(100MW)
 Tongguan Wind(49.4MW)
 Yan'an Wind(50MW)

Shanghai City

Shanghai Gas(2.4MW) △

Fujian

Longyan Wind(48MW)
 Hui'an Wind(26MW)
 Mingqing Wind(22MW)
 Fuqing Photovoltaic(13.5MW)
 Jingwei Photovoltaic(7.0MW)

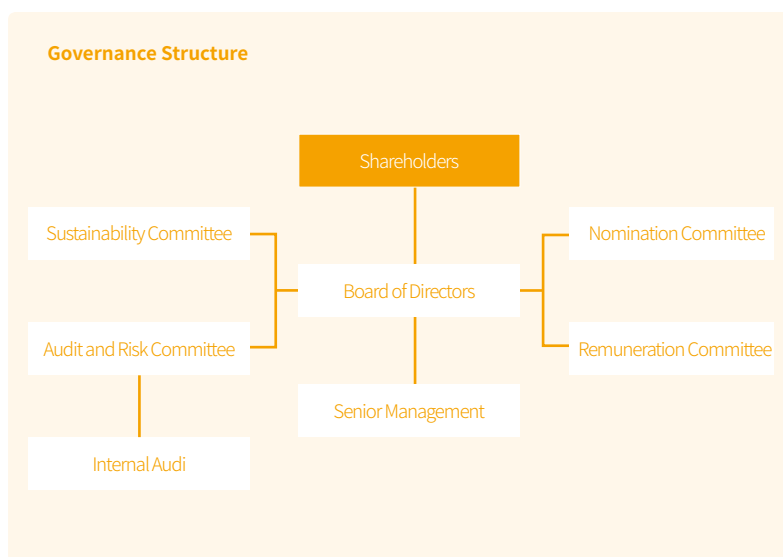
Jilin

Nong'an Photovoltaic(20MW)

■ Operating Power Plants

Corporate Governance

CR Power has established a sound governance structure and management system in line with the Corporate Governance Code in Appendix 14 of the Main Board Listing Rules of the HKEx to ensure strong corporate governance. In particular, the Board of Directors is mainly responsible for improving the governance framework, making overall strategic plans, setting long-term performance and management targets, supervising the performance of the Senior Management, assessing the operations of the Company, and auditing various risks. The Board is supported by four committees, namely the Audit and Risk Committee, the Nomination Committee, the Remuneration Committee, and the Sustainability Committee. The chairmen of the Audit and Risk Committee, the Sustainability Committee, and the Remuneration Committee are all Independent Non-executive Directors; the chairman of the Nomination Committee is a Non-executive Director.



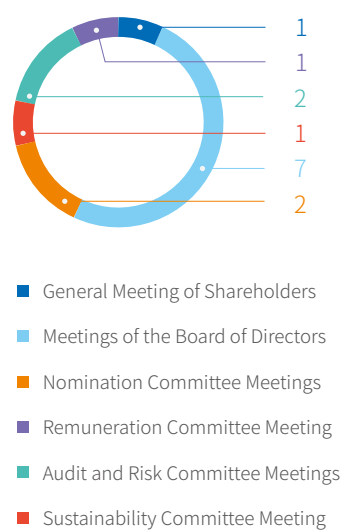
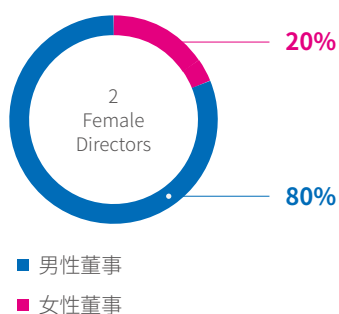
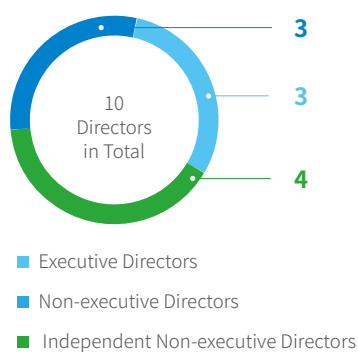
Board of Directors

Mr. Wang Chuandong	Mr. Tang Yong	Mr. Zhang Junzheng	Ms. Wang Xiao Bin	Mr. Chen Ying
Chairman of the Board & Non-executive Director	Executive Director & President	Executive Director & Vice Chairman of the Board	Executive Director & Chief Financial Officer & Company Secretary	Non-executive Director
Mr. Wang Yan	Mr. Andrew Ma Chiu-Cheung	Ms. Elsie Leung Oi-sie	Dr. Raymond Ch'ien Kuo Fung	Mr. Jack So Chak Kwong
Non-executive Director	Independent Non-executive Director	Independent Non-executive Director	Independent Non-executive Director	Independent Non-executive Director

Senior Management

Mr. Tang Yong		Mr. Zhang Junzheng		Ms. Wang Xiao Bin		Mr. Zhu Guolin		Mr. Zhou Jianbo			
Executive Director & President		Executive Director & Vice Chairman of the Board		Executive Director & Chief Financial Officer & Company Secretary		Senior Vice President & Finance Director		Senior Vice President			
Mr. Jiang Lihui		Mr. Zhao Houchang		Mr. Wang Lin		Mr. Hou Yongjie		Mr. Zhang Gang		Mr. Xu Hongbo	
Vice President		Vice President		Vice President		Vice President		Vice President & General Legal Counsel		Assistant President & General Manager of the Strategic Development Department	

As of March 30, 2020



Organizational Structure

China Resources
Power Holdings
Company
Limited

Fighting the COVID-19 Pandemic

Shortly after the outbreak of COVID-19 at the start of 2020, CR Power established a leading group to oversee disease prevention and control, employee health protection, safe production and stable supply of heat and power in all areas nationwide, especially in the affected areas. Behind this level of assurance is the dedication and sacrifice by all our staff members.

Helping Hubei Stay Strong

CR Power's Puqi Power Plant is located in Xianning, Hubei Province and has an installed capacity of 2,600 MW. Phase I of the plant is a major power supplier for Xianning. Phase II powers much of the city's surrounding areas as well as Wuhan's Optic Valley and Jiangxia District and, via the eastern Hubei distribution network, Jiangxi Province. During the pandemic, Puqi Power Plant imposed zone- and group-based quarantine measures to ensure staff health. The plant also spent RMB 160 million to purchase coals and other production supplies, building up a 56-day reserve to ensure continuous power output. The plant generated 2,128 GWh of power from January to March, contributing significantly to Hubei's fight against the coronavirus.



Offering Employee and Plant Assistance

On January 30, 2020, CR Power's Zhumadian (Xinyang) Renewable Energy Company in Henan Province purchased 15 metric tons of rice, flour, oils, vegetables, milk, and other living supplies for Suixian Tianhekou Wind Farm, a sister power plant in Hubei. Zhou Jian, an employee of the company, did not hesitate to deliver the supplies to the Wind Farm in the epicenter of the pandemic. Zhou made the return trip overnight and promptly quarantined himself after informing his company and family members of his safe return over the phone.

On a wider scale, CR Power project companies were purchasing and sending supplies to support sister power companies in the Central China Region in Hubei. As of March 30, RMB 792,000 of prevention supplies (face masks, medical gloves, and thermometers) and food (vegetables, rice, and oil) had been delivered to the affected companies, addressing their most pressing needs and ensuring stable power supply in the region.



Ensuring Power Supply

"We still have a serious situation in Hubei, so I must go back to the frontline. I left the holiday treats at the station's storage area. Tell the kids to pick them up and please give the handset to mom."

Lu Jun is the technical director of Puqi Power Plant and, for the past few years, has been the on-duty manager during the Chinese New Year holiday. This year, Lu bought a lot of New Year snacks, planning to enjoy them with his family at home to celebrate the Chinese New Year. But this plan was interrupted by the pandemic just as Lu was nearly home. He immediately made the long

return trip and picked up where he left off.

Power and heat supply affects every family. During the pandemic, many CR Power employees gave up the chance of family reunion to ensure this supply was not disrupted. Tang Zhongyang and his wife Jiao Yanhui are both CR Power employees, one at the Yichang Power Plant and the other at the Lianyuan Power Plant. In the early morning of the second day of the Chinese New Year, this couple went right back to the frontline at their respective companies.



Lu Jun checking station equipment



Tang Zhongyang and his wife Jiao Yanhui working to ensure disease prevention and power generation

Giving Back to the Community

"Since February 15, your company has donated 170 metric tons of sodium hypochlorite disinfectants to the Zhejiang Yueqing Economic Development Zone, which has contributed greatly to our disinfection, disease control, and reopening plans. Please accept our sincere thanks for your kindness!" This thank-you letter, dated February 26, 2020, was addressed to our Wenzhou Power Plant for the donation of self-made disinfectants.

In addition to ensuring power supply to cities through rigorous equipment monitoring, check, and maintenance works, CR Power did everything it could to help local communities. By March 30, CR Power project companies and employees have donated RMB

6.29 million worth of face masks, disinfectants, thermometers, and other prevention supplies to hospitals, local governments, communities, and public welfare organizations. In particular, the Company's power plants at Haifeng, Wenzhou, and Caofeidian have donated 516 metric tons of sodium hypochlorite disinfectants, made by electrolysis of salt water with one-site equipment, to help clean roads and other public areas and accelerate the reopening of local businesses.



A truck carrying self-made disinfectants to Yueqing



CR Power donating supplies to China Resources Wugang General Hospital

Wind and Photovoltaic Power for A Better Life

"Qingyuan has several major industrial projects underway and will soon see a surge in electricity demand. CR Power is helping us to not only meet that energy need but also reduce poverty in the region. This is what a company that values and fulfills corporate social responsibility looks like. The Qingyuan government will continue to support CR Power's projects here, and hopes that it will make more green investments and accelerate the plans for existing and new projects to help us build our economy and city."

— **Guo Feng, Secretary of Communist Party of China ("CPC") Qingyuan Municipal Committee**

Qingyuan is a prefecture-level city in northern Guangdong. It boasts a long history and rich timber, hydroelectric power, mineral, and tourism resources, which have yet to be put to productive use due to lack of a well-thought-out development plan and investment. Qingyuan is one of China's pilot zones for anti-poverty reform, and has 1 national poverty county, 3 provincial key poverty counties, and 1 provincial mountainous poverty county.

Helping these counties increase revenue, lifting poor villages out of poverty, and creating a happier life for the people are some of the most urgent challenges facing Qingyuan government. As a result, CR Power has held many meetings with the local CPC committee and government on energy investment, green development, and poverty reduction.



In 2018, CR Power's South China Region company entered into an agreement with the government of Lianzhou (a county-level division in Qingyuan) to jointly establish the region's first wind power company for poverty reduction. In particular, the government contributed local anti-poverty funds for a 17.5% stake in the company, and would funnel the dividends from the project back into its poverty alleviation programs. To lift the local community out of poverty as soon as possible, CR Power even started to pay dividends before the project went into operation. Total dividends paid amounted to RMB 4.98 million as of the end of 2019.

This project has opened the door for similar efforts in Guangdong and Guangxi. By the end of 2019, the South China Region company has signed agreements with the governments of Qingyuan, Lianzhou, Fogang, Xinfeng, and Longmen in Guangdong and the county of Cangwu in Wuzhou, Guangxi. These projects have cumulatively distributed RMB 12.39 million in dividends to 4,000 households totaling 12,000 people.



The Lianzhou project created construction jobs for the local villagers which increased their income. Existing village roads were also redesigned or widened for a more efficient transport system. This shows that anti-poverty wind power projects can not only increase local income, but also improve local infrastructures and economy.

"All 120 families in our village, totaling 367 people, are now out of poverty!" Exclaimed Er Muxue, of the village of Ruoduo, Heishui County.

Heishui (tsochu in Tibetan, meaning pig-iron water) is a county in eastern Qinghai-Tibet Plateau under the administration of the Ngawa Tibetan and Qiang Autonomous Prefecture. Due to frequent occurrence of drought, heavy rain, hail, and other natural hazards, Heishui has been designated as a national poverty county three times.

In 2018, a CR Power project company built a 30 MW PV power station here to reduce local poverty. According to the agreement signed with the local government, Heishui, for its investment in the project, holds a 25% equity in the power station and will use all income received each year to support the poor who (due to age, disability, or otherwise) cannot work and other assistance programs. If this income is less than RMB 4.032 million in any year, CR Power will make up for the difference. This agreement went into effect on July 1, 2018 for a term of 20 years.

From July 1, 2018 to June 30, 2019, CR Power contributed RMB 4.032 million to Heishui in the form of dividends and donations, as the parties had agreed, helping 1,932 registered poverty-stricken families. During project construction, local villagers helped rebuild the roads linking to nearby areas, which has made travelling easier and brought RMB 20,000–80,000 of income to each participating

household. Following project completion, CR Power's Southwest Region company paired up with the villages of Ruoduo and Erniunai (both in Heishui) on follow-up initiatives to promote the joint development of the company and the local community.

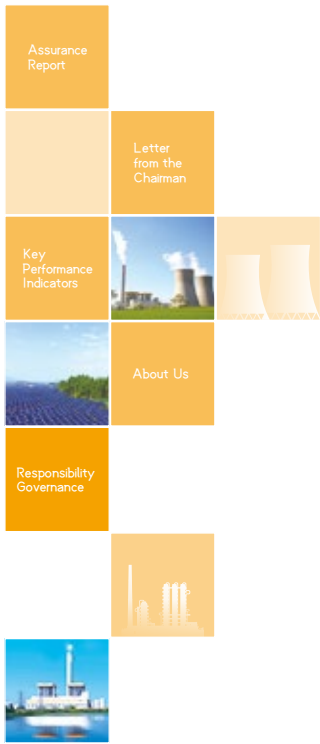
San Jixue is a 46-year-old farmer in Ruoduo. Even with the additional income from collecting medicinal herbs on the mountain slopes, his family earns only RMB 4,000–5,000 a year. During the construction of the PV project, San Jixue helped maintain site security, dug drainage trenches, and carried photovoltaic panels to the installation site. In less than a year, he made RMB 40,000–50,000, or what he used to make in ten years. "I built a new house for my family and now have the school money for my kids," said the humble middle-aged man. San was happy with his income from the past six months and would always invite our staff to his house. Set against Ruoduo's snowy mountains, rows of PV panels are creating a better life for local villagers like San.



The Story Behind

Seeking to turn renewable resources into sustainable benefits for local communities, CR Power has been working with governments in Hubei, Guangdong, Shanxi and Sichuan to jointly build anti-poverty wind and PV projects. These projects combine resource utilization with economic development and income generation, benefiting project companies, local governments, and local communities alike. As of the end of 2019, CR Power had invested RMB 3.6 billion in these anti-poverty projects, with a total installed capacity of 515 MW. In the next 20 to 30 years, these wind and PV projects are expected to generate RMB 36 million of anti-poverty funds a year, or RMB 3,000 each for 12,000 families, keeping 36,000 people out of poverty. As the next step, CR Power is planning to bring similar, locality-aware projects to more regions in need.



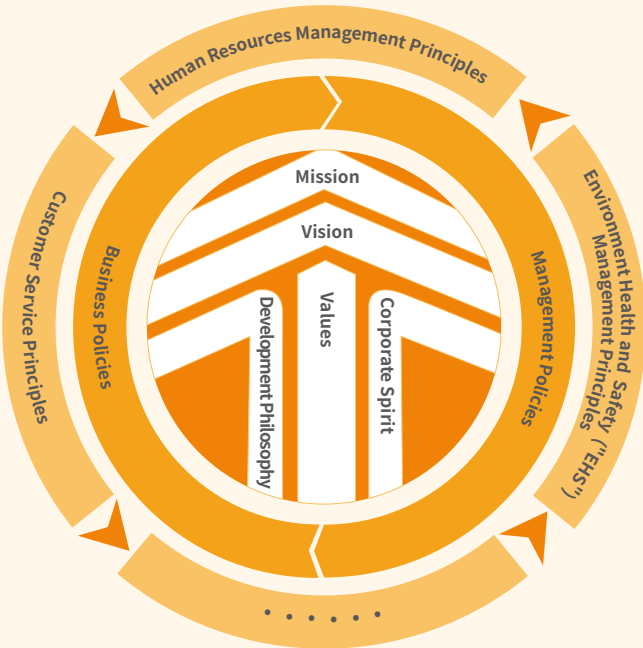


Responsibility Governance

Philosophy of Responsibility

CR Power has developed a "Power Culture" that embodies its distinctive features and corporate image. This Power Culture model is inspired by the two essential parts of a generator – the stator and the rotor. CR Power's mission statement, vision, values, development philosophy, and corporate spirit form the core of its corporate

culture. Its operating and management policies are derived from and are complementary to those core principles, providing guidance for all the Company's day-to-day activities, and supplying endless "power" to its employees, to the Company as a whole, to the economy, and to the society.



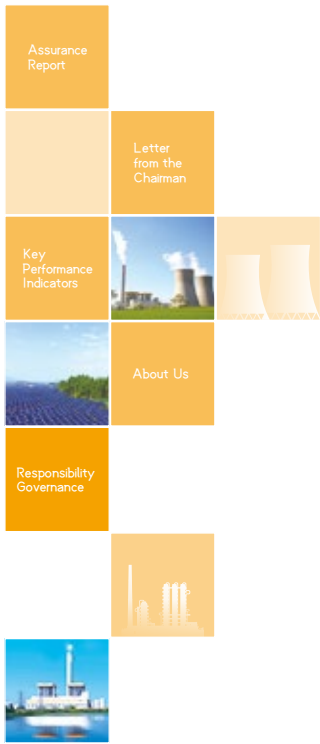
CR Power's "Power Culture" Model

Mission	Vision	Values	Development Philosophy	Corporate Spirit
 <p>Leading the industry and energizing life</p>	 <p>To become a trusted and preferred international integrated energy service provider</p>	 <p>Honest, performance-oriented, people-oriented, and innovation-driven</p>	 <p>Be practical, strong, large-scale, dependable, and sustainable</p>	 <p>Pragmatism, specialization, collaboration, and dedication</p>

Responsibility Governance

Based on the Power Culture and the 17 Sustainable Development Goals ("SDGs") of the UN, CR Power has been promoting the deep integration of sustainability targets in the Company's strategic planning, reform, corporate management, framework development, and business operations.

 <p>Goal 1</p> <p>End poverty in all its forms everywhere</p> <ul style="list-style-type: none"> ◦ Assistance for the poor ◦ Philanthropy and charity 	 <p>Goal 2</p> <p>End hunger, achieve food security and improved nutrition and promote sustainable agriculture</p> <ul style="list-style-type: none"> ◦ Agriculture and farmers support ◦ Soil protection 	 <p>Goal 3</p> <p>Ensure healthy lives and promote well-being for all at all ages</p> <ul style="list-style-type: none"> ◦ Employee occupational health ◦ Work-life balance
 <p>Goal 4</p> <p>Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p> <ul style="list-style-type: none"> ◦ Education aid programs ◦ Talent nurturing system 	 <p>Goal 5</p> <p>Empower women and girls and ensure their equal rights</p> <ul style="list-style-type: none"> ◦ Anti-gender discrimination ◦ Care of female employees 	 <p>Goal 6</p> <p>Ensure availability and sustainable management of water and sanitation for all</p> <ul style="list-style-type: none"> ◦ Engagement in community development ◦ Recycling of water resources
 <p>Goal 7</p> <p>Ensure access to affordable, reliable, sustainable and modern energy for all</p> <ul style="list-style-type: none"> ◦ Provision of stable and reliable electricity, heating, and cooling ◦ Development of integrated energy services 	 <p>Goal 8</p> <p>Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p> <ul style="list-style-type: none"> ◦ Employment opportunities ◦ Employee remuneration and benefits 	 <p>Goal 9</p> <p>Build resilient infrastructures, promote inclusive and sustainable industrialization and foster innovation</p> <ul style="list-style-type: none"> ◦ Construction project quality management ◦ Standardized operational management ◦ Innovations in technology and management
 <p>Goal 10</p> <p>Reduce inequality within and among countries</p> <ul style="list-style-type: none"> ◦ Equal employment ◦ Poverty alleviation 	 <p>Goal 11</p> <p>Make cities and human settlements inclusive, safe, resilient and sustainable</p> <ul style="list-style-type: none"> ◦ Production safety ◦ Engagement in community building 	 <p>Goal 12</p> <p>Ensure sustainable consumption and production patterns</p> <ul style="list-style-type: none"> ◦ Production safety ◦ Development of renewable energy
 <p>Goal 13</p> <p>Take urgent action to combat climate change and its impacts</p> <ul style="list-style-type: none"> ◦ Development of renewable energy ◦ Control emissions of greenhouse gas 	 <p>Goal 14</p> <p>Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p> <ul style="list-style-type: none"> ◦ Offshore wind power ◦ Seawater desalination and recycling 	 <p>Goal 15</p> <p>Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and protect biodiversity</p> <ul style="list-style-type: none"> ◦ Environment management ◦ Soil and water conservation
 <p>Goal 16</p> <p>Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</p> <ul style="list-style-type: none"> ◦ Compliance with business ethics ◦ Strengthening rule of law ◦ Anti-bribery and corruption 	 <p>Goal 17</p> <p>Strengthen the means of implementation and revitalize the global partnership for sustainable development</p> <ul style="list-style-type: none"> ◦ Responsible supply chain ◦ Multi-party strategic cooperation 	 <p>SUSTAINABLE DEVELOPMENT GOALS</p>



Sustainable Development Management Framework

The sustainable development of a business hinges on how well it fulfills social responsibilities. In this area, CR Power has created a four-level management framework and formulated the CR Power Social Responsibility Program Management Standards (which sets out the social responsibility management system and key performance indicators) to improve the strategies, standards, and rules governing the Company's sustainable development efforts.



Leadership Team

The Sustainability Committee, chaired by Independent Non-executive Directors, is responsible for:

- Reviewing the monthly sustainable development report; reviewing the annual summary and improvement plan for CR Power's sustainable development programs and offering suggestions;
- Supervising CR Power's handling of matters that relate to society, environment, and business ethics and have an impact on shareholders and other stakeholders; and
- Reviewing Company policies and performance on sustainable economic, environmental, and social development and offering suggestions to the Board of Directors.

Guidance Team

The Social Responsibility Steering Committee is responsible for:

- Studying CR Power's strategies on social responsibility programs;
- Studying and approving CR Power strategic plans, major rules, annual plans and reports on social responsibility; and
- Studying and approving CR Power's major issues on social responsibility.

Coordination Team

Administrative Office of Headquarters, serving as CR Power's centralized management department of social responsibility programs and supporting the Social Responsibility Steering Committee, is responsible for:

- Preparing CR Power's medium- and long-term plans on social responsibility; and facilitating the implementation of CR Power strategic and annual plans on social responsibility, and major resolutions of the Sustainability Committee under the Board of Directors and the Social Responsibility Steering Committee;
- Organizing the preparation of CR Power's annual sustainable development reports;
- Developing sound rules and indicator systems for CR Power's social responsibility programs; conducting performance assessment; and organizing best practice recognition programs;
- Guiding affiliated entities' social responsibility efforts and promoting social responsibility initiatives;
- Organizing studies, training, communications, and other day-to-day management affairs concerning CR Power's social responsibility programs;
- Overseeing corporate governance, information disclosure, media relations, brand management, poverty alleviation, public welfare, and other work; and
- Regularly updating the Sustainability Committee under the Board of Directors on CR Power's social responsibility achievements.



Implementation Team

Departments & Offices of Headquarters identify the heads and points of contact for social responsibility programs and are responsible for supervising and advancing such programs in line with their functions:

- Strategic Development Department: implementing the Company's strategic plans; developing, reviewing, and evaluating business plans; and promoting project development and investment, standardized management and improvement, and strategic cooperation;
- Human Resources Department: defining employees' responsibilities and implementing programs on employee protection, career development, and training;
- Finance and Accounting Department: protecting shareholders and creditors; ensuring funds security and payment of tax; disclosing performance figures of the Company to maintain investor relations; developing and releasing reports; organizing meetings of the Board of Directors and general meeting of shareholders; and establishing sound communication with investors and analysts from fund companies;
- Audit Department: conducting integrity and compliance audit and offering guidance and specialized services to ensure integration of social responsibility into institution assessment, risk management, and internal control systems;
- Legal Department: ensuring compliant development and guiding corporate governance, fair operations, and equity protection;
- Intelligence and Informatization Management Department: offering technical support to IT platforms such as promotional, statistical, and working platforms and ensuring information security;
- Environment, Health and Safety Department: promoting energy conservation and emission reduction, safe production, occupational health, green office, and circular economy;
- Mass Affairs Department: building corporate culture and a clean company; handling complaint reporting and stability maintenance; and overseeing mass organizations and employee volunteer services;
- Supervision Department: investigating events that violate social responsibility rules and requirements and bring about material effects and losses; offering accountability suggestions and implementing relevant results; ensuring operational integrity and compliance; and developing anti-corruption systems;
- Operations Management Department: ensuring cost-efficient, environmental-friendly, safe, and stable operation of power operation projects, including management of production, technology, operations, and boards of directors of project companies;
- Construction Management Department: overseeing the improvement of designs of various projects (including thermal power, hydroelectric power, wind power, and photovoltaic power), technology management, tendering for equipment procurement, and project construction;
- Fuel Management Department: procuring coal for coal-fired power projects and putting in place power and coal logistics systems;
- Procurement Management Department: establishing tendering and procurement systems; managing and supervising the implementation of annual procurement plans; and duly organizing tendering and procurement projects of Departments & Offices of Headquarters;
- Power Wholesale Management Department: developing, implementing, and managing business plans on power sales, distribution, and wholesale; establishing power wholesale management platforms; developing national key accounts; and promoting innovative business models, new business and technologies, and brands of power distributors and wholesalers;
- International Business Department: implementing international business development plans; developing and incubating overseas projects; and nurturing talents;
- Departments & Offices of Headquarters are to integrate regulatory requirements into their policies, rules, and management systems; include social responsibility in annual plans; clarify the relevant duties of each position; and create a mechanism linking performance to reward and punishment.

CR Power's social responsibility programs are mainly implemented by regional companies and coal branch company, which work with the Departments & Offices of Headquarters during implementation and are subject to their guidance and performance evaluation. Regional companies and coal branch company are responsible for:

- Designating centralized social responsibility management departments of head offices; and having full- and part-time personnel take charge of day-to-day contact, communication, and coordination concerning social responsibility programs;
- Clearly defining the duties of each department in their head offices and of project companies; carrying out the social responsibility plans of the Headquarters; promoting responsibility integration; introducing innovative responsibility practices; and helping enhance their capacity to discharge responsibilities;
- Based on the plans of the Headquarters, working out medium- and long-term plans and annual plans on social responsibility for regional companies and coal branch company in consistent with their development strategies and goals; breaking down requirements; defining duties; and incorporating social responsibility in performance assessment of related entities and positions;
- As required by the Headquarters, organizing regional companies, coal branch company, and related entities to collect, aggregate, and submit information and data on social responsibility programs;
- Promoting their social responsibility achievements and performance; strengthening communication with stakeholders; enhancing public opinion on their social responsibility performance; and shaping public opinions conducive to their development; and
- Guiding subordinate enterprises' social responsibility programs.

Social responsibility programs of regional companies and coal branch company are mainly implemented by project companies, which also accept the guidance and performance evaluation of regional companies and coal branch company. Project companies are responsible for:

- Designating centralized social responsibility management departments; and having full- and part-time personnel take charge of day-to-day contact, communication, and coordination concerning social responsibility programs;
- Clearly defining the duties of each department; developing social responsibility plans for regional companies and coal branch company; promoting responsibility integration; introducing innovative practices; and helping enhance their capacity to discharge responsibilities;
- Based on the plans of regional companies and coal branch company, working out their medium- and long-term plans and annual plans on social responsibility in consistent with their development goals; breaking down requirements; defining duties; and incorporating social responsibility in performance assessment of related departments and positions;
- As required by regional companies and coal branch company, organizing collection, consolidation, and submission of information and data on their social responsibility programs; and
- Promoting their social responsibility achievements and performance; strengthening communication with stakeholders; enhancing public opinion on their social responsibility performance; and shaping public opinions conducive to their development.

Under the leadership and supervision of the Sustainability Committee, the Company has improved its closed-loop management procedures of sustainable development, covering goal setting, work plans, day-to-day management, result presentation, and progress evaluation. Moreover, by organizing meetings and training aimed at promoting social responsibility at different stages, CR Power has enhanced literacy and awareness of social responsibility of the relevant personnel and further increased management efficiency.

CR Power has joined social responsibility organizations including the China Social Responsibility 100 Forum, and participated in the 2019 China Corporate Social Responsibility Annual Session & 8th Shared Responsibilities Annual Meeting, the "ESG and Sustainable Development Session" of the 2019 Sina Golden Kirin Forum, and other industry exchange events, in order to promote the research and application of social responsibility theories.

Communications on Sustainable Development Programs

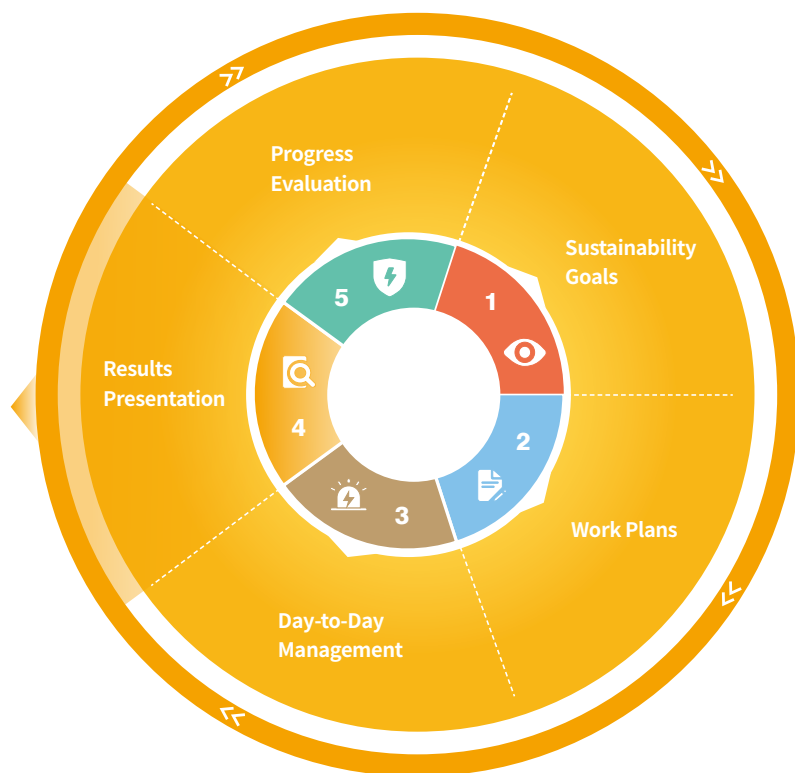
In 2019, the Company prepared 12 issues of CR Power Monthly Public Opinion and Social Responsibility Report for review by the Board of Directors, and held several meetings on sustainable development participated by senior managers. These reports and meetings provided the latest updates on sustainability programs and helped build consensus and enhance management. In May, CR Power's Executive Directors chaired the Sustainable Development Report & Social Responsibility Meeting. In November, the Sustainable Development Workshop was held in Shenzhen, during which relevant departments and offices discussed how to improve the Company's performance on sustainable development, address concerns of the capital market, and prepare the relevant reports.



Preparation of Sustainable Development Reporting Report

To fully and accurately convey CR Power's achievements in sustainable development to internal and external stakeholders, the Company engages management and implementation personnel at all four levels in preparing its annual sustainable development reports.

Before the preparation of the report, the Guidance Team trains the Coordination Team and the Implementation Team according to the requirements and goals set by the Leadership Team. The Implementation Team then collects and submits reporting materials, based on which the Coordination Team prepares a report and coordinates data assurance and report rating with an independent third party. Following completion of the report, the Leadership Team reviews its contents and submits it to the Chairman for final approval. After the report is published, the Coordination Team organizes the promotion and dissemination of the report and collects comments from stakeholders, to further improve the Company's sustainable development programs.



Communication of Our Responsibilities

We take day-to-day communication with our stakeholders seriously and have opened various channels to receive comments and suggestions. We frequently share with our stakeholders the latest changes to our operations, culture and values, and

future plans, to help them understand and appreciate our actions. At the same time, we incorporate their expectations and concerns in our corporate strategies, operations and management to win their support.

Stakeholders Engagement

Stakeholders	Main Concerns	Engagement Methods	Response Measures
 Government and Regulatory Agencies	<ul style="list-style-type: none"> Legal and regulatory compliance Work safety and environmental protection Promote economic development Tax payment Job creation Corporate stability 	<ul style="list-style-type: none"> Formulate rules and policies Strategic cooperation Information submission Work reports Statistical reports 	<ul style="list-style-type: none"> Comply with laws and regulations Reduce operational safety hazards Prevent major accidents Meet national environmental standards Guarantee employee compensation and benefits and timely communicate with employees
 Investors	<ul style="list-style-type: none"> Corporate governance Performance growth Dividend distribution Investor relations Stock performance 	<ul style="list-style-type: none"> Shareholder meetings Information disclosure On-site visits Roadshows 	<ul style="list-style-type: none"> Establish rational decision-making, execution, and supervision mechanisms, and strengthen internal controls Pursue qualitative growth and value creation Improve information disclosure and increase transparency Organize and participate in a variety of shareholder engagement events
 Employees	<ul style="list-style-type: none"> Legitimate rights and interests Compensation and benefits Career development Training Occupational health and working environment Employee care 	<ul style="list-style-type: none"> Employee representative meetings Employee suggestions Intranet and public-facing websites Seminars, networking, etc. 	<ul style="list-style-type: none"> Sign employment contracts as required by law Hold training to encourage internal mobility Implement occupational health programs Improve production and office environments Conduct employee satisfaction surveys Improve human resource policies
 Customers	<ul style="list-style-type: none"> Provide safe and stable electricity, heating, and cooling 	<ul style="list-style-type: none"> Satisfaction surveys Agreements/contracts Customer meetings 	<ul style="list-style-type: none"> Provide adequate, reliable, and environmentally friendly energy services such as power, heat, cooling, and coal
 Partners	<ul style="list-style-type: none"> Contract compliance and mutual trust Long-term cooperation as equals Mutual benefits 	<ul style="list-style-type: none"> High-level meetings Agreements/contracts Products and services 	<ul style="list-style-type: none"> Ensure transparent procurement process to eliminate commercial bribery Maintain integrity and business ethics Sign long-term strategic cooperation agreements
 Community and Environment	<ul style="list-style-type: none"> Environmental protection Safety and stability Harmonious community Charity programs Public relations 	<ul style="list-style-type: none"> Philanthropic events Community building 	<ul style="list-style-type: none"> Ensure environmental protection and compliance with pollutant emission standards Promote circular economy and green office Strengthen safety management and prevention of major accidents Participate in community events and support philanthropic programs Build CR Hope Town
 Media and NGOs	<ul style="list-style-type: none"> Information Disclosure Interaction with media Contributions to NGOs Impact on sustainable development 	<ul style="list-style-type: none"> Activity organization On-site visits Information disclosure 	<ul style="list-style-type: none"> Organize field surveys, interviews, and reports Release advocacy materials and invite media to monitor social responsibility programs Participate in industry exchange meetings and professional skill competitions Engage in productive exchanges with NGOs



Case Study | Pursuing Green Development from the Heart - the 4th Open Power Plant Month

To give stakeholders a closer look at what we do at CR Power, we have created the Five-Year Plan of CR Power on Open Power Plant Months (2018–2022). In September 2019, we held our 4th Open Power Plant Month with the theme of "Pursuing Green Development from the Heart," which attracted over 2,000 public visitors to 39 of our power plants.

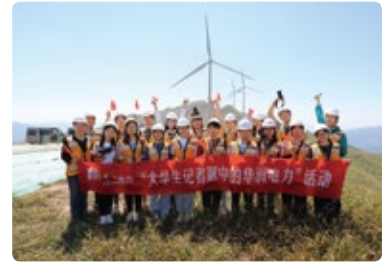
In addition to showcasing CR Power's efforts to promote safe production, energy conservation and environmental protection, technological innovations, and business development, the power plants organized interactive activities such as Ode to My Country and Power Lectures to better engage the visitors. During the event "My Impression of CR Power", visitors were encouraged to share their impressions of our power plants with words and drawings, which were put on a wall for public display. The open month program was covered by 260 media reports.



Case Study | BRNN Reporters Visited CR Power

On September 25, 2019, CR Power Guangzhou Thermal Plant welcomed reporters from mainstream media in Uganda, Nigeria, Zambia, Ghana, and South Africa and from the People's Daily, as part of a media workshop of the Belt and Road News Network (BRNN). The group took a tour of the main production areas including the fly ash and desulfurization system, boilers, and steam turbines; main facilities for ultra-low emission, municipal sludge disposal, energy storage and frequency control; as well as Happy Farm – a demonstration area for ecological planting.

During the subsequent discussion meeting, the reporters asked about CR Power's collaborative programs with BRI countries and African countries and green energy initiatives. Company representatives answered those questions and presented the Company's environmental efforts and achievements, as well as future plans for overseas regions. This event helped both domestic and foreign reporters better understand the stance, measures, and outcomes of CR Power's green development programs; experience first-hand the green transformation of Chinese traditional thermal power companies; and appreciate the rapid development of renewable energy technologies in the Guangdong-Hong Kong-Macao Greater Bay Area. The event was covered by 125 news articles.



Case Study | CR Power in the Eyes of College Student Journalists

To connect outstanding college students to the job market and help them understand the state of modern Chinese energy companies, in September 2019, CR Power launched the "CR Power in the Eyes of College Reporters" program. The program attracted 18 students of media and related majors at 11 universities, including Nanjing University, Sun Yat-sen University, and Huazhong University of Science and Technology. The students visited CR Power's Guangdong Shanwei Haifeng Power Plant, Fujian Longyan Zhenfu Wind Farm, and Fujian Fuqing Smart Energy Project, where they learned about the Company's efforts and achievements in green development, energy conservation, and environmental protection, and saw cutting-edge energy technologies at work. They captured what they saw with words, photographs, and videos which were then released to the public.



Responsibility Topics

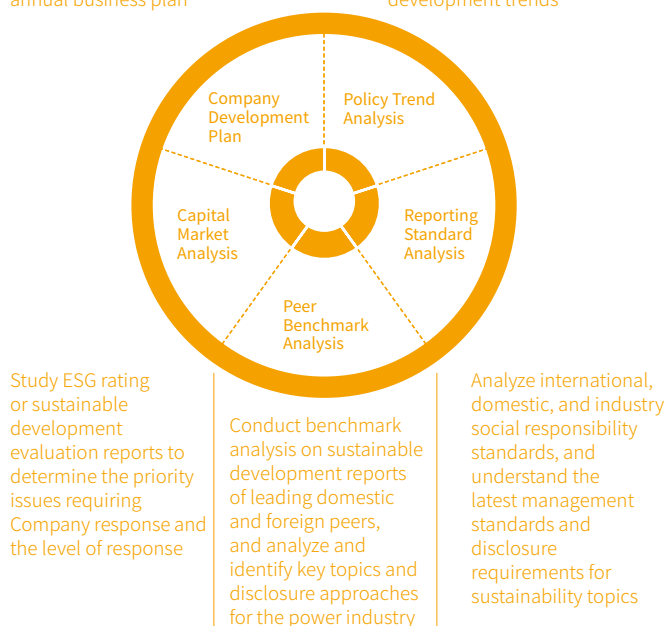
CR Power has been dedicated to improving the processes to identify and evaluate sustainability topics:

Step I: Pre-Evaluation Preparation

Select major topics of relevance to CR Power from multiple dimensions.

Identify key topics significant to CR Power's strategic goals as per its strategic development plan and annual business plan

Understand national macro-policies, energy/power industry policies and regulations, and industry sustainable development trends



Step II: Improvement of Sustainability Topics

In 2019, we consolidated and simplified the sustainability topics we consider to help stakeholders focus on those particularly relevant to CR Power.

Step III: Stakeholder Survey

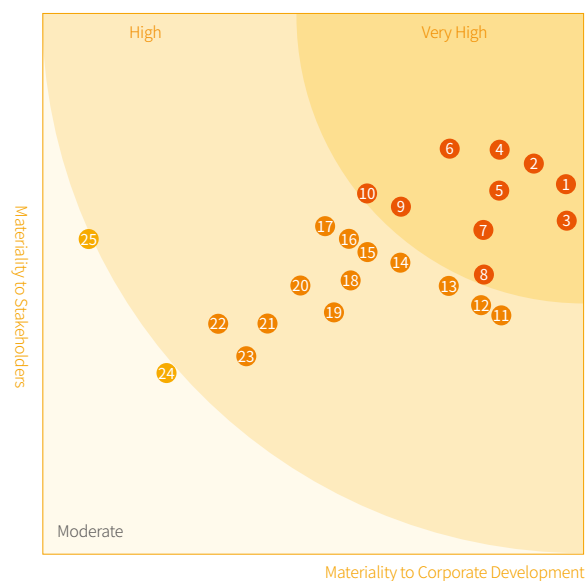
Invite senior management, employees, and external stakeholders to evaluate the materiality of the 7 environmental, 11 social, and 7 governance topics identified and comment on the Company's existing sustainability strategies, performance, and reporting methods via an online questionnaire.

In 2019, 1,971 stakeholders took part in the survey, including CR Power's Directors, senior managers, employees, investors/shareholders, partners, suppliers, media, the public, government agencies, and regulators.

Step IV: Materiality Analysis

Analyze the responses and assign risk-based weightings to the topics, forming a two-dimensional representation of the materiality of each topic to stakeholders and to corporate development.

CR Power Social Responsibility Topic Materiality Matrix



- | | |
|--|--|
| 1 Safe Production and Occupational Health | 11 Protection of Shareholder Interest |
| 2 Corporate Governance and Risk Management | 12 Technological Innovations and Environmental Investments |
| 3 Response to National Policies | 13 Improving Customer Service |
| 4 Development of Renewable Energy | 14 Maintenance and Growth of Value of State-owned Assets |
| 5 Response to Climate Change | 15 Operational Compliance |
| 6 Community Service and Philanthropy | 16 Employee Rights and Care |
| 7 Energy Conservation and Emission Reduction | 17 Waste Disposal and Utilization |
| 8 Water Resources and Waste Water Management | 18 Provision of Safe and Stable Electricity and Heating |
| 9 Corporate Culture and Business Ethics | 19 Strengthening Ecological Protection |
| 10 Employee Training and Development | 20 Responsible Supply Chains |
| | 21 Protection of Market Environment |
| | 22 Sustainable Development Planning |
| | 23 Respect for Intellectual Property |
| 24 Industry Cooperation and Development | |
| 25 Information Disclosure and Reporting | |

Leading the Way to a Green Future

With the increasing occurrence of extreme weather conditions around the world, climate change has become a key factor affecting global sustainable development. And for many, energy shortages and environmental pollution are now obstacles to a better life. CR Power has been actively responding to challenges arising from climate change by increasing its mix of renewable energy and strengthening environmental stewardship and pollution control, contributing to the green development of our world.

Key Topics

- Development of Renewable Energy
- Response to Climate Change
- Water and Wastewater Management
- Energy Conservation and Emission Reduction
- Waste Disposal and Utilization
- Strengthening Ecological Protection
- Technological Innovations and Environmental Protection

SDGs



Management Systems

- Environmental Protection Standards
- EHS Supervision Management Standards
- EHS Job Responsibility System
- Energy Conservation Management Standards
- Energy Conservation Supervision Standards for Thermal Power Units
- Work Guidelines for Power Generation Efficiency Improvement in Wind Power Units
- Carbon Asset Management Standards
- Integrated EHS Emergency Response Plan
- EHS Risk Assessment Standards for Thermal Power Companies
- EHS Risk Assessment Standards for Wind Power Companies
- EHS Risk Assessment Standards for Photovoltaic Power Companies
- EHS Risk Assessment Standards for Hydroelectric Power Companies



Our Performance

Proportion of installed renewable energy attributable generation capacity

23.3%

Total environmental investment

RMB **1.828** billion

Investment in efficiency and emission upgrade

RMB **1.511** billion

Comprehensive ash and slag utilization rate

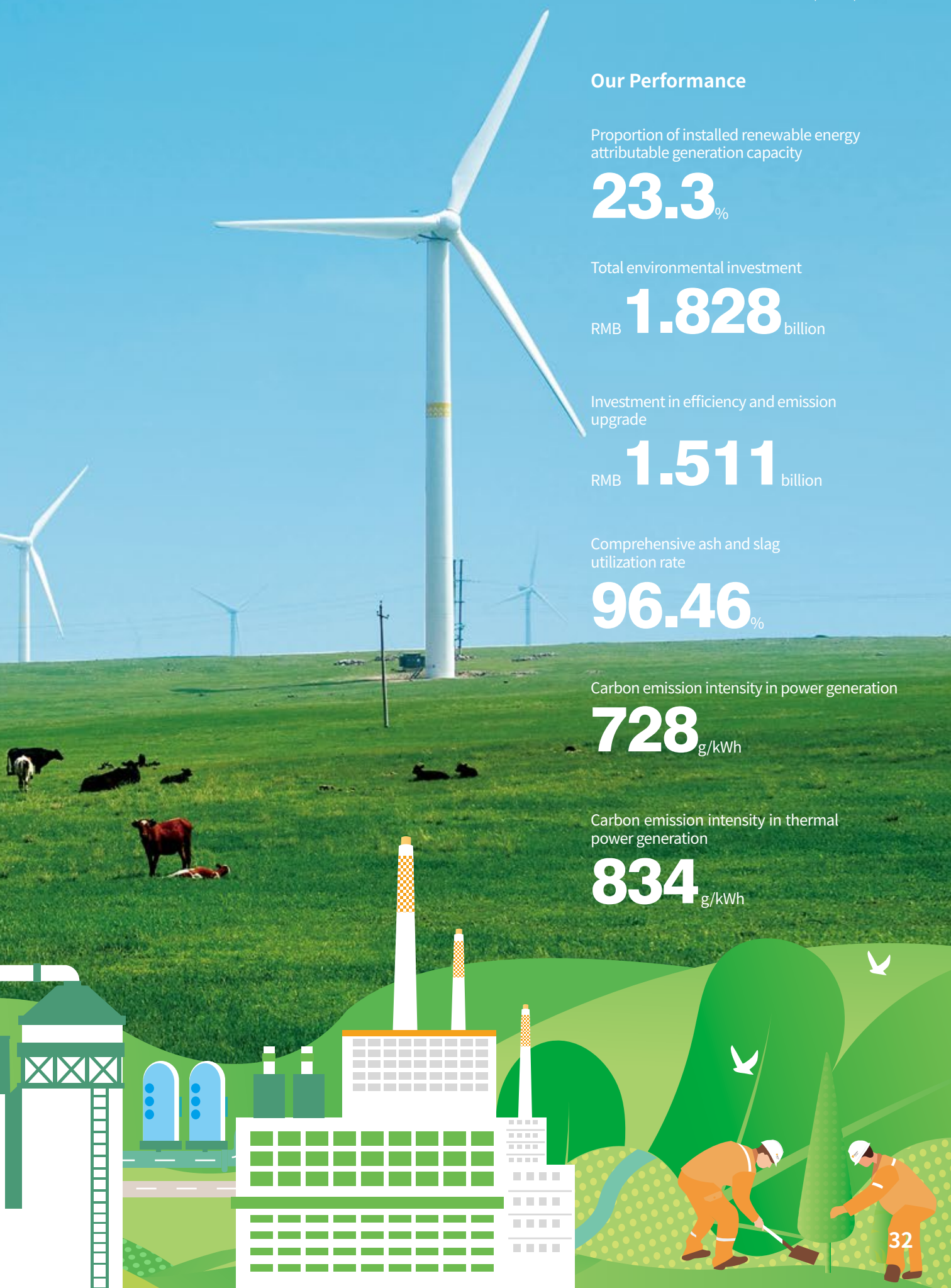
96.46%

Carbon emission intensity in power generation

728 g/kWh

Carbon emission intensity in thermal power generation

834 g/kWh





Responding to Climate Change

Strategy for Transitioning to Renewable Energy

Coal-fired power generation is a major contributor to greenhouse gas (GHG) emissions and thus climate change is an issue the power industry can no longer ignore. The United Nations Framework Convention on Climate Change and the Paris Climate Change Agreement are two major commitments made by the international community to address the climate crisis and achieve green and low-carbon development. In line with China's carbon reduction commitments to the international community, CR Power has been promoting renewable energy, carbon trading, and innovative technologies. CR Power also periodically assesses the policy and operational risks arising from climate change to remain vigilant about its potential impacts.

To increase the mix of renewable energy in our business, we are strictly controlling the pace of new coal-fired power capacity and at the same time investing heavily in renewable energy. In the wind sector, we have stepped up internal measures to encourage our regional companies to expand wind power development, funded internally, through the renewable fund or other partnerships.

CR Power's renewable energy mix includes wind power, photovoltaic power, and hydroelectric power. In 2019, we prioritized the construction and commissioning of onshore wind farms, but have also commenced initial preparatory work for potential offshore wind projects.

Overview

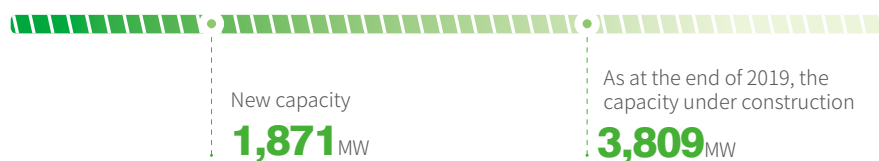
China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

M2.2/M2.3/E2.1

HKEx ESG Indicators

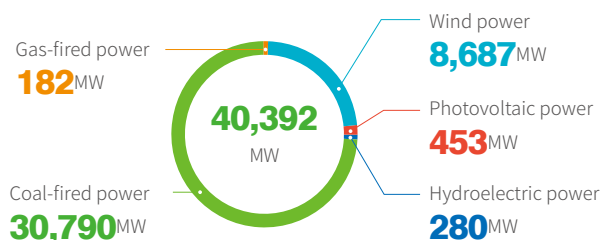
A2.3/A3 General Disclosure

CR Power's achievement in wind energy in 2019:



As at the end of 2019, CR Power's attributable operational generation capacity totaled

40,392 MW,
including contribution from
renewable energy projects of
9,420 MW,
or
23.3%
of the total capacity



In the renewable energy sector, CR Power will continue to focus on wind power development and plans to add 3,500 MW of capacity in 2020. This will bring the Company's renewable energy capacity to more than 29% of its total attributable

generation capacity. In addition, CR Power will continue to optimize its asset structure to pursue clean and low-carbon power generation, and plans to raise the proportion of renewable energy to over 30% during the 2021–2025 period.

Improving Energy Efficiency

In line with the PRC Energy Conservation Law, CR Power has developed the CR Power Supervision and Management Rules for Energy Conservation and Emission Reduction Programs and the related management system, in order to promote new technologies, materials, processes, and products to help the country optimize its industrial structure and energy consumption structure.

Net generation standard coal consumption rate (subsidiary power plants)

296.64 g/kWh

Reduction from 2018 level

2.9 g/kWh

Standard coal saved

408.9 metric kilotons

Case Study | Boosting Overall Energy Efficiency

To reduce heat loss, Nanjing Chemical Park Power Plant has upgraded its extraction-condensing turbines to extraction back-pressure turbines. Thermal efficiency of the new generators reached 82.8%, which is 30.9% higher than before and exceeding that of other pure condensing turbines in conventional coal-fired power plants by 35-40%. Additionally, the standard coal consumption rate of the new generators is 199.7 g/kWh, far lower than the 270 g/kWh of domestic 1,000 MW ultra-supercritical coal-fired generating units. This translates into a saving of 60,000 metric tons of standard coal each year.

Zhenjiang Power Plant upgraded its generating units into combined heat and power (CHP) units, which has improved the plant's thermal efficiency and reduced its standard coal consumption rate by 4 g/kWh, saving 23 metric kilotons of standard coal and 53 metric kilotons of carbon dioxide emissions each year. Meanwhile, this upgrade enabled the plant to supply heat, equivalent to 120 metric tons of standard coal per hour, to 12 companies in the Dantu Economic Development Zone and Jurong Lingang Industrial Zone, helping accelerate the shutting down of other small boilers in the region, thereby contributing to the local energy and emission targets.

Organization building

CR Power has established a leading group to oversee the Company's energy conservation programs and supervise and evaluate their implementation. Each regional company and project company has also set up corresponding positions responsible for daily management and supervision.

Target management

CR Power has formulated energy-saving plans and, in view of industry characteristics and domestic and international benchmarks, set appropriate management and evaluation targets, which are cascaded down to subsidiary companies, departments, and teams. CR Power then monitors and periodically reviews operational data to continuously enhance energy management.

Energy-saving measures

Each project company power plant seeks to get the most out of its equipment through a combination of technical and management measures, including upgrading generators, shutting down small-scale generating units, improving the energy efficiency of key equipment, and strictly controlling equipment energy use.

Case Study

The Newly Commissioned Caofeidian Power Plant Leads the Industry in Energy Efficiency

On April 25, 2019, the #3 generator of Caofeidian Power Plant Phase II completed its 168-hour full-load trial operation. The project has a designed net generation standard coal consumption rate of less than 263 g/kWh, and is equipped with the most advanced technologies by domestic and international standards, making this project the most energy-efficient thermal power generation project in the world.

Integrated desulfurization, particulate removal, and denitrification functions allow the power plant to achieve ultra-low emission levels, setting a new benchmark for the megawatt-class generators in China as well as for future thermal power plants. Moreover, the commissioning of Caofeidian Power Plant's #3 unit will alleviate the power shortage in Northern China, thereby contributing to the development of the Beijing-Tianjin-Hebei region.



Demonstration project for carbon capture technologies

Active Participant of Carbon Trading

Carbon trading is a market-based approach for reducing the emission of carbon dioxide and other GHGs worldwide and promoting the global transition to a low-carbon economy. In 2019, CR Power updated its Carbon Asset Management Standards in accordance with the Ministry of Ecology and Environment (MEE)'s Plan for the Establishment of a National Carbon Emissions Trading Market (Power Generation Industry). The updated Standards require: (i) thermal power plants to assess, verify, monitor their carbon emissions and track, meet, and trade their emission quotas; (ii) alternative energy projects to complete the application, review, verification, and filing for emission reduction projects with government agencies, to engage in carbon trading, and to prepare for entering and promoting the national carbon market.

Improving capacities



CR Power periodically organizes its project subsidiary companies to receive trainings on carbon market policies; major trading processes including the calculation and allocation of emission quotas, data management, account opening, and trading and performance; and future market trends, allowing for easier entry into the carbon market and more effective management of carbon trading.

Becoming prepared



CR Power's Headquarters, regional companies, and project companies have set up dedicated or part-time staff positions to manage carbon assets. By starting to managing carbon assets and conducting simulation calculations – using the carbon asset management system of the power sales cloud platform – on the carbon quotas of thermal power plants, the companies have enhanced their data analysis and management capabilities. In accordance with MEE requirements, in June 2019, the subsidiary project companies opened accounts at emissions registration and trading systems to prepare for connection to the national carbon market.

Regional trading pilots



To efficiently allocate carbon assets, CR Power arranged CR Snow Breweries to purchase the relatively low-cost Chinese Certified Emission Reduction (CCER) units from its subsidiary CR Golden Concord (Beijing) Thermal Power Plant, thus saving the compliance cost by about RMB 600,000. This purchase signifies the Company's improved capabilities to allocate its internal carbon assets. With the launch of the national carbon market, this purchase can also help other CR Power companies to learn about the processes of carbon trading.

Carbon Capture Technologies

Carbon dioxide created from burning fossil fuels accounts for 57% of the global GHG emissions and is the main contributor to climate change. To date, carbon capture, utilization and storage (CCUS) is the only technology that allows us to continue using fossil fuels while also substantially reducing GHG emissions.

In May 2019, CR Power launched the Carbon Capture Test Platform (CCTP) at Haifeng Power Plant, composed of pretreatment, amine-based absorption, membrane separation, and compression and purification systems. Specifically, flue gas first enters the pretreatment system where it is cooled and removed of pollutants at a purification tower. Then the treated flue gas is fed into either the amine-based absorption system or the membrane separation system where high-purity carbon dioxide is captured. The captured carbon dioxide is then purified, compressed, dried, liquefied and rectified in the compression and purification system and then stored for future use. As the first international multi-technology carbon capture test platform for coal-fired power plants in Asia, CCTP

can capture 20 metric kilotons of carbon dioxide a year. After purification, the captured carbon dioxide can be used in food processing and other industrial processes to create economic benefits rather than greenhouse effects.

CR Power plans to improve CCTP over time by testing additional carbon capture technologies, finding new uses for the captured carbon dioxide, managing related test data and intellectual properties, promoting the test platform, and pursuing commercialization options. Moreover, CR Power will build it into an open platform where domestic and international service providers and innovative companies can test their technologies, so as to discover more cost-effective solutions, drive the industrial upgrades of related equipment manufacturers, and accumulate experience for the application and industrialization of CCUS technologies in China. This project promises to transform the region into a national center for CCUS technologies and a world-class center for related industries.





Enhancing Environmental Management

Strategic Goals

Believing that "clear waters and green mountains are invaluable assets," CR Power has been committed to saving and improving our environment while providing stable power and heating services for the public. By developing environmental strategies, management systems, and technologies and enhancing environmental training and advocacy, CR Power seeks to enable all of us to live in harmony with nature.

According to the CR Power Environment, Health, and Safety Management Plan (2016-2020), by 2020, CR Power is to have implemented a sound and highly efficient environmental management system, have improved the professional and management capabilities of its environmental personnel, and have achieved a leading environmental performance in the power industry. To this end, CR Power has set quantitative environmental indicators and broken down the strategic goals for assignment to each organizational hierarchy, and been tracking milestone progresses.

Environmental Management Indicators

	Proportion of renewable energy (%)	Net generation standard coal consumption rate (subsidiary power plants) (g/kWh)	Pollution incident of major or higher impact
2019 Achievements	23.3	296.64	0
2020 Goals	29%	0.1% lower than in 2019	0
	SO ₂ emissions (metric kilotons)	NO _x emissions (metric kilotons)	Particulate emissions (metric kilotons)
2019 Achievements	11.2 (-17.53% YoY)	19.6 (-13.13% YoY)	1.4 (-19.85% YoY)
2020 Goals	2% lower than 2019	2% lower than 2019	9.5% lower than 2019
	Chemical oxygen demand (COD) emissions (metric tons)	Comprehensive energy consumption rate per RMB 10,000 of output value (metric tons of standard coal)	Comprehensive energy consumption rate per RMB 10,000 of industrial added value (metric tons of standard coal)
2019 Achievements	118.53 (-14.13% YoY)	3.91 (-2.82% YoY)	12.93 (-23.91% YoY)
2020 Goals	Lower than in 2019	3% lower than in 2019	2% lower than in 2019

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

E1.1/E1.3/ E1.7/E1.8

Environmental Management Systems

To enhance environmental management and performance, in 2019 CR Power released its 6-Star Environment, Health, and Safety Management System based on the environmental statutes including the PRC Environmental Protection Law and the Air Pollution Prevention and Control Law of People's Republic of China ("PRC"), the General EHS Guidelines of CR Group, and the characteristics of the power industry and of its own. Incorporating many of the elements of international standards such as ISO 14001 – leadership, culture and mindset, continuous improvement, organization, institutional standards, education and training, qualification and certificate, goals and responsibilities, monitoring and inspection, energy management, ecological protection, supervision and audit, communication and promotion, assessment and evaluation, and reward and punishment – CR Power's 6-star system covers all phases of the PDCA (Plan-Do-Check-Act) model in EHS management. The system helps regulate the environmental management programs of the wind, photovoltaic, thermal, and hydroelectric power projects wholly-owned, controlled, or managed by CR Power. In addition, CR Power encourages and supports its subsidiaries to become ISO 14001 certified for environmental management systems ("EMS"). This has been achieved by subsidiaries including CR Power Northeast Power Engineering Co., Ltd.

Each year, CR Power conducts periodic environmental reviews on each of its subsidiaries to ensure plan implementation and standards compliance. The review is always followed by a corrective action plan and deadline, and mandates periodic, follow-up progress reports be submitted to company executives. In 2019, we conducted one environmental review each month, identifying 196 risks related to air, water, and soil pollution and solid and hazardous wastes; 173 or 88.27% of these have now been resolved.

Environmental Training and Advocacy

CR Power's environmental training takes place at three levels: Headquarters, regional companies, and project companies. Training offered at the Headquarters is propagated to the regional companies and project companies by those who have received the training. These companies also offer their own courses for wider coverage, including courses on environmental protection, technology-based environmental monitoring, and environmental management. In 2019, CR Power employees received 632,915 hours of EMS training, personnel of stakeholders received 705,908 hours, for a combined of 1,338,823 hours.

Headquarters level



The Headquarters organized training on environmental risks during the construction phase of renewable energy projects and on the identification and prevention of EHS-related legal risks of such projects. The Headquarters also organized a number of other events, such as meetings on environmental supervision, the identification and prevention of environment-related legal risks in existing projects, and chemical-based environmental technologies.

Regional company level



Regional companies invited experts recommended by provincial environmental protection agencies to offer training on the compliant disposal of solid and hazardous wastes, prevention of environmental risks of renewable energy projects, and case studies from recent precedent environmental lawsuits. They also celebrated the National Energy Conservation Week and National Low-Carbon Day, published the Low-Carbon Day Declaration, and conducted environmental screenings as well as low-carbon activities including energy, materials and water conservation events.

Project company level



Project companies organized lectures on national environmental policies and ecosystem protection and environmental management at power plants. They also organized movie nights and knowledge contests to promote energy conservation and clean air through a more engaging format.

Environmental Technologies

CR Power always seeks new ways to incorporate environmental technologies in its operations. It embeds the supervision and management of such technologies in every stage of a technological upgrade project and the power generation process. It also supervises, evaluates, and adjusts parameters, performance, and indicators crucial to the economic operation of generators, in order to achieve the lowest overall consumption of coal, electricity, oil, steam, and water.

Case Study

Research on the Migration and Distribution of TOC in Condensing Turbine Systems

When a condensing turbine switches from power generation to heat supply mode, the level of total organic carbon (TOC) in the steam, coming from impurity ions in the form of organic matters, will greatly increase with the increased use of makeup water.

Since 2016, Rundian Energy Science & Technology has been studying and testing the treatment of makeup water on real steam turbines. The analysis is on the migration patterns and control of TOC for organic, acidic products of decomposition in steam condensate, feed water, boiler water, and steam, for the different grades of desalted boiler makeup water. This work culminated in a method for controlling organic matters in the water-steam cycle, which has improved the overall steam/water quality and overall stability of heat-supply condensing turbines. This project won first prize in the 2019 Henan Electrical Science and Technology Award and led to two patents and three published papers in leading Chinese science journals.



Green Production

CR Power is committed to becoming a resource-saving and environmentally-friendly enterprise. It has been vigorously promoting cleaner production, green design, conservation and efficiency, and pollution and emissions reduction to ensure sustainable development.

Controlling Pollutions

In accordance with the PRC Environmental Impact Assessment Law, CR Power strictly complies with the "Three Simultaneous" requirements (i.e., environmental facilities are to be designed, constructed, and commissioned concurrently with the principal facilities), and ensures various pollution control facilities are competently constructed, operated, and managed. Moreover, in line with the Interim Measures for the Administration of Contingency Plans for Environmental Emergencies, before a project is put into operation, a risk screening is conducted and the emergency plans for responding to air, water, and solid waste pollutions are developed to prevent and minimize the potential environmental impact.

Case Study | Controlling Flue Gas Emissions

Cangzhou Thermal Power Plant in Hebei Province, upgraded its denitrification system for its 2×330 MW co-generation heat and power units, reducing the nitrogen oxide emissions by a remarkable 15.4% compared with 2018 levels.

The Tangshan Caofeidian Power Plant, in Hebei Province, by conducting flow field optimization of its denitrification system and adding low-temperature economizer, has effectively controlled the concentration of nitrogen oxides at the system outlets. This leads to lower emission of condensable particulates such as soluble salts, sulfuric acid mist, and organic matters in the flue gas, and therefore fewer occurrence of gypsum rain and colored fumes.

Air pollution

CR Power has strengthened air pollution control by adopting cleaner processes and improving technologies to achieve the 2020 goals set in the national Three-Year Plan on Protecting the Blue Skies and to meet the requirements of the PRC Air Pollution Prevention and Control Law.

Ultra-low emission by thermal power plants

According to China's Action Plan for the Upgrade and Retrofitting of Conservation and Emission Technologies in Coal-Fired Generating Units (2014–2020), CR Power conducted a phased upgrade of its thermal power generators to achieve ultra-low emissions. This program has lowered the concentrations of sulfur dioxide, nitrogen oxides, and particulates in emissions to below 35 mg/Nm³, 50 mg/Nm³, and 10 mg/Nm³, respectively, meeting the corresponding national standards (GB 13233-2011) for gas-fired power plants. In 2019, CR Power rolled out this upgrade for the #3 unit (200 MW) of Shenyang Thermal Power Plant and the #2 unit (300 MW) of Dengkou Power Plant. The only remaining two 200 MW coal-fired generators run by CR Power that have not undergone this upgrade are expected to achieve ultra-low emissions in 2020.

Fully-enclosed coal yards

CR Power has been building fully-enclosed facilities for its coal yards to reduce dust pollution. As at the end of 2019, 22 or 81.5% of the 27 CR Power coal-fired power plants have either completed (12 plants), or are in the process of building (10 plants), coal yard enclosures. Enclosed coal yards are able to collect, treat and prevent dust from being carried into surface waters after a rainfall.

Daily monitoring

Flue gas emission monitoring system is installed at all of CR Power's thermal power plants in accordance with MEE's Specifications for Continuous Emissions Monitoring of SO₂, NO_x, and Particulates in the Flue Gas Emitted from Stationary Sources. This system transmits real-time pollutant data to local environmental authorities. For added insurance, power plants periodically compare the data manually and handle abnormalities in a timely manner to ensure the integrity and validity of the transmitted data.

Overview

CASS-CSR 3.0
Core Indicators for
Power Production
Industry

S4.1/S4.2/
E1.5/E1.11/E2.1/E2.5/
E2.6/E2.7/E3.1/E3.3/
E3.4/E3.5/E3.6/E3.7

HKEx ESG
Indicators

A1 General
Disclosure/
A1.5/A1.6
A2 General
Disclosure/
A2.4/A3.1



Water pollution

While striving to conserve water and increase recycling, CR Power has strictly controlled the treatment and discharge of industrial wastewater in accordance with the PRC Water Pollution Prevention and Control Law and local discharge standards.

Classification and collection of wastewater

All water used for maintenance and cleaning of machinery and equipment is collected and recycled. All wastewater created from chemical cleaning and shutdown protection is collected and recycled or handed over to qualified companies for treatment in accordance with the prescribed disposal plan.

Wastewater treatment facilities

To meet the wastewater discharge standards, each power plant has set up facilities to treat sewage, chemical wastewater, desulfurized wastewater, coal-containing wastewater, and oily wastewater as needed by their operations.

Solid waste pollution

Improper disposal of solid waste puts groundwater and soil at risk. To comply with the PRC Law on the Prevention and Control of Environmental Pollution by Solid Wastes, CR Power takes actions to reduce the creation of wastes, and supervises their collection, storage, transportation, utilization, and disposal to prevent pollution incidents.

Disposal of non-hazardous waste

At our coal-fired power plants, non-hazardous wastes mainly comprise furnace by-products such as fly ash, slag, and desulfurized gypsum. We sell the coal ash, gypsum, and other byproducts to other industries, not for purely economic reasons, but to extract maximum utility out of resources and prevent environmental risks. We always seek the best solutions for resource utilization to boost the local economy.

Disposal of hazardous waste

At our coal-fired power plants, hazardous wastes mainly include waste grease, catalysts, and lead batteries. Abiding by legal requirements such as the Technical Specifications for the Collection, Storage, and Transportation of Hazardous Waste and the Multi-Receipt-Based Management of Hazardous Waste, CR Power makes it a top priority to reduce the creation of hazardous wastes in the first place, and where they do arise, engage companies with the proper qualifications for compliant disposal. Additionally, CR Power has implemented multi-receipt-based management to track the storage and transport of hazardous wastes, in order to prevent inadvertent spills during those processes.



Recycling

In accordance with the PRC Circular Economy Promotion Law, CR Power has fully implemented the reduce-reuse-recycle paradigm and has been continuously improving the utilization of water and solid wastes to reduce dependence on natural resources.

Saving water resources

Water is essential to our survival and crucial to our ecosystem. CR Power's sustainable development hinges on the availability of water resources, one of the key risk factors for the power industry. Accordingly, CR Power has adopted cutting-edge technologies to reduce water consumption. Our plants at Hezhou, Wenzhou, Xuzhou, and Jiaozuo have been recognized as "Model Water-Saving Enterprises" by local governments for their significant water conservation achievements and eco-friendly practices.

► Reducing the use of fresh water 1

To reduce stress on natural water sources and groundwater, CR Power subsidiaries preferentially use reclaimed water (i.e., treated wastewater) in their operations. In 2019, our power plants in Jiaozuo, Shouyangshan, Cangzhou, and Xuzhou used 34.52 million metric tons of reclaimed water in place of fresh water. CR Power has also adopted technologies including closed-loop water cooling system and flue gas dehydration, and technologies that permit higher impurity concentration in circulating waters, to further reduce the loss of fresh water.

► Adopting innovative water conservation technologies 2

Nanjing Chemical Park Power Plant has implemented a technology that enables unpowered recycling of concentrated waste water in a reverse osmosis system, reducing the percentage of discarded concentrated waste water from 25% to 12.5%. The Inner Mongolia Xilingol Power Plant has developed a technology that allows the water vapor from flue gas to be condensed and then recovered by direct contact with the low-temperature circulating water. The recovered water is then treated and used in desulfurization and other systems, significantly reducing the makeup water consumed by generators.

► Strengthening water management 3

Pursuing the strategy of "reduction and control at source, classification-based collection, and cascade utilization," CR Power has strengthened water management by establishing individual files for water users, improving equipment operation and maintenance records, and enhancing water management standards. For better water management at each of its subsidiaries, CR Power has been conducting water balance tests and strengthening use measurement and water conservation rules.

Integrated use of solid waste

We take a two-pronged approach to handling solid wastes: reducing their creation and maximizing their use.

► Sludge-coupling power generation **1**

Urban sludge treatment plants produce a large amount of sludge in the process of purifying wastewater. So far in China, most of this sludge is disposed of in landfills, creating secondary pollution risks. To address this problem, many of our coal-fired power plants are experimenting with sludge-coupling power generation, where sludge is mixed with coal before incineration. This technology makes large-scale treatment of sludge become possible, and the resulting additional heat can also be used for power generation.

► Enhancing the utilization of by-products **2**

Many solid by-products of power plants – fly ash, wet slag, and desulfurized gypsum – are good building materials. Jiaozuo Power Plant has built a fully sealed storage facility for ash and slag, which are then fed into a grinding and sorting machine to improve on quality, raising the overall utilization rate of the by-products to 100%.

► Recycling industrial solid waste **3**

Limestone powder is consumed in large quantities during flue gas desulfurization. CR Power's Gucheng Power Plant innovatively uses white mud, a solid waste from papermaking, to replace limestone powder, for which it has received a utility patent. Likewise, Henan Dengfeng Power Plant is seeking to replace limestone powder with calcium carbide slag, a waste by-product from the chlor-alkali industry, to promote circular economy.

To help local communities improve environmental governance, 16 of our coal-fired power plants, including Haifeng Power Plant, Guangzhou Thermal Power Plant, Changshu Power Plant, Nanjing Chemical Park Power Plant, and Gucheng Power Plant, are working with local authorities in the disposal of sludge and industrial wastes. In 2019, CR Power processed 748 metric kilotons of sludge by co-combustion and burned or recycled 216 metric kilotons of industrial and manufacturing waste.

Comprehensive desulfurized gypsum utilization

3,300.6

metric kilotons

Comprehensive desulfurized gypsum utilization rate

95.63%

Protecting the Ecosystem

CR Power has increased investment in wind power. To reduce the environmental impact of wind farms and comply with the PRC Environmental Impact Assessment Law, the Company engages qualified independent parties to analyze, predict, and evaluate the potential impacts of each project, and formulates and implements preventive policies and measures during construction. CR Power's environmental and conservation efforts start as early as during the site selection stage. For instance, during site selection CR Power would avoid key areas for water and soil conservation, develop conservation plans, optimize construction methods, and minimize soil disturbance and vegetation damage. After a wind farm is built, CR Power actively seeks the best ways to restore vegetation according to its Ecosystem Protection Standards.



Adopting tailored transportation method

To reduce the impact on vegetation and the fragile local ecosystem, CR Power assigns workers to dig cable trenches and, where possible, horses rather than trucks to transport building materials.



Restoring vegetation according to professional designs

CR Power invites qualified design institutes to wind farms to formulate water and soil protection and vegetation restoration solutions. Then, based on their designs, repairs drainage ditches, hardens roads, reinforces slopes, and revegetates the surrounding areas.



Restoring vegetation on special terrains

After years of experimentation, CR Power has developed an effective method for greening wind farms situated on rock slopes at an altitude above 1,500 meters. By spraying grass seeds and planting shrubs and climbing vines, with the help of 3D geomats and seed agglomeration technologies, the green coverage at wind farms can reach up to 90%.

For hydroelectric power projects, CR Power is committed to maintaining a stable aquatic ecosystem by carrying out ecological fish planting and artificial breeding, building fish passages and artificial spawning grounds, and protecting fish habitats, all in strict compliance with the recommendations of environmental impact assessment reports and the requirements listed in government approval documents. Moreover, CR Power strictly prohibits the dumping of excavated excess soil into rivers and streams, and has set up pipe and box culverts to help amphibians and reptiles pass under roads.

Environmental assessment rate

100%

Promoting Green Office

CR Power encourages its employees to contribute to a low-carbon work and living environment by doing the little things such as conserving electricity and water, reducing paper usage and travel, conducting meetings via video conference and planting trees.

Video conference system

CR Power's video conference system now covers 280 conference rooms at over 150 affiliated companies. With the rising popularity and demand for mobile office, CR Power upgraded its video conference system in 2019, greatly improving work efficiency and user experience. Over 3,600 video conferences, totaling 20,000 hours, were held in 2019.

Planting a tree, planting a hope

Every year, CR Power companies take part in the national Tree-Planting Day. Together, they have planted thousands of trees, including Masson pine, rhododendron pulchrum, red twig, pine, acacia, cherry, pipa, sweet osmanthus, red bayberry, banyan, and longan, leading by example in our drive to build a Green Earth.

Protecting Lives

Safe production is essential to any company. We at CR Power believe that there are no boundaries when it comes to safety, and people's lives are our foremost top priority in all our activities. Through organizational design, protocols, risk management, emergency response, monitoring and feedback, and safety culture, we have built an all-encompassing production and personal safety framework.

Key Topics

- Safe Production and Occupational Health

SDGs



Management Systems

- EHS Post Responsibility System
- Safety Risk Classification and Control Work Guidelines
- EHS Supervision Management Standards
- EHS Accident and Event Management Standards (Tentative)
- Safety Production Educational Training Management Standards
- Occupational Health Management Standards
- EHS Management Guidelines for Stakeholders in Tender Stage
- EHS Stakeholders Management Standards
- EHS Risk Assessment Criteria for Thermal Power Companies
- EHS Risk Assessment Criteria for Wind Power Companies
- EHS Risk Assessment Criteria for Photovoltaic Power Companies
- EHS Risk Assessment Criteria for Hydroelectric Power Companies



Our Performance

Safety investment

RMB **112** million

Number of emergency drills

1,354

Total number of hours of safety training

1,338,823

Safety training coverage ratio

100 %

Number of emergency drill participants

26,113

Total number of safety training participants

301,987





Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

S2.17/S2.19/S3.1/S3.4/S3.8/S3.9

HKEs ESG Indicators

B2.3

Improving Safety Management

Recognizing the paramount importance of safety and human lives, CR Power has strengthened its safety management system, raised the safety awareness of employees and relevant stakeholders, and created a safety culture that involves all stakeholders.

Safety Management System

Drawing on the latest international and domestic safety management philosophies, CR Power has created its own environment, health, and safety management system, covering such safety topics as signs and labeling, hazard sources and potential risks, stakeholder management, work environment

Risk management



Replacing the conventional accident-driven approach with a risk-driven approach, i.e., basing management decisions on the actual circumstances and with the goal to control risk.

Openness and inclusiveness



Integrating domestic and international management systems such as ISO with CR Power's internal programs such as safety teams, safety assessment, "hand-in-hand" support, and lean management.

Systematic standards



Integrating current management philosophies and approaches to build a unified "language and conduct" management platform for all CR Power companies, thus enabling them to cooperate, support, and connect with each other to form an organic management system.

Safe Production Goals

Strictly complying with the PRC Work Safety Law and the PRC Law on the Prevention and Control of the Occupational Diseases, we adopt a "safety first, preemptive action-centric, and comprehensive governance" approach with regard to safe production. By modernizing our safety management system and conducting full-coverage safety risk prevention, we strive to meet the target set in the CR Power Environment, Health, and Safety Management Plan (2016-2020): To reach industry-leading levels on 90% of safety indicators by 2020.

As of the end of 2019, 14 CR Power companies had a 10-year or longer safe production record, and 29 had a 5-10 year safe production record.

and permit, employee behaviors, change management, early warning and emergency management, process and equipment, and non-compliance management. In particular, the safety management system and the environmental management system share the same management approach and principles.

Process control



Focusing on process control, risk assessment, and employees' occupational health and personal, equipment, and environmental safety.

Full participation



Ensuring full participation during implementation, such as during the planning of a new management system, drafting of documents, and promotion and steady improvement of the system.

Continuous improvement



Following the PDCA model in system implementation to continuously improve CR Power's safety management practices.

Safety Risk Screening

To manage and control safety risks in production processes, CR Power and all its subsidiaries regularly evaluate EHS risks and risks associated with a particular region or job position, and formulate preventive measures appropriate for the level of risk. On-site inspections are carried out periodically to

identify risk hazards at every organization level and position, leaving no blind spot. In particular, our inspection teams conduct in-depth inspections into the high-risk areas such as construction sites, ammonia storage facilities, and oil tanks, as well as coal-handling system and other easily overlooked areas, based

on the geographical location, seasonal characteristics, and major potential risk factors of the inspection site. Uncovered safety issues and hazards, as well as the deadline for rectification, are noted in the on-site inspection report, ensuring end-to-end management of all safety hazards.



CR Power's EHS Department organized a special inspection on fire and explosion risks



Wenzhou Power Plant led a safety inspection ahead of the flood season



General manager of the Central and Western Region conducted a safety inspection at the Anyang wind farm's step-up substation right before grid connection

Maintaining Equipment Safety

Equipment maintenance is paramount to production safety. CR Power has been steadily improving the operation and maintenance of generating units; formulating ever more detailed maintenance standards; tracking major equipment defects; and implementing environmental, energy-saving, safety, and electricity reform policies, so as to prevent risks and ensure equipment safety.

Formulating more detailed maintenance standards

In line with the requirements of its Guidelines on Standardized Unit Maintenance and Repair, CR Power has enhanced the preparation, implementation, and review of maintenance and repair work and the arrangements for annual maintenance plans. In particular, maintenance and repairs are followed by an evaluation, the conclusions from which are reflected in operational excellence assessment to ensure standard compliance. In 2019, without compromising the overall reliability of our generators, we carried out 54 generator maintenance and repairs for safer and more reliable and economical operations.

Improving defect elimination during routine maintenance

We have introduced the Equipment Defect Management Standards for more rigorous management of equipment defects at our subsidiaries. As part of our routine maintenance program, we conduct monthly benchmark analysis for indicators including time spent to eliminate defect and defect elimination rate and promptness; and have strengthened defect tracking and the development of the necessary technical solutions. In 2019, thanks to the higher efficiency of our routine management program, there was a significant drop in number of defects and a notable rise in equipment reliability and availability. Defect elimination rate increased 0.03 percentage points to 99.58%; promptness rate increased 2.03 percentage points to 94.03%; and average time to eliminate defect was 20.40 hours, signaling a 21.05% increase in efficiency.

Ensuring equipment safety through technological upgrades

In accordance with our innovation commitment and Technological Upgrade Management Standards, we have implemented various environmental, energy-saving, safety, and electricity reform policies; and made technological upgrades in response to changes in fuel, electricity, fly ash, heating, and ancillary service markets. While ensuring the necessity and feasibility of these upgrades before carrying them out, we continue to improve the upgrade plans for higher implementation efficiency. We also conduct post-upgrade evaluation and filing to promote successful and commercially attractive upgrade projects within the Company, and implement end-to-end management to ensure equipment safety.

Number of generator maintenance and repairs

54

Defect elimination rate

99.58%

Defect elimination promptness rate

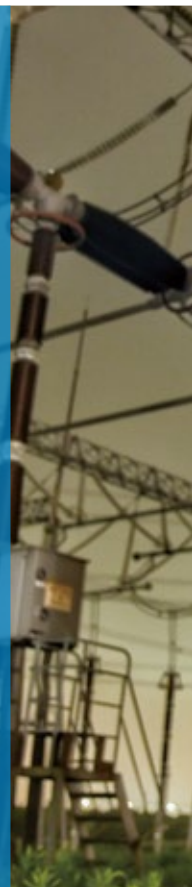
94.03%

Major equipment accident

0

Regular equipment accident

0



Creating A Safety Culture

Building a safety culture is a novel approach of CR Power toward modernizing and improving safety management at the company. CR Power strives to not only institutionalize safety culture in its corporate rules and operating procedures, but also gives it a humanist touch to make it easier to assimilate by employees. CR Power is committed to spreading this culture to every corner of the organization to ensure safety for all.

EHS training received by CR Power employees and stakeholders in 2019

1,338,823 hours

Case Study | Training and Seminars for General Managers

In June 2019, the general managers of regional companies, coal branch company, and project companies participated in the EHS training course organized by the Headquarters. This course contained nine modules, including the EHS status and requirements of CR Power, EHS legal risks and their prevention, building of internal safety teams, EHS management, and general manager accountability rules. Following lectures, the general managers each gave a safety course in accordance with the Safety Production Educational Training Management Standards, in which they discussed the state and future plan of safe production in the context of their personal experiences and employee feedbacks.

In 2019, CR Power and its subsidiaries organized a wide range of events to promote EHS culture, including oath and signing ceremonies, campaigns against safety violations, general manager lectures, educational videos, experiential safety education, review of illustrative safety incidents, safety quiz, speech contests, cartoon contests, knowledge contests on dangerous chemicals, competition of equipment operational skills, and training competition. These activities have created a self-reinforcing safety culture that involves every employee, contributing to more effective safety management at CR Power.



Safety knowledge training



"Safety and Health Cup" knowledge contests



Handing out safety books



"Safety Consultation Day" Activity





Technology-Assisted Safety

CR Power values the use of technology in safety management and has been investing in its smart safety control system, smart safety management platform, and virtual reality (VR) scenario simulator.



Smart safety management platform

In 2019, CR Power Headquarters and a subset of its regional companies launched an Enterprise Smart Safety Management Platform. Featuring such functional modules as hazard screening and management, risk management, safety training and education, safety-related activities, emergency response, stakeholder management, and evaluation and review, the platform enables integrated, systematic, and efficient management of safety programs.



Smart safety control system

The Runyoushi Smart Safety Control System leverages big data, artificial intelligence, and internet-of-things technologies to offer customized safety controls. Through image recognition on video feeds, the system intelligently detects and alerts staff of unsafe conducts, equipment status, and environmental factors, enabling fully automated control.



VR scenario simulator

The safety simulator creates a number of lifelike scenarios through use of images, sound, and dynamic simulation. Here, employees can experience escape and rescue at height, handling of falling objects, liquid splash and direct injury, hoisting of heavy objects, first aid, and use of electrical equipment. Combining theory education with hands-on experiences helps raise employees' safety awareness and skills, making safety management in the field that much more effective.

Strengthening Safety Protection

Safety Teams

Our safety teams have become the first responder and first line of defense in safety matters. Accordingly, strengthening these teams is not only essential to better safety management, but also the most practical and effective means to reduce the number of accidents. CR Power has begun forming safety teams across the Company since early 2018. By the end of 2019, a total of 1,445 teams were in operation, 58 of which had attained 4-star performance rating, and 345 a 3-star rating, setting an example for the others in helping CR Power maintain a safe workplace.

Case Study | Jiangsu Regional Company: Everyone is the Team Leader

The Jiangsu Regional Company launched the "Everyone is the Team Leader" program to ensure every member of a safety team is fully committed to fulfilling safety responsibilities. The company also drafted the Evaluation Criteria for the Implementation Award of "Everyone is the Team Leader" Program, based on which lower-level companies will be evaluated and awarded based on their performance in building safety teams.

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

S2.17/S2.19/S3.2/S3.3

HKEx ESG Indicators

B2 General Disclosure / B2.3

Safety Drills

CR Power takes accident prevention, real-time incident control, and post-incident resolution seriously. It has developed targeted emergency skill training and safety drills for all employees to minimize the impact of an incident, protect personal and property safety, and maintain orderly production activities.

Safety drills organized in 2019 by various CR Power companies covered scenarios such as liquid ammonia spill, oil tank leakage, flood, terrorist acts, power outage, flooded pump station, food poisoning, escape from height, fire, traffic accidents involving employee shuttles, and high-pressure steam pipe leakage. These drills help improve the companies' emergency response capabilities and employees' skills in protecting their own lives and those of others.

Number of comprehensive contingency plans

115

Number of specialized contingency plans

1,872

Number of the emergency drills held

1,354

Number of emergency drill participants

26,113



Fire and environmental protection "double blind" drills organized by Hunan Project Company



Terrorism response drill at Xuzhou Project Company



Dangerous chemicals drill at Liyujiang Project Company



Occupational Health Protection

Occupational hazards at coal-fired power plants mainly include silica dust, coal dust, noise, high-temperature thermal radiation, and arc light radiation. Without proper protection, workers may suffer from pneumoconiosis, hearing loss, photokeratitis, and other occupational diseases. To promote the physical wellbeing of its employees, CR Power organizes physical check-ups for those who are exposed to occupational hazards, and has developed Occupational Health Management Standards to clarify the management duties and occupational health responsibilities of each functional department and relevant staff position. By creating occupational health records, informing employees of the potential occupational hazards and protective measures, organizing regular physical check-ups, engaging

independent agencies to perform hazard assessment and public notification, and issuing compliant personal protective equipment, CR Power has continuously improved its occupational health program. As a result, CR Power has consecutively recorded zero occupational health incidents for many years.

In 2019, to further disseminate information about occupational diseases and improve employees' self-protection awareness and skill, CR Power has organized a number of company-wide events as part of the National Health Commission's "2019 Publicity Week on the Law on the Prevention and Control of the Occupational Diseases."

Case Study | Mapping of Occupational Health Hazards

CR Power's Henan Shouyangshan Power Plant is piloting the use of cutting-edge digitalization technologies to present occupational health information. Through an animated video, it explains the main occupational health hazards in coal-fired power plants, the areas where they are present, the protective measures built into

the facility and required of each employee, and the available occupational disease protection facilities.



Communication, monitoring, and notification of occupational hazards

100%

Allocation and wearing of protective gears

100%

New occupational disease incidents

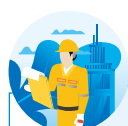
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Employees with personal health file

100%

Stakeholder Safety Management

Stakeholder safety management is a challenging task due to the large number of contractors on site, the frequency of high-risk works, and the inconsistent level of safety awareness and skills of the people on site. To reduce the safety risks to stakeholders' personnel, our subsidiary companies have implemented strict protocols for stakeholder selection, site admission, and the entire work process. In 2019, stakeholders' personnel received a total of 705,908 hours of EHS training from CR Power.



Selection

According to the Requirements for EHS Section of Engineering Project Bidding Documents, contractors with insufficient safety assurance and management capabilities will be excluded from the bidding and selection process.



Site admission

Before a stakeholder is permitted to enter a site, it is subject to a review regarding its licenses and permits, safety record, personnel, equipment, occupational health and training regimes, work plans, risk identification methodology, and contingency plans.



Start of work

Before commencing work, a stakeholder's employees need to pass a safety exam, attend safety training courses, and duly obtain the work commencement approval.



Operation

A detailed plan for the routine supervision of stakeholders' work has been developed to standardize related management practices. During the work period, stakeholders' work teams will be managed as one of our safety teams. Special attention is given to high-risk activities such as work at height and where two or more types of work are conducted simultaneously. Random on-site inspections will be carried out. If any issue is identified, a notice of evaluation and rectification will be issued. The rectification process will have a deadline and be tracked from start to finished to ensure end-to-end management.



Completion of work

After work is completed, we will rate a stakeholder on its adherence to EHS commitments as a reference to future selection processes.

In 2019, there were 2 work-related staff accidents at CR Power companies:

- > On April 19, a machinery accident involving Shenyang Project Department of CR Power Northeast Power Engineering Co., Ltd. resulted in 1 fatality.
- > On December 13, a machinery accident at Inner Mongolia Dengkou Power Plant resulted in 1 severe injury.

There were 4 accidents involving CR Power's stakeholders, resulting in 8 fatalities.

Following an accident, CR Power Headquarters will immediately form an accident investigation team according to its EHS Accident and Event Management Standards to carry out on-site investigation, CCTV footage review, witness interview, and simulation to analyze the cause of the accident. Based on the investigation, and in view of the job responsibilities and actions of the personnel involved, the Company will impose penalties on the relevant companies and individuals according to CR Power's Accountability Rules for EHS Accidents and Incidents, EHS Award and Penalty Standards (Tentative), and Accountability Standards for EHS Accidents and Incidents (Tentative).

We will then develop corresponding measures to prevent reoccurrence of similar accidents. Other CR Power companies will review the accident as a cautionary case study and a group from the Headquarters will check the safety measures and safety hazards at those companies to ensure similar incidents do not occur in the future.

Ensuring Sustainable Development

As China pushes forward the structural reform of the power industry and enhances industry supervision, we are actively responding to national policies, seeking progress while ensuring stability, and embracing innovations. We are also strengthening risk management, driving innovations, and sharpening our competitiveness to achieve qualitative growth.

Key Topics

- Response to National Policies
- Improving Customer Service
- Respect for Intellectual Property
- Responsible Supply Chains
- Maintaining Market Environment
- Corporate Governance and Risk Management
- Protection of Shareholder Interest
- Maintenance and Growth of Value of State-owned Assets
- Operational Compliance
- Industry Cooperation and Development
- Corporate Culture and Business Ethics

SDGs



Management Systems

- Internal Audit Regulations
- Basic Rules of Internal Control and Risk Management
- Guidelines on Incorporating Risk Analysis in Business Processes
- Management Measures for Post-Investment Project Evaluation
- Post-Construction Evaluation Method for the Quality of Thermal Power Projects
- Post-Construction Evaluation Method for the Quality of Wind Power Projects
- Guidelines on Risk Management of Overseas Investments
- Management Measures for Audits
- Management Measures for Remuneration and Benefit Audits
- Management Measures for the Integrity Information of Managers and Key Personnel
- Confidentiality Rules for Discipline Inspection and Supervision Programs
- Implementation Measures on Anti-Corruption Talks
- Legal Dispute Cases Management Standards
- Knowledge Management Standards
- Information Security Management Standards
- Information System Security Management Standards
- Procurement Management Standards
- Procurement Center Management Guidelines
- Management Standards for the Certification of Procurement Personnel
- Guidelines on the Management of Improper Conduct (Blacklist) of Bid Evaluation Experts (Tentative)
- Management Measures for the Recording, Announcement, and Investigation of Interference in Bidding Procedures and Engineering Projects by Managers
- Rules for the Periodic Rotation of Procurement Personnel
- Tax Risk Management Standards
- Management and Evaluation Method for the Chief Financial Officers of Affiliate Companies
- Guidelines on Risk Management in Power Sales



Our Performance

Total assets

HKD **215.74** billion

Net Generation Volume of Operating Power Plants

193,607 TWh

Attributable operational generation capacity

40,392 MW





Lawful and Compliant Operations

CR Power strives to deeply integrate legal compliance and risk management into all its lines of business, build synergy between its business integrity, rule-of-law, and compliance audit programs, and continuously improve its risk management capacity. The goal is to maintain legal and regulatory compliance and management soundness to ensure continuing business and financial growth.

3-Line Audit Control System

- Pre-line Warning and Prompting
- On-Line Consultation and Services
- Off-Line Supervision and Evaluation

Bolstering Risk Control

Centering on corporate and governance strategies, CR Power has been strengthening internal controls by developing the 3-Line Audit Control System and internal control and risk management framework. This creates a long-term mechanism for the prevention of operational and other risks before, during, and after an event or process. At the same time, CR Power is strengthening its risk management framework as it pertains to corporate governance and decision-making, investment, procurement, finances, environmental health and safety, and audit. Among the 176 management standards introduced by the Headquarters (and in effect), 94 are designed for specific business processes, identifying the key steps where major risks should be identified, the risk factors, and the necessary responses. These standards help each business unit anticipate risks and take precautionary actions in their business activities.

Digital audit

To tap the efficiency offered by IT tools, CR Power has built an intelligent audit risk warning system. By analyzing various inputs, this system enables the real-time, remote monitoring of fuel usage data and of bidding and procurement processes. CR Power is also working to upgrade the system to achieve continuous, IT-powered audit and supervision.

Comprehensive risk management

CR Power has been improving its risk identification, assessment, response, control, and monitoring frameworks; given particular attention to assessing risk factors, preparing risk management reports, and forecasting major risks of the year; and prioritized prevention of business risks at the source through risk management initiatives. In 2019, in line with the Evaluation of the Major Risks to Achieving 2019 Business Plan Goals, the Company has determined the top five risks and the response strategies and supervisory indicators. Responsibilities have also been expressly assigned to the relevant companies to ensure group-wide business development.

Improving risk warning capabilities

CR Power regularly compiles audit-related case studies to uncover best practices for integrating risk management in business processes and to emphasize the importance of early warning. During risk education and training campaigns, CR Power informs, through case studies, regional company professionals about the risk factors in key business processes, and gives trainings on internal audit, control, and risk management (ACR), in order to raise their risk awareness and strengthen risk management at all levels.

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

M3.2/M3.3/
S1.1/S1.2/S1.3

HKEx ESG Indicators

B7 General Disclosure /
B7.1/B7.2

Full coverage of audit

CR Power conducts special audits on key managerial aspects as required by the Standards for Audit Processes and Basic Rules of Internal Control and Risk Management, ensuring full audit coverage. In 2019, CR Power focused in the three aspects of risk prevention, internal control improvement, and value creation, organizing 30 audits and inspections on economic accountability of departing executives, construction projects, technological upgrade projects, renewable energy operations, and project shutdowns. These audits resulted in 257 recommendations for improvement.

Internal control and evaluation

Combining self-evaluation with auditing in respect of internal controls, CR Power organizes departments and regional companies to conduct self-inspection and random inspection, and has been enhancing the oversight of audits at subsidiary companies and the management of internal controls, enabling evaluations to shape future company rules and improvements.

Building Compliance Management

Responding to "greater operational and management compliance at central state-owned enterprises," CR Power is making sure that the business conduct of its companies and employees is increasingly compliant with laws, regulations, supervisory rules, industry norms, as well as CR Power's own articles of association and rules and international conventions and rules, to achieve business sustainability.



Compliance management system

CR Power began building its compliance management system in 2019. In particular, it formed a Compliance Committee and developed the Management Measures for Related-Party Transactions of Managers (Tentative) and Compliance Committee's Rules of Procedure for Related-Party Transactions of Managers. Under the Compliance Committee there is a general office that shares office the Legal Department to lead and coordinate the Company's compliance management efforts.



Compliance in key areas

In 2019, accounting for the top concerns of the energy industry, assessment of the Company's environmental protection rules and business conducts, and lessons from instructive environmental incidents, CR Power compiled a list of compliance risks that may arise during project development, construction, and operation. The Company also dived into the causes, consequences, and resolution of environmental incidents, based on which it developed pragmatic compliance and dispute resolution guidelines.



Legal risk prevention

Since 2013 CR Power has been managing legal risks through a combination of self-assessment and self-inspections. It enforces the prevention of legal risks through special pilot programs, legal "check-ups," contract management, rulemaking, IT systems, and general risk prevention. CR Power has created ten risk manuals for such areas as employment, thermal power, photovoltaic power, wind power, and heat supply, achieving 100% coverage of the legal risks in all its principal business lines.



Strengthening Anti-corruption Safeguards

Integrity is the key to sound business development and achievement of long-term business goals. To promote and enhance anti-corruption throughout the organization, CR Power has developed a rigorous supervision framework, vigorously fostered the culture of integrity, strengthened regular integrity education, and established accessible whistleblowing procedures, all in strict compliance with the PRC Company Law, PRC Anti-money Laundering Law, PRC Anti-unfair Competition Law, and other anti-corruption and anti-bribery statutes. For the reporting period, no lawsuit was brought against CR Power for commercial bribery, blackmailing, fraud, or money laundering.



CR Power held the (2019) 2nd Integrity Awareness and Education Meeting & New Manager Integrity Seminar in Shenzhen



Shaanxi Baoji New Energy Company launched the "Integrity Education Month" event

Supervision framework



In 2019, on the basis of the 24 Rules for the Conduct of Managers, CR Power developed the Management Measures for the Integrity Information of Managers and Key Personnel. Focusing on key personnel, areas, and processes, this document specifies the responsibilities, tasks, and approaches for managing the integrity information of managers and people in key positions, resulting in clearer supervisory guidance and greater supervisory intensity.

Professional trainings on integrity



With a view to building a high-caliber and professional team of conduct supervisors, CR Power combines open recruitment and advancement channels with strict qualification requirements, theory and classroom studies with on-the-job practical trainings, and appointment with supervision. In particular, 7 conduct supervisors from regional companies were seconded to CR Power's Supervision Department for additional course studies; more than 100 full-time conduct supervisors attended CR Group's professional training events; conduct supervisors from Headquarters and regional companies were organized to watch integrity-related training videos; and CR Power purchased and distributed the related reference books.

Regular awareness and education programs



In 2019, CR Power launched an integrity awareness campaign at the Headquarters departments and offices, directly affiliated entities, and regional companies, and organized two company-wide conferences attended by over 2,200 managers. Moreover, organizations at various levels of the Company held 645 events for 22,574 employees to promote integrity.

CR Power also organized two training courses on integrity in the year. The first course covered the contents of the Disciplinary Action Regulations and, for greater deterrence effect, organized a field trip for more than 90 trainees to an enforcement agency. The second course comprised two sessions and was attended by 288 people.

Multi-dimensional approaches



In 2019, CR Power sought and created various opportunities to promote the importance of integrity, including by setting up dedicated informational columns and publishing the Supervisory Report, creating a full-coverage promotion and education network. Company WeChat account Lianjie Rundian is the primary online delivery channel. The account has about 12,800 subscribers and has published 216 articles that have been read an average of 819 times each. Five issues of the Supervisory Report, containing 102 integrity-related articles covering various speeches and events, have been released thus far to foster a culture whereby every employee is concerned about, promotes, and acts with integrity.

Easier whistleblowing methods



CR Power maintains open, efficient, and well-managed whistleblowing channels. Whistleblowing reports can be submitted by telephone, email, website of the conduct supervision body, and Lianjie Rundian. Furthermore, pursuant to the Company's confidentiality rules for conduct supervision programs, materials submitted by, and information about, the person who files a whistleblowing report or complaint are treated as confidential. Such information and all physical evidence, written statements, testimonies, and other evidence may not be divulged. Thus, identity and other private information of the person who files a whistleblowing report or complaint is adequately protected.



Growth from Economies of Scale

In 2019, CR Power invested over RMB 20 billion in capital expenditure and newly commissioned 2,953 MW of attributable operational generation capacity. With the help of the Guangdong Runchuang New Energy Equity Investment Fund, CR Power incubated new renewable businesses to support its transformation. Through capital injection, CR Power acquired a 30% stake in DR Biomass Development (HK) Limited. This deal propelled CR Power into the biomass power industry, strengthening its renewable energy arm and optimizing its energy mix. These new business lines allow CR Power to better cope with changes in energy policies and market environments, thereby increasing its risk resilience.

Meanwhile, CR Power is conducting a review of its coal-related assets on a case-by-case basis to reduce excess capacity. In 2019, CR Power closed down 1 mine, shedding 450,000 metric tons of annual output and raising the overall quality of the Company's asset portfolio.

In 2019, CR Power's subsidiary power plants sold 193,607 TWh of electricity, including 173,574 TWh of coal-fired power, 962 TWh of gas-fired power, 16,608 TWh of wind power, 710 TWh of photovoltaic power and 1,753 TWh of hydroelectric power.

Overview

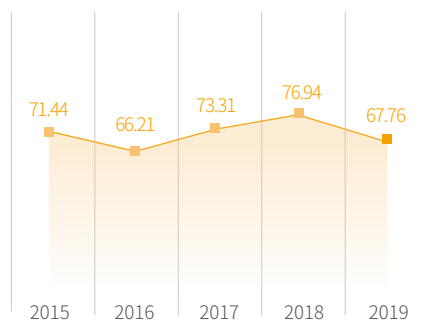
China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

M1.4/M1.5/M2.5/
S1.5

Performance

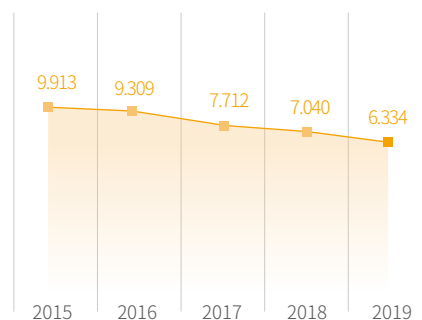
Turnover

Unit: Billion HKD



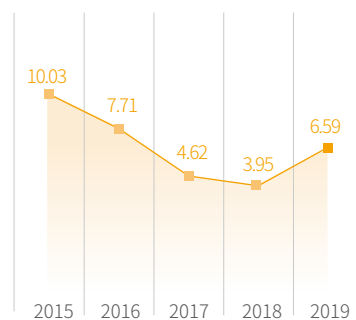
Total Tax

Unit: Billion RMB



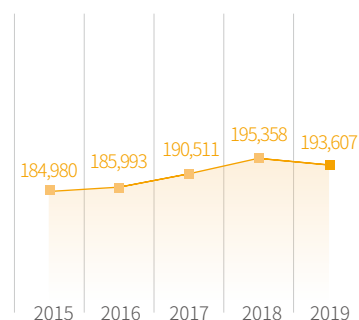
Profit Attributable to Shareholders

Unit: Billion HKD



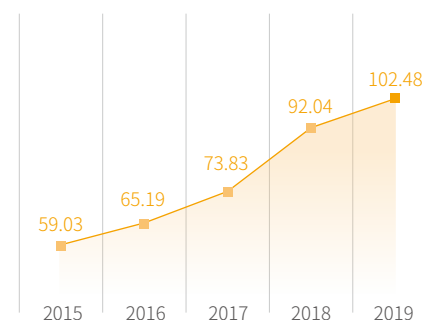
Net Generation Volume of Operating Power Plants

Unit: TWh



Total Heat Supply

Unit: kTJ



Improving Quality of Service

Overview

HKEx ESG Indicators

B6 General Disclosure / B6.2/B6.5



Satisfaction survey by telephone

466



Satisfaction survey by text message

973



Satisfaction rate

95.2%

To maximize power sales revenue, CR Power has implemented the Management Standards for Categorization of Energy Customers, and Management Standards for Maintaining Relationship with Energy Customers. These standards facilitate differentiated power sales strategies, enabling CR Power to expand its customer base, selectively develop power distribution services, and offer complementary and integrated solutions to customers. Such classification also facilitates customer visit and maintenance and improves customer satisfaction. The year 2019 was a great year for our power retail companies: they completed sales of 87.8 TWh of electricity, up 36% year-on-year; number of customers also increased by 90% to 5,358.



Integrated energy services

We provide value-added services such as equipment testing, repair, safety testing, and energy retrofits. Promoting sustainable energy consumption, we install smart meters to help customers analyze their energy use and improve efficiency.



Customer classification

We are improving our customer information database to build more accurate profiles and enable more accurate marketing strategies.



Customer relations

We are introducing differentiated and tailored approach for maintaining relationship with each of our customers.

Improving After-sales Service

We are a customer-oriented company. To improve our power sales services and protect customer interest, we listen to our customers, respond to their feedback and comments, and promptly resolve their complaints. We also organize customer care and customer relations events to the quality and reliability of our services. Our 2019 customer satisfaction survey shows a 95.2% satisfaction rate among the 1,439 respondents; and no customer complaint was received on our power sales business.



Customer education

We use online and offline channels to inform and educate our customers about the latest policies for the electricity market and our take on the current market situation. Our magazine CR Power Monthly has a "Spot Power Market" column devoted to the spot market for electricity. Customers can also find information about national electricity market transactions, provincial power sales news, and CR Power's cloud-powered demonstration areas by following our WeChat accounts (including Runxiaoxi) and TikTok account. Moreover, we are joining hands with power exchange centers and other relevant organizations to answer customer questions, explain the workings of market-based electricity transactions, and comment on the development of the electricity market at face-to-face settings. We hope that these informational events can encourage businesses and customers to take advantage of favorable policies to improve their energy management and lower energy bills.



Customer complaints

We offer and welcome fair deals and maintain utmost honesty in our dealings with customers. False or misleading advertisement is prohibited. We have set up two complaint channels: online and the "400" customer service hotline. Upon receiving a complaint, our customer service center will collect the background information and forward it to the relevant power retail company. The relevant person-in-charge at the company will then come up with a suitable solution and work with the customer until the customer is satisfied. The outcome will then be forwarded to the customer service center, which will follow up with the customer to gather feedback, and then enter the complaint and outcome in our records.



Customer care

We have set up a customer relations group on WeChat for major and group-company customers to provide better services. On holidays, we send our greetings and good wishes to customers through the 106 Text Message Platform and WeChat accounts.



Keeping Information Secure

Our business and activities may require us to access and collect information about our stakeholders (including customers, business partners, and suppliers) and our employees. For this reason, we strictly abide by the PRC Cybersecurity Law and other laws and regulations on the protection of crucial information infrastructures. We have developed the Management Measures for Information Security, Management Measures for Information System Security, and other rules, standards, and operating procedures concerning information and data security. We have also built safeguards into our computer and related equipment to help ensure their safety and security, information confidentiality and data integrity, and the prevention of security risks.

Building a sophisticated information security management system

CR Power has drawn up the Information Security Management Standards, Information System Security Management Standards, and Management Standards for Disaster Backup of Computer Systems, clarifying the processes for information security management, reporting of security incident, and emergency response. These policies have also enhanced the protection of employee and supplier information, as well as the standards and requirements in 14 areas such as classification-based protection, risk assessment, and security incident. Furthermore, they have specified the requirements for disaster recovery plans and the procedures for drills and routine disaster backup management, boosting CR Power's defensive capabilities.

Raising employees' awareness

In addition to requiring new hires to undergo cybersecurity trainings and sign a genuine software commitment letter and confidentiality agreement, CR Power organizes regular information security courses for professionals and department representatives, informing them about the security risks frequently encountered in work and off-work settings, as well as how to avoid and handle them, in order to raise their awareness and related skills.

Case Study | IT Security Risk Screening by All Subsidiaries

In March 2019, CR Power organized all its subsidiaries to assess and eliminate the risk factors facing key online data and personal information, with a view to prevent cybersecurity risks and system and data breaches. Based on the results of this campaign, CR Power further required the companies to complete system migration, conduct offsite backup, and enhance the management of supplier risks to better protect key company and personal data.



On June 25, 2019, CR Power, broadcasting from Shenzhen, hosted a video conference on network and information security. The event was attended by over 300 information security managers and other professionals from Headquarters departments and offices, regional companies, the coal branch company, and other relevant companies.

Business Transformation and Upgrade

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

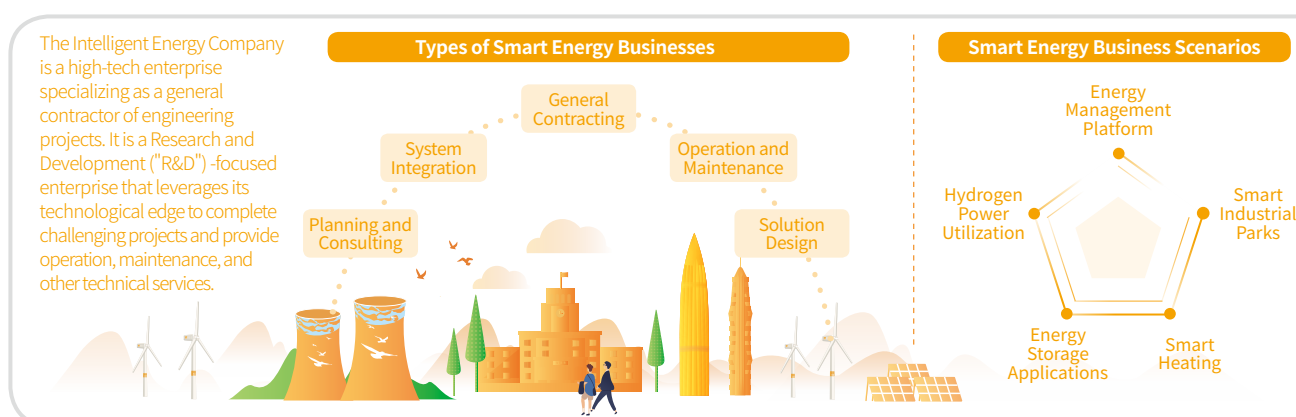
E2.8

HKEx ESG Indicators

A3 General Disclosure

Aligning with the national policy on industry upgrades, CR Power is investing in mutually complementary, smart, user friendly, clean, and low-carbon integrated energy businesses. Specifically, CR Power has established the Intelligent Energy Company to provide integrated energy solutions in areas of smart heating, smart industrial parks, and other upgrade projects for traditional energy systems, as well as in areas of hydrogen power, energy storage, and other new technologies and their applications.

Leveraging internet-of-things (IOT) and artificial intelligence (AI) technologies, CR Power's smart energy management platform offers clean, low-carbon, safe, and efficient energy and value-added services to government agencies, industrial parks, and businesses alike. By the close of 2019, CR Power has begun offering real-world solutions for energy storage applications, hydrogen power utilization, smart heating, energy management platform, and smart industrial parks.



Lingxi Smart Energy Management Platform

By managing the full lifecycle of electricity, heat, and cooling supplies, the Lingxi Smart Energy Management Platform integrates various businesses and projects into a unified cloud portal through IOT, system modeling, and AI technologies. This allows Lingxi to provide energy project planning, design, integration, construction, and operation and maintenance services to government agencies, industrial parks, and businesses.

01 Smart industrial park + energy management platform : Smart energy project of Hezhou Circular Economy Industrial Park

CR Circular Economy Industrial Park, a smart energy project in Hezhou, leverages the interdependencies and synergy among the on-site thermal, wind, and photovoltaic power plants – in terms of production inputs and outputs, electricity, data, and added value – to achieve zero net emission. Each year, this demonstration project generates 60 GWh of clean electricity, processes 250,000 metric tons of solid waste, and saves 66,000 metric tons of standard coal.

02 Smart industrial park + energy management platform: Smart project at Taigu Economic and Technology Development Zone

Being the first energy planning and smart energy project serving a provincial economic development zone, CR Power's smart energy management platform, deployed at the Taigu Industrial Park, enables accurate, reliable, fast, and fully automated metering and collection of power consumption data of about 50 businesses within the area. These data are then aggregated, analyzed, and made into reports, helping administrators monitor energy usage and facilitating zone-level energy data collection, compilation, and analysis as well as usage warning and control. Moreover, the smart energy management platform features a green energy monitoring module and safety warning module specific to the needs to the industrial park. Individual businesses can use the platform to monitor usage data in real time, perform energy benchmark analysis, and manage energy consumption and usage strategy for greater efficiency. Upon completion, this project is expected to provide 160 GWh of green electricity, 1.4 million GJ of heat supply, and save 96,000 metric tons of standard coal each year.

03 Energy storage application: Energy storage and frequency regulation project of Liyujiang Power Plant

Undertaken by CR Power's Intelligent Energy Company, the Liyujiang Power Plant's power supply-side energy storage and frequency regulation project is the first domestically funded project of its kind. The project is equipped with a 12 MW lithium iron phosphate battery system and the Lingxi Energy Management System (LEMS) developed in-house by Intelligent Energy Company. LEMS enables the power plant to adjust its frequency control strategies according to grid rules and market competition, and therefore finding the most optimal solution throughout the lifecycle of the energy storage system. The project has now become a benchmark project for China Southern Power Grid.

04 Smart industrial park + energy management platform: Fuyao Group's integrated energy project

Fuyao Group's integrated energy project allows the cascading and efficient use of energy. High-temperature flue gas from glass furnaces is used to generate electricity, as is the byproduct natural gas. The electricity then powers the plant and office buildings, and any remaining heat can be used to boil hot water for the living quarters and cool the air conditioning system. Rooftop solar panels provide additional electricity. After full project completion, green electricity is expected to account for 15% of the energy consumption. This translates into annual savings of 22,000 metric tons of standard coal and emissions reduction of 2,000 metric tons of SO₂ and 54,000 metric tons of CO₂.



Stimulating Innovation

Innovation is the primary growth driver for a business. Actively responding to CR Group's strategy of "Development by Transformation, Growth from Innovation," CR Power has established the Innovation, Development and Intellectual Property Committee, stepped up R&D effort and investment, created innovation platforms, stimulated management innovations, and built its own team of innovative talents. CR Power aims to complete strategic transformation through innovation, and thus achieve qualitative growth.

Research and Technological Innovation

The core innovation platform of CR Power lies in its technology research institutes, and this is where the Company seeks to find pragmatic solutions to real-world problems, continuously improves the innovation and innovation management frameworks, and increases investment to build itself into a highly innovative and competitive enterprise. We currently operate two research institutes, four research centers, and one platform. They are dedicated to studying topics including environmental protection, resource assessment, and safe production, and turning ideas into solutions that bolster our thermal power, wind power, and other renewable energy businesses.

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

M2.6/M2.7

HKEx ESG Indicators

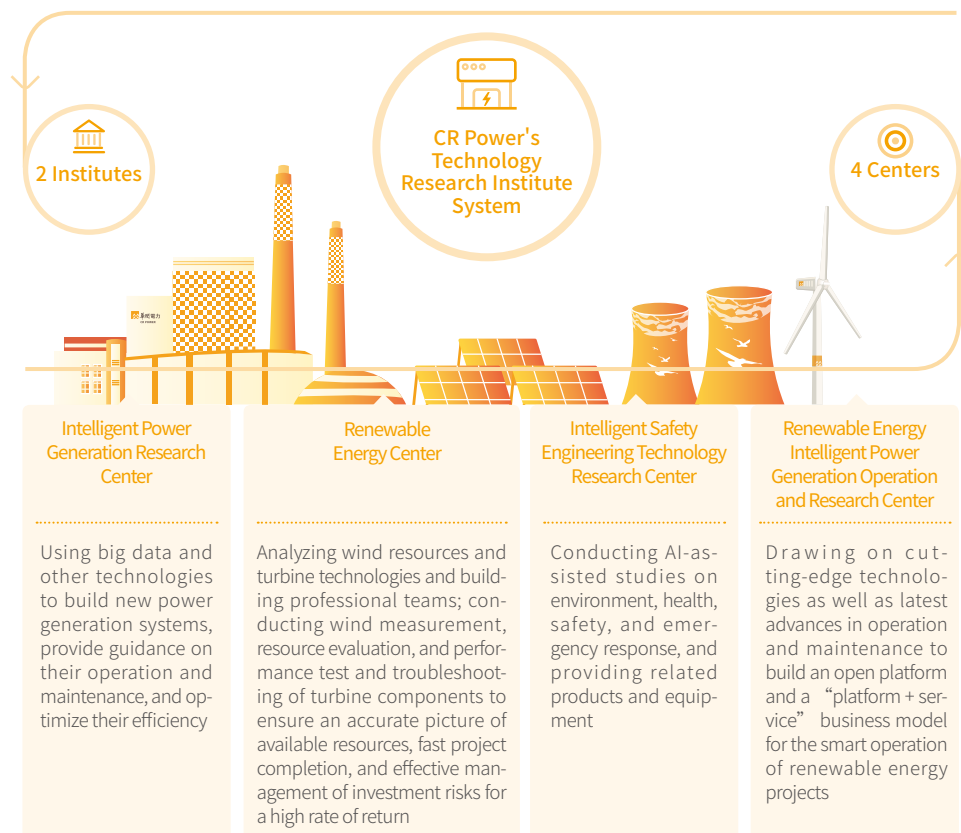
B6.3

Rundian Energy Science & Technology Company Limited ("Rundian")

Providing basic services to power companies such as unit testing, performance testing, fault diagnosis and troubleshooting, system and control optimization, and technical monitoring; researching and applying innovative technologies

Shenzhen ZhiRun Renewable Energy Exploration & Design Company Limited

Providing renewable energy-related technical services such as wind, photovoltaic, biomass power generation and distributed energy; promoting higher standards for renewable energy



Number of R&D
personnel in 2019

350

New patent
applications filed

212

Total patent
applications filed

1,076

Patents granted
in the year

225

Total patents
granted

620

R&D
expenditure

RMB **173** million



At the 3rd Symposium for
Intelligent Equipment
Control Technologies of
Power Companies, won
awards for equipment
innovation

8

Award-winning articles on
innovative application of
smart equipment

13

We value the use of technologies in safety management. Runyoushi, a proprietary intelligent safety control system developed by CR Power, was awarded the First Prize in the inaugural Safety Technology Progress Award conferred by the China Association

of Work Safety. The system has been installed for use at our Tangshan Fengrun Power Plant, Cangzhou Yundong Power Plant, Puqi Power Plant, and Fengming Wind Farm.

Case Study | Operational Safety through the Runyoushi Intelligent Safety Control System

Runyoushi is a camera-based intelligent safety control system that uses innovative image recognition, big data, and IOT technologies to offer a systemic solution to the safety management challenges commonly found in work sites, such as inadequate and hard-to-implement supervisory measures, large number of blind spots, and difficult-to-manage third-party personnel. Featuring intelligent modules for safety management, health management, environmental protection, hazard management, emergency response, and site survey, Runyoushi

can identify workwear, safety helmet, safety belt, fire, smoke, abnormal noises, vibration, as well as scaling of conveyer belts and trespassing into unauthorized areas. It also supports personal health monitoring, indoor and outdoor 3D positioning, intelligent site survey, and emergency response and rescue. Runyoushi can effectively prevent and stop personal injuries and launch remedial actions as soon as an environmental incident has occurred, thereby enabling the intelligent monitoring of production safety.

Promoting Lean Management

CR Power is building a modern management system. To boost management efficiency, it has been advocating lean management philosophies and practices, measuring

progress against benchmarks, and promoting innovation and efficiency initiatives.

CR Power has stepped up lean management programs throughout the organization, identifying 16 action items for the Headquarters and 2,479 action items for regional companies, including 326 at the green belt level and above.

In 2019, CR Power has recognized 16 power plants (10 thermal, 5 wind, and 1 hydro) with outstanding operational performance as five-star benchmarks. In particular, Puqi Power Plant, Honghe Hydroelectric Power Plant, and Huanxian Wind Farm, recognized by CR Group as six-star benchmark power plants, will especially help CR Power to improve the group-wide operational performance.

Lean
management
programs

Lean
management
professionals

Benchmark
power plants

Smart power
plants

CR Power also prioritizes the training of lean management professionals. In 2019, 83 have been green belt-certified, and 445 yellow belt-certified. The Company has trained 54 instructors and developed 9 courses for lean management.

In the process of building smart power plants, CR Power has independently developed Runyoushi, RUY, generator maintenance and repair system, smart de-dusting system, and other technologies, achieving the designed objectives and winning the acclaim of peers and customers.



Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

M3.1

Enhancing Cooperation and Mutual Development

CR Power has been building broad cooperative relations and strategic alliances with equipment manufacturers, industry partners, and downstream customers. It actively explores all possible cooperation models in business development, construction and operation, power sales, and integrated energy services, in order to promote innovation and productivity and achieve complementarity, mutual benefits, and coordinated

development with upstream and downstream partners. With the help of strategic partners, CR Power has built energy equipment manufacturing centers, which leverage each company's industrial and R&D capabilities and resources to help modernize the local industry, create jobs, and increase local tax revenues. CR Power signed 14 strategic cooperation agreements in 2019.

Working with the government

We have established multi-level communication and cooperation mechanisms in many fields with all levels of government. In areas such as municipal sludge treatment, poverty alleviation through wind power, sustainable wind development, and smart energy services, we are engaging in in-depth cooperation with the government to promote local economic and industrial development.

Working with businesses

Together with our strategic partners, we are developing integrated energy services; exploring innovative solutions in circular economy, central heating, and sludge-coupled power generation; and expanding our expertise and influence to various energy sectors. We and our partners complement each other and grow together.

Case Study Working with Zhongwei on Innovative Wind Project

In September, 2019, CR Power signed a tripartite agreement with China Railway Rolling Stock Corporation ("CRRC") Zhuzhou Electric Locomotive Research Institute Company and the government of Zhongwei in Ningxia. According to the agreement, the parties will promote the revitalization and sustainable development of Zhongwei's local wind industry, the construction of the 300 MW wind farm to help reduce poverty in the county of Haiyuan, and the deployment of CRRC Zhuzhou's renewable energy solutions (wind turbines, smart electric buses, renewable energy buses, environmental technologies, and photovoltaic panels) in Zhongwei.



Working with higher learning institutions

We have formed strategic ties with colleges and universities on the training of engineers and on industry exposure opportunities within the Company.

Case Study

Establishing the Zhejiang University("ZJU")-CR Power Intelligent Energy Joint R&D Center

In July 2019, Zhejiang University-CR Power Intelligent Energy Joint R&D Center was unveiled at ZJU's Yuquan campus. Designed to promote talent training and industry transformation and innovation, it is the first joint R&D center of CR Power launched in partnership with a leading Chinese university. Both parties hope the center will become a model of business-academic cooperation and contribute to the smart energy industry and talent cultivation.



Working with the industry

We are an active participant of international symposiums, forums, exhibitions, as well as the drafting of industry standards. Through these efforts, we hope to promote professional exchanges, share experiences, and generally help build a brighter future for the industry.

In 2019, CR Power participated in the drafting of over 20 industry standards, serving as the principal drafter for industry standard DL/



On February 22, Rundian organized the drafting team and standard discussion meeting for the Methodology for Calculating Water Efficiency Indicators in Thermal Power Plant, in association with experts from the Henan Water Resources Office, Henan Water Ecosystem and Resources Bureau, Hebei Ji-Yan Energy Science & Technology Research Institute, and Northwest China Branch of China Datang Corporation Science & Technology Research Institute. The meeting made plan for the drafting of the standard which aims to improve water conservation at thermal power plants.

T 300: Guideline for Anti-corrosion and Anti-fouling of Condenser Tube in Power Plant and pending industry standard Calculation of Water Efficiency Indicators of Thermal Power Plant, and co-drafter of IEEE P1865.2: Specifications for Maintenance and Test of Distributed Control Systems in Thermal Power Stations: Operation Service and Management and national standard GB/T 23331: Energy Management Systems – Requirements.



In March 2019, CR Power participated in the Macao International Environmental Co-operation Forum & Exhibition (MIECF), showcasing our green development philosophy and successful energy and environmental projects.





Building Responsible Supply Chain

Believing that business cooperation should benefit and be fair to all stakeholders, we insist on responsible procurement, selecting suppliers based on a combination of product quality, labor rights, occupational safety and health, environmental management, and business integrity considerations. This multi-dimensional approach not only promotes social responsibility among our suppliers, but also builds a healthy and mutually beneficial relationship between us, empowering us to face challenges and achieve growth together.

Improving Supply Chain Management

CR Power has created a procurement management system to facilitate information sharing among the Headquarters and regional companies. A supplier database has also been set up for centralized management of all goods suppliers. We have developed the Sanctions for Supplier Misconduct to clarify the relevant procedures, and put suppliers that have acted in a dishonest manner during a bid or during contract performance on our dishonest supplier list, upon which they would not be awarded any CR Power projects for a set period of time. Furthermore, at the bidding stage, we require our suppliers to submit a certificate of no-bribery record and to undertake that all materials and information they provide are authentic and truthful, that they will abide by national laws and regulations during bidding, and that they will not engage in any form of commercial bribery. To strengthen supplier management and avoid breach of contract by dishonest businesses, CR Power conducts supplier evaluation annually. Contractors are evaluated according to criteria such as product quality, after-sales services, engineering project safety, and environmental protection and receive different procurement treatments depending on their rating.

Safeguarding Supplier Interests

Information about every bidding process is publicly available through the corporate contract bidding platform. We strictly comply with laws and regulations including the PRC Bidding Law and the Implementing Regulations on the Bidding Law, and with the industry's code of conduct and business ethics. We have created a company Code of Integrity, requiring our employees to uphold fairness and comply with the recusal and confidentiality rules during the bidding process. We have set up a channel to receive and handle grievances and complaints from tenderers during bid-invitation, bid-opening, and bid-award stages, and have zero tolerance for anti-competitive behaviors such as collusion, below-cost bids, industry monopoly, and kickbacks.

Furthermore, our privacy policy is also binding on our suppliers. In particular, bid participants are not allowed to divulge any nonpublic commercial or technical information (including intellectual properties) without the owner's consent, or to divulge any personal information during a bid or procurement procedure.

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

M3.2/M3.3/ M3.5/ M3.12/ M3.14

HKEx ESG Indicators

B5 General Disclosure / B5.2

Percentage of suppliers certified by ISO 9001 (quality management), ISO 14001 (environmental management), and ISO 45001/OHSAS 18001 (occupational health and safety management)

100%

Economic contract fulfilled

99.2%



Equipment localized

100%



Responsible procurement

100%



Number of suppliers reviewed

5,916



Promoting Social Responsibilities Among Suppliers

CR Power has set up a well-functioning training system for external suppliers, contractors, and temporary employees, through which it provides regular training and guidance on EHS issues. For supplier safety management, we have released Stakeholder EHS Safety Management Rules on the basis of our Guidelines for Stakeholder EHS Management in Bidding Processes and Guidelines on Stakeholder EHS Management. The Rules sets out the safety management requirements for CR Power and stakeholders, reinforces the principle that "those responsible for businesses must also be responsible for safety," and requires stakeholders to assess their EHS shortfalls and risks against statutory standards and relevant rules and regulations. It also prescribes a

percentage-based requirement on safe production expenses, to strengthen the oversight of expenditures. At the same time, we also hold contractors and other relevant stakeholders accountable for construction safety, requiring them to set up a safety management body and specify a supervisor to ensure the safety of each construction project through all its stages. We also conduct EHS reviews on tenderers, scrutinizing their safety commitment, policies, goals, and management bodies; their safety certifications and personnel training; the prevention of occupational diseases; and the management of hazardous materials, personal protection equipment, and environmental protection programs. Moreover, we have strengthened the management of dynamic risks during

stakeholders' construction works, offering training to raise the safety awareness and skill of their employees, and help our suppliers build in-house safety management capacity.

For green procurement, we append the Incentives on Enterprise Income Tax for Purchase of Specialized Equipment (2017 version/2008 version) to our wind turbine bidding documents, encouraging tenderers to choose eco-friendlier products for reduced tax burdens.



Employees

Becoming Our Better Selves

CR Power regards talent as its most precious wealth and core competitiveness. The development of the Company is impossible without the support and dedication of each employee. By providing a fair and just work platform, a workspace that allows employees to bring their competence into full play, and sound career development paths and training, CR Power aims to create a pleasant work environment, drive the growth and well-being of employees, and forge ahead together with them.



Key Topics

- Employee Training and Development
- Employee Rights and Care

SDGs



Management Systems

- Management Measures for Employment Contract
- Headquarters Management Measures for Vacation Leaves
- Management Standards for Recruitment
- Management Standards for Organizational Performance
- Management Standards for All Employee Performance at Regional Companies
- Management Measures for Talent Coordination and Exchanges
- Guidelines for the Implementation Plan on the Professional Development Paths at Regional Companies
- Management Measures for Mentors of New Employees
- Management Standards for Employees' Participation in External Training



Our Performance

Total number of employees

21,746

Total employee training hours

848,094 hours

Employee care funds

RMB **0.6872** million

Rate of employment contracts signed

100%

Total training expenditures

RMB **15.25** million





Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

S2.3

HKEx ESG Indicators

B1 General Disclosure / B4 General Disclosure / B4.1/B4.2

Protecting Employee Rights and Interests

CR Power's success is built on how well we protect the rights and interests of our employees. We appreciate and respect the different personalities and talents of our employees, seek to promote their mental growth, and empower them to achieve their full potential. We also advocate diversity and equal opportunities to build a diverse corporate culture, and strive to create an inclusive and open work environment to maintain corporate vitality.



Rate of employment contracts signed in 2019

100%

Protection of human rights

CR Power strictly abides by the PRC Employment Law, the PRC Employment Contract Law, the PRC Social Security Law, the Regulation on Paid Annual Leaves of Employees, the Regulation on Work-Related Injury Insurances, the Law on the Protection of Women's Rights and Interests, and other laws and regulations. As a result, the Company adopts equal employment policies, eliminates all forms of employment discrimination, fights against forced labor and child labor, and puts in place employee recruitment, development, and promotion systems without discrimination on the grounds of gender, ethnicity, religion or age. We also safeguard the human rights of all employees by following the advocacies of international human rights organizations such as the Universal Declaration of Human Rights and International Human Rights Conventions.

Labor protection

We formulated the Management Measures for Employment Contracts according to law to provide the framework and processes for entering into employment contracts with employees and clarify the managerial responsibilities of various business units, as part of our efforts to develop a sound rule on employment contracts and protect the fundamental rights and interests of employees. We have always abided by the principles of lawfulness, fairness, and integrity and have always conducted fair negotiations with employees before signing employment contracts that include the rights and obligations of both parties and arrangements for compensation and dismissal, recruitment and promotion, work time, and holiday arrangements, in order to protect the legitimate rights and interests of employees.

Privacy protection

During recruitment, performance evaluation, and compensation management, the Company permits access to employees' personal data (including resumes and information on their family, salary, and health status) only by dedicated personnel and only after they have received special approval, and requires the personnel to keep such data confidential to protect the privacy of employees.

Open communication

We practice a democratic management approach whereby open communication is encouraged. Through two-way communication channels, such as seminars, complaints via leaders' mailboxes, Human Resources Service Day events, and home visits, we have kept close contact with employees and, based on their feedback and suggestions, make improvements to create a pleasant work environment.

Improving Compensation and Benefits

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

S2.10/S2.22

While ensuring internal fairness and external competitiveness, CR Power's compensation is based on position, performance, and competency to constantly improve organization and employee performance. In conjunction with fair and equitable performance management principles, we have implemented a wide range of incentive mechanisms. The Company regularly conducts employee performance evaluations to recognize the skills, enthusiasm, and contributions of individuals and to give them timely and useful feedback, so that they can build on their strengths and overcome their shortcomings. CR Power's efficient, fair, and comprehensive performance evaluation system, which accounts for individual contributions and expertise, helps the Company achieve its strategic goals.

On top of the basic employee benefits offered according to relevant regulations, CR Power has drawn up a more comprehensive benefits

scheme to cater to employees' needs, consisting of annual physical check-ups for all employees; a universal social security policy; contribution to all employees' pension, medical, unemployment, work-related injury, maternity insurance and housing fund; and additional coverage of commercial insurance and supplementary pension insurance (i.e., enterprise annuity). Independent contractors are also included in the Company's social security and commercial insurance schemes. Under the Headquarters Management Measures for Vacation Leaves, which provides leave application and review procedures and safeguards employees' right to vacation leaves, female employees are entitled to extra days off each month. The Company offers benefits to interns in addition to regular employees. For instance, measures to promote the growth and benefits of interns are stipulated in the Headquarters Management Measures for Interns released in 2019.

To better understand employees' needs and our areas for improvement, we conduct an employee satisfaction survey each year and take further actions accordingly.

Employees with personal health file

100%

Talent Recruitment and Development

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

P4.5/S1.7/S1.8/S2.1/S2.13/S4.5

HKEx ESG Indicators

B2.1/B2.2

In close alignment with national energy development plans, its business development strategies, and the market outlook, CR Power analyzes the key positions needed in each Region, identifies high-potential talents, and attracts high-tech talents in fields such as new energy, smart energy, and power marketing to gradually enlarge the pool of high-level, innovative talents.

Moreover, CR Power strives to create local jobs in areas it operates. In 2019, the Company released the Management Standards for Recruitment to facilitate recruitment of top professionals through various local recruiting platforms. In particular, the Company runs campus recruitment events, the 100 Talent Program, and summer internships through the Regional Companies to broaden talent supply in all localities.



Employees recruited in 2019

855



From public recruiting events

524



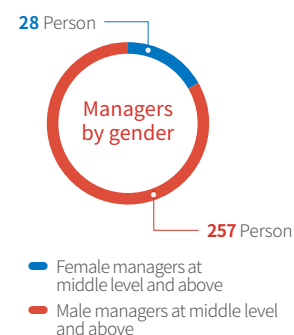
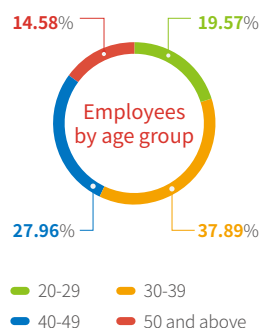
From campus recruiting events

331

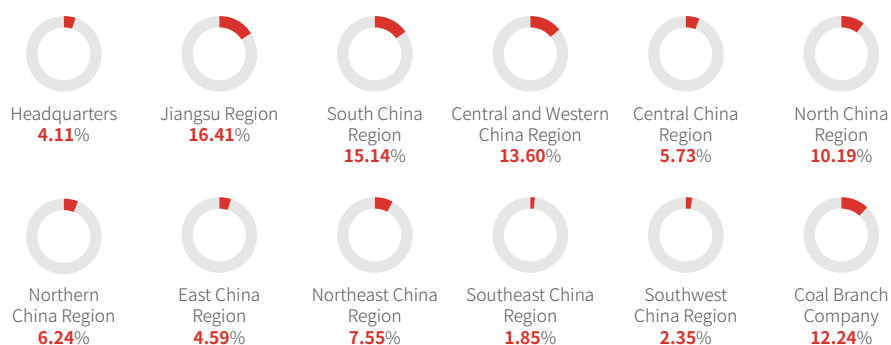


Recruits with a Master's or Ph.D. degree

149



Employees by region



Total number of employees in 2019

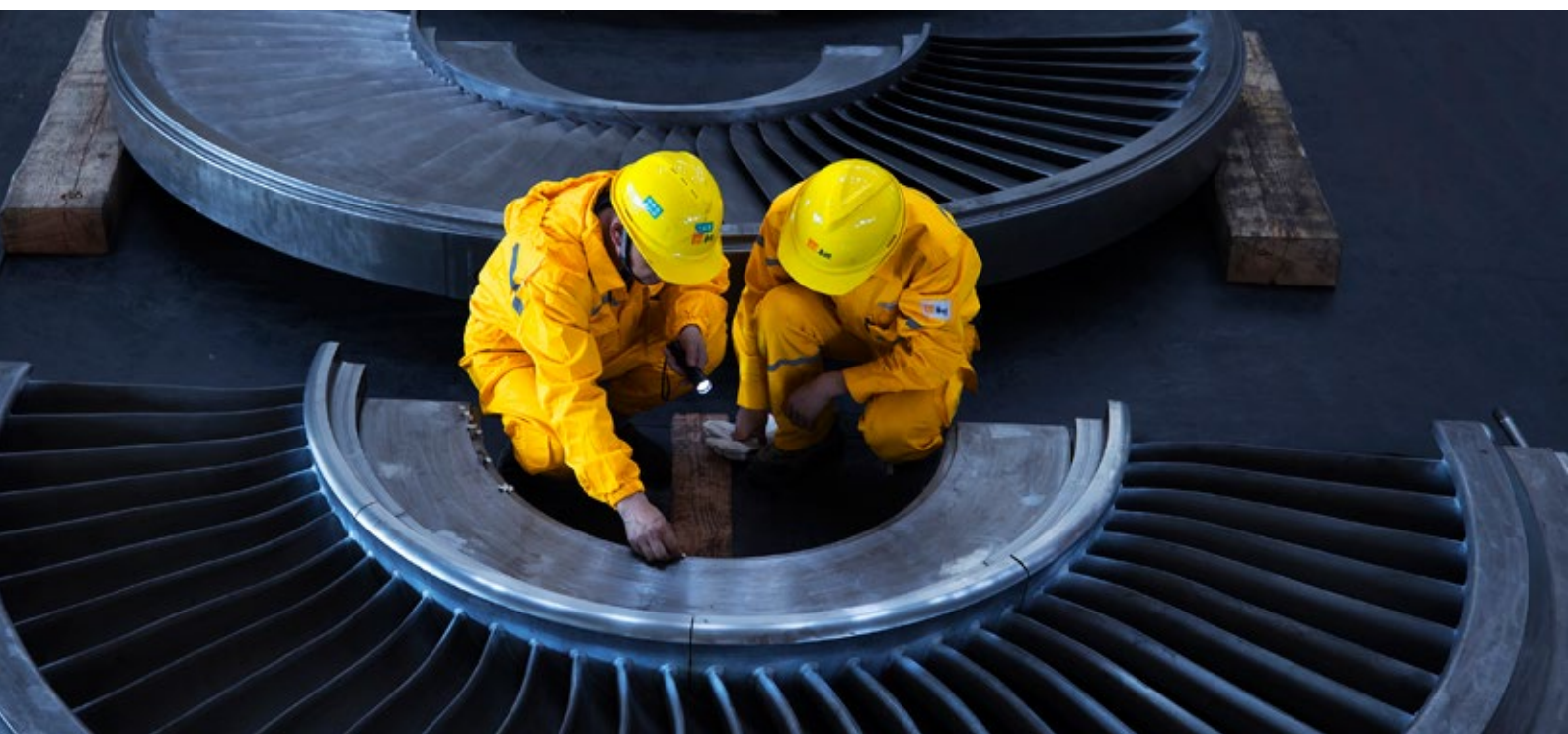
21,746

Employees giving CR Power high-performer/best-employer ratings

83%

Turnover rate

2.8%





Enhancing Employees' Competence

Given the rapid development of technology, employees and companies at large can maintain sustainable development only through ongoing learning. At CR Power, we offer new recruits, professional employees, and middle and senior managers rational training programs and diversified course series to create a favorable environment for them to grow.

Meanwhile, under the guidance of the Management Standards of CR Power Headquarters for Rank Adjustment and the Guidelines for the Implementation Plan on the Professional

Development Paths at Regional Companies, CR Power endeavors to provide employees with sound promotion channels. In particular, the Company adopts dual career development paths (i.e., the professional line and the managerial line), takes into account employees' personal development goals and demands for professional skills in its internal comprehensive talent development plan, and offers employees a broad range of training and development programs and qualification assessment programs to promote their professional development and competitiveness.

Leadership training

Middle and senior managers of CR Power regularly participate in advanced training courses at China Resources University such as CR Way and Business Approach to hone their leadership skills. By focusing on the development of industry leaders and lower- and middle-level managers, the Company aims to enhance the overall competence of its managerial personnel. In 2019, 15 outstanding managers from the 10 Regions and business units took part in the 15th and 16th CR Way training programs, which lasted 45 days. According to the tiered talent development strategy of the Company, we selected 12 of newly promoted young managers to participate in a 10-day training seminar organized by the University, intending to nurturing future management talents.

CR Power has worked out efficient talent succession plans to cultivate high-potential talents for various positions and ranks. In 2019, the Company held the first of the six training seminars for young managers. The seminar covers topics including conventional energy, internet, Industry 4.0 and Smart Manufacturing, and business models. During the program, 44 middle managers from the Headquarters and subsidiaries visited firms based in Hong Kong and the mainland and R&D institutes that specialize in advanced technologies, which helped them stay current with the latest industry trends and foster an innovative way of thinking. We engaged four industrial experts to deliver lectures.

Training in professional skills

Concerned about the cultivation of professional talents with excellent craftsmanship, CR Power has invested resources in training programs where employees can improve their professional skills and knowledge. In 2019, we developed customized training plans for employees in different positions.

○ Talents in integrated energy

We held the 2nd training session for talents in integrated energy, benefiting more than 80 employees from various CR Power companies;

○ Talents in wind power

We held the 2nd head project manager workshop for wind power projects, which was participated by 72 project managers and professional managers from the 10 Regions;

○ EHS professional lecturers

The 1st training seminar for internal EHS trainers was held on the North Campus of China Resources University, with participation of 42 trainees;

○ Lean management trainers

We organized the 1st training seminar for internal lean management trainers, with involvement of 66 employees.

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

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S2.26

HKEs ESG Indicators

B3 General Disclosure / B3.1/
B3.2

Training for new recruits

Total employee training

848,094 hours

Average training per person

39 hours

Number of training participants

182,950

Total training expenditures

RMB **15.25** million

To better train new hires, CR Power formulated the Management Measures for Mentors of New Recruits, according to which each new employee will be assigned a mentor who, through continuing guidance, will help the employee to achieve his/her personal development goals. In addition to this two-year training program, in recent years CR Power has been organizing the Future Star training camp that serves as an orientation program for new employees to prepare them for future growth.

Encouraging self-improvement

CR Power has been endeavoring to create a self-improvement culture. We revised the Management Standards for Employees' Participation in External Training and encouraged employees to seek opportunities for enhancement in view of their development and the Company's business needs and to pursue higher academic degrees, with a view to nurturing specialized talents and fully increasing employees' capacity. CR Power also manages employees' applications for middle and senior professional titles by reviewing, verifying, archiving, and conducting web assessment of application materials in areas such as engineering, economics, archiving, and news. In 2019, we helped 28 technical personnel in all Regions, including economists, with their title applications. The Company now has more than 60 employees with senior titles approved by SASAC's appraisal committee.

Training coverage ratio

100%

Managerial skill training coverage ratio

100%

Training by Rank

● Senior managers
20 hours/person

● Middle managers
32 hours/person

● Regular employees
33 hours/person

Case Study | The 10th Future Star Training Camp

CR Power has long been in cooperation with education agencies on strengthened internal training. In 2019, the 10th Future Star training camp was held in Wuhan Donghu University. It was centered on issues such as corporate culture, general skills and knowledge, industry know-how, EHS skills, and discussions on innovative topics. At the camp, new recruits were encouraged to develop high professional qualities, innovation capacity, and perseverance. During the 32-day program, 343 new recruits took various courses. We also

organized art performances, basketball games, calligraphy and painting competitions, and birthday celebrations, showing CR Power's support for the development of employees.



Scan for more info



2019 CR "Future Star" Training Camp



Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

S2.27

Work - life Balance

The Company embraces the China Resources people-centered philosophy and provides employees with benefits that enable them achieve work-life balance and greatest wellbeing. We not only care for all the aspects of our employee' life, but also seek to work with our employees to together build a healthy, sustainable work environment.

Employee Care

We care about employees' physical and mental health. Specifically, CR Power organizes annual physical check-ups for employees at local health centers and closely follows the health status of employees to prevent, control, and eradicate diseases. The Company also conducts various training events to help employees effectively manage work-related stress and cope with career anxieties.



CR Power Central China Region held a "smart parenting" family education seminar. The seminar invited renowned teacher to share their experience in education enabling employees to gain a better understanding of family education, improve their practice, grow together with their children, and achieve family-work balance.



On November 9, 2019, CR Power held the 3rd Family Day activities themed with "Gathering Happiness at CR Power and Lightening up Thousands of Families," over 500 employees and their family members in nearly 200 households from the Headquarters took part in the activities and had a good time.

Rich Cultural and Sports Activities

CR Power values all-round development of employees and encourages them to participate in a broad array of activities. The Company has set up clubs for general fitness, swimming, football, and other activities at various locations to organize engaging events, helping employees achieve work-life balance, cultivate hobbies, and relax their body and mind alike.



Puqi Power Plant in Hubei Province organized a recreational sports meeting

We hope that employees in need, can feel the warmth brought by the Company. For this reason, we have set up the CR Power Care Fund to help employees and their family members solve their difficulties. In 2019, we allocated RMB 687,200 to aid employees and families in need.

Case Study

Power Plant at Bohai New Area, Cangzhou Provided Public Rental Housing to Employees

CR Power has been committed to improving the living standards of employees. In 2019, Bohai New Area Power Plant, after frequent communications with multiple government agencies, managed to obtain 65 public rental housing units in Xinqidian Jiayuan, Huanghua Xincheng, as dormitories for employees and furnished the dormitories with furniture and home appliances, providing them with a comfortable, safe living environment. Moreover, the Company improved the routes of employee shuttles to make daily commutes more pleasant.

Type	2015		2016		2017		2018		2019	
	People (Household)	Amount (RMB 1,000)	People (Household)	Amount (RMB 1,000)	People (Household)	Amount (RMB 1,000)	People (Household)	Amount (RMB 1,000)	People (Household)	Amount (RMB 1,000)
Aiding employees in need	467	1,062.7	586	811.1	542	687.3	216	337.1	95	107.7
Visiting and aiding families of employees in need	367	160.1	337	402.8	324	364.3	73	84.8	259	151.2
Funding education of children of employees in need	50	76.7	68	93.6	75	123	10	12.6	6	6
Aiding sick employees (including their immediate family members)	63	147.9	266	573.0	367	1,365.3	289	540.2	164	422.3



Southwest Region held quarterly employee birthday celebrations with different themes



A calligraphy, painting, and photography contest taking place in the Northeast Region in celebration of the 70th anniversary of the founding of the PRC



The South China Region held a Chinese New Year Gala entitled "Chasing Our Dream at CR Power South China Region"

Integration

Caring for the Future of Our Community

CR Power appreciates greatly the support and assistance from stakeholders. We will continue to focus on poverty alleviation and public welfare programs, advance balanced population growth and regional development, and work together with stakeholders on building an inclusive, tolerant, and happy society.

Key Topics

- Response to National Policies
- Community Service and Philanthropy

SDGs



Management Rules

- Management Standards for Charity Activities
- Social Responsibility Program Management Standards
- Guidelines for Models of Poverty Alleviation through Wind Power Projects



Our Performance

Total tax paid

RMB **6,334** million

Newly recruited employees

855

New graduates employed

331

Total charitable donations

RMB **117** million

Participants in volunteer services

4,315





Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

S4.8

HKEx ESG Indicators

B8 General Disclosure / B8.1/B8.2

Contributing to Targeted Poverty Alleviation

CR Power fully implements the Decision of the CPC Central Committee and the State Council on Winning the Battle Against Poverty and the State Council's Poverty Alleviation Plan for the 13th Five-Year Plan Period, duly carries out targeted poverty alleviation, and ensures assistance reaches the intended villages and families. Leveraging its financial, technological, human, and management resources, CR Power is committed to working with CR Group to advance the targeted anti-poverty campaign through CR Hope Town projects, investments, locality-specific programs, infrastructure donation funds, and education funds.

From 2015 to 2019, CR Power invested RMB 45.976 billion to establish 33 companies in 28 national poverty counties, which had generated RMB 2.36 billion in tax revenue. Working closely with governments at all levels, CR Power has engaged in 42 anti-poverty projects to help reduce poverty. To date, the Company has donated some RMB 136 million for poverty reduction across the country, and has contributed another RMB 33.2 million of revenue from public-private partnership projects to local poverty relief funds. These initiatives have benefited 37,000 people, boosting their quality of life as well as the local economy.

Poverty Alleviation through Investment

Economic growth is essential to lifting people out of poverty, but it is also one of the biggest challenges. CR Power has provided jobs and poverty relief funds for impoverished areas by building renewable energy facilities such as PV power stations and wind farms, thus boosting the sustainable growth of the local economy.



Wind power projects

CR Power believes that wind power projects should benefit the society, local government, and, most importantly, the local population. In 2019, based on experiences from pilot programs, we released the Guidelines for Models of Poverty Alleviation through Wind Power Projects to help regional companies build wind farms in impoverished areas.

As of the end of 2019

CR Power's wind farms in Guangdong and Hubei have a combined capacity of 425 MW, which can generate RMB 28.4 million of relief funds each year, or RMB 3,000 for each of the 9,467 families totaling 28,400 people. These wind farms also have significant environmental benefits, as they can generate 900 GWh of renewable energy annually which saves 269,600 metric tons of standard coal and reduces carbon dioxide emissions by 474,100 metric tons a year.





PV projects

Photovoltaic power is a clean and mature technology that brings steady income to owners. In areas with abundant sunshine, it can be a highly effective means for poverty reduction. Apart from building PV power stations, CR Power has been promoting the integration of PV projects with agriculture, livestock, fishery activities to make the most out of land area in the war on poverty.

Case Study | PV Project in Lan County Benefits 1,200 Families

The Lanxian Chunhui PV Power Station, a joint project of CR Power Northern Region Company and the government of Lan County, Shanxi, is an example of the "PV + livestock + agriculture" model. Strategically placed PV panels allow farmers to grow economic crops underneath and herdsman to graze livestock on the less fertile mountain slopes, helping turn barren mountains into "mountains of gold." The power station is designed to provide RMB 3,000 a year to each of the 1,200 poorest registered families, equaling a total of RMB 3.6 million a year, for 20 years. As of the end of 2019, this project had disbursed RMB 9.065 million of poverty relief funds.

Case Study | "PV + Fishery" Model Ensuring Sustainable Poverty Reduction in Huai'an

Located in Huai'an, Jiangsu Province, the 10 MW Sanbao PV Power Station is constructed above a fish farm. This design not only saves land space, but also increases the economic value per unit area. To help sooner lift the local population out of poverty, the project will donate RMB 300,000 a year for 20 years. By the close of 2019, the project had provided RMB 600,000 of financial support to impoverished households.



Assisting Local Industries

In addition to direct investment, CR Power helps revitalize impoverished rural areas by purchasing local produce and assisting them in developing agriculture, livestock, and other industries, leading to higher income and quality of life for the local residents.

Case Study | Greenhouse Bringing Additional Income to Shidongzi

Shidongzi is a village in Yangshuwan, city of Huludao, Liaoning Province, and has a harsh economic and living condition. It is a farming village that has no collective income enterprises, and 180 of the 903 village households are registered impoverished families. Following a detailed survey, CR Power donated RMB 980,000 to acquire land-use rights and to build seven high-standard greenhouses in the village. These greenhouses have increased the annual income of about 20 families and created as many long-term jobs. A portion of the profits from the project will be used to assist promising students, other poor families, and environmental projects.



Case Study | Supporting the Beef Cattle Industry in Inner Mongolia

In 2019, CR Power donated RMB 100 million to Taipusi, Xilingol, Inner Mongolia to support the local beef cattle industry – in areas of deep-processing, breeding, and cattle weight gain – so that the county can generate sustainable income. The project has created 160 jobs for the local beef cattle industry and another 100 for related industries.



Public Welfare Programs

Integrating charity work into its poverty alleviation initiatives, CR Power funds infrastructure projects to promote economic development; creates jobs to enable local residents to escape poverty by themselves; promotes education and literacy to transform the mindsets of people in need; and offers volunteer services to enhance quality of life.

Case Study | CR Power Gannan Building Infrastructure for Qingtian

Improving infrastructure is essential to reducing poverty. CR Power has funded infrastructure projects for many poverty-stricken villages to boost the local economy. In November 2019, CR Power Gannan Company donated RMB 247,500 to the village of Qingtian in the city of Ganzhou, Jiangxi Province, to install 75 photovoltaic power street lamps.

Case Study | CR Power Xiangyang Funding 100 Primary and Secondary School Students

One of the most effective ways to reduce poverty is to boost the confidence of the poor and help them receive the education they need. In January 2019, CR Power Xiangyang participated in a poverty alleviation event organized by the government of Yicheng, donating RMB 200,000 to the China Social Welfare Foundation to support the education of 100 primary and secondary school students in Yicheng.

Case Study | Giving Back to the Community through Power Transmission Project

Taking advantage of the national Guangdong-Guangxi Poverty Reduction Cooperation Platform, CR Power Hezhou Power Plant completed the Hezhou-Guangdong power transmission project in 2019. Increased energy sales has greatly enhanced the power plant's profitability, raising local industrial output by RMB 1.98 billion and tax revenue by RMB 90 million. The plant also employs people from 64 registered impoverished households, directly benefitting 324 people in need.

To give back to the community, CR Hezhou Power Plant has donated RMB 10 million to the Fuchuan Yao Autonomous County for building the CR Power Primary School. To cultivate better community relations, the staff at the plant opened and donated RMB 2 million into a charity account. This money is used to build nursing homes, roads and other infrastructures, as well as for education, elderly care, and local industry support programs.



Active Participation in Charity Activities

Charity is a noble undertaking that improves people's well-being and promotes social harmony and a vital vehicle for raising socialist cultural-ethical standards. It is also essential to helping needy people and vulnerable groups. We are aware that there is a long way to go towards charity. To better manage the Company's charity activities, we formulated the CR Power Management Standards for Charity Activities in accordance with the PRC Law on Donations for Public Welfare, Circular of the Ministry of Finance on Strengthening the Financial Administration of the Donations Made by Enterprises, and other applicable laws and regulations. We hope all of our care and donations will reach those in need.

Education support

Offering each child access to quality education is a major way to eliminate inter-generational inheritance of poverty. Concerned about the children and teenagers in remote and poor areas, many CR Power companies have made donations to schools in those areas for many years, contributing to equitable education, balanced development, and enhanced local education.

Total charity donation
RMB **117.4** million

Percentage of the profit
attributable to owners
1.9%

Participants in volunteer
services
4,315

Overview

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Case Study | Launching "Sending Love from Our Hearts" Student Welfare Week

In December 2019, CR Power launched student welfare week activities themed "Sending Love from Our Hearts" in many parts of the country to bring warmth and love to children in poor areas and left-behind children as well. During the event, professionals from power plants checked the power facilities at certain schools for potential safety hazards, offered suggestions for improvement, and repaired some equipment, ensuring the safe use of electricity among local students and teachers.



Delivering a power lecture



Checking a power distribution box

- 1 CR Power volunteers delivered lectures on power in several primary schools through video clips, text and picture presentations, and interactive games;
- 2 Xuzhou Power Plant and Zhenjiang Power Plant in Jiangsu Province, Yichang Power Plant in Hubei Province, and Panjin Power Plant in Liaoning Province donated books to children;
- 3 Gucheng Power Plant in Henan Province, Lianyuan Power Plant in Hubei Province, Wenzhou Power Plant in Zhejiang Province, Jiaozhou Wind Farm in Shandong Province, and Baoji New Energy Company in Shaanxi Province donated school supplies, sports supplies, and daily necessities to children;
- 4 Volunteers from Xuzhou Thermal Power Company visited families with which they paired up. They inquired about the basic situation of those families, and donated books and staples such as rice and flours;
- 5 Volunteers of Anhui Mingguang Wind Farm taught left-behind children about power, and set up archives for them to form a long-term assistance mechanism; and
- 6 Staff members of Gansu Huanxian Tianshuipu Wind Farm completed handmade works together with students.



Scan for more
info

Caring for special groups

We understand that special groups not only need donations but also require emotional and psychological care. During assistance programs, we focus on communicating with them and helping strengthen their senses of social belonging and integration.



Employees from Jiangsu Region playing a game with children with special needs

Dedicated to volunteer services

Volunteers commit their time and energy to promoting social progress, and the positive attitude they adopt conforms to one of CR Power's core concepts. We

support and encourage each of our staff members to be a passionate volunteer and to develop a give-and-take mindset.

Case Study | Organizing "Charity Run for Clothes Donation" Event

In March 2019, Hunan Division of South China Region organized the "Charity Run for Clothes Donation" event along Liyujiang River, which had a participation of more than 350 volunteers. The event integrated physical exercise with charity and environmental protection and was comprised of clothes-donation, charity run, and other sections aimed at promoting care and a healthy and green lifestyle. All the 836 pieces of clothing received were carefully selected, washed, disinfected, and folded by staff members before they were distributed by Chenzhou Blue Sky Rescue Team to those in need.



Caring for Community Well-being

Overview

China CSR Reporting Guidelines—Power Generation Industry (CASS-CSR3.0)

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HKEx ESG Indicators

B8 General Disclosure / B8.1/B8.2

We adopt feedback and suggestions from the community and raise our awareness of dedication and service to fulfill our aspirations and missions. In 2019, we strengthened communications with the community by inviting people to visit our plants. We also integrated into the

local community by helping respond to emergencies and natural disasters such as fire, building roads and bridges, and employing local residents. We care about their well-being and hope to work together for a better life.

Improving roads

During the construction of CR Power New Energy Weinan Tongguan Port Project, the Company helped local villagers build roads to make easier their travel and transportation of agricultural and sideline products.

Firefighting

Fire patrol members of CR Power Tangshan Fengrun Thermal Power Plant in Hebei Province discovered a fire in a nearby company and immediately put it out.

Rescuing fishermen

Since its opening in December 2013, the port serving CR Power Wenzhou Power Plant dispatched tugboats and patrol boats eight times and saved more than ten fishermen and crew members. For this the port was awarded "the Most Beautiful Five-Star Port" in Zhejiang Province.

Major Social Responsibility Awards Received

Award	Conferred by	Recipient	Date
Ranked 147th in S&P Global Platts Top 250 Global	S&P Global Platts	China Resources Power Holdings Co., Ltd.	September
Ranked 1,170th in Forbes Global 2,000	Forbes	China Resources Power Holdings Co., Ltd.	September
Asian Power Awards: Wind Power Project of the Year – China (Datong Yanggao Wind Farm) Coal Power Project of the Year – China (Tangshan Caofeidian Power Plant) Photovoltaic Power Project of the Year – China (Heishui PV Station) Power Plant Upgrade of the Year – China (Manzhouli Wind Power Heating Project) Information Technology Project of the Year – China (Renewable Energy Wind Turbine Early-Warning System)	Asian Power	China Resources Power Holdings Co., Ltd.	September
Best Social Responsibility Award of the Chinese Enterprise ESG "Golden Responsibility Award"	Sina Finance	China Resources Power Holdings Co., Ltd.	November
Environmental and Ecological Contribution Award, Yicai the Corporate Social Responsibility Ranking in China 2019	Yicai	China Resources Power Holdings Co., Ltd.	December
Ranked 8th in the 4 th Hong Kong Business Sustainability Index	Center for Business Sustainability (CBS) of CUHK Business School, Friends of the Earth (HK), SGS (HK)	China Resources Power Holdings Co., Ltd.	January
Corporate Green Governance Award – Corporate Mission Environmental, Health and Safety Award – Platinum Green Management Award – Gold Sustained Performance (5 years+) Certificate	Hong Kong Green Council	China Resources Power Holdings Co., Ltd.	December
First Prize, Second Prize, and Third Prize for Innovation in Ultra-Low Emissions and Energy-Saving Retrofit of Thermal Power Companies	China Electricity Technology Market Association	China Resources Power (Lianyuan) Co., Ltd., China Resources Power (Hezhou) Co., Ltd., China Resources Power (Xilingol) Co., Ltd.	March
National Electric Power Industry Equipment Outstanding Operation and Maintenance Team	China Electric Power Equipment Management Association	China Resources Power Hubei Co., Ltd.	March
Hi-Tech Enterprise	Department of Science and Technology of Guangdong Province, Department of Finance of Guangdong Province, Guangdong Provincial Tax Service, State Taxation Administration	China Resources Power (Haifeng) Co., Ltd.	April
2019 China Outstanding Power Project	China Electric Power Construction Association	China Resources Wind Power (Longyan) Co., Ltd., China Resources Wind Power (Yicheng) Co., Ltd.	May

Award	Conferred by	Recipient	Date
#1 unit recognized as Best Generator in power and coal consumption in 350 MW-Class Supercritical Heat Supply Liquid-Cooled Generators (2018)	China Electricity Council	China Resources Power (Panjin) Co., Ltd.	July
#1 and #2 units recognized as AAAA-Grade Generator in 300 MW-Class Subcritical Heat Supply Liquid-Cooled Generators (2018)	China Electricity Council	Cangzhou China Resources Thermal Power Co., Ltd.	July
#1 unit recognized as AAAA-Grade Generator in 600 MW-Class Supercritical Pure Condensing Liquid-Cooled Generators	China Electricity Council	China Resources Power (Changshu) Co., Ltd.	July
Third Prize in the Second Central Enterprise QC Group Results Presentation Contest	China Association for Quality	China Resources Power (Bohaixinqu) Co., Ltd.	July
Third Prize in Innovation in Oil Quality Supervision of Electric Power Companies	National Electric Power Technology Collaboration Network	China Resources Power (Hezhou) Co., Ltd.	July
China Quality Innovation Award for QIC-V Level Technical Achievement	China Association for Quality	Shenzhen ZhiRun Renewable Energy Exploration & Design Co., Ltd.	July
AAAAA Rating, National Wind Farm Production and Operation Indicators (Area Outside North Liaoning, Chaoyang, and South Liaoning, Liaoning Province, Northeast Region)	China Electricity Council	Yimachi Wind Farm, China Resources New Energy (Fuxin) Wind Power Co., Ltd.	August
AAAA Rating, National Wind Farm Production and Operation Indicators (Chaoyang Area, Liaoning Province, Northeast Region)	China Electricity Council	Xiangyang Wind Farm, China Resources New Energy (Beipiao) Wind Power Co., Ltd.	August
AAAA Rating, National Wind Farm Production and Operation Indicators (Shandong Province, North China Region)	China Electricity Council	China Resources Wind Power (Feixian) Co., Ltd.	August
Outstanding Innovation in Equipment Management of Power Companies	China Electricity Technology Market Association	North China Branch, China Resources Power Investment Co., Ltd.; China Resources New Energy (Datong Guangling) Wind Power Co., Ltd.; China Resources New Energy (Datong) Wind Power Co., Ltd.; China Resources New Energy (Xinzhou) Wind Power Co., Ltd.	August
AAA Rating, National Photovoltaic Power Station Production and Operation Indicators (Heilongjiang Province, Northeast Region)	Science and Technology Development Service Center, China Electricity Council	Shengli Photovoltaic Power Station, China Resources New Energy Photovoltaic Power Generation (Tailai) Co., Ltd.	October
National Outstanding Quality Project	China Association of Construction Enterprise Management	China Resources Power (Haifeng) Co., Ltd., China Resources Power (Haiyuan) Co., Ltd.	December
First Prize in Safety Technology Progress Award	China Association of Work Safety	CR Power Energy Science and Technology Co., Ltd.	December
2019 Top Ten Green Responsibility Enterprises	Organizing Committee of China International Forum on Green Development	China Resources Power (Hezhou) Co., Ltd.	December

A Glance at the Future

In 2020, China must finish building a moderately prosperous society in all respects and achieve the first centenary goal. It is also the final year of the 13th Five-Year Plan and the year to work out the 14th Five-Year Plan. Pursuing the goal of becoming a world-class renewable energy company with global competitiveness, we will enhance our capacity for sustainable development from multiple dimensions and hold onto our belief in creating a brighter future for stakeholders by taking the following actions.

We will continue to strengthen the importance and understanding of sustainable development management within the Board of Directors and monitor the environmental and social impacts brought out by our business, and direct the Sustainability Committee and relevant mechanisms to strengthen the communication and relationship with stakeholders.

We will also continue to increase the percentage of power from renewable energy sources, set relevant targets; provide our customers with green power options, develop innovative technologies for renewable energy and energy conservation and emission reduction, promote carbon capture technologies; and strengthen the management

and recycling of wastewater, waste gas and waste residues, so as to tackle the challenges arising from global climate change and environmental pollutions. Moreover, we will enhance our core capacity for power wholesale and integrated energy services and explore strategies for renewable energy investment to achieve business transformation and upgrading.

We will further improve the Company's employee training and development system by offering targeted training programs for different positions and levels and creating a sound benefit system that covers all employees. To promote community development, we will boost the management of charity events and carry out more distinctive and influential charity programs.

The spring breeze is full of freshness. Faced with both opportunities and challenges, CR Power will, based on careful planning and established goals, join hands with all stakeholders to strive for a better future.

Key Performance Indicators

Energy performance

	Unit	2015	2016	2017	2018	2019
Total assets	HKD bn	208.086	200.111	220.972	208.223	215.736
Net Generation Volume of Operating Power Plants	TWh	184,980	185,993	190,511	195,358	193,607
Total heat supply	kTJ	59.03	65.19	73.83	92.04	102.48
Attributable operational generation capacity	MW	34,731	36,184	36,077	37,438	40,392

Economic performance

	Unit	2015	2016	2017	2018	2019
Turnover	HKD bn	71.44	66.21	73.31	76.94	67.76
Operating profit	HKD bn	20.01	16.36	12.48	11.35	12.89
Net profit Attributable to owners of the Company ^①	HKD bn	10.03	7.71	4.62	3.95	6.59
Return on invested capital (ROIC) ^②	%	10.4	7.3	5.3	6.0	6.9
Return on equity (ROE) ^③	%	14.2	11.0	7.7	9.5	12.7
Asset-liability ratio	%	59.8	62.7	63.5	62.9	59.8
Interest-bearing debt ratio	%	51.4	55.1	55.7	55.6	52.1
Value appreciation of state-owned assets	%	100.2	97.3	109.0	103.6	109.1
Net operating cash flow	HKD bn	31.99	22.30	18.56	18.10	20.51
New patents	Patents	31	50	51	198	225

Environmental performance

	Unit	2015	2016	2017	2018	2019
Proportion of installed renewable energy attributable generation capacity	%	13.1	13.9	17.1	20.1	23.3
Total environmental investment	RMB bn	1.706	1.798	1.957	1.518	1.828
Investment in efficiency and emission upgrade	RMB bn	1.586	1.776	1.697	1.283	1.511
Energy consumption per RMB 10,000 industrial added value	tce	9.81	11.61	15.12	16.99	12.93
Water consumption per RMB 10,000 industrial added value	t	96.51	108.25	159.38	139.4	98.72
Carbon dioxide emissions ^②	Mt	N.A.	N.A.	137.29	133.30	134.02
Carbon emission intensity in power generation	g/kWh	N.A.	N.A.	780	755	728
Carbon emission intensity in thermal power generation ^②	g/kWh	N.A.	N.A.	844	834	834
Comprehensive energy consumption	k · tce	30,647.2	29,553.8	30,051.5	29,064.1	27,251.6
Net generation coal consumption rate ^④ (subsidiary power plants)	g/kWh	306.98	305	303.16	299.54	296.64*
Natural gas consumption ^⑤	Mm3	162.58	193.59	198.21	193.64	259.88*
Diesel consumption ^⑤	kt	14.8	15.7	14.9	11	11.2*
Coal consumption ^⑤	kt	71,580.0	74,766.5	78,150.3	77,589.1	73,489.0*
Purchased electricity ^⑤	MWh	123,821.50	126,339.70	106,343.60	92,117.60	79,682.09*
Oil consumption for power generation	g/MWh	92.5	93.8	86.9	59.1	62.9
Power consumption rate of power plants	%	5	4.95	4.99	4.97	4.93
Power consumption rate of factories ^⑤	%	5.79	5.75	5.67	5.82	5.88
Comprehensive water consumption for power generation	kt	285,186.6	252,598.8	275,161.6	238,433.9	208,088.7

Notes: ^① Net profit attributable to owners of the Company.

^② 2017 and 2018 figures are based on the Accounting and Reporting Requirements for Greenhouse Gas Emissions Part I: Power Generation Enterprises (GB/T 32151.1-2015, effective from June 1, 2016) issued by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China and Standardization Administration of the People's Republic of China. Carbon dioxide emissions and carbon emission intensity in thermal power generation increased in 2019 for two reasons: (i) China changed the formulas for carbon oxidation rate and carbon content per unit heat value from coal; (ii) increase in heat supply compared with 2018.

^③ Third party performed an independent limited assurance of figures marked with "*". The emission rate is calculated based on the data captured in 2019 by the Continuous Emission Monitoring System installed in thermal power plants (pp. 14-15) that are wholly-owned, controlled (as identified by △) by China Resources Power Holding Co., Ltd., and in the Luoyang and Yixing power plants (shutdown in Sep and Dec 2019, respectively) and the Zhuhai project (heat-supply generators). See pages 4 to 5 for the assurance report. Emission rates of nitrogen oxides, sulfur dioxide, and particulates in 2015-2019 are calculated based on data captured by the Continuous Emission Monitoring System.

^④ Power consumption rate of factories increased in 2019 for two reasons: (i) expanding heat supply business, resulting in a 11.3% increase in heat supply and 3.2 percentage points increase in heat-to-power ratio compared with 2018; (ii) commissioning of new projects and equipment including sludge incinerators, energy storage, electric boilers, and electric air compressors.

^⑤ Excluding non-cash expenditures and incomes such as impairments and exchange gains and losses.

	Unit	2015	2016	2017	2018	2019
Comprehensive water consumption rate for power generation	t/MWh	1.78	1.51	1.6	1.42	1.32
Wastewater discharge	kt	N.A.	N.A.	3,324	4,855.9	4,770.6
Wastewater discharge rate	g/kWh	31.88	24.79	19.3	28.82	30.06
Chemical oxygen demand (COD)	t	63.26	89.8	153.79	138.03	118.53
Nitrogen oxide emissions ^⑥	kt	42.6	32.2	28.6	22.6	19.6*
Nitrogen oxide emission rate ^{⑥⑦}	g/kWh	0.26	0.2	0.17	0.13	0.12*
Sulfur dioxide emissions ^⑥	kt	33.7	21.1	17.2	13.6	11.2*
Sulfur dioxide emission rate ^{⑥⑦}	g/kWh	0.22	0.13	0.1	0.08	0.07*
Particulate emissions ^⑥	kt	7	3.4	2.3	1.8	1.4*
Particulate emission rate ^{⑥⑦}	g/kWh	0.04	0.02	0.01	0.01	0.01*
Installation rate of desulfurization equipment in coal-fired power plants ^{⑦⑧}	%	100	100	100	100	100*
Installation rate of denitrification equipment in coal-fired power plants ^{⑦⑧}	%	100	100	100	100	100*
Total amount of hazardous waste created ^⑨	kt	N.A.	N.A.	4.2	3.1	4.5
Density of hazardous waste created ^⑨	g/MWh	N.A.	N.A.	24	18	25
Total amount of non-hazardous waste created	kt	N.A.	N.A.	20,055.3	19,544.7	19,227.6
Density of non-hazardous waste created	t/MWh	N.A.	N.A.	0.12	0.12	0.12
Comprehensive ash and slag utilization	kt	N.A.	N.A.	15,653.2	17,589.7	14,802.8
Comprehensive ash and slag utilization rate	%	96.55	97.39	94.55	95.91	96.46

Social performance

	Unit	2015	2016	2017	2018	2019
Total tax paid	RMB mn	9,912.5	9,308.58	7,712.4	7,040.0	6,334.33
Major equipment incident(s)	Incident(s)	0	0	0	0	0
General equipment incident(s)	Incident(s)	0	0	0	0	0
Personal injury and fatality incident(s) ^⑩	Incident(s)	5	3	5	1	6
Unplanned outage	Times	29	20	25	20	19
Equivalent availability factor	%	91.35	90.54	92.77	91.62	92.28
Safety management personnel with certificates ^⑩	Person	1,771	1,831	1,866	477	1,441
Certified safety engineers ^⑩	Person	170	200	209	173	287
Total headcounts (excluding associated companies)	Person	39,728	33,604	29,827	21,629	21,746
Female employees	Person	6,550	5,673	5,277	4,161	3,987
Employees with disabilities	Person	10	10	10	10	10
Ethnic minority employees	Person	1,001	949	934	909	901
Social security coverage ratio	%	100	100	100	100	100
Total expenditure for employee training	RMB mn	7.17	9.82	11.16	12.80	15.25
Training coverage	%	89	82	100	100	100
Physical examination coverage ratio	%	100	100	100	100	100
Paid holidays per person	Days	8	8	8	8	8
New graduates employed	Person	523	411	297	489	331
Newly added employees	Person	4,866	2,283	2,252	1,639	855
Charitable donations	RMB mn	11.82	95.52	4.69	6.07	117.40
Volunteer activities	Participants	5,100	5,328	3,787	6,109	4,315

Notes: ⑥ Sulfur dioxide emission rate (g/kWh): Sulfur dioxide emission per unit power generation
Nitrogen oxides emission rate (g/kWh): Nitrogen oxides emission per unit power generation
Particulate emission rate (g/kWh): Particulates emission per unit power generation
Emission rate = total emission/total electricity generated

⑦ Installation rate of desulfurization equipment in coal-fired power plants (%): The number of coal-fired power plants with desulfurization equipment to the total number of coal-fired power plants

⑧ CR Power has been strengthening the management of hazardous wastes, including adopting more rigorous collection, statistical, and disposal protocols. This is reflected in the higher amount and density values.

⑨ The data of personal injury and fatality incidents contains CR Power's stakeholders' accidents. See page 51 for the further description.

⑩ Due to the disposal of coal assets in 2018, the number of employees holding coal-related safety certificates has dropped sharply. In 2019, production assurance managers at all levels enrolled in safety management trainings and obtained qualification certificates. CR Power encourages its employees to take the certified safety engineer examination; many have become certified.

CR Power takes ESG management seriously. We take every ESG performance indicator as a means to gauge and improve our management practices, and continuously improve the soundness and rigor of our statistical methodology. To promote the sustainability of our business, each year we review and promote the indicators thusly optimized, and analyze the cause of and develop improvement plans for any deficiencies.

Comments by Stakeholders

Government Officials

CR Power has done very well in growing through innovation. Caofeidian Power Plant is currently the most advanced coal-fired power plant in the world by specifications. The project's innovative designs and technologies attest to how far our coal-fired power industry has come, and push the boundaries even further. It is the achievement of the new development philosophies promoted by the power industry and President Xi Jinping, and is the industry's trailblazer for qualitative improvement. I hope the Caofeidian Power plant will continue to innovate and enhance management, and promote its know-hows and technologies to drive the green development of the coal-fired power industry.

Deputy Director of National Energy Administration

Liu Baohua

CR Power's Hezhou Power Plant has the right idea of seeking business transformation. By integrating wind, photovoltaic, thermal, and biomass power generation and embracing intelligent distribution network and circular economy, it is transitioning from a traditional coal-fired power plant to an integrated energy and smart energy service company. It has not only become a model company in the region to be emulated by others, but also fulfilled the social responsibilities of a central enterprise.

Vice Chairman of Guangxi Zhuang Autonomous Region

Fei Zhirong

With regional, environmental, industrial, and scale advantages, CR Power's Haifeng Power Plant helps dispose of our municipal sludge, an important task for the city. CR Power should continue to hold itself to high standard; make strategic, agile, and sustainable decisions; and leverage the resources of CR Group to improve our city and our people's well-being by helping Shenzhen turn municipal sludge into non-polluting resources.

Vice Mayor of Shenzhen

Huang Min

Industry

It is very refreshing to see what CR Power did in their "smart power plant" projects. The Hezhou Circular Economy Industrial Park has enabled the circular use of industrial wastes among the local power plant, cement plant, and brewery, raising the utilization efficiency of energy and resources and achieving a near-zero net emission of pollutants. This model should be promoted by the state and replicated elsewhere.

Deputy Secretary-General of China Energy Research Society (CERS), Director of Energy Saving & Emission Reduction Center of CERS

Wang Fan

CR Power has done much for Shandong's electric power industry and is an exemplar among renewable energy companies in the province. I hope that CR Power's East China regional company will work more closely with SDPEA and contribute more to our local industry, to together promote the economic growth of Shandong.

Vice Chairman of Shandong Province Electric Power Enterprise Association (SDPEA)

Xu Zhen

CR Group, as a "red" central enterprise, made unique contributions in the founding of the People's Republic of China. During this visit, I am deeply impressed with Shouyangshan Power Plant's clockwork-like operations, IT systems, and people-oriented management style. I am looking forward to increased exchange and cooperation for the benefit of Henan and its people.

Chairman of Henan Provincial Association for Enterprises with Foreign Investment

Hu Baosen

Media

people.cn

As a major energy company, CR Power has further cut energy consumption and emissions by improving corporate governance and vigorously developing renewable energy. It has substantially reduced its coal-related assets and innovatively combined renewable energy development with targeted poverty alleviation, achieving social responsibility and sustainable development goals at the same time.



cpnn.com.cn

CR Power's Guizhou Renewable Energy Company in the Southwest Region has been pursuing qualitative, integrated, and green development strategies. Guided by the directives of the 19th CPC National Congress, it has remained true to its original aspirations, kept its missions firmly in mind, risen to challenges, and forged ahead. It has adapted renewable energy solutions to the local context to promote the green and sustainable development of the local economy.



cnenergynews.cn

Our citizens' ever-increasing environmental awareness has catalyzed the emergence of clean and renewable energy technologies and the rapid decline of electricity generation costs. Responding to the national initiative for building a "beautiful China," CR Power has been investing in renewable energy, which is accounting for a rising share of its business. This change in the energy mix of CR Power epitomizes a similar change on the national scale.



Hong Kong Economic Times

The #3 unit of Phase II of CR Power's Caofeidian Power Plant is the first million-kilowatt ultra-supercritical coal-fired generating unit in the province of Hebei. A strategic collaboration between CR Group and Hebei, this project will supply much of the electricity needed by the Bohai Economic Rim, addressing the power shortage in North China and promoting the economic development of the Beijing-Tianjin-Hebei Region.



Yicai

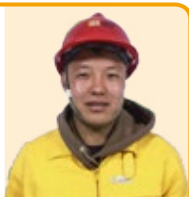
Driven by technological progress and environmental needs, the global energy industry is fast transitioning toward clean and low-carbon solutions. China has become a leader in this transition, as shown by CR Power, a major Chinese integrated energy company. CR Power is improving corporate governance, investing in renewable energy, and reducing energy consumption and emissions. As at the end of 2018, the company's renewable energy generation capacity accounted for 20.4% of its total energy mix – an increase of 3 percentage points over the year before. In particular, utilization hours of thermal and wind power projects substantially exceeded the national average.



Employees

China Resources New Energy PV Power (Heishui) Co., Ltd. Operator on Duty Zhe Zai

I joined CR Power just a little over a year ago, but already feel at home. My superiors and coworkers have given me care, guidance, and encouragement since day one. I feel honored to be a part of CR Power. Thanks to the fantastic work atmosphere here, I keep learning new things, growing together with my company.



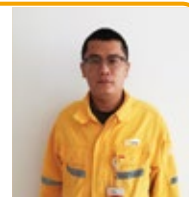
CR Power Northeast Region Training and Corporate Affairs Manager Gu Liang

CR Power is a pioneering, innovative, and responsible company that allows employees to achieve their potential. It is a people-centric organization that never forgets its founding aspirations and missions as a central enterprise. I am especially honored and proud to join this team, and hope that I can do more for myself and for the company in the years to come.



China Resources Power (Xilingol) Co., Ltd. Assistant Manager of Safety Supervision Department Liu Xiangbo

This year saw the completion of the Xilingol Power Plant. Everyone gave 100% during the most critical stage of the construction phase. I feel proud to be part of this process, and look forward to working with the rest of the team to deliver reliable technical solutions based on our past project experience and to make Xinlingol a model project in northern Xinjiang.



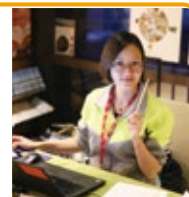
CR Power South China Region Project Development Coordinator Zhang Wentuan

As an ordinary member of South China Region's project team, I feel it a great responsibility and honor to be part of the national energy reform. In fact, the work we do in the South China Region also follows the trajectory of the national reform: from coal-fired power of yesteryear, to wind and photovoltaic today, to integrated energy projects for the Guangdong-Hong Kong-Macao Greater Bay Area now and into the future. We will be committed to providing clean, low-carbon, efficient, and intelligent power to help build a better future for everyone.



CR Power East China Region Energy Conservation, Environmental Protection, and Occupational Health Manager Ye Yanqin

I am proud to be part of CR Power, as it has all the traits that a great company should have: good business model, great potential, strong core competencies, and a positive corporate culture. I am fortunate to work here.



Other Stakeholders

Jinan University Jiang Xize

After visiting CR Power, I realize how much imagination and possibility can come out of an innovative idea. This tour also allows college students like myself to learn about new technologies in the domestic power industry. I hope there will be more learning opportunities like this.



Fuxin Emergency Management Bureau Wang Bing

During CR Power's open-house event, we saw wind turbines up close in a tour led by the company guide and safety officers, and learned firsthand how wind is turned into electricity. The wind farm was clean and tidy, and the employees had a rigorous and meticulous work attitude. We left the tour with a positive impression and new understanding about renewable energy companies.



Jimsonweed Young Journalist Class Xiaomeng

Entering CR Power's Lianyung Power Plant, I felt like I was entering a park. Everything was clean and organized. It was all very interesting and a good learning experience outside our classroom. I learned about wind energy, environmental protection, and what responsibility means. I am glad to get to know CR Power.



Guangdong Zhanjiang Torch Primary School Teacher Mr. Deng

The green development philosophy advocated by CR Power helps address current environmental issues. CR Power runs a diversified operation that touches many aspects of our lives. After visiting the wind farms, we have learned much about wind power generation.



Rating Report

Rating Report of "Sustainability Report 2019 of China Resources Power Holdings Company Ltd."

Upon the request of China Resources Power Holdings Co., Ltd., the Chinese Expert Committee on CSR Report Rating invited experts to form rating team to rate the "Sustainability Report 2019 of China Resources Power Holdings Co., Ltd." (hereinafter referred to as "the Report").

I. Rating Criteria

"Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 4.0)" of the Chinese Academy of Social Sciences & the "Rating Standards for Corporate Social Responsibility Report of Chinese Enterprises (2020)" of "Chinese Expert Committee on Corporate Social Responsibility Report Rating".

II. Rating Process

1. The rating team reviews and confirms the "Process Data Confirmation of Corporate Social Responsibility Report" submitted by the "Report" writing group and relevant supporting materials;
2. The rating team conducts evaluation on the preparation process and the content disclosed by the "Report", and then drafts the rating report;
3. The Vice Chairman of the Rating Expert Committee, the leader of the rating team, and the experts of the rating team jointly sign the rating report.

III. Rating Results

Process (★★★★★)

The office of the company takes the lead to establish the organization for preparing the sustainable development report, which consists of a "leading group" and a "preparing team." The president of the company serves as the leader of the leading group and is responsible for controlling the key information. The assistant president serves as the leader of the "preparing team", controlling the overall direction and reviewing the details. The chairman of the board of directors is responsible for the final approval of the Report. The Report is positioned as an important tool to meet the compliance disclosure requirements, strengthen communication with the stakeholders, improve the social responsibility management, and enhance the reputation in the capital market, with clear functional value positioning. The company identifies the substantive issues according to national macro policies, industry benchmarking analysis, expert training and exchange, stakeholder investigation and major corporate strategies, plans to hold an online special press conference, and presents the report in electronic version, printed version, Chinese and English version and H5 version, with excellent performance in process.

Materiality (★★★★★)

The Report systematically discloses and fully describes the key industrial issues in the industry such as guarantee of power supply,

development of green power, safe production, occupational health management, tackling of the climate change, energy conservation and emission reduction, circular economy, ecological environment governance, with excellent performance in materiality.

Integrity (★★★★★)

The main content of the Report systematically disclose 90.50% of the core industrial indicators from the perspectives of "We lead a clean future", "We protect the power of life", "We adhere to steady development", "We become a better ourselves" and "We care about the future of the community", with excellent performance in integrity.

Balance (★★★★★)

The Report discloses such negative data as "the number of major or above-major environmental pollution incidents", "the number of new cases of occupational diseases", "employee turnover rate" and "items of risk in hazardous waste disposal", and describes in detail the causes, processes, treatment results and preventive measures of the employee casualties, with excellent performance in balance.

Comparability (★★★★★)

The Report discloses the comparative data of 80 indicators such as "turnover", "amount of electricity generation", "amount of investment on the transformation of the energy conservation and emission reduction", "sulfur dioxide emission rate", "total number of employees" and "safe production investment" for three consecutive years and compares horizontally with the same industry with respect to such data as "ranking 147th among S&P Global Platts Top 250 Energy Companies", and "ranking 8th for Hong Kong Business Sustainability Index (HKBSI)", with excellent performance in comparability.

Readability (★★★★★)

Continuing the theme of "green energy and colorful life", the Report systematically demonstrates the annual accountability concept, practice and effectiveness of key issues such as environmental protection, safe production, prudent operation, employee development and community harmony, and fully responds to the expectations and demands of stakeholders. The cover design integrates wind power generation with the scene of harmonious life, echoes the theme of the report, and enhances the identification of the Report. The cross-page adopts large realistic picture matching with the chapter topic, embeds narrative introduction and key performance indexes, concentrates on the main points and enhances the readability of the Report. The special section of "10 major events in 2019" is set to show the progress of the annual key responsibility progress and highlight the significance of the

corporate responsibility performance. The section of "Comments of relevant parties" is set to prove the effectiveness of the corporate responsibility performance with third-party testimonies, which strengthens the credibility of the Report, generating excellent performance in readability.



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

Innovation (★★★★★)

The Report responds positively to the new international and domestic standards and requirements on social responsibility, and for the first time systematically discloses the responsibility performance actions and results over the key issue of climate change, which enhances the directing position of the Report. At the beginning, we set two responsibility performance stories of "acting together to fight against the epidemic situation" and "wind" and "light" bringing a better life, in response to the current political hot topics such as fighting against COVID-19 and poverty alleviation, thus demonstrating the mission of the enterprise. The Report explores the application of new technology, embeds VR video QR code, extends and interprets the content through videos and pictures, enhances the interaction with readers and improves the sense of technology and interest of the Report, with excellent performance in innovation.

"Sustainable Development Report of China Resources Power" has received the five-star rating for five consecutive years.

IV. Improvement Suggestions

Enhance the disclosure of the core indicators of the industry and improve the integrity of the Report.

Overall Rating (★★★★★+)

According to the rating team's assessment, the "Sustainable Development Report 2019 of China Resources Power Holdings Co., Ltd." has reached the five-star level in terms of process, materiality, integrity, balance, comparability, readability and innovation, thus rated as five-star and is a model corporate social responsibility report.



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Rating Files

Vice President of Chinese
Expert Committee on CSR
Report Rating

Leader of the Rating
Team

Expert of the Rating
Team

Process Evaluator Ren Jiaojiao, Zu Zhinan

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Note				KPI A2.5 is not applicable to power plant

Readers' Feedback

Dear reader,

Thank you for taking the time to read the Sustainable Development Report 2019 of CR Power Holdings Company Limited. To improve our social responsibility program and this report, we would like to hear your comments and suggestions.

Please answer the following questions and submit it to us via emails (crp-ir@crc.com.hk or cr-power@crpower.com.cn), or by scanning the QR code below.



Readers' Feedback Form of Sustainable Development Report 2019 of CR Power Holdings Company Limited

Name _____

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Title _____

Tel _____ Email _____

Your comments: (Please put a check mark in the corresponding box)

Very Good Good Average Poor Very Poor

Do you think this report has informed you about the material impact that CR Power has made on our environment and society? ☐ ☐ ☐ ☐ ☐

What's your overall evaluation of the information contained in this report? ☐ ☐ ☐ ☐ ☐

What's your overall evaluation of the format and design of this report? ☐ ☐ ☐ ☐ ☐

Which part of the report are you most interested in?

What other information do you think is needed in this report?

What comments and suggestions do you have for CR Power in terms of its report on social responsibility programs?

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