



**新天绿色能源股份有限公司**

**China Suntien Green Energy Corporation Limited**

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

Stock Code: 00956



# 2019

**Environmental, Social and  
Governance Report**

# ABOUT THIS REPORT

This report is a true reflection of China Suntien Green Energy Corporation Limited actively fulfilling its economic, social and environmental responsibilities and achieving comprehensive, coordinated and sustainable development. The forward-looking descriptions of the business plans and development strategies involved in the report do not constitute a substantial commitment of the Company to investors.



## SCOPE

- Organizational scope: This report covers China Suntien Green Energy Corporation Limited and organizations under its management.
- Timeframe: 1 January 2019 to 31 December 2019. Certain items mentioned are outside the aforementioned timeframe.
- Publication cycle: This report is published on an annual basis along with the publication of the Company's annual report.

## REPORTING STANDARDS

- The report was prepared according to the *Environmental, Social and Governance Reporting Guide of Rules Governing in Appendix 27 of the Listing of Securities* on The Stock Exchange of Hong Kong Limited (the "ESG Reporting Guide") and in compliance with GRI standards "core" plan requirements of Global Sustainability Standards Board (GSSB GRI Standards).

## EXPLANATIONS ON DATA

- Financial data in the report are extracted from the 2019 annual report. Other data are extracted from the Company's internal management system and statistics, and partly comprise of data from previous years. Unless otherwise stated, Renminbi is used in this report as its functional currency.

## REPORTING FORM

- The report is issued in print and electronic versions. Please visit [www.suntien.com](http://www.suntien.com) to download the report. Please call 0311-85278707 if you need a print version.

## EXPLANATIONS ON ABBREVIATED NAMES

- For convenience, expressions including "China Suntien Green Energy Corporation Limited", "Suntien", the "Company" or "we" are used in the report. Regarding major subsidiaries of the Company, Hebei Natural Gas Limited is referred to as "Hebei Natural Gas" and HECIC Newenergy Co., Ltd. is referred to as "HECIC New-energy".

## CONTACTS

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# CHAIRMAN'S STATEMENT

2019 was an extraordinary year which marked the 70th anniversary of the founding of the People's Republic of China, and the year in which Suntien entered its first decade. In the past ten years, in order to create a future-oriented sustainable energy system, China continuously accelerated the pace of energy supply-side structural reform and vigorously supported the development of the new energy industry. With the precise strategic positioning and by capturing the opportunities of the times, Suntien opened a path of flourishing development in the past ten years.

Currently, China is at the beginning of an energy transformation period. With continuous decline in technical costs and increased scale of new energy installed capacity, the impact of the single subsidy policy on the scale of the industry has gradually weakened. In 2019, China firmly insisted its path of making the new energy industry more market-oriented. Facing the ever-changing market, Suntien always adheres to the concept of green development, firmly implements the spirit of "practicing innovation, pursuing for excellence", and constantly makes breakthroughs and progress in its own development, social responsibility and contribution to the country.

## For itself, management and technology are the cornerstone of the development of Suntien

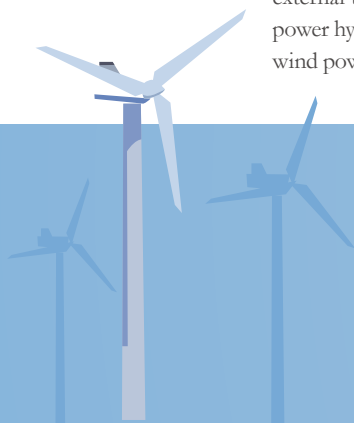
We always adhere to transparent and standardized operations, and strive to create a clean and upright working environment, establish honest and shared cooperative relationships with suppliers, provide customers with efficient and caring services, and appreciate the growth and development of each employee of Suntien. In 2019, we actively implemented the internal trainer system, increased employee training and technical assessment, began to improve the risk response mechanism, and urged subsidiaries and suppliers to obtain quality and safety certification.

## For the society, upholding social responsibility is an unchanging commitment of Suntien

We proactively keep abreast of the concerns and demands of various stakeholders and focus on environmental protection and social welfare. In terms of environmental responsibility, in 2019, we increased investment in environmental protection, actively implemented water conservation and reclamation throughout the project construction cycle, and strived to reduce the impact of our operations on the ecological environment. In terms of public welfare and poverty alleviation, in 2019, we conducted an in-depth investigation of the needs of villagers in Leguo Village, Fengning, Hebei Province, and contributed RMB 89,600 for the targeted poverty alleviation.

## For the country, contributing to national development is the mission of Suntien

On one hand, we strive to promote the construction of natural gas infrastructure, and on the other hand, to cultivate the new energy industrial ecology. Our natural gas pipelines have become an energy hub in the north, and we have expanded our wind power and photovoltaic business from Hebei province to the whole country. With breakthroughs in major projects in 2019 such as the successful grid connection for power generation of the offshore wind farm at Puti Island in Leting, Tangshan, the approval of Tangshan LNG project and the external transmission pipeline project of the receiving station, and the smooth progress of the Guyuan wind power hydrogen production project, Suntien's efforts will promote the rapid rising of the use national offshore wind power and drive the booming development of the hydrogen energy industry.



Striving spirit and unremitting efforts made today for gaining outstanding results in the future. The time has come for the wind power industry to benefit from non-subsidized policies achieve grid parity; the reform of natural gas liberalization and control in within is irreversible. In the future, Suntien will strive to be a digitalized- and intelligence-oriented, as well as a first-tier and domestic leading new energy company.

**Cao Xin**

**Chairman**



## ABOUT US

China Suntien Green Energy Corporation Limited was established on 9 February 2010 with contributions made by the promoter shareholders of Hebei Construction & Investment Group Co., Ltd. and HECIC Water Investment Co., Ltd. The Company was listed on the Main Board of the Hong Kong Stock Exchange on 13 October 2010. The Company is a leader in the development and utilization of clean energy in northern China. It has two major business segments: wind power and natural gas.

The Company is engaged in the planning, development and operation of wind farms as well as the sale of electricity, and it owns wind power projects in Hebei, Shanxi, Xinjiang, Shandong, Yunnan, Inner Mongolia, and other regions. Based in Hebei, the Company has invested and developed wind power projects across the country and seeks suitable investment projects overseas. As of 31 December 2019, the Company had consolidated installed capacity of 4,415.75 MW and attributable installed capacity of 3,939.62 MW. In 2019, the Group's gross wind power generation was 8,834 million kWh with 2,472 utilization hours.

The Company possesses natural gas transmission and ancillary facilities in Hebei Province, and sells natural gas through natural gas distribution channels. As of 31 December 2019, the Company owned 6 long-distance natural gas transmission pipelines, 18 high-pressure branch pipelines, 30 city gas projects, 22 distribution stations, 13 gate stations, 7 CNG primary filling stations, 6 CNG refilling sub-stations and 1 LNG refilling station. In 2019, the Group's natural gas sales volume was 3,237 million cubic meters.





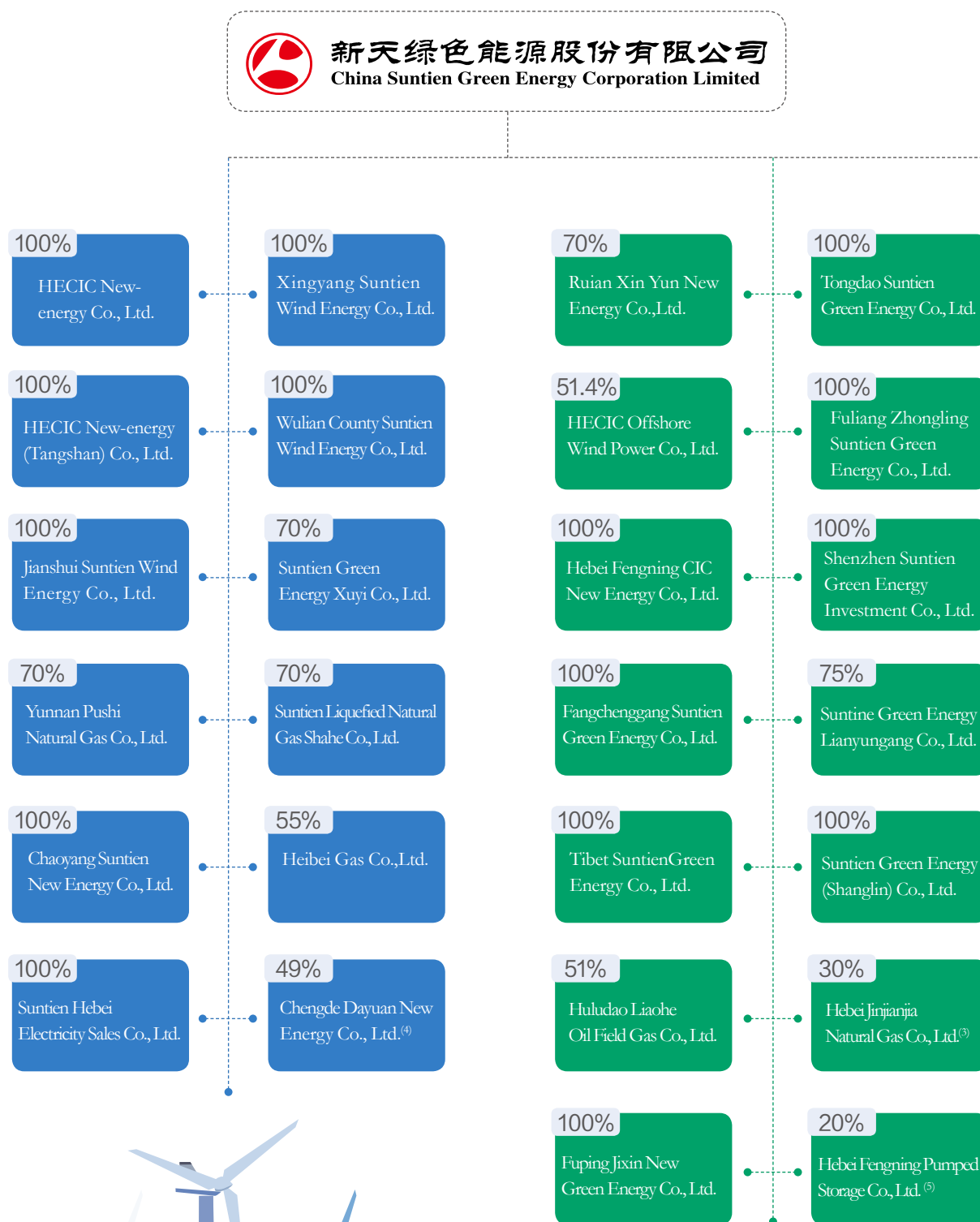
### Natural gas distribution diagram

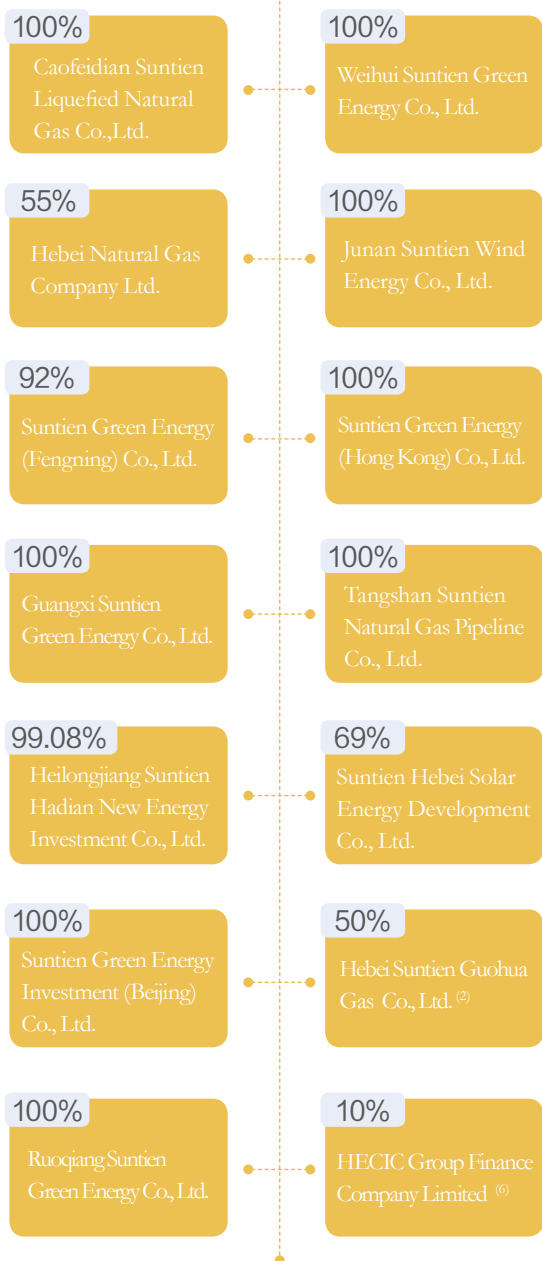


# Organizational Structure

## Corporate structure chart

As at 31 December 2019, the corporate structure of the Group was as follows <sup>(1)</sup>:





#### Notes:

- (1) Please note that the corporate structure chart covers first-tier subsidiaries of the Company only.
- (2) Hebei Suntien Guohua Gas Co., Ltd. is a joint venture of the Company.
- (3) Hebei Jinjianjia Natural Gas Co., Ltd. is an associated company of the Company.
- (4) Chengde Dayuan New Energy Co., Ltd. is a joint venture of the Company.
- (5) Hebei Fengning Pumped Storage Co., Ltd. is an associated company of the Company.
- (6) HECIC Group Finance Company Limited is a long-term investment company of the Company.



## CORPORATE GOVERNANCE

In accordance with provisions of the *Company Law of the People's Republic of China*, the *Securities Law of the People's Republic of China*, the *Listing Rules* and other relevant laws and regulations, regulatory documents and the Articles of Association, Suntien has gradually improved its rules of corporate governance, amended the Articles of Association and introduced terms of reference for all professional committees subsequent to the listing in 2010, to meet operational and management demands and external regulatory requirements.

Suntien has an excellent structure of internal control and governance. It has established committees for Strategy and Investment, Nomination, Audit and Remuneration and Appraisal under the Board to supervise and inspect strategy, management appointments, incentive measures, risk control and other aspects of the Company. A Board of Supervisors supervises the internal control system established and conducted by the Board and senior management. In the “Enterprises of Credit in Hebei Province 2019” contest, Suntien was awarded the title “Enterprise of Credit in Hebei Province” for the 8th consecutive year and HECIC New-energy was awarded the title for the 11st consecutive year.



Suntien was awarded the title for the **8<sup>th</sup>** consecutive year and HECIC New-energy was awarded the title for the **11<sup>st</sup>** consecutive year.

For the Board's specific responsibilities and composition, those of the professional committees under it, and those of the Board of Supervisors, please refer to the “Corporate Governance Report” in the *2019 Annual Report of China Suntien Green Energy Corporation Limited (0956. HK)*.

### ■ Internal Control and Risk Management

The *Internal Control Manual of China Suntien Green Energy Corporation Limited* prepared by Suntien clearly details all the risk points inherent to the Company's operation, its internal control measures and risk point control measures, and the basis of its reasonable and systematic internal control system.

In 2019, Suntien continued to develop a comprehensive standardized risk management and control system, including developing a specialist management mechanism who is in charge of internal control, strictly implemented relevant systems such as its *Comprehensive Risk Management Measures*, *System Management Measures* and *Comprehensive Risk Management Manual*, and disseminated their content through training, thereby gradually improving the monitoring of risk warning indicators.

### ■ Anti-Corruption

Suntien attaches great importance to clean administration and takes rigorous action against corruption in any form. The Company strictly complies with relevant laws and regulations such as the *Criminal Law of the People's Republic of China*, the *Law of the People's Republic of China on Anti-Unfair Competition*, the *Company Law of the People's Republic of China*, and the *Interim Provisions on Banning of Commercial Bribery*, and developed a series of policies and measures such as *Management Measures for the Prevention of Business Corruption*, *Tentative Measures for the Implementation of the Responsibility System for Construction of Honest Administration*, *Detailed Accountability Rules for the Responsibility System for Construction of Honest Administration*, *Tentative Measures for Efficiency Monitoring*, and *Tentative Administrative Procedures for Power Monitoring Mechanism*, with reference to laws and regulations as well as its actual situation. These are in whole or in part aimed at preventing corruption at the source.



Suntien requires people who are responsible for key processes and/or in key positions to sign a *Commitment Letter of Prevention of Business Bribery* with business partners to regulate the behavior of both parties. In 2019, Suntien promulgated the *Implementation Measures on Conducting Clean Government Talks, Verifying Talks, and Encouraging Talks with Leaders of Party Members, Relevant Provisions on Party Members and Cadres Handling Marriage and Funeral Festivities, Implementation Measures on Establishing Leading Cadres' Integrity Archives (Trial)* and other policy documents to strengthen the integrity of management personnel.

#### In order to improve employees' awareness of self-discipline in integrity

Suntien incorporated the construction of integrity in the annual assessment system, and divided and described the risk levels of the risks of integrity. To this end, Suntien set up a risk reminder, warning and education prevention mechanism, and improved the anti-corruption awareness of employees through carrying out anti-corruption education. Suntien formulated the *Administrative Measures for the Work of Complaint Reporting*, published the methods of complaints and reporting at office sites and information-based office platforms, set up a reporting box and hotline for preventing commercial bribery, and required strict confidentiality of the reporting, the accusers and the cases investigated and prosecuted. Through further implementing "Eight-point Austerity Rules" and "One Position with Two Responsibilities" system, Suntien gradually established a comprehensive supervision system consisting of discipline inspection, supervision, finance and auditing, etc., formed a supervisory pattern of complementary advantages, resource sharing and work coordination, and cultivated a talented team under such comprehensive supervision.

In 2019,  
Suntien average anti-  
corruption training  
per person was

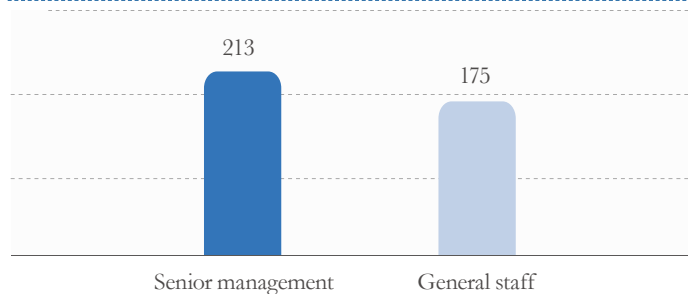
**198** hours

#### In order to guide and regulate the daily behavior of employees

Suntien appreciated anti-corruption education, actively conducted various types of integrity education activities, and basically achieved comprehensive coverage and no omissions, as well as fully conveyed and implemented the idea of building a clean and honest government at the grass-roots level. In 2019, the Company organized employees to watch warning education videos, received education at warning education bases, carried out the knowledge of party conduct and clean government, and conducted warning education for enterprises in violation of regulations, and conducted anti-corruption examination and talk about clean government for those to be promoted, with the average training time of 198 hours. During the reporting period, Suntien had no anti-corruption or corruption lawsuit cases.

During the  
reporting period,  
Suntien had **ZERO**  
anti-corruption  
or corruption  
lawsuit cases.

Hours of anti-corruption training per person of employees in 2019 (unit: hour)



#### Case | Suntien held 2019 Suntien System Leading Cadres Warning Education Conference



Middle and senior managers attend training courses on integrity

From July to September 2019, the Discipline Inspection Commission of Suntien carried out special spiritual inspection in violation of the eight provisions of the Central Committee on 36 subsidiaries inside and outside the system. In response to the problems identified in the inspection, the Party Committee of Suntien convened a warning education conference for leading cadres in the internal system, which required the leading cadres to be aware of awe, stay out of fear, and observe the bottom line, and focus on the rectification and system construction. The conference played an important role in further strengthening the discipline and consciousness of leading cadres in the system, and building a clean and honest bottom line against corruption and degeneration. In December 2019, Suntien held a special training course on party spirit cultivation and leadership improvement for middle and senior management of the Company, requiring the officers at different levels to maintain integrity and fulfill their duties.

## ENVIRONMENTAL, SOCIAL AND GOVERNANCE MANAGEMENT

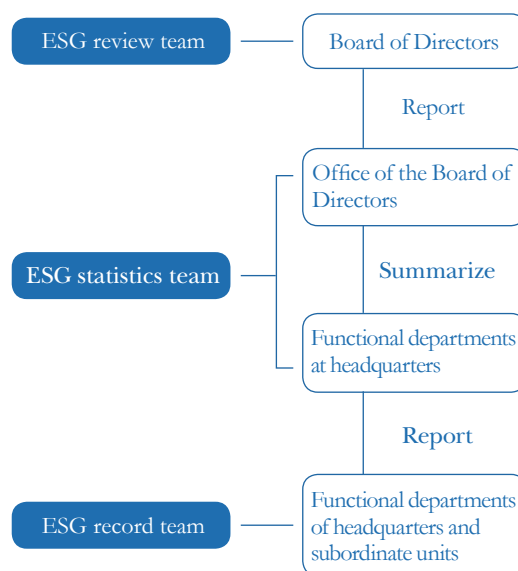
As an important clean energy supplier in North China, Suntien actively contributes to the coordinated development in the Beijing-Tianjin-Hebei Region. In 2019, the Company further optimized the ESG management system, actively responded to stakeholders' demands for Suntien, and improved the sustainable development ability of Suntien in essence.

### ■ ESG Management System

The focus of Suntien's ESG management system has always been on ESG quantitative performance management. In 2014, as one of the first mainland enterprises to adopt the ESG Reporting Guide, we preliminarily established the Suntien Green Energy ESG Indicator System based on the requirements for disclosure of ESG information. Subsequently, under the leadership of the Board, we built an ESG quantitative information management system with the Board of Directors of the Company as the leading department and covering all important business units.

In 2019, in view of the overall requirements for management system standardization, we reviewed the work mechanisms and processes of ESG information disclosure and the Company's internal management, and gradually improved the daily management and control of key ESG topics based on ESG quantitative management. The ESG management structure determines that the Board of Directors of the Company shall be responsible for the environment, society and governance strategy and report of Suntien; the Office of the Board of Directors and each functional departments form the ESG information review team, and the heads of the Company's headquarters and subordinate units are responsible for reporting ESG information, and each functional department is responsible for collecting and summarizing this information and reporting to the Office of the Board of Directors; the Office of the Board of Directors is responsible for reporting environmental and social policies and data to the Board of Directors of the Company.

#### ESG Management System of Suntien



### ■ Stakeholder Communication

Maintaining close communication with all stakeholders is vital to Suntien's sustainable development management. On the one hand, as a member of the industry chain and society, stakeholders have a direct impact on the enterprise through their decision-making and behavior, and Suntien can obtain the sustainable development momentum through timely response to the needs of stakeholders; on the other hand, enterprises have a direct and indirect impact on all stakeholders through the products and services and engineering construction provided. During the operation of the enterprise, the effective participation of stakeholders can help Suntien to accurately assess the impact of its decisions, make needed adjustments, and more fully realize the potential of mutual sustainable development.

Suntien has reviewed the type of stakeholders affected by its operations and classified them according to their relative importance, method of participation, and the corresponding measures taken to address their concerns. Effective communications with stakeholders help us understand their needs and create a basis for discussing future cooperative measures, which has gradually assumed greater importance among all our departments.

#### Channels of stakeholder communication and their focus

Stakeholder Types	Needs	Responses	Communication Channels
 Shareholders	<ul style="list-style-type: none"> <li>Continuous stable investment returns</li> <li>Timely information disclosure</li> <li>Enterprise operation in compliance with laws and regulations</li> </ul>	<ul style="list-style-type: none"> <li>Improve business diversity</li> <li>Establish a system for regular information disclosure</li> <li>Improve internal compliance system</li> </ul>	<ul style="list-style-type: none"> <li>Annual reports and corporate announcements</li> <li>Information dissemination channels including roadshows</li> </ul>
 Employees	<ul style="list-style-type: none"> <li>Decent working environment</li> <li>Ample opportunities for career development</li> <li>Competitive remuneration packages</li> <li>Health and safety protection</li> </ul>	<ul style="list-style-type: none"> <li>Improve internal management systems such as staff recruitment and promotion</li> <li>Enriched daily life</li> <li>Provide diversified employee welfare</li> </ul>	<ul style="list-style-type: none"> <li>Internal website</li> <li>Internal corporate publication</li> <li>Suntien WeChat public account</li> </ul>
 Suppliers	<ul style="list-style-type: none"> <li>Fair, just and open procurement process</li> <li>Punctual fulfillment of contractual obligations</li> </ul>	<ul style="list-style-type: none"> <li>Ensure transparency in the procurement process and receive internal and external supervision</li> <li>Reasonable management and control of cash to ensure timely payment</li> </ul>	<ul style="list-style-type: none"> <li>Announcements and notices for procurement and tender on governmental websites</li> <li>Corporate corruption reporting hotline</li> </ul>
 Customers	<ul style="list-style-type: none"> <li>Continuous, reliable and safe supply of natural gas</li> <li>Timely response to customer demands</li> <li>Service quality improvements</li> </ul>	<ul style="list-style-type: none"> <li>Establish a comprehensive safety supervision and response system</li> <li>Improve customer complaint handling process, establish a responsibility identification system for customer complaints</li> <li>Compile a standardized service manual</li> </ul>	<ul style="list-style-type: none"> <li>Regular community promotions for safe use of gas</li> <li>Visiting dissatisfied customers</li> <li>Conduct customer satisfaction surveys</li> </ul>
 Government	<ul style="list-style-type: none"> <li>Drive local and surrounding industry development</li> <li>Enterprise operation in compliance with laws and regulations</li> </ul>	<ul style="list-style-type: none"> <li>Provide job opportunities and pay taxes at the location of operations</li> <li>Cooperate with government supervision and improve internal compliance monitoring</li> <li>Ensure compliance with laws and regulations regarding environment, safety and integrity</li> </ul>	<ul style="list-style-type: none"> <li>Participate in government meetings and regularly visit the government</li> <li>Receive governmental supervision</li> </ul>
 Community	<ul style="list-style-type: none"> <li>Contribute to community development</li> <li>Participation in community activities and maintain good communication</li> </ul>	<ul style="list-style-type: none"> <li>Improve local infrastructure in terms of road and power grid construction</li> <li>Aid rural development in terms of assistance provided to designated persons</li> <li>Maintain good communication with local residents and herdsmen</li> </ul>	<ul style="list-style-type: none"> <li>Survey of community representatives</li> <li>Visits in the daily operation</li> </ul>
 Banks	<ul style="list-style-type: none"> <li>Good creditworthiness and strong ability to pay debts</li> <li>Stable business development</li> </ul>	<ul style="list-style-type: none"> <li>Pay debts on time to maintain creditworthiness</li> <li>Strengthen cooperation with domestic and foreign banks</li> </ul>	<ul style="list-style-type: none"> <li>Regular direct communication</li> </ul>
 Academic institutions	<ul style="list-style-type: none"> <li>Continuous investment in innovation</li> <li>Strengthen cooperation with academic institutions to improve the ability to apply research results</li> </ul>	<ul style="list-style-type: none"> <li>Increase internal R&amp;D investment, improve intellectual property and innovation management</li> <li>Increase cooperation and exchanges with universities, colleges, and other research institutions</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation fairs</li> </ul>

## ■ ESG Reporting Principle Response

### Principle of materiality:

In order to clarify the key areas of ESG practice and information disclosure and improve the pertinence of the reporting, Suntien identified ESG issues and made material judgments in accordance with the requirements of the *Environmental, Social and Governance Reporting Guidelines* of Hong Kong Stock Exchange to ensure the information disclosed in the report fully covers the key issues of concern to the Suntien and stakeholders.

In 2019, Suntien continued to conduct stakeholder questionnaire survey to systematically understand stakeholder evaluations of Suntien ESG related work and to listen to stakeholder recommendations. Suntien invited all internal and external stakeholders to participate in identifying environmental, social and governance issues and conducting materiality assessments. Through various forms such as employee interviews, site visits, and questionnaire surveys, we can fully understand the sustainable development topics of internal employees and external stakeholders. In 2019, a total of 168 questionnaires were received in Suntien.

In 2019,  
Suntien received  
questionnaires

**168**

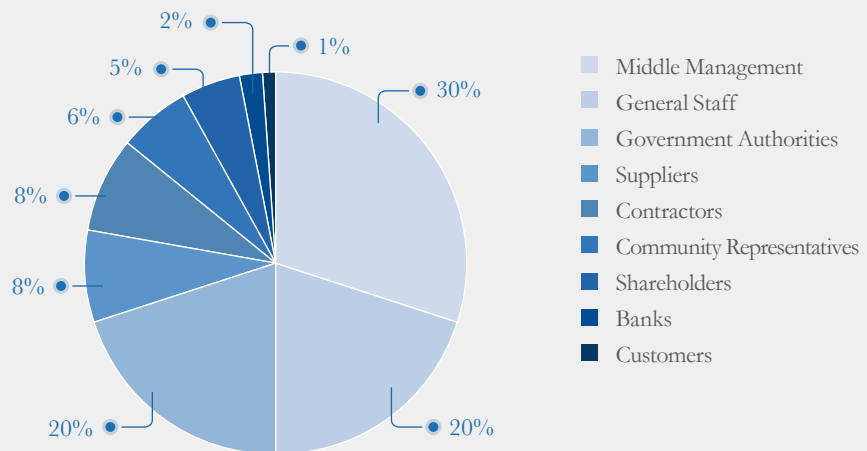
### Screening Process of Environmental, Social and Governance Issues

#### Source of topics

- Company management recommendations
- Internal and external expert analysis and suggestions
- Multimedia information analysis
- Peer benchmarking study
- ESG related standards and guidelines

#### Screening criteria

- Contribution to sustainable development
- Stakeholders' general concern
- ESG-related guidelines for important issues
- Meet the Company's strategic development needs



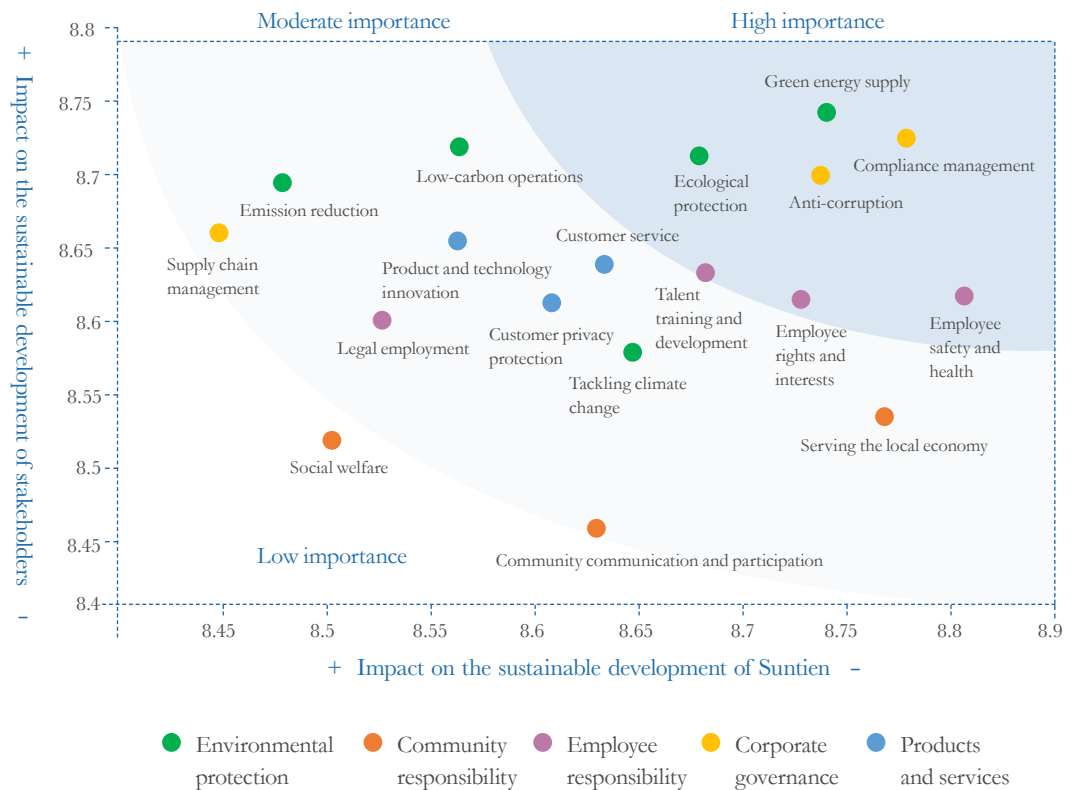
Percentages of stakeholders in the 2019 survey



Compared with the survey results of the past two years, 89.88% of the respondents have read the *Environmental, Social and Governance Report 2018 of Suntien*, which is significantly higher than the past two years (77.05% and 83.22% in 2017 and 2018, respectively). 95.24% of respondents believed that the ESG reporting can help them understand sustainable development work in Suntien and deepen their understanding of the Company's sustainable development practices. 97.02% of the respondents were interested in learning more about the sustainable development of Suntien.

The results of the survey provide a useful reference for adjusting our future sustainable actions. They can give Suntien a more accurate perception of changing social demands, and subsequently enable us to make targeted adjustments to the focus of management and control to meet those demands. The results will also have a direct effect on the content of our ESG information disclosures. This report includes targeted disclosures on the topics of most concern.

### Matrix of Material ESG Aspects in 2019



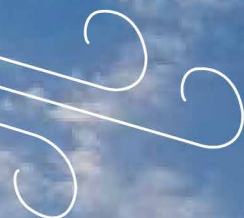
#### Principle of quantification:

Suntien established a standardized ESG indicator management tool covering the headquarters and its subsidiaries, regularly quantifies key quantitative indicators including all “environment” categories and part of “social” categories in the ESG report guidelines and consolidated such indicators during the year to finally prepare this report for external disclosure. ESG quantitative data are detailed in the sections of this report.

#### Principle of consistency:

This report has consistent disclosure scope with that of the previous sustainable development reports, and adopts consistent disclosure statistical methods, and further details the part of disclosure categories corresponding to the SEHK ESG report guidelines. The multi-year comparative data of ESG is detailed in the sections of this report.

01





# ADDRESSING CLIMATE CHANGE

Climate change has had unprecedented impact on a global scale. In order to effectively reduce greenhouse gas emissions and achieve sustainable development, China has established a development route of ecological civilization construction to promote economic transformation. As an important clean energy supplier in Hebei Province, Suntien actively responded to national development strategies and its own development needs. Based on fully identifying climate-related risks, it continuously explored development opportunities, promoted clean energy as the main response strategy, and actively participated in low-carbon development in Beijing-Tianjin-Hebei and other regions, so as to strive to promote industry progress, and give full play to the important role of the new energy industry in optimizing the energy structure and building an ecological civilization.



## Preventing Climate Risks

Suntien attaches great importance to the related risks and opportunities brought by climate change and has begun to integrate climate-related risk indicators into existing risk management methods. Specifically, the relevant technical department of Suntien will report the identified climate risks to the auditing and regulation department of the Company in order to identify the risk content that has a significant impact on the Company in the year and respond effectively. In 2019, Suntien identified the following risk factors related to climate change in terms of transition risks and physical risks.

### ■ Transition risk

China's determination to actively respond to climate change and achieve national emission reduction targets has provided an inexhaustible impetus for a clean and low-carbon energy development path. In this context, the continuous implementation of relevant policies and regulations will have a greater impact on the development of new energy companies. In 2019, China increased its efforts in the construction of market mechanisms for the energy industry. The National Development and Reform Commission and other departments have successively issued regulatory policies on natural gas pricing and construction of wind power and photovoltaic projects, emphasizing the focus on promoting parity on-line access and competitive allocation, and reducing dependence on state subsidies for industry development. In order to mitigate the impact of the de-subsidy policy on the Company's revenue, Suntien fully studied the relevant national policies, analysed the actual situation of the projects to be developed, rationalized the progress of project development and construction, and ensured that the approved projects will be connected to the grid and put into operation as soon as possible.

With the deepening of market-oriented reforms in the natural gas and new energy industries and the full launch of the national carbon market, the market's demand for clean energy will increase significantly. In order to cope with the pressure caused by rising demand on the Company's operations, Suntien continued to strengthen its operation and maintenance management, improved the safety and reliability of equipment and the level of production operation and maintenance, which laid a solid foundation for the follow-up projects. In addition, to meet the development opportunities that may be brought to the new energy industry after the launch of the national carbon market, Suntien actively developed carbon assets, actively participated in green power transactions, and has cooperated with Hebei Construction & Investment State Financing Energy Services Ltd. for many years. In 2019, Suntien developed and completed the transaction of 236,000 megawatt-hours of international green power in Chashan, Yu County, Hebei Province, Lihuajian Wind Farm in Yu County and Dongxinghe Wind Farm in Yu County.

In 2019,  
Suntien developed and  
completed the transaction  
of international  
green power

**236,000**

megawatt-hours

### ■ Physical risk

#### For the wind power business

Issues such as frequent extreme weather caused by climate change, rising sea levels, and acidification of the seawater will affect wind farm power generation efficiency and even damage wind farm power generation equipment. In addition, wind resources are critical to the wind power business, and their inter-annual changes are closely related to the amount of power generated. Due to the inherent randomness and uncontrollability of wind resources, Suntien carried out wind resource tests during the project planning phase and before the construction of the wind farm, to comprehensively assess the potential installed capacity of the site, and to minimize the impact of climate risks.

#### For the natural gas business

The heating season is the peak period of natural gas consumption, and the frequent occurrence of severe weather will challenge the Company's ability to stabilize gas supply. To meet the demand of gas, Suntien actively carried out forecasting of severe weather and peak demand for gas consumption, strengthened the operation and maintenance management of wind farms and pipeline networks, and coordinated multiple sources to form a pattern of complementary multiple gas sources, strengthen the construction of gas storage facilities, and improve peak regulation capacity and ensure stable gas supply.

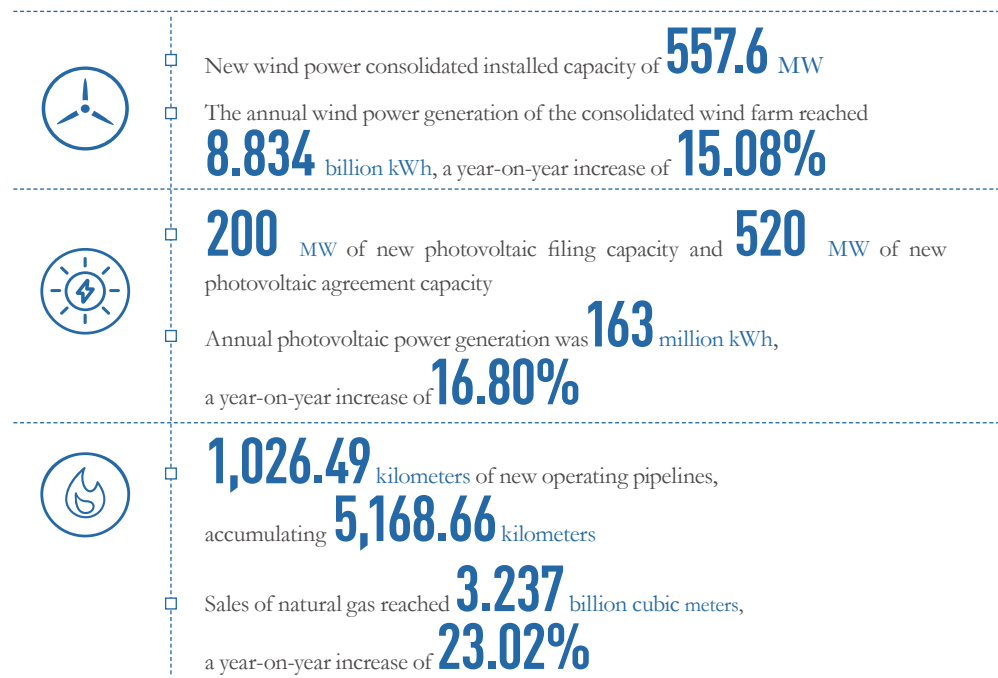


## Development of Clean Energy

Energy structure transformation is a major support for addressing climate change. The Chinese government attaches great importance to the development of non-fossil energy and has set the development of a “clean, low-carbon, safe and efficient energy system” as a basic policy in the “Thirteenth Five-Year Plan”. At the 19th National Congress of the Communist Party of China, the strategic deployment of “strengthening the clean energy industry” was clearly proposed, which greatly promoted the vigorous development of the new energy industry. Based on the two major industries of natural gas and new energy, Suntien actively seized the opportunities of the times and worked hard to play its important role in addressing climate change and reforming the energy structure.

In the new energy sector, although wind and light energy are environmentally friendly and clean, they have limitations in terms of their wide distribution range, natural conditions, and storage difficulties. On the one hand, Suntien adopted a mode of coordinating resource allocation and emerging business expansion to diversify business types. On the other hand, it increased the supply of clean energy and improved the efficiency of renewable energy generation. It has a two-pronged approach to ensure the effective use of clean energy from the source. In the natural gas sector, Suntien focused on the construction of gas pipeline networks and developed natural gas end users relying on new commissioning pipelines to expand the scope of natural gas supply. In 2019, Suntien steadily increased the power generation of wind and photovoltaic projects, achieved breakthroughs in the construction of hydrogen refueling stations and other fields, and the multi-source gas supply pattern of natural gas pipelines achieved initial results.

### Major annual performance



Compared to the use of traditional energy sources, the total wind and photovoltaic power generation is equivalent to avoiding<sup>1</sup>:

**7,593,500** tons  
of carbon dioxide

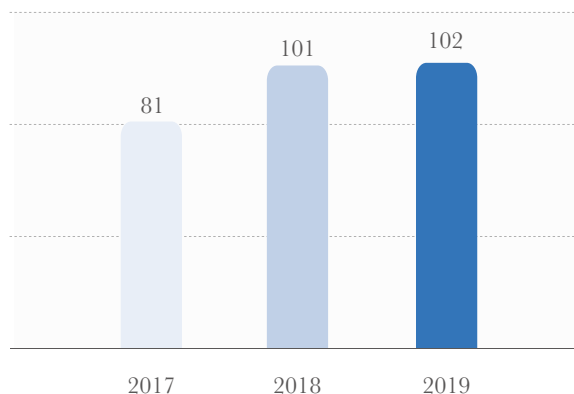
**2,339** tons  
of sulfur dioxide

**2,249** tons  
of nitrogen oxides

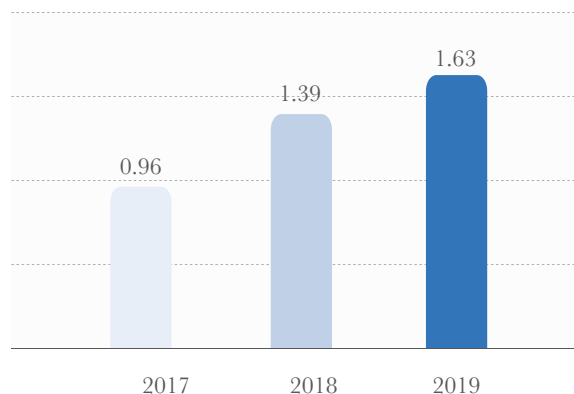
**540** tons  
of dust

<sup>1</sup>Note: The conversion is based on the carbon dioxide, sulfur dioxide, nitrogen oxides and dust generated by unit thermal power generation in the Annual Development Report 2018 of Power Industry in China.

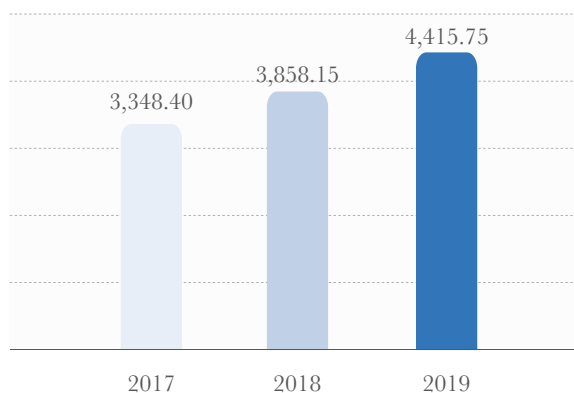
Photovoltaic installed capacity Unit: MW



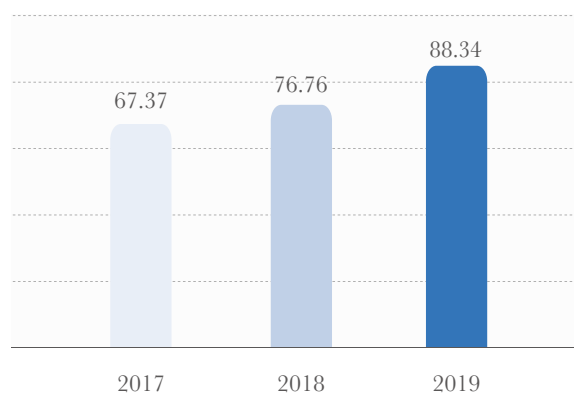
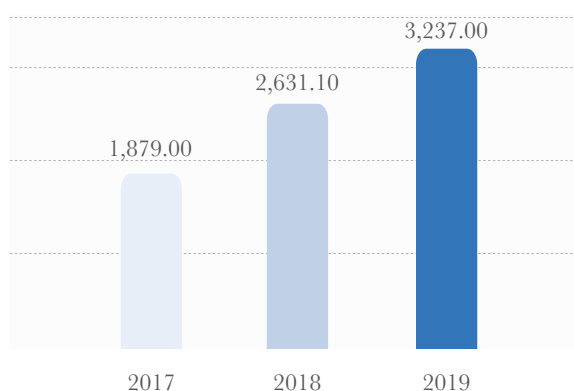
Photovoltaic electricity generation Unit: 100 million kWh



Wind power consolidated installed capacity Unit: MW



Wind power electricity generation Unit: 100 million kWh

Sales volume of natural gas Unit: million m<sup>3</sup>

#### Case | “Beijing-Shijiazhuang-Handan” Gas Transmission Pipeline Double-line Project of Hebei Natural Gas was approved

In January 2019, the “Beijing-Shijiazhuang-Handan” gas pipeline double-line project of Hebei Natural Gas was finally approved. As one of the projects included in the “Thirteenth Five-Year Plan” for the development of natural gas in Hebei Province, the “Beijing-Shijiazhuang-Handan” gas pipeline double-line project starts from the former Beijing-Shijiazhuang-Handan Pipeline Luzhou Station, with a total length of about 102 kilometers. The project has 5 stations in total, each of which will undertake the existing pipelines in Hebei Province. They will be connected to the PetroChina-Russia gas pipeline in the long term to form a gas supply and distribution pipeline network, which will effectively supplement the gas volume gap along the Beijing-Handan line and will help alleviate the gas supply pressure of Beijing-Shijiazhuang-Handan pipeline, to achieve the interconnection and interoperability of the natural gas pipeline network in the province, and to enhance the gas source network dispatching ability, which are of great significance to the safety and stability of the Beijing-Tianjin-Hebei gas supply.

**Case | The first wind turbine in the first offshore wind farm in northern China successfully connected to the grid for power generation**

In December 2019, as the blades of the wind turbines standing in the Bohai Bay slowly turned, the wind turbine of the offshore wind farm No. 54 of Suntien Offshore Wind Power Co., Ltd. at Puti Island in Leping, Tangshan was successfully launched and connected to the North Hebei power grid. Various technical parameters met the requirements, and the first wind turbine of the Puti Island project was successfully connected to the grid for power generation.

The offshore wind farm demonstration project at Puti Island in Leping, Tangshan is intended to arrange a total of 75×4-MW-wind-turbines with a total installed capacity of 300 MW and an annual grid-connected power generation of 760.13 million kWh. After the formal operation, it will effectively alleviate the air quality pressure in the Beijing-Tianjin-Hebei region, to fight for “Winning the Blue-Sky Defending Battle”.

**Case | Guyuan Wind Power Hydrogen Project of New Energy Company promoted innovation and development of hydrogen energy industry**

Guyuan Wind Power Hydrogen Project in Hebei Province is the first wind power hydrogen production project in China and the world's first wind power project with a megawatt-scale hydrogen production load. It aims to create a complete hydrogen energy ecosystem while pioneering the path of renewable energy consumption and lead the green hydrogen production.

The project innovatively transforms huge wind energy resources into water through wind power generation → electrolyzed water → hydrogen production and oxygen generation → hydrogen energy → power generation, heating, cooking, heating, transportation, etc., and re-enters nature ecosystem, preparing for the next energy conversion loop utilization, helping wind power to become a recyclable green energy source, with an annual grid-connected power of 524.7 GWh; after the completion of the comprehensive hydrogen utilization system, it is estimated that the annual grid-connected power is 419.84 GWh and the annual hydrogen production was 708,000 Nm<sup>3</sup>.

In the course of project research, in order to ensure the smooth development of Guyuan wind power hydrogen production project, Suntien and Hebei University of Science and Technology signed the Intellectual Property Rights Sharing Agreement and set up a provincial engineering laboratory for comprehensive utilization of wind power hydrogen production, which aims to digest and absorb the wind power hydrogen production technology of McAfee of Germany, thus improving the efficiency of fluctuating hydrogen production and solve problems such as abandoning wind in existing wind farms.

Upon completion of the Guyuan wind power hydrogen production project, the development level of China's technology in renewable energy and hydrogen industry will be shown to the world through the Wind Olympics. It will also make important contributions to the construction of the Zhangjiakou Renewable Energy Demonstration Special Zone and Hebei Province becoming a new center for national hydrogen industry innovation and development.



Guyuan Wind Power Hydrogen Project Site

## Contributing to Regional Low-Carbon Development

Rooted in Hebei and radiating to the whole country, Suntien fully supported the development of the “Beijing-Tianjin-Hebei” region, while exploring opportunities for cooperation in remote areas, and actively promoted clean heating and power supply in cities and towns based on new energy sources, contributing to the implementation of national energy development plans and the elimination of bottlenecks in the transmission of natural gas infrastructure.

In 2017, the *Beijing-Tianjin-Hebei Energy Coordinated Development Action Plan (2017-2020)* issued by the Development and Reform Commission of Beijing, Tianjin and Hebei and the *Clean Winter Heating Plan for Northern China (2017-2021)* jointly issued by ten ministries and commissions of the PRC proposed quantitative indicators for clean energy use and clean heating rates in northern regions. In 2018, the *Action Plan to Promote the Coordinated Development of Beijing, Tianjin and Hebei 2018-2020* further deepened the joint prevention and control mechanism for air pollution in the Beijing-Tianjin-Hebei region, and proposed the goal of building a green ecological barrier in the Beijing-Tianjin-Hebei region within three years. For many years, Suntien has closely followed the development plans of the Beijing-Tianjin-Hebei region, deeply cultivated the development needs of Hebei Province, and fully met the needs of regional development for clean energy through accelerating the pace of development and improving the efficiency of business operations.

Total investment of the project was

**RMB 25.39** billion

The designed capacity was

**12** million tons per year

**Case :** Both the Tangshan LNG project and the ancillary receiving station external pipeline project were approved

In 2019, Suntien Tangshan Liquefied Natural Gas (LNG) project and receiving station external pipeline project were approved by the National Development and Reform Commission, marking the official landing of the LNG project with the largest designed and storage capacity in China. As the key project of the national natural gas production, supply, storage and transportation system, this project is the first large-scale gas source project to be established in Hebei Province. It is also an important part of the reform of the energy structure and has profound significance for energy adjustment and environmental quality improvement.

The project is located in Caofeidian Port Logistics Park, Tangshan City, Hebei Province, with a total investment of RMB 25.39 billion, a designed capacity of 12 million tons per year, and in the supporting pipelines:

- ▶ The annual designed gas transmission capacity of Caofeidian-Baodi section is 11.2 billion cubic meters, and the maximum daily gas transmission capacity is 160 million cubic meters. It is the longest and most difficult natural gas long-distance pipeline project with the same diameter in a single directional drilling;
- ▶ The annual designed gas transmission capacity of the Baodi-Yongqing section of the pipeline is 11.2 billion cubic meters, and the maximum daily gas transmission capacity is 151 million cubic meters. It is one of the national *Implementation Plan for the Construction of LNG Storage and Transportation System in the Bohai Rim region 2019-2022*, and a key project for natural gas infrastructure construction in the Bohai Rim region.



**Case | Staged achievements in providing wind power to Tibet and Xinjiang**

In January 2019, the Development and Reform Commission of Tibet Autonomous Region issued the *Notice on Approval of Suntien Gongga Dongla 49.5-MW-Wind-Power-Project*. After two years of efforts, the Gongga Dongla Wind Power Project was finally approved. The project is the first wind power project of the Company approved in the Tibet Autonomous Region, which has filled a blank of the quasi-project of the Company approved in the Tibet Autonomous Region and is a landmark.

In September 2019, Suntien successfully signed a number of cooperation projects with the Bazhou government and the Second Division of the Military Unit through active communication with the local government. After the Xinjiang Investment Monitoring and Early Warning Results released by the National Energy Administration turn green, the project will be prioritized for competitive allocation or parity on-line projects.

**Case | Suggestions for the preparation of the “14th Five-Year Plan” for the development of natural gas in Hebei Province**

The year 2019 is a key year for the implementation of the “13th Five-Year Plan” for natural gas in Hebei Province, and also a year for conspiracy in the “14th Five-Year Plan”. With the continuous deepening of the reform of the oil and gas system and the acceleration of the construction of the natural gas production, supply, storage and marketing system, the natural gas industry is facing profound changes and major opportunities. Therefore, Suntien started from establishing a natural gas industry system which has sound institutional mechanisms, basic supply and demand balance, reasonable gas consumption structure, sufficient market competition, and efficient facility operation. Based on the advantages of the natural gas resources, pipeline network and market advantages in the province, Suntien actively planned and took the initiative to study and compiled the “14th Five-Year Plan” for the development of natural gas in the province. Combined with the new situation, new policies and new requirements of the development of the natural gas industry, focusing on tasks of improving the natural gas consumption and utilization levels, and improving the construction of natural gas infrastructure, Suntien carried out planning work scientifically and strived to contribute to the development of natural gas in Hebei Province.

In 2019,  
Suntien's R&D  
investment was

**RMB 10.2926** million

The number of science and  
technology projects and  
information projects was

**26**

The number of invention  
patents was

**15**

The number of utility  
model patents was

**26**

## Boosting Industry Progress

In recent years, the new energy industry with increased investment, rapid technological progress, and a substantial drop in driving power generation costs coupled with government subsidies have effectively stimulated the growth of wind and photovoltaic power generation installations. However, the excessively rapid development also gradually generated problems such as lagging in updating individual policies and regulations, inadequate linking of some local planning goals with national planning goals, too much emphasis on scale, and excessive supply. In order to promote the sustainable progress of the industry, Suntien attached great importance to scientific research and development and technological innovation, conducted multi-party cooperation and exchanges, and strived to promote the transformation of clean energy from supplementary energy to alternative energy.

Focusing on technological innovation and protection of intellectual property rights, the Company strictly complied with the Patent Law of the *People's Republic of China* and the *Implementation Rules of the Patent Law of the People's Republic of China*, systematically managed the patents obtained, and gradually revised the *Management Measures for Production Suppliers*, the *Measures for the Management of Reform Projects*, the *Measures for the Management of Safe Production Procurement*, the *Measures for the Management of Project Entrusted Operations*, and the *Measures for the Management of Intellectual Property Rights*, which have promoted the active development of innovative research and development within enterprises, and established an innovation system with enterprises as the mainstay, market-oriented, and a deep integration of production, education and research.

In order to provide energy supply services in line with future trends, Suntien continued to encourage research and innovation, rationally allocated research and development costs, and stimulated employees' enthusiasm for invention and creativity. In 2019, Suntien invested about RMB 10.2926 million in research and development, reported a total of 26 science and technology projects and information projects, applied for 15 invention patents, 26 utility model patents, obtained 5 software copyrights, published 13 papers, and scientific research and development achieved initial results.



## 2019 science and technology innovation projects and research topics

## System construction

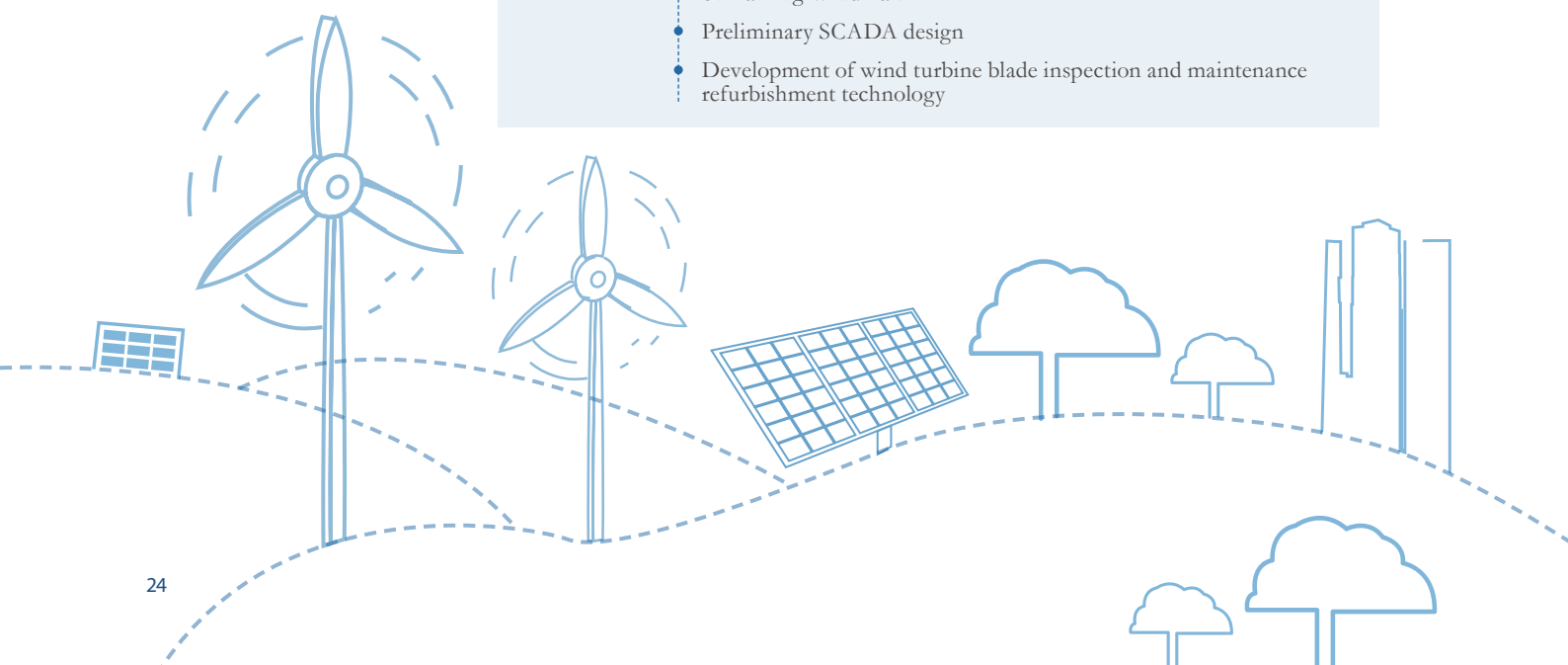
- Refined operation and maintenance platform for wind turbine
- Construction of equipment reliability benchmarking system
- Construction of wind turbine operation and maintenance system
- Suntien Scientific and Technological Enterprise Management Business Informatization Construction (continued)
- Substation intelligent robot inspection system

## Equipment

- Wind power operation and maintenance business mobile terminal
- Improved yaw control system device
- Energy release device for wind turbine pitch circuit
- Reinforcement device for wind turbine generating unit pitch mechanism
- Gamesa wind generator shaft current release device
- Transformer simulation training device
- Wind Turbine Yaw System Performance Optimization
- GE SCADA upgrade (smart warehouse access)

## Technological research

- Research on Optimization of Single-machine Information Upload in Wind Farm
- Application of on-line vibration monitoring technology for wind turbine blade installation
- Application of wireless signal transmission technology in wind farm
- Application of Wind Turbine Tower Bolt Condition Monitoring Technology
- Application of Monitoring Technology for Wind Farm Current Collection Lines
- Review and analysis of Haixing No. 8 wind turbine basic design
- Main control experimental equipment, foundation and load analysis of Haixing Wind Farm
- Preliminary SCADA design
- Development of wind turbine blade inspection and maintenance refurbishment technology





**Case :** The prototype under DEC wind turbines comprehensive technological reform research project of Shanghai Technology Innovation Office was successfully connected to the grid

In December 2019, DEC wind turbines comprehensive technological reform R&D project of Suntien Shanghai Technology Innovation Office successfully completed the prototype hoisting, commissioning, and grid connection at No. 24 wind turbine of Dongxinying Wind Farm and was in full operation. This research project is the first in China to adopt comprehensive transformation technologies such as tower heightening, blade lengthening and foundation strengthening. The implementation of this project has successfully transformed the scientific research results into post-market functional table service products and laid the foundation for securing the Company's favorable position in future market competition.



Project mockup and management interface

**Case :** Hebei Natural Gas realized digitalization of urban gas and informatization of long-distance transmission pipelines

In 2019, Hebei Natural Gas intensified the efforts for digital construction of urban gas, deployed equipment for acquiring urban gas terminals, and sent back real-time data such as pressure, temperature of the pipeline network, and flow data of the user. Each gas company synchronizes its data to the general data center, and realizes data sharing through the "Enterprise Cloud Service Center" and "Intermediate Storage Service". The intelligent control system and emergency command system were used to build a mechanism for unified monitoring, management, distribution, and processing of alarms.

In terms of long-distance transmission pipelines, Hebei Natural Gas established a three-level control mechanism, deployed a total of 9 system software including SCADA, GIS, production management systems, online and offline simulation systems, and established the "Enterprise Cloud Service Center" and "Intermediate Storage Services". The concept of big data was adopted to accurately predict and adjust the supply and transportation of long-distance pipelines, and the information system was used to manage the production and operation of long-distance pipelines.



02





# STEADY SUPPLY OF ENERGY

Suntien is committed to supplying safe and stable green energy to the region and helping to optimize and upgrade the local energy structure. For a long time, following Suntien's safety concept, which requires prioritizing safety, sharing responsibility, and managing risks before happening, Suntien has been constantly strengthening safety management and control, improving the quality of its products and services and supplier management system to provide customers with a stable, convenient supply of high-quality clean energy and meet the demand for natural gas of residents and enterprises.



## Safety Management

In 2019,  
the investment in safety  
production was

**RMB 35.83** million

The number of deaths due to  
work for three consecutive  
years was

**0** person

Operational safety is one of the pillars on which Suntien's long-term success depends. Suntien has established the concept of safety development and red line awareness. With the goal of effectively preventing and curbing various types of production safety accidents, it has continuously improved its safety management system, established safety production committees, implemented information-based whole-process safety management methods, and carried out safety training in-depth and special activities for promotion of safety management work in all round, which have achieved certain results. In 2019, Suntien increased investment in safety production and invested RMB 35.83 million in safety management. As of the end of 2019, there were no safety accidents in Suntien, and the number of deaths due to work for three consecutive years was zero.



### ■ Construction of Security System

In strict accordance with the *Production Safety Law of the People's Republic of China*, the *Production Safety Regulation of Hebei Province*, the *Tentative Measures for Removal, Inspection and Rectification of Incidents and Hidden Dangers in Safe Production* and other relevant laws and regulations, Suntien continuously improved the safety system and formulated a number of management measures from safety supervision and inspection, occupational health and safety, emergency response and incident treatment. In 2019, focusing on safety risks and safety education and training, Suntien promulgated system documents such as the *Measures for the Management and Control of Safety Risk Hierarchies* and the *Implementation Rules for the Construction of Safety Risk Hierarchical Management and Control System*, to implement safety risk hierarchical management and deepen the safety production responsibility system. Besides, Suntien updated its *Management Measures for Safe Production Inspection at Each Level and Removal, Inspection and Rectification of Incidents and Hidden Dangers*, the *Implementation Rules for the Selection of Advanced Units in Production Safety* and the *Administrative Measures for the Production Safety Responsibility System*, to further refine the safety inspection and investigation mechanisms and ensure smooth production work.



### Occupational health

- Occupational Health Management Measures;
- Measures for Safety Management at Sites of Production and Operation with Great Danger and Hazardous Factors;
- Labor Protective Articles Supervision and Management Measures;
- Safety Management System for Production and Business Premises with Greater Danger and Hazard Factors;
- Occupational Health Management System;
- Occupational Health Management Measures;

### Emergency response plan

- Emergency Response Plan Management Measures;
- Integrated Emergency Response Plan for Safe Production Incidents;
- Special Fire Emergency Response Plan;
- Long-distance Natural Gas Pipeline Major Hazard Incident Response Plan;

### Incident treatment

- Incident Reporting, Inspection and Treatment Measures;
- Production Incident Inspection Procedures;

### Monitoring and Inspection

- Management Measures for Safe Production Inspection at Each Level and Removal, Inspection and Rectification of Incidents and Hidden Dangers;
- Management Measures for Safety Inspection and Monitoring of Major Hazards;
- Fire Safety Management Measures;
- Labor Protective Articles Supervision and Management Measures;
- Management Measures for Safe Production Inspection at Each Level and Removal, Inspection and Rectification of Incidents and Hidden Dangers;
- Occupational Health Management System;
- Administration Measures for Incentives of Work Safety;
- Administration Measures for Penalties of Work Safety;
- Measures for Safety Management at Sites of Production and Operation with Great Danger and Hazardous Factors;

## ■ Safety Production Organization

In order to strengthen the unified leadership, organization and coordination of safety work, Suntien has established a Production Safety Committee which is led by the President of the Company and composed of people who are in charge of each functional department. The proportion of ordinary employees is 10%. Meanwhile, HECIC New-energy, Hebei Natural Gas and other important direct units have established respective production safety committees. Every season, the Safety Committee organizes meetings to analyze production safety situation, to guide and supervise the Company's production safety work, and to solve significant production safety issues through rigorous study and effective coordination.

## ■ “One Standard and Two Controls” Mechanism

In order to advance the construction of the safety management system in depth and breadth, Suntien proposed a “One Standard and Two Controls” safety management system, which means “one standard per position, one control per person, and one control per matter.”, and established the Establishment Committee. In 2019, Suntien promulgated the *Administrative Measures for Safety Production Responsibility System* to further refine the “one standard per position” standard and deepen the “one control per matter” operational risk management and control. Based on the actual situation on the site, HECIC New-energy formulated the implementation plan for the construction of the “two controls” system in 2019, and initially completed the functional design of the system, and realized the security risk management during the infrastructure period through the security management information system. Besides, from the perspective of strategic development, HECIC New-energy put forward the management concept of the big safety supervision system and formulated the *Key Tasks for Work Safety Management of Regional Companies*, taking multiple measures to establish a continuously improving long-term safety management mechanism for production safety.



## ■ Special Safety Activities

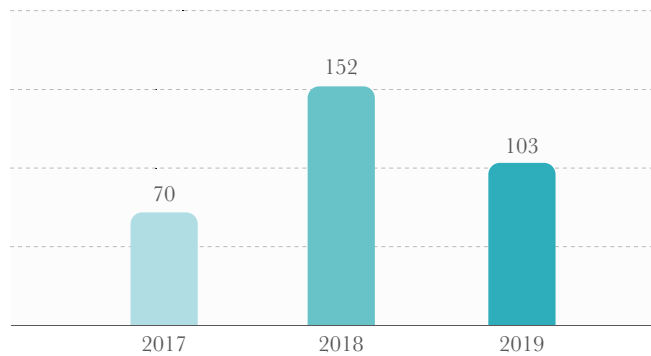
In accordance with the structure of safety management system, Suntien successively carried out various special safety activities such as hidden danger investigation, emergency drills, dual measures plan, employee safety training, safety cultural activities, etc., in-depth investigation of accident hazards, and improved emergency handling capabilities of employees to promote safety management with more effective measures in all aspects.

In order to effectively prevent and curb all kinds of production safety accidents, Suntien has stepped up efforts to investigate and manage hidden dangers, and regularly conducts joint inspections and special treatments for key areas, projects and hidden dangers. In September 2019, in order to ensure the safe and stable production of the Company's system during the 70th anniversary of the founding of the People's Republic of China, Suntien carried out "risk prevention for ensuring safety to celebrate the National Day welcoming" special safety inspections in key areas such as storage tanks and filling stations. During the inspection in 2019, a total of 103 hidden safety hazards were found. The inspection team put forward rectification opinions and requirements for the problems found on the spot.

During the inspection in 2019, the number of hidden safety hazards was

**103**

Number of troubleshoot security checks from 2017 to 2019 Unit: item



Special inspection on production safety of Suntien Shahe LNG Company at the 70th anniversary of the founding of the PRC



Special inspection for production safety of Tangshan LNG Project

To prevent leakages, fires, explosions and other emergencies at urban natural gas pipeline network and minimize potential damage to people and property, Suntien and its subsidiaries inaugurated a series of emergency exercises and inspections to improve the staff's ability to handle such situations. The activities enhanced anti-terrorism awareness and coordination ability upon occurrence of emergency incidents. In 2019, Hebei Natural Gas carried out emergency drills for urban gas, fire prevention, flood prevention and other special emergency plans or on-site disposal plans. The Shahe branch and government departments jointly conducted emergency drills for urban gas leaks and analyzed and summarized the problems identified after conclusion of the drills, which strengthened the emergency linkage mechanism and provided technical support for emergency rescue.



**Case | HECIC New-energy organized external experts to conduct emergency capability assessment**

In August 2019, HECIC New-energy organized external experts to conduct an emergency capability assessment on Suntien Wind Energy Co., Ltd. The expert team reviewed the emergency training and drill records, emergency equipment and facility accounts, and other relevant emergency file information, and evaluated employees by way of examinations, questions, operations and drills in combination with on-site inspection and verification. After evaluation, the Company and the expert team conducted in-depth exchanges on deficiencies and rectification measures and reached a consensus.



CPR training exercise



Anti-virus emergency drill

**Case | Suntien New Energy Technology Co., Ltd. launched "flood control emergency drill"**

Suntien Science and Technology Co., Ltd. carried out a "flood prevention emergency drill" at Qili Wind Farm. This emergency drill tested the rigor, pertinence and operability of the on-site disposal plan. After the drill, the Company revised the non-conforming on-site disposal plan. This activity familiarized employees with the drill process and their safety responsibilities, and improved their emergency response capabilities on the spot.



Fire emergency drill



Flood prevention emergency drill



### Case | Hebei Natural Gas held emergency rescue drill for long-distance transmission pipeline in 2019

On 24 October, Hebei Natural Gas held the emergency rescue drill for the long-term transmission pipeline in 2019. The drill set up links such as early warning start, accident reporting, pre-accident handling, intelligent control system and emergency command system operation, and air vent replacement. This exercise examined the applicability of the Company's special emergency plan for major hazard sources of long-distance pipelines and the coordination of teams. It also tested the comprehensive performance of each module of the smart control system and emergency command system and the response capabilities of cross-platform integration and concluded the problems for handling.



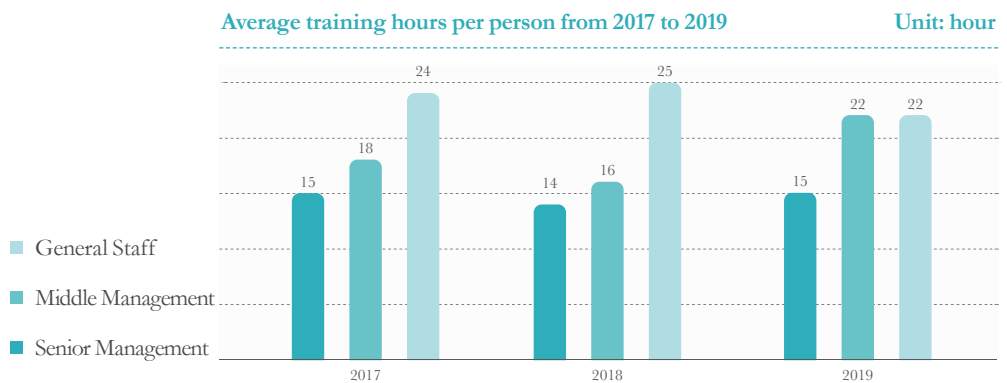
Emergency drill for long distance pipeline



Emergency drill summary meeting

Meanwhile, Suntien actively promoted the construction of the occupational health, safety and environmental management system, and is committed to providing employees with a healthy and safe working environment to protect their physical and mental health. In 2019, HECIC New-energy implemented a "dual measures plan" to monitor the physical condition of employees in real time and adopted special protective measures to avoid occupational health hazards. The Company purchased and replaced counter-measurement equipment such as climbing-free devices and maintenance-assist devices to provide employees with a safe and healthy work environment.

In order to enhance the safety awareness of all employees and effectively curb production safety accidents, Suntien attaches great importance to the construction of safety culture, and regularly organizes safety training activities such as safety training and safety production months and has achieved good results. In terms of safety training, in 2019, Suntien strengthened employees' awareness of safety by hiring safety experts for training, watching educational videos such as "Being Safeguarding the Public", "Life Red Line", organizing knowledge contests, and conducting safety sharing meetings, so as to improve their ability to protect themselves. In the annual "Safety Production Month", Suntien carried out a variety of safety cultural activities such as safety and operation workshops, safety production publicity and consultation days, and public safety experiences, and achieved good publicity results.



"Dual measures" are security measures and countermeasures. Security measures are program of technological measure in safety, which refer to protection measures to improve working conditions, prevent work-related accidents, and prevent occupational injury. They are protection measures against personal safety. Countermeasures refer to the technical precautions taken to prevent technical accidents such as equipment accidents and employee mis-operations. They are protective measures against equipment.



Hebei Natural Gas organized safety training for middle and senior management



The Offshore Wind Power Company organized employees to watch videos about safety

#### Case : Suntien organized the Second Safety Knowledge Contest

In June 2019, Suntien held the Second Safety Knowledge Contest. The scope of this safety contest involves 51 production safety laws, regulations, standards, and company rules and regulations, including the *Work Safety Law*, the *Emergency Regulations on Production Safety Accidents*, and so on. During the contest, the conference team enabled employees inside and outside the venue to have the opportunity to participate in the security contest by virtue of on-site interactive answering and WeChat network answering, which increased employee participation and motivation.



The Second Knowledge Contest of Suntien

#### Case : Suntien organized public safety experience activities

In June 2019, the Safety Supervision Department of Suntien organized employees at headquarters to conduct public safety experience activities. Under the guidance of the interpreter, the employees learned of safety knowledge in five major areas including natural disasters, fire safety, traffic safety, home safety, and safe production, and emergency treatment methods for common dangers. Subsequently, the experience hall simulated various natural disasters and accident scenes, and employees participated in experience projects such as firefighting and extinguishing, helmet protection test, VR danger source and so on. This public safety experience activity enabled employees to have on-site experience in emergency handling of various accidents and natural disasters, and to further understand and master safety knowledge and escaping skills.



Knot training



Firefighting training





Anguo Company conducted safety oath and signature activities



"Family Safety Support" activity



Safe walking activity



Safety and operations workshop

## Quality Management and Control

Suntien regards quality as life. It continues to promote construction of the quality management system, perfect the quality management system and the production skills of employees so that the level of quality management and control is effectively improved. Due to the characteristics of the industry, the issue of recalling products sold and shipped does not apply to Suntien.

In terms of systems improvement, Suntien has compiled the *Project Construction Management Measures*, *Construction Project Quality Management Rules*, *Project Construction Progress Management Measures*, *Manual on Standards of Wind Farm Projects Construction and Management*, and other documents, which help the Company to comprehensively refine management contents, further implement management responsibilities, and strictly control production quality.

In terms of employee skills improvement, to create an environment which is conducive to technical studies and innovation, the Company organizes a series of training and competitions. These efforts have effectively helped employees to improve their theoretical knowledge and technical practice ability and facilitated quality control in project construction, production and operation.



### Case : Hebei Natural Gas hosted Hebei Construction & Investment Group Employee Vocational Skills Competition 2019

To cultivate, select and inspire high-skilled talents, on 29 November, various departments of Hebei Natural Gas jointly hosted Hebei Construction & Investment Group Employee Vocational Skills Competition 2019. The competition, consisting of three parts, evaluated the professional level of players from various aspects. An electronic barrier was set up at the examination room to ensure that the competition was carried out in a fair, just and orderly manner. This skills competition aimed at promoting learning and training, set off an upsurge of "competing in skills, learning technology, and keeping pace with models", and created a good atmosphere of "learning hard to catch up with models".



Gas Pressure Regulating System Skills Competition



Customer Service Skills Competition

## Customer Service

Suntien provides high-quality, efficient, and considerate services, which supports it to maintain a leading position in the industry. Adhering to the philosophy of "Customer and Quality First", Suntien makes every effort to solve problems for customers. For HEIC New-Energy, wind and photovoltaic power are purchased by local power grids. The Company maintains timely communication with local power grids so that their demands and needs can be promptly and fully satisfied. Hebei Natural Gas mainly serves residential and enterprise users. The Company has developed many policies and systems to ensure safe gas supply and business development and has taken a series of measures including propaganda to improve customer satisfaction.

In terms of systems and policies, Hebei Natural Gas has developed management rules for customer services including *Standardized Management Measures for Customer Services*, *Standardized Management Measures for Door-to-Door Services*, *Standardized Management Measures for Hotline Center and the Complaint Handling Process*. It has also formulated *Rules for Customer File Management* to standardize management of customer information and secure customer privacy. In 2019, Hebei Natural Gas developed 9 new management systems including *Rules for Disposing of Emergencies for Civil Users* and *Rules for Outsourcing of Customer Services for Civil Users* to further standardize management of various businesses and improve the customer service level.

To further improve the service image and capability, Hebei Natural Gas has implemented a series of optimization measures such as adding mobile security testing instruments, upgrading the TCIS system for comprehensive management of civilian customers and services, and renovating the hotline center and customer service center. It also organized activities, such as indoor installation, gas appliance maintenance, skills competitions and training, and carried out special inspections and star-rating assessments to help employees to improve their job skills and customer service level.





### Case | Hebei Natural Gas held the Second Customer Service Skills Competition

In June 2019, Hebei Natural Gas held the Second Customer Service Skills Competition. The competition consisted of three items, “indoor pipeline installation”, “gas appliance troubleshooting”, and “indoor security inspection”. Each item included two parts, written examination and field operation. The competition boosted front-line customer service personnel to enhance their maintenance and security check skills and service level, and inspired employees to improve their skills and innovate their services.



Customer Service Skills Competition

In 2019, Hebei Natural Gas developed *Rules for Interview Management on Customer Satisfaction*, requiring follow-up interview of all customers who have complaints and faced with problems of gas leakage. It optimized the customer service level and enhance customer satisfaction by organizing the aforementioned activities. By the end of 2019, 91 customer complaints were received and well resolved.

### Case | Hebei Natural Gas invited an external lecturer to organize special training on handling customer complaints

To help the customer service team to enhance the service awareness and master the complaint handling skills, on 10 April 2019, the Customer Service Department invited an external lecturer to organize special training on handling customer complaints. The employees were trained from five aspects, namely strengthening prior management and control, establishing service thinking, effectively determining responsibilities, identifying customer characters, and establishing correct attitudes to handle complaints. The lecturer divided the trainees into groups and interacted with them, so that they were enthusiastic to participate in training, learn and apply what they learnt into daily work.



Customer complaint handling training



External lecturer giving lesson



## Number of complaints received from 2017 to 2019 (unit: case)

Customer type	2017	2018	2019
Residential	66	88	91
Non-residential	0	0	0

## Results of Customer Satisfaction Survey from 2017 to 2019 (unit: %)

Customer type	2017	2018	2019
Residential	99.40	99.30	99.25
Non-residential	100	94.10	100

To give customers and the public a better understanding of how to use natural gas safely and strengthen safety publicity, Hebei Natural Gas has organized a series of activities including door-to-door security check, safety publicity on holidays, and community and campus safety publicity. It raised the awareness of residents to use gas safely and ensured a safe and stable gas supply by investigating and rectifying hidden dangers, issuing safety brochures, organizing award-winning quizzes, and giving public workshops. In 2019, the Company actively organized “Community Pipeline Safety” campaigns, invested RMB 131,400 in safety publicity and provided 17,539 hours of safety-related services.



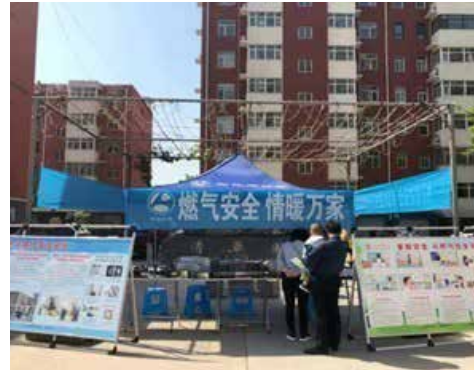
Safety publicity for coal-to-gas to every village  
by Shahe Branch



Winter safety publicity by customer service  
staff in Ningjin



Safety publicity in old district by Shijiazhuang Natural Gas



Community gas safety publicity by Shahe Branch on May 1st



Campus gas safety publicity by Shijiazhuang Natural Gas



Campus gas safety publicity by Shenzhen Suntien

## Upstream Business Cooperation

A healthy and coordinated business system is an important guarantee for Suntien to achieve sustainable development. Suntien mainly cooperates with project and material suppliers in the upstream business chain. Projects suppliers include designers, constructors, and supervisors for the wind power and natural gas businesses, while material suppliers provide materials for operations and offices. To realize a green business chain, Suntien advances accountability procurement and continuously improves the supplier management system to ensure that suppliers follow principles and values consistent with ours.

### ■ Supply Chain Management

To maintain sound and efficient management of suppliers, Suntien has successively established management systems including *Construction Project Tendering Management Measures*, *Construction Project Management Measures*, and *Construction Project Quality Management Measures* in strict accordance with the *Law of the People's Republic of China on Tenders and Bids*, *Regulations on the Implementation of the Bidding Law of the People's Republic of China* and other relevant laws and administrative regulations. In daily procurement and bidding, Suntien appraises suppliers by considering their performance in assuming environmental, safety and other social responsibilities and verifies relevant qualifications obtained by suppliers. In 2019, nearly 50% of our suppliers were certified by the quality management system (ISO 9000), environmental management system (ISO 14000), and occupational health and safety management system (OHSAS 18000).

In 2019, Suntien further improved rules for procurement, standards for reviewing suppliers, and measures for managing contractors. In terms of material procurement and supplier assessment optimization, Hebei Natural Gas updated *Materials Procurement Management Measures*, which require suppliers to submit letters of commitment on integrity and to refrain from bribery and other improper practices during the procurement process. It regularly reviewed suppliers, implemented graded management of suppliers according to the review results, and promptly eliminated unqualified suppliers. HECIC New-energy established the “blacklist” and “red list” mechanisms according to *Measures for Supplier Management* and implemented dynamic management of suppliers by regularly updating the *Project Suppliers Directories*. In terms of suppliers’ management, Hebei Natural Gas issued *Administrative Measures for Evaluation of Engineering Construction Suppliers*, which includes routine assessment, annual assessment, and warranty period assessment. Hebei Natural Gas appraised contractors in terms of safety, quality, and environment and gave high marks to contractors who are certified by ISO and other certification systems. In 2019, Suntien had a total of 385 suppliers, all from China.

<p>In 2019, Suntien had a total of</p> <p><b>385</b> suppliers</p>	<p><b>Suppliers</b></p>	<ul style="list-style-type: none"> <li>• It regularly reviewed suppliers, and promptly eliminated unqualified suppliers.</li> <li>• It established the “blacklist” and “red list” mechanisms</li> </ul>
	<p><b>Contractors</b></p>	<ul style="list-style-type: none"> <li>• It established routine assessment, annual assessment, and warranty period assessment.</li> <li>• It gave high marks to contractors who are certified by ISO and other certification systems</li> </ul>

## ■ Communication with Suppliers

Suntien attaches great importance to communication and cooperation with high-quality suppliers, and strives to achieve simultaneous improvement in technology, management level and product quality for both parties. With an open, equal, cooperative, and mutually beneficial mindset, Suntien strengthens communication with suppliers and tries to guide suppliers and industry partners to develop an awareness of accountability procurement and sustainable supply chains through various ways, including regular on-site visits, workshops, and others. Together with our suppliers, Suntien actively explores industry development trends, seeks technical breakthroughs, and continuously optimizes management modes.









# BUILDING A DEVELOPMENT PLATFORM

Suntien always adheres to the philosophy of "people orientation and harmonious development" as its vigorous development is inseparable from the dedication and support of every employee. The Company constantly improves the human resources management mechanism to protect the rights and interests of employees, strives to create an atmosphere conducive for employees to display their talents, regularly learns about the needs of employees, and harmoniously grows with employees.





## Employment and Welfare

As the end of 2019,  
Suntien had

0

cases of child labor  
and forced labor

In 2019,  
the coverage of collective  
bargaining agreements was

100%

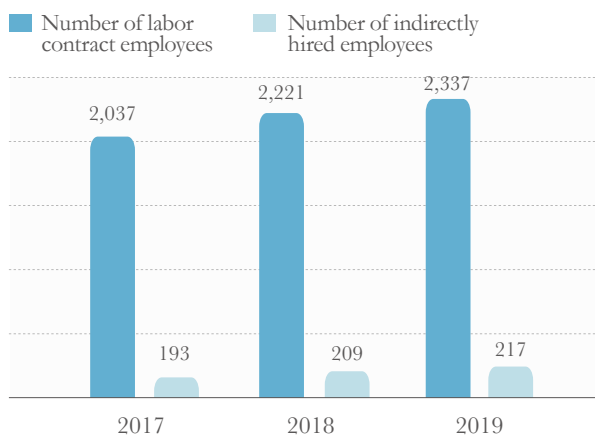
Suntien adheres to using and hiring staff in an equal manner and in strict accordance with all relevant laws and regulations like *Labor Law of the People's Republic of China*, *Employment Contract Law of the People's Republic of China*, and *Protection of Minors Law of the People's Republic of China*. On this basis, Suntien formulated *Measures for Staff Management of China Suntien Green Energy Corporation Limited*, which requires the Company to implement diversified, standardized, and transparent employment and recruitment processes as well as promotion and reward and punishment mechanisms, and to eliminate any tolerate discrimination in gender, ethnicity, religion and political beliefs.

Suntien struggles against forcing labors and hiring child labors in any form. If a child labor is identified, the Company will promptly take rectification measures and designate people to send him/her back home and make sure that he/she is well-taken care by lawful guardians. As of the end of 2019, Suntien neither forced any labor nor hired any child.

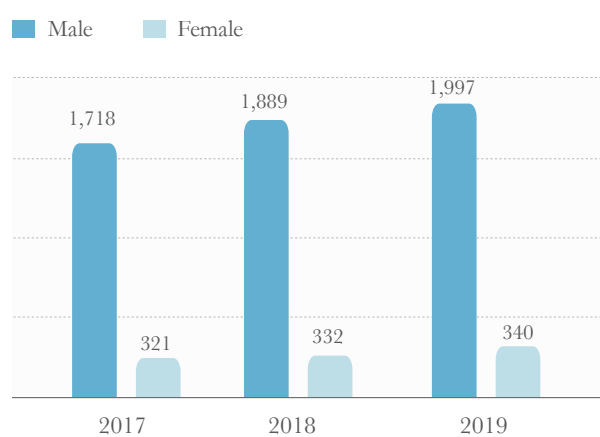
Suntien extensively recruits talents of all varieties, insists on signing labor contracts with employees according to law, and fully protects the rights and interests of employees. In 2019, Suntien signed labor contracts with all employees and allowed all employees to join in collective bargaining agreements. All employees are from Chinese.

To ensure remuneration for labors, Suntien formulated the *Remuneration Management Measures of China Suntien Green Energy Corporation Limited*, which stipulates salary composition and adjustment mechanisms and ensures fair, just, scientific and reasonable management of remuneration. Suntien also provides employees with an industry-competitive and incentivizing remuneration and continues to make its remuneration and welfare system more scientific and reasonable.

Distribution of employees by employment type from 2017 to 2019  
unit: person

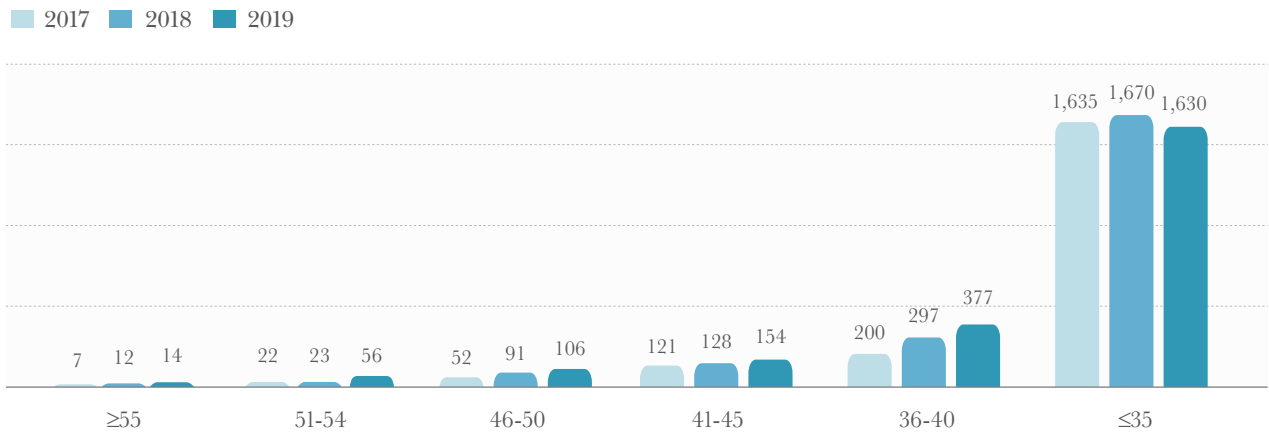


Distribution of employees by gender from 2017 to 2019  
unit: person

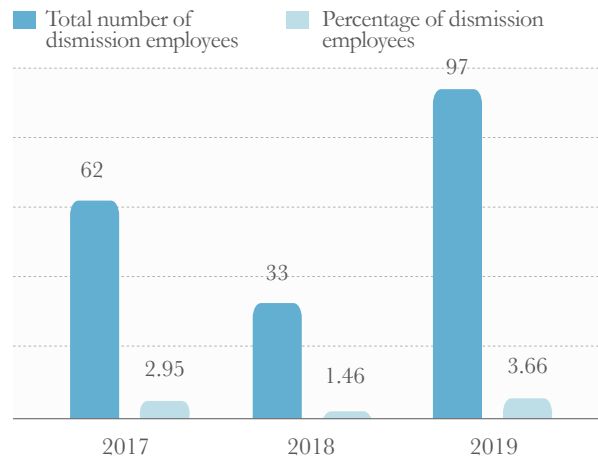


Distribution of employees by age from 2017 to 2019

unit: person

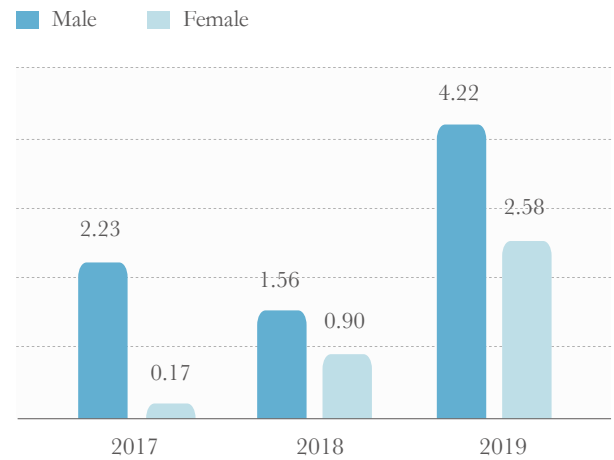


Total number (unit: person) and turnover rate of employee (unit: %) from 2017-2019



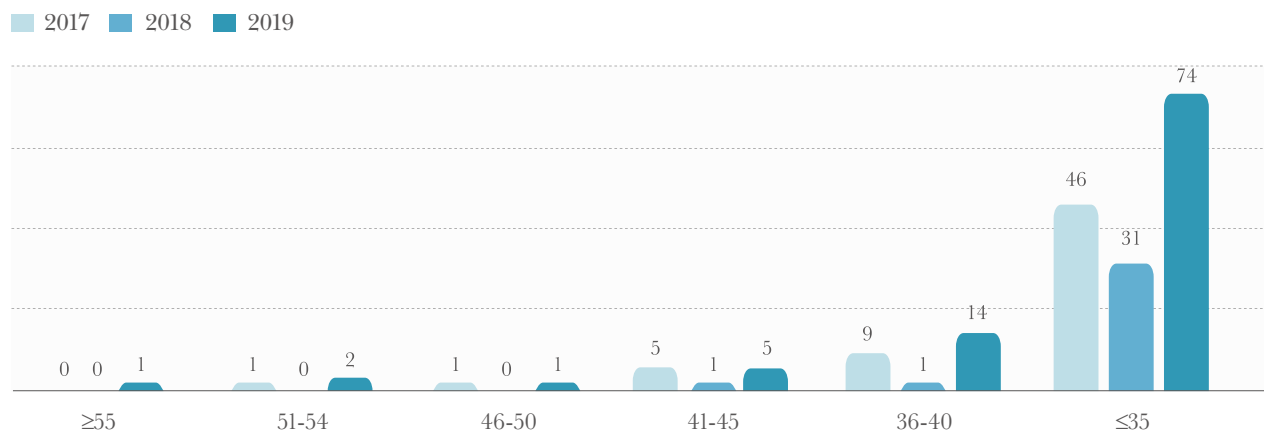
Turnover rate of employees by gender from 2017 to 2019

unit: %



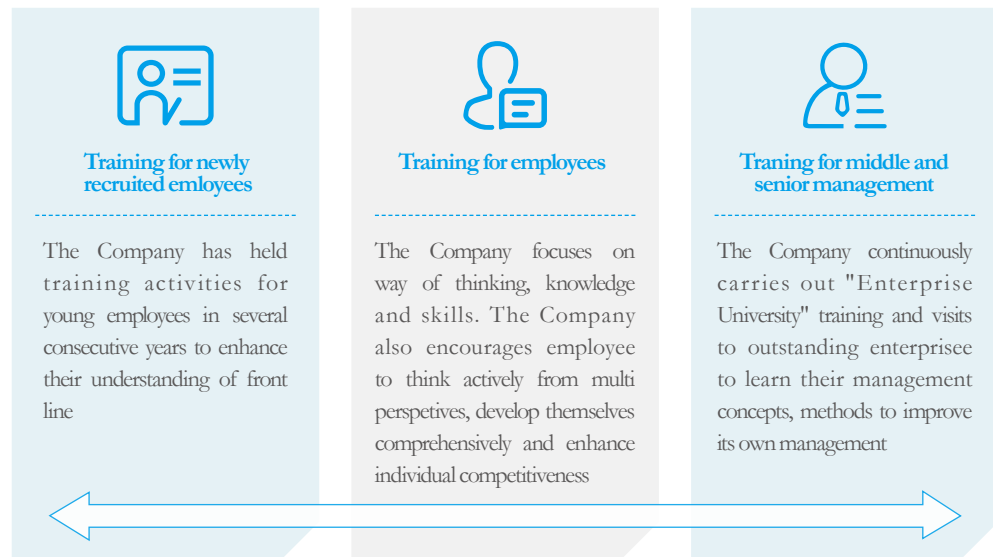
Number of employee turnover by age from 2017 to 2019

unit: person



## Training and Education

Suntien attaches great importance to assisting employees to improve their skills and quality. The Company organizes scientific and reasonable training courses and trained employees according to various training systems and management processes through the formulation of internal policy including *Management Measures for Induction Training of New Employees of China Suntien Green Energy Corporation Limited*, *Management Measures for Internal Training Team of China Suntien Green Energy Corporation Limited* and *Employee Training Management Measures of China Suntien Green Energy Corporation Limited*.



In 2019,  
the proportion of trained  
employees was

**100%**

Suntien develops annual training plans according to different jobs requirements and employee requests. The Company helps employees to master necessary professional knowledge and practical skills through on-site training, online teaching, professional technical workshops and other internal and external vocational training forms, so that they can develop better personal careers. Suntien regularly organizes various forms of training to help middle and senior management personnel to improve their capabilities and strengthen communication and exchanges with each other. Suntien mainly teaches ways of thinking and technical knowledge to grass-root workers and helps them to continuously strengthen and improve their skills, achieve comprehensive development, and development their own career paths. In 2019, all employees of Suntien have undergone training.



### Case | Suntien held classes for middle management and enterprise leaders in human resources training

According to the Company's training plan for middle management and enterprise leaders (2019-2021) and training needs requirements survey results, Suntien organized human resources training classes for middle management and enterprise leaders in 2019. A total of 48 middle management personnel and human resources management personnel participated. The training helped the trainees to further understand their position, role, and necessary abilities in human resources management.



Human resources training class



A professor of Renmin University of China is giving a lecture

### Case | Suntien held "Experience Front-line" activities for young employees

On the eve of May 4th Youth Day, the 5th "Experience Front-line" activity was launched as scheduled. 17 employees from Suntien participated in the activity held in Wuming, Guangxi. They experienced working in stations, micro-site selection and wind farm inspections, as well as various team building activities. The activity allowed young employees to know it is uneasy to do grassroots work and learn more about the elimination of hidden dangers in wind farms and road inspections and the importance of teamwork.



Inspection in wind farm station

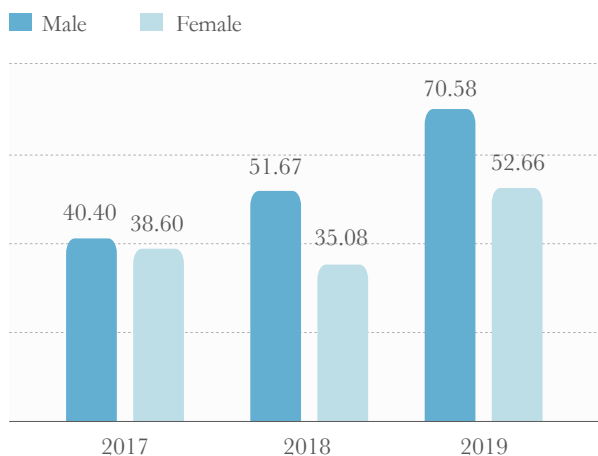


Outdoor inspection in wind farm



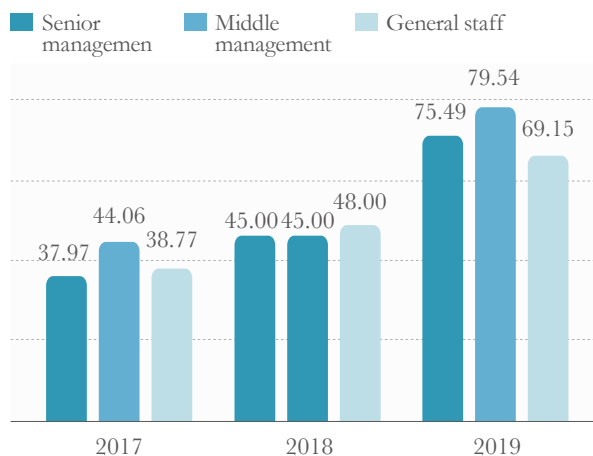
Average training hours per person by gender from 2017 to 2019

unit: hour



Average training hours per person by employee type from 2017 to 2019

unit: hour



Note: The above training statistics exclude safety and anti-corruption training. For related statistics, please refer to the sections “Safety Management” and the “Anti-Corruption” in this Report.

## Care and Communication

Suntien cares every employee and therefore has revised *Management Measures for Employee Aids*, *Administrative Measures for Company Caring Funds* and other policy to meet various needs of employees. The Company helps employees find way out of difficulties according to the conditions, amounts and management procedures for various subsidies and assistance clearly stipulated in these systems. Suntien also pays equal care to female employees. Suntien strictly implements the right for normal leave and maternity leave according to law and actively creates an equal and caring work atmosphere.

Suntien maintains close communication with employees. Suntien has formulated *Employee Representative General Meeting Management Measures of China Suntien Green Energy Corporation Limited*, aiming at promoting good interaction between employees and enhancing their sense of belonging. The system clearly specifies the generation process of employee representatives and their rights and obligations and requires the Company to communicate with employees on a regular basis, understand the needs of employees, master the actual situation of employees in need, timely and accurately resolve problems faced by employees, and keep tracking of and give feedback to their real-time needs.

Suntien tries to enrich the spiritual and material life of employees and extends care to employees through organizing various cultural and sports activities, including greetings on Women's Day, Labor Day, and Spring Festival. These not only unites employees, but also help employees to live, work, and create personal value in a healthy and happy manner.







Organized female employees to make DIY eternal flowers on the International Women's Day.



Marathon organized of the Company

#### Case | Suntien held "Meeting friends through reading" activity

The Company organized a number of online and offline reading activities and recommended employees to read books such as *Augustus, No Longer Human*, and *Like Father, Like Son*, aiming at helping employees to establish a habit of reading, broaden their vision, improve cultural competence and enrich their knowledge.



04





# ENVIRONMENTAL IMPACT CONTROL

In response to the call of ecological civilization construction of the CPC Central Committee at 18th National Congress, Suntien assumes "developing clean energy and jointly building a harmonious homeland" as its mission, actively transforms to a green and low-carbon enterprise, attaches great importance to resource conservation and environmental protection, and implements energy conservation and emission reduction to reduce the adverse impact of production operations on the ecological environment.



## Use of Resources

Suntien is committed to becoming a modern resource-saving and environment-friendly enterprise and implements the green concept of energy conservation and emission reduction in production activities and daily office. In strict accordance with *Environmental Protection Law of the People's Republic of China*, *Energy Saving Law of the People's Republic of China*, *Measures for Energy Conservation Pollution Emissions Reduction Management of Hebei Construction & Investment Group Co., Ltd.* and other relevant laws or regulations, Suntien developed *Energy Conservation and Pollution Emissions Reduction Management Measures* for its headquarters and subsidiaries. This provides clear provisions on the responsibility of all departments in terms of energy conservation and emissions reduction. The Company also established a leading group which is responsible for the implementation and assessment of its efforts on energy saving and emissions reduction. Suntien integrates the concept of green management into corporate governance to raise the environmental-friendly awareness of employees. Suntien also implements the green concept in daily office and project construction to ensure long-term and effective development of energy conservation and emission reduction.

### Suntien Resource Conservation Measures



Actively publicizing guidelines and policies on energy-saving and emission reduction to all employees and enhance the awareness on energy saving and emission reduction in a practical way

Incorporating energy saving and emission reduction indicators into entity and individual's performance assessment. Also entity and individual which have made prominent progress in technic development for emission reduction and promotion will be recognized and rewarded.

Irregularly reviewing the achievements of energy saving and emission reduction targets of all leading groups.



Saving electricity: actively promoting video meeting system to replace traditional projectorequipment

Saving paper: promoting development of information systems, reducing demand for paper, advocating paper recycling and two-side printing

Saving water: reporting to property managemententerprise for repairing water leakage and pasting banners of saving water



Carrying out green construction concepts in the design stage of new projects

Promoting the adoption of new materials, processes, technologies and equipment andstriving to eliminate "backward" processes and equipment



Suntien has formulated *Technological Upgrading Project Management Measures* to improve existed technologies from the production process, technique, research and testing aspects. Suntien constantly improves management ways and eliminates outdated technology or equipment with excessive energy consumption and high pollution. These measures help the Company to ensure project safety and stability while realizing low-cost and minimizing the impact to environment. Suntien does not use packaging materials in operations, consume water in project operations, and generate emissions such as wastewater and exhaust gas during construction and operation.

As Suntien is in a period of rapid development, the rapid expansion of the business scale will inevitably lead to an increase in resources and energy consumed. To better control energy consumption and implement energy conservation and emission reduction, Suntien limits energy consumption to less than 69 kg of standard coal per RMB 10,000 output value and regularly keeps real-time inspection of completion of the target to ensure an orderly progress in energy conservation and emission reduction.

#### Air pollutants of Suntien in 2019

Pollutant type (kg)	Data
Total emissions of sulfur oxide	25.74
Total emissions of nitrogen oxide	8,922.02
Total emissions of particulate	853.78

Note: The air pollutants are derived from the consumption of gasoline, diesel and liquefied petroleum gas in accordance with *Key Environmental Performance Index Guide of the Stock Exchange*.

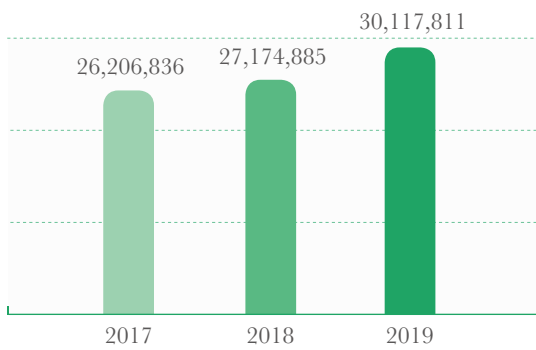
#### Greenhouse gas emissions of Suntien in 2019

Greenhouse gas emissions (tCO <sub>2</sub> e)	Data
Total emissions	34,905.83
Scope I	5,955.79
Scope II	28,950.04

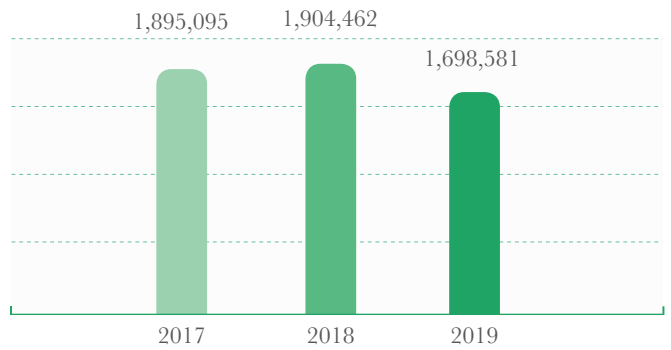
Note: Greenhouse gas emissions in Subject Area I are derived from the consumption of gasoline, diesel, liquefied petroleum gas and natural gas in accordance with the *Guidelines for Accounting and Reporting of GHG Emissions of Other Industrial Enterprises*. Greenhouse gas emissions in Subject Area II are derived from the consumption of electricity in accordance with the *Baseline Emission Factors for Regional Power Grids in China in 2017* and the *Environmental Performance Indicator Reporting Guide of the Stock Exchange*.

## Energy consumption of Suntien from 2017 to 2019

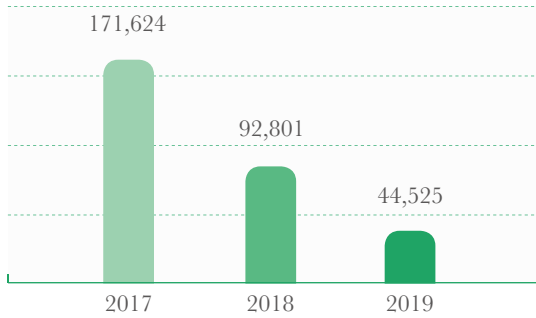
Electricity consumption from 2017 to 2019 unit: kWh



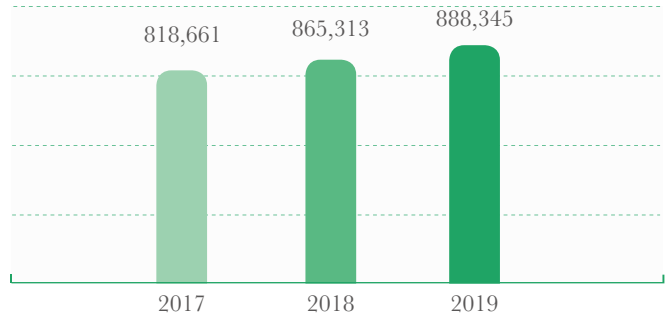
Gasoline consumption from 2017 to 2019 unit: L



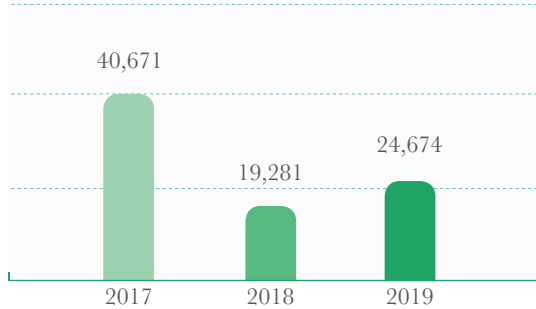
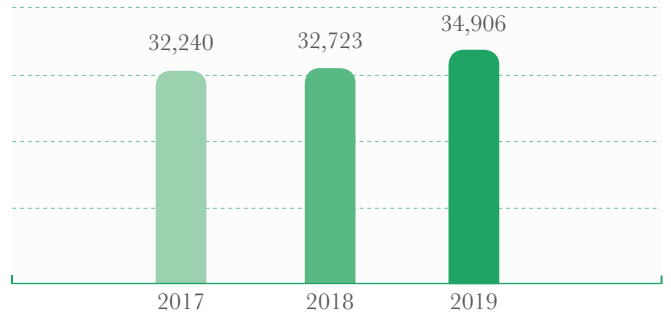
Diesel consumption from 2017 to 2019 unit: L



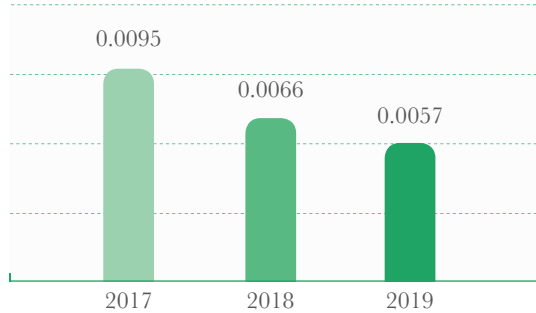
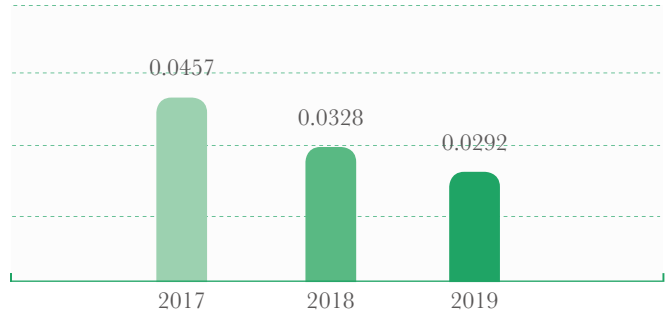
Natural gas consumption from 2017 to 2019 unit: m³



Liquefied gas consumption from 2017 to 2019 unit: m³

Greenhouse gas emissions from 2017 to 2019 (unit: tCO<sub>2</sub>e)

Energy consumption per RMB 10,000 revenue (unit: tce/RMB 10,000)

Carbon dioxide emissions per RMB 10,000 revenue (unit: tCO<sub>2</sub>e/RMB 10,000)

Note: The comprehensive energy consumption is calculated according to the *General Principles for Calculation of Comprehensive Energy Consumption GB-T25892008*.

### Case : Optimized design of the wind power project in Gongga, Dongla to achieve energy saving and emission reduction

To meet the requirements of national environmental protection policies, Suntien tries to achieve energy conservation and emission reduction through optimizing the design of the wind power project in Gongga, Dongla. With a total installed capacity of 49.5 MW, the project is built to be an environmentally friendly project.

#### Site selection

The booster station is built in a reasonable site to shorten the path of the collector line, save materials and reduce energy consumed by the line.

#### Layout design

The overall layout of the booster station is optimized to make full use of land, reduce land occupied, and save materials including cables.

#### Material selection

Energy-saving products are selected to reduce energy consumption and losses of components.

The project is designed to consume 0.09 ton of standard coal per RMB 10,000 industrial output value (equivalent value), far lower than the energy consumption per unit of GDP in Tibet Autonomous Region.

It is expected to provide electricity of **114.676** million kWh for the power grid a year and save about **36,000** tons of standard coal a year.

## Waste Management

In the process of practicing green production, Suntien strictly controls generation and discharge of waste. Suntien strengthens the control of waste throughout the entire production process and reduces waste generation from the source. In strict accordance with *Environmental Protection Law of the People's Republic of China*, and *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste*, Suntien formulated *Measures for Disposal of Waste Materials*, which regulates the disposal of waste from all sources including daily office, project construction, operation and maintenance according to the principle "Repairing Old Matters and Recycle Waste Materials, Coordinated Management and Centralized Disposal", aiming at minimizing the negative impact of waste disposal on the environment.

Hebei Natural Gas developed *Equipment Management Measures and Environmental Protection Management Measures*, and HECIC New-energy issued *Waste Materials Disposal Management Measures* to regulate the management of old and used equipment, improve the efficiency of renewable resources, realize harmless waste disposal, recycle and reduce waste, and finally eliminate waste of resource and environmental pollution.

The waste generated during Suntien's project construction and operation would be treated by qualified third parties. Construction waste such as broken bricks, waste sand, and waste concrete are piled up in a unified site and treated by contractors on a regular basis. Waste packaging materials are recycled. Suntien allows waste batteries and used devices to be recycled by qualified third parties and managed by the Materials Department of Suntien in a unified way. In 2019, to further reduce the impact on the environment, Suntien added oil filters that can recycle all waste oil generated from operations so that no hazardous waste was produced during the year.

In 2019,  
Suntien recycled

**100%**

of waste oil

The production of  
hazardous waste was

**0**

Non-hazardous Waste treatment and Intensity of Suntien from 2018 to 2019

	2018	2019
Non-hazardous waste (tons)	100.55	79.89
Intensity of non-hazardous waste (tons/RMB 10,000)	0.0001	0.00007

## Ecological Protection

Suntien adheres to the concept that "lucid waters and lush mountains are invaluable assets" and strictly abides by the "red line for ecological protection" in production activities. The Company standardizes the use of forestland for wind farm construction in strict accordance with *Notice on Standardizing the Construction and Use of Forest Land for Wind Farm Projects* issued by the National Forestry and Grassland Administration to prevent the forest vegetation and ecological environment from being damaged and affected by operations. Suntien implements the "green" concept at every stage of construction. A project is not allowed to start until a full feasibility study is completed, including standardized site selection, evaluation of local resource reserves, environmental impact pre-evaluation, and soil erosion prevention measures. During construction, the Company tries to reduce the discharge of pollutants, dispose of waste in compliance with regulations, reduce environmental noises, and minimize damage to the local ecological environment as much as possible. After construction, the Company always reclaims surrounding land and finds ways to protect local biodiversity, soil and water.

To avoid environmental damage caused by emergencies, Suntien formulated *Environmental Emergency Response*, which would pre-estimate possible environmental emergencies according to industry characteristics in the early stage of project construction and formulate corresponding prevention and response measures. In addition, the Company continuously updated emergency response documents through annual environmental safety inspections to effectively prevent unexpected environmental incidents. In 2019, no penalty was imposed on Suntien as no environmental pollution or illegal discharge occurred.

In 2019,  
the investment in  
environmental protection was

**RMB 15.3848** million

Suntien invested a total of RMB 15.3848 million in environmental protection in 2019, including environmental protection and restoration before completion of new projects in 2019 and for wind farms built in 2018.





### Case : Various ecological protection measures were adopted during the construction of Shizishan wind power plant

Shizishan wind power plant located in Tiefeng Mountain Range, Nanmen Town, Kaizhou District, Chongqing City. The wind farm area is divided into Northeast Area and Southwest Area by Tiefengshan National Forest Park and is roughly parallel to the direction of the forest park and red line for ecological protection. The minimum distance between the turbine tower and the red line for ecological protection in Kaizhou is about 20 meters. To reduce the impact of project construction and operation to the forest park, reduce pollutant emissions and avoid water and soil erosion, the Company adopted the following measures during the design stage:

#### Strict management and control of pollutant emissions during construction:

- Reduce the concentration of particles such as dust in the air during construction with measures such as watering;
- Set up sedimentation tanks, grease traps and pit toilets to collect and treat construction wastewater and domestic sewage;
- Timely collect and transport domestic garbage in a unified way;
- Try to avoid simultaneous use of multiple machines producing noises, strictly manage the construction site and reduce man-made noises.

#### Measures to prevent water and soil loss during construction:

- Control the working intensity of construction engineering;
- Protect the size of vegetation from being eroded during construction;
- Construct temporary soil and water protection slopes;
- Strengthen comprehensive management.

In line with the "green construction" concept, Shizishan wind power plant is built avoiding Tiefengshan National Forest Park and the area within the red line for ecological protection. The project tries to conserve local soil and water to the greatest extent and minimize damage to the ecological environment.

### Case : Staff representatives in Fengning region participated in "Compulsory Afforestation by All People"

Adhering to the idea of "covering deserts with trees to become forests", staff representatives in Fengning region actively participated in the local ecological civilization construction activity in Fengning. In April 2019, staff representatives in Fengning region participated in the "Compulsory Afforestation by All People" organized by Huangqi Town, Fengning County. The staff representatives joined hands with villagers of Leguo Village, Huangqi Town to plant 100 pine trees and 100 poplar trees, turning the originally empty site into a grove and contributing to the construction of a beautiful green environment.



Staff representatives in Fengning region participated in "Compulsory Afforestation by All People"

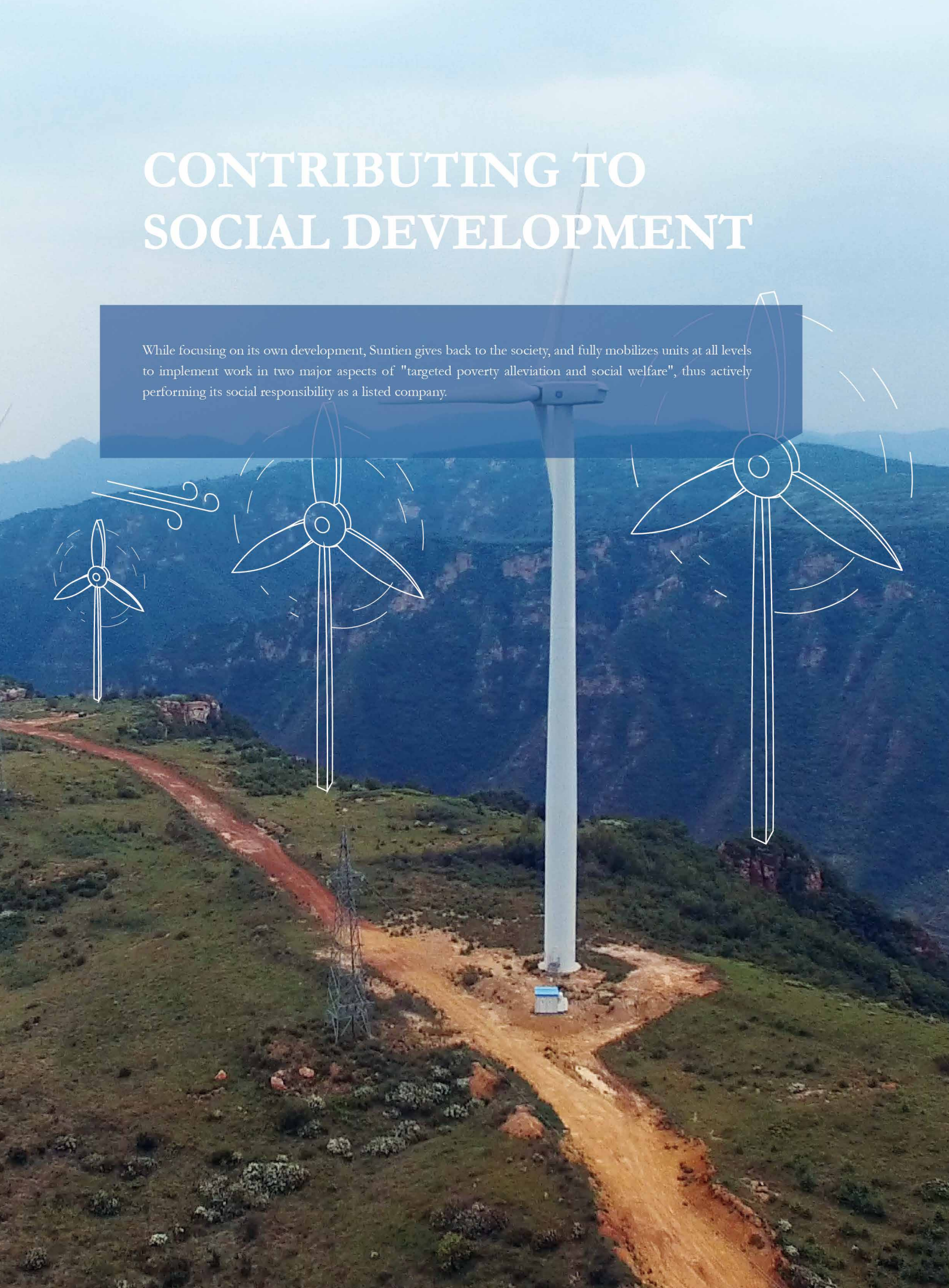
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# CONTRIBUTING TO SOCIAL DEVELOPMENT

While focusing on its own development, Suntien gives back to the society, and fully mobilizes units at all levels to implement work in two major aspects of "targeted poverty alleviation and social welfare", thus actively performing its social responsibility as a listed company.



## Targeted Poverty Alleviation

In response to the government's initiative of "in-depth implementation of targeted poverty alleviation and getting rid of poverty," Suntien follows the requirements of the Targeted Poverty Alleviation Working Group of Hebei Province to raise the income of residents of Leguo Village, Huangqi Town, Fengning Manchu Autonomous County, Hebei Province.

With a large but barren land area and sparse population, Leguo Village is located 50km to the north of Fengning County and has a total of 147 poverty-stricken households with 303 people under registration. Since 2016 when Suntien started targeted poverty alleviation there, a special working group has been established and conducted in-depth investigation for multiple times. In order to implement targeted poverty alleviation and help Leguo Village win the battle against poverty, Suntien issued the *Implementation Opinions on Strengthening the Management of Poverty Alleviation Work* in accordance with the requirements of the Implementation Opinions on *Strengthening the Selection and Assignment of Task Forces in Poverty-stricken Villages* promulgated by Hebei Provincial Government, to establish an on-site supervision system, a regular home visiting system and a support fund guarantee system to ensure the smooth development of poverty alleviation. Besides, in order to strengthen the management of alleviation work, Suntien sets up a "leading group for poverty alleviation", which regularly receives work report of the resident teams, collectively studies the alleviation work, approves the alleviation work plan, and provides guidance to urge the responsible person to identify the families which need help.

2019 was a decisive year in the fight against poverty. Suntien adhered to the principle of "adopting measures applicable to local conditions reasonably and efficiently", selected carefully the business projects requiring help, and implemented precise measures to strengthen industrial poverty alleviation. Through carrying out activities such as "Week of Field Visits" and "Month of Visits to Rich Income Households", Suntien strengthened the support for the preferential projects, visited the poverty-stricken families, thoroughly understood the needs of the poverty-stricken families, and completed the "looking back" task. Through the pairing-aid strategy, 33 cadres and employees of Suntien were paired with 156 poverty-stricken families in Leguo Village which followed the "one-support-five" "tailor-made" pairing to support the poverty-stricken families, and successfully helped 339 persons from 156 families in Leguo Village to get out of poverty, with an overall poverty incidence rate of zero. As of the end of 2019, Suntien invested a total of RMB 89,600 in poverty alleviation.

In 2019  
the number of people  
got out of poverty in  
Leguo Village was

**156** families  
**339** persons

The investment in poverty  
alleviation was

**RMB 89,600**

## Social welfare

In 2019,  
Suntien participated  
in volunteer activities  
for more than

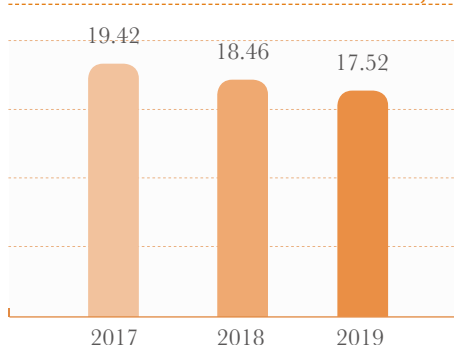
**18,096** hours

The investment in  
social welfare was

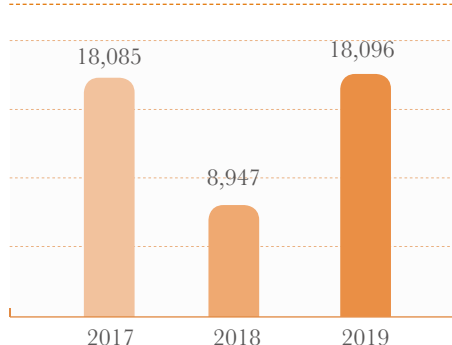
**RMB 175,200**

Suntien actively engages in the local community and organizes voluntary activities to support the construction of the local community. Over the years, Suntien has been contributing to the society by adhering to the idea of "sharing light with others" participating in various activities such as blood donation, bringing condolences to the lonely elderly, visiting the veteran Red Army men, or helping the people in distress at sea or donating books, etc. In 2019, Suntien participated in volunteer activities for more than 18,096 hours and invested a total of RMB 175,200 in social welfare.

Total charity expenses from 2017 to 2019  
Unit: RMB 10,000



Total hours spent on charity activities from 2017 to 2019  
Unit: hour





### Case | Book donation activity of "Focusing on education and supporting Wuchuan"

On 4 September 2019, the representatives of cadres and employees of Suntien and New-energy's Inner Mongolia Regional Company went to the education bureau of Wuchuan County, Hohhot, Inner Mongolia Autonomous Region, and organized a "focusing on education and supporting Wuchuan" book donation activity before the Teacher's Day. The books purchased in this activity met the actual needs of the education bureau of Wuchuan County with the value of RMB 30,000, which greatly enriched the types and quantity of books in the library.



Suntien donated books to the education bureau of Wuchuan County

### Case | Puti Island project department under the offshore wind power company rescued villagers in distress at sea

On 15 September 2019, Puti Island project department under the offshore wind power company and the participating construction units jointly organized a rescue mission on the land and at sea, and successfully rescued three persons in distress and helped them to return home safely.

At 10:40 am, Puti Island project department received a notice from the Search and Rescue Center under the Maritime Safety Agency and requested Puti Island offshore wind farm to organize the guardian ships and assist in search and rescue. After receiving the assistance and rescue notice from the Search and Rescue Center under the Maritime Safety Agency, Puti Island project department immediately rushed to the sea area near the incident and conducted a maritime search, and promptly informed the Search and Rescue Center under the Maritime Safety Agency of the latest developments. Around 11:28 am, with the help of rescuers, three persons in distress boarded the rescue ship and were successfully rescued. The project department coordinated the ships and transferred the three villagers safely to the land, and the distressed people were in good physical condition. Besides, the safety management staff of Puti Island project department educated the three distressed persons and emphasized that the sea area near the wind farm is an operation area where fishing is prohibited.

### Case | Volunteer service activity of protecting migratory birds

This activity enabled employees to learn certain knowledge about migratory birds' ecological habits and protection measures, to help employees and enterprises better understand the green development concept, and to integrate the ideas of protecting the environment and caring for wildlife into daily work and living.



Suntien's employees participating in protecting migratory birds

# OUTLOOK FOR 2020

With the advancement of the reform of the ecological civilization system, China's energy cleaning process is accelerating, and the energy consumption structure has been remarkably optimized, showing a favorable situation. In 2020, China will enter the target year for the construction of an ecological civilization system and will also initiate a five-year plan for the construction of an environmental governance system. Following the future development direction of the country, Suntien will actively focus on the national strategic need for energy, promote coordinated and orderly use of resources based on the actual supply of resources, and contribute to the construction of a clean, low-carbon, safe and efficient energy system.

To this end, Suntien will proactively transform from high-speed growth to high-quality development. In terms of business development, Suntien will actively explore ways to effectively address the unbalanced and inadequate development of natural gas, overcome the bottlenecks in the development of new energy, and drive corporate progress with scientific and technological innovation; in terms of business operations, Suntien will actively respond to climate change risks, adhere to green operations, and strive to create a refined, low-energy consumption operation model to promote the sound development; in terms of talent construction, Suntien will make increased efforts to cultivate talents and strive to create a team with professional capabilities and strong sense of dedication, thus making progress together with the employees.

As a sound management system is the cornerstone of high-quality development, Suntien will further promote the construction of the ESG management system. Suntien will focus on the deep integration of the ESG concept with corporate strategy and culture, and plan to deepen the involvement of the Board, establish a coordinated and unified ESG management mechanism among various departments, and form a long-term mechanism to continuously promote sustainable development. While establishing a scientific, professional and comprehensive ESG system, Suntien will create greater value for all stakeholders.

Suntien will remain true to our original aspiration and keep our mission firmly in mind. In 2020, Suntien will unswervingly implement the clean energy development strategy, contribute to the country's green development and energy transformation through industrial innovation, and strive to become an international first-tier and domestic leading new energy company in the near future.





# ESG INDICATOR INDEX

Indicator for disclosure		Page
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A1.1	The types of emissions and respective emissions data	P51, P53-54
A1.2	Greenhouse gas emissions in total (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	P51
A1.3	Total hazardous waste produced (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	P53-54
A1.4	Total non-hazardous waste produced (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	P54
A1.5	Description of measures to mitigate emissions and results achieved	P51-P53
A1.6	Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved	P53
A2: Use of Resources		
General Disclosure		P50-51
A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility)	P52
A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility)	P51
A2.3	Description of energy efficiency initiatives and results	P50-51
A2.4	Description of any issues concerning sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	P51
A2.5	Total packaging material used for finished products (in tons) and, if applicable, with reference to per unit produced.	Not applicable
A3: The Environment and Natural Resources		
General Disclosure		P54
A3.1	Description of significant impacts of activities on the environment and natural resources and the actions taken to manage them.	P54-55
Scope: Social		
Employment and Labor Practices		
B1: Employment		
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B1.2	Employee turnover rate by gender, age group and geographical region	P43
B2: Health and Safety		
General Disclosure		P28-29
B2.1	Number and rate of work-related fatalities.	P28
B2.2	Lost days due to work injury.	P28



Indicator for disclosure		Page
B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored.	P30-33
<b>B3: Development and Training</b>		
General Disclosure		P44-45
B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	P45
B3.2	The average training hours completed per employee by gender and employee category.	P46
<b>B4: Labor Standards</b>		
General Disclosure		P42
B4.1	Description of measures to review employment practices to avoid child and forced labor.	P42
B4.2	Description of steps taken to eliminate such practices when discovered.	P42
<b>Operating Practices</b>		
<b>B5: Supply Chain Management</b>		
General Disclosure		P38-39
B5.1	Number of suppliers by geographical region	P39
B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored	P38-39
<b>B6: Product Responsibility</b>		
General Disclosure		P23, P34-35
B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	Not applicable
B6.2	Number of product and service-related complaints received and how they are dealt with.	P36-37
B6.3	Description of practices relating to observing and protecting intellectual property rights.	P23
B6.4	Description of quality assurance process and recall procedures.	P34
B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored.	P35
<b>B7: Anti-corruption</b>		
General Disclosure		P10-11
B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	P11
B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	P11
<b>Community</b>		
<b>B8: Community Investment</b>		
General Disclosure		P58
B8.1	Focus areas of contribution (e.g. education, environmental concerns, labor needs, health, culture, sport)	P58-59
B8.2	Resources contributed (e.g. money or time) to the focus area	P58

## GRI STANDARDS INDEX

Indicators		Pages
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2.1-2.7		
GRI 102		
102-1	Name of the organization	P6
102-2	Activities, brands, products, and services	P6-7
102-3	Location of headquarters	P3
102-4	Location of operations	P6-7
102-5	Ownership and legal form	P6, P8-9
102-6	Markets served	P6-7
102-7	Scale of the organization	P6-7
102-8	Information on employees and other workers	P42-43
102-9	Supply chain	P38-39
102-10	Significant changes to the organization and its supply chain	P3
102-11	Precautionary Principle or approach	P10
102-12	External initiatives	P12, P18
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102-14	Statement from senior decision-maker	P4-5
102-16	Values, principles, standards, and norms of behavior	P11
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102-40	List of stakeholder groups	P13
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102-42	Identifying and selecting stakeholders	P13
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102-47	List of material topics	P15
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Governance structure		Pages
102-51	Date of most recent report	P3
102-52	Reporting cycle	P3
102-53	Contact point for questions regarding the report	P3
102-54	Claims of reporting in accordance with the GRI Standards	P3
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102-56	External assurance	none

Indicators		Pages	Omission
GRI 201: Economic Performance			
	Management Approach	P19	none
201-1	Direct economic value generated and distributed	P19, P22	none
201-2	Financial implications and other risks and opportunities due to climate change	P18	none
GRI 203: Indirect Economic Impacts			
	Management Approach	P58	none
203-1	Infrastructure investments and services supported	P58	none
203-2	Significant indirect economic impacts	P58	none
GRI 204: Procurement Practices			
	Management Approach	P38	none
204-1	Proportion of spending on local suppliers	P38-39	none
GRI 205: Anti-corruption			
	Management Approach	P10-11	none
205-1	Operations assessed for risks related to corruption	P11	none
205-2	Communication and training about anti-corruption policies and procedures	P11	none
205-3	Confirmed incidents of corruption and actions taken	P11	none
GRI 302: Energy			
	Management Approach	P50	none
302-1	Energy consumption within the organization	P52	none
302-2	Energy consumption outside of the organization	P52	none
302-3	Energy intensity	P52	none
302-4	Reduction of energy consumption	P50-53	none
302-5	Reduction in energy requirements of products and services	—	Not applicable

Indicators		Pages	Omission
GRI 304: Biodiversity			
	Management Approach	P54	none
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	P54-55	none
304-2	Significant impacts of activities, products, and services on biodiversity	P54	none
304-3	Habitats protected or restored	none	none
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	none	none
GRI 305: Emissions			
	Management Approach	P50	none
305-1	Direct (Scope 1) GHG emissions	P51	none
305-2	Energy indirect (Scope 2) GHG emissions	P51	none
305-4	GHG emissions intensity	P52	none
305-6	Emissions of ozone-depleting substances (ODS)	none	none
305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	P51	none
GRI 306: Effluents and Waste			
	Management Approach	P51, P53	none
306-1	Water discharge by quality and destination	—	none
306-2	Waste by type and disposal method	P54	none
306-3	Significant spills	none	none
306-4	Transport of hazardous waste	P53	none
306-5	Water bodies affected by water discharges and/or runoff	none	none
GRI 307: Environmental Compliance			
	Management Approach	P54	none
307-1	Non-compliance with environmental laws and regulations	none	none
GRI 401: Employment			
	Management Approach	P42	none
401-1	New employee hires and employee turnover	P42-43	none
GRI 403: Occupational Health and Safety			
	Management Approach	P28-29	none
403-1	Workers representation in formal joint management-worker health and safety committees	P29	none
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	P28	none
403-3	Workers with high incidence or high risk of diseases related to their occupation	P32	none



Indicators		Pages	Omission
403-4	Health and safety topics covered in formal agreements with trade unions	P29	none
GRI 404: Training and Education			
	Management Approach	P44	none
404-1	Average hours of training per year per employee	P46	none
404-2	Programs for upgrading employee skills and transition assistance programs	P44-45	none
GRI 405: Diversity and Equal Opportunity			
	Management Approach	P42	none
405-1	Diversity of governance bodies and employees	P42	none
GRI 413: Local Communities			
	Management Approach	P58	none
413-2	Operations with significant actual and potential negative impacts on local communities	P58	none
GRI 416: Customer Health and Safety			
	Management Approach	P35	none
416-1	Assessment of the health and safety impacts of product and service categories	—	Not applicable
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	none	none

# FEEDBACK

Dear readers,

Thank you for taking the time to read China Suntien Green Energy's 2019 Environmental, Social and Governance Report. We look forward to your feedback. Please send us your completed questionnaire by mail, e-mail after scanning, or by fax, or call us directly to offer your opinions.

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1. Which type of stakeholders is your institution in relation to Suntien?

- ☐ Shareholder ☐ Employee ☐ Supplier ☐ User ☐ Government ☐ Community ☐ Bank  
☐ Academic institution ☐ Other (please specify)

2. Have you read the Environmental, Social and Governance Report of China Suntien Green Energy? (If your answer is no, please ignore items 3, 4 and 5)

- ☐ Yes ☐ No

3. If yes, did you read the print version or the electronic version?

- ☐ Print ☐ Electronic

4. Which version do you prefer?

- ☐ Print ☐ Electronic

5. Your evaluation of the 2019 ESG Report:

·Readability (easy to understand, well designed, intriguing, easy to locate the information required)

- ☐ 3 points (good) ☐ 2 points (mediocre) ☐ 1 point (poor)

·Credibility (whether the information in the report is true and reliable)

- ☐ 3 points (good) ☐ 2 points (mediocre) ☐ 1 point (poor)

·Information integrity (taking into account both positive and negative aspects of performance, whether it meets your information needs)

- ☐ 3 points (good) ☐ 2 points (mediocre) ☐ 1 point (poor)

In addition to the disclosures already made in the report, what else would you like to see?

The reporting team of the 2019 ESG Report of China Suntien Green Energy

March 2020



新天绿色能源股份有限公司  
China Suntien Green Energy Corporation Limited