

# 順風國際清潔能源有限公司 SHUNFENG INTERNATIONAL CLEAN ENERGY LIMITED

(Incorporated in the Cayman Islands with limited liability) Stock code: 01165

# ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT 2017

CLEAN ENERGY PROVIDER

WORLD'S LEADING CLEAN ENERGY PROVIDER LOW-CARBON & ENERGY-SAVING -INTEGRATED SOLUTIONS PROVIDER LOW-CARBON &

WORLD'S

LEADING

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# Introduction

Our mission is to create a low-carbon environment. Solar power generation is the core pillar of the Group's solar energy business and the Group is working to become a fully integrated new energy enterprise.





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# **ABOUT THIS REPORT**

## **Purpose of this Report**

This is the second Environmental, Social and Governance ("ESG") Report (the "Report") of Shunfeng International Clean Energy Limited ("SFCE", or the "Company", together with its subsidiaries collectively, the "Group" or "We"). It outlines our approaches, strategies and performances in relation to the sustainable development of the Group.

### **Report Year and Scope**

The reporting period of this Report is from 1 January 2017 to 31 December 2017 (the "Reporting Period"). Unless otherwise stated, this Report mainly focuses on our core business segment, manufacturing and sales of solar products in the People's Republic of China (the "PRC" or "China"), which accounted for over 80% of our total revenue during the Reporting Period.

## **Report Framework**

This Report has been prepared in accordance with the disclosure requirements of the ESG Reporting Guide in Appendix 27 to the Rules Governing the Listing of Securities on Hong Kong Exchanges and Clearing Limited (the "Listing Rules").

## **Access to this Report**

The Report is published in both Chinese and English, available in electronic version from our official website of SFCE (http:// sfcegroup.com). Should there be any discrepancy between the two languages, the English version shall prevail.

### Your Feedback

We sincerely welcome your comments and suggestions with regard to this Report and our sustainability performance. Please send your feedback to us via email at ir@sfcegroup.com.

Energy Saving Coal 566,256 tonne

> H₂O **6,258,700** m³

# Environmental Performance Highlights of the Group in 2017\*

Electricity Generated Year 2017 1,564,675 MWh

Year 2016 **1,328,594** MWh

# Reduction of Emissions

Smoke and Dust 27,406,785 tonne

CO<sub>2</sub> 1,520,864 tonne

SO<sub>2</sub> 100,737 tonne

NO<sub>x</sub> 49,661 tonne

Include the performance of the entire Group

# **ABOUT SFCE**

The corporate mission of Shunfeng International Clean Energy is to create a low-carbon environment. The Group is a fully integrated photovoltaic service provider mainly engaging in solar power generation, solar products manufacturing and solar power plants operation and services at the same time the Group is dedicated to research, development as well as operations of other forms of clean energy. Solar power generation is the core pillar of the Group's solar energy business and the Group is working to become a fully integrated new energy enterprise.

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## **OUR SUSTAINABILITY VISION**

To become the world's largest low-carbon, integrated, clean energy generation provider to create a low-carbon environment.

As a pioneer in the renewable energy industry, we view sustainability not only as a key business driver but also as an essential responsibility which we take very seriously. We will constantly strive to improve the way we serve the interests of our key stakeholders including shareholders, employees, customers, suppliers and local communities. We believe our visions can only be fulfilled through business practices that are based on the principles of long term sustainable development. Our unequivocal commitment is to continuously strive to strengthen our sustainable business practices under 5 key areas including:

# Commitment to Our Customer

Deliver our diverse customer base with high quality products and services through continuous improvement in health and safety, supply chain management and customer engagement.

# Commitment to Our People

Foster a rewarding, fair and safe workplace for our people to unleash their full potential and develop their career.

# Commitment to Our Reputation

Make a balance between making economical progress and environmental and social impact through robust corporate governance and risk management.

# Commitment to Our Environment

Optimize the use of natural resources and minimize the environmental impact by going beyond regulatory compliance, adopting best practices in business operations and active stakeholder engagement.

# Commitment to Our Community

Create positive impact and address social issues in the community by leveraging our business resources and actively engaging with our stakeholders.

# **OUR RESPONSIBLE VALUE CHAIN**



# STAKEHOLDER ENGAGEMENT

The support from stakeholders is of paramount importance when it comes to the sustainable development and long-term success of the Group. We define our key stakeholders as employees, customers, suppliers, shareholders and investors, governments and regulatory bodies, NGOs as well as community.

Throughout the years, we strive to maintain a good relationship with our stakeholders through a wide variety of channels in our daily operation to identify ESG issues that are of importance and of concern to our business and to our stakeholders. We also obtain stakeholders' feedback on our sustainability performance. It is a prerequisite in the preparation of this report as engaging with stakeholders allows us to better shape our business strategy to respond to their needs, anticipate risks and strengthen key relationships. Their feedback has been collected and evaluated to establish material aspects which form the underlying foundation of this Report.

# **Commitment to Our Customer**

We continuously improve our products.

- Product Innovation
- Patent Registration
- Quality Control
- Global Customer Services





# **PRODUCT INNOVATION**

We reinforce market competitiveness through strategic partnerships with various prestigious universities and work hard to provide customers with new and advanced products and services.

#### National-recognized Enterprise Technology Center

The Enterprise Technology Center of Wuxi Suntech Power Co., Ltd. ("the Center") [無錫尚德太陽能電力有限公司企業技術中 心), which passed the national certification in 2008, carries out several scientific research projects every year and has made substantial achievements during the past 9 years. The Center possesses the largest photovoltaic modules and products inspection laboratory with the most advanced inspection methods in China, which has been awarded the Witness Test Data Program (WTDP) Certificate by the UL (USA), the Test Data Acceptance Program (TDAP) Certificate by the VDE (Germany), the Laboratory Accreditation Certificate by China National Accreditation Service for Conformity Assessment (CNAS), and the Golden Sun Certificate for solar photovoltaic products. At present, the Center can perform analysis and testing in aspects of chemical, physical and photo etching.

#### Jiangsu (Suntech) Photovoltaic Technology Research Institute

With Jiangsu Photovoltaic Energy Engineering Technology Research Center [江蘇省光伏能源工程技術研究中心] as its basis, the Jiangsu Scientific & Technological Development Program: Jiangsu (Suntech) Photovoltaic Technology Research Institute ("the Research Institute") [江蘇省科技發展計劃—江蘇省(尚德)光伏技術研究院] was established in 2008. The Research Institute has integrated our resources with those of the various cooperating universities such as the University of New South Wales (UNSW) to carry out innovation projects which mainly aim at enhancing product competitiveness and speeding up product upgrades.

### National Postdoctoral Scientific Research Center

The postdoctoral center of Wuxi Suntech Power Co., Ltd. was upgraded to a national postdoctoral scientific research center as approved by the Ministry of Human Resources and Social Security (國家人力資源和社會保障部) and the National Management & Coordination Committee for Postdoctoral Scientific Research Centers [全國博士後科研流動站管理協調 委員會] in August 2010. The establishment of the national postdoctoral scientific research center has not only facilitated the industry-university-research cooperation between enterprises and universities, but also expanded the channels for attracting high quality talents and hence strengthened our core competitiveness.

#### Jiangsu Photovoltaic Energy Engineering Technology Research Centre

Jiangsu Photovoltaic Energy Engineering Technology Research Centre ["the Centre"] [江蘇省光伏能源工程技術研究中心] was established in 2005 with the approval from the Jiangsu Department of Science and Technology [江蘇省科技廳]. The Centre is comprised of 4 sub-centers including management center, solar cell research center, photovoltaic module research center and photovoltaic product testing center. Since establishment, the center has been devoted to developing related technological development management systems, including the standardization of patent work process and reward system.

# Commitment to Our Customer (Continued)

# PATENT REGISTRATION

We have successfully obtained 489 patents as of December 2017 including 393 in utility model, 86 in invention and 10 in design. Among them, 37 patents were obtained during the Reporting Period including 17 in utility model, 17 in invention and 3 in design.

# **R&D Experts**

Specialist schools or above



100% of the team

Bachelor or above



2/3 of the team

Master or above





# **QUALITY CONTROL**

Quality control remains the top priority for the group. In addition to conforming to applicable local laws and regulations, including but not limited to Product Quality Law of the PRC (中華人民共和國產品質量法), our products are certified and labelled after being rigorously tested internally and externally by accredited standards authorities around the world including Verband der Elektrotechnik, Elektronik und Informationstechnik (VDE), Care Quality Commission (CQC), Canadian Standards Association (CSA), Microgeneration Certification Scheme (MCS), Japan Electrical Safety & Environment Technology Laboratories (JET), Khalid Electrical & Mechanical Co. (KEMCO), to ensure they meet and exceed standards with regard to quality, health, safety and the environment.





PID resistant test by VDE

Sand Blowing Resistant

Sand blowing test by SGS



Sulphur dioxide resistance test by CPVT



Ammonia resistant strict test by TUEV Rheinland



Extended Wind



Double IEC testing/combined cycle testing by VDE

Extended wind and snow load test by VDE

Salt mist resistant test by VDE



Dynamic loading wind tunnel testing by SJTU National Lab

# Commitment to Our Customer (Continued)

Our laboratory, established to ensure product quality and reliability, has the world's advanced testing capabilities in the PV industry. Our laboratory management system is in full compliance with ISO/IEC17025 General Requirements for the Competence of Testing and Calibration Laboratories. We have applied a series of tests with stringent standards to assure the quality and reliability of each photovoltaic products including:

Key Control Points in Production Line		
Control Points		Performance Tests
Raw Material	Backsheet	• Peel strength, weight, tensile strength, elongation and size stability
	EVA (ethylene vinyl acetate)	• Peel strength, transmittance, cross-linking test and contractibility
	Tempering glass	• Transmittance and status of fragment
	Junction box	Pull test and wet leakage
	Frame	• Hardness of frame, thickness of oxidation film, hardness of jump ring (short frame), platform gap and curvature
Cell	Wafer	• Defects test by photoluminescence (PL) tester
	Texturing	<ul><li>Reflectivity check</li><li>Weight loss monitoring</li></ul>
	Diffusion	Sheet resistance check
	Etching	<ul><li>Resistance check</li><li>Weight loss monitoring</li></ul>
	Plasma-enhanced chemical vapor deposition (PECVD)	Refractive index check
	Screen Printing	Printing quality check
	Electroluminescence (EL) test	• 100% EL test
Module	Soldering	• Sample soldering temperature test
	Cross-linking test in lamination	Sample test
	HI-POT test & power test	<ul><li>100% Hi-pot test</li><li>MSA for final tester</li></ul>
	Electroluminescence (EL) test	<ul> <li>100% EL test</li> <li>SPC control on key process</li> <li>Soldering temperature and ribbon pull test</li> </ul>

All of these have assured the quality and reliability of each of our products. Cells fail to meet the standard will be rejected. We also carry out sampling tests for packed final products and inform relevant units if there is any defect for continuous improvement. We ensure our products will work well across a wide range of applications as well as withstand harsher conditions. We are the first company that received the certification of exemption from export inspection in China's PV industry. We adopt Total Quality Control (TQC) which requires company-wide efforts to make continuous improvements in delivering high-quality products and services to customers. We deliberately stick to the standards laid down in ISO9001 Quality Management Standards, SA 8000:2008 and OHSAS 18001:2007/2011 to meet global market requirement. We also promote 7S, which are Seiri" (Sort), "Seiton" (Set in Order), "Seiso" (Shine), "Seiketsu" (Standardize), "Shitsuke" (Sustain), "Safety" and "Save", in our workplace to enhance efficiency, effectiveness and thus achieving sustainability in the long-run.

## Strategic Partnership with VDE

We participate in the Quality Tested program of the German independent certification authority VDE, one of Europe's largest technical-scientific associations and notified bodies, attesting that the quality of our products exceeds existing industry standards. The VDE has created its VDE Quality-Tested seal of approval to recognize a level of quality control that goes beyond existing standards in the PV industry when validating PV modules. Low rates of degradation and high safety standards are the essential aspects of attaining VDE certification. Compared to other industry standards, the VDE Quality-Tested seal relies on a more rigorous examination of performance capabilities, ensuring continuous high safety standards and quality of our modules over a long term.

## **Product Safety**

Besides internal product testing, our products are also subjected to external testing. For instance, our operation in Changzhou sent their products to The National Centre of Supervision and Inspection on Solar Photovoltaic Product Quality for annual sample check. Tests are conducted based on IEC 61215:2005 Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval, as well as IEC 61730-2:2012 Photovoltaic (PV) module safety qualification – Part 2 – Requirement for testing. In particular, reverse current overload test, fire test and wet leakage current test are carried out to ensure product safety.

# **GLOBAL CUSTOMER SERVICES**

Our business is not only about science – we care for our customers. Delighting our customers with the highest standard of customer service has always been at the heart of our ethos.

We particularly pride ourselves in the Global Customer Service ("GCS") team which provides 24/7 services to customers around the globe. Officially established in 2008, the GCS team mainly provides services including global customer complaint management, promotion of efficiency improvement, special case management, after-sales technical support, on-site services, and customer audit. Maintaining a 12-year product warranty and a 25-year performance warranty as the core service, the GCS team provides timely and efficient solutions to ensure project yield of our global customers.

#### **Customer Feedback**

Identification and satisfaction of the needs of our customers are always our first priority. We understand customer needs by conducting customer survey at least once a year. The questionnaire provides us feedback from the customers concerning product and service quality, delivery time, price etc. We review and analyse the feedback to make corresponding improvement.

#### **Complaint Handling**

The professional and efficient handling of complaints is a critical factor for our high standard customer service. To make sure customers' complaints are properly handled, a comprehensive Customer Complaint Handling Procedure is developed. Our complaint channels include hotline, e-mail box and in person. We offer product exchange or refund with the approval by our product quality unit in case of complaints about product quality. The Client Complaint Prevention Policy Report will be reviewed for evaluation of the effectiveness of the way of handling.

#### **Marketing and Advertising**

We organized and participated in a series of exhibitions, conferences and other external activities in the industry over the years. Online platforms and social media such as Weibo, WeChat, YouTube and Twitter also serve as bridges for communication between us and our stakeholders. In order to ensure the objectiveness and accuracy concerning our external marketing and advertising, the External Advertising Management Measure (對外宣傳管理辦法) is formulated with an aim to increase our transparency and publish contents based on facts, complying with the Advertisements Law of the People's Republic of China (中華人民共和國廣告法). Approval process is implemented to ensure the appropriateness and accuracy of all marketing materials.

# **Commitment to Our Reputation**

# We maintain high standard of integrity.

- Corporate governance
- Supply chain management
- Employee code of conduct
- Anti-corruption





## **CORPORATE GOVERNANCE**

The Group continuously strengthens our governance structures to promote business success and drive our culture of responsibility. Not only does the Group strictly abide by applicable local laws and regulations, we also go the extra miles to strive to fulfil our roles and responsibilities as a leading global company by demonstrating best practices. To this end, we are dedicated to eliminating any unlawful and unethical acts while fostering an organizational culture of integrity. We seek to set industry standards with transcendent business performance by fair and honest competition, rather than illegal or unethical business practices. We strictly prohibit infringement of third parties' intellectual properties. We adhere to the principles of fairness, integrity and legal compliance. Every employee is required to treat customers, suppliers and competitors equally and respect their rights.

To cultivate a culture of integrity, we continuously reinforce our compliance management systems and put compliance at the heart of all business activities and decision-making processes through employee training and system reviews. Our code of conduct in the employee handbook has outlined clearly our expectations to maintain a high standard of integrity internally.

## SUPPLY CHAIN MANAGEMENT

Our suppliers are an important part of the supply chain and it is necessary to encourage them to embrace our vision on sustainability and to commit to our sustainable sourcing principles.

We aim to promote sustainability and responsible business practices in supply chain by choosing and rewarding partners who share the same values as ours. We are devoted to ensuring safe and high-quality goods and services delivered with respect for people and nature.

Our expectations on environmental and social responsibility for our suppliers, in terms of local law and regulation compliance, health and safety issues, environmental protection and prevention of bribery, are set out in the Supplier Undertaking and Environmental and Social Responsibility Undertaking, which are signed by new suppliers. We also encourage our suppliers to formulate and implement quality and environmental management policies according to ISO9000, ISO14000, OHSAS18000 and SA8000 series standards. Suppliers are required to present the relevant certificates when necessary.

A series of transparent and fair procedures including Supplier Management Control Procedure and Merchandising Control Procedure have been implemented to opt for quality suppliers who comply with applicable local laws and regulations and uphold high ethical and environmental standards. Apart from special circumstance (e.g. lack of certain materials in the market), we strive to only work with the suppliers on the pre-qualified supplier list and regular reviews on the performance of qualified suppliers are conducted.

# **EMPLOYEE CODE OF CONDUCT**

Our employee code of conduct has outlined the guiding principles that we expect our employees to uphold.

Major Principles	Specific Action Guides
Principle 1: Comply with laws and ethical standards	<ul> <li>Compete fairly in accordance with laws and business ethics</li> <li>Protect personal and business partner information</li> </ul>
Principle 2: Maintain a clean organizational culture	<ul> <li>Draw a strict line between public and private affairs in all business activities</li> <li>Protect and respect the intellectual property of the Group and others</li> <li>Create a healthy organizational atmosphere</li> </ul>
Principle 3: Respect customers, shareholders and employees	<ul> <li>Make customer satisfaction the top priority in business activities</li> <li>Maintain mutual respect among employees</li> </ul>
Principle 4: Care for the environment, safety and health	<ul><li>Pursue eco-friendly management</li><li>Put emphasis on people's safety and health</li></ul>
Principle 5: Fulfil social responsibility as a global corporate citizen	<ul> <li>Perform basic obligations faithfully as a corporate citizen</li> <li>Respect local sociocultural characteristics and achieve shared growth</li> <li>Establish business partnerships that promote coexistence and co- prosperity</li> </ul>

In addition, other policies such as Integrity and Self-discipline Undertaking, Commercial Confidentiality Agreement and Competition Limitation Agreement are also formulated to maintain high ethical standard within the Group.

# **ANTI-CORRUPTION**

The Group works actively to combat corruption in all its forms, which include bribery, extortion, fraud and money laundering. This includes having policies and procedures to identify risks, train staff, manage suppliers and implement adequate measures against violations of the Group's policies in rigid compliance with the Criminal Law of the People's Republic of China (中華人民共和國刑法), Anti-Unfair Competition Law of the People's Republic of China (中華人民共和國反洗錢法), the Interpretation of the Supreme People's Court on Several Issues concerning the Specific Application of Law in the Trial of Money Laundering and Other Criminal Cases (最高人民法院關於審理洗錢等刑事案件具體應用法律若干問題的解釋), the Supreme People's Court and the Supreme People's Procuratorate on Issuing the Opinions on Issues concerning the Application of Law in the Handling of Criminal Cases Involving the Acceptance of Bribes (最高人民檢察院、最高人民法院 關於辦理受賄刑事案件適用法律若干問題的意見) and other relevant laws and regulations. We have formulated the Gift and Benefit Receiving Management System and whistle-blowing procedures, requiring and helping our employees to adhere to the ethical standards we advocated. We have provided honest practices training to our senior staff members and channels including hotline and e-mail box for all employees to report any case of bribery, extortion, fraud and money laundering.

Our internal audit and control system and anti-corruption system are improved continuously to uphold high standard of integrity. To ensure the independence of the internal control review, the Group has outsourced its internal audit function to third party professional internal control advisers (the "Internal Control Advisers"), who are responsible for reviewing our risk management process and the effectiveness of our internal control system. Please make reference to the Corporate Governance Report in the Group's Annual Report 2017 for more information. There is no reported case of bribery, extortion, fraud or money laundering during the Reporting Period.

# **Commitment to Our People**

Our staff is our greatest asset.

- Employment overview
- Compliance to employment regulations
- Attracting and retaining talents
- Training and development
- Compensation and benefits
- Connection and communication
- Health and safety





# **EMPLOYMENT OVERVIEW**

Our people are at the heart of our business. We build our team and invest in our people so they can serve our clients responsibly and help make an impact in our communities. We have a culture where we put the customer first, emphasize on integrity and responsibility, and encourage all employees to bring their whole selves to work. When we can create a workplace where our colleagues are engaged, empowered and committed for the long term, we are better positioned to offer high standard products and services. The way we value and support our colleagues is a reflection of who we are. We provide compensation, benefits and wellness resources that reflect our commitment to being a great place to work. It is not only the right thing to do but also the key to being a sustainable and successful corporation.

### **Composition of Our Workforce**

We had a total of 6,397\* staff members as at 31 December 2017. The composition is set out as below:



\* Covering the entire Group

# **COMPLIANCE TO EMPLOYMENT REGULATIONS**

By upholding international conventions on human rights and labour standards, we strictly comply with the Labour Law of China and the Labour Contract Law of China and other applicable local laws and regulations for protection of the legitimate rights and interests of our employees:

- As an equal opportunity employer, we take a zero-tolerance approach to discrimination of any sorts. We strive to provide equal employment opportunity and fair treatment to our potential and current employees regardless of gender, age, sexual orientation, marital status, race, ethnicity, social class, religion, disability, or political background. We also protect the rights and benefits of maternal staff.
- We offer employees a harmonious, pleasant and safe workplace. All work should be voluntarily performed and any form of forced labour is strictly forbidden.
- We eliminate child labour in the production or service provision process. In case of occurrence, termination of the duty of the child will immediately take effect and we will compensate the child according to the law before he/she is passed to his/her guardian.
- We grant leaves, allowances, insurance and other social welfare benefits in accordance with applicable local laws.
- We provide draft contracts to job candidates and only sign official contracts upon mutual agreement on the contract terms.
- We discuss with supervisors to formulate new joiner onboarding plan. We also offer training on internal policies, staff manuals and guides, HR systems and internal business processes to let them familiarise themselves with the internal rules and procedures.
- We do not encourage overtime work and implement a total of 40 standardised working hours per week. Employees are required to seek approval from supervisors for overtime work and we compensate for the approved overtime work.
- We have outlined the details with respect to employees' dismissal in our respective internal policies.

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# ATTRACTING AND RETAINING TALENTS

Every year, our recruitment team recognizes prospective staff and connects talents to leaders within our organization. We also increased our diversity in hiring, with a focus on early candidate identification and development through partnerships with universities and graduate internship programs. In 2017, we continued to hire employees in areas of our business where we have identified growth opportunities or more employees are required to serve the actual development needs. We offer competitive compensation and benefits to attract and retain top talents.

### Performance Appraisal System

Staff performance appraisal and promotion system is formulated to evaluate employee job performance and develop a fair system for pay adjustments and promotions. Performance evaluation is conducted on a regular basis based on our annual targets established by the employees themselves. We endeavour to maintain the highest level of fairness in our promotion system and deter any form of discrimination, living up to our commitment to diversity and inclusion.

Responsible Department	Action	
Management	Set annual goals and targets	
Human Resources Department	<ul> <li>Establish performance evaluation system and its procedure</li> <li>Assist and support the explanation of performance evaluation system</li> <li>Implement the evaluation system</li> <li>Keep all historical evaluation records</li> <li>Conduct regular checks on the actual implementation of the evaluation system in each unit</li> </ul>	
Development Planning Department	<ul> <li>Break down corporate annual and quarterly target</li> <li>Adjust operational targets according to market and corporate business strategy</li> </ul>	
Operation Management Department	<ul> <li>Collect and analyse the data of operational targets</li> <li>Draft concise operation target evaluation implementation method according to actual operation for company approval</li> </ul>	
Finance Department	<ul> <li>Assist in the break down and establishment of the evaluation target</li> <li>Provide necessary financial data regularly</li> </ul>	
Evaluator	<ul> <li>Support employees to develop personal annual/quarterly targets and make sure they are in accordance with that of the Group</li> <li>Provide regular feedback and guidance to employees</li> <li>Conduct evaluation according to the evaluation management procedure</li> <li>Develop improvement action plan and supervise the implementation of the plan</li> </ul>	
Employees	<ul> <li>Set personal annual and quarterly targets according to targets provided by senior</li> <li>Update, record and report the progress of the achieving the targets</li> <li>Accomplish improvement action plan (if there is any)</li> </ul>	

# TRAINING AND DEVELOPMENT

Our people are critical to our future success. Training and development of our employees for the future is key to our success. The Group is committed to its investment in talent development and has a robust and systematic approach to employee, manager and executive development. The Group's development agenda is targeted at building the capacities of our people and our organization through our 3-step training system:

## **Our Training System**

Training demand identification	Internal and external training sessions are organized by the HR Department according to the Group business development and training request questionnaire submitted by the employees.		
Formulation and implementation of training plans Evaluation of training effectiveness	<ul> <li>according to the plan, records the atternant includes the record to annual app</li> <li>Departments can propose training sess Upon approval by department head/d Managing Director, the training record</li> <li>External training session is approve depending on whether it is included in</li> <li>Sponsorship of external training session</li> <li>Training evaluation report is submitted</li> </ul>	<ul> <li>HR Department develops Annual Training Plan, organizes training sessions according to the plan, records the attendance and the result of the training sessions and includes the record to annual appraisal.</li> <li>Departments can propose training sessions not included in the Annual Training Plan.</li> <li>Upon approval by department head/development department/HR Department and Managing Director, the training record will be included in the annual appraisal.</li> <li>External training session is approved by HR Department or Managing Director, depending on whether it is included in the Annual Training Plan.</li> <li>Sponsorship of external training session is approved according to seniority.</li> <li>Training evaluation report is submitted by trainee and recorded by HR Department upon approval by the responsible department to review the effectiveness of the training</li> </ul>	
Aspects		Forms	
Orientation Training	<ul> <li>Corporate Introduction</li> <li>Operational procedure</li> <li>Management systems in all aspects</li> <li>Health and Safety</li> </ul>	<ul><li>Offline</li><li>Internal</li></ul>	
On-job Training	<ul> <li>Professional skills and knowledge</li> <li>General skills and knowledge</li> <li>Management development</li> <li>Health and Safety</li> </ul>	<ul><li>Offline/Online</li><li>Internal/External</li></ul>	

## Case Study – A Visit to Hitech Technology by Executive Research Team

During the Reporting Period, the executive research team of Wuxi Suntech Power Co., Ltd. ("Wuxi Suntech") paid a visit to Hitech Technology. They made a tour in the factory to have a glimpse of the packaging and testing procedures. They were also introduced the corporate culture, development history and recent significant internal activities. Managers from the testing and production departments were also invited to share their work experiences and exchange ideas.



## Case Study – A Voluntary Visit to the Project Site by Customer Service Team

To familiarise themselves with the actual project site environment, the customer service team of Wuxi Suntech voluntarily initiated a visit to the distributed power plant site in Huaneng Huzhou. Through the detailed explanation by their manager, they learned about the key components of the power plant (including the modules, combining manifolds, grid-connected inverter, PV support bracket, cables, high-voltage substations, etc.), installed capacity calculation methods, string distribution, real-time power generation calculations and other related information. Starting from the actual situation, they analysed and demonstrated the testing procedures of the insulation test, string power test, and component infrared inspection of the power plant. Through theory and practice, they had a better understanding of the development, installation, debugging, and later operation and maintenance of the distributed photovoltaic power plant.



### Case Study – Wuxi Suntech 2017 Talent Training Camp

To help the fresh university graduates quickly adopt to the working environment, Wuxi Suntech organized an orientation camp for them in summer. Through campus recruitment, 27 talents are selected from 15 universities, in which 7% of them are bachelor degree graduates and 93% of them are master degree graduates. After 18 months of training, our human resources department cooperated with the other departments to undergo integrated evaluation and assign suitable job positions for the new blood.



### **Case Study – Occupational Contest**

**Average Training Hours by Gender** 

Various occupational contests were held during the year to strengthen the skill of our talents.



#### Average Training Hours by Employment Type



# **COMPENSATION AND BENEFITS**

The Group implements a competitive remuneration and benefit system to retain talents. In addition to basic compensation and benefits according to applicable local laws and regulations, we provide extra allowances and bonuses according to actual circumstances.

Basic Compensation and Benefits	Extra Allowances and Bonuses
<ul> <li>Basic salary paid according to educational background, experience and grading</li> <li>Social insurance (including national pension, medical insurance, employment insurance, occupational health and safety insurance)</li> <li>Paid annual leave</li> <li>Public holiday and leaves required by the law (compassionate</li> </ul>	<ul> <li>Housing allowance</li> <li>Travel allowance</li> <li>Night shift allowance</li> <li>Inflation allowance</li> <li>Festival bonus</li> <li>Marriage and birth-giving bonus</li> <li>Attendance bonus</li> <li>Performance bonus</li> </ul>
leaves, sick leaves, marriage leaves, maternity leaves, paternity leaves, parental leaves and etc.)	<ul> <li>Free shuttle bus</li> <li>Subsidies for critical illness medical expenses</li> <li>Body check</li> </ul>

• Birthday and festival shopping card and gift box





# **CONNECTION AND COMMUNICATION**

To strength the cohesion among all levels of staff, a number of channels have been established to promote interaction and communication.

### **Formal Channel**

**Annual** company level night meeting was held where frontline staff gathered and shared with each other the challenges that they faced in their area of operation. Key messages from the management were also communicated to empower actions that align with organization strategy.

**Bi-annually/Quarterly** company level staff meeting was held to ensure that key strategic priorities were clearly defined.

**Monthly** union level staff meeting was held to ensure key trends, market updates, and company strategies were brought to the frontline in an appropriate manner.



#### **Complaint and Appeal System**

We strive to enhance employee satisfaction, increase cohesiveness and establish a harmonious corporate culture. To ensure hidden risks are handled through proper channels in an open and fair manner, the Complaint and Appeal System is formulated to safeguard the rights and interests of our employees. Employees can voice out their opinion or complaints through Wechat, email or written letter. We are committed to providing prompt reply, making necessary improvement and handling all complaint cases with high confidentiality.

### **Informal Channel**

To provide a pleasant and harmonious working environment for our people, a wide variety of staff events were organized and festival benefits were distributed during the year. Some of the events organized this year include:





# **HEALTH AND SAFETY**

The health, well-being and safety of our employees are the top priorities at the Group and we are committed to ensuring safe and healthy workplaces for all. Health and occupational safety are therefore fundamentally important issues for us.

When it comes to ensuring safe and accident-free working environments, a systemic approach to prevention is key. We systematically assess the working conditions of our employees for risks and potential dangers and provide our workforce with the equipment they need to carry out their jobs safely. We also conduct regular training to heighten the awareness of workers and their mangers on the subject of safety regulations and possible workplace hazards. Additional information in the form of posters and other materials are used to reinforce a "Safety First" culture within the Group.

We also adopted the OHSAS 18001:2007/2011 standard which provides us a framework for establishing the policies, procedures and controls needed to achieve the best possible workplace health and safety conditions. This also ensures alignment to internationally recognised best practice.

## **Occupational Health and Safety Risk Assessment**

Our occupational safety efforts focus on prevention. We systematically assess the working conditions of our employees for risks and potential dangers. We engage qualified institutions to carry out occupational hazard detection. Safety engineers and occupational physicians are entrusted to carry out Hazard Identification & Risk Assessment (HIRA) and review of the implementation of occupational health examinations. Regular safety audit and inspection are carried out to ensure compliance with all relevant safety regulations and requirements.

#### **Precautionary Measures**

All of our activities in the area of occupational safety aim to strengthen employee awareness on the subject of safety and possible workplace hazards – not only for their own protection but also for the safety of others.

- Workers in special position are equipped with precautionary package;
- Hazardous chemicals are clearly labelled and placed in special areas;
- Material storage area and product transfer area are clearly divided to maintain tidiness;
- Warnings and safety reminders are placed;
- Protective clothing, aprons, boots, face shields and gloves are provided, replaced, cleaned and inspected regularly;
- Sufficient washing facilities are provided in close proximity to injury-prone workshops;
- Safety responsibilities are clearly defined;
- Equipment is double checked before being used. Defect equipment is well-labelled and passed to maintenance unit;
- Occupational health examinations are conducted at least annually to monitor our employee's health condition;
- Operation approval and safety confirmation system is implemented and enforced at special workshops to closely monitor operation process and ensure safety;
- We immediately correct deficiencies and deviations by continuous improvement; and
- We exchange safety management experience with companies in the industry.

## Health and Safety Training System

- Apart from general operational staff, we attach great importance to training for managers. Inspecting the working
  conditions of staff, correctly assessing risk levels and initiating suitable measures to minimise risk are among their
  most important managerial tasks. As such, they receive support in the form of guidelines, recommendations and
  consulting from our occupational safety experts. We also work to fine-tune and improve the safety training we offer
  to managers, so that we make continuous improvement in enhancing their awareness for occupational safety and
  prepare them to carry out their occupational safety responsibilities.
- All our employees are required to attend professional health and safety trainings at least once a year, with topics covering safe use of equipment, facilities, storage and handling of hazard-prone chemicals and materials, occupational danger prevention, first-aid and so on. While all new staff is required to attend not less than 24 training hours of the 3-level safety training, all production operators must receive proper training before the use of any new production process, new technology, new materials or new facilities.
- Special requirements on the training frequency for employees in particular positions are listed below:

Position Categories	Frequency
Manager grade or above	At least once a quarter
Special safety managers, production managers and technicians	At least once a month

### **Our 3-Level Safety Training**

Orientation Training On Job Training	Content
Corporate Level	• National and local safety laws, regulations and policies.
Department Level	• Policies, guidelines, source of risks and precautionary measures, on-site and on-position training.
Class Level	<ul> <li>Production operation procedure, safety reminders, safe production guidelines, characteristics of equipment and facilities, use and storage of protective products, emergency preparation and report procedure.</li> </ul>

### **Preparedness and Contingency Planning**

Our employees are well equipped to meet the obligations of health and safety in the events of emergency. In an effort to manage the risks and hazards of any emergency situations, a series of emergency response plans have been developed. We periodically conduct emergency drills such as fire drills, earthquake drills and blackout drills to raise the safety awareness of the employees and to strengthen their skills to react in an event of crisis or emergency. The drills serve as a platform to provide the closest real-life training to our employees on the necessary procedures during emergency and to identify aspects of deficiency in the emergency response plans for further improvement.

### **Reward and Punishment System**

Our Reward and Punishment System for Work Safety with monthly EHS evaluation is in place to take a further step to emphasize safety at workplace. Safe production, fire prevention and environmental protection are some of the key performance indicators for evaluation. We reward outstanding departments and individuals on safety management in production annually by distributing special awards for those who provide effective and feasible suggestions on safety measures as well as prevention of occupational casualties and loss of corporate properties.

# **Commitment to Our Environment**

# We strive to develop a sustainable future.

- Emissions management
- Resources conservation





### **Commitment to Our Environment**

We are part of the supply chain of our responsible and reputable customers who are clearly committed to sustainability and we are proud to be the partner of choice for these customers. Our commitment to sustainability puts us in a position to develop sustainable energy solutions for our customers, assists customers to meet their own targets and commitments on sustainability, thereby allows us to create close partnership with them.

We have regarded building an eco-friendly society as our responsibility, and we take lead to improve our operation and lifestyle to be more environmental friendly. We continue to enhance the efficient use of natural resources and improve our environmental performance. Through our solar energy business, we address global climate change by providing clean and renewable energy to the society.

We have a wide range of qualifications for operation to uphold the stability of our operation and ensure that our emissions comply with the relevant regulations and laws. We further manage our operation process through attaining the international standard of ISO14001:2004/2015 for an effective Environmental Management System (EMS).

The Group has embarked on a mission to constantly improve the management systems for the environment, health and safety (EHS), as well as strengthen the management mechanism. We hope to incorporate the EHS management system into every aspect and establish an excellent corporate culture.

To further protect our environment and reduce emissions, our EHS Department works together with the Operation Department to put the following initiatives into practice:

EHS Department	Operation Department
<ul> <li>Monitor the environmental protection works by other departments, conduct environmental assessment and in charge of the implementation of rectification and accountability in case of non-compliance</li> <li>Carry out regular inspection and keep corporate pollutants' emission level in control</li> <li>Prepare report concerning emission and preventive operation to the local environmental department and assist in the department's inspection and monitoring</li> <li>Conduct investigation on environmental incident</li> <li>Organize various environmental promotion activities and trainings</li> <li>Promote and implement policies that are in accordance with national and local environmental laws and regulations</li> <li>Establish, implement and monitor the hazardous waste management plan</li> <li>Assign qualified personnel for the use, collection, storage, transfer and handling of hazardous waste according to national and the Group's internal regulation</li> <li>Involve in the establishment and audit of the environmental management system</li> <li>Participate in the development and audit of environmental emergency response plan and organize drills regularly</li> </ul>	<ul> <li>Define responsibilities for environmental pollution prevention works, organization of emergency drills etc.</li> <li>Report on any department's environmental incident, conduct investigation and take remedial actions</li> <li>Responsible for implementing the environmental protection work of the department, establish department's environmental policies and clearly define responsibilities and management procedures</li> <li>Handle department's sewage, exhaust gas, noise and solid waste in accordance with the relevant laws and regulations</li> <li>Conduct daily monitoring of the department's operation</li> <li>Responsible to the operation of sewage treatment facilities, online chemical oxygen demand ("COD") monitoring facilities, emission port, site operation and environmental management to comply with relevant laws and regulations</li> <li>Organize environmental training for daily tasks</li> </ul>

# **EMISSIONS MANAGEMENT**

As we view sustainability as our responsibility, we strive to minimise the potential impact of our activities on the environment.

### **Air Emissions**

Following strict emission standards and consistently improving emission performance are our principal approach in air emission control and management.

The Group strictly abides by applicable laws and regulations including Atmospheric Pollution Prevention and Control Law of the PRC. To strengthen the control on air emission, Regulations on Exhaust Gas Management is issued and our qualified environmental monitoring centre is appointed to conduct sampling at the exhaust ports for analysis. This is to ensure that our air emissions meet the permissible levels pursuant to Table 5 of Emission Standard of Pollutants for Battery Industry (GB30484-2013). Inspection is also carried out at the exhaust ports annually.

Measures are taken to reduce the emission of exhaust gases generated by the Group and external vehicles. Vehicles are properly managed and maintained in accordance with the Vehicle Management System. The emission of cooking fume is managed and regulated by the Staff Canteen Management System. Cooking fume is processed by fume purification devices, which is cleaned by qualified third party quarterly.

#### **Greenhouse Gas Reduction**

#### "We not only track our carbon footprint, we also try our best to eliminate it."

We are always looking for ways to minimize our carbon footprint in the design, manufacturing, sales, transportation, and installation processes. We aim to increase our energy efficiency when designing our products. We are also actively working with suppliers to purchase low carbon emissions materials and increase our use of cleaner energy, such as natural gas and solar energy generated from our own PV systems.

### **Case Study – Acid Mist Purification Tower Enhancement**

During the year, we have upgraded the acid mist purification tower in our Changzhou operation from single stage to double and triple stage spray treatment. The exhaust gases removal rate is expected to be largely increased from 60% to over 90%, while the concentration of the nitrogen oxides (NO<sub>x</sub>) is reduced from about  $100 \text{mg/m}^3$  to within  $30 \text{mcg/m}^3$ .



### Wastewater Discharge

We strictly conform to applicable local water discharge laws and regulations, including Integrated Wastewater Discharge Standard (GB 8978-1996). All wastewater and recycling water from the manufacturing process is treated by our on-site wastewater treatment system. The treated effluent is accumulated in holding tanks until sample tests are performed to confirm compliance with regulatory discharge limits. All industrial wastewater is subject to testing and approval for discharge and re-treatment is required if it is not up to discharge standard.

### Waste Management

We have established a comprehensive waste management system to ensure waste materials generated from our operations are properly handled. The waste hierarchy of "avoid, reuse and recycle before disposal" is our guiding principle. We strive to reduce waste generation and prioritize using reusable and recyclable resources. For packaging material, materials that are recyclable and biodegradable would be preferred.

In order to improve the safety management of hazardous waste and prevent the occurrence of injury related to hazardous chemicals, as well as protecting the health and safety of our employees, the Hazardous Waste Management System is set up and implemented in accordance with Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes.

We have appointed qualified third parties to collect and handle the hazardous wastes in accordance with the corresponding rules and guidelines. Precautious measures are taken to avoid any cross contamination to our production materials and products. General refuse is duly cleared to maintain workplace hygiene.

With the aim to reduce the use of acidic substance during manufacturing process, hence reducing acidic hazardous waste, we have implemented the following initiatives:

- Minimize the amount of automatic rehydration of nitric acid
- Regulate the concentration of hydrofluoric acid
- Remove the concentrated acid discharge pipe lines from the less concentrated ones
- Improve the cleaning process
- Unified exchange time and maintenance time

### **Sludge Treatment**

We actively explore the possibility of sewage sludge recycling. Our sewage sludge is sold to qualified sludge treatment company where the sewage sludge would be processed for brick-making.

# Commitment to Our Environment (Continued)

#### **Noise Management**

To manage the noise generated during our business operations, we have implemented different mitigation measures to ensure compliance with the limit of the Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008) and Occupational exposure limits for hazardous agents in the workplace, Part 2: Physical agents (GB22.2-2007).

To minimise noise produced and safeguard the living environment of the neighbourhood, we have taken different precautionary measures, which includes keeping the doors and windows closed, utilizing trenches isolation and preserving the facilities in good condition. Meanwhile, our construction projects have undergone environmental examination by authorized environmental department.

Regular internal noise monitoring and noise pollution prevention is carried out and remediation is conducted once deficiency is found. If the noise level is unable to meet the industry standard, the Corrective Prevention and Continuous Improvement of Control Procedures will be adopted. Professional third party is appointed to conduct noise measurement in our workplace at least once a year.

## **RESOURCES CONSERVATION**

Dew point meters and dew point temperature controller are added to the air dryer, which can save RMB80,000 per annum.



The use of steam is replaced by humidifier for humidification in the printing area, which save around RMB300,000 per annum for the cost of steam. The original heatless regenerative air dryer is replaced by micro-heat regeneration dryer which leads to a 7% reduction in air consumption, which can save RMB230,000 electricity cost per annum.



Our air compressor units required cooling tower for heat rejection throughout the year. During the liquid oxygen vaporization process, a large amount of heat was absorbed by the system through the vaporizer. This led to the formation of icing on the surface of the vaporizer and affected the vaporization effect. This absorbed heat from the process is now recycled for heating during winter or for water heating. Also, a sprinkler and a collection pool are installed to collect the molten ice water for cooling the air compressor units in summer.



To fully utilize the residual heat from production process, a new 1,000RT total heat recovery chiller was installed in factory#18 of Jiangsu Shunfeng Photovoltaic Technology Co., Ltd to reclaim the energy, which would otherwise be wasted. By connecting the cold and hot water pipe network, the hot return water from factory#18 was supplied to factory #1 as heating for the workshop and office area during winters. At the same time, factory #1 installed a new plate heat exchanger to substitute the services of two chillers to chill the cooling water during winter. With the new installed heat recovery system, factory #1 suspended the services of two chillers and one hot water pump in the four months of winter, reducing electricity cost by RMB576,000.



Jiangsu Shunfeng Photovoltaic Technology Co., Ltd. replaced 1,150 traditional lights tubes with LED (Lightemitting diode) lights tubes, contributing to an annual energy reduction of approximately 146,730 kWh, saving around RMB74,000 per year.
Commitment to Our Environment (Continued)

Wuxi Suntech Power Co., Ltd implemented an enhancement project for the acid mist purification tower during the year. Alkaline wastewater can now directly fed into the acid mist purification tower to replace the mixtures of fresh water and Alkali. Also, part of the pipeline is altered so that dilute alkali can be used. This not only reduced the consumption of alkaline chemical, but also conserved fresh water consumption, which led to **RMB88,000** saving per annum.

Wuxi Suntech Power Co., Ltd adopted water recycling system during the year. Water from Ultra Filtration (UF) washing and cooling tower is now recycled and reused. Monthly recycled water from UF washing and cooling tower amounts to **165 tonnes** and **550 tonnes** respectively.



Jiangsu Shunfeng Photovoltaic Technology Co., Ltd. adopted a condensate recycling system with a daily water recycling capacity of 40 tonnes during the year. Since the first operation in February, the system has recycled **12,403 tonnes** of condensate.

### **Environmental Performance Table**

Indicators	Unit	Total
Total Greenhouse Gas (GHG) Emissions	Tonnes of CO <sub>2</sub> e	136,617.76
Direct Emissions (Scope 1)	Tonnes of CO <sub>2</sub> e	1,509.68
Indirect Emissions (Scope 2)	Tonnes of CO <sub>2</sub> e	135,108.08
Intensity of Total GHG Emissions (Scope 1 and 2)	Tonnes of CO <sub>2</sub> e/MW	30.60
Nitrogen Oxides (NO <sub>x</sub> )	kg	11,160.92
Sulphur Oxides (SO <sub>x</sub> )	kg	30.24
Particulate Matter (PM)	kg	127.14
Total Energy Consumption	MWh	199,007.55
Purchased Electricity	MWh	192,051.29
Self-Generated Solar Energy	MWh	470.93
Diesel oil	MWh	1,225.86
Unleaded petrol	MWh	540.12
Natural Gas	MWh	4,719.34
Energy Consumption Intensity	MWh/MW	44.58
Total Water Consumption	m <sup>3</sup>	1,481,480.00
Water Consumption Intensity	m³/MW	331.87
Total Non-Hazardous Waste	Tonnes	5,998.00
Non-Hazardous Waste intensity	Tonnes/MW	1.34
Total Hazardous Waste	Tonnes	5,159.02
Hazardous Waste intensity	Tonnes/MW	1.16
Total Packaging Material	Tonnes	12,980.53
Packaging Material Intensity	Tonnes/MW	2.91

For emissions and resources consumption intensity, the MW of manufacturing capacity include both solar cells and solar modules.

## **Commitment to Our Community**

As part of our long-term commitment to serve the community, we actively seek to join forces with various parties and charitable organizations to support local development.



### **COMMITMENT TO OUR COMMUNITY**

Investing in communities where we operate is an important part of being a good neighbour. Our businesses tailor social investment strategy to the needs of local communities while working to a common global vision and framework.

#### **PV Poverty Alleviation Project**

Poverty alleviation by PV is one of the top ten projects for poverty alleviation in China. In response to the national deployment and thorough implementation of the State Council's poverty alleviation work, Wuxi Suntech has actively promoted photovoltaic poverty alleviation projects in the first half of 2017. After Sunyang Poverty Alleviation Project, Suntech Yijia signed a photovoltaic poverty alleviation project with Shuangliu Town, Yingshan County, Sichuan Province during the year. The project is a village-level demonstration project that includes five village-level ground power stations. After the project is completed, it will bring green power to 33,400 people, increase the income of local residents, and help the poor people in the area to achieve poverty alleviation and prosperity. We have always been adhering to the principle of providing customers with high-quality, high-reliability photovoltaic products. It adheres to strict quality standards in the construction and operation and maintenance of photovoltaic poverty alleviation projects, and also provides comprehensive after-sales service to customers, and will provide effective PV-related poverty alleviation projects. We will implement our technology and products, perform its corporate social responsibilities, and promote the use of new energy in poor villages to make more contributions to the poverty-stricken population.

#### **Charitable Donations**

To repay the society and support the Wujin Gaoxin District charitable development, we have made donation to various charitable organizations to support their community work. After making a RMB500,000 donation to the Changzhou Charity Foundation – Campus Accident Support Foundation, we also signed a donation agreement with the Wujin Charity Federation ("the Federation") that we will donate RMB100,000 per year for 5 years starting from 2017, amounting to RMB500,000 in total. Founded in 2006, the Wujin Charity Federation aimed at promoting humanitarian spirit, Chinese traditional values of helping people in need, advocating the moral trend that conform to the spirit of the times, motivating all walks of life in the society to raise fund for charity, helping the underprivileged and enhancing economic and social development, to build a harmonious society of Wujin.

The funds raised by the federation mainly support poverty alleviation projects (such as medical support, education sponsorship, orphan and elder sponsorship) and cultural charitable activities. For instance, the Federation launched a charitable critical illness insurance campaign to support the poor. In order to get more targeted assistance to the people who become poor because of illness, the Federation changed their way of sponsorship from giving out direct monetary amount to helping the poor to buy charitable critical illness insurance, alleviating a common social problem that people suffer from critical illness always fall back to poverty due to huge sum of medical expenses. Since the launch of the trial charitable critical illness insurance campaign in April 2017, about 300 families were supported by the trial insurance in 5 months with more than RMB1,000,000 donated by the Federation.

# **Performance Metrics**

### Honours and Rewards

Honours or Awards	Organizer
China Best Household Distributed Photovoltaic Brand Enterprise Gold	www.solarpwr.cn
	(太陽能發電網及《太陽能發電》雜誌)
(中國最佳戶用分佈式光伏品牌企業金獎)	Department of Commerce of Jiangey Dravines (江菇尖帝政庭)
Kay educational and Development international Brand of the Jiangsu Province (江蘇省重點培育和發展的國際知名品牌)	Department of Commerce of Jiangsu Province (江蘇省商務廳)
CTC Photovoltaic module power decay rate "leader" certification (CTC 光 伏組件功率衰减率 「領跑者」 認證 )	China Building Material Test & Certification Group Co.,Ltd. (中國建材檢 驗認證集團股份有限公司), National Centre of Supervision and Inspection on Solar Photovoltaqic Products Quality(國家太陽能光伏(電)產品質量監 督檢驗中心)
Top 100 2017 Leading Renewable Energy Companies in China (2017領跑 中國可再生能源先行企業 100 強)	China Yangtze Economic Belt Renewable Energy Equipment Manufacturing Industry Alliance (中國長江經濟帶可再生能源裝備製造業
Top PV Module Brand Award (頂級光伏組件品牌獎)	產業聯盟), China Renewable Energy Society (江蘇省可再生能源行業協會)
Household Distributed Composite Brand Award (戶用分佈式組合品牌獎)	
2017 EUPD德國	EUPD
2017 EUPD 荷蘭	EUPD
2017SNEC吉瓦級金獎	SNEC
2017 Brand of Single Item Top PV Module (2017單項頂級光伏組件品牌)	China Renewable Energy Society 〔江蘇省可再生能源行業協會〕
2017 Brand of Household Distributed Set (2017戶用分佈式組合品牌)	China Renewable Energy Society 【江蘇省可再生能源行業協會】
2017 Polaris Top Ten PV System Household Brands (2017年度「北極星」十大光伏系統戶用品牌)	guangfu.bjx.com.cn 〔北極星太陽能光伏網〕
2017 Polaris Cup Top Ten Photovoltaic Cell and Module Brands (2017年度 「北極星杯」十大光伏電池、組件品牌)	guangfu.bjx.com.cn [北極星太陽能光伏網]
2017 Photovoltaic Module Enterprises (2017年度光伏組件企業)	Solarbe
2017 Gold Award for Household Distributed System Brand (2017年度戶用分佈式系統品牌金獎)	www.solarpwr.cn (太陽能發電網)
2017 Top 10 Influential Brands for China Household PV Modules (2017年 度中國戶用光伏組件十大影響力品牌)	China Household Photovoltaic Assembly Organizing Committee [中國戶用光伏大會組委會]
The 2017 Most Popular Distributed System Integrator (2017年度最受歡迎分佈式系統集成商)	www.taopv.cn
The 2017 Most Popular Distributed Module Enterprise (2017年度最受歡迎分佈式組件企業)	www.taopv.cn
2017 Asia Photovoltaic Innovation Company [2017亞洲光伏創新企業]	Asia Solar

Honours or Awards	Organizer
2017 Embrace Love Charity Project Donation Certificate (2017擁愛計劃公益項目捐贈證書)	Embrace Love Charity Project*
2017 China's Photovoltaic Industry's Most Innovative Companies (2017中國光伏行業最具創新企業)	http://www.solarenpv.com/
2017 Top 20 Chinese PV Companies (2017中國光伏企業 20 強)	PVP365 [365光伏]
2017 Top 20 Chinese PV Module Enterprises (2017中國光伏組件企業 20強)	PVP365 [365 光伏]
2017 Top 20 Chinese PV Module Enterprises (2017中國光伏組件企業 20 強)	in-en.com
2017 Top 10 China Solar PV System Brands [2017中國好光伏戶用光伏系統十大品牌]	in-en.com
2017 China Top 10 Solar PV Modules (2017中國好光伏戶用光伏組件十大品牌)	Photovoltaic Green-ecosystem Organization (PGO)
2017 China Household Photovoltaic Gold Brand Enterprises (2017中國戶用光伏金牌企業)	China Household Photovoltaic Brand-Promotion Alliance
2017 China Household Photovoltaic Brand Alliance Member Unit (2017中國戶用光伏品牌聯盟會員單位)	China Household Photovoltaic Brand-Promotion Alliance
2017 China Household Photovoltaic Brand Enterprises (2017中國戶用光伏品牌企業)	Chinese Renewable Energy Conference and Exhibition ("CREC")
2017 China Top Ten Household PV Module Brand (2017中國十大戶用光伏組件品牌)	China Renewable Energy Society 〔江蘇省可再生能源行業協會〕
Leading Chinese Renewable Entrepreneurs in 2017 (2017年領跑中國可再生能源優秀企業家)	SNEC
Star Enterprise (明星企業)	Changzhou Municipal Committee of the CPC [中共常州市委], Changzhou City People's Government [常州市人民政府]
Changzhou City Labor Certificate of Merit (常州市五一勞動獎狀)	Changzhou City People's Government [常州市人民政府]
Major Industrial Enterprise in the District [區重點工業企業]	Changzhou City Wujin District People's Government (常州市武進區人民 政府)
Jiangsu Famous Brand Certificate (江蘇名牌產品證書)	Jiangsu Famous Brand Strategy Promotion Committee (江蘇省名牌戰略 推進委員會)
Tax Contribution Award—Silver Enterprise (納税大戶獎-銀獎企業)	Chinese Communist Party ("CPC")Changzhou Wujin District Committee [中共常州市武進區委員會] Changzhou Wujin District People's Government (常州市武進區人民政府]

Honours or Awards	Organizer
Technology Innovation Award 2017 [2017年度科技創新獎]	Working Committee of the CPC Wujin National New Technology Industry Development Zone(中共武進國家新技術產業開發區工作委員會) Wujin National High-tech Industrial Development Zone Management Committee(武進國家高新科技術產業開發區管理委員會)
Star Enterprise 2017 (2017年度明星企業)	CPC Changzhou Committee [中共常州委員會] Changzhou City People's Government [常州市人民政府]
Safety Production Demonstration Enterprise 2017 (2017年度安全生產示範企業)	Changzhou Wujin District Safety Production Committee(常州市武進區安 全生產委員會)
New Standard Single Crystal Leading Energy Efficiency Certification (新標單晶一級領跑者能效認證) (單晶 Perc 72片板型組件 STP360 S-24/V fw)	China Quality Certification Centre (CQC)





### Membership of Industry Associations

Country/region	Association	LEVEL OF INVOLVEMENT
China	China Chamber of Commerce for Import and Export of Machinery and Electronic Products (中國機電產品進出口商會)	Vice President Unit
Singapore	Asian Photovoltaic Industry Association (APVIA)	Member
China	China Household Photovoltaic Brand- Promotion Alliance (中國戶用光伏品牌推廣聯盟)	Member

### **Industry Participation**

Event	Organizer
PV CellTech 2017	PV CellTech 2017 Committee
SNEC 11th (2017) International Photovoltaic Power Generation Conference &Exhibition	Asian Photovoltaic Industry Association (APVIA), Chinese Renewable Energy Society (CRES), Chinese Renewable Energy Industries Association (CREIA), Shanghai Science & Technology Development and Exchange Center (SSTDEC), Shanghai Federation of Economic Organizations (SFEO), Shanghai New Energy Industry Association (SNEIA)
Intersolar Europe 2017	Solar Promotion GmbH
Renewable Energy Asia 2017	UBM Asia (Thailand) Co., Ltd.
Solar Power International 2017	Solar Energy Industries Association
12th AsiaSolar Photovoltaic Innovative Technology Exhibition & Cooperation Forum [第十二屆亞洲太陽能光伏創新技術展覽會]	China Society of Inspection and Quarantine Photovoltaic Green- ecosystem Committee(CSIQPGC), Photovoltaic Green-ecosystem Organization (PGO) China Household Photovoltaic Brand-Promotion Alliance (CHPBA)
Renewable Energy World India & Central Asia	Pennwell Corporation
2017 Intersolar South America	Solar Promotion International GmbH
2017 2nd China Distributed PV Quality Construction Summit Forum (Beijing) (2017第二屆中國分佈式光伏品質建設高峰論壇(北京))	www.solarpwr.cn [太陽能發電網及《太陽能發電》雜誌]
2017 National Household Photovoltaic Brand Tour Exhibition (Zhejiang) [2017全國戶用光伏品牌巡迴展(浙江)站]	China Society of Inspection and Quarantine Photovoltaic Special Committee (CSIQPSC), Photovoltaic Green-ecosystem Organization (PGO), China Household Photovoltaic Brand- promotion Alliance (CHPBA), Hangzhou Renewable Energy Association (杭州市可再生能源行業協會)

Event	Organizer
China Household Photovoltaic Standardization Alliance Launch Ceremony (Shanghai) (中國戶用光伏標準化聯盟發起儀式(上海))	China Association for Standardization of Solar Energy Applications (中國標準化協會太陽能應用分會)
13th CSPV "Outdoor Testing and Certification" Forum (Xuzhou) (13th CSPV "戶外實證檢測與認證"專題論壇(徐州))	China Building Material Test & Certification Group Co., Ltd. And National Center of Supervision and Inspection on Solar Photovoltaic Products Quality
2017 The 7th "Strategy of Innovation and Development of the "One Belt and One Road" Distributed Energy in the Yangtze River Economic Belt (Nanjing) (2017 第七屆加強應用長江經濟帶「一帶一路」分佈式能源創新發 展論壇(南京))	China Yangtze Economic Belt Renewable Energy Equipment Manufacturing Industry Alliance [中國長江經濟帶可再生能源裝備製造業產業聯盟], Jiangsu Provincial Renewable Energy Industry Association (江蘇省可再生 能源行業協會)
The 9th Chinese (Wuxi) Renewable Energy Conference and Exhibition [第九屆中國(無錫)國際新能源大會暨展覽會)	National Energy Administration(國家能源局), China Council for the Promotion of International Trade(中國國際貿易促進委員會) and Jiangsu Provincial People's Government (江蘇省人民政府)
2017 The 12th China (Jinan) Solar Energy Utilization Conference and Exhibition (2017第十二屆中國(濟南)國際太陽能利用大會暨分佈式光伏發電 展覽會)	People's Government of Shangdong Province(山東省人民政府)、 China General Chamber of Commerce (中國商業聯合會)
Solar Power Expo China 2017 (2017中國國際太陽能發電應用展覽 會暨光伏四新展)	China Electricity Council(中國電力企業聯合會), Construction Industry Sub-Council, China Council for the Promotion of International Trade(中國國際貿易促進委員會建設行業分會), Electric Power Industry Office of China Council for the Promotion of International Trade (中國國際貿易促進委員會電力行業委 員會), China Council for the promotion of International Trade Beijing Sub-council (中國國際貿易促進委員會北京市分會)

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