



UNITED PHOTOVOLTAICS GROUP LIMITED

聯合光伏集團有限公司

Hong Kong Stock Code 香港股份代號: 00686



Environmental, Social and
Governance Report

環境、社會和管治報告

2015

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Chairman's Statement

主席寄語



At the end of 2015, the world turned the spotlight to Paris, where the ongoing 21st Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (“COP21”) was working on decisions to help human beings to control and slow down the trend of environmental deterioration in the next ten years, or twenty years or beyond. All the countries attended the conference adopted the *Paris Agreement*, which sets a goal of climate change control: to limit global warming to less than 2°C compared above pre-industrial levels, to reach global peaking of greenhouse gas (GHG) emissions as soon as possible, and to achieve a zero net GHG emission during the second half of the 21st century.

Energy is the engine of the modern industrial society and the foundation for the explosive growth of human productivity and creativity. However, the way we obtained energy has severely damaged the Earth in the past 100-200 years. Huge amounts of GHG emissions from burning fossil fuels became the main reason for climate change acceleration during the past century. In the future, we still need modern energy to support our development, and we will turn to use environmental friendly clean and renewable energy, especially the inexhaustible solar power. In September 2015, the United Nations announced the updates of Millennium Development Goals—the *Sustainable Development Goals*, which sets a wide range of development goals. It clearly pointed out that the reinforcement on clean and renewable energy research and application in the future helps to ensure the affordable, reliable and sustainable modern energy to all of us.

2015年底，全球目光都匯聚到巴黎——這裡正在召開的《聯合國氣候變化框架公約》第21次締約方大會（簡稱「巴黎氣候大會」）決定了未來十年、二十年甚至更長遠的時間內，人類能否控制地球環境逐漸惡化的趨勢。在大會上，各國一致通過了《巴黎協定》，制定未來控制氣候變化的目標：把全球平均氣溫升幅控制在工業革命前水平2攝氏度之內，溫室氣體排放儘快達到全球峰值，本世紀下半葉實現溫室氣體淨零排放。

能源，是工業社會的動力，是我們之所以能夠進入現代化社會、促使人類生產力和創造力呈爆炸式增長的基礎。可是人類獲取能源的方式卻也在過去的一、兩百年間給我們的地球家園造成了難以恢復的傷害。燃燒化石燃料所大量產生的溫室氣體是近百年來氣候變化過程加劇的主要原因。社會的發展，人類的進步仍然需要現代能源的支撐，我們在未來所尋找的是和傳統能源不同的，更加環保、更具開發潛力的清潔能源，這其中有不竭的太陽能。2015年9月，聯合國公佈了最新的涵蓋廣泛的《可持續發展目標》，其中也明確提出，加強清潔能源和可再生能源在未來的研究與應用，確保人人獲得可負擔、可靠、可持續的現代能源。



United Photovoltaics Group Limited (“United PV” or “we”) focuses on photovoltaic power generation and carries the mission to benefit everyone with solar power. Photovoltaics (“PV”) is the name of a method of converting solar energy, which is inexhaustible, into direct current electricity, has been long seen as a promising clean energy production available to all with minimal environmental pollutions. Compared with other renewable energy, the construction of solar power plants is less dependant on geographical environment, as they can be built either on rooftops or in areas of complex terrain, such as desert, massif and bog.

The tenet to which we adhere is: “To create green energy and help our society move towards clean and sustainable consumption and production”. We acquired our first solar power plant in 2013, and since then, our total installed capacity has increased by seven times within two years. In 2015, our total electricity generation increased by 77%, compared to that of the year 2014. Such increase in electricity generation volume signifies our growing contributions to environmental protection. In line with our growth in installed capacity and electricity generation volume, we have been publishing data on our electricity generation volume quarterly and make use of a mobile App called iNEX to promote the public awareness and familiarity of photovoltaic power generation and its environmental benefits.

We believe that all value chain partners must devote together to PV industry innovation and development to grow the industry bigger and stronger. Back in 2013, we jointly founded the Photovoltaic Green Ecological Collaborative Organization (PGO) with China Merchants New Energy Group Limited (“CMNEG”), a substantial shareholder of the Company. PGO is an industrial platform that opens to all downstream and upstream partners, where they can, on the basis of complementary advantages, efficiently collaborate in the construction, acquisition and operation of high-quality solar power plants. In 2015, we are the only Hong Kong-listed company chosen by the “Top Runner” Program introduced by the National Energy Administration, which is a significant recognition of our development, construction, operation and maintenance ability. Meanwhile, we worked with Huawei Technologies Co., Ltd. to develop the Global Smart PV Cloud Management Center to enhance our management of plants scattered across the country and operation efficiency. It is a bold and transformative step to create a new management and operation model combining the PV industry and Internet+.

聯合光伏集團有限公司(「聯合光伏」或「我們」)作為一家專注於光伏發電的企業，讓太陽能未來惠及千家萬戶是我們重要的使命。光伏發電，是把人類有生之年都不會枯竭的太陽能轉化為直流電，發電過程幾乎不會對環境產生污染。同時相比其他新能源發電方式，光伏電站對地域環境的受限程度較小，既能建造在建築屋頂上，又能建造在沙漠、山丘、沼澤等地形複雜地區。

我們始終秉承「打造綠色能源，讓社會以更清潔、更可持續的方式進行生產和消費」的宗旨。從2013年收購第一座光伏電站開始，聯合光伏旗下電站總裝機量在兩年時間裡增加了7倍，2015年的總發電量比2014年增加了77%。隨著發電量不斷提升，我們對環境保護的貢獻愈加顯著。在不斷提高光伏電站裝機量與發電量的基礎上，我們堅持每季度公佈發電量數據，並且利用手機應用程序「綠信」，致力於讓社會大眾瞭解和熟悉光伏發電，及其帶來的環保效應。

我們始終相信，要將光伏行業做大做強，需要光伏產業鏈上的夥伴一同投入到行業的創新與協同發展中。我們早在2013年與招商新能源集團有限公司(「招商新能源」)(本公司的主要股東)共同創建了光伏綠色生態合作組織(PGO)，將其作為面向所有上下游夥伴的光伏產業平台，旨在加強合作夥伴間分工合作、優勢互補，快速有效地推進優質光伏電站項目的建設、收購與運營。2015年，我們成為唯一入選國家能源局推動的「領跑者計劃」的香港上市公司，聯合光伏的開發、建設和運維實力再次得到認可。與此同時，我們還借助華為技術有限公司尖端科技技術打造「全球光伏電站智能營維雲中心」，提升了本集團遍佈全國的光伏電站管理和運營效率，大膽地開啟了光伏產業與互聯網+相結合的運維管理模式。

“People Oriented” is our philosophy so that we care about the health and happiness of our employees in workplace and help them to make progress in their career paths. We also care about our local communities and supply them with convenient and reliable electricity, while the local residents nearby are able to carry out agricultural, fishery and animal husbandry production activities by virtue of the advantage of our solar power plants.

The PV industry is of great potential in future. In China’s 13th Five-Year Plan, the targets for PV industry are to raise the proportion of solar electricity generation in overall electricity structure to 7%, and among newly added electricity structure, raise to 15% by 2020. We will continue to work with more partners for acquisition and development of solar power plants within and outside of China, and to collaborate with the Internet and financial industries for crossover innovation. By fulfilling our mission of “to build a green home, and fulfill the dreams of millions of families,” more people will have access to green and clean energy. On our way to the future, you will be with us to witness a new era of clean energy for everyone.

我們堅持「以人為本」的理念，同時關心員工，幫助員工健康快樂地工作，在職業道路上獲得更好的發展；我們也關心社區，為數十萬家庭提供方便、穩定的電能。同時電站所在地周邊居民可以結合我們的電站開展豐富的農、漁、牧生產活動，為社區創造共享價值。

光伏產業在未來擁有巨大的發展潛力。國家「十三五」規劃對光伏產業的總體目標是到2020年，光伏發電在電力結構中佔比7%，新增電力結構中佔比15%。未來，我們將繼續聯合行業力量，在國內和國外地區收購、開發光伏電站，加強光伏與互聯網、金融等產業的交叉創新，踐行「共同建設綠色家園，成就億萬家庭夢想」的使命，讓更多人能夠獲得綠色、清潔的能源。在我們不斷前行的路途中，希望有您和我們一同見證清潔能源走入你我生活。

Mr. Li, Alan
Chairman, Chief Executive Officer
United Photovoltaics Group Limited
March, 2016

李原
聯合光伏集團有限公司
董事會主席兼首席執行官
2016年3月



About the Report 關於本報告



This report is the first Environmental, Social and Governance (ESG) Report of United Photovoltaics Group Limited (“United PV” or “we”) about its environment and social responsibility performance. This report is published in both Chinese and English with the reporting period from 1 January to 31 December 2015.

Publication

This report is available on our website: (www.unitedpvgroup.com/en/investor-relations) and that of the Stock Exchange of Hong Kong Limited. A mobile version of this report is also available through our official WeChat public account (ID: unitedpvgroup).



Reporting Reference

This report was prepared in accordance with *Guideline for Environmental, Social and Governance Reporting* issued by the Stock Exchange of Hong Kong Limited, and the *G4 Sustainability Reporting Guidelines (G4 Guideline)* issued by the Global Reporting Initiative (GRI) to disclose our ESG information under universal guidelines.

Reporting Content and Boundary

In accordance with the *G4 Guideline* reporting principles of stakeholder engagement, sustainability context, materiality, and completeness, we performed the “Materiality Analysis” to identify specific issues and their boundaries.

Report Scope

Unless otherwise stated, all cases and data disclosed in this report are collected from United PV and its subsidiaries (the “Group”) and associates.

Report Reliability

The Company assures that this report does not contain false or misleading information.

You are welcome to download the Feedback Form at www.unitedpvgroup.com/en/investor-relations to submit your comments and ideas, which will help us continuously improve our work.

本報告是聯合光伏集團有限公司(「聯合光伏」或「我們」)第一份環境、社會及企業管治(Environmental, Social and Governance, ESG)報告，重點披露公司環境與社會責任相關信息。報告同時發佈中、英文版，時間跨度為2015年1月1日至2015年12月31日。

報告發佈渠道

本報告可通過我們官方網站，地址為(www.unitedpvgroup.com/c/investor-relations)及香港交易所網站瀏覽和下載。讀者還可從我們官方微信公眾號平台(帳號：unitedpvgroup)查閱適用於移動平台的報告。

報告參考標準

在確保符合香港聯合交易所有限公司《環境、社會及管治報告指引》要求以外，報告編寫重點參考了全球報告倡議組織(GRI)《可持續發展報告編寫指南(G4)》，力求ESG相關信息披露符合業界通行標準。

報告內容及邊界

遵循G4指南報告編寫的「利益相關方參與、可持續發展背景、實質性和完整性」原則，我們通過實質性分析確定議題實質性。

報告範圍

如無特別說明，本報告所有案例與數據均來源於聯合光伏及其附屬公司(合稱「本集團」)及其聯繫人。

報告可靠性保證

本公司保證本報告內容不存在任何虛假記載和誤導性陳述。

若您對本報告有任何意見或建議，歡迎您於www.unitedpvgroup.com/c/investor-relations下載「讀者反饋」，以幫助我們持續改進。

United PV and ESG 聯合光伏與ESG



Company Profile

United Photovoltaics Group Limited (“United PV,” the “Company” or “we”, together with its subsidiaries, the “Group”) is an investor and operator focusing on solar power plants. We concentrate on the fast-growing solar power plant market in China with the vision to become one of the best solar power plants operation platform.

“To build a green home, and fulfill the dreams of millions of families” is our mission. We are committed to industrial collaboration and innovation, aiming at creating an open, inclusive, inter-connecting and sharing industry ecological environment along with the industry partners. The intersection of industry and technology will bring together the business partners in the industry chain and the technical elites from various fields, to build a more scale-beneficial and professional operation platform for solar power plants, and to encourage more people to join the green business, and build green homes.

United PV focuses on the development, investment, operation and management of solar power plants. Through acquiring grid-connected solar power plants, we are able to integrate the finest resources in the industry, and thus accelerate the growth of the industry.

Rooted in China, United PV also set sights on international market. We plan to gradually expand our business to Europe, North America, Australia, Japan and other overseas regions along the “One Belt One Road” strategy to build a global leading PV company.

公司概况

聯合光伏集團有限公司(「聯合光伏」、「本公司」或「我們」, 及其附屬公司合稱「本集團」)是一家專注太陽能發電站的投資運營商。本公司深耕於快速增長的中國太陽能發電站市場, 願景是打造領先的光伏發電站運營平台。

「共同建設綠色家園, 成就億萬家庭夢想」是我們的使命。聯合光伏致力於加強合作與創新, 打造開放包容、互聯共享的行業生態環境, 在產業和科技兩個層面聯合全產業鏈合作夥伴和各領域技術精英, 建設更具規模效益及更專業的太陽能電站運營平台, 讓更多人投身綠色事業, 建設綠色家園。

聯合光伏專注於太陽能發電站的開發、投資、運營及管理。通過收購已併網的光伏電站項目, 整合行業內優質資源, 帶動光伏全產業鏈迅速發展。

我們植根於中國, 著眼於全球光伏市場, 未來計劃將業務佈局逐步拓展至歐洲、北美、澳洲、日本及「一帶一路」沿線國家等海外地區, 致力於打造國際化光伏行業龍頭公司。

Total Installed Capacity in 2015
2015年總裝機容量達

976 MW 兆瓦

Electricity Generation
Volume in 2015
2015年總發電量達

860 million KWh
百萬千瓦時

As of 31 December 2015, The Group and its associates beneficially owned 25 solar power plants with a total installed capacity of 976 MW across Qinghai, Inner Mongolia, Hubei, Shanxi, Gansu, Xinjiang, Jiangsu, Guangdong and Yunnan.

於2015年12月31日，本集團及聯營公司旗下實益擁有太陽能電站25個，遍佈青海、內蒙古、湖北、山西、甘肅、新疆、江蘇、廣東和雲南，總裝機容量達976兆瓦。



Corporate Governance

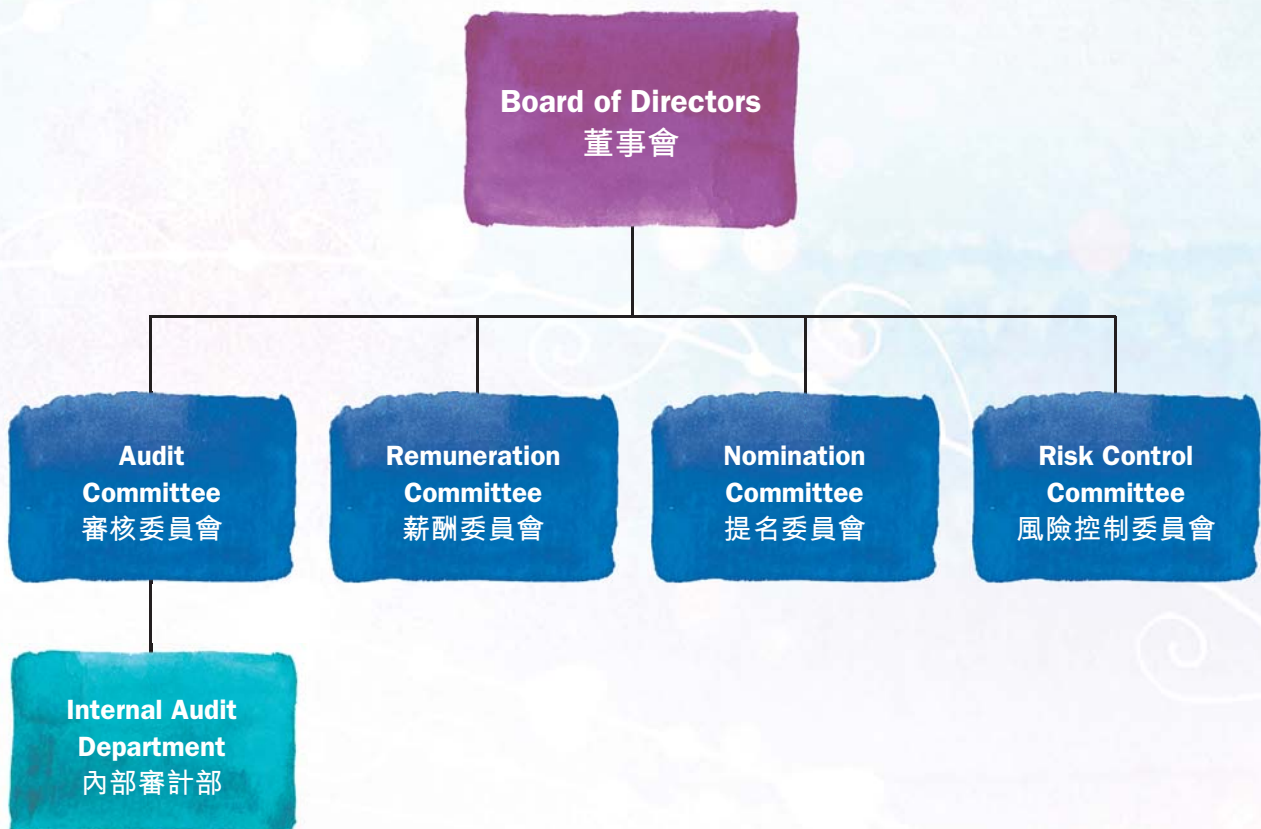
United PV is listed on the Main Board of the Stock Exchange of Hong Kong Limited, with stock code 00686.HK.

The Board of Directors is our highest governance body. Our board has established four committees — the Audit Committee, the Remuneration Committee, the Nomination Committee and the Risk Control Committee.

企業管治

聯合光伏的普通股股份於香港主板上市，股票代碼 00686.HK。

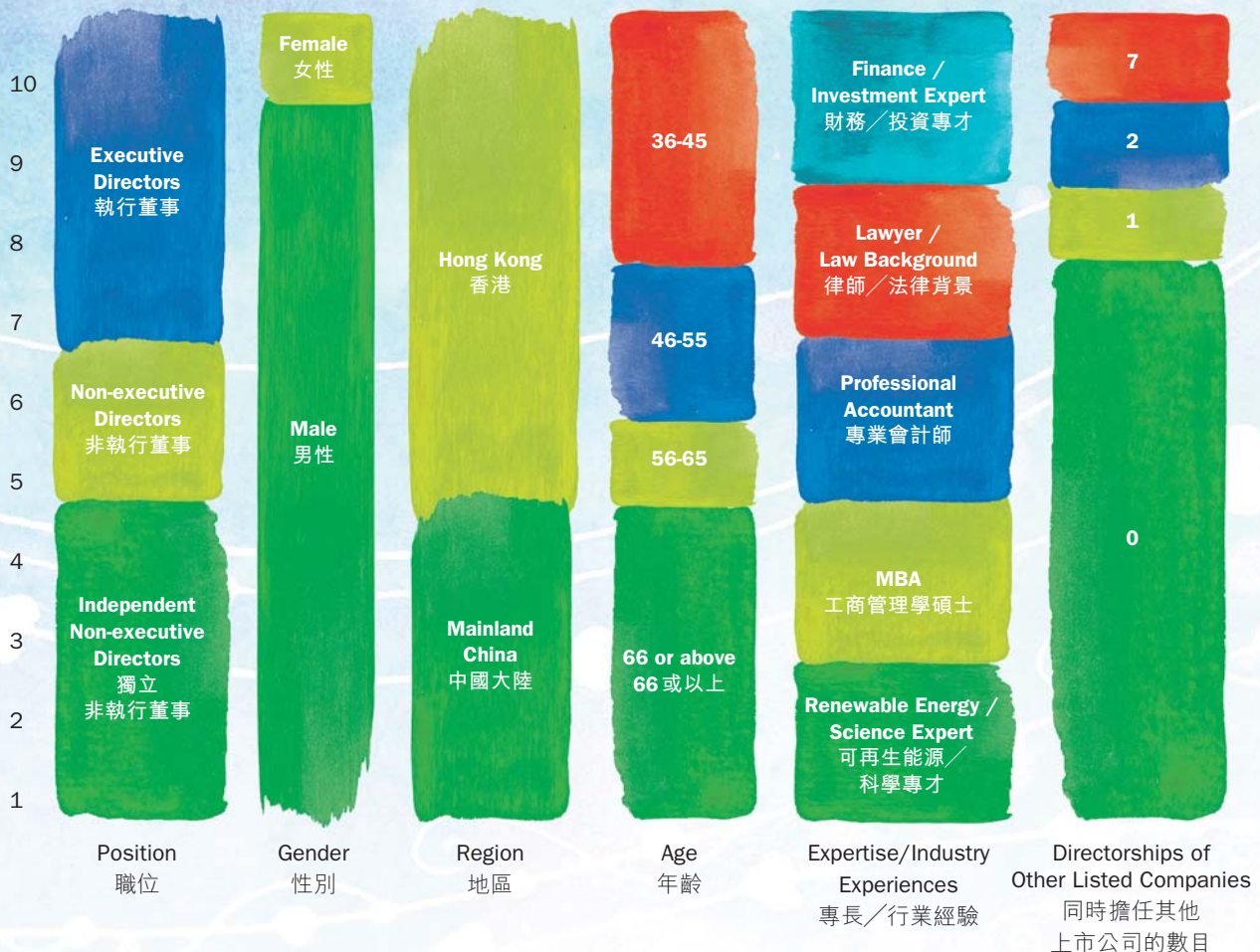
董事會是我們最高治理主體。董事會下設四個委員會，分別為：審核委員會、薪酬委員會、提名委員會與風險控制委員會。



By the end of 31 December 2015, the board consisted of 10 members, including four executive directors, two non-executive directors, and four independent non-executive directors.

截至2015年12月31日，董事會共由10名成員組成，其中四名董事為執行董事，兩名董事為非執行董事，四名董事為獨立非執行董事。

Board Composition Diagram 董事會組成分析圖



We formulated policies of the *Code of Corporate Governance*, *Compliance Manual*, *Policy of Board Diversity* and *Inside Information Policy and Procedures Manual*, to guide our operations on corporate governance, compliance, work ethics, legal requirements, confidential and proprietary information, as well as inside information identification. We engaged external lawyers, auditors and other professionals to provide training to directors and employees on corporate compliance and ESG requirements. Sharing and trainings on compliance and corporate governance have been organized internally to ensure all of our employees, management and directors are aware of related policies and procedures.

We have established an internal control system based on the international principles, *Enterprise Internal Control Guidelines and Application Guidelines for Enterprise Internal Control* issued by the Ministry of Finance of the PRC. The effectiveness and reasonableness of this system are subject to internal audit. With the help of a sound corporate governance structure and an effective internal system, we achieved better compliance with applicable laws and internal regulations. As a result, we could maintain a sound and sustainable development.

我們制定了《企業管治政策》、《企業合規管理手冊》、《董事會多元化政策》和《內幕消息政策及程序手冊》對企業管治、企業合規、職業道德指引、法律標準、保密及專有資料、內幕消息識別和處理等事務進行指導。此外，我們聘請外部律師、審計師等專業人士在年內為董事及僱員提供了企業合規和ESG標準相關培訓，並在本公司內部開展了多次法律合規和企業管治的專題分享和培訓，以確保我們的每一位僱員、高管和董事都瞭解並遵守相應政策程序。

我們依據國際通用的內部控制準則、中國財政部發佈的《企業內部控制基本規範》及《企業內部控制規範應用指引》建立了內部控制體系，並通過內部審計對體系的有效性、合理性進行監督與評價。通過良好的企業管治結構及有效的內控體系，我們保證了適用法律及內部制度的有效執行，減低了腐敗風險和違法違規風險，從而推動企業的健康及可持續發展。

ESG Management

ESG Ideas

We hold our mission of “to build a green home, and fulfill the dreams of millions of families”, and integrated ESG responsibilities into our corporate strategy and operation to create shared value for the society, and achieve sustainable growth.

In 2015, our core ESG management and practice areas are “Top Runner of PV Industry,” “Supplier of Green Energy,” and “Caregiver to Communities.” We have set up an information disclosure procedure based on ESG reporting, and are developing a standardized and effective ESG management system.

ESG 管理

ESG 理念

我們謹記「共同建設綠色家園，成就億萬家庭夢想」的使命，將ESG責任理念融入我們的企業戰略與運營實踐中，為社會創造共享價值，與社會共同實現可持續發展。

2015年，我們以「光伏行業領跑者」、「綠色能源打造者」、「社區人文關愛者」為ESG管理與實踐的核心內容，以ESG報告編制為基礎加強信息披露管理，逐步建立規範和有效的ESG管理制度體系。

A Top Runner of PV Industry 光伏行業領跑者

As a leading market player, we are always bringing in innovation to our solar power plant operation, management, and finance models. We are promoting communication and cooperation in the industry to share the growth and sustainable development with our partners.

我們作為行業翹楚，不斷在光伏電站運營管理、光伏行業金融模式等方面進行創新，樹立行業標桿。同時我們積極推動行業交流與合作，攜手合作夥伴共同成長、共享可持續發展價值。

A Supplier of Green Energy 綠色能源打造者

We follow our mission to provide clean and green energy to the society. By managing our environmental impacts from operation, we are aiming at becoming a role model in energy conservation and emission reduction.

我們秉承使命，為社會提供綠色、清潔的能源，通過嚴格控制自身運營帶來的環境影響，成為節能減排、打造綠色家園的表率。

A Caregiver to Communities 社區人文關愛者

We care about our employees and the communities. It is our major responsibility to help employees to achieve a happy and balanced life, and to share our development benefits with our communities and to have a better life for the future.

我們關心員工，也同樣關心我們所植根的社區。讓員工幸福快樂，獲得工作與生活的平衡；讓社區共享我們的發展成果，生活水平逐步提高，是我們重要的責任。

ESG Issue Identification and Evaluation

We performed a detailed materiality analysis to ESG issues as the first step of preparing this report to ensure the report contents meet the stakeholders' expectations.

We conducted an identification and analysis of ESG issues in accordance with G4 Guideline. Thirteen material issues that are highly related to PV industry and our Company had been identified, and their impacts and importance to stakeholders and our business were assessed through a multi-dimensional analysis. The results from this analysis were used as basis of the contents disclosed in this report.

ESG 議題識別與評估

我們在 ESG 報告編製工作之初針對不同 ESG 議題進行了詳盡實質性分析，確保報告中披露內容實質回應各利益相關方的期望。

我們遵照《G4 指南》對本公司相關的 ESG 議題進行識別和分析。通過多維度的分析，我們識別出和光伏行業及公司自身關聯程度最高的 13 項議題，並分別就這些議題對利益相關方的影響程度和對本公司運營發展的重要程度進行評估，綜合確定每個議題的實質性高低，作為報告披露內容的重要選擇依據。



Through the materiality analysis matrix, we assessed each issue in two dimensions and sorted them into three groups: high materiality, moderate materiality, and low materiality issues. The difference in levels of materiality not only served as evidence to determine the report contents, but also a strategic basis for the future ESG management and practice.

我們通過實質性分析矩陣，根據每一個議題在兩個維度上的評估結果，區分高實質性議題、中實質性議題和低實質性議題。議題實質性的高低不但將作為本報告中 ESG 信息披露程度的確定依據，也將作為本公司未來 ESG 管理和實踐的戰略依據。

ESG Issue Materiality Matrix ESG 議題實質性分析矩陣



	Issues 議題	Disclosure in the Report 報告披露位置
High Materiality 高實質性議題	Carbon Emission Management 碳排放管理	A Supplier of Green Energy 綠色能源打造者
	Industrial Cooperation Promotion 推動行業合作發展	A Top Runner of PV Industry 光伏行業領跑者
	Business Strategy and Performance 經營戰略與績效	United PV and ESG — Company Profile, A Supplier of Green Energy — Providing Green and Clean Energy 聯合光伏與ESG — 公司概況、綠色能源打造者 — 提供綠色清潔的能源
	Energy Consumption 能源消耗	A Supplier of Green Energy — Providing Green and Clean Energy 綠色能源打造者 — 提供綠色清潔的能源
	Occupational Health and Safety 職業健康安全管理	A Caregiver to Communities — Occupational Health and Safety Management 社區人文關愛者 — 職業健康與安全管理
Moderate Materiality 中實質性議題	Compliance 合規管理	United PV and ESG — Corporate Governance, A Top Runner of PV Industry — Promoting Industry Cooperation and Communication 聯合光伏與ESG — 企業管治、光伏行業領跑者 — 促進行業合作交流
	ESG Management for Suppliers 供應鏈社會責任管理	A Top Runner of PV Industry — Developing Together with Supplier Partners, A Supplier of Green Energy — Minimizing Operational Environmental Impacts 光伏行業領跑者 — 與供應商夥伴一同發展、綠色能源打造者 — 減少運營環境影響
	Philanthropy 社會公益行動	A Caregiver to Communities — Co-development with Our Communities 社區人文關愛者 — 我們與社區共發展
	Employees Care 員工關懷與和諧工作	A Caregiver to Communities — Protecting Employees' Rights 社區人文關愛者 — 保障員工權利
	Diversity and Equality 多元化與平等	A Caregiver to Communities — Protecting Employees' Rights 社區人文關愛者 — 保障員工權利
	Career Development 員工職業發展	A Caregiver to Communities — Career Development Paths 社區人文關愛者 — 職業發展通道
	Water Resource Management 水資源管理	A Supplier of Green Energy — Minimizing Operational Environmental Impacts 綠色能源打造者 — 減少運營環境影響
Low Materiality 低實質性議題	Waste Management 廢棄物管理	A Supplier of Green Energy — Minimizing Operational Environmental Impacts 綠色能源打造者 — 減少運營環境影響

Honors and Recognitions

On 25 November 2015, Morgan Stanley Capital International (“MSCI”) included the Company as a constituent of Global Small Cap China Index, with effect from 30 November 2015.

On 16 November 2015, China Securities Golden Bauhinia Award granted the Company the “Most Innovative Listed Company Award” leveraging on our excellence in production-finance integration, technology innovation and financial results.

On 12 October 2015, the Company was recognized as one of the “Global Top 500 New Energy Enterprises” and received the “Development Potential Award” at the “5th Global Top 500 New Energy Enterprises Ceremony & 2015 New Energy Development Summit.” As the nomination foundation of the selection, since 2011, the National Energy Administration listed the *Research in Global Top 500 New Energy Enterprises* as a soft science project.

On 31 August 2015, Hang Seng Composite Index (HSCI) Series included the Company in its five major indexes, namely HSCI, HSCI — industrials, Hang Seng Composite MidCap & SmallCap Index, and Hang Seng Composite SmallCap Index, with effect from 14 September, 2015.

榮譽認可

2015年11月25日，摩根士丹利國際資本公司(MSCI)將本公司納入全球小型股中國指數成份股，於2015年11月30日起生效。

2015年11月16日，憑藉在產融模式創新、先進技術創新以及經營業績等方面的優異表現，本公司榮獲聯合中國證券金紫荊獎「最佳創新上市公司獎」。

2015年10月11日，在第五屆全球新能源500強發佈會暨2015全球新能源發展高峰論壇中聯合光伏入圍「全球新能源企業500強」，同時還獲得「發展潛力獎」。作為該評選活動基礎的《全球新能源企業500強研究》於2011年開始被列為國家能源局軟科學課題。

2015年8月31日，本公司被納入恒生五大指數：恒生綜合指數系列(恒生綜合指數、恒生綜合行業指數 — 工業、恒生綜合中小型股指數、恒生綜合小型股指數)及環球綜合指數，於2015年9月14日起生效。



2015 Key ESG Performance

2015 年關鍵 ESG 績效



859,730 MWh

兆瓦時

Generated electricity volume in 2015 which was a 77% increase compared to 2014, and was approximately **equivalent to:**
Saving standard coal 280,000 tons
Reducing carbon dioxide 740,000 tons
40,000,000 **trees planted** per annum
500,000 families demands for **electricity in a year**

2015 年全年光伏發電總量
相比 2014 年增長了 77%。約相當于：
節約標準煤 280,000 噸
減排二氧化碳 740,000 噸
40,000,000 棵樹一年內的**二氧化碳吸收量**
500,000 戶人家**一年用電量**



35%

Waste recycling rate in 2015
2015 年廢棄物回收率



68.1%

Average waste-water recycling
rate of solar power plants in 2015
2015年光伏電站平均耗水回收率

0

safety accidents
安全事故
in 2015
2015年

14

Members of Photovoltaic Green
Ecological Collaborative Organization
(PGO), which was jointly founded by the
Company and CMNEG

我們與招商新能源共同創建的
光伏綠色生態合作組織
(簡稱「PGO」)成員數目

A Top Runner of PV Industry 光伏行業領跑者



As is emphasized in the *United Nations Sustainable Development Goals*, United PV believes it is important to strengthen clean energy cooperation in the fields of technology research and development, along with investment, and infrastructure construction. China's 13th Five-Year Plan and *Strategic Action Plan for Energy Development (2014-2020)* also clearly propose to push forward energy reformation and accelerate the breakthrough of core technologies to promote new energy industry development through technology innovation and upgrade. As one of the key development areas for China energy reformation, the PV industry will bring new opportunities for its economic development, while cooperation of the whole industry is required to achieve its innovation, transformation, upgrade and breakthrough.

Utilising our own advantages, United PV continues to innovate in solar power plants financing, operation and technical support in the industry development and cooperation. We are the first company in the industry to apply Global Smart PV Cloud Management Center (the "Center") in solar power plant operation and maintenance. By connecting new energy with the technology of the Internet and the "Internet of Things", we made operation management more efficient and laid a foundation for future transformation and upgrade of our industry.

We are actively building the exchange and cooperation platform throughout the industrial chain, aiming at integrating various resources to help the industry players develop together. We work with top domestic photovoltaic enterprises to expand photovoltaic ecosystems for the industry's rapid development by establishing the PGO and participating in "Top Runner" Program. We cooperated with raw material suppliers, equipment manufacturers, power operators, consulting service providers and other professional firms in various fields to build a leading and professional solar power plant operation platform in China.

在聯合國發佈的「可持續發展目標」中，聯合光伏認為加強對清潔能源技術研發、投資、基礎建設等領域的合作是其強調的重要目標之一。中國「十三五」規劃和《能源發展戰略行動計劃(2014-2020年)》也明確提出要推進能源改革，加快突破新能源核心技術，以技術創新和升級等方式促進新能源產業發展。光伏發電行業作為我國能源改革的重點發展領域，將為我國經濟發展帶來新的契機。而實現光伏發電產業創新、轉型升級、再獲突破，離不開全產業的通力合作。

在這股行業發展合作浪潮中，聯合光伏發揮自身優勢，不斷在光伏電站融資、運營、技術支持方面進行創新。我們在行業內率先應用全球光伏電站智能營維雲中心("中心")，借助新能源與互聯網、物聯網技術相結合的優勢使光伏電站的運營管理更高效，為未來光伏行業向智能化方向轉變奠定了基礎。

我們還積極打造貫穿產業鏈的交流和合作平台，整合行業多方資源，讓從業者發展更齊心。通過創建光伏綠色生態合作組織、參與「領跑者」計劃等項目，我們攜手國內一流光伏企業，共同擴大光伏生態圈、推動光伏行業快速發展。我們與原材料供應商、設備製造商、電力運營商、諮詢服務商及其他專業機構等在多個領域開展合作，致力於打造中國領先及專業的太陽能發電站運營平台。

Break-through Innovations

Innovation, technology upgrade, operation and management optimization, and industry cooperation optimization are the basics for a company to increase competitiveness and to realize sustainable development. We have been promoting intra-industry cooperation and inter-industry resources sharing. Driven by the national development strategies for the “Internet +” and the “Internet of Things”, we have also explored innovation and breakthrough in multidimensional aspects such as operation and maintenance models, financial models and advanced technology to contribute to the overall economic benefits enhancement and sustainable development of our industry.

Establishing Global Smart PV Cloud Management Center

We are refining our management in an intensive and smart way to achieve centralized management in four dimensions covering production, personnel, assets and data, thus to achieve delicacy management to reduce operation and maintenance costs. In July 2015, we worked with the global leader in Internet technology—Huawei Technologies Co., Ltd. and set up a Global Smart PV Cloud Management Center for PV power plant operation and maintenance of the Group. The Center enables us to apply effective real-time management on solar power plants throughout China and enhance power plants' operation efficiency and our business returns.

無處不在的創新突破

堅持創新發展，實現產業技術升級，優化企業經營管理與產業合作方式，是企業提升競爭力，實現可持續發展的基礎。聯合光伏不斷推進行業合作與跨行業資源共享，結合我國「互聯網+」與物聯網發展戰略，積極探索從運維方式、金融模式及高新技術等多維度的創新與突破，以此參與到光伏行業整體經濟效益提升與可持續發展的浪潮中來。

構建全球光伏電站智能營維雲中心

我們著力發展集約化、智能化的管理方式，努力實現生產、人員、資產和數據四個維度的統一管理，以推動本公司精細化管理，有效降低運維成本。2015年7月，我們聯合全球互聯網技術領軍企業華為技術有限公司，創立了「全球光伏電站智能營維雲中心」用於本集團電站運維和管理，該中心對本集團遍佈全國的太陽能發電站進行實時有效的管理，提升了電站運營效率與本公司經營效益。



Global Smart PV Cloud Management Center
全球光伏電站智能營維雲中心



The Center adopts cloud technology, big data and 4G wireless communication. The Center has the features of mass data access, storage and high-speed computing power, integrated with the design of high-speed wireless data communication among power plant equipment, power plant managers, and the Center. It also supports mobile smart operation and maintenance by use of mobile terminals. It improved the level of our delicacy management and centralized monitoring of the power plants.

The Center can access to multiple power plants in different locations around the world for centralized management. Through real-time monitoring of production and operation status, collecting and analyzing historical operating data, the Center can achieve unified, standardized and digital management on power plants' daily work and process, through which related facts and data are used to make scientific decisions to enhance management efficiency.

該中心採用雲技術、大數據及4G無線通訊技術，具備海量數據接入、存儲和高速運算能力，同時設計實施了電站設備層、電站管理人員與雲中心層的無線高速數據通訊，並通過移動終端實現移動智能運維，提升了電站精細化管理和集中監控水平。

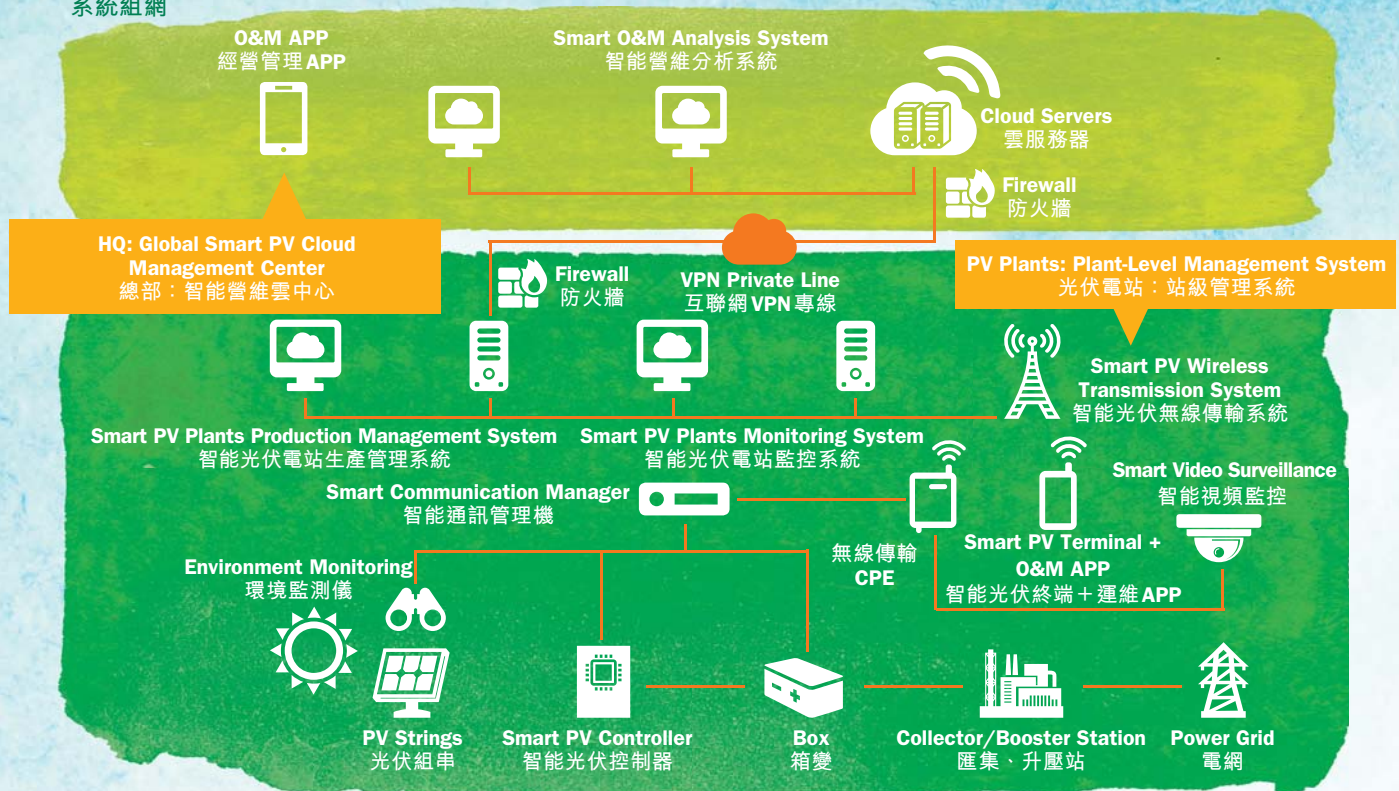
該中心支持全球不同位置的多個電站接入進行統一管理，通過實時監測光伏電站生產運行情況、統計分析電站歷史運行數據、實現電站日常工作 and 流程的規範化、標準化、數字化管理，為本公司科學決策提供依據和數據支撐，有效提升了管理效率。

Global Smart PV Cloud Management Center Structure and Process

全球光伏電站智能營維雲中心結構與流程

System Network

系統組網



Operation Management System:

- Smart PV Centralized Control System: achieves unified management and access for all our plants.
- Plant-level Management System:
 - a. Solar PV Plants Monitoring System: provides comprehensive real-time monitoring and management of solar power plant equipments.
 - b. PV Plants Production Management System: provides electronic and mobile production and operation management as well as office functions to improve efficiency.

Comprehensive Scheduling System:

- O&M APP: through 4G wireless communication, the mobile terminals can offer real-time contact with the Center, so that the managers of the power stations, centralized control and maintenance center, the Group's decision-makers, managers of the system, and customers have access to real-time inquiry of KPIs of the Group's power plants. Meanwhile, it can also provide varieties of operating data for the solar power plants managers.
- On-site Operation and Maintenance APP: realizes mobile operation and maintenance through receiving real-time monitoring information, fault alarms and work orders to generate new work content, and interacting with remote experts to solve difficult problems etc.

運營管理系統：

- 智能光伏集控系統：實現對本集團旗下電站的統一管理和接入；
- 站級管理系統：
 1. 電站監控系統：提供完善的光伏電站設備實時監控和管理；
 2. 電站生產管理系統：提供電子化、移動化的生產運行管理和辦公功能，提高電站管理、運行效率。

綜合調度系統：

- **經營管理APP**：通過4G無線通訊，使移動終端與中心實時建立聯繫，供電站管理人員、本集團決策層、系統管理人員以及客戶實時查詢本集團電站KPI運營指標，同時為電站管理者提供各種運營數據；
- **現場運維APP**：實時接收電站監控信息、故障報警，接收工單，生成工作，實現移動運維，也可以與遠程的專家互動，解決疑難故障等。

Leading Internet Finance Innovation

We have all realized the rapid development of the Internet and the influence of information technology to our social life. Thus, we considered that the integration of finance and the Internet would be a critical development direction for future social innovation, channels and innovation model of finance. As a result, we formulated our photovoltaic mobile Internet finance strategy to lead the brand-new ecological chain.

While optimizing our innovative Internet investment and financing, we also pay attention to timely two-way communication with our investors to improve our accountability. With our iNEX App, users and investors can watch the real-time scene of plant, current and historical electricity generation data and latest industry information, etc.

引領互聯網金融創新

近年來互聯網對社會生活融合之深、發展之快有目共睹，我們認為，金融與互聯網的結合將會是未來社會創新、金融渠道和金融模式創新的關鍵方向，因此確立了光伏移動互聯網金融戰略，創新引領全新生態鏈。

在不斷優化互聯網創新投融資方式的同時，我們注重加強同投資人的及時溝通與信息反饋，不斷完善負責任的投資管理方法。借助移動互聯網，我們的「綠信」App使每名用戶、每位投資人都能夠實時看到電站運行畫面、當天及歷史發電量數據、接收最新行業資訊等。



Applying Cutting-edge Technology

The PV industry could not develop without technology innovation. To promote industry development, we actively participate in cooperative and innovative research on photovoltaic technology with external agencies to reduce operation and maintenance costs, improve generation quality, efficiency of operation, maintenance and feedbacks.

In 2015, we cooperated with General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) to work on the national research project of “building solar power plant demonstration platform”. We also cooperated with Shenzhen DJI Technology Co., Ltd. and utilize its global leading unmanned aircraft control systems to operate and maintain solar power plants for the first time, with great enhancement of operation and maintenance efficiency and with fewer people on duty.

Promoting Industry Cooperation and Communication

It is necessary for the enterprises within the PV industry to cooperate and grow together to achieve the industry’s development. We always focus on intra-industry cooperation and communication. By participating in the “Top Runner” program, establishing PGO, and participating in industry summits and forums, we not only explored the industry development direction together with peers, but also enhanced understanding of PV industry development for government, partners and the public.

Leading Industry Standards Enhancement

In recent years, China has witnessed rapid development in PV technology and growing expansion of PV market. At the same time, the industry has encountered problems such as lack of PV technology reserve, and slowness in technology upgrades, along with wide unevenness in construction quality. The government implemented supporting policies to encourage the industry to promote production management standards and put forward the demand in innovation and upgrades among the whole PV industry.

運用尖端科技

光伏產業的發展離不開創新的技術研發。為了推動產業技術發展，我們積極參與合作科研，以降低運維成本及提高電站發電量、運維效率和反饋速度為目標，與外部機構共同開展光伏技術的創新研發工作。

2015年，我們與國家質檢總局合作，共同參與「建立光伏電站實證平台」國家級課題，並與深圳市大疆創新科技有限公司合作，利用其全球領先的無人飛行器控制系統，首次實現使用無人機運維光伏電站，大大提升了光伏電站的運維效率，為光伏電站的少人值守，智能運維奠定了基礎。

促進行業合作交流

光伏產業的發展亦離不開行業企業的通力合作與共同成長。聯合光伏始終關注行業溝通與交流，通過參選「領跑者」計劃，建立光伏綠色生態合作組織，參與行業峰會與論壇交流，在與同業共同積極探索行業發展方向、共同推進行業前進的同時，提升了政府、合作夥伴以及社會公眾對光伏行業發展的瞭解。

引領行業標準提升

近年來，我國光伏技術發展加快、市場規模不斷擴大，但同時面臨著光伏技術儲備不足、產業技術升級緩慢、電站工程質量參差不齊等問題。對此，國家實施政策進行了積極倡導，鼓勵行業提升生產管理標準，提出了光伏技術進步和產業升級的要求。

In June of 2015, the National Energy Administration, Ministry of Industry and Information Technology, and Certification and Accreditation Administration, jointly issued *Advice on Promoting Advanced Photovoltaic Technology Product Applications and Industry Upgrades*, aiming at enhancing the market entry standards for photovoltaic products, and initiating the “Top Runner” program, which requires more rigorous technical indicators on photovoltaic modules, strengthens quality management of solar power plant projects guides and pushes forward the overall technology development and upgrade of the PV industry’s upstream and downstream, and contributes to the future healthy competition and collaboration.

2015年6月，國家能源局、工業和信息化部、國家認監委聯合發佈《關於促進先進光伏技術產品應用和產業升級的意見》，提出要提高光伏產品市場准入標準，實施「領跑者」計劃。「領跑者」計劃對光伏組件提出更嚴格的技術指標要求，加強光伏电站工程質量管理，引導和推動光伏行業上下游的整體技術發展與產業升級，並促進光伏行業在未來的良性競爭和協同發展。

What is “Top Runner” Program? 什麼是「領跑者計劃」？

The “Top Runner” program is a special program supporting PV industry by the National Energy Administration annually through establishing Advanced Photovoltaic Technology Demonstration Base, new technology application demonstration projects, etc.

「領跑者計劃」是國家能源局每年實行的光伏扶持專項計劃，通過建設先進技術光伏發電示範基地、新技術應用示範工程等方式實施。

The program requires the projects to adopt advanced technology products whose standard is more rigorous than the current regulation of *Specification for Photovoltaic Manufacturing Industry*.

要求項目採用先進的技術產品，其產品要求比目前的《光伏製造行業規範條件》要高。

In the future, technology and products developed by the Top Runner companies will be adopted with priority in the process of government financial support and procurement.

未來在政府財政支持和採購中，將優先使用「領跑者」企業所開發的技術及生產的產品。



As one of the China's leading solar power plant investors and operators, we positively acted as the "Top Runner" of the industry through leading product technology and quality enhancement. On 4 August 2015, as the only selected Hong Kong-listed company, we were one of the first batch listed in the Top Runner Program and got the first demonstration project—The 100 MW project in National Advanced Photovoltaic Technology Demonstration Base in Shanxi Datong Coal Mining Subsidence Area.

作為中國領先的太陽能發電站投資與運營商，聯合光伏積極爭取擔當行業「領跑者」，引領產業技術與產品質量提升。2015年8月4日，聯合光伏獲得領跑者計劃首個示範項目——「山西大同採煤沉陷區國家先進技術光伏示範基地」的100兆瓦項目，成為首批入選領跑者計劃的光伏企業之一，也是唯一入選的香港上市企業。

On 25 June 2015, National Advanced Photovoltaic Technology Demonstration Base in Shanxi Datong Coal Mining Subsidence Area was approved by the National Energy Administration as the first demonstration project for the Top Runner Program. From 2015 to 2017, a 3 GW photovoltaic power project will be constructed in the 1,687.8 km² coal mining subsidence area. The investment of the first batch of projects with total capacity of 1 GW was estimated to be 10 billion Yuan. 13 solar power plants would be built to provide 1.5 billion kWh of grid power annually, which is equivalent to saving 480,000 tons of standard coal. 2015年6月25日，「山西大同採煤沉陷區國家先進技術光伏示範基地」獲得國家能源局批復，成為「領跑者計劃」首個示範項目。項目計劃從2015年到2017年，用3年時間在總面積1,687.8平方公里採煤沉陷區範圍內建設3吉瓦的光伏發電項目。其中，2015年開工的一期項目投資估算100億元，總裝機達1吉瓦，將建設13個光伏電站，建成後年均上網電量15億千瓦時，相當於節約標煤48萬噸。

Of all the 13 plants, we, together with 6 other companies obtained 100MW projects respectively, reckon the industrial professional competence, operational experience and management capability of today's China. 在一期項目的13個電站中，聯合光伏與6家企業各獲得了最高規模的100兆瓦項目。首批入選的企業代表了目前中國光伏行業專業能力、運營經驗、管理能力的最先進水平。



Industry certification standards were gradually shaping the "Top Runner" Program while more and more photovoltaic enterprises would comply their product standards with requirements of this program. We would expect a more reliable solar industry with higher quality while more and more projects would be constructed in accordance with "Top Runner" Program.

在「領跑者」計劃啟動後，針對「領跑者」計劃的行業認證標準也逐步成型，越來越多的光伏企業也將自己的產品生產標準向「領跑者」計劃要求傾斜。今後隨著越來越多的項目按照「領跑者」計劃進行建設，我們將能看到一個更優質可靠的光伏行業。

Platform for Industry Cooperation

We committed to creating an open, inclusive, inter-connecting and sharing industry ecological environment to promote the healthy and sustainable development together with our partners.

In 2013, by integrating the resource advantages of our industry, we, together with CMNEG, established the first ecosystem in the entire photovoltaic industry chain — the Photovoltaic Green Ecological Collaborative Organization (PGO), jointly with 6 large-scale central enterprises and industry leading companies like the GD Solar Co., Ltd. and the State Grid Corporation.

打造產業合作平台

聯合光伏始終致力於打造開放包容、互聯共享的行業生態環境，攜手行業夥伴共同推進光伏發電事業的健康持續發展。

2013年，本公司與招商新能源共同整合光伏產業優勢資源，聯合國電光伏有限公司及國家電網等六家大型央企與行業龍頭，共同建立了中國第一個光伏行業全產鏈生態系統——光伏綠色生態合作組織(PGO)。

PGO Introduction:

光伏綠色生態合作組織(PGO)：

PGO is an enterprise alliance in the photovoltaic industry. As a platform, PGO brought different parties of the solar power plant projects together including investors, developers, operators, maintenance providers etc. to accelerate implementation based on the principles of mutual benefit, complementary advantages, and comprehensive cooperation. So far, the total installed capacity of the power plant projects developed and built by PGO was 570MW.

PGO是一個光伏行業企業聯盟。PGO作為一個平台，匯聚了光伏電站項目投資方、開發和建設方、運營和維護方等不同環節相關企業，各方以互利共贏、優勢互補、全面合作為原則，加快了光伏電站項目的全流程實施。目前，以PGO平台開發並承建的電站項目總裝機容量已達570兆瓦。

PGO attached great importance on quality control of the solar power plants, for plant quality meant the life of our industry. Through high entry standard for project owners, operators, EPC, construction quality control, power generation test, plant operation and maintenance, PGO enterprises could ensure plant's quality in compliance with required standards.

PGO高度重視電站質量把控，將電站的質量視作行業的生命線。PGO企業承建電站通過對項目持有方、項目電站運營方、項目電站工程總承包方(EPC)的高門檻的准入設定嚴格把控電站各環節質量，並通過工程建設過程中的質量管控、發電量測試和電站運維工作，確保電站質量全面合規達標。



PGO founding conference
光伏綠色生態合作組織成立大會

The establishment of the PGO could effectively help the industry enterprises solve the difficulties and challenges in terms of project resources connection, solar power plant operation and maintenance certification, project financing etc., to push forward the marketization process of China's PV industry and new energy development. As of the end of 2015, there were already 14 PGO members after a two-year rapid development.

PGO的建立，能夠有效幫助行業企業解決在項目資源對接、電站運維問題認證、項目融資等各環節面臨的困難，推動我國光伏行業市場化進程，促進新能源可持續發展。截至2015年底，經過兩年的快速發展，PGO成員企業數量已達14家。

"Members of PGO covered the whole photovoltaic industry chain. They had great advantages in project resources, core equipments, project construction, smart operation and maintenance, project financing etc. Bringing them together as partners of the industry chain to promote technology upgrade, cost reduction, to guarantee stable return rate, to regulate industry development order would help realize the popularization of green energy." — a representative of a PGO corporate member

「PGO組織內部成員覆蓋光伏行業全產業鏈，在項目資源、核心設備、工程建設、智能化運維、資金安排等方面有強大的優勢，把這些企業匯聚到一期，整合成為電站產業鏈的合作夥伴，內部協同聯動促使行業技術升級、降低成本、保證各方穩定的收益率，規範行業發展秩序，實現綠色能源走進千家萬戶。」— PGO某成員企業代表



Industry Communication Participation

Apart from continuously improving the management level and industry collaboration mechanism, we also pay attention to communication with peers from both international and domestic platforms. Through focusing on global development issues and national development strategies, we made greater contribution to social development by utilizing our resources.

參與行業溝通

在不斷提升管理水平、完善行業合作機制的基礎上，我們加強國際與國內行業平台交流，密切關注全球發展議題與國家發展戰略，以自身資源優勢，為社會發展做出更大的貢獻。



In November 2015, United PV participated in the "Sino-French Climate and Green Economy Forum"
2015年11月，聯合光伏參與「中法氣候與綠色經濟論壇」



In September 2015, United PV participated in "2015 China International Energy Summit"
2015年9月，聯合光伏參與「2015中國國際能源峰會」

Throughout 2015, we actively participated in energy summits and international forums. Through discussing industry technology, funding supply, innovative development and other issues, we contributed to China's photovoltaic industry development, as a part of the "One Belt One Road" green energy recycling industry chain establishment, and offered suggestions on how to cope with global climate change.

In 2015, we were an active participant in plentiful solar-industry events. We were invited to join the COP21 as a representative of China's new energy companies. Mr. Alan Li, the CEO of the Company delivered speeches, and actively discussed industry development trends with industry professors and leaders worldwide.



In December 2015, Mr. Alan Li, the CEO of United PV, delivered a speech at COP21
2015年12月，聯合光伏首席執行官李原先生在聯合國巴黎氣候大會上發表演講

Promoting Industry Growth

Improving industry requirements and standards are the keys to guarantee and achieve a healthy and sustainable development of the PV industry. As a leading enterprise in our industry, we pay close attention to the industry policies implementation, and maintained good communication and interaction with the supervision agencies.

In 2015, we provided advice on the *Xinjiang Uygur Autonomous Region Photovoltaic Power Plant Project Regulations*, and participated in compiling solar power plant management regulations in Guangdong to help improve the industry regulations. Based on our business experience and industry practice, we continued to engage in communication with the government agencies concerning existing problems with a view to assisting the regulated development of the industry.

2015年，我們積極參加能源峰會、國際論壇等活動，積極參與探討行業技術、資金供應、創新發展等問題，為促進我國光伏產業發展、建立「一帶一路」綠色能源循環產業鏈、以及企業如何應對全球氣候變化等議題建言獻策。

2015年，我們受邀參加了多個國際、國內行業盛會。12月作為中國新能源公司代表，我們獲邀參加了巴黎氣候大會。首席執行官李原先生於會上發表演講，與全球行業專家及領袖共同探討新能源發展趨勢。



In July 2015, Mr. Alan Li addressed a speech on "Green Development" at the Seventh International Youth Summit on Energy and Climate Change held in Shenzhen, he took a group photo with the attendees after the speech
2015年7月，第七屆國際青年能源與氣候變化峰會於深圳召開，李原先生發表「綠色發展」主題演講，並與參會青年合影

推動行業規範成長

完善的行業發展規範與標準是實現光伏產業健康與可持續發展的重要保障。作為光伏行業的領先企業，我們密切關注行業政策實施情況，與行業監管機構保持良好的溝通。

2015年，我們為《新疆維吾爾自治區光伏電站項目管理辦法》的制定提供意見，參與編寫廣東等省份光伏電站管理標準，協助行業制度建立與完善。我們結合業務運營經驗與行業實際操作情況，與政府機構就現存問題進行溝通，助力行業規範發展。

In December 2015, we participated in a seminar held by the National Energy Administration, the National Development and Reform Commission, and the Ministry of Finance and gave proposals on how to solve the common problems in release of government subsidies and power grid construction in the photovoltaic industry. Together with our industry peers, we contributed to the industry's healthy and sustainable development.

For the quality inspection of the solar power plants, we established a strategic partnership with TÜV NORD and proposed to construct a cooperative laboratory for further study of power plants quality evaluation and management standards, which could provide technical reference, not only for our power plant acquisitions and management, but also for evaluation methods and standards of the industry.

Developing Together with Supplier Partners

As the leading enterprise of the industry, we not only enhanced our own capacity, but also drove our supplier partners to develop, aiming at helping small and medium enterprises and building a mutually beneficial industry environment.

2015年12月，我們與多家光伏企業一起參加了與國家能源局、發改委、財政部等政府部門進行的座談會，建議如何解決中國光伏行業普遍存在的補貼發放、電網建設問題，協同同業促進行業健康和可持續發展。

在光伏電站質量檢測領域，我們與德國技術監督協會(TÜV NORD)建立了戰略合作夥伴關係，擬建合作實驗室，致力於深入研究電站質量評估與管控標準，為本集團的電站收購與管理，以及行業電站評級方法與標準完善提供技術參考。

與供應商夥伴一同發展

作為行業領先企業，聯合光伏在加強自身能力的同時，不忘積極帶動供應商夥伴共同發展，幫助中小企業成長，構建互利共贏的行業發展環境。



Note: Suppliers are categorized according to their main business operation regions
註：供應商地點按照供應商主要業務開展和運營範圍劃分

Improving Supplier Management Regulations

Comprehensive supply chain management mechanisms are essential for the smooth cooperation between the upstream and downstream on the industry chain and for the overall improvement and efficient operation of business.

To solve problems of throat-cutting price competition, wide variations in product qualities, along with different material standards among the upstream and downstream enterprises on the industry chain, we assisted our suppliers to establish a “Three-in-One” management system, consisting of product quality, environment and occupational health and safety management systems, aiming at building good cooperation relationships among upstream suppliers, midstream users and downstream investors and operators for the whole industry’s healthy and sustainable development.

For supplier selection, we applied the “White List” scheme. Through inspecting suppliers’ materials by our technical department or third party inspection institution, we evaluated their critical factors like technology, product quality and service, with the top ten suppliers listed on the “White List” as a result. Furthermore, the white-list suppliers will be reviewed annually to ensure the product and service quality. This way we can promote a healthy competition that would better help supplier’s development.

完善供應商管理機制

良好的供應商管理機制對於促進產業鏈上下游合作的順暢銜接，提升業務經營效率具有重要意義。

為了改進以往產業鏈上下游間面臨的相互壓價、產品質量參差不齊、用料標準不統一等問題，我們協助供應鏈企業結合實際運營情況，建立「三合一」管理體系，完善管理措施，從不同利益相關方角度考慮，促進上游供應商、中游應用方、下游投資運營方建立良好的合作關係，帶動全產業鏈健康與可持續發展。

在供應商篩選方面，我們實施「白名單」管理制度，對業界知名企業在技術、產品質量等要素進行評估，由技術部或第三方檢測機構對供應商的物資材料進行檢測，進而選出前十名入圍供應商「白名單」，每年將對「白名單」進行複審評估，加強對供應商合規履責管理。

A Supplier of Green Energy 綠色能源打造者



In December 2015, representatives from nearly 200 countries and regions gathered in Paris and passed the *Paris Agreement* which aims to control the long-term climate change trends. This agreement will force the signatories to fulfil their responsibilities to fight against climate change.

Climate change has been one of the most threatening impacts to human beings since industrialization in the 19th century. In recent years, we have seen the worst air pollution, and climate change associated with natural disasters such as flood and drought. These environmental problems have actually influenced everyday life, and reminded us of the true meaning of the environment in the development of society.

One of the main reasons of climate change is GHG emissions from human activities. Nearly 75% of the GHG emissions are coming from combustion of fossil fuels such as coal and oil. As the problems of climate change and energy depletion become more urgent, the world has focused on renewable energy for future energy consumption. This is a responsibility as well as an opportunity for United PV. We provide green and clean energy to the society in a low pollution and a low emission way, and promote the application of renewable energy in China by managing and operating our current solar power plants. We also integrate our solar power plants with surrounding existing industries to form different regional green economic models and build green homes for families.

Apart from satisfying the need for green energy, we are doing our best to minimize the environmental footprint of our plant operations and office work. By establishing a comprehensive environmental management system, we are able to control our impacts on every segment of our operations so that we can become a eco-friendly company in all respects.

2015年12月，近兩百個國家和地區的代表齊聚巴黎，一致通過了旨在控制長期氣候變化水平的《巴黎協定》，這意味著每個協定締約方在未來將扛起各自肩上的責任，為實現抗擊氣候變化貢獻自己的一份力量。

氣候變化是自19世紀工業化進程啟動以來，人類所面臨的最具威脅的影響之一。近年來，我們經歷了有史以來最嚴重的霧霾侵襲，洪災、旱災等與氣候變化同生的自然災害。氣候變化所帶來的環境問題已經越來越真切地影響到我們每個人的生活，也不斷地提醒我們環境之於人類社會發展的意義所在。

氣候變化的主因之一是人類活動所造成的二氧化碳、甲烷等溫室氣體排放。在所有的溫室氣體排放中，近75%的排放來源於煤炭、石油等化石燃料的燃燒。因此，隨著氣候變化、能源枯竭等問題的日益嚴重，全球都將未來能源利用的目光投向了可再生能源，而這也是聯合光伏的責任與未來機遇之所在。一方面，我們立足於自有太陽能光伏發電站的運營和管理，以低污染、低排放的生產方式向社會提供綠色清潔能源，推廣可再生清潔能源在中國的應用；另一方面，我們還將光伏電站與周邊已有產業相結合，實現地區經濟的綠色產業模式，共同建設綠色家園。

除了滿足可再生能源需求以外，我們還致力於減少公司自身在電站運營和日常辦公中產生的環境足跡。通過建立完善的環境管理體系，我們對各個運營環節中的環境影響進行控制，讓自己成為一家真正的環境友好型公司。

Providing Green and Clean Energy

Since the second industrial revolution, thermal power generation, which combusts coal as the energy source, has been the main source of our electricity. While the economy boosted in these years, we witnessed the problems of climate change, environmental pollution and energy depletion. These problems caused us to rethink the way we generate power. As we realize the urgency of environmental protection, technology development gives us a new possibility to generate power in a green and clean way.

All of the Group's power plants in operation are solar power plants. The solar power generation is eco-friendlier than thermal power generation from two perspectives: it is the renewable energy source and the generation process is green and clean.

Renewable energy sources: unlike the non-renewable energy such as coal and oil, solar power is inexhaustible and renewable and may last as long as human beings need it.

A green and clean power generation process: during the entire process of thermal power generation, various by-products would also be produced such as carbon dioxide, oxynitride, sulfur oxide, fly ash, etc. These by-products would seriously deteriorate the environment if emitted into surrounding areas. On the contrary, solar power generation converts solar power into electricity by using semiconducting materials that exhibit the photovoltaic effect while generating almost zero carbon dioxide or other pollutants in the process, neither does the process require any cooling water. Therefore, a solar power plant can be built on diversified environmental conditions.

提供綠色清潔能源

第二次工業革命以來，以燃燒煤炭作為主要能量來源的火力發電是人類獲取電力的最主要方式。可是近年來，在經濟飛速發展的同時，與之相對應的是氣候變化、環境污染、能源枯竭等問題的逐漸顯現，也引發了人類對傳統火力發電方式的再思考。在人們意識到環境保護的緊迫性的同時，隨著技術的成熟，以綠色清潔的方式獲取能源成為了可能。

我們目前所運營的電站全部為太陽能光伏發電站。和火力發電相比，太陽能光伏發電的環境友好效應主要體現在兩個方面：能源來源可再生和發電過程綠色清潔。

能源來源可再生：與煤炭、石油等隨著人類的不斷使用將會窮盡的不可再生能源相對，太陽能是一種取之不盡、用之不竭的可再生能源，在人類有生之年都不會耗盡。

發電過程綠色清潔：在火力發電廠的發電過程中會產生大量副產物，如二氧化碳、氮氧化物、氧化硫、煤灰等。這些副產物排放到周邊環境中會導致環境條件的惡化。而在光伏發電過程中，利用光伏半導體材料進行光伏效應而將太陽能轉換為電能，過程中幾乎不會產生二氧化碳和其他環境污染物，也無需使用冷卻水，因此光伏電站的建設可以適應多種環境條件。

By the end of 2015, the Group and its associates own solar power plants with a total installed capacity of 976 MW, and an annual electricity generation volume of 859,730 MWh, which is equivalent to:

截止到2015年底，本集團及其聯營公司實益擁有的光伏電站總裝機容量達到976兆瓦，年度總發電量為859,730兆瓦時，相當於：

Reduced

減少煙塵排放

approximately 約

430 tons 噸

of smoke and
dust emission

Saved

節約標準煤

approximately 約

280,000 tons 噸
of standard coal

Reduced

減少二氧化碳排放

approximately 約

740,000 tons 噸

of carbon dioxide emission

Reduced

減少二氧化硫排放

approximately 約

7,000 tons 噸

of sulfur dioxide emission

Reduced

減少氮氧化物排放

approximately 約

7,000 tons 噸

of oxynitride emission

Equivalent to

相當於一年種植

approximately 約

40,000,000

trees planted per annum
棵樹

Electricity supply for

可供

approximately 約

500,000

families in a year

戶家庭一年用電

In the past three years, our rapidly increased electricity volume has shown a greater green effect on helping the society achieve an eco-friendly economic development.

三年來，隨著發電量快速上升，我們的環保效應也愈發明顯，助力社會實現更綠色的經濟發展。

Indicators 指標	Units 單位	2013 2013 年	2014 2014 年	2015 2015 年
Total electricity volume 總發電量	MWh 兆瓦時	34,939	485,046	859,730
Standard coal saved 節約標準煤	tons 噸	11,530	160,065	283,725
Carbon dioxide emission reduced 減少二氧化碳排放	tons 噸	29,978	416,169	737,684
Smoke emission reduced 減少煙塵排放	tons 噸	17	243	430
Sulfur dioxide emission reduced 減少二氧化硫排放	tons 噸	290	4,026	7,136
Oxynitride emission reduced 減少氮氧化物排放	tons 噸	269	3,735	6,620

Reducing Environmental Resource Consumption

With the continuous improvement of the industrialization and urbanization in China, concerns raised over how to effectively develop and utilize the land resources due to a conflict between the limited land resources and demand for rapid economic development. In order to increase our land utilization to minimize consumption of land resources, we implemented a variety of land re-use strategies for different land types by combining photovoltaics with other businesses, thus to accelerate local economy and industry development.

We have power plants that are built on wastelands, deserts or surface subsidence in mining areas. Our plants are able to transfer these non-productive areas into exploitable lands. In those sand-dune areas, the solar power panels in our plants can help restore the surrounding environment through preventing wind, fixing sand and reducing evaporation. Take our two newly acquired power plants as examples:

降低環境資源消耗

隨著我國工業化、城鎮化水平的不斷提高，有限的土地資源和快速發展的經濟需求之間開始產生衝突，如何高效地開發和利用土地成為政府和企業關心的問題。為了提高土地利用，減少對土地資源的消耗，我們針對不同電站建設土地的原有特點實行了不同的電站土地複用措施，運用光伏和多種產業相結合的立體化綠色產業模式，改善地區經濟發展條件，實現地區產業升級。

聯合光伏旗下部分光伏電站建設在沒有農、牧、漁利用價值的荒地、沙漠、採礦沉陷區等地區，我們將這些土地資源變廢為寶，產出可觀的經濟價值。同時，在自然環境較為惡劣的沙塵地區，光伏電站的太陽能電池板能夠起到防風固沙、減少水分蒸發流失的作用，改善了這些地塊周邊的綠化環境。以2015年新開發、收購的兩個電站為例：

100 MW Solar Power Plant in Coal Mining Subsidence Area in Datong 大同採煤沉陷區100兆瓦光伏電站項目

Datong is a city with a large coal mining industry in China. The long-term, large-scale mining activities had formed a 1,687.8 km² of surface subsidence area around the mining districts. The subsidence area is full of craggy mountains, collapsed ground, destroyed farmlands and hazardous gas. It is not a suitable place for living. However, Datong enjoys a great source of solar power. The average annual insolation duration is 1,900 hours, which is perfect for solar power plant construction on the subsidence area.

大同是我國重要的煤炭城市，但由於長時期、大規模的煤炭開採，在礦區及周邊形成了1,687.8平方公里的採煤沉陷區，出現了山體裂縫、地面塌陷、農田破壞、有害氣體突出等問題，居住條件被完全破壞。但大同擁有優良的太陽能資源，年均日照時間達到1,900小時，十分適合在採煤沉陷區的閑置土地上建設光伏電站。

In 2015, the Company won the bid for the exclusive rights to develop and operate a 100 MW ground-mounted power plant in Datong. This plant is part of the “Top Runner” Programme in Coal Mining Subsidence National Advanced Technology Solar Demonstration Base in Datong, Shanxi, which is the first demonstration base initiated by National Energy Administration. It will bring employment for the local community to boost the local economy. The massive solar power panels will prevent the land from being exposed directly under the sun, and the cleaning water of panels will irrigate and restore the ecological balance of soil.

2015年，聯合光伏獲得國家能源局「光伏領跑者」計劃第一個示範項目——大同採煤沉陷區國家先進技術光伏示範基地的100兆瓦地面電站項目。光伏電站在採煤沉陷區內的建設與運營，不但將為周邊社區帶來就業機會，改善社區居民的經濟條件，電站內大面積的光伏電池板還能避免沉陷區土地繼續被暴露在日曬環境中，清洗光伏電池板的水也可以慢慢滋養土壤，讓本已荒廢的土壤恢復生態活力。



100 MW Solar Power Plant on Hills at Suizhou

隨州100兆瓦山地光伏發電項目

This plant located in Xihe county, Suizhou city, Hubei province, is the largest grid-connected solar power plant in the central area of China. On 26 May 2015, this plant achieved on-grid connection for full operation.

隨州晶泰100兆瓦光伏發電項目位於湖北省隨州市淅河鎮，是華中地區已經建成併網的單體最大工程，已於2015年5月26日全部併網發電。

The plant was built on the hills of the Tongbo mountain. Most of the hills are rugged wasteland. The wasteland was renovated so that it can be used to produce economic value, at the meantime, the villagers from local communities were employed for plant construction. This solar power plant is a key project of Hubei province, and a milestone of new energy industry in the province. The development of new energy electricity generation in central area in China will be further promoted and encouraged through this project.

該項目建設在桐柏山餘脈延伸而成的丘陵地帶上，項目場區多為荒山荒坡，存在較多地勢起伏。項目不但把原來廢棄的荒山坡進行改造利用，提高了土地利用價值和利用效率，同時為周邊村民提供了新的工作崗位，改善他們的經濟條件。該光伏電站作為湖北省重點項目，在湖北省新能源的發展史上具有里程碑式的意義，在促進華中地區新能源發電項目的發展上起到了關鍵性作用。



For those lands with high productive value, our solar power plants will integrate the power generating function with their original business such as agriculture, fishing, forestry, farming and wind power generation. Building a solar power plant can produce additional benefit and value without changing the original terrain, nature and use of the land.

在高利用價值地區，我們的光伏電站會將通過農光互補、漁光互補、林光互補、牧光互補、風光互補等形式，將光伏發電和地區原有產業結合，不改變原有地貌特徵，不改變土地原有性質和用途，產出附加效益和價值。

Agriculture-Photovoltaics Integrated Power Plant at Feng County 豐縣農光互補電站

Our 23.8 MW solar power plant project at Feng county, Xuzhou city, Jiangsu province is a 60-hectare rooftop project with an ecological agriculture business under the roof.

徐州豐縣23.8兆瓦光伏電站屬生態農業屋頂項目，地處江蘇省徐州市豐縣，佔地面積約60公頃。

We installed the solar panels on the rooftops of the agriculture greenhouses, so that the plant can be built without occupying additional land resources. By combining the power generation and agricultural production, we are able to meet demands from both sides and have created a new form of agriculture business model.

我們將光伏發電板安裝在農業大棚棚頂，無需額外佔用土地資源，將農業生產和發電兩者巧妙結合起來，既滿足農業生產的需要，又實現了光電轉換，創造了全新的農業生產經營模式。

The plant, by integrating solar power generation and agriculture, enable a vertical enhanced utilization of local land resources, which in turn, puts in place an effective comprehensive agricultural utilization. On top of the greenhouse roofs are solar power panels, while inside of greenhouses is farmland for live stock raising or crop planting, such as mushroom, wheat, broccoli and rose. This project has been an effective demonstration of new energy application for current and planned agriculture projects. It also set an example of solar power technology promotion and application.

江蘇豐縣光伏發電項目將太陽能光伏發電和農業種植相結合，實現了土地立體化增值利用和高效農業綜合利用。電站設計為上層放置光伏發電板，下層開展生態農業種植和養殖，可種植食用菌、小麥、菜花以及玫瑰等農作物，並進行畜牧養殖工作。本電站通過光伏發電技術與設施農業項目上的應用和研究，不僅為現有的、在建、未建的設施農業項目提供一條新能源應用示範的有效途徑，同時也為光伏發電技術的普及應用，打開一個巨大的市場和建設途徑。



Qianhai Distributed Pilot Solar Power Plants

前海分佈式示範電站

These power plants are installed on the rooftops of warehouses in the Qianhai Bonded Bay Port Area of Shenzhen. All of the generated electricity can satisfy up to 30% of total power demands for the warehouses, logistics, and equipment loads. Photovoltaics power not only achieves a low-emission and pollution to the environment, but also realizes a “self-supply” for electricity to help the area become eco-friendlier.

前海光伏示範電站位於深圳市前海灣保稅港區內的倉庫屋頂，所發電力全部供應至前海灣保稅港區的倉儲、物流及港口設施負載，可滿足港區約30%的用電需求。利用光伏發電，保稅園區不但實現了發電過程的低排放低污染，也做到電能的「自發自用」，讓園區的環保效應更加突出。

This project marks the birth of China's first environmental-friendly, low-carbon bonded area. It took the unique advantages of Qianhai pilot zone where Mainland and Hong Kong maintained close collaborations to build a landmark research base for new energy application.

前海分佈式示範電站項目的實施標誌著全國首個綠色低碳保稅港區在前海誕生，項目依托中港緊密合作先導區的獨特優勢，打造了標桿性的新能源應用研究基地。



Minimizing Operational Environmental Impacts

減少運營環境影響

Environmental Management System

We have followed the requirements of ISO 14001 for environmental management system (EMS) to establish an effective EMS that covers our offices and all plants. Our EMS was officially obtained ISO 14001 Certificate on 14 February 2016.

環境管理體系

我們按照ISO 14001環境管理體系標準要求，建立了覆蓋公司辦公區域和各電站的環境管理體系，並於2016年2月14日取得ISO 14001環境管理體系認證。

In August 2015, we initiated the establishment of our environmental, quality and occupational safety management systems (QEMS) according to the international standards of ISO 14001, ISO 9001 and OHSAS 18001.

在2015年8月，按照ISO 14001、ISO 9001及OHSAS 18001三項國際標準要求，我們啟動了環境管理體系、質量管理體系和職業健康安全管理體系（「三體系」）的搭建工作。

According to the international standards and our management needs, we designed and set up a QEMS structure, and assessed our current product quality, original environment, health and safety conditions to identify our major environmental factors and hazards in our operations. Based on the results of the assessments, we formulated the handbook of quality, environment and health and safety, and built corresponding records. An overall QEMS management procedure was created along with publications of the relevant documents.

按照國際標準，我們設計確立了符合公司日常管理需要的「三體系」管理架構，並對公司當前的產品質量、初始環境及健康安全情況進行了評估，識別了公司運營管理中面臨的最主要環境因素和危險源。基於相關評估結果，我們編寫了質量、環境、健康安全手冊，建立了相關記錄文件，並根據管理體系架構確定了「三體系」管理程序和相關文件的編寫發佈。

We also established an internal review policy for QEMS. The process requires regularly review the compliance and effectiveness of the QEMS. If any non-compliance was discovered, related departments would analyze the reasons and make correction plans to improve our management based on QEMS.

同時，我們還建立了對「三體系」的內審流程制度，定期審計其運行的符合性和有效性。針對審計中發現的不符合項，由相應部門分析原因並制定整改措施，不斷提高公司「三體系」管理水平。

The established QEMS means United PV has met the international standards for our operation systems. QEMS will further enhance our quality management and equip us for managing the risks associated with quality, environmental and safety.

「三體系」的建立標誌著聯合光伏的工作流程管理體系已經滿足國際標準的相關要求。通過體系的有效運行，將進一步提高公司的質量管理水平，加強公司抵禦質量、環境、健康安全風險能力。



Our EMS covers the full-cycle of operation including environmental policies, environmental risks and factors identification, control procedures, as well as environmental impact assessment and project approval. We can identify different environmental factors, assess their impacts and implement control measures and plans for them.

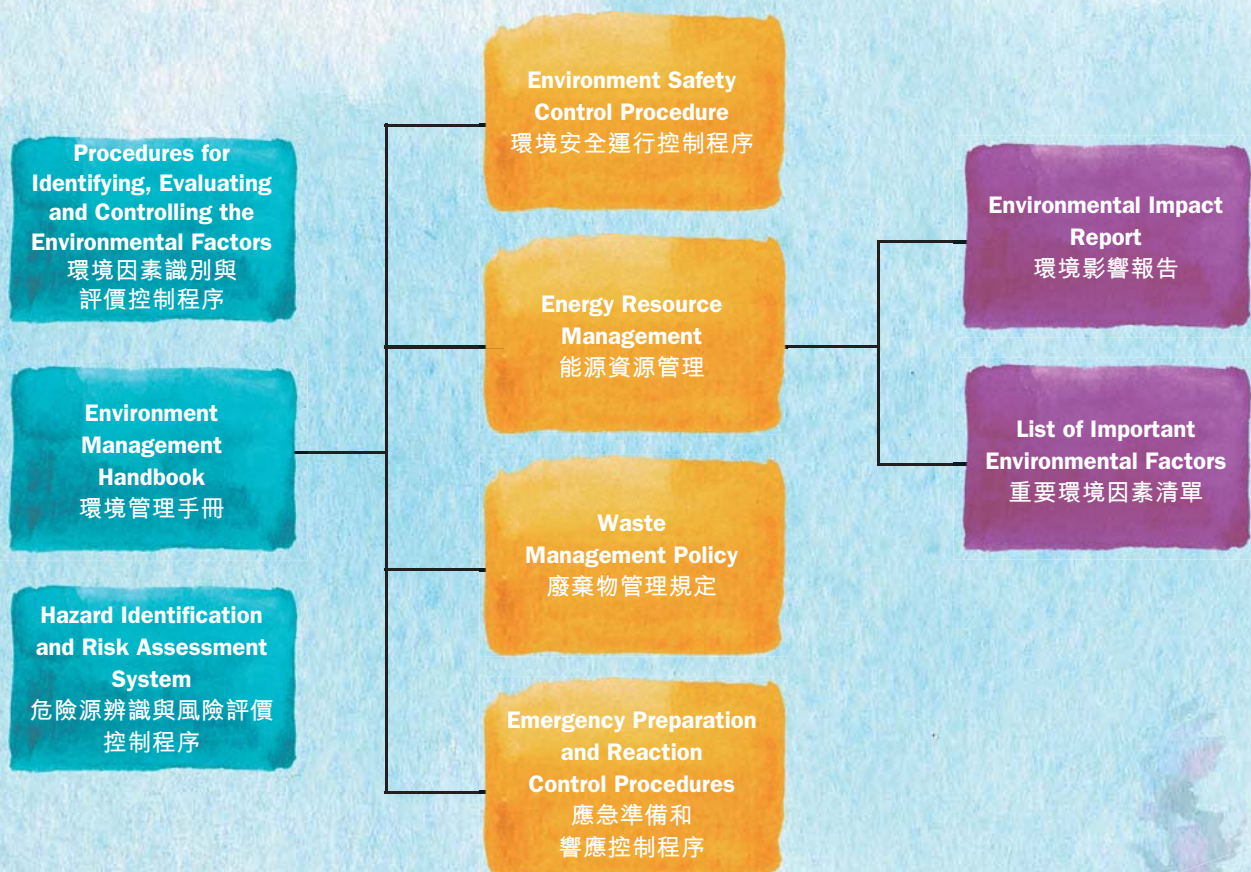
We have two main environmental risks: process of harmful wastes and production accidents that may lead to fire and oil leakage. We work with qualified third parties to handle and dispose wastes, and have emergency reaction plans to reduce production accidents.

我們的環境管理體系完整覆蓋了從環境制度建設、環境風險因素識別到運行控制程序、環境影響評估及審批的項目建設和運營全流程。根據識別出的重要環境因素，確定其影響級別，並制定相應的控制措施和計劃。

我們在生產運營中涉及到的環境風險主要分為兩類：有害廢棄物的處理及可能引起火災、泄油的安全生產事故。針對這兩類風險，我們與有資質的專業公司對廢棄物進行恰當的處置，並制定應急預案。

EMS Procedure of the Company

公司環境管理體系流程圖



In the process of selecting suppliers, it is important for us to assess their environmental management and environmental protection commitments. We require environmental management system certificates from potential suppliers in pre-assessments. The certificates are verified during on-site assessments as well. For our current suppliers, we have been conducting environmental management related trainings to assure our partners would reduce their environmental impacts along with us. In 2015, we organized environmental management system trainings for several suppliers, in which we explained the importance to build such a management system, and how to establish a system based on its own circumstances. During these trainings, we urged suppliers to take environmental responsibility and to enforce their environmental policies.

Green Production

The entire process of PV power generation produces minimal wastes such as waste gas and waste residue. Our main wastes generated during plant operations are mostly office supplies, construction materials and employee domestic waste. We categorize our waste into toxic/hazardous waste, which includes toner cartridges, ink cartridges, batteries, color ribbons, etc., and nontoxic/hazardous waste, which include construction leftover materials, packaging boxes, domestic wastes, etc.

We designated staff to contact qualified third parties to dispose toxic/hazardous waste, and to identify if other waste was recyclable. For recyclable waste, we collect and deliver it to the third parties to process; for non-recyclable waste, we entrust the local garbage disposal department to ensure the waste is processed correctly.

在選擇供應商時，供應商的環境管理水平以及環境保護承諾是我們決定是否與之建立合作關係的重要依據之一。在供應商前期調查中，我們要求供應商提供環境管理體系相關認證證書，並在後續供應商實地考核中對其進行檢查。我們還針對已經開展合作的供應商進行環境相關培訓，確保我們的合作夥伴與我們一同降低對環境的負面影響。2015年內，我們為數家供應商提供了環境管理體系培訓，為供應商夥伴說明了建立環境管理體系的必要性，以及如何根據企業情況建立相應的環境管理體系，督促供應商承擔環境保護職能，執行環保政策。

綠色生產

光伏電站發電過程中幾乎不產生廢氣、廢渣等廢棄物。我們的電站所產生的運營廢棄物主要為廢棄的辦公用材和建築廢料，以及員工和後勤保障中產生的生活垃圾。我們將這些廢棄物分為有毒有害類廢棄物和無毒有害類廢棄物兩個類別，其中有毒有害類廢棄物主要包括硒鼓、墨盒、電池、色帶等物料，無毒有害類廢棄物包括建築施工邊角料、包裝紙盒、員工生活垃圾等。

我們指定專人與有資質的機構聯繫處置有毒有害廢棄物，並對其餘廢棄物的可回收性進行鑒別。對於可回收廢棄物，設置集中分類堆放點，交由專業第三方機構進行處置；對於不可回收廢棄物，委託當地垃圾清運部門清運處理，保證所有廢棄物都得到妥當處置。

Waste Recycling Volume
廢棄物回收總量

6,470
kg 公斤

Waste Recycling Rate
廢棄物回收率

35%

Waste Generation
Volume
廢棄物產生總量

18,610
kg 公斤

The main source of waste water during plant operation is cleaning water for solar panels. Such water contains little suspended solids that have limited environmental impact, thus we would leave the water to evaporate.

The domestic sewage at our plant construction sites is emitted into oil separators and buried inside integrated sewage treatment plants. The treated sewage, which meets the *Integrated Wastewater Discharge Standard*, would be used for watering plant around construction sites.

Green Office

We advocate environmental protection and energy conservation in different parts of our operation. We post notices near switches and printers to remind employees of saving electricity, reusing paper and other resources to reduce wastes. The paperless office was implemented in the Company to reduce paper consumption.

光伏電站運行過程中產生的廢水主要是太陽能電池板清洗水，廢水中僅含有少量懸浮物，對環境影響較小，因此採用自然蒸發方式處理。

電站工程現場產生的生活污水採取隔油池和地埋式一體化生物污水處理設施，經處理後達到《污水綜合排放標準》後，用於項目管理區域周圍綠化。

綠色辦公

我們提倡在辦公運營的不同環節注重環保、節約能源。我們在辦公室的電源開關處及打印機附近均張貼溫馨提示，提醒員工注意節約用電、善用廢紙及資源、減少浪費。我們在公司內部推行無紙化辦公，減少紙張消耗量。

Average Used Water
Recycling Rate
耗水回收率

68.1%

Electricity Consumption
in Office Areas
辦公區域總用電量

300,610
kWh 千瓦時

Water Consumption in
Office Areas
辦公區域總用水量

599
tons 噸

Note: Water consumption data does not include the consumption at the Hong Kong headquarter
註：總用水量數據暫不包括香港總部用水量

Green and Trust

By “Green”, we mean to protect environment and our homes. By “Trust”, we mean our belief and devotion to environmental protection. We believe that environmental protection cannot be left to just one person or one corporation, but needs the whole society to take action. We would love to share with the entire society of our achievements and experience in environmental protection, so that they would join us to contribute to a green and sustainable future.

We are the first in industry to regularly disclose and update basic information of all power plants of the Group via our website, including plant locations, plant types, installed capacity and date of grid connection. Meanwhile, we disclose the quarterly electricity generation volume and total generation volume within the year by company announcements.

We are the first company throughout the world to develop a mobile application called iNex to monitor the solar power plant operation of the Group in real time. All users can have access to operating data of United PV's power plants. The app is available in simplified Chinese, traditional Chinese and English versions. The app allows users to view basic information and local air quality, temperature, humidity, wind direction, weather and sunlight of all our operating plants. Furthermore, for five pilot solar power plants, users can view daily electricity generation, carbon dioxide reduction, standard coal reduction, deforestation reduction, and other environmental relevant information.

In the future, iNEX welcomes worldwide premium solar power plants to join the platform, and share their operational information to the public. We will add multiple functions to the app, and explore more possibilities with mobile Internet to expand our collaboration with the public to build a green Earth.

「綠」與「信」

綠，寓意著保護環境，保護我們的家園；信，意味著我們對保護環境的信念與執著。我們相信，保護我們的家園依靠的不僅僅是一個人、一個公司的力量，而是需要全社會行動起來。為了這個目標，我們樂於分享聯合光伏在保護環境過程中點滴成果與體會，鼓勵全行業、全社會加入我們，一起為綠色、可持續的發展做出貢獻。

我們通過公司官方網站，在同業中率先披露和更新公司全部下屬電站的基本信息，包括電站地點、電站類型、電站裝機容量、電站併網時間等。同時我們定期以公司公告的形式公開披露所有電站的季度發電量和年度總發電量數據。

我們開發了全球首個光伏電站實時監測移動應用——「綠信」。每一位用戶都可以通過該應用實時查看聯合光伏旗下太陽能電站相關運營數據。「綠信」目前提供簡體中文、繁體中文、英語三種語言版本。用戶可以在應用中查看聯合光伏現有運營中的全部光伏電站的基本信息，電站所在地的空氣狀況、溫度、濕度、風向、天氣、日照信息，同時還包括五個標桿電站的日發電量、二氧化碳減排量、節約標準煤量、減少森林砍伐量等環保信息。

未來，「綠信」將吸納全球範圍內的優質光伏電站，共同分享各自的運營資訊。還將引入其他功能，探索多種移動互聯網模式，開拓電站與公眾共建綠色家園的道路。



A Caregiver to Communities 社區人文關愛者



Employees are one of our most important resources and our core for growth, success and value creation. Communities, where we operate our business, and the local residents are our important stakeholders and partners for value creation. To our employees and local residents, we are not only a clean energy provider, but also a shared value creator to help them enrich, improve and facilitate their lives.

We established a complete human resources management system to ensure employees' fundamental rights and make them feel free to pursue their career growth. We offered diverse and complete training programs for them, and provided transparent and clear career paths for them to reach career achievements gradually. We attach importance to employees' health and safety through constantly improving our occupational health and safety management system to help them work safely and live happily.

With the geographical expansion of our power plants, we reached out to more and more communities and residents. In every project site, we launched various projects based on local community conditions. Through investing in remote areas, donating solar products to local communities and communicating more with communities, we supported local development and helped in creating harmonious communities.

員工是公司最寶貴的資源之一，是我們成長、成功乃至創造價值的核心；我們電站所在的社區及當地民眾，是我們重要的利益相關方，是創造共享價值的重要夥伴。對員工、當地民眾來說，我們存在的意義不僅僅是一個清潔能源的提供者，更是一個能讓他們的生活更豐富、更美好、更便利的共享價值創造者。

我們建立了完整的企業人事管理制度，保障員工的基本權益，讓員工放心追求職業成長。我們為員工提供多樣、完整的職業相關培訓課程體系，並建立透明清晰的職業成長路徑，幫助員工一步步取得事業成就。我們重視員工的健康與安全，不斷完善職業健康與安全管理體系，讓員工能夠安心工作、快樂生活。

隨著我們的發電站運營地點不斷增加，我們也接觸到了越來越廣闊的社區和民眾。在每個項目所在地，我們都根據實地情況開展多樣化的社區項目，通過投資偏遠地區，向社區捐贈太陽能設備等，強化與社區的溝通，幫助社區的發展，與社區共創和諧。

Growing Together with Our Employees

We respect our employees and regard them as our internal driving force to our innovation and progress. We respect the lawful rights of our employees and our efforts gain their appreciation. In 2015, all the female employees who took maternity leave stayed with us. We also attached importance to employee localization by recruiting local employees.

我們與員工共成長

我們重視員工，視其為我們創新和前進的內生動力。我們充分尊重員工合法權利，並得到員工的認同。2015年，產假後重回崗位女性員工比例為100%。我們還注重員工本地化，儘量招聘當地員工。

Employee Structure in 2015 2015年度員工組成基本情況

Indicators 指標	Unit 單位	Mainland China 中國內地	Hong Kong 香港地區
Total number of employees 員工總數	person 人	210	34
Percentage of employees under 30-year-old 年齡30及以下員工比例	%	52.38	41.17
Percentage of employees between 31 and 40-year-old 年齡31-40歲員工比例	%	37.15	38.24
Percentage of employees above 41-year-old 年齡41歲以上員工比例	%	10.47	20.59
Percentage of female employees 全體員工中女性比例	%	28.88	56
Percentage of female employees at senior management level 高級管理層中女性比例	%	14.29	40
Percentage of ethnic minority employees 少數民族員工比例	%	0.86	-

Employee Turnover in 2015 2015 年度員工流動情況

Indicators 指標	Unit 單位	Mainland China 中國內地	Hong Kong 香港地區
Total number of newly hired employees in 2015 年度新入職員工總數	person 人	208	13
Number of newly hired female employees 其中女性新入職員工總數	person 人	42	9
Number of newly hired male employees 其中男性新入職員工總數	person 人	166	4
Total number of resigned employees 主動離職員工數	person 人	23	6
Number of resigned female employees 其中女性主動離職員工總數	person 人	9	5
Number of resigned male employees 其中男性主動離職員工總數	person 人	14	1
Total number of dismissed employees 解僱員工數	person 人	24	3
Number of dismissed female employees 其中解僱的女性員工總數	person 人	7	1
Number of dismissed male employees 其中解僱的男性員工總數	person 人	17	2
Percentage of returning rate of female employees who has taken maternity leave 產假後重回崗位女性員工比例	%	100	100

Protecting Employees' Rights

We understand that equal employment opportunity, non-discrimination, insurance benefits, employee caring, and complaint channels are basic employees' rights. Therefore, we implemented related rules and regulations and opened communication channels to protect our employees' rights and welfare.

Employees' Basic Rights

We strictly comply with the applicable labour protection legislations and other relevant regulations to ensure equal employment opportunity and fight against any kind of discrimination based on ages, marital status, races, social classes, religions, disability, genders, sexual orientation, or political backgrounds towards applicants and employees. In all our recruitment advertisements, there is no word nor requirement relevant to any kind of discrimination. Meanwhile, we clearly state "intolerance to any kind of discrimination in our group" in our employee handbook. We prohibit child labour in any workplace. We offer all employees comfortable, free and secured workplace and working conditions, and all work should be voluntarily performed and we shall not involve forced labour.

In 2015, we did not receive any appeals or investigation incidents about violation of employees' basic rights.

Employees' Compensation

In Hong Kong, we not only provide mandatory provident fund, insurance, paid sick leave, maternity leave, paternity leaves and other statutory welfares to our employees, but also marriage leave, exam leave, compassionate leave, childbearing gift, holiday welfare, New Year, red packets medical benefits, health checkups and other non-statutory welfares. We organize birthday parties every month, and various employees' activities every season. If employees have to work overtime, they will receive certain compensation.

保障員工權利

僱傭平等、無歧視、保險福利、員工關愛、申訴途徑等等都是員工對公司的基本訴求。我們在充分瞭解這些訴求的基礎上，通過實施相應的規章制度、開設溝通渠道等措施，充分保障員工的權利與福利。

保障員工基本權利

我們嚴格遵守適用的勞動保障的法例和相關法規，保障平等僱傭，反對任何基於年齡、婚姻狀況、種族、社會階層、宗教信仰、殘疾、性別、性取向、或政治背景等的招聘歧視，在所有招聘廣告中不會有任何「歧視」字句或要求，並在員工手冊內註明「不容許公司存在任何歧視」。我們不容許有童工在任何工作場所工作。我們為全部員工提供自由、舒適、安心的工作場所和辦公條件，所有工作應當是自願而不是使用強迫的勞動力。

2015年內，我們沒有接到任何有關侵犯員工基本權利的申訴或調查事件。

提供員工福利

在香港，除了為員工提供強積金、勞工保險、年休假、有薪病假、產假、侍产假等法定福利之外，我們還為員工提供婚假、考試假、喪假、生育賀禮、生日福利、節日福利、開工利是以及醫療福利、體檢等非法定福利，並每月舉辦生日會，每季度開展豐富的員工活動。員工若加班，會得到一定補償。

"My neck and shoulders suffered from working with computer for long time. The company procured laptop stands for us after the management knew that the stands not only offer more comfort while working but also make me feel warmth from the company" — Staff M

「長時間使用電腦工作，讓我的頸部和肩部都很疲憊。公司管理層看到後便統一採購了電腦支架，讓我們可以更加舒適的使用電腦。這讓我感到非常貼心。」— 員工M





In Mainland China, we offer cash or benefit in kind such as New Year red packets, holiday fee, marriage gifts, birth gifts, funeral allowance, birthday welfare, and high temperature allowance. We also offer health checkups, group accident insurance and other health insurance welfares. Furthermore, for employees working in solar power plants in remote areas or in high altitude area, we offer them financial compensation.

Employee Communication

In order to ensure normal communication between employees, departments and the management, we formulated the *Policy on Employee Complaint Management*. Employees can complain about labor health and safety, labor employment, performance reward and penalty results, the company's management or other systematic problems, management violation or no execution of rules, through special appeal room of human resources or administration departments, suggestion box and suggestion collection email and regular employee representative meetings. We give timely written or oral responses to employees' complaints. In necessary situations, we organize face-to-face communication between employees and the person in charge.

在內地，我們為員工提供開工利是、過節費、結婚賀禮、生育賀禮、喪葬費補助、生日福利、高溫補貼等現金或實物福利，員工體檢、團體意外險等健康保險類福利，以及員工俱樂部、員工爬山等主題活動、公司年度旅游、年會等活動類福利。針對在偏遠地區或高原地區工作的部分电站員工，我們提供津貼等。

暢通員工溝通

為保障員工與職能部門、公司管理層的正常溝通，我們制定了《員工申訴管理制度》，方便員工就勞動安全衛生、勞動用工、績效考評及獎懲結果、公司管理體系或具體制度、管理人員違反或不執行制度等問題，以人力資源／行政部專項申訴室、意見箱與意見收集郵箱、定期員工代表大會等途徑進行申訴。我們會採取書面或口頭形式給予員工及時答覆，或在必要時組織相關負責人與員工面對面進行交流。



Occupational Health and Safety Management

Workplace safety, work safety, avoidance of occupational disease are the important conditions for a secure working environment for our employees, and part of our basic responsibilities. In 2015, we have established a safety management system in accordance with the OHSAS 18001 standard, and carried out work safety trainings to ensure employees' health and occupational safety.

Organization and System Assurance

We place great importance on employees' safety. We established a work safety committee, and set up a work safety committee office to manage and monitor overall work safety.

職業健康與安全管理

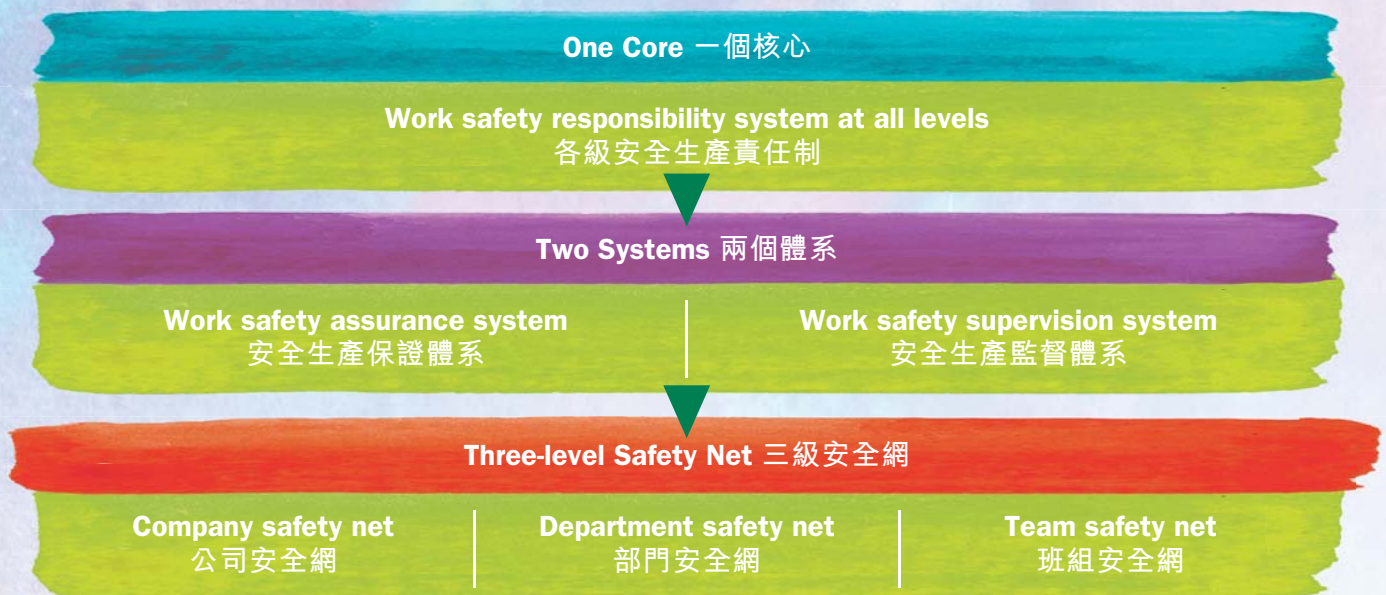
工作場所安全、生產安全、無職業病，是員工在公司安心工作的重要條件，更是我們的基本責任。2015年，我們根據OHSAS 18001標準建立了一套安全管理系統，並通過開展安全生產培訓等措施，竭力保障員工健康與安全。

組織與制度保障

我們高度重視保障員工安全，成立了安全生產委員會，並下設委員會辦公室，負責管理和監督集團安全生產全面工作。

Work Safety Organization and Management System

公司安全生產組織管理體系



To ensure work safety, we formulated and improved safety management files such as the *Work safety Organization and Management System*, *Work Safety Accountability Management Approach*, *Work Safety Work Rules*, *Identification and Evaluation and Control Program of Environmental Factors on Work Safety*, *Hazard Identification and Risk Assessment Control Program*, *Fire Safety Regulations*, *Emergency Preparedness and Response Control Program* according to the *Work Safety Law*, *Labor Law*, *Electricity Law of People's Republic of China* and other laws and regulations. We also actively promoted the establishment, external audit and certification of the “three in one” management system of quality, environment and occupational health and safety.

On top of organization and system, we ensured work safety through a series of safety routine work, such as work safety committee meetings, Safety Day/Month activities, meetings before and after shifts, work safety weekly meetings, safety supervision, online safety meetings, regular and irregular safety inspections, safety evaluation, hazard identification, and implementation of 25 anti-accident measures.

為切實保障安全生產目標的實現，根據《中華人民共和國安全生產法》、《勞動法》、《電力法》等有關法律法規，我們制定並完善了《安全生產組織管理體系》、《安全生產責任制管理辦法》、《安全生產工作規定》、《安全健康環境因素識別與評價控制程序》、《危險源辨識與風險評價控制程序》、《消防安全管理規定》、《應急準備與響應控制程序》等安全管理文件。我們還積極推動質量、環境、職業健康安全「三合一」管理體系的建立、外部審核與認證工作。

在組織和制度保障的基礎上，我們通過一系列安全例行工作，確保達到安全生產目標，如：安全生產委員會會議、安全日、月活動、運行值班班前會和班後會、安全生產周例會、安全監督及安全網例會、定期和不定期安全檢查、安全性評價、危險源辨識和重大危險源確定、二十五項反事故措施實施等。

Strict Execution of “Two Tickets and Three Systems”

嚴格執行「兩票三制」

As the main method of site safety inspection and management, “two tickets and three systems” scheme consist of working tickets, operation tickets, work shifting system, inspection tour system and regular equipment tests rotation. We seriously implemented “two tickets and three systems” and rigidly executed “two tickets” technical standards. We can remotely monitor execution and defect status of the “two tickets” scheme in our Cloud System, which enable us to identify and rectify problems in a timely manner.

「兩票三制」是指工作票、操作票、交接班制、巡迴檢查制、設備定期試驗輪換制，是實行現場安全監督管理的重要手段。我們認真落實「兩票三制」，嚴格執行「兩票」技術規範和相關標準。在集團營維雲中心，將各電站「兩票」執行情況和缺陷管理納入遠程監控，發現問題及時糾正。

Work Safety Trainings

In order to improve safety management and safety awareness of the staff on site, and form a long-term mechanism of work safety, we arranged for trainings for power plant managers in the form of internal and external trainings, practical exercises. The training topics cover “two tickets and three systems,” power industry safe operation regulations, cardiopulmonary resuscitation after electric shock, occupational health and safety, self-protection, solar power plant accident management principles and case study, risk identification on solar power plant sites, emergency management on solar power plant.

安全生產培訓

通過對電站管理人員進行內外部培訓、演練、實操等方式，提升員工安全管理水平、現場作業安全意識和素養，形成安全生產的長效機制。培訓主題包括光伏電站「兩票三制」、電業安全工作規程、觸電急救心肺復蘇、職業健康安全及自我防護、光伏電站事故處理原則及典型事故案例分析、光伏電站現場風險源辨識、光伏電站應急管理培訓等。



At the northwestern branch, we organized several trainings on Safe Usage of Tools and Instruments, Safety Regulation for Operation and Maintenance Staff with 100% participation rate.

在西北分公司，我們多次組織安全工器具使用培訓、運維人員安規培訓，員工參與率達100%。

Employee Health Management

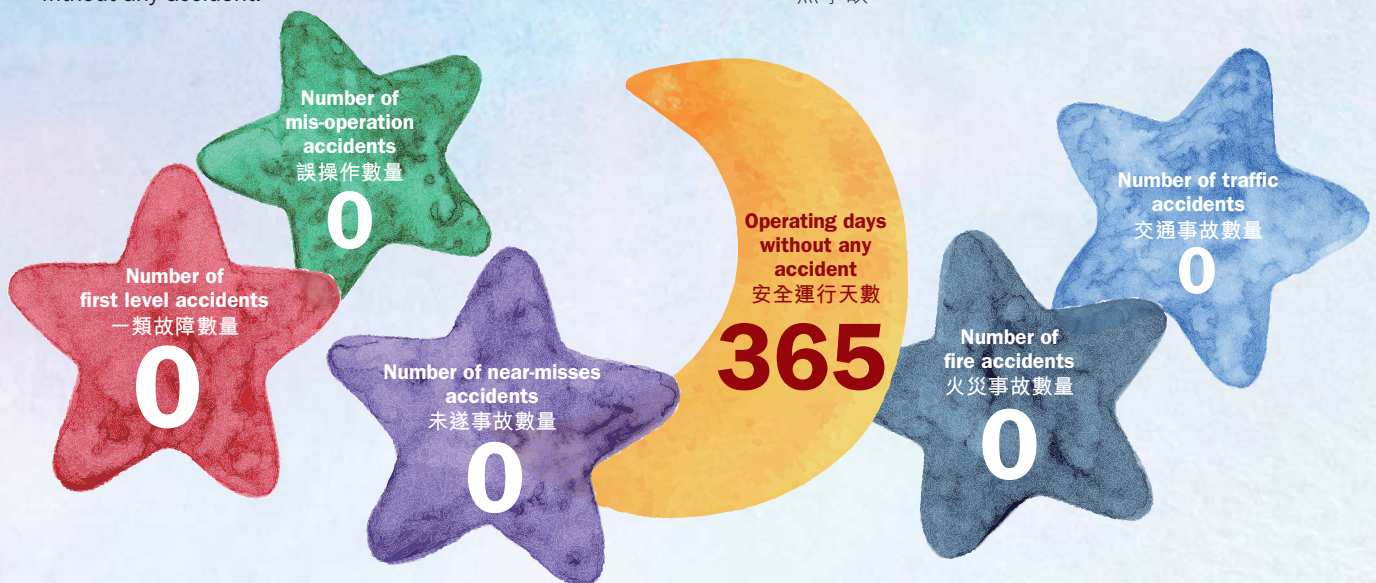
In order to prevent, control, eliminate occupational diseases and protect employees' health, we formulated *Occupational Injury and Disease Management Regulation*. Through awareness raising, prevention and combining prevention with treatment, we aimed to eliminate occupational injury and disease.

During the period of 2013–2015, there was no occupational health and safety related accidents in our headquarter, regional branches and their power stations. In 2015, we operated safely for 365 days without any accident.

員工健康管理

為了防治、控制、消除職業病，保護員工健康，我們制定了《工傷職業病管理規定》，以廣泛宣傳、預防為主、防治結合的方式，消除工傷職業病危害。

2013–2015年，集團總部、各區域公司及所屬電站未發生員工健康安全相關的事故。2015年，我們安全運行天數達365天，全年無事故。



In 2015, we had no employee fatalities while on duty, no working days loss from working injury, and percentage of coverage employees who take health checkup benefits reached 100%.

2015年，我們無員工因公死亡，工傷損失工作日數為零，員工體檢福利覆蓋率達到100%。

Occupational Health and Safety Performance

職業健康與安全績效

Indicators

指標

Unit

單位

2015

2015年

Number of employees died while on duty
因公死亡人數

person 人

0

Number of working days loss from working injury
因工傷損失工作日數

days 日

0

Percentage of coverage employees who take health checkup benefits
員工體檢福利覆蓋率

%

100%

Career Development Paths

The creativity and vitality brought by our employees enable the Company to develop and expand. According to differences of professional post, we set clear career development plans for our employees. Through complete training plans, we helped our employees grow fast in career to show their values for company and contribute to company's growth and development.

A "3+1" Training System

We have established a "3+1" training system. "3" refers to three stages of training, namely basic trainings, professional trainings and advanced trainings. "1" refers to a points-based training management. The training points of employees would be regarded as a basis of promotions, performance reviews and rewards. Such a system would help improve the effectiveness of trainings.

We also encourage our employees to apply for external trainings relevant to their job, and cover their training fee to relieve our employees from the financial burden.

職業發展通道

員工為企業帶來的創造力與生命力，使得我們能發展和壯大。我們根據不同崗位的特點，為員工規劃清晰的職業發展道路，提供完備的培訓計劃，幫助員工快速成長，實現個人在企業中的價值，為企業成長與發展作出貢獻。

「3+1」培養體系

我們建立了「3+1」培養體系。「3」即分基礎培養、專業培養、進階培養三個階段對員工進行培養，「1」即結合培訓積分制管理方式，將員工培訓積分作為職位晉升、年終績效考核及獎勵的依據，以期實現良好的培訓效果。

我們還鼓勵支持員工自主申請參加與工作相關的外部培訓，並由公司承擔相關費用。



Basic trainings 基礎培養

Orientation training for new employees
新員工入職培訓

General training for on-the-job employees
員工在崗通用類課程培訓

Professionals trainings 專業培養

Specialized training for on-the-job employees
員工在崗專業類課程培訓

Advanced trainings 進階培養

Basic management trainings
基礎管理培訓

Mid-level management trainings
中層管理培訓

Senior management trainings
高層管理培訓

In 2015, we launched a “Newcomer’s Unit” plan within the Company. New recruits will be accompanied by experienced employees to get familiar with the Company. Each term of “Newcomer’s Unit” lasts 3–6 months. Experienced employees in the unit will help the newcomers know and understand our corporate culture and business and gain working skills through sharing sessions and reading sessions within a short time.

While helping new recruits get familiar with the Company, the plan is also a channel for communication and sharing. Sharing of work and life experience will not be limited within the unit, but be spreaded over the entire group. Everyone could communicate with each other for a more effective work and a better life.

In August 2015, 5 new employees joined the first activity of “Newcomer’s Unit”. They had learned a lot from the other members through theme discussions, reading sessions and sharing sessions. In January 2016, the first term of unit graduated. In the future, the unit will be carried out to help every newcomer to get along with our family.

2015年，我們在公司內啟動了「新人幫」計劃，旨在由經驗豐富、熟悉公司的老員工幫助新員工儘快融入公司。每一期「新人幫」為期3至6個月，通過分享會、讀書會等多樣形式，讓新員工在短時間內瞭解公司文化，熟悉公司業務，並掌握工作中所必需的工作技巧。

在幫助新員工融入公司的同時，「新人幫」計劃也是一條溝通與分享的紐帶，將工作經驗、生活感想的分享由「新人幫」內部傳遞到全體同事中，在公司內部建立相互交流的良好氛圍，讓大家更高效地工作、更快樂地生活。

2015年8月，5名新員工參加了「新人幫」第一次活動。在主題討論會、讀書會、經驗分享會等活動上，新人們從「幫主」和其他成員身上受益良多。2016年1月，第一期「新人幫」正式畢業。今後，「新人幫」計劃將不斷傳承下去，幫助每一名未來的新同事融入聯合光伏大家庭中。



Employee Training Performance in 2015**2015 年度員工培訓成效**

Indicator 指標	Unit 單位	Mainland China 中國內地	Hong Kong 香港地區
Training expense per employee 人均培訓費用	RMB 人民幣	1,050	215
Number of persons trained 培訓總人數	Person-times 人次	3,825	144
Number of senior managers trained 高層接受培訓的人數	Person-times 人次	82	19
Number of mid-level managers trained 中層接受培訓的人數	Person-times 人次	368	41
Number of general employees trained 普通員工接受培訓的人數	Person-times 人次	3,368	89
Average training time per employee 員工平均培訓時間	hours 小時	17	12
Average training time per senior manager 高級管理人員平均參加培訓時間	hours 小時	5.5	5
Average training time per mid-level manager 中級管理人員平均參加培訓時間	hours 小時	11	8
Average training time per general employee 普通員工平均參加培訓時間	hours 小時	22.5	15

Co-development with Our Communities

Community development is closely related to our operations. We could never achieve a sustainable development without our communities. Through recruiting local manpower, employee volunteer services and donations, we have grown together with the communities at which our power plants/offices locate.

Employee Volunteer Services

We encouraged our staff to participate in philanthropy and volunteer activities to bring warmth to the society.

我們與社區共發展

社區的發展與我們的運營息息相關，我們無法離開社區而長遠發展。通過招募當地人力、員工志願服務、向社區捐贈等措施，我們與電站／辦公室所在社區同走發展之路。

員工志願服務

我們鼓勵員工參加公益志願活動，通過自己的行動為社會弱勢群體帶去溫暖和關愛。

Orbis Moonwalker: Darkness is Never Scary With Us Beside

奧比斯「盲俠行」：沿途有我們，黑夜不再可怕

Assembling participants among the colleagues and raising donations to enroll in the event, our staff enjoyed the hustle and bustle in being a part of the Orbis "Moonwalker" charitable activity.

號召同事、籌集善款、組織報名，我們的員工為了參加此次奧比斯盲俠行活動忙前忙後，更是樂在其中。

"I did some good to the blind people while enjoying a workout, which in turn offered me a chance to taste the hardness of these people. That was really a meaningful and interesting experience in my life," said the staff S, who participated in the Moonwalker and also tried the 10 minutes' walk with eyes covered, "That was a six hours' walking from the deep darkness of midnight to the first ray of the sunlight! I can't describe that feeling of accomplishing something when we reached the end of that 20 km's journey, but I would remember it for my whole life."

「既鍛煉了身體，又能幫助失明人士，還能在活動中體會他們生活的不易，我覺得這真的是很有意義也很有趣的人生體驗。從深夜走到黎明整整六個小時！抵達20公里終點那一刻的成就感，我一輩子都會記得。」——參加盲俠行並體驗了蒙眼走路10分鐘的員工S。



Investment in Remote Areas

We cooperated with local governments to actively join in poverty alleviation through photovoltaic energy. Our solar power plants are mainly located in relatively undeveloped areas in Southwestern and Northwestern China. By constructing solar power plants there, local residents could get both land compensation and clean electricity. Villagers who could not get access to electricity before are using lights, TV, fridges and other electrical appliances to improve their living standards. We prefer to recruit local employees under same conditions.

偏遠地區投資

我們與當地政府合作，積極參與光伏扶貧。我們的太陽能電站多分佈在中國西北、西南部發展相對落後的地區，太陽能電站建設使當地民眾得到土地補償的同時，還為當地民眾提供清潔電力，使原來的無電村用上了電燈、電視、電冰箱等電器，改善了他們的生活質量。我們在同等條件下，優先聘用當地員工。

Build Ecological Oasis in PV Park 光伏園區打造生態綠洲

We established a PV park in Gonghe County, Hainan Tibetan Autonomous Prefecture in Qinghai Province. With "Ecological Oasis" construction, we not only increased the county's afforestation level and improved local ecological environment, but also fundamentally changed most villagers' life style to benefit them in a long run. The PV Park uses land not suitable for pasture growth, and provides the villagers with a one-time subsidy of RMB2,200 per mu, and also a 5-year subsidy of RMB9.7 per mu for returning pasture. Many villagers purchased new houses, new cars to enjoy comfortable life with these subsidies. Moreover, some villagers took these subsidies to start funding for entrepreneurship to change their traditional life style from depending on livestock production to a more sustainable way of prosperity. The construction and operation of PV Park also created many local job opportunities. Ever since the PV Park's construction, villagers got jobs including construction, power plant operation, catering, security, etc., that had significantly improved their household income and life quality.

我們在青海省海南藏族自治州共和縣建設光伏園區，並開展配套「生態綠洲」建設，不僅提升了綠化水平，改善了當地生態環境，還從根本上改變了大多數村民的生活方式，使其長期受益。光伏園區通過徵用不適合草場生長的土地，村民分兩次拿到每畝人民幣2,200元的一次性補助，以及5年內每年每畝人民幣9.7元退牧補貼。依靠這筆資金，不少村民添置了新房、新車，過上了小康生活。很多村民還將其作為其他事業的啟動資金，轉變了依賴畜牧生產的傳統生活方式，走上了持續致富的道路。光伏園區的建設和運營，還為當地創造了大量就業機會。光伏園區開建之後，當地村民得到了建設施工、電站運營、餐飲安保等工作，家庭收入和生活水平明顯提高。

Equipment Donation

Through delivering solar power and donating solar lamps to local communities, we helped the remote and undeveloped communities to get access to convenient and green power.

設施捐贈

我們通過向社區輸送太陽能、捐贈照明燈，讓邊遠貧困的地區也能享受到便利、綠色的電力。

Light for Remote Villages

情系山區，贈送光明

We donated 1,000 solar lamps to temples and primary schools in undeveloped regions of Haidong City of Qinghai Province. We also delivered solar power technology to the residents in Haidong. By popularizing basics of solar energy generation, and helping them with different applications of solar power in daily life, we improved their educational conditions greatly and eased their inconvenience of power using.

通過向青海海東貧困地區寺廟及小學捐贈 1,000 套太陽能照明燈，我們為海東地區的居民送去了太陽能發電技術，並在當地普及太陽能發電的基本知識，幫助居民瞭解其在日常生活中的應用，極大地改善了當地的教育條件，緩解了當地生活用電不便的情況。



Outlook in 2016

2016 年展望



In 2016, we will further integrate ESG management into our daily operational management. We will establish a more comprehensive ESG management system to implement ESG practices across the entire company. We are developing a formal ESG performance indicator system and a ESG information disclosure system. We will hold our mission of "To build a green home, and fulfill the dream of millions of families," to better communicate with stakeholders, to develop together with stakeholders and create more value for stakeholders.

In February 2016, we were officially certified by the United Kingdom Accreditation Service and China National Accreditation Service for Conformity Assessment of our management systems of product quality, environment and occupational health and safety. The recognition affirms that our management systems are systematic and standard. For our future operation, we will stick to the standard requirements to ensure management quality, increase efficiency, conserve energy, and protect employee health and safety. Through such managements, we will enhance our competitiveness, and to actually become a leading corporation of Chinese energy transformation.

In 2016, with the platform of PGO and the participation in Top Runner Program, we will work more closely with industrial partners to achieve an innovative, and healthy co-development, and to keep providing green and clean energy to the society.

2016年，我們將把ESG管理更全面地融入到企業日常管理工作中。我們將建立更完善的ESG管理機制，讓ESG相關實踐貫穿企業上下各環節，建立規範化、常態化的ESG績效指標體系和信息溝通機制。我們會始終堅守「共同建設綠色家園，成就億萬家庭夢想」的使命，更注重與利益相關方的溝通，讓企業與利益相關方共同發展成長，為利益相關方創造更大的價值。

2016年2月，公司同時獲得了包括UKAS（英國皇家認可委員會）證書和CNAS（中國合格評定國家認可委員會）證書的三體系認證證書，實現了質量、環境、安全管理工作系統化、規範化、標準化。在未來的運營管理中，我們將繼續遵照三體系標準要求，規範管理、提升質量和效率、節能降耗、保障員工的健康安全、提高公司品牌競爭力，為實現把公司打造成為「中國能源轉型的國家名片」保駕護航。

2016年，依托PGO組織和「領跑者計劃」的平台作用，我們將與光伏行業上下游夥伴更加緊密的聯繫與合作，共同為實現產業的創新、健康與協同發展努力，繼續為社會提供綠色、清潔的能源。

In 2016, we will be able to provide more clean energy and enlarge the environmental protection benefit such as reducing carbon dioxide emission, with the growth of our power plant portfolio. We will keep reducing our environmental impacts through our Environmental Management System.

Meanwhile, more communities and residents will be connected with us with more plants acquired by the Group. We will keep encouraging employees to attend volunteer servicing activities, and continue to support remote villages by donation and investments. We will pursue to grow together with communities and enable the local residents to have a better life.

2016年，隨着我們電站數量的增加，發電量繼續提高，我們將為社會提供更多的清潔能源，二氧化碳減排等環保效應將進一步放大。我們也將基於環境管理體系繼續減少自身運營所造成的環境影響。

同時，電站分佈版圖不斷擴大也意味着有更多的社區和居民將與我們相連。我們仍將鼓勵員工參與志願服務活動，繼續通過捐贈和投資等方式幫助邊遠貧困社區，追求與社區共同發展，讓當地居民的生活更加美好。

Indicators 指標	2015 2015年數據	2016 Targets 2016年目標
Number of Accidents 電站運行事故數	0	0
Number of Working Days Loss from Working Injury 因工傷損失工作日數	0	0
Percentage of Employees Who Take Health Checkup Benefits 員工體檢福利覆蓋率	100%	100%
Number of Persons Trained 員工培訓活動參與人次	3,969 person-times 人次	4,200 person-times 人次
Average Training Time Per Employees 員工平均培訓時間	17 hours 小時	18 hours 小時
Recycled Waste Rate 廢棄物回收率	35%	35%
Average Waste-Water Recycling Rate 耗水回收率	68.1%	68.1%

Report Disclosure Index

相關索引

**Hong Kong Stock Exchange
Environmental, Social and Governance Reporting
Guide**

**香港交易所
《環境、社會及管治報告指引》**

Subject Areas and Aspects 核心主題	KPIs 指標	Page 披露頁碼
A. Environmental A. 環境		
A1 Emissions A1 排放物	A1.1 The types of emissions and respective emissions data. A1.1 排放物種類及相關排放數據。	36–38, 45–46
	A1.2 Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility). A1.2 溫室氣體總排放量(以噸計算)及(如適用)密度(如以每產量單位、每項設施計算)。	36–38
	A1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility). A1.3 所產生有害廢棄物總量(以噸計算)及(如適用)密度(如以每產量單位、每項設施計算)。	45
	A1.4 Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility). A1.4 所產生無害廢棄物總量(以噸計算)及(如適用)密度(如以每產量單位、每項設施計算)。	45
	A1.5 Description of measures to mitigate emissions and results achieved. A1.5 描述減低排放量的措施及所得成果。	36–38
	A1.6 Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved. A1.6 描述處理有害及無害廢棄物的方法、減低產生量的措施及所得成果。	45
	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). A2.1 按類型劃分的直接及／或間接能源(如電、氣或油)總耗量(以千個千瓦時計算)及密度(如以每產量單位、每項設施計算)。	46
	A2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility). A2.2 總耗水量及密度(如以每產量單位、每項設施計算)。	46
A2 Use of Resources A2 資源使用	A2.3 Description of energy use efficiency initiatives and results achieved. A2.3 描述能源使用效益計劃及所得成果。	46
	A2.4 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved. A2.4 描述求取適用水源上可有任何問題，以及提升用水效益計劃及所得成果。	46
	A2.5 Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced. A2.5 製成品所用包裝材料的總量(以噸計算)及(如適用)每生產單位佔量。	不適用於公司

Subject Areas and Aspects 核心主題		KPIs 指標	Page 披露頁碼
A3	The Environment and Natural Resources	A3.1 Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	36–42
A3	環境及天然資源	A3.1 描述業務活動對環境及天然資源的重大影響及已採取管理有關影響的行動。	
B. Social B. 社會			
Employment and Labour Practices 僱傭及勞工常規			
B1	Employment B1 僱傭	B1.1 Total workforce by gender, employment type, age group and geographical region. B1.1 按性別、僱傭類型、年齡組別及地區劃分的僱員總數。	50
		B1.2 Employee turnover rate by gender, age group and geographical region. B1.2 按性別、年齡組別及地區劃分的僱員流失比率。	51
B2	Health and Safety B2 健康與安全	B2.1 Number and rate of work-related fatalities. B2.1 因工作關係而死亡的人數及比率。	57
		B2.2 Lost days due to work injury. B2.2 因工傷損失工作日數。	57
		B2.3 Description of occupational health and safety measures adopted, how they are implemented and monitored. B2.3 描述所採納的職業健康與安全措施，以及相關執行及監察方法。	54–57
B3	Development and Training B3 發展及培訓	B3.1 The percentage of employees trained by gender and employee category (e.g. senior management, middle management). B3.1 按性別及僱員類別（如高級管理層、中級管理層等）劃分的受訓僱員百分比。	60
		B3.2 The average training hours completed per employee by gender and employee category. B3.2 按性別及僱員類別劃分，每名僱員完成受訓的平均時數。	60
B4	Labour Standards B4 勞工準則	B4.1 Description of measures to review employment practices to avoid child and forced labour. B4.1 描述檢討招聘慣例的措施以避免童工及強制勞工。	52
		B4.2 Description of steps taken to eliminate such practices when discovered. B4.2 描述在發現違規情況時消除有關情況所採取的步驟。	53
Operating Practices 營運慣例			
B5	Supply Chain Management B5 供應鏈管理	B5.1 Number of suppliers by geographical region. B5.1 按地區劃分的供應商數目。	32
		B5.2 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored. B5.2 描述有關聘用供應商的慣例，向其執行有關慣例的供應商數目、以及有關慣例的執行及監察方法。	33, 45

Subject Areas and Aspects 核心主題	KPIs 指標	Page 披露頁碼
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	B6.2 Number of products and service related complaints received and how they are dealt with. B6.2 接獲關於產品及服務的投訴數目以及應對方法。	不適用於公司
	B6.3 Description of practices relating to observing and protecting intellectual property rights. B6.3 描述與維護及保障知識產權有關的慣例。	–
	B6.4 Description of quality assurance process and recall procedures. B6.4 描述質量檢定過程及產品回收程序。	不適用於公司
	B6.5 Description of consumer data protection and privacy policies, how they are implemented and monitored. B6.5 描述消費者資料保障及私隱政策，以及相關執行及監察方法。	不適用於公司
B7 Anti-corruption B7 反貪污	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. B7.1 於匯報期內對發行人或其僱員提出並已審結的貪污訴訟案件的數目及訴訟結果。	2015年內，沒有涉及到公司或者僱員的類似案件和訴訟
	B7.2 Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored. B7.2 描述防範措施及舉報程序，以及相關執行及監察方法。	12
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B8 Community Investment B8 社區投資	B8.1 Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport). B8.1 專注貢獻範疇(如教育、環境事宜、勞工需求、健康、文化、體育)。	61–63
	B8.2 Resources contributed (e.g. money or time) to the focus area. B8.2 在專注範疇所動用資源(如金錢或時間)。	61–63

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