



信義光能控股有限公司

XINYI SOLAR HOLDINGS LIMITED

(Incorporated in the Cayman Islands with limited liability)

(根據開曼群島法例註冊成立的有限公司)

Stock Code 股份代號：00968

A GREEN LIFE WITH

XINYI SOLAR

信義光能 引領綠色生活



2017

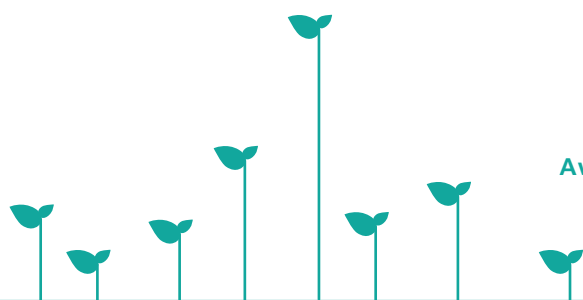
**Environmental, Social and
Governance Report**

環境、社會及管治報告

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ABOUT THIS REPORT 關於本報告

This Environmental, Social and Governance Report (the “Report”) is prepared in accordance with the Environmental, Social and Governance Reporting Guide (“ESG Reporting Guide”), Appendix 27 to the Rules Governing the Listing of Securities of the Stock Exchange of Hong Kong Limited (the “Hong Kong Stock Exchange”) by Xinyi Solar Holdings Limited (“Xinyi Solar” or the “Company”) and its subsidiaries (the “Group”). This report mainly focuses on Xinyi Solar’s work and performance of sustainable development from the economic, environmental and social aspects during the period from 1 January 2017 to 31 December 2017. Throughout the period, the Company complied with the disclosure requirement of the “comply or explain” provisions as set out in the ESG Reporting Guide.

This report covers the Company and its subsidiaries located in Mainland China, Hong Kong, Malaysia, Canada, and their principal businesses, which include: (i) production and sale of solar glass; (ii) development and operation of solar farms; and (iii) provision of engineering, procurement, and construction (“EPC”) services.

This report is available for download at the website of the Hong Kong Stock Exchange (www.hkexnews.hk) and the website of the Company (www.xinyisolar.com).

This Report should be read in conjunction with Xinyi Solar’s 2017 Annual Report. This report is published in Chinese and English. In case of any discrepancy between the two versions, the Chinese version shall prevail.

If you have any questions or suggestions regarding the contents of this report, please contact us by phone or by mail. Our contact details are as follows:

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本報告乃信義光能控股有限公司(「信義光能」或「本公司」)及其附屬公司(「集團」或「本集團」)按照香港聯合交易所有限公司(「香港聯交所」)的證券上市規則附錄二十七《環境、社會及管治報告指引》(「ESG報告指引」)編寫的《環境、社會及管治報告》(「本報告」)，主要從經濟、環境及社會範疇匯報信義光能於2017年1月1日至12月31日期間的可持續發展工作和表現。期內，本公司已遵守ESG報告指引所載「不遵守就解釋」條文的披露要求。

本報告涵蓋本公司及其位於中國大陸、香港、馬來西亞、加拿大的附屬公司及其進行的主營業務，包括：(i)生產及銷售太陽能玻璃；(ii)發展及營運太陽能發電場；及(iii)提供工程、採購及建設(「EPC」)服務。

本報告可於香港聯交所網站(www.hkexnews.hk)及本公司網站(www.xinyisolar.com)下載。

建議本報告連同信義光能2017年年報一併閱覽；本報告以中、英文兩種文字出版，若兩種版本出現差異，請按中文版解讀。

如對本報告的內容如有任何疑問或建議，歡迎來電或來函詢問。我們的聯繫方式如下：

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FOREWORD 前言

Company Background

Xinyi Solar is one of the world's largest solar glass manufacturers, specialising in the research and development, manufacturing, sales and after-sales services of solar glass. The Company provides solar glass products to major solar module manufacturers in the world.

Xinyi Solar has three major solar glass production bases in Wuhu City of Anhui Province, Tianjin in China and Malacca City in Malaysia respectively. The solar glass production lines have a total daily melting capacity of 6,800 tonnes, of which the production line with a daily melting capacity of 500 tonnes in Tianjin has been undergoing repairs and upgrade since April 2018 and is expected to resume operation in the second half of 2018. The production expansion plan of the Group includes three additional solar glass production lines in Malacca City in Malaysia, each with a daily melting capacity of 1,000 tonnes. Major products include ultra-clear solar patterned glass (raw or tempered), coated solar glass, back glass, etc. Solar glass is a critical component for solar modules and is primarily used as the cover sheet to protect solar module panels.



公司背景

信義光能是全球最大的太陽能玻璃製造商，公司專業從事太陽能玻璃的研發、製造、銷售和售後服務，為全球主要的太陽能組件廠商提供太陽能玻璃產品。

信義光能擁有三大太陽能玻璃生產基地，分別位於中國安徽省蕪湖市、天津和馬來西亞馬六甲市，擁有日熔量總計6,800噸的太陽能玻璃生產線(其中於天津的日熔量500噸生產線自2018年4月進行維修改造，預計於2018年下半年重投生產)，而集團的擴產計劃包括於馬來西亞馬六甲市增加三條每條日熔量1,000噸的太陽能玻璃生產線。主要產品包括超白太陽能壓花玻璃(原片、鋼化片)、太陽能鍍膜玻璃、背板玻璃等。太陽能玻璃是太陽能組件的重要元件，主要用作保護太陽能組件面板的蓋板。





Xinyi Solar provides an array of different product solutions from ultra-clear solar patterned glass to conductive thin film solar glass covering crystalline silicon solar cell technology and thin film solar cell technology, which supports the effective enhancement of solar energy conversion efficiency. With a view to building a sustainable photovoltaic industry, Xinyi Solar is committed to enhancing the competitiveness of the solar industry and improving energy efficiency.

Solar energy is a renewable energy, which can reduce the reliance on traditional fuels and cause less damage to the environment and resources. As such, Xinyi Solar also proactively expands its solar power operations, with solar power systems built on the plant rooftops since 2012 for self-consumption and its first utility-scale ground-mounted solar farm project completed in 2014. Xinyi Solar built solar power systems for third parties and participated in photovoltaic (“PV”) poverty alleviation programmes as well. By the end of 2017, the Group had grid-connected solar farm projects with a total capacity of 1,972 megawatts (“MW”).

Management Approach and Philosophy

With a view to building a sustainable PV industry, Xinyi Solar is committed to enhancing the competitiveness of the solar industry and improving energy efficiency. The Group has been consistently striving for cost optimisation, advanced technology, excellent management, quality services and continuous improvement while adopting the business approach of devotedly meeting customers’ increasing expectation on quality. Xinyi Solar places great emphasis on quality and reputation and develops new markets by leveraging on its high quality and continuous innovation of news products. It has already established a professional and reliable corporate image among the customers.

從晶體硅太陽能到薄膜太陽能電池技術，信義光能提供了從超白太陽能壓花玻璃至薄膜導電太陽能玻璃等的不同產品解決方案，為有效提高太陽能轉換效率提供了有利支援。信義光能以提升太陽能行業競爭力和能源效率為己任，致力於打造一個持續發展的光伏產業。

太陽能發電屬可再生能源，能降低對傳統燃料能源的依賴，從而減少對環境資源的破壞。有見及此，信義光能亦積極拓展與太陽能發電相關的業務，包括自2012年起於廠房屋頂建設太陽能發電系統以作自用，於2014年建成首個大型地面太陽能發電場項目向電網售電，以及為第三方建設太陽能發電系統及參與光伏（「光伏」）扶貧項目。截至2017年年底，本集團擁有總容量達1,972兆瓦（「兆瓦」）的已併網太陽能發電場項目。

管理方針及信念

信義光能以提升太陽能行業競爭力和能源效率為己任，致力打造一個可持續發展的光伏產業。集團一直堅持追求最佳成本、先進技術、優秀管理、優質服務、持續改進，全心致力為滿足顧客對品質日益增高的期望為業務方針。信義光能講求品質、注重信譽，靠優良品質和不斷革新產品從而開拓市場，因而在顧客心中建立了專業可靠之企業形象。





In addition, with a strong focus on quality, the Group has been proactively responding to customers' demand. It places a great importance on product quality while meeting the requirements of ISO 9001:2008 Standards for Quality Management Systems and continuously introducing advanced technology and equipment so as to optimise the production process. The Company has provided economic and efficient products for the solar application system for years by virtue of its excellent product performance and service quality.

The Group is convinced that it should conduct business in a responsible and sustainable manner. While consistently creating value for shareholders, it also pays attention to the rights and interests of different stakeholders and maintains contact and communication with them through various means, to listen to their comments and respond to their appeals.

此外，集團亦一直以品質為目標，積極回應客戶訴求，高度重視產品質素，符合ISO 9001:2008質量管理體系標準，不斷引進先進技術及設備；從而優化生產流程。公司多年來憑藉優良的產品性能和服務品質，為太陽能應用系統提供經濟高效的產品。

集團深信應以負責任的態度及可持續發展的方式經營業務，在貫徹持續為股東創造價值的同時，亦關注不同持份者的權益，並透過不同方式與持份者保持聯系和交流，並聆聽意見及回應訴求。

Enterprise vision
企業願景

Creating an outstanding glass company and establishing a world-class brand
締造傑出玻璃企業，成就世界一流品牌。

Enterprise mission
企業使命

Leading a green new life
引領綠色新生活。

Core values
核心價值觀

Trust, integrity, passion and people
信譽至上，義氣爭榮，自強不息，善待天下。



ENVIRONMENT 環境

In response to the country's advocacy and promotion of environmental protection, Xinyi Solar optimises the industrial structure and implements "intelligent" production. As an important part of the enterprise development strategy, "energy saving and environmental protection" is implanted in every step of its development. Xinyi Solar actively explores the path to green development with "Leading a Green New Life" as the enterprise mission. As a member of the renewable energy-related industry, Xinyi Solar not only supports the promotion and application of renewable energy in business activities, but also promotes waste reduction at the source and good management of resources in daily operations, and implements various emission reduction measures to create green spaces.

In order to better and more effectively implement and promote environmental protection work, Xinyi Solar has established a special environmental protection team to consistently implement relevant environmental protection regulations, standards and policies; to carry out unified supervision and management of environmental protection work; to investigate environmental risks and practise emergency drills; and to organise and put in place various environmental protection measures.

Emissions

The Group stringently follows the pollutant emission standards and improves its monitoring and control measures to ensure all the emissions are within the emission standards and practises clean production. In the production process of solar glass, the emitted exhaust gas mainly includes sulphur dioxide (SO₂), nitrogen oxides (NO_x) and smoke and dust. Each production base is equipped with facilities for desulphurisation, denitrification and dedusting and is continuously monitored to ensure that the emission standards required by the country are met, such as the "Integrated Emission Standard of Air Pollutants" (《大氣污染物綜合排放標準》) (GB16297-1996) and the "Emission Standard of Air Pollutants for Flat Glass Industry" (《平板玻璃工業大氣污染物排放標準》).

信義光能在國家提倡和推動環保工作中，優化產業結構，實行「智造」生產，將「節能環保」作為企業發展戰略的重要部分，並植入企業發展的每一個環節，以「引領綠色新生活」為企業使命，積極探索綠色發展之路。作為再生能源相關行業的一份子，信義光能不只在營商上支持再生能源的推廣及應用，亦在日常營運亦推動源頭減廢、善用資源，實行各種減排措施，創造綠色空間。

為更好及更有效的實行和推動環境保護工作，信義光能已成立環保專項小組，以貫徹落實相關的環境保護法規、標準及政策；對環保工作實施統一監督管理；排查環境隱患及實施應急演練；組織並落實各項環境保護措施。

排放

集團嚴格執行污染物排放標準，完善監測和控制措施，確保達標排放和清潔生產。在生產太陽能玻璃的過程中，主要廢氣排放包括二氧化硫(SO₂)、氮氧化物(NO_x)及煙塵。各生產基地已設有脫硫脫硝除塵設施，並進行持續監察，以確保排放物符合國家指定的排放標準，如《大氣污染物綜合排放標準》(GB16297-1996)及《平板玻璃工業大氣污染物排放標準》等。



Emission of air pollutants and greenhouse gases

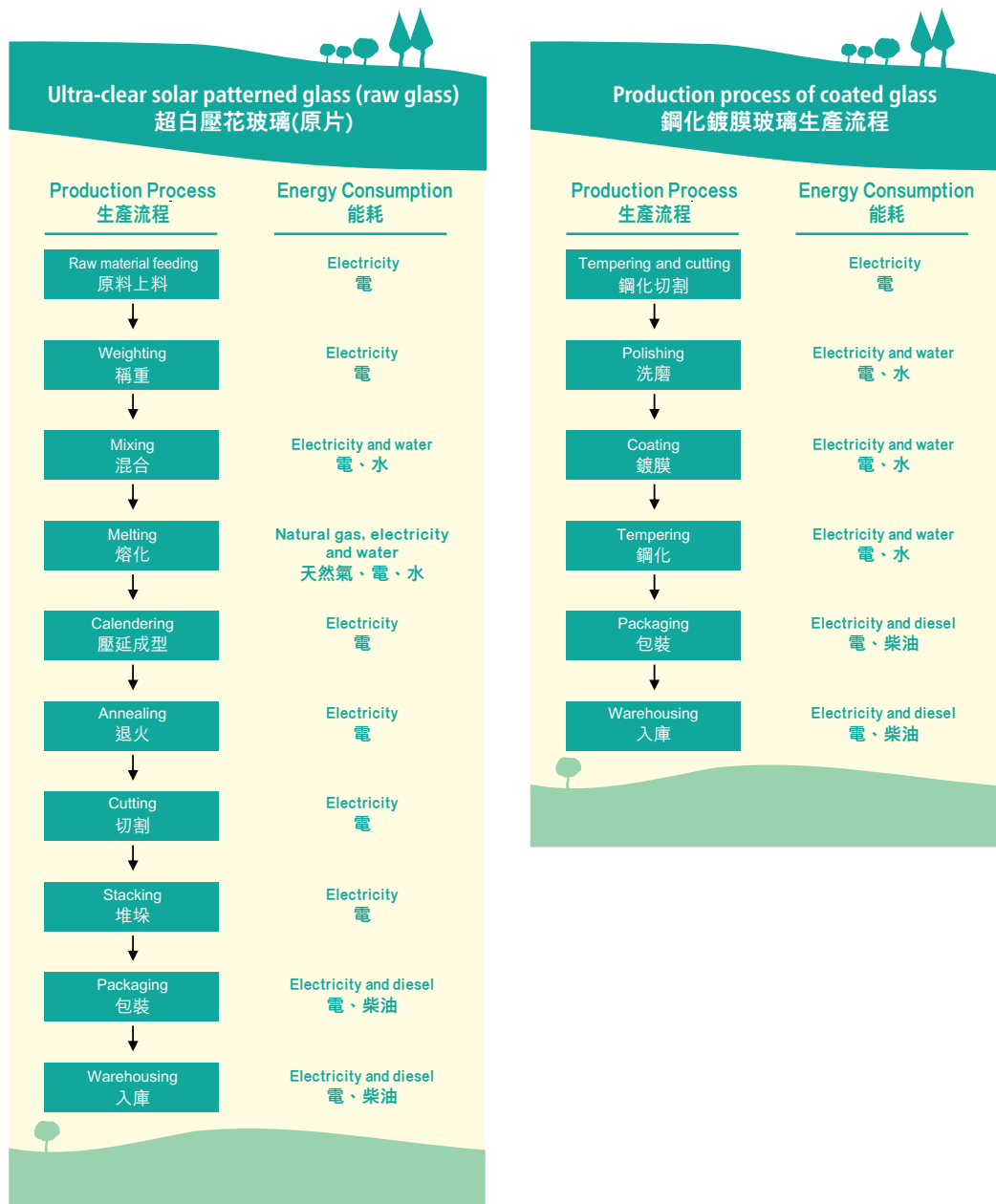
空氣污染物及溫室氣體排放

For the Group, greenhouse gases, sulfur dioxide (SO₂), nitrogen oxides (NO_x) and particulates mainly arise from energy consumption (mainly including natural gas, electricity, water and diesel oil) during the production of solar glass.

就本集團而言，溫室氣體、二氧化硫 (SO₂)、氮氧化物 (NO_x) 及顆粒物的產生主要是來自於生產太陽能玻璃過程中的能源消耗 (主要包括天然氣、電力、水、柴油)。

Main energy consumption in the production of solar glass

生產太陽能玻璃過程中的主要能源消耗





During the reporting period, Xinyi Solar achieved the goal of reducing emissions through a series of energy-saving programmes and by improving the efficiency of environmental protection facilities, including the following actions:

- 1) To minimise the emission of exhaust gas, natural gas, which is an efficient clean energy and is more environmentally friendly compared to other fossil fuels, is used as the primary energy source in the solar glass production lines;
 - 2) In late 2016 and the first quarter of 2017, the Group added three new ultra-clear PV raw glass production lines with an aggregate daily melting capacity of 2,900 tonnes and the ancillary deep processing production lines. The introduction of new equipment and technologies helped reduce the overall energy consumption of the products, thus reducing the emission of pollutants produced per unit of products in the production process;
 - 3) One of the ultra-clear PV raw glass production lines with a daily melting capacity of 500 tonnes located in Wuhu Industrial Complex was cold-repaired and retrofitted for energy saving in late May of 2017 due to the long service life of the furnace and the high energy consumption per unit of products. The overall energy consumption of the products was significantly reduced through the research and development of new energy-saving furnaces and the use of more energy-efficient equipment;
 - 4) Denitrification equipment was renovated to increase denitrification efficiency and reduce the emission concentration of nitrogen oxides;
 - 5) To respond to Anhui Province's Action Plan on Prevention and Control of Air Pollution during Winter, environmental protection facilities were operated at higher rates during winter;
- 於報告期內，信義光能通過一系列節能方案和提高環保設施工作效率以達到減排的目的，其中包括：
- 1) 為盡量減低廢氣排放，太陽能玻璃生產線均採用天然氣作為主要能源，天然氣為高效清潔能源，較其他石化燃料環保；
 - 2) 於2016年年底及2017年第一季度，新增三條日熔量總額為2,900噸的超白光伏原片玻璃生產線及配套的深加工生產線，新設備及技術的引入有助降低產品的綜合能耗，從而減少在生產過程中每單位產品產出的污染物排放量；
 - 3) 鑒於蕪湖工業園的其中一條日熔量500噸的超白光伏原片玻璃生產線因窯爐使用年限較長，產品單耗較高，於2017年5月底對該產線進行冷修及節能改造，通過研發新型節能窯爐，使用更節能設備，大幅度降低產品綜合能耗；
 - 4) 對脫硝設備進行改造，從而增加脫硝效率，降低氮氧化物的排放濃度；
 - 5) 回應安徽省冬季大氣污染防治方案，於冬季期間加大環保設施的運行力度；



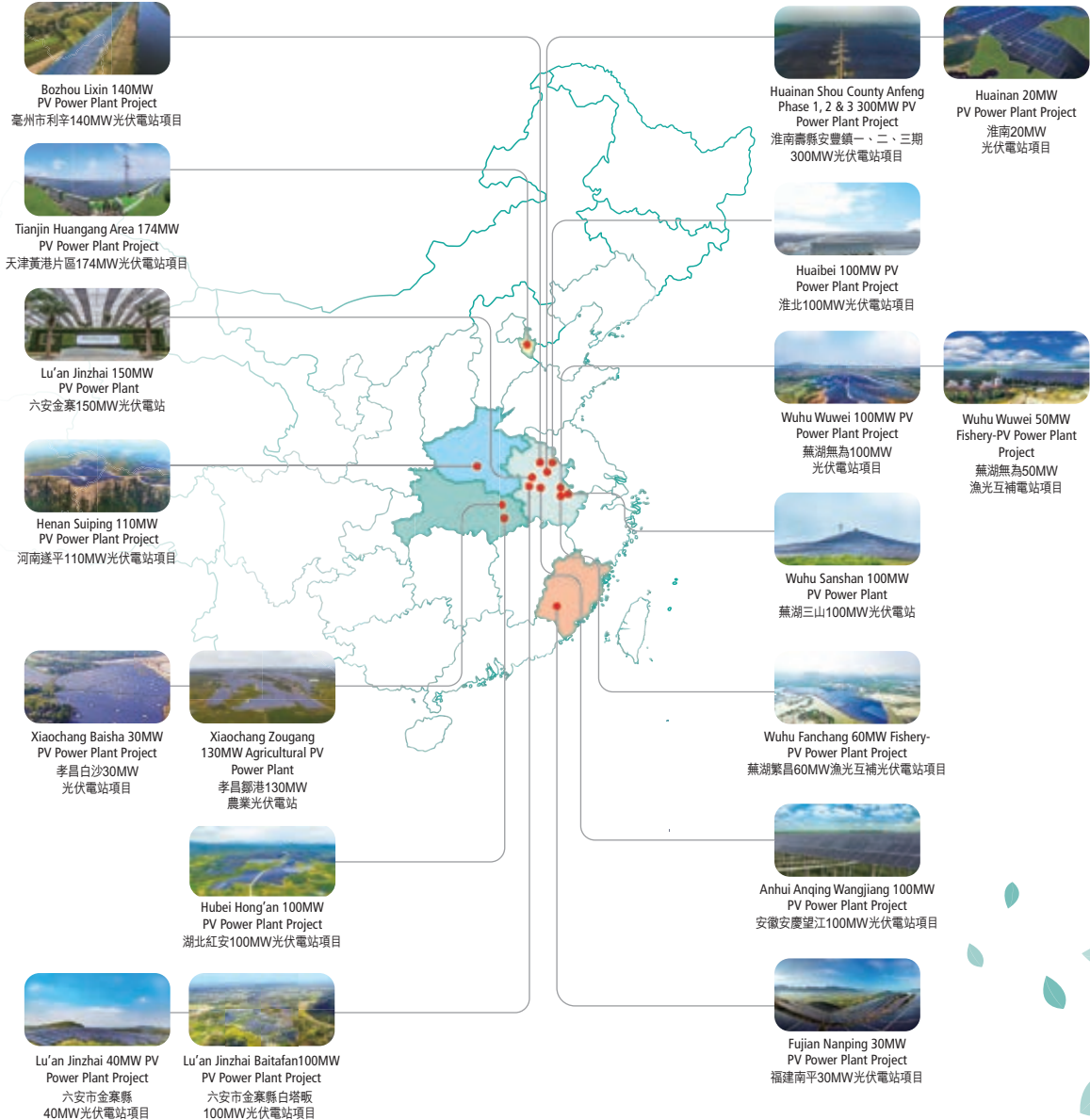
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| 6) Desulphurisation, denitrification and dedusting equipment was added to reduce the emission of nitrogen oxides (NO_x), sulfur dioxide (SO_2) and particulates from the exhaust gas of the furnaces; | 6) 增加脫硫、脫硝及除塵設備，減少窯爐廢氣中氮氧化物(NO_x)、二氧化硫(SO_2)以及顆粒物的排放； |
| 7) The furnace design was improved to reduce fuel consumption and heat loss in the furnace, so as to save energy and reduce consumption; | 7) 改善窯爐設計，以減少燃料使用量及窯內熱量損失，達到節能降耗的目的； |
| 8) Residual heat power generation equipment was added to generate power with the high-temperature flue gases emitted from the furnaces, so as to reduce the consumption of purchased electricity. | 8) 增加餘熱發電設備，利用窯爐排放高溫煙氣發電，減少外購電用量。 |

The solar farm business of the Group is categorised as a renewable energy business. Their operations cause no greenhouse gas emissions and can facilitate energy saving. As of the end of 2017, the solar farms which Xinyi Solar invested in and built had a grid-connected capacity of about 1.9 gigawatt ("GW"). Based on the actual electricity generation of these solar farms in 2017, approximately 656,000 tonnes of standard coals can be saved, and the emissions of carbon dust, carbon dioxide and sulphur dioxide can be reduced by approximately 441,000 tonnes, 1,140,000 tonnes and 49,000 tonnes, respectively, representing the amounts of carbon dioxide absorbed by approximately 2,850,000 trees in one year or the electricity consumed by approximately 812,000 households in one year.

本集團的太陽能發電場業務屬於可再生能源類別，不單沒有產生溫室氣體排放，同時有助節能。截止2017年年底，信義光能投資建設的太陽能發電場併網量約1.9吉瓦(「吉瓦」)。按該等太陽能發電場2017年的實際發電量計，可節約標準煤約65.6萬噸，減排碳粉塵約44.1萬噸，減排二氧化碳約114萬噸，減排二氧化硫約4.9萬噸，相等於約285萬棵樹一年的二氧化碳吸收量或相等於約81.2萬戶家庭一年用電量。



Distribution of Xinyi Solar's ground-mounted solar farms
信義光能地面太陽能發電場分佈圖



Electricity generated by the above solar farms in 2017:
以上太陽能發電場 2017 年發電量：

Saved standard coals (tons) 節約標準煤 (噸)	656,000
Reduced carbon dust emission (tons) 減少碳粉塵排放	441,000
Reduced carbon dioxide emission (tons) 減少二氧化碳排放 (噸)	1,140,000
Reduced sulphur dioxide emission (tons) 減少二氧化硫排放 (噸)	49,000

Equivalent to electricity
consumed by
相當於

812,000
households in a year
戶家庭一年用電量

Equivalent to planting
相當於種植

2,850,000
trees per annum
棵樹每年



During the reporting period, the air pollutants and greenhouse gas emissions generated by the Group in the course of its business were as follows:

於報告期內，本集團在業務過程中所產生的空氣污染物及溫室氣體排放數據如下：

Emission index 排放指標	Unit 單位	2017 2017年
Nitrogen oxides (NOx) emissions ^(Note 1) 氮氧化物(NOx)排放量 ^(附註1)	Tonne 噸	1,999
Sulphur dioxide (SO ₂) emissions ^(Note 1) 二氧化硫(SO ₂)排放量 ^(附註1)	Tonne 噸	605
Particulate emissions ^(Note 1) 顆粒物排放量 ^(附註1)	Tonne 噸	77
Total greenhouse gas emissions 溫室氣體總排放量	Tonne of carbon dioxide equivalent 噸二氧化碳當量	1,616,151
Direct emissions (Scope 1) ^(Note 2) 直接排放(範圍1) ^(附註2)	Tonne of carbon dioxide equivalent 噸二氧化碳當量	1,201,453
Indirect emissions (Scope 2) ^(Note 3) 間接排放(範圍2) ^(附註3)	Tonne of carbon dioxide equivalent 噸二氧化碳當量	414,698
Greenhouse gas emissions per tonne of finished products ^(Note 4) 每噸產成品溫室氣體排放量 ^(附註4)	Tonne of carbon dioxide equivalent 噸二氧化碳當量	0.98
Direct emissions (Scope 1) ^(Note 2) 直接排放(範圍1) ^(附註2)	Tonne of carbon dioxide equivalent 噸二氧化碳當量	0.72
Indirect emissions (Scope 2) ^(Note 3) 間接排放(範圍2) ^(附註3)	Tonne of carbon dioxide equivalent 噸二氧化碳當量	0.25

Note:

附註：

- | | |
|---|--|
| <p>(1) Flue gas emitted from the furnaces during the production of solar glass.</p> <p>(2) Scope 1 - Emissions from fuel consumption (mainly natural gas) and the decomposition of carbonates in feedstock ingredients during the production of solar glass.</p> <p>(3) Scope 2 - Emissions arising from purchased electricity consumption during the production of solar glass, not including the emissions related to the purchased residual heat electricity generation since such amount was already included in the calculation of direct emissions of fuel consumption.</p> <p>(4) Based on the number of tonnes of solar glass production.</p> | <p>(1) 源自生產太陽能玻璃過程中窯爐排出的煙氣。</p> <p>(2) 範圍1 - 生產太陽能玻璃過程中因燃料消耗(主要為天然氣)及原料配料中碳酸鹽分解的排放。</p> <p>(3) 範圍2 - 生產太陽能玻璃過程中因外購電力而引致的排放不包括外購餘熱發電，因與其相關的排放已計入燃料消耗的直接排放計算內。</p> <p>(4) 以太陽能玻璃生產噸數作計算基準。</p> |
|---|--|

*Treatment of waste and sewage*

The Group will try to use non-toxic and non-hazardous materials as well as materials that are easy to be reused and recycled as far as possible. Hazardous waste generated in the construction, production and operation process, which mainly includes discarded reagent bottles (glass), discarded packaging barrels, discarded fluorescent tubes, waste mineral oil, discarded oil brushes and gloves, is identified and sorted in accordance with the requirements of relevant laws and regulations in the places of business. Such waste is separated and temporarily stored in designated areas and managed by designated staff. Qualified agencies are also appointed to follow up the handling of such waste. For the non-hazardous waste, shattered glass will be sent back to furnaces and used as raw materials while discarded packaging materials such as timber, cardboard and plastic will be passed to recycling companies for recycling or treatment pursuant to applicable laws.

廢棄物及污水的處理

集團會盡量使用無毒無害及便於回收利用的材料，對於在建設、生產及營運過程中產生的有害廢棄物，主要包括廢試劑瓶（玻璃）、廢包裝桶、廢燈管、廢礦物油、廢油刷、手套，已根據業務所在地的相關法律法規要求對該等廢棄物進行識別、歸類，並設置專屬暫存區進行隔離，由專人負責管理，並委託有資質廠商進行後續處理。無害廢棄物方面，碎玻璃會回爐作為原材料之用，廢包裝材料（如木材、紙板、塑膠）會交由回收公司進行回收循環再用或採取合法的途徑處理。

Waste and sewage index 廢棄物及污水指標	Unit 單位	2017 2017年
Hazardous waste 有害廢棄物	Tonne 噸	100
Non-hazardous waste 無害廢棄物	Tonne 噸	22,348
Sewage discharge 污水排放	Cubic metre 立方米	115,971



Various industrial complexes and offices have been equipped with recycling facilities to collect recyclable materials. For the Group's performance in waste recycling during the reporting period, please see the following table.

各工業園及辦事處均設有回收設施以收集可回收再用的物料。於報告期內，本集團在廢物回收方面的績效請參閱下表。

Waste recycling index 廢物回收指標	Unit 單位	2017 2017年
Paper 紙張	Tonne 噸	244
Metal 金屬	Tonne 噸	1,860
Plastic 塑膠	Tonne 噸	15
Timber 木材	Tonne 噸	897
Electronic equipment 電子設備	Tonne 噸	15
Total 總計	Tonne 噸	3,031

Each solar glass production base is equipped with sewage treatment and collection system to treat the domestic and industrial sewage, which is discharged only after treatment. The discharge of sewage is regularly monitored with respect to its pH value, chemical oxygen demand (COD), biochemical oxygen demand (BOD5), ammonia nitrogen, vegetable and animal oils and suspended solids (SS). This is to ensure that the emission standards required by the country are met, such as the "Integrated Emission Standard of Pollutants" (《污染物綜合排放標準》) (GB8978-1996). Xinyi Solar also strengthens the recycling and reuse of water resources by collecting sewage discharged from the production process and reuses it after treatment. The utilisation rate of recycled water is more than 80%, and that of some processes reach more than 95%. It continues to optimise and improve the sewage treatment system in the tempering workshop. In addition, large filter presses are installed to reduce the cleaning frequency of sedimentation tanks, thereby reducing the loss of loop water. Through the above measures, water consumption has dropped by approximately 40%.

各太陽能玻璃生產基地設有污水處理收集系統處理生活污水和工業污水，污水經過處理後始作排放，污水排放會就其酸鹼值(pH)，化學需氧量(COD)，生化需氧量(BOD5)，氨氮，動植物油，懸浮物(SS)，並作定期監察，以確保排放物符合國家指定的排放標準，如《污染物綜合排放標準》(GB8978-1996)。同時亦加強水資源的循環使用，收集生產過程中排出的污水，經處理後循環再用，循環水利用率可達到80%以上，部分工序更達95%以上。繼續對鋼化車間的污水處理系統進行優化完善。此外，加裝大型壓濾機，減少沉澱池的清理頻次，從而減少迴圈水的流失。通過上述措施，用水量下降約40%。



The operation process of the Group's solar farms mainly produces domestic sewage. The drainage system in the project areas separates rainwater and sewage so that water is discharged in a controlled manner. Domestic sewage (sewage from canteens with oil separated and solids removed) and the cleaning water of solar modules are treated in septic tanks, collected through drainage pipes which are merged with the sewage pipe networks and then discharged legally.

Use of Resources

Use of energy and water resources

Xinyi Solar continuously invests in the upgrade and improvement of technologies and equipment, energy saving and consumption reduction, and environmentally friendly facilities, so that it can utilise the resources more efficiently and, to some extent, reduce the consumption of various types of resources. During the reporting period, the Group's work in reducing energy consumption and enhancing energy and water efficiency mainly includes:

本集團太陽能發電場的運作過程中主要涉及生活用水，項目區排水採用雨、污分流制，達至有組織排放。生活污水(食堂污水經隔油除渣處理後)和太陽能組件清洗水經化糞池預處理後由排水管收集、匯入污水管網依法排放。

資源使用

能源及水資源的運用

信義光能不斷通過升級改造技術和設備、節能降耗、環保設施的投入，更加有效地利用資源，一定程度上減少對各類資源的消耗。於報告期內，集團在減少能耗及提升能源和用水效益方面的工作主要包括：



Wuhu Plant 蕪湖廠房

- The connection and automation of production processes were strengthened to reduce intermediate processes (such as stacking, packaging, transportation, loading, etc.) so as to reduce transportation energy (diesel) consumption and electricity consumption;
 - Tempering furnaces were integrated to increase efficiency and reduce electricity consumption;
 - Drilling equipment is upgraded to reduce electricity consumption;
 - The water consumption for the deep-processing line was optimised and adjusted, and the sewage treatment systems were optimised and improved in all tempering workshops. All the water used for polishing during deep-processing was recycled water. In addition, a large filter press was installed in the sewage treatment system to reduce the cleaning frequency of the sedimentation tank, thereby reducing the loss of recycled water. Through the above measures, the water consumption dropped by approximately 40%.
- 加強生產流程的連線及自動化，減省中間流程(如堆垛、打包、運輸、上片等)，以節省運輸能耗(柴油)及電耗；
 - 整合鋼化爐以提升效率，有助降低電耗；
 - 改造鑽孔設備以減少電耗；
 - 優化調整深加工產線的用水量，繼續對鋼化各車間的污水處理系統進行優化完善，目前深加工的洗磨用水全部均為循環再利用水。另外，於污水處理系統安裝大型壓濾機，減少沉澱池的清理頻次，從而減少循環再利用水的流失。通過上述措施，用水量下降約40%。

Tianjin Plant 天津廠房

- The use of high-efficiency energy-saving devices, such as the replacement of light bulbs with LED lamps and the installation of time switches for machinery and equipment, reduced electricity consumption by approximately 10%;
 - Electricity consumption per unit of products was reduced by adopting the high-efficiency edging machines in the tempering workshop, shortening the time required for the process and increasing the output rate;
 - Sewage in the tempering workshop was recycled after treatment and the daily water consumption was reduced by nearly 60%.
- 使用高效節能裝置，如以LED燈代替電燈泡、為機器設備加裝定時開關等，用電量因此減少10%左右；
 - 鋼化車間更換高效磨邊機，縮短工序所需時間，提升產出率，從而降低每單位產品的用電量；
 - 鋼化車間污水處理實現循環使用，每日用水量減少近60%。



Malaysian Plant 馬來西亞 廠房

- The electrostatic dedusting + SCR denitrification process was adopted in the course of residual heat generation, so that the denitrification efficiency reached above 80%;
 - Sewage discharge facilities were upgraded in tempering sewage tanks to improve treatment efficiency and reduce water consumption;
 - The management and optimisation of the water used in the polishing session of the tempering workshop was strengthened to reduce the waste of water, and the sewage collection and treatment system was optimised so as to recycle and reuse the water.
- 餘熱發電採用靜電除塵+SCR脫硝工藝，脫硝效率達80%以上；
 - 鋼化污水池排污設施改造，提升處理效率，降低水資源消耗；
 - 加大對鋼化車間洗磨工段用水的管控、優化，減少水的浪費，並優化污水收集處理系統，實現水資源再次利用。

The Group's solar glass production bases in Wuhu and Malaysia have installed residual heat power generation devices to make use of the residual heat generated in the production process for electricity generation. Not only does it save energy, but also helps protect the environment. During the reporting period, some dedusting and denitrification facilities for residual heat power generation were upgraded to reduce the emission of pollutants. In 2017, approximately 12% of the total electricity consumption of the Group came from residual heat power generation.

The Group has built distributed solar power stations of a capacity of approximately 118 MW on the rooftops and in the industrial complexes of its solar glass plants in Wuhu and Tianjin in order to use clean energy. Based on the electricity generation of these distributed solar power stations in 2017, approximately 44,000 tonnes of standard coals can be saved, and the emissions of carbon dust, carbon dioxide and sulphur dioxide can be reduced by approximately 29,000 tonnes, 76,000 tonnes and 3,000 tonnes, respectively. This promotes sustainable development and creates a greener environment for both living and work in the future.

本集團位於蕪湖及馬來西亞的太陽能玻璃生產基地建有餘熱發電裝置，利用生產過程中多餘的熱能轉換為電能，不僅節能，還有利於環境保護。報告期內亦有為部分餘熱發電的除塵、脫硝設施升級，以減少污染物的排放。2017年本集團的總用電量中約12%來自餘熱發電。

集團在蕪湖及天津的太陽能玻璃廠房屋頂及園區建設了容量約118兆瓦的分佈式太陽能電站，藉此採用清潔能源。按該等分佈式太陽能電站2017年的發電量計，可節約標準煤約4.4萬噸，減排碳粉塵約2.9萬噸，減排二氧化碳約7.6萬噸，減排二氧化硫約0.3萬噸。既可促進可持續發展，也為未來締造更綠色的生活與工作環境。





The Group's water supply sources and water intakes were in line with the scope permitted by the laws and regulations applicable to the places where its operations are located, and no difficulties are encountered in obtaining suitable water sources. During the reporting period, the Group's energy consumption and water consumption were as follows:

本集團之供水源與取水量皆符合各業務所在地法規許可的範圍，在獲取適用水源上沒有遇到困難。於報告期內，本集團的能源消耗及用水量如下：

Energy consumption index ^(Note 1) 能源消耗指標 ^(附註 1)	Unit 單位	2017 2017年
Total energy consumption 能源消耗總量	MWh 兆瓦時	1,753,090
Total direct energy consumption 直接能源消耗總量	MWh 兆瓦時	1,072,719
Natural gas 天然氣	MWh 兆瓦時	937,888
Petrol/diesel 汽油／柴油	MWh 兆瓦時	2,563
Other fuels 其他燃料	MWh 兆瓦時	132,268
Indirect energy consumption (electricity purchased) 間接能源消耗量(外購電力)	MWh 兆瓦時	680,371
Energy consumption per tonne of finished products ^(Note 2) 每噸產成品能源消耗量 ^(附註 2)	MWh 兆瓦時	1,058

Water consumption index ^(Note 1) 用水量指標 ^(附註 1)	Unit 單位	2017 2017年
Total water consumption 總用水量	Cubic metre 立方米	4,086,957
Production use 生產用水	Cubic metre 立方米	3,637,839
Domestic use 生活用水	Cubic metre 立方米	449,118
Water consumption per tonne of finished products ^(Note 2) 每噸產成品用水量 ^(附註 2)	Cubic metre 立方米	2.47



Note:

- (1) The above data only covers the Group's solar glass business. Data about the solar farm business and the EPC business is not included in this Report due to their low energy and water consumption. The Group will continue to monitor the impact of the relevant operations on the Group. If necessary, relevant data will be added to future reports.
- (2) Based on the number of tonnes of solar glass production.

Use of packaging materials

In 2017, a total of approximately 15,400 tonnes of packaging materials were consumed by all production bases of Xinyi Solar. As wooden boxes and wooden pallets are one of the major sources of consumption, the Group fully promotes the use of metal frames instead of wooden boxes to facilitate recycling and reuse. During the year, the consumption of wooden pallets at the Tianjin Plant significantly dropped by approximately 80%. Other than that, the Group also continued to encourage customers to use simple packaging to reduce paper consumption. During the reporting period, the Group's consumption of packaging materials was as follows:

附註：

- (1) 以上數據僅涵蓋本集團的太陽能玻璃業務。由於太陽能發電場業務及EPC業務的能源消耗及用水量較少，所以並沒有涵蓋在本報告內。集團會繼續留意相關運作對本集團的影響，如有需要會於日後的報告中加入相關數據。
- (2) 以太陽能玻璃生產噸數作計算基準。

包裝材料使用

2017年信義光能各生產基地合計消耗約1.54萬噸包裝材料。因應木箱及木托盤是其中一個主要消耗源頭，本集團全力推廣以鐵架代替木箱，方便回收及循環使用，本年度天津廠房的木托盤使用量大幅下降約80%。此外，集團亦繼續鼓勵客戶採用簡約包裝以減少紙張消耗量。於報告期內，本集團的包裝材料使用量如下：

Packaging material consumption index 包裝材料使用量指標	Unit 單位	2017 2017年
Total consumption of packaging materials for finished products 製成品包裝材料總使用量	Tonne 噸	15,359
Plastic, plastic strips, plastic bags 塑膠、膠條、膠袋	Tonne 噸	1,258
Timber, wooden strips, wooden pallets 木材、木條、木托盤	Tonne 噸	11,545
Paper, paper boxes, corrugated boxes 紙張、紙盒、瓦通紙盒	Tonne 噸	2,543
Others (labels, sealing adhesive tapes) 其他(標籤、封箱膠紙)	Tonne 噸	13
Consumption of packaging materials per tonne of finished products ^(Note1) 每噸產成品包裝材料使用量 ^(附註1)	Tonne 噸	0.009



Note:

- (1) Since the solar farm business and the EPC business do not involve the use of packaging materials, the calculation is based on the number of tonnes of solar glass production.

附註：

- (1) 由於太陽能發電場業務及EPC業務不涉包裝材料的使用，因此以太陽能玻璃生產噸數作計算基準。

Environment and Natural Resources

Before setting up a solar glass production line or a solar farm, Xinyi Solar has carried out environmental assessment to analyse the natural environment (such as water, soil and natural resources) and the environmental quality (such as air quality, quality of surface water, environmental noise, etc.) of the relevant locations. In addition, the analysis report has set out the primary environmental protection goals and the levels of protection of the locations under consideration. In the last part of the report, a detailed analysis of the environmental impact specifies the impact of construction and operation in terms of noise, water, atmospheric, waste and light pollution, as well as the resulting preventive and control measures adopted and the appropriate investment in environmental protection made by the Group.

While actively developing new energy sources, the Group has also strived to explore PV agricultural smart greenhouse power plant projects that combine new energy and modern agriculture. The PV agricultural smart greenhouse power plant is a PV power generation system integrating solar power generation, intelligent temperature control and modern high-tech planting. The power plant adopts new technologies, new materials, new structures and new processes to reasonably allocate the proportion of solar radiation, thereby organically integrating PV power generation and ecological planting, and realising rooftop power generation, indoor planting and the more effective use of land resources. It is in line with the national industrial policies on promoting PV power generation and modern agriculture, with demonstration effect on promoting the low-carbon concept, energy-saving, emission-reduction and environmental protection, improving planting efficiency and standardisation, and integrating tourism and ecological agriculture.

環境及天然資源

信義光能建設太陽能玻璃生產線及太陽能發電場前均會作出環境評估報告，對所在地的自然環境如水、土壤及自然資源；環境品質狀況如空氣品質、地表水環境品質、區域聲環境品質等作出分析。此外，報告會列出所在地一些主要環境保護目標及保護級別。最後，報告作出詳盡的環境影響分析，列舉工程在施工期及營運期在聲環、水環、大氣環境、廢環、光污染各方面的影響分析，對此採取防治措施及進行適當的環保投資。

集團在積極發展新能源之餘，亦努力探索將新能源與現代農業互相結合的光伏農業智能溫室電站項目。光伏農業智能溫室電站是集太陽能發電、智能溫控、現代高科技種植於一體的光伏發電系統。電站採用了新技術、新材料、新結構、新工藝，合理的分配太陽光照比例，使光伏發電和生態種植有機結合，實現屋頂發電，室內能種植，更有效的利用土地資源，符合國家倡導發展光伏及現代農業的產業政策，對推動低碳、節能減排、環保、提升種植效益及規範化、觀光旅遊與生態農業一體化作出示範作用。





During the reporting period, the Group also continued to adopt the following green office practices to raise our staff's awareness of environmental protection with the aim of protecting the environment and natural resources:

- Setting up waste recycling bins to recycle waste paper, aluminium cans and plastic bottles;
 - Encouraging the staff to save paper and putting a box beside the printer to collect used paper for double-sided printing and reuse;
 - Properly adjusting the temperature of the office air-conditioning system to reduce energy consumption;
 - Reducing the unnecessary power consumption of lighting equipment and only keeping the specially required lighting systems and those for security purposes at lunch breaks and non-business hours;
 - For domestic water use, providing fixed water use subsidies for each dormitory and requiring employees to personally bear the expenses in excess of the subsidies so as to enhance their awareness of water conservation; at the same time, posting slogans at conspicuous places to promote the concept of water conservation;
 - Making use of the sleep mode of computers and the power-saving mode setting;
 - Encouraging the staff to use reusable utensils such as water bottles, cups, etc. and avoid using disposable items such as paper cups;
 - Using energy-efficient appliances such as LED lights and appliances with Grade 1 energy efficiency label;
 - Continuously optimising and promoting office automation and gradually implementing a paperless office.
- 報告期內集團亦繼續提升員工的環保意識，保護環境及天然資源，集團採納以下環保辦公室措施：
- 設置廢物回收箱回收廢紙、鋁罐和膠樽；
 - 鼓勵員工節約用紙，在影印機旁放置單面紙收集箱，以作環保紙之用；
 - 適當調節辦公室空調系統溫度，減少能耗；
 - 減省不必要的照明設備用電，於午休及非辦公時間，只保留有特別需要及配合保安要求的照明系統；
 - 生活用水方面，本集團會對每座宿舍提供用水定額補貼，超出補貼額則由員工個人負擔該等費用，從而推動員工節水意識；亦於當眼處張貼標語，宣貫節約用水理念；
 - 善用電腦休眠模式及省電模式的設置；
 - 鼓勵員工使用可循環再用器具，如水樽、水杯等，避免使用即用即棄用具，如紙杯；
 - 使用具能源效益的電器，如LED燈及標有一級能源效益標籤的電器；
 - 不斷優化並推行辦公自動化，逐漸實現無紙化辦公。



Compliance

Xinyi Solar complies with the environmental protection laws and regulations applicable to each of its places of business and takes necessary environmental protection measures. The relevant laws and regulations mainly include:

守法循章

信義光能遵守各業務所在地所適用的環保法律法規，採取必要的環境保護措施，相關法律法規主要包括：

China 中國	Malaysia 馬來西亞
“Environmental Protection Law of the People’s Republic of China” 《中華人民共和國環境保護法》	“Environmental Quality Act 1974” 《1974年環境素質法》
“Law of the People’s Republic of China on Appraising Environmental Impacts” 《中華人民共和國環境影響評價法》	“Environmental Quality Act 1987” 《1987年環境素質法令》
“Law of the People’s Republic of China on the Prevention and Control of Atmospheric Pollution” 《中華人民共和國大氣污染防治法》	“Guidelines for Environmental Impact Assessment 1990 of Malaysia” 《1990年馬來西亞環境影響評估指南》
“Law of the People’s Republic of China on the Prevention and Control of Water Pollution” 《中華人民共和國水污染防治法》	“Guidelines for Environmental Impact Assessment 1994” 《1994年環境影響評估指南》
“Law of the People’s Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste” 《中華人民共和國固體廢物污染環境防治法》	

Each subsidiary of the Group has formulated pollutant emission monitoring measures in accordance with the relevant laws and regulations in the place in which it operates. It has also arranged for professional organisations to assess and monitor the discharge of sewage and exhaust gas from time to time to ensure compliance with pollutant emission standards. During the reporting period, the Group did not discover any non-compliant matters that have a significant impact on the environment or on the Group, including exhaust gas emissions and greenhouse gas emissions, sewage discharge and waste disposal.

本集團各附屬公司已根據業務所在地的相關法律法規要求製訂污染物排放監測措施，亦會不時安排專業機構對污水及廢氣排放等作評估及監測，以確保污染物的達標排放。於報告期內，本集團並無發現任何對環境或對本集團造成重大影響的違法行為，包括廢氣及溫室氣體排放、污水排放及廢物棄置。



SOCIAL RESPONSIBILITY 社會責任

The relationship between enterprises and society is inseparable. Enterprises are a part of society while the development of society is driven by enterprises, suggesting their mutual influence on each other. Xinyi Solar has established solar glass production bases and solar farms in different locations in China and overseas countries, and their operations rely on the resources provided by society. In turn, the Group has the responsibility and obligation to serve society and take into account the interests of different stakeholders.

Employment and Labour Practices

Xinyi Solar adheres to the philosophy of “People-Oriented” and is committed to providing the employees with a safe and healthy work environment. The staff members are encouraged to show their creativity and potential, realising the co-development of the staff and the enterprise.

In strict compliance with the requirements of the relevant local laws and regulations, staff recruitment is carried out in an open, fair and just manner to uphold the legal interests of the staff including reasonable working hours. In order to protect the interests of both parties, the employment agreement specifies the employment conditions in detail, including remuneration and benefits, training, workplace safety, confidentiality, non-competition agreement and the terms of termination.

Before joining, each new staff member is provided with induction training to gain knowledge of the company culture, rules and regulations, safe production, system establishment, job positions and duties, etc., including the corporate profile, overview of the industrial complexes, training on safety knowledge, training on system knowledge and external training.

企業與社會的關係密不可分，企業是社會的其中一部分，社會亦有賴企業推動運轉，兩者相互影響。信義光能在中國及海外不同地點設有太陽能玻璃生產基地、太陽能發電場，有賴社會提供資源讓集團得以運作，集團亦有責任及義務回饋社會及照顧不同持分者的權益。

僱傭及勞工常規

信義光能堅持「以人為本」的理念，致力為僱員提供安全及健康的工作環境；鼓勵員工發揮其創造力和潛能，實現員工與企業共同發展。

員工招聘嚴格按照當地的相關法律法規要求，以公開、公平、公正方式進行，維護員工合法權益，配置合理工時。為保障雙方權益，僱傭協議會詳細列明僱傭條件，其中包括薪酬福利、培訓、工作場所的安全、保密原則、不競爭協定及終止協議條款。

每位員工入職前，均有入職培訓，讓新員工瞭解企業文化、規章制度、安全生產、體系建設、崗位職責等方面的知識，例如包括集團概況、工業園概況、安全知識培訓、體系知識培訓和委外培訓。



SOCIAL RESPONSIBILITY 社會責任

As of 31 December 2017, the number of employees of Xinyi Solar was 3,493, including solar glass production, research and development, sales and management teams, solar farm development, construction, operation, maintenance and management teams, and EPC project operation and management teams. Xinyi Solar has adopted a diversified policy on recruitment. Talents are recruited based on their skills and professions, regardless of the age, gender, ethnicity, nationality and location, and religious and political beliefs of the staff. All staff members enjoy equal opportunities for recruitment, work, remuneration and benefits, promotion and compensation.

截至2017年12月31日，信義光能的僱員數目達3,493人，包括太陽能玻璃生產、研發、銷售及管理團隊，太陽能發電場開發、建設、運維及管理團隊，以及EPC項目經營及管理團隊。信義光能的招聘採用多元化政策，不論員工的年齡、性別、民族、國籍和地區、宗教信仰及政治理念，而是基於他們的技能和專業招聘人才。所有僱員在招聘、勞動、薪酬福利、晉升、補償均享有平等機會。

Region	地區	Number of individuals 人數	% of total number of individuals 佔總人數比例	Turnover rate 流失比率
Mainland China	中國大陸	3,032	86.8%	7.2%
Malaysia	馬來西亞	419	12.0%	2.8%
Other regions	其他地區	42	1.2%	—
Total	合計	3,493	100.0%	6.6%

Age	年齡	Number of individuals 人數	% of total number of individuals 佔總人數比例	Turnover rate 流失比率
30 or below	30歲或以下	1,586	45.4%	8.1%
31-40	31-40歲	1,333	38.2%	1.9%
41-50	41-50歲	475	13.6%	1.1%
51 or above	51歲或以上	99	2.8%	0.1%
Total	合計	3,493	100.0%	4.6%

Gender	性別	Number of individuals 人數	% of total number of individuals 佔總人數比例	Turnover rate 流失比率
Male	男	3,068	87.8%	6.9%
Female	女	425	12.2%	4.2%
Total	合計	3,493	100.0%	6.5%



SOCIAL RESPONSIBILITY 社會責任

Xinyi Solar provides the employees with attractive remuneration and benefits. Staff remuneration, comprised of basic salary, performance-based salary and incentives/penalties, is adjusted for factors such as the Company's results, the value of the staff member's position, personal capability and performance, social development level, etc. The Company makes contributions to the social insurance for its staff and provides them with meal allowances, housing benefits, subsidies for high heat, and transport and communication allowances.

To retain high calibre staff members, annual internal appraisal is required for employees and those eligible could participate in the share option scheme of the Company as an incentive. In addition, the Company presents service awards to its employees. Staff members will be awarded service awards after the completion of their first and second 5-year contract terms. For staff members who work for Xinyi Solar for consecutive 10 years, the Company will additionally consider granting share options as an incentive.

In view of the fact that the Malaysian Plant has many employees with different nationalities and religious beliefs, the Group has set up dedicated prayer rooms in workshops and office buildings. There are different restaurants for employees in the living area (including Malaysian restaurants, Halal restaurants, Chinese restaurants and the food street).

In response to the increasingly fast pace of life, Xinyi Solar encourages its employees to achieve work-life balance. It organises medical check-ups and travel tours for the employees and holds various events such as entertainment and recreational activities including birthday parties, football matches, Chinese New Year celebrations, National Day celebration, etc. for them. There are different cultural and daily facilities in the industrial complexes, such as library, basketball court, football field, badminton court, snooker room, table tennis room, cyber cafe, TV room, karaoke room, fitness room, medical room, kiosk, tuck shop, staff canteen, etc.

信義光能為僱員提供具吸引力的薪酬和福利。員工的薪酬由基本工資、績效工資和獎罰額度構成，薪酬隨著公司業績、員工崗位價值、個人能力與績效以及社會發展水平等因素進行調整。公司為員工繳納社會保險，為員工提供飲食津貼、住房福利、高溫補貼、交通及通訊補助。

信義光能為挽留優秀員工，員工每年須作內部評核，符合資格者可參與公司的購股權計劃，作為獎勵。此外，信義光能設有就業服務獎。員工第一個及第二個五年期勞動合同期滿後，均會頒發信義就業服務獎。對於在信義光能連續工作滿十周年的員工，公司會考慮額外授予購股權以作激勵。

鑒於馬來西亞廠房有較多不同國籍及宗教信仰的員工，集團於車間及寫字樓均設有專門的祈禱室，生活區內設有不同餐廳（包括馬來餐廳、清真餐廳、中國餐廳以及美食街）供員工自行選擇。

面對日益加快的生活節奏，信義光能鼓勵僱員平衡工作與生活，為僱員組織健康體檢和旅遊，並為僱員舉辦各項活動如娛樂康體活動如生日會、足球比賽、春節晚會、國慶晚會等。工業園內設有不同文化、生活設施如圖書室、籃球場、足球場、羽毛球場、桌球室、乒乓球館、網吧、電視房、卡拉OK室、健身房、醫療室、小賣部、小吃店、員工飯堂等。



Xinyi Solar strictly follows the requirements for working hours and holidays of the local laws in the places where its operations are located. The employees are entitled to the local statutory holidays and paid leaves including marriage leave, bereavement leave, maternity leave and paternity leave, etc.

Health and Safety

Xinyi Solar places great emphasis on ensuring staff's safety and is committed to ensuring the safety and health of their staff through advocacy and promotion, education and trainings, etc.

The Group sets up safety management and implementation instrumentality with dedicated personnel. We develop and implement health and safety management system and operational guideline to mitigate potential risks by strengthening the prevention of and control on incidents, as well as regular inspections on dangerous source spots. The Group provides their staff with work protective equipment and supplies, as well as improving health and safety in workplace environment and conducting annual medical check-ups. Smoking is prohibited in office areas, production workshops and solar farms in order to create a healthy, safe, clean and comfortable working environment.

The Group organises regular trainings for staff who are responsible for safety production management, sharpens its employees' skills in health and safety measures and strengthens operational maintenance on production equipment and facilities to ensure production safety. Through integrated internal and external education and promotion on health and safety, including seminars on safety knowledge, safety settings, safety warning marks and banners, as well as slogans and many other ways, safety awareness of staff is enhanced. This can ensure the proper implementation of safe production policies and operation standards.

Occupational health and safety management activities of the Group's ultra-clear solar patterned glass production have fulfilled OHSAS 18001: 2007 Standards for Occupational Health and Safety Management Systems.

信義光能嚴格遵守各業務所在地法律規定的工作時限和假期，並按當地法定節假日放假，另設有婚假、喪假、產假、陪產假等有薪假期。

健康與安全

信義光能一直高度重視保障員工安全，並致力透過宣傳和推廣、教育和培訓等，確保員工的安全及健康。

本集團設有安全管理和執行部門並配備專門人員，負責制定及執行健康安全管理制度和操作規程，加強事故的預防和控制，定期巡查危險源點，整改隱患。集團亦為員工配備勞動保護設施和用品，改善工作場所健康與安全環境，每年進行健康體檢。在辦公室、生產車間以及太陽能發電場嚴禁吸煙，以營造健康、安全、整潔和舒適的工作環境。

集團定期組織對安全生產管理人員的培訓，提高員工的健康安全技能，並加強生產設備設施運行維護，確保安全生產。通過內外相結合的健康與安全教育和宣傳，如安全知識講座、安全設置、安全警示標識、條幅及標語等多種形式，提高員工安全意識，確保安全生產規章制度和技術操作規程的實現。

與本集團超白太陽能壓花玻璃生產有關的職業健康安全管理活動已符合OHSAS 18001: 2007職業健康安全管理體系標準。





Development and Training

Xinyi Solar is committed to promoting staff training and development activities, which enhances the professional knowledge and skills of their staff, improves their management skills and nurtures their problem-solving abilities. The comprehensive training resources and the learning environment enable the staff to learn more efficiently, so that talents can maintain their competitive edges through continuous innovations.

Training contents are diversified, which include programmes on enhancing production safety such as “6S Management and Operation Standardisation in Workplace”, “Analysis and Prevention of Work-Related Injuries”, etc. Programmes that build up personal professional skills and knowledge include “Knowledge of Glass Technology”, “Training on Production Equipment Maintenance”, “Information on the Industry and its Related Upstream and Downstream Industries”, “Sales Psychology and Negotiations and Service Skills”, etc. Teamwork and management abilities are cultivated through programmes such as “Shaping of a Leader and Leadership”, “Team Skill Enhancement in Business Negotiations”, “Management Knowledge of Quality and Cost”, etc.

In 2017, the total number of internal and external training hours was approximately 49,955 hours, and the number of participants was 26,318.

To strengthen the communication among staff and facilitate a harmonious relationship, the Group organises various recreational activities from time to time. For example, activities are held for the holidays such as the gala nights for the New Year’s Day and Spring Festival, where lucky draws are offered and the employees can deeply feel the festive atmosphere. There are also staff singing contests and chess contests, etc. These further enrich the cultural life of Xinyi Solar’s staff for their wellbeing. In addition, the Group hopes that its staff can achieve a balanced development both physically and mentally. Table tennis tournaments, basketball games, fishing competitions, tug-of-war contests and various kinds of gala nights are held regularly. Through these activities, bonding among colleagues is strengthened and a cooperative spirit of endeavour and unity is promoted.

發展及培訓

信義光能致力推動員工培訓和發展活動，故不斷增進僱員的專業知識與技能，提升管理技巧，培養其解決問題的能力，完善的訓練資源與學習環境，員工的學習更具效率，使人才不斷創新，保持競爭優勢。

培訓內容十分多元化，包括提高生產安全的課程如《工作現場6S管理及作業標準化》、《工傷事故分析及預防》等；建立個人專業技能及知識如《玻璃工藝知識》、《生產設備維護保養培訓》、《行業及上下游相關行業資訊》、《銷售心理學與談判、服務技巧》等；培養團隊合作和管理能力的課程如《領導者修煉與領導力》、《團隊商務談判技能提升》、《質量成本管理知識》等。

2017年的內外部培訓總時數約49,955小時，參與人次為26,318人次。

為了加強員工之間的溝通，促進彼此之和諧關係，集團不時為員工舉辦各種康樂活動，每逢節日舉辦活動，如元旦、春節等晚會，中間加插抽獎部分，以讓員工大大感受到節日的氣氛；全體員工歌唱比賽及象棋比賽等，進一步豐富信義光能員工的文化生活，愉悅身心。此外，集團亦希望能增強員工身心平衡的發展，會定期舉辦乒乓球賽、籃球賽、釣魚比賽、拔河比賽及各式晚會等。透過該等活動，從而加強同事之間的凝聚力，發揚拼搏及團結之合作精神。



Labour Standards

Xinyi Solar strictly complies with the local labour standards in the places where its businesses are located, including “Labour Law of the People’s Republic of China”, “Labour Contract Law of the People’s Republic of China” and “Employment Act 1955 of Malaysia”, etc., as well as the relevant laws and regulations prohibiting child labour and forced labour. To ensure staff health and safety, forced labour is forbidden. In addition, staff can engage in relevant jobs only upon completion of training.

Supply Chain Management

Xinyi Solar has been maintaining the harmonious partnership of equal footing, honest cooperation and mutual benefits with suppliers. Supplier management has been standardised. Supplier assessment system has been improved through tendering and procurement. This is to create a fair and just competition environment for suppliers.

To avoid over-dependence on a particular supplier, Xinyi Solar has sourced raw materials, fuel, production equipment, solar modules and other components, supporting materials, etc. from suppliers from different regions, including China and overseas countries. The diversification of supplies helps the Group to reduce its procurement risks, control its purchasing costs and guarantee the quality of the goods purchased.

For supplier selection, in addition to product quality, prices, production capacity, experience, industry qualification and certification, market reputation and after-sales service of the suppliers, the Group also pays close attention to the business ethics, integrity and social responsibilities, etc. of the suppliers. The Group also conducts on-site surveys and appraisal on major suppliers, including visits to plants, assessments on their production facilities and machinery, audits on their record and management system, as well as meetings with their management, etc. These can ensure that all qualified suppliers have followed the standards required by the Group.

Xinyi Solar has also conducted annual appraisal to exclude those suppliers that fail to meet the required standards. This can ensure that products or services comply with our quality standards and requirements.

勞工準則

信義光能嚴格遵守各業務所在地的勞工準則，包括《中華人民共和國勞動法》、《中華人民共和國勞動合同法》、《馬來西亞勞工法令》(Employment Act 1955)等，以及關於禁止使用童工或強制勞動的法律法規。為保障員工健康和 safety，嚴禁強迫勞動。此外，員工需經過培訓才可從事相關工作。

供應鏈管理

信義光能一直以來與供應商均維持平等協商、誠信合作、互惠互利的友好合作關係，建立了規範的供應商管理機制，通過招標採購，完善供應商評價體系，為供應商創造公平公正的競爭環境。

為免過份依賴個別供應商，信義光能向來採納來自不同地區(包括中國及海外)的供應商提供原材料、燃料、生產設備、太陽能組件及其他零部件、輔助材料等，多元化的供貨選擇有助集團降低採購風險、控制採購成本及保證採購質量。

對於供應商的甄選，除了產品質量、價格、產能、經驗、行業資格及認證、市場信譽及售後服務外，集團亦關注供應商的商業道德、誠信經營及社會責任等。集團亦會派員定期對主要供應商進行實地考察及評估，包括到訪廠房、評估生產設施及生產機器、審核記錄保存及管理系統，以及拜訪管理層等，確保供應商符合集團訂定的標準，方可成為合資格供應商。

信義光能亦會對供應商進行年度評估，剔除不達標的供應商，以確保產品或服務符合質量標準和要求。



Xinyi Solar has developed and implemented “Procurement and Outsourcing Management System” to ensure smooth operation of production, saving in procurement costs, optimisation and standardisation of supply chain management. Centralised and specialised procurement function aims at resources sharing and efficient allocation and use of supplies among different units within the Group. All procurement is executed by signed agreements or contracts. Execution of the contracts and settlement controls are strictly monitored. Xinyi Solar has compiled a list of suppliers for regular evaluation and update to monitor the consumption of raw materials and ancillary parts, etc. Through the above measures, our supply chains can be secured.

Product Responsibility

Xinyi Solar is committed to the production of quality solar glass, with great emphasis on product quality and reputation. We comply with the ISO9001:2008 Standards for Quality Management Systems and have passed the China Compulsory Certification (CCC) and CQC Product Certification for Coated Glass. To ensure that solar glass product quality meets the given standards of the Group, Xinyi Solar has been adopting stringent quality control procedures including:

- quality checks are conducted on raw materials supplied by our suppliers. Various supply sources are checked and compared to ensure the raw materials purchased are of the best quality. After the raw materials are mixed, we also conduct sample testing on the mixture before putting them into our furnaces;
- developed and implemented stringent quality control, assurance standards and inspection procedures at each key production process. These standards and procedures are documented in our quality control manuals which have been distributed to our quality control staff;
- automated monitoring system has been established in our production process to check and report key production parameters. If irregularity is found, correction will be made by the control staff immediately;

信義光能已制定並執行《採購和外包管理制度》，確保生產正常運行，降低採購成本，完善供應鏈管理，規範採購行為，集團化、專業化採購，並以達到資源分享，內部單位物資可相互調配使用的目的。所有採購都會簽訂合約合同，嚴格監督合同的履行和控制資金的支付。信義光能設有供貨商名冊並定期對其評估和更新，監控原材料、配件等物資的消耗情況。透過上述措施，確保供應鏈的安全。

產品責任

信義光能致力於生產優質太陽能玻璃，十分重視產品的質量和信譽，符合ISO9001:2008質量管理體系標準，並通過了中國國家強制性產品認證(CCC)及鍍膜玻璃CQC產品認證。為確保太陽能玻璃產品質量達到集團的既定標準，信義光能一直採取嚴格的品質監控程序，其中包括：

- 對供應商供應的原材料進行質量檢查，亦通過比較不同供應商提供的原材料尋求最佳質量的原材料。原材料混合後，亦會在放入窯爐前對混合物進行抽樣測試；
- 於生產工序的各個關鍵步驟制訂及實施嚴謹的品質監控及保證標準和檢測程序。該等標準及程序載於我們的品質監控手冊，分發給品質監控人員；
- 生產流程設有自動監測系統，檢查並報告生產過程的主要參數，出現異常情況時監控人員會馬上作出修正；



- quality control laboratory has been set up in each production plant to conduct functionality tests. Finished glass products must pass the designated quality control tests, including bubble check, mechanical strength check, etc., before packaging and sale.

During the reporting period, there are no products of the Group sold or shipped subject to recalls for safety and health reasons.

In terms of the operation of solar farms, the Group strictly complies with the relevant laws and regulations, industry standards and regulations for its power system, as well as following the unified dispatch by power grid dispatching agencies to ensure the safe operation of the power system. The Group has a centralised monitoring system to monitor the operation of each solar farm in real time. It also conducts special and professional safety inspections for power grid safety on a regular basis and carries out accident drills.

Anti-corruption

Xinyi Solar strictly follows relevant regulations, advocating in a proactive manner that the philosophy of integrity, honesty, fairness and to abide by the law is implemented to the words and behaviour of all staff in daily basis. The Group has zero tolerance for corruption and fraud.

During the reporting period, the Group was not aware of any material violations of laws and regulations that had a significant impact on the Group in respect of corruption and fraud.

Xinyi Solar has developed internal codes, behaviour guidelines and reward and punishment systems to ensure that all staff understand the significance of integrity and ethical conduct and carry them out properly, as well as avoiding any circumstances which may cause actual or potential conflicts of interest.

- 每個生產廠房均設有品質監控實驗室，進行功能測試。產成品玻璃必須通過指定的品質監控步驟(包括氣泡檢查、機械強度檢查等)，方可包裝出售。

於報告期內，本集團沒有因安全或健康理由而須回收已出售或已付運的產品。

在太陽能發電場的運作方面，本集團嚴格遵守相關的法律法規、行業標準及所屬電力系統的規程規範，服從電網調度機構的統一調度，以確保電力系統安全運行。集團設有集中監控系統，實時監測每個太陽能發電場的運營，亦會定期開展各項涉及電網安全的專項和專業安全檢查，並進行事故演習。

反貪污

信義光能嚴格遵守相關規範，積極宣導所有僱員在日常的言、行中具體落實正直、誠實、公平和遵守法令的理念。集團對貪污及欺詐採取零容忍的態度。

於報告期內，本集團並不知悉在貪污及欺詐方面有任何對本集團造成重大影響的重大違反法例法規情況。

信義光能已制定內部守則、行為指南與獎懲制度，確保所有員工皆理解及落實誠信及道德行為的重要性，並避免任何可能導致實際或潛在利益衝突的情況。





Xinyi Solar established an Office for Corruption-free of the Group under the Legal Department of the Group, specialising in handling corruption affairs of the Group. Staff can report by letters, emails, telephone calls, etc. to the Office for Corruption-free various misconduct of any staff, including any breach of duty, dereliction of duty, abusing power for personal gains, receiving bribes, and encroaching company assets. Appropriate action will be taken for the reported case after investigation, collection of evidence, verification and conclusion drawn. The internal audit team also carries out special or routine investigations from time to time to prevent and plug the loophole.

The business operation of the Group complies with the standards of conduct specified in the relevant laws and regulations (e.g. the relevant anti-corruption and anti-bribery laws in the PRC, “Prevention of Bribery Ordinance” of Hong Kong, etc.) in the place where its businesses are located.

Community Participation

Xinyi Solar adheres to the core values of “trust, integrity, passion and people” with a deep sense of social responsibility. It is enthusiastic about public welfare undertakings, and starts from improving the energy structure and solving local energy problems. The Group implemented its first PV poverty alleviation project in Jinzhai County of Anhui Province in April 2014, serving as a model for innovative poverty alleviation in China. In 2017, PV poverty alleviation EPC projects with a total capacity of more than 300 MW were completed in different counties and cities of Anhui Province, benefiting more than 40,000 families living in poverty.

信義光能在集團法務部下設立了集團廉潔辦公室，專責處理集團廉潔事務。員工可以通過信函、電子郵件、電話等方式向各地工業園廉潔辦舉報公司任何員工的各類失職、瀆職、以權謀私、收受賄賂、侵佔公司財物等違規行為，經調查、取證、核實、得出結論後予以處理。內部審計小組亦會不時作專案或例行調查，以防止及堵塞漏洞。

本集團的業務營運符合所在地的相關法規（如中國的相關反貪污賄賂法規、香港的《防止賄賂條例》等）所訂明的行為標準。

社區參與

信義光能秉持「信譽至上，義氣爭榮，自強不息，善待天下」的核心價值，肩負高度社會責任感，熱心公益事業，從改善能源結構及解決當地能源問題為出發點，2014年4月於安徽省金寨縣實施首個光伏扶貧工程，創新模式成為全國扶貧模版。2017年於安徽省不同縣市完成超過300兆瓦的光伏扶貧EPC工程，令4萬多戶貧困人口受惠。

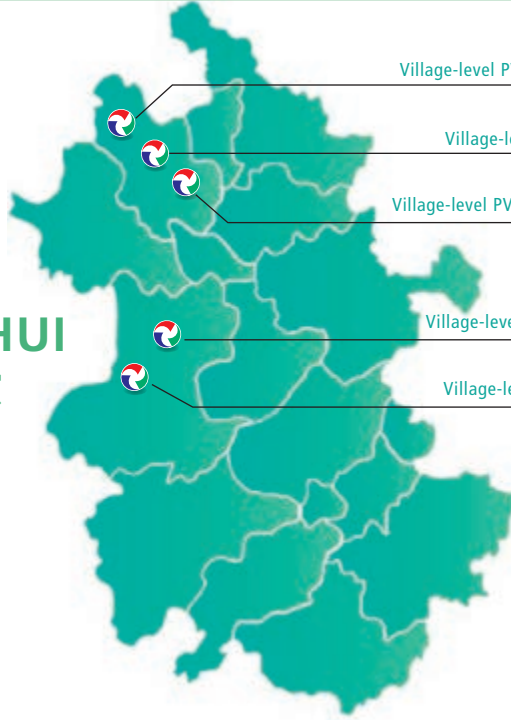


Distribution of Xinyi Solar's PV poverty alleviation power plants
信義光能光伏扶貧電站分佈圖

BOZHOU
亳州

我公司在亳州市利辛縣、蒙城縣、譙城區共建設 1,684 個(約 314 兆瓦)村級光伏扶貧電站，幫助 40,416 戶人口脫離貧困
The Company has built a total of 1,684 Village-Level PV poverty alleviation power plants (approximately 314 MW) in Lixin, Mengcheng and Qiaocheng in Bozhou, lifting 40,416 families out of poverty.

ANHUI
安徽



安徽亳州譙城村級光伏扶貧電站
Village-level PV poverty alleviation power plant in Qiaocheng, Bozhou, Anhui Province

安徽亳州利辛村級光伏扶貧電站
Village-level PV poverty alleviation power plant in Lixin, Bozhou, Anhui Province

安徽亳州蒙城村級光伏扶貧電站
Village-level PV poverty alleviation power plant in Mengcheng, Bozhou, Anhui Province

安徽六安壽縣村級光伏扶貧電站
Village-level PV poverty alleviation power plant in Shouxian, Lu'an, Anhui Province

安徽六安金寨村級光伏扶貧電站
Village-level PV poverty alleviation power plant in Jinzhai, Lu'an, Anhui Province

JINZHAI
金寨

全國首個光伏扶貧項目——金寨光伏扶貧創新模式已成為全國扶貧模版

2014 年初全國首個光伏扶貧模式在安徽金寨縣精準扶貧到戶項目中得到認可，我公司在金寨縣共完成 8,741 戶用電站，286 個村級電站，總容量約 43MW，幫助 14,300 戶人口脫離貧困。

The innovative PV poverty alleviation mode in Jinzhai, which is also the first PV poverty alleviation project in China, has become the model for poverty alleviation nationwide.

In early 2014, the first national PV poverty alleviation mode was approved in the targeted "direct-to-home" poverty alleviation programmes in Jinzhai, Anhui Province. The Company has completed 8,741 power plants for household use and 286 village-level power plant with a total capacity of approximately 43 MW, lifting 14,300 families out of poverty.

During the reporting period, the Group also actively participated in the following charity activities:

- Employees from Tianjin Plant organised a volunteer team to visit disabled children in Shepherd's Field Children's Village in March and to visit a home for the elderly located in Xijuehe Village in November;
- Employees from Wuhu Plant received the teacher and student representatives of Yurui Experimental Primary School to visit the glass production and processing process in September;

於報告期內，集團積極參與的其他慈善公益活動包括：

- 天津廠房員工組織了義工隊於 3 月份前往牧羊地兒童村探望殘疾兒童，於 11 月探訪西掘河村敬老院；
- 蕪湖廠房員工於 9 月份接待了育瑞實驗小學的師生代表參觀玻璃生產加工過程；



SOCIAL RESPONSIBILITY 社會責任

- Employees from Hong Kong office participated in the Community Chest Dress Casual Day in October;
 - Donations: The Group donated approximately HK\$8,410,000 to the EPC service for the photovoltaic power generation project at Tongshan Temple, Sanshan District, Wuhu City, Anhui Province; the Group also sponsored other sports projects, school construction and charitable activities with a total donation of approximately HK\$680,000.
- 香港辦公室員工於10月份參與了香港公益金舉辦的便服日；
 - 捐贈方面有安徽省蕪湖市三山區銅山寺的光伏發電工程EPC服務捐贈約841萬港元，其他體育項目、學校建設及慈善活動的贊助及捐款合共約68萬港元。

The Group also cares for the living environment, playing its part in a proactive manner to improve the surrounding community infrastructure and facilities of each solar farm. This promotes the development of local transport and water resources, and strengthens the conservation of the natural environment, as well as the historical and cultural preservation and succession.

集團亦關注民生環境，積極參與改善各太陽能發電場周邊社區基礎設施，帶動當地交通及水利發展、加強自然環境保育，以及歷史文化的保留及承傳。



AWARDS AND CERTIFICATIONS 獎項及證書

Names of the awards/certifications 獎項／證書名稱	Awarding entity 頒發單位
Top 50 Enterprises of Anhui Province in 2017 2017年安徽省50強企業	Anhui Provincial Office, SAT 安徽省國家稅務局
Water-saving Enterprise 節水型企業	The People's Government of Tianjin 天津市人民政府
Qualified and Safe and Trustful Product for Consumer under National Supervision and Inspection 全國監督抽查質量合格・消費者放心產品	China High-tech Industrialisation Association Expert Committee on Brand Strategy 中國科技產業化研究會
Enterprise with Credit Rating of AAA AAA級信用企業	Development and Reform Commission of Anhui 安徽省發展和改革委員會
ISO 9001:2015 Standards for Quality Management Systems ISO 9001:2015品質管制體系標準	China Building Material Test & Certification Group Company Limited 中國建材檢驗認證集團股份有限公司
ISO 14001:2015 Standards for Environmental Management Systems ISO 14001:2015環境管理體系標準	China Building Material Test & Certification Group Company Limited 中國建材檢驗認證集團股份有限公司
OHSAS 18001: 2007 Standards for Occupational Health and Safety Management Systems OHSAS 18001: 2007職業健康安全管理体系標準	China Building Material Test & Certification Group Company Limited 中國建材檢驗認證集團股份有限公司
China Compulsory Certification (CCC) 中國國家強制性產品認證(CCC)	China Building Material Test & Certification Group Company Limited 中國建材檢驗認證集團股份有限公司
CQC Product Certification for Coated Glass 鍍膜玻璃CQC產品認證	China Quality Certification Centre 中國質量認證中心



AWARDS AND CERTIFICATIONS 獎項及證書





CORPORATE GOVERNANCE 企業管治

To protect the interests of the Group and the shareholders while enhancing the corporate value, Xinyi Solar has been adopting a sound structure, good practices and proper procedures of corporate governance. The Board of Directors (the “**Board**”), comprised of four executive directors, two non-executive directors and three independent non-executive directors, is the highest governing body of our Group.

In strict compliance with good corporate governance principles, the Board has clear division of responsibilities. The Chairman is responsible for the management and leadership of the Board to ensure that our Group maintains strong and effective corporate governance practices and procedure. The Chief Executive Officer is responsible for the daily management and operation of our Group’s business, who, with the assistance of the other Board members and other senior management members, closely monitors the operation and financial results of our Group, identifies the operational deficiencies and carries out all necessary and appropriate actions to correct such deficiencies. The Chief Executive Officer is also responsible for formulating our Group’s future business plans and strategies which are subject to the Board’s approval. There are the Remuneration Committee, the Audit Committee and the Nomination Committee under the Board, each of which regularly evaluates and reviews the effectiveness of its work in accordance with its terms of reference.

The Group reviews the Governance Code in a timely manner to strengthen the internal control and improve the prevention and management of risks. Compliance with the latest regulatory requirements is thus ensured. For the more detailed corporate governance policies and procedures of our Group and other information, please refer to the Corporate Governance Report set out in the Annual Report 2017 of our Company.

為保障集團及股東利益及提升公司價值，信義光能一直以來奉行良好的企業管治架構實務及程序。董事會是本集團的最高管理機構，由四名執行董事，兩名非執行董事及三名獨立非執行董事組成。

董事會堅守良好的企業管治原則並有明確分工，主席負責管理及領導董事會，確保本集團維持強而有效的企業管治實務及程序。行政總裁負責本集團業務之日常管理運作，於董事會其他成員及其他高級管理層之協助下，緊密監控本集團之營運及財務業績，找出經營中不足之處，並作出所有必需及適當行動改善該等不足，其亦負責訂立本集團未來業務計劃及策略，待董事會批准。董事會之下另設薪酬委員會、審核委員會及提名委員會，各委員會根據其所屬職權範圍，定期評估及審查其工作的有效性。

集團會適時檢視管治守則，強化內部監控、完善風險防範與管理，確保符合最新的監管要求。有關本集團更詳盡的企業管治政策和程序及其他資料，請參閱本公司2017年年報內所載之企業管治報告。



信義光能控股有限公司
XINYI SOLAR HOLDINGS LIMITED

