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信義光能
XINYI SOLAR

SEHK main board listed company (Stock code:00968)
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www.xinyisolar.com



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



Xinyi PV Products (Anhui) Holdings,Ltd

Xinyi PV Products (Anhui) Holdings Limited, established in 2007 and located at Wuhu, Anhui, is a wholly-owned subsidiary of Xinyi Solar. The company is regarded as the main photovoltaic glass production base, which specializes in photovoltaic glass research and development, manufacturing, sales and after-sale services. The products are marketed in the east, the north and the central regions of China.

The company has seven photovoltaic glass production lines with a total melting capacity of 5400T/D, which is the largest solar energy glass production base nationwide. It can supply more than 29GW photovoltaic glass per year under the calculation of current conversion efficiency of solar module. The products include ultra-clear patterned glass (raw sheet and tempered), AR photovoltaic glass, backplane glass and thin film photovoltaic glass (ITO).

信义光伏产业（安徽）控股有限公司

信义光伏产业（安徽）控股有限公司是信义光能全资子公司，成立于2007年，位于安徽省芜湖经济技术开发区，为集团旗下最主要的太阳能光伏玻璃生产基地。主要从事太阳能光伏玻璃的研发、制造、销售和售后服务。产品主要服务于华东辐射华北、华中地区。公司拥有7条共计5400T/D的太阳能光伏玻璃生产线，按目前太阳能组件转换效率计算可提供29GW/年以上的光伏玻璃，是目前国内最大的太阳能玻璃生产基地。公司光伏玻璃产品包括：超白压延玻璃、AR光伏玻璃、ITO玻璃、背板玻璃、超白浮法玻璃。

Xinyi PV Products (Anhui) Holdings,Ltd Tianjin Branch

Tianjin Branch of Xinyi Photovoltaic Industry (Anhui) Holdings Limited, established in 2010 and located in Wuqing Development Zone, Tianjin, specializes in photovoltaic glass research and development, manufacturing, sales and after-sale services. The company has one photovoltaic glass production line with 500T/D melting capacity, which is recognized as one of the largest solar energy glass production lines in North China. It can supply more than 3GW photovoltaic glass per year under the calculation of current conversion efficiency of solar module. The products include ultra-clear patterned glass, AR photovoltaic glass and backplane glass, which target the north and the northeast regions of China.

信义光伏产业（安徽）控股有限公司天津分公司

信义光伏产业（安徽）控股有限公司天津分公司，成立于2010年，位于天津市武清开发区，主要从事太阳能光伏玻璃的研发、制造、销售和售后服务。公司拥有总计一条500T/D的太阳能光伏玻璃生产线，按目前太阳能组件转换效率计算可提供3GW/年以上的光伏玻璃。为华北地区最大的太阳能光伏玻璃生产商之一。产品销售和服务范围主要涵盖华北、东北地区。公司生产的产品包括超白压花玻璃、AR光伏玻璃、背板玻璃。

Group Profile

Xinyi Solar (stock code: 00968), listed on the main board of Hong Kong Stock Exchange on 12th December 2013, the largest photovoltaic glass manufacturer worldwide. The company provides economical and efficient products for solar application system, which also specializes in photovoltaic glass research and development, manufacturing, sales and after-sale services.

Xinyi Solar currently has four photovoltaic glass manufacturing bases located in Wuhu, Tianjin, Beihai and Malaysia (overseas), with a total melting capacity of 7800T/D, accounting for over 30% of global market share. Following the construction of manufacturing base in Beihai, our market supply ability will increase significantly. The main products include ultra-clear patterned glass (raw sheet and tempered sheet), AR photovoltaic glass, backplane glass and thin film photovoltaic glass (ITO), etc.

Xinyi Solar is the first solar company to be certified by the Energy Management System of Chinese Building Material Center for its excellent product performance and service quality. The company supplies photovoltaic glass products for the major solar panel manufacturers worldwide.

Xinyi Solar provides extensive solutions for its solar products, including the technology of polycrystalline silicon, thin-film solar cell, and also solar-energy conversion efficiency. The company is committed to energy efficiency enhancement and solar industry sustainability.

集团简介

信义光能控股有限公司是全球最大的太阳能光伏玻璃制造商。2013年12月12日于香港联交所主板上市，股票代码：00968.HK。公司专业从事太阳能光伏玻璃的研发、制造、销售和售后服务，为太阳能应用系统提供最经济高效的产品。

信义光能目前在国内外建有四大光伏玻璃生产基地，分别座落在芜湖、天津、北海和马来西亚（海外），拥有总计日熔化量7800吨的光伏玻璃生产线，占有全球超过30%的市场份额，随着信义光能在广西北海布局后，市场供货保障能力随之大幅提升。主要产品涵盖超白压花玻璃（原片、钢化片）、AR光伏玻璃、背板玻璃、ITO玻璃等。

凭借优异的产品性能和服务品质，信义光能成为国内光伏玻璃行业首家通过中国建材中心能源管理体系认证的企业。为全球太阳能组件厂商提供太阳能光伏玻璃产品。

从晶硅太阳能到薄膜太阳能电池技术，信义光能提供了从太阳能光伏玻璃和薄膜导电玻璃完整的产品解决方案，为有效提高太阳能转换效率提供了有利支持。信义光能以提升太阳能行业竞争力和能源效率为己任，致力于打造一个持续发展的光伏产业。



Xinyi Solar (Malaysia) Sdn. Bhd.

Xinyi Malaysia Industrial Park is the first overseas manufacturing base of Xinyi Group (Xinyi Glass, Stock Code: 00868.HK; Xinyi Solar, Stock Code:00968.HK) located in Jasin, Malacca, Malaysia with a total area of about 360000 sqm, its construction was completed in December 2016. Its first photovoltaic glass production line (900T/D) was started operation on December 16th, 2016 and the second photovoltaic glass production line (1000T/D) was started operation on December 31st, 2018. It is the largest oversea photovoltaic glass production line which can supply over 10GW of photovoltaic glass per year under conversion of solar module efficiency. The company mainly engages in research and development, manufacturing, sales and after-sales service of solar photovoltaic glass. Products include: ultra-clear patterned glass, AR photovoltaic glass, backplane glass, etc. New production capacity can meet the global needs PV supply chain and increase the market share of the company.

信义光能（马来西亚）有限公司

信义马来西亚工业园为信义集团（信义玻璃，股票代码：00868.HK；信义光能，股票代码：00968.HK）第一个海外投资的生产基地，位于马来西亚马六甲市野新，总占地面积约36万平方米，并于2016年12月正式建设落成。信义光能马来西亚第一条900T/D光伏玻璃生产线于2016年11月16日投产，第二条1000T/D光伏玻璃生产线于2018年12月31日成功投产。按目前太阳能组件转换效率计算可提供10GW/年以上的光伏玻璃，是目前海外最大的太阳能光伏玻璃生产线。公司主要从事太阳能光伏玻璃的研发、制造、销售和售后服务。光伏玻璃产品包括：超白压延玻璃、AR光伏玻璃、背板玻璃等产品。新产能的投入能满足全球光伏供应链的需求，加大信义光能的市场占有率。

Guangxi Xinyi Photovoltaic Industry Co., Ltd.

Guangxi Xinyi Photovoltaic Industry Co., Ltd. is a wholly-owned subsidiary of Xinyi Solar. Its construction started at the end of 2018 and it is planned to build two 1000T/D photovoltaic glass production lines. The company's products including ultra-white embossed glass, AR photovoltaic glass and backplane glass are mainly for domestic and overseas markets.

广西信义光伏产业有限公司

广西信义光伏产业有限公司是信义光能全资子公司，于2018年底开始筹建，计划建设两条1000T/D光伏玻璃生产线。产品主要服务于国内外市场。公司生产的产品包括超白压花玻璃、AR光伏玻璃、背板玻璃。

SOLAR GLASS

Based on customer requirements, Xinyi targeting on 3 different series of solar glass.

- Low Iron Patterned Solar Glass (raw glass, tempered glass and AR tempered glass)
- Back Glass
- ITO Glass

光伏玻璃介绍

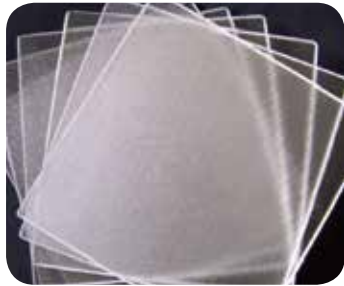
信义光能根据不同客户的需求，生产的光伏产品有以下三类：

- 超白压花玻璃（原片、钢化片和AR钢化片）
- 背板玻璃
- ITO导电玻璃

01

超白压花玻璃
(原片、钢化片和AR钢化片)

Low Iron Patterned Solar Glass (raw glass, tempered glass and AR tempered glass)



02

晶体硅电池
Crystalline silicon cells



03

背板玻璃
Back Glass



Low Iron Patterned Solar Glass

Product spec.

Raw Glass/ Annealed Glass

- 1) Thickness range: 2.0mm/10mm;
- Common Thickness: 2.0mm/2.5mm/ 3.2mm / 4.0mm
- 2) Maximum Glass Size: 2200mm*3300 mm

Tempered Glass

- 1) Thickness range: 2.0mm~10mm;
- Common Thickness: 2.0mm/2.5mm/3.2mm/ 4.0mm
- 2) Maximum Glass Size: 1100mm*2100 mm

Major Performance

- 1. Density: $\approx 2.5\text{g/cc}$
- 2. Solar Transmittance(3.2mm): $\geq 91.4\%$
- 3. Poisson's Ratio: ≈ 0.2
- 4. Young's Modulus: $\approx 73\text{GPa}$
- 5. Tensile Strength: $\approx 42\text{MPa}$
- 6. Hemispherical Emissivity: ≈ 0.84
- 7. Expansion Coefficient: $9.03 \times 10^{-6} / \text{K}$
- 8. Melting Point: $\approx 720^\circ\text{C}$
- 9. Annealing Point: $\approx 550^\circ\text{C}$
- 10. Strain Point: $\approx 500^\circ\text{C}$



超白压花玻璃

玻璃规格

超白光伏玻璃原片

- 1)玻璃厚度：2.0mm/10mm，
常规厚度为：2.0mm/2.5mm/3.2mm/4.0mm
- 2)最大玻璃尺寸：2200*3300mm

超白光伏玻璃钢化片

- 1)玻璃厚度：2.0mm~10mm，
常规厚度为：2.0mm/2.5mm/3.2mm/4.0mm
- 2)最大玻璃尺寸：1100*2100mm

玻璃的主要性能

- 1、玻璃密度： $\approx 2.5\text{g/cc}$
- 2、太阳光透过率（3.2mm）： $\geq 91.4\%$
- 3、泊松比： ≈ 0.2
- 4、杨氏弹性模量： $\approx 73\text{GPa}$
- 5、抗拉强度： $\approx 42\text{MPa}$
- 6、半球辐射率： ≈ 0.84
- 7、膨胀系数： $9.03 \times 10^{-6} / \text{K}$
- 8、软化点： $\approx 720^\circ\text{C}$
- 9、退火点： $\approx 550^\circ\text{C}$
- 10、应变点： $\approx 500^\circ\text{C}$



ANTI-REFLECTIVE COATING SOLAR GLASS

Product Profile

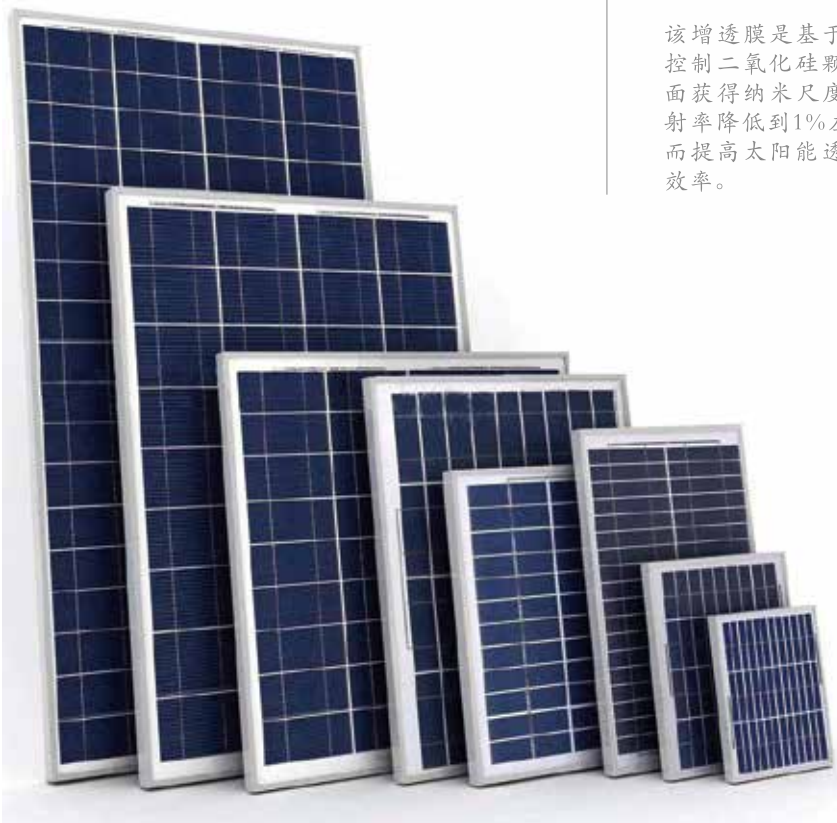
Xinyi Solar has developed its own anti-reflective (AR) coating glass with national-wide recognitions. The ultra-clear solar glass is coated with an antireflective layer before tempering process. The whole process is to enhance its solar transmittance and mechanical strength. The AR coating lowers the glass surface reflectance effectively, and also enhances the energy conversion efficiency. Simultaneously, the selfcleaning feature of the glass allows easy maintenance of PV modules. The AR coating is developed with the advanced nano-porous silica technology. The silica particles are applied on the glass surface equally with precise control. The glass surface reflectance can be reduced to about 1%, and thus improves both solar transmittance and conversion efficiency of PV modules.



AR光伏玻璃

我司开发的AR镀膜玻璃是采用国际上领先的技术和设备，在高透过超白太阳能玻璃的表面镀上一层增透膜后，再经过钢化处理后得到的产品。它能有效的降低玻璃表面的反射比，提高透射比，从而提升组件的转换效率，提高光伏组件输出功率，同时还具有表面自清洁功能，是目前国际上先进的技术和产品。

该增透膜是基于先进的纳米多孔二氧化硅技术，通过控制二氧化硅颗粒的大小和堆积形态，在超白玻璃表面获得纳米尺度分布均匀的多孔纳米材料，膜层的反射率降低到1%左右，大大降低了太阳能的反射率，从而提高太阳能透射率，最终将提升太阳能组件的转化效率。



The Advantages of AR Coating Glass

- 1.Low-iron content, which enhances the transmittance and maximizes the conversion efficiency of Solar modules.
- 2.Apply with nano-technology, antireflective coating improves the transmittance by around 2.5% comparing with uncoated glass.
- 3.Patterned glass surface treatment increases diffuse reflection and reduces specular reflection, which helps minimize environmental pollution;
- 4.High temperature processing makes the coating more durable with better adhesion to the glass.
- 5.Chemically-resistant, the coating can withstand a wide range of PH in harsh outdoor environments.
- 6.Self-cleaning coating decomposes organic pollutants on the glass surface and reduces maintenance time.

产品优势

- 1、采用低铁含量的玻璃配方，透过率更高，能有效提升组件转换效率；
- 2、玻璃表面采用纳米材料处理，形成高效增透膜，提升透过率约2.5%（相对于未镀膜玻璃）；
- 3、玻璃表面绒化处理，变镜面反射为漫反射，减少环境光污染；
- 4、高温钢化处理，膜层与玻璃结合牢固；
- 5、室外恶劣环境下膜层耐酸碱性强；
- 6、膜层具有自洁净功能，能分解附着在组件表面的有机污染物，减少组件维护工作；

AR膜性能

测试项目	测试条件	标准（ΔT）	结果
湿热试验	IEC61215-2005	<1%	合格
热循环试验	IEC61215	<1%	合格
湿冻试验	IEC61215	<1%	合格
紫外试验	IEC61215	<1%	合格
耐洗刷试验	ISO 11998:2006	<1%	合格
耐盐雾试验	EN1096-2	<1%	合格
耐酸试验	ISO 2813-1:2007	<1%	合格
PCT加速老化试验	Q/CPVT005-2014	<1%	合格

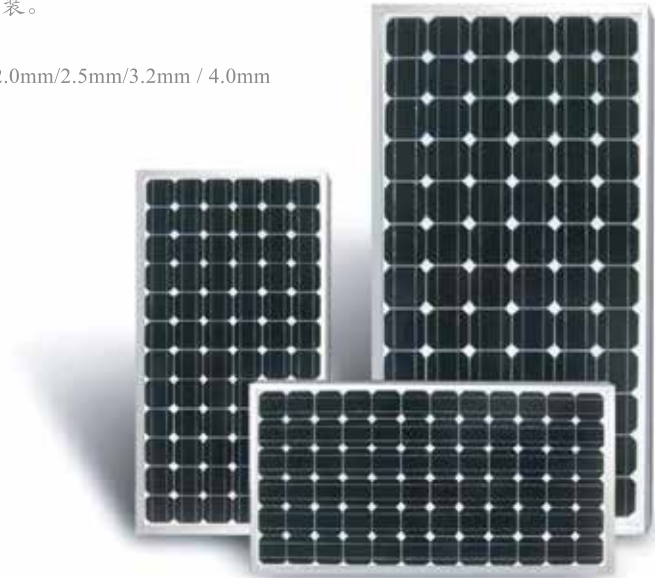
Coating Properties

Testing Items	Technical Requirements	Standard（ΔT）	Test Results
Damp Heat Test	IEC61215-2005	<1%	Pass
Thermal Cycle	IEC61215	<1%	Pass
Humidity-freeze Test	IEC61215	<1%	Pass
UV Test	IEC61215	<1%	Pass
Scrub Resistance Test	ISO 11998:2006	<1%	Pass
Neutral Salt Spray Test	EN1096-2	<1%	Pass
Acid Resistance Test	ISO 2813-1:2007	<1%	Pass
PCT accelerated aging test	Q/CPVT005-2014	<1%	Pass
Adhesive force	ISO 2409:2007	0	Pass



- 1、玻璃厚度：2mm~10mm，常规厚度为：2.0mm/2.5mm/3.2mm/4.0mm；
- 2、最大玻璃尺寸：宽 1200mm 长 2100mm
- 3、玻璃包装：纸箱或木箱包装，可采用铝箔密封包装。

- 1. Glass Thickness: 2mm~10mm; Common Glass Thichness: 2.0mm/2.5mm/3.2mm / 4.0mm
- 2. Maximum Glass Size: 1200mm*2100 mm
- 3. Packaging: wooden case , plywood case, foil packing



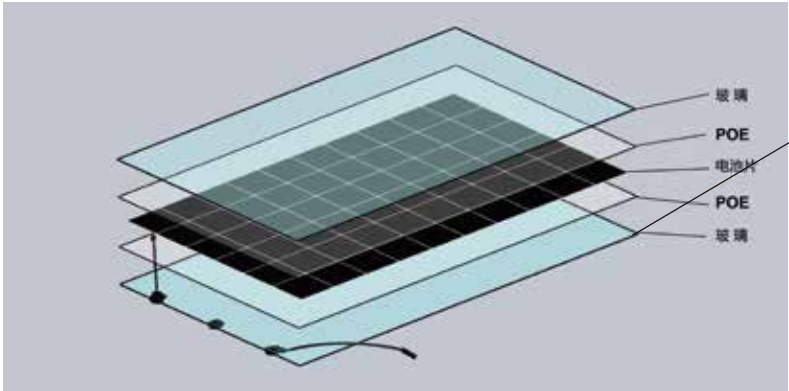


BACK GLASS

Back glass is mainly applied to double glass modules and thin film, using ultraclear patterned glass or common float glass as substrates. Holes drilling and other processing procedures are engaged on the production of back glass which is able to meet the requirements of crystalline photovoltaic solar module. Advanced imported equipments guaranteed a good processing accuracy of the products; Better processing control ensure an excellent production quality.

背板玻璃

背板玻璃主要用于双玻组件或薄膜太阳能电池，采用超白压花玻璃或浮法玻璃原片为基片，进行加工处理或丝印涂釉钻孔处理，满足晶体太阳能电池的需求。先进的进口设备保证了产品具有很好的加工精度，良好的制程控制保证产品具有很好的品质。



背板玻璃

Main Performance of Back Glass

Hole Drilling
Glass Thickness: 1.6mm-6mm
Common Glass Thickness: 2.0mm, 2.5mm, 3.2mm, 4.0mm,
Max Glass Size: 1300*2500mm
Hole Diameter: 10~50mm
Hole Position: the distance between hole edge and glass edge cannot less than 25mm (Thickness 2.5mm)

主要性能指标

钻孔
产品厚度：1.6mm-6mm
常规厚度：2.0mm，2.5mm，3.2mm，4.0mm，
最大玻璃尺寸：1300*2500mm
孔径：10~50mm
孔位：孔距玻璃边部不得小于25mm（玻璃厚度2.5mm）



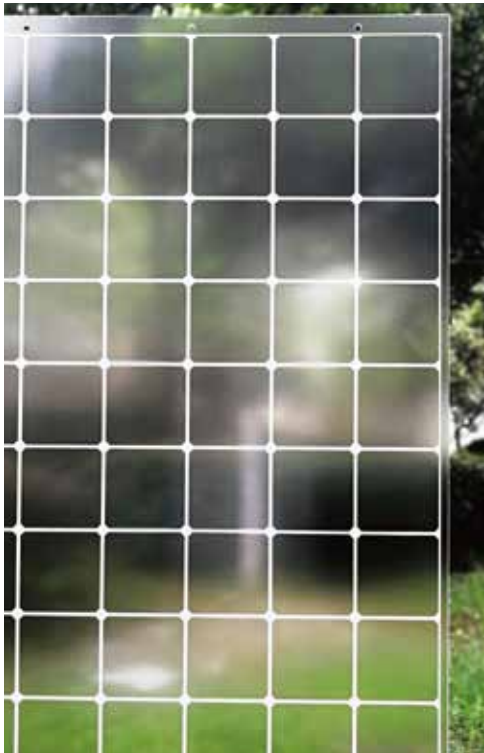
High-Reflection Back-sheet Glass

The screen-printed glazed back-sheet glass, also known as HR reflective glass, is developed by us with world-leading technology and equipment. It is produced by tempering a printed back glass of the crystal silicon double-glass assembly with reflective high temperature ink.

The reflective high temperature ink can produce an effective diffuse reflection effect, increase the amount of light actually projected onto the surface of the cell sheet, thereby improving the conversion efficiency of the double glass assembly and increasing the photovoltaic module output power by 2%.

丝印涂釉背板玻璃

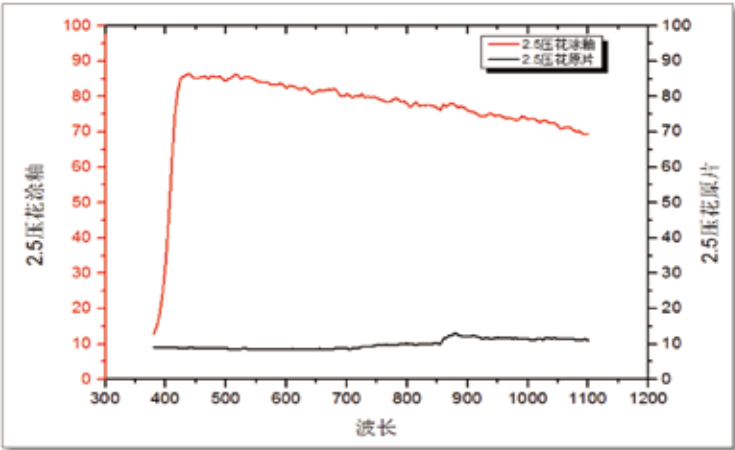
我司开发的丝印涂釉背板玻璃，又称HR 反射膜玻璃，是采用国际上领先的技术和设备，在晶体硅双玻组件的背板玻璃上印上反光高温油墨后，再经过钢化处理后得到的产品。该反光高温油墨能产生有效的漫反射效果，增加实际投射到电池片表面的光线量，从而提升双玻组件的转换效率，提高光伏组件输出功率2%。



涂釉背板玻璃产品规格书 Specifications of glazed back-sheet glass

产品名称 product name	玻璃厚度 glass thickness	原片类型 raw sheet type	厚度公差 thickness tolerance	涂布精度 coating precision	釉料厚度 glaze thickness	平均反射率 mean reflectance	抗冲击强度（1040g落球） impact strength (1040g falling sphere)		老化衰减 aging decay
			mm	mm	μm		60/72片 电池片版型 solar cell type	120/144片 电池片版型 solar cell type	
涂釉背板 glazed back-sheet glass	2.0/2.5	压花/浮法 patterned glass/ float glass	±0.2	±1	5~25	≥80%	800mm	600mm	0.30%

注：其余未注明的参数，请参照普通背板质量标准。
Note: For the remaining unspecified parameters, please refer to the quality standards of ordinary back-sheet glass.



Comparison between G-G Module and Traditional Module

1.Module Applications:

G-G Module: It can be used for more strict and severe environment, which includes but not limited to the application of traditional module, such as coastal mud flat (high salt fog and humidity environment), rivers and lakes, sewage disposal works,agricultural greenhouses, desert (acid rain and salt spray environment) and etc.

2.Module Performances:

Advantages of G-G Modules:

1) Lower yearly power attenuation, better anti-attenuation capacity:

The module power attenuation is less than 2% for the modules (polycrystal G-G module) used for more than 3 years;

2) Better performance of PID and lower rate of snail shape lines caused by solar cell subfissure;

3) Better performance of reliability and abrasion:

Back glass is inorganic nonmetallic material, which can solve the pervious to water problem of back sheet, deducing the electrochemical reaction caused by moisture accessing into solar module and protecting the stability of Hot melt glue, to get better reliability.

4) Decreasing the hot spot effect of module:

Split-type junction box is used for G-G modules, instead of one big junction box used for traditional module, it can decrease the hot spot effect of module and get higher power generation efficiency;

5) Higher fire resistance class :

Use of back glass make it easier to get Class A for G-G module, instead of Class C

6) Decreasing the dust stratification and accumulation of snow:

G-G module is designed without aluminum frame, the dust and snow can be easily cleaned and fall down without frame.

3.Material Cost:

Less production material and lower cost for G-G modules:

Split-type junction box is used for G-G modules, less cables and bus bar are required accordingly, and no aluminum frame is needed for G-G modules.

4.Electric Energy Production:

Higher electric energy generation by G-G modules under the same environment, cables, inverters, combiner box and etc.

5.Life Time:

Longer life time for G-G modules compare to traditional modules;

6.Module Recycle:

Glass is inorganic material, more stable compare with organic material(such as back sheet), both of the two glass can be recycled as cullet of glass production

7.G-G module is slightly heavier than traditional module, and glass is a brittle material, so it should be taken more carefully in the construction and installation of power station. But these two weaknesses have no impact on the construction cost of the power station, and it requires good management of power station builder.

8. Application of G-G module:

In double-side solar module and 1500V DC system, it is more suitable to use G-G module.



双玻组件相对于传统组件的优势

一．组件使用环境：

双玻组件不仅可以完全覆盖传统单玻组件的适用领域，而且拓展了传统单玻组件的使用领域；比如沿海滩涂高盐雾高温环境；江河湖泊，污水处理厂，农业大棚，沙漠等等酸雨和盐雾环境，对抗恶劣环境能力更胜一筹。

二．组件的性能：

1.更低的年功率衰减，双玻组件具有比传统单玻更好抗衰减能力，使用三年的多晶双玻组件衰减不到2%。

2.抗PID，双玻组件采用上下两面使用同厚度的半钢化玻璃，电池片在其中受到很好的应力保护，可以认定：从组件生产出来后，一直到安装完成，组件中的电池片都会受到很好的保护。所以PID，隐裂引起的蜗牛纹等等的发生几率大大降低。

3.更出色耐候、耐磨性，无机非金属材料玻璃做为背板，很好地解决了背板透水问题。从而减少了因水汽进入而产生电化学反应，更好地保护了热熔胶的稳定性，使得组件的耐候性能大幅度提高。加上玻璃较有机材质的背板更加耐磨，所以在沙漠环境中具有更长生存时间。

4.减少热斑效应，双玻组件采用分体式接线盒，规避了传统组件大接线盒（安装位置覆盖两串电池片）的热斑效应，从而提高了组件的发电效率。同样背面采用玻璃后组件的散热效率也同时得到提升。

5.防火等级的提高，双玻组件背板使用玻璃使得组件的防火等级从“C”级上升到“A”级。使得在一些防火等级要求高的地方使用组件安全性能得到保证。

6.减少积灰、积雪现象，双玻组件采用无边框设计，减少了积灰现象，同样由于雨水的作用使得组件上的灰尘能够得到更好的清理。积雪更容易滑落。

7.材料成本更具优势，采用分体式接线盒，使得汇流带和线缆使用减少，线损减少。

三．双玻组件的成本：

双玻组件采用分体式接线盒，所以线缆，汇流带相应减少，加上无边框，对比传统单玻组件，降低了材料成本。

四．发电量：在同一个地区环境下，采用相同的线缆，逆变器，汇流箱，单玻组件和双玻组件安装量相同的情况下：双玻组件比单玻组件发电量要多4.4%以上。

五．使用寿命方面：双玻组件的使用寿命至少可以达到三十年以上，较单玻组件有大幅度提高。

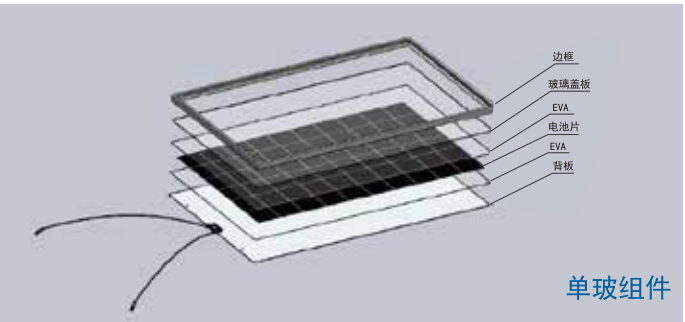
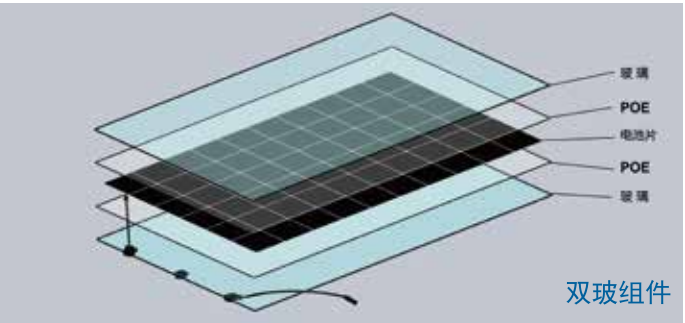
六．组件回收：由于玻璃是无机材料，在自然界稳定性比有机材料更稳定所以对环境压力更小。

七．双玻组件比单玻组件略重，加上玻璃是脆性材料，所以在电站建设安装过程中要更加小心，但是这两个弱点对电站的建设成本并没有影响，只是考验电站建设者的管理水平。

八．双玻组件的应用：双面发电及1500V直流系统中，更适合使用双玻组件。

在相同地区装机量一样，使用一样的逆变器、汇流箱、电缆等同等条件下，经过2015年及2016年运行数据对比，2015年双玻组件年发电量相对传统单玻组件提高4.4%以上，2016年提高到5.7%以上。

After the comparison of operating data between 2015 and 2016 under same circumstance including the installed location, capacity, use of inverters, combiner boxes and cables, etc, the double glass modules generate 4.4% and 5.7% more capacity relative to the conventional single glass module in 2015 and 2016 respectively.



PV Power Generation System

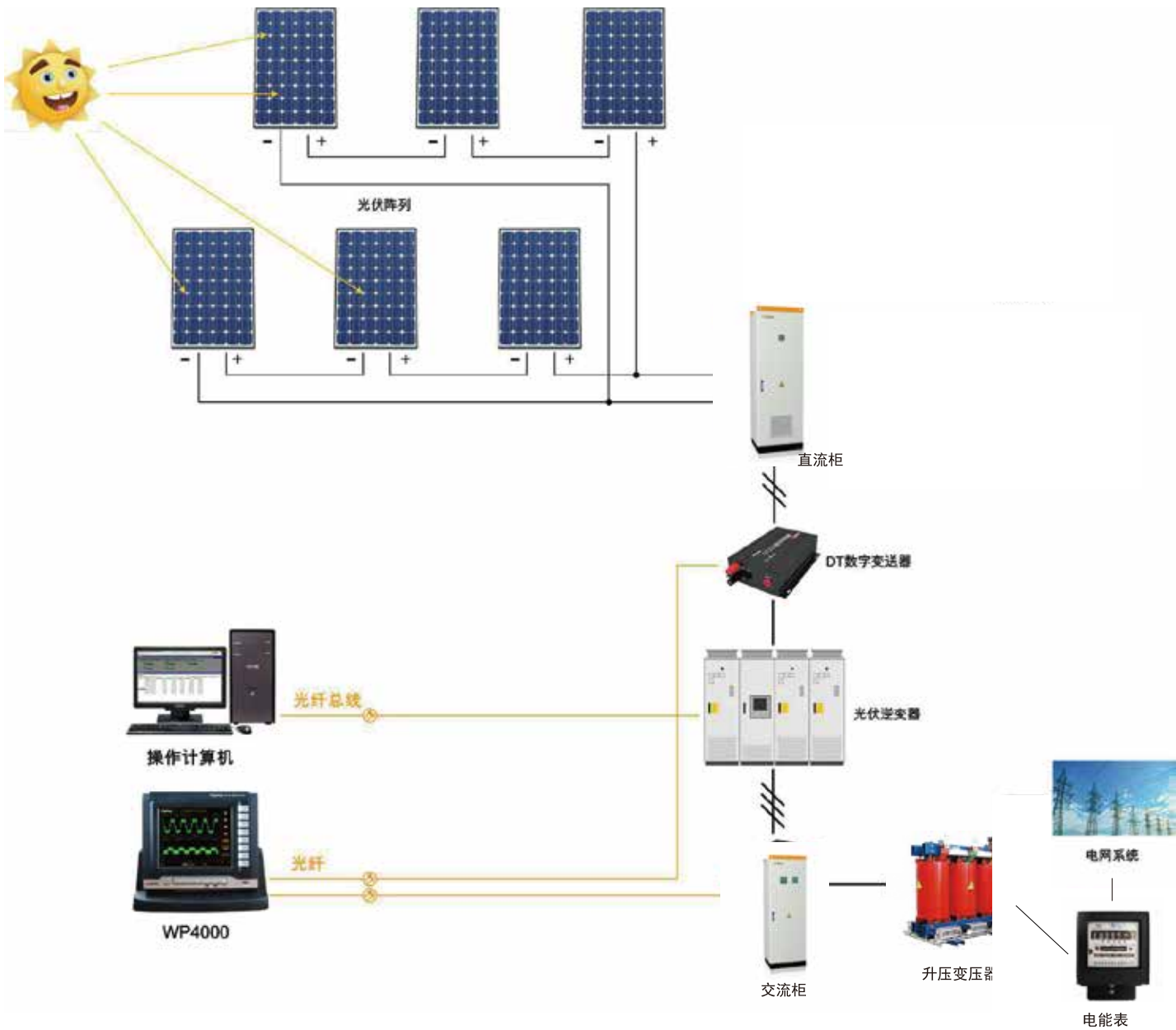
The PV power generation system is a system which can convert solar energy into electric energy by using the photovoltaic effect. The PV power generation system can be divided into independent solar PV power generation system, grid-connected solar PV power generation system and distributed solar PV power generation system.

The main components of the system include solar cells, batteries, controller and inverter. The system has the characteristics of high reliability, long service life, non-environment-pollution and capability of independent power generation and grid-connected operation. And it is favored by the enterprises and organizations of various countries, and has broad prospects in future.

光伏发电系统介绍

光伏发电系统是利用太阳能电池组件直接将太阳能转换成电能的发电系统。其特点是可靠性高、使用寿命长、不污染环境、能独立发电又能并网运行，受到各国企业组织的青睐，具有广阔的发展前景。它的主要部件是支架、太阳能电池、控制器和逆变器。

目前社会上主要以并网太阳能光伏发电系统为主。它是指太阳能光伏发电连接到国家电网的发电的方式，成为电网的补充，典型特征为不需要蓄电池即发既用降低建设成本。



信义芜湖工业园光伏电站

Advantages of PV Power Generation System

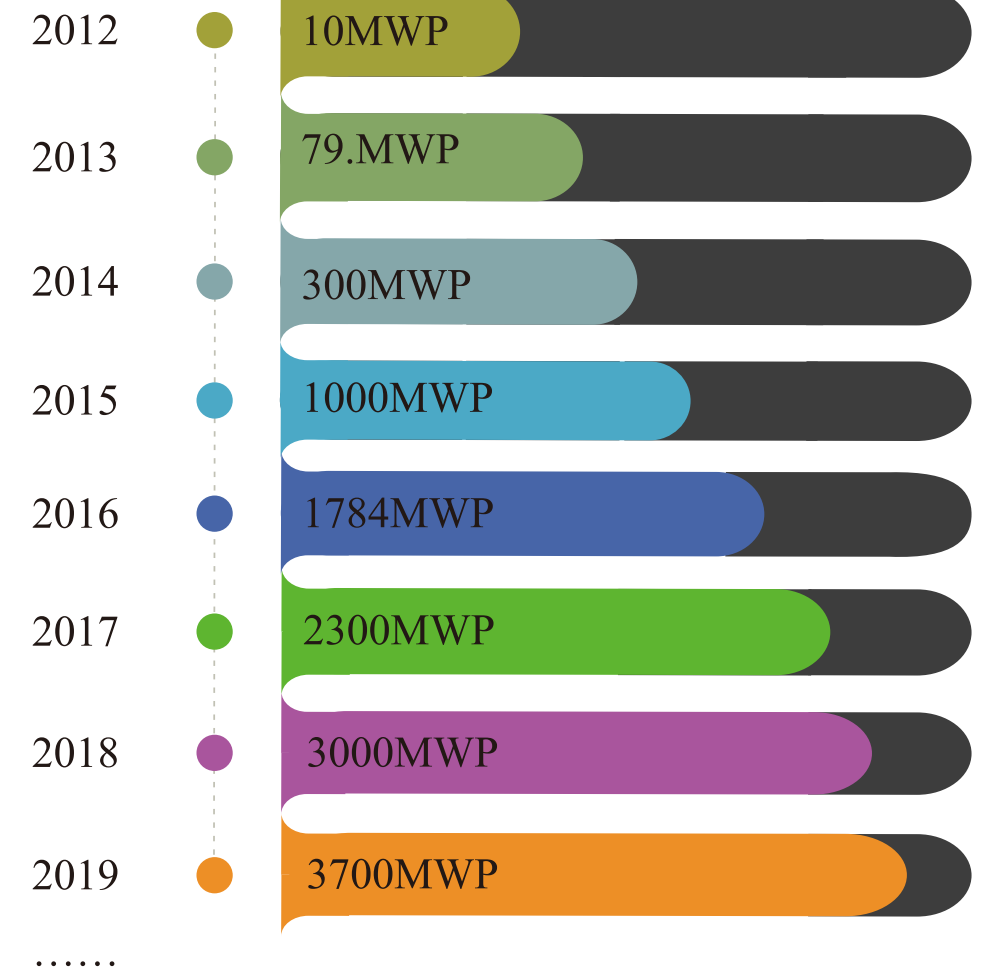
1. The solar energy is inexhaustible. The solar radiation energy received on the Earth's surface is 10,000 times the global energy demands. If solar PV systems are installed in only 4% of the world's deserts, the electric power generated can meet the global demands. Solar power generation is safe and reliable, and it is not subject to the influences of energy crisis or fuel market instability.
2. The solar energy can be obtained everywhere and supplied nearby. Long-distance transmission is unnecessary, thus avoiding the voltage loss in long-distance transmission;
3. The solar power generation system requires no fuel and has very low operation costs;
4. The solar power generation system has no moving parts, is not easily damaged and is simple to maintain, particularly suitable for unattended use;
5. Solar power generation does not produce any waste, without pollution or noise, and free of any adverse impact on the environment. Solar energy is an ideal clean energy;
6. The solar power generation system requires only a short construction period, convenient and flexible. The solar array capacity can be freely added and reduced in accordance with the load increase/decrease, to avoid wastage.

光伏发电系统优点

1. 太阳能取之不尽，用之不竭，地球表面接受的太阳辐射能，能够满足全球能源需求的1万倍。只要在全球4%沙漠上安装太阳能光伏系统，所发电力就可以满足全球的需要。太阳能发电安全可靠，不会遭受能源危机或燃料市场不稳定的冲击。
2. 太阳能随处可取，可就近供电，不必长距离输送，避免了长距离输电线路的损失；
3. 太阳能不用燃料，运行成本很低；
4. 太阳能发电没有运动部件，不易损坏，维护简单，特别适合于无人值守情况下使用；
5. 太阳能发电不会产生任何废弃物，没有污染、噪声等公害，对环境无不良影响，是理想的清洁能源；
6. 太阳能发电系统建设周期短，方便灵活，而且可以根据负荷的增减，任意添加或减少太阳能方阵容量，避免浪费。



信义电站实施容量与计划



东莞工业园



江门工业园



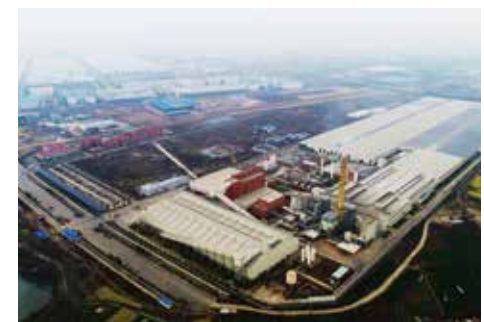
深圳工业园



天津工业园



营口工业园



德阳工业园



XINYI SOLAR

Xinyi Photovoltaic (PV) Agricultural Smart Greenhouse Power Station

Xinyi Photovoltaic (PV) Agricultural Smart Greenhouse Power Station

During development of new energy resource actively, Xinyi Solar has made efforts to explore a way of combining the new energy resource with modern agriculture and it becomes Agricultural Smart Greenhouse Power Station Project.

The PV agricultural smart greenhouse power station integrates with solar power generation, smart temperature control and modern high-tech planting then becomes one PV Power Generation System. Power station has apply with new technology, new material, new structures and new processes are employed in the power station to reasonably allocate the sunlight proportion and combine PV power generation and ecological planting, thus realizing roof-top power generation and indoor planting. It is a new high-tech agro-ecological project which integrates low carbon, energy saving, environmental protection and suit for tourism benefits.

信义光伏农业智能温室电站

信义光能积极发展新能源的同时，努力探索出一条将新能源与现代农业相结合的光伏农业智能温室电站项目。光伏农业智能温室电站是将太阳能发电、智能温控、现代高科技种植为一体的光伏发电系统。电站采用了新技术、新材料、新结构、新工艺，合理的分配太阳光照的比例，使光伏发电和生态种植有机结合，实现屋顶能发电，室内能种植，是集低碳、节能、环保、旅游于一身的新型高科技农业生态项目。



Solar photovoltaic (PV) Power Generation System
Automatic Constant Temperature and Humidity System [Roof Window Ventilation System, Sun-shading Insulation System (Sunshade), Cooling System (Water Curtain Fan) and Heating System (Heating Pipe)]LED plant lights (used for simulating the sunlight for light supplementing)
Automatic drip-Irrigation System
Smart Monitoring system

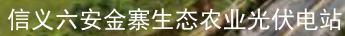
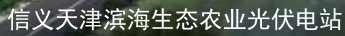
太阳能光伏发电系统
全自动恒温恒湿系统（顶窗通风系统、遮阳保温系统（遮阳帘）、降温系统（水帘风扇）、加热系统（热管））
LED植物灯（用于模拟太阳光进行补光）；
全自动滴灌系统
智能监控系统



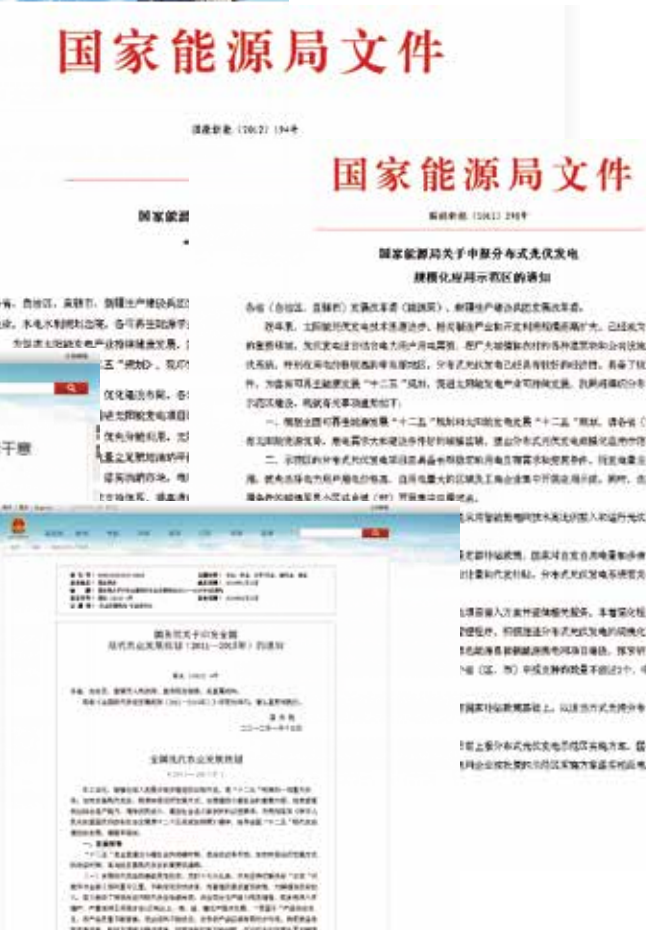
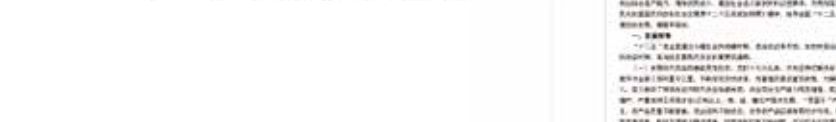
光伏农业智能温室电站符合国家倡导发展光伏及现代农业的产业政策,符合国家及地方产业发展规划,能有效推动我国能源和农业结构的调整,有很好的经济效益、社会效益与生态效益。

- A. 增加电力供应，调整能源结构，实现节能减排；
B. 提高土地利用效率；
C. 提高就业，增加农民收入；
D. 观光旅游和生态农业一体化，保护环境；
E. 增加地方财政收入。
F. 对农业高效规模化示范作用；

Xinyi Solar will take the responsibility of promoting clean energy development, contribute to the environmental protection career of human race by relying on scientific ideas, innovative thinking and advanced technology; explore and develop the green, envirmint-friendly, efficient, recycling, energy-saving and land-saving modern agricultural model, and usher in the new aera of factory agriculture.



信义光能将以推动清洁能源的发展为己任，以科学的理念、创新的思维、先进的技术为人类的环保事业做出贡献；探索和发展绿色、环保、高效、循环、节能、节地的现代农业模式，开创农业工厂化新时代。



信义芜湖三山区生态农业光伏电站