

# Solargiga Energy Holdings Limited 陽光能源控股有限公司









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- 4 Financial Performance
- 5 Future Plans and Strategies
- 6 Q&A







# Corporate Overview



# **Corporate Overview**







Established in 2001, the largest in Northeast China, high-ranking of the photovoltaic manufacturing corporate of the country. Focus on vertical integration for monocrystalline products, providing onestop solutions from ingots, wafers, cells, modules to the development, design, construction, operation and maintenance of PV System.



Cross-listed in Hong Kong (00757.HK) and Taiwan (9157.TT)





# **Corporate Overview**



- One of the first corporates to engage in monocrystalline silicon solar ingots/wafers in China, with 16 years in P-type monocrystalline and 15 years in N-type monocrystalline products manufacturing experience.
- The only corporation to receive the honour of exemption of examination in monocrystalline silicon solar ingots in China.
- Having high conversion rates and consistent battery products, including anti-PID cells, large-sized of 160 cells and other high-end products, e.g. N-type double-sided solar cells.
- Numerous qualified and professional certifications for modules products. First batch module production companies to receive certification in "Top Runner Program".
- Listed in Hong Kong on 31 March, 2008 (757.HK).
- Listed in Taiwan on 11 December (9157.TT).
- Global New Energy 500 Enterprises (247th)
- China Electronic Materials Industry 50 Enterprises (17th)
- Top Three Industrial Enterprises in Jinzhou City, Liaoning Province, China



# Ingots, Wafers



#### 规模

#### • <u>Scale (规模)</u>

• 462 monocrystalline furnace, 116 wafer slicing machines, 1.2GW capacity, top three capacity within China.

#### •

#### • Professionalism (专业)

• One of the first in the field of monocrystalline ingot, with 16 and 15 years of experiences in P-type and N-type production, respectively.



# 品质

#### • Quality (品质)

• The only domestic monocrystaline silicon ingot manufacturer to gain National Exemption in Quality Examination (国家免检).



#### • <u>Specialty (特色)</u>

 Providing P-type and N-type monocrystalline products according to customer needs and specifications.



#### • Services (服务)

服务

• Professional customer service team, providing thorough customised services.





# Solar cells









特

8 standard solar cell production line, with annual capacity of 350MW. Flexible in switching from P-type mono-solar cells to N-type mono-solar cells and to multi-cells.



#### Conversion Efficiency (精)



High consistency, P-type and N-type mono-solar cell with conversion efficiency over 19.8% and 20.5% respectively.



#### Speciality (特)

- Comprehensive anti-PID solar cells
- Extra-large 160W solar cells
- N-type double-silicon solar energy improves conversion efficiency by 20%





### Photovoltaic modules



#### Quality

Internationally renowned manufacturing capability.

- Annual export over 400MW to Japan alone.
- Quality guarantee.

Experience

Comprehensive manufacturing experience in difference photovoltaic products.

Cost control

- Tight cost control.
- Competitive advantage deriving from Vertical Integration.
- Strategic partnerships

Competitive advantage







# Photovoltaic module certifications



- TUV、VDE、UL certifications
- First batch module production companies to receive certification in "Top Runner Program".











### Shareholding Structure as at 30 June 2017









Wafer Works Corp. 7.75%







Public shareholders -Taiwan (TDR) 3.65%



# Solargiga Energy Holdings Limited

陽光能源控股有限公司

Number of issued shares 3,211,780,566





1.2GW photovoltaic modules

at Shanghai and Beijing.

Group's marketing centers

# Manufacturing and customer base





Southeast Asia and Africa.



### **Major Customers**



# SHARP 夏普





北京控股集团有限公司







信义玻璃控股有限公司





















#### **Market Overview**



#### **China**

- China continues leading the global solar market. For the first half of 2017, the newly-added volume of photovoltaic power generation to grid connection was 24GW (an increase of 9% comparing to the corresponding period of 2016) in China. Of which, distributed power plants accounted for 7GW, growing by 2.9 times compared to the corresponding period of 2016. Photovoltaic power plants accounted for 17GW. As at the end of June, cumulative grid connection installation capacity of photovoltaic power generation has reached over 100GW. And, it accomplish the cumulative photovoltaic installation target of 110GW before 2020 under the "Solar Energy Development plan under the "Thirteen Five-Year Plan" (太阳能发展「十三五」规划) well ahead of schedule.
- As the scale of the industry continues to expand, production technology has kept its pace in improvement. Production costs has continued to decline and hence the industry gross profit margin has remained stable as a result. It is expected that China market will maintain a good growth trend.
- The National Energy Bureau launched the program of application of advance technology on construction of photovoltaic power generating plants, also known as "Super Runner Program", focusing and promoting large-scale and advanced technology companies. "Super Runner Program" sees efficient product development as its main focus, the main products include the Group's N-type double-sided photovoltaic modules and other high-end products. They are expected to gain attention from the market.

#### <u>Japan</u>

The market is expected to shift to rooftops PV systems in 2016. From the Bloomberg New Energy Finance ("BNEF") report, between 2016 and 2040, Japan will add 94GW of new solar, including 65GW of rooftop PV. The Group has focused on Japan market for more than ten years and it is expected that it will receive orders with steady growth.



#### Market Overview



#### **USA**

According to the latest research data from GTM Research and the US Solar Energy Industries Association ("SEIA"), the photovoltaic installations reached 2.04GW in the first quarter in 2017 alone. According to the existing photovoltaic projects currently under construction and also those being planned, it is predicted that the newly installed photovoltaic capacity in the United States will be slightly lowered from 14.6GW in 2016 to 13.2GW in 2017, of which 66% will be large-scale ground photovoltaic power plants. By 2022, it is expected that the annual installed photovoltaic capacity the United States will exceed 18GW. According to GTM Research and SEIA, the cumulative solar market in USA is estimated to nearly triple in size over the next five years.

#### **Emerging markets**

- the "One Belt One Road" international cooperation strategy has promoted the development of emerging markets.
- Based on the statistics published by the Ministry of New and Renewable Energy of India ("MNRE"), the cumulative installed solar photovoltaic capacity in India, the world's fourth largest solar energy market, surpassed 9GW by the end of 2016. EnergyTrend predicts that the annual installed photovoltaic capacity of India may reach 10GW in 2017 and hence overtaking Japan as the world's third largest market with cumulative installed capacity above 100GW.
- The two most potential regions in Latin America, Mexico and Brazil, are expected to have double production capacity in this year. By 2020, the Latin American region will increase by 26 GW. The cumulative installations in Mexico, Brazil and Chile are expected to reach 26GW by 2021. The Middle East and Turkey will add 19GW from Algeria, Turkey, Jordan, Egypt and the U.A.E, while Thailand, The Philippines, South Korea, Taiwan and Indonesia will add 23GW in total. The Group's development of the Taiwanese and Southeast Asian markets has been effective and will result in a diversification of sales channels in the terminal markets.





# Business Review



# **Operations Strategy**

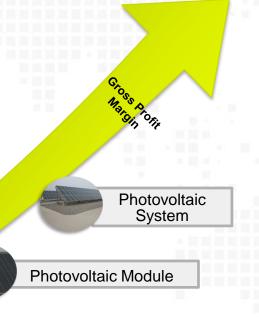


# 1. Upstream products can be used for internal use and external sales

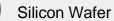
The Group focuses on the vertical integration for monocrystalline products. By manufacturing the solar products from polysilicon materials, the Group not only sells photovoltaic products to module end-user customers, but also to the external upstream customers (monocrystalline ingot, wafer and cell) to satisfy different needs of customers.

# 2. Improving gross profit margin by vertical integration with steadily downstream module sales volume

By fully leveraging its technological advantage in monocrystalline products and focusing on the development of monocrystalline products, it will make good use of its vertically-integrated capacity with both upstream and downstream portions to raise the gross profit of the Group's module products and drive profit growth of the Group. By the strategy on the direct external sales of upstream products, the Group could have steadily upstream sales, while maintaining the competitiveness of all upstream and downstream products.



Photovoltaic Cell





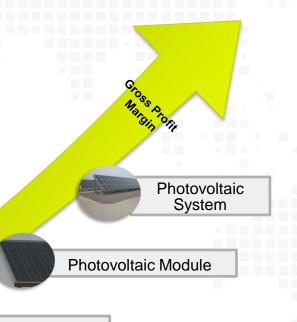




## **Operations Strategy**



- 3. Focus on internal resources to strengthen the upstream monocrystalline ingot, wafer and downstream module products
- The Group ranks the top three of the capacity of monocrystalline ingot and wafer in China and it has economies of scale and technology leading edge. While the sales of module products has growth rapidly in recent years, the number of customers and also the quantity of their purchases continue to increase. As such, we will focus and strengthen on the production and sales of monocrystalline ingot, wafer and module products.
- For the production of solar cells, by being strategic alliances with the large solar cell-focused manufacturer, the Group will secure the sales channel of wafer and hence ensure stable supply of solar cells. Thus, it will strengthen the advantages under the vertical integration strategy.





Photovoltaic Cell

Silicon Wafer





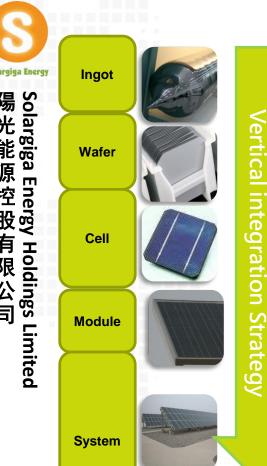


### Production Capacity and Product Range





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1.2GW

Waiting for opportunity to expand production capacity

1.2GW

Waiting for opportunity to expand production capacity

Strategic 350MW Alliances

- Being strategic alliances with the large solar cellfocused manufacturer, the Group will secure the supply of upstream and downstream products. Selling wafer products to strategic partners and hence purchase the solar cells from the strategic partners.
- 3. And thus, it will secure the sales channel of wafer and hence ensure stable supply of solar cells.

- 1.2GW
- Waiting for opportunity to expand production capacity
- Distributed power plants Apart from the wholly-owned subsidiaries engaged in construction photovoltaic systems to expand the end-user market, the Group also plans to establish joint venture companies with companies from other industries, in order to share the profits and also provide extra distribution channels for the Group's module sales.
- Centralised power plants the Group will, through investing as minority shareholders, seek construction opportunities as a EPC service provider and help drive the sales of the Group's modules.



### Monocrystalline Solar Ingots and Wafers





- With the continued realisation of advantages in better improvement in conversion efficiency, stabler decay rate in its photovoltaic systems, continued reduction in unit costs, etc of monocrystalline products, it is expected that the advantage of monocrystalline products will become more obvious in the field of photovoltaic power generation, and the market share of monocrystalline silicon products will increase significantly.
- Through long-term strategic partnerships with well-known solar cell-focused manufacturers, this allows the Group to enjoy priority distribution channels for the sales of its monocrystalline wafers, and ensure long-term stable utilisation of the Group's capacity and shipment volume.
- During the period, the gross margin and shipment volume were significantly increased compared with the corresponding period of last year. It mainly due to the upgrade and transformation work was performed on related production equipment and capacity, thus it realised of the benefit from economy of scale.
- The Group's production capacity and production volume during the period has returned to normal operations.





#### Photovoltaic Cells and Modules



#### **Cell Business**

- The Group's production lines of solar cells are located at the manufacturing base of the Group in Jinzhou, Liaoning. With annual production capacity of 350MW. Such solar cells are on the one hand sold internally to provide high-quality raw materials supply for the downstream module business of the Group, and also sold to the customers in China and Japan.
- The Group's solar cell manufacturing capacity is highly flexible, products range was hence extensive, which include monocrystalline, multicrystalline, P-type high end, N-type double sided solar cells, etc. Focusing on the implementation of the vertical integration strategy, most of the solar cells have been reserved for internal utilisation.

#### **Module Business**

- Demand for solar modules has grown rapidly and it led to an increase in solar module sales. During the period, external shipment of the Group reached 616.5MW, compared to 434.6MW for the corresponding period of last year, representing an increase of 42%. The increase in external shipment was mainly the result of the successful development of the client base, reflected in the significant growth in both the number of customers and in the quantity of their purchases.
- Currently, the photovoltaic module capacity is compatible with that of upstream capacity. This strengthened the upstream and downstream supply and demand stability. From the downstream module demand to drive the internal upstream ingot demand to gain the benefit from economy of scale.
- To strengthen the development and sales of efficient products, such as double-sided photovoltaic modules, intelligent components and other "Super Runner Program" related efficient products.
- Through investing as minority shareholders, seek construction opportunities as a EPC service provider and help drive the sales of the Group's modules.







# **Huge turnaround**



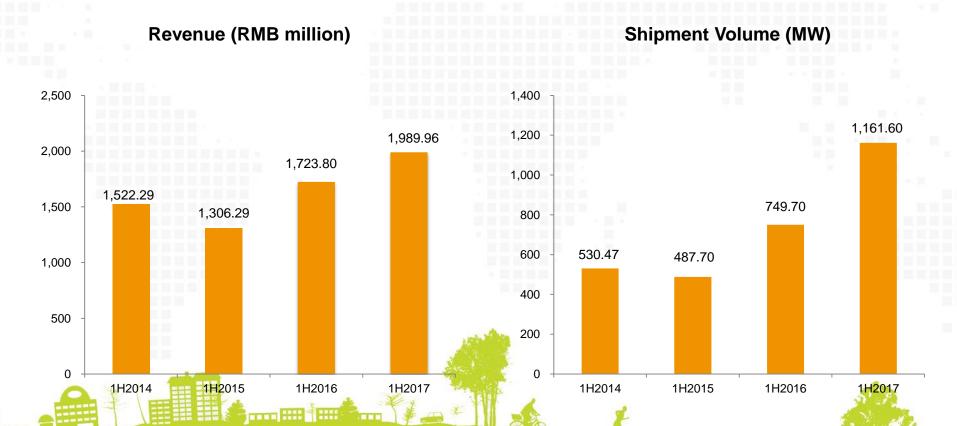
- Due to the upgrade and transformation work was performed on production equipment in last year. The Group, hence, was also not able to enjoy the full benefit of economy of scale. In addition, the impact of a long-term purchase contract resulted in relatively high purchase price on the raw materials, resulting in loss over the corresponding period of last year.
- Since the turn of the year, production has resumed normal operations and external shipment volume increased from 749MW in the corresponding period of last year to 1,161MW in the first half of 2017, representing an increase of 55%.
- Long-term supply contract of high purchase price raw material, polysilicon, has mainly been completed and with the huge jump in capacity utilisation, the Group's bargaining power has improved significantly. Gross profit margins has also improved from 11.4% to 15.3%, representing an increase of 34%.
- Based on the above reasons, comparing to the operating profit of RMB30.283 million in the corresponding period of 2016, operating profit increased significantly to RMB181.663 million during the first half of 2017. This represented an increase of 500%.



#### Revenue and Shipment Volume, Historic High



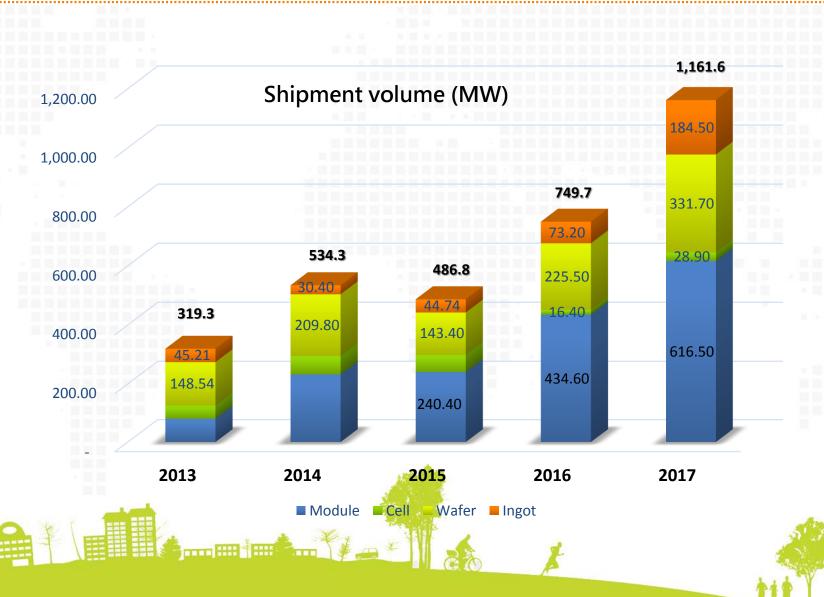
The revenue for the six months ended 30 June 2017 of the Group was RMB1,989.961 million, representing an increase of 15.4% compared with the corresponding period in 2016. Expansion of modules production capacity not only drives the internal demand for the Group's upstream ingots and wafers, it also help realise the benefits of the Group's competitive advantage of its vertical integration





### For 6 months ended Shipment Volume, Grown Rapidly



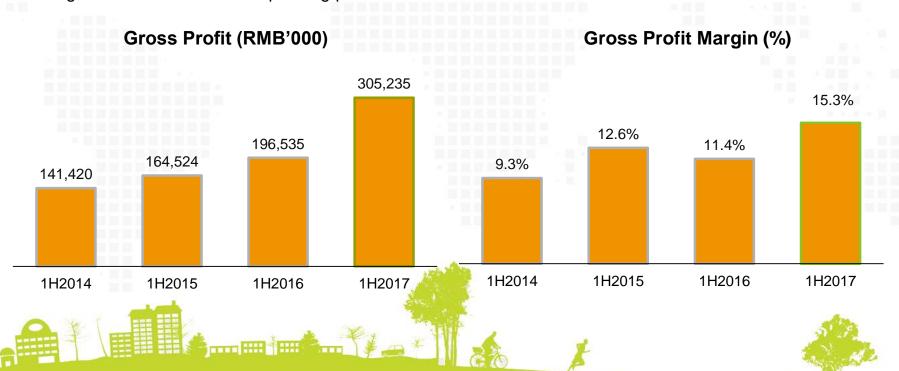




#### Gross Profit and Gross Profit Margin, Steadily Growth



- The Group completed the upgrade and transformation work on certain segment of the production capacity, production capacities and production volume has resumed normal. It enjoys advantages of economies of scale from its production scale. Through expansion of upstream and downstream products sales volume, it drives the growth of the Group's consolidated gross profit margins under the vertical integration strategy.
- The Group recorded a gross profit of RMB305.235 million and a gross profit margin of 15.3% for the six months ended 30 June 2017, as compared to a gross profit of RMB196.535 million and a gross profit margin of 11.4% for the corresponding period ended 30 June 2016.





# Results Highlight



- Since upgrade and transformation work was performed on upstream ingot and wafer manufacturing capacities last year, utilization ratio was relatively low and affected the realization of the benefit from economy of scale; long-term raw material, polysilicon, supply contract led to last year's losses. Since the turn of the year, production has resumed normal operations and external shipment volume increased from 749MW in the corresponding period of last year to 1,161MW in the first half of 2017, representing an increase of 55%.
- Further, long-term supply contract of high purchase price raw material, polysilicon, has mainly been completed and with the huge jump in capacity utilisation, the Group's bargaining power has improved significantly. Gross profit margins has also improved from 11.4% to 15.3%, representing an increase of 34%. The Group was able to enjoy the full benefit of economy of scale, and hence officially turned around its losses. Based on the above reasons, comparing to the operating profit of RMB30.283 million in the corresponding period of 2016, operating profit increased significantly to RMB181.663 million during the first half of 2017. This represented an increase of 500%.

(RMB'000)	1H2017	1H2O16	Change
Turnover	1,989,961	1,723,799	15.4%
Reported Gross Profit	305,235	196,535	55.3%
Gross Profit Margin (%)	15.3%	11.4%	39pp
Profit from Operations	181,663	30,283	500%
Profit/(Loss) Attributable to Equity Shareholders of the Company	95,299	(49,557)	n/a
Basic earnings/(loss) per share (RMB cents)	2.97	(1.54)	n/a
EBITDA	271,008	135,882	99%



# Results Highlight



(RMB '000)	2017.6.30	2016.12.31	Change
Current Assets	2,829,165	2,284,503	544,662
Current Liabilities	3,368,143	2,937,233	430,910
Total Assets	4,653,393	4,274,548	378,845
Total Liabilities	3,649,668	3,395,860	253,808
Net Assets	1,003,725	878,688	125,037
Net asset per share (RMB)	0.29	0.25	16%
Net asset per share (HKD)	0.34	0.29	16%

Note: RMB 1 = HKD 1.175





#### **Financial Ratios**



- The Group put enormous effort toward maintaining a level of lower inventory turnover days. With a long-term purchase contract expired, the purchase bargaining power with suppliers has improved. Through better inventory management and lowered the idle inventory, working capital increased and thus the inventory turnover days comes down gradually.
- The increase in trade receivable turnover days was mainly due to an increase in the proportion of module sales. The module sales has a longer credit period than other products.
- From utilization ratio was relatively high to realise of the benefit from economy of scale, the Group has better bargain power for cash collection cycle, payments to suppliers. As a result, the trade payable turnover relatively increased.

	2017	2016	Change		
Turnover Day Analysis (Six months ended 30 June)					
Trade Receivables Turnover (Days)	80	70	10		
Trade Payable Turnover (Days)	97	89	8		
Inventory Turnover (Days)	61	67	(6)		
Gearing Analysis					
	2017.6.30	2016.12.31			
Current Ratio (Times)	0.84	0.78	0.06		
Net Debt to Equity Ratio (%)	132%	175%	(43pp)		







#### **Action Plans**



S Plans

- Focus on internal resources to strengthen the leading position of Top 3 enterprises of China of manufacturing upstream monocrystalline ingot and wafer. And, focus on end-user module products and expanding customers demand to be the Top 10 enterprises of China of manufacturing module products.
- As the relatively low capacity of cell production capacity within the Group, it will establish strong strategic alliances with local and overseas manufacturers, the Group's photovoltaic wafers are sold to our strategic partners and the Group in turn purchase solar cells from them. According to our needs, this arrangement provides a stable sales channels for our photovoltaic wafers and a secure source for our solar cells under any turbulence in the market. As such, the Group will be able to focus on developing the markets and sales channels for the upper stream monocrystalline silicon ingots and waters and also for the downstream photovoltaic module and, hence demonstrating the Group's competitive advantage from its vertical integration strategy in upper and lower stream monocrystalline silicon products.
- By continually uplifting product quality and refining the structure of its full-industry chain businesses, the Group will, as always, provide the best product application development and one-stop services to the customers along its fully integrated photovoltaic industry chain, and aim at becoming a globally leading supplier of one-stop services in solar power generation.



