

Our brand strengths, operational assets and proven ability to deliver differentiated, market-driven products and solutions give us the confidence to overcome the challenges facing our industry in becoming the top global solar PV brand and an exemplary company.

# global perspectives

ANNUAL REPORT 2012

quality  
innovation  
solutions  
partnership

sustainability

research  
development



📍 COLORADO STATE UNIVERSITY // USA

🏠 **5.3 MW** system that will generate electricity equivalent to the amount used by approximately 2,100 American homes and will reduce greenhouse gas emissions by **6,250 tons**.

.....



# contents

LETTER FROM CEO	01
ABOUT TRINA SOLAR LIMITED	07
HISTORY/KEY MILESTONES	09
TECHNOLOGY INNOVATION	13
SUSTAINABLE MANUFACTURING AND CSR	17
FINANCIAL REPORT	19

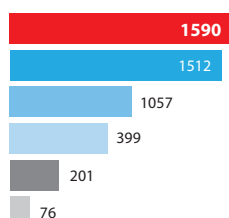


# letter from our CEO

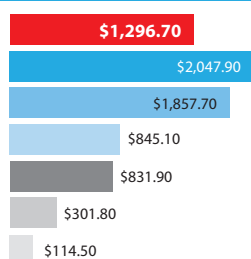
In 2012, the global PV industry was impacted by a lingering supply-demand imbalance, intense pricing competition and regulatory uncertainties. Despite these industry-wide challenges, our company has continued to develop and adapt. In 2012, global PV demand increased moderately as lower average selling prices (ASPs) drove increased demand in existing markets such as Germany and the United States, as well as in high growth markets such as China and Japan.

## Financial Highlights

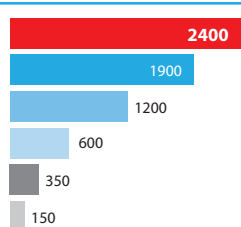
### MODULE SHIPMENTS (MW)



### REVENUE (USD MILLIONS)



### CELL AND MODULE CAPACITY (MW)



2012 was certainly a challenging year for our company. Global manufacturing overcapacity and sluggish macroeconomic conditions affected the entire industry. While competition and consolidation intensified in the industry, we maintained a healthy balance sheet and implemented a product differentiation strategy focused on accelerated delivery of market-driven innovative products, including high output/performance modules and other premium solutions capable of lowering the cost of solar-generated power. In addition, we have been expanding our efforts in the downstream project/system business, which we believe will be a key driver for the company's future growth and improved profitability.

Responding to such a challenging environment, in 2012 we streamlined and restructured our commercial organization, establishing four global sales regions - Europe, the Americas, China, and APMEA, which includes Asia Pacific (including Japan and India), the Middle East and Africa. The restructuring initiatives also included separating our module and systems business units. We believe these measures will allow us to strategically allocate our resources in a more efficient manner and to better capture commercial opportunities as they arise.

To meet increasing demand for high efficiency PV products, we successfully ramped up 500 MW of our Honey module production in the first half of 2012. Our multicrystalline Honey modules offer 5-10% more power output than the traditional modules and have been well received in the market, especially in commercial rooftop applications.

In terms of our operating metrics, during 2012 we shipped approximately 1.6 GW of modules, up from 1.5 GW in 2011 while our year-end cell and module manufacturing capacities increased to 2.4 GW, up from 1.9 GW in 2011. Primarily due to the falling ASPs of modules, our full-year 2012 revenue was US\$1.3 billion, down from US\$2.0 billion in 2011. We realized a net loss in the amount of US\$267 million compared to a net loss of US\$37.8 million in 2011. Into 2013, we have begun to see signs of improvement in the supply demand balance of the industry and stabilizing module ASPs. With our continued efforts in technological advancement and cost reduction we believe profitability will be improved for our module business.

In 2012 we continued to diversify sales. Compared to 2011, our shipments to emerging markets increased noticeably while our proportion of revenue from European markets decreased from approximately 66% to 48%. In addition to solid year-on-year increases in the proportion of our US and China market sales, which grew from 22% to 26% and 7% to 13% of our total net sales, respectively, we also became the top PV supplier in Australia, and expanded sales in Japan, India, the Middle East and Africa.

2012 marked a year of regulatory uncertainty in our US and European markets. In March and May, the US Department of Commerce announced its preliminary determination of countervailing and antidumping duties against solar PV cells made in China. In September, the European Commission announced the initiation of an antidumping investigation on the imports of crystalline silicon photovoltaic modules and key components originating in China. In November, the US International Trade Commission made the final determination of antidumping and countervailing duties against PV cells made in China. In both the US and European cases, Trina Solar was selected to be one of the companies sampled. We continue to fully cooperate with the investigators and defend our position that based on the evidence available these duties are unwarranted and serve as an impediment to the broader adoption of solar energy as a sustainable energy. Meanwhile, Trina



2012 was certainly a challenging year for our company. While competition and consolidation intensified in the industry, we maintained a healthy balance sheet, implemented a product differentiation strategy and expanded our efforts in the downstream project and systems business.

# Our brand strengths, global presence, operational excellence, and innovation were again recognized by leading agencies.

Solar remains committed to continuing to serve our customers and business partners in both regions, with whom we have built strong relationships.

Going forward, we plan to continue to optimize our business models and commercial processes. Building on the foundation of our module manufacturing business, we are growing our downstream systems business both domestically and abroad. We believe we can utilize our product quality and balance sheet strength to seize valuable downstream opportunities.

In 2012 we applied our resources towards building a global project pipeline. Domestically, our efforts succeeded in securing the rights to develop, in Gansu, China a 50 MW solar project, which is to be completed in 2013. We continue to source project opportunities, both utility scale and distributed generation, as more encouraging policies by the Chinese regulators emerge in 2013. By developing downstream projects we are adding a new dimension to our revenue stream, which we believe will support growth in our profitability. We are confident that our downstream project development business will comprise an increasingly large proportion of our revenue in the coming years.

In response to market demands, we continue to develop an ever-increasing range of more powerful and innovative PV products and services designed to improve overall efficiencies and reduce costs for the end-user. In 2012, we accelerated the development

and delivery of new products and solutions to create additional value for our customers. In addition to our high efficiency Honey modules, our high-tech 'Trinasmart' module integrated solution and distributors/installers-friendly Partner Plus program, are increasingly recognized for their value-added characteristics.

As a result of our emphasis on research and development, we continued to make technological breakthroughs in 2012. Honey Ultra, the second generation of Trina Solar's Honey technology, achieved a new record for multicrystalline modules. The standard-size Honey Ultra module (1650x992mm) reached 284.7 watts of peak power output in May 2012, as confirmed by TUV Rheinland. Increased efficiency was made possible by our Honey cell texturing, thinner bus-bars and finger-lines, as well as the utilization of a highly reflective black foil. This achievement surpassed our previously held world record of 274 watts of peak power output set in 2011 by our Honey technology.

Our State Key Laboratory for PV Science and Technology, located next to our headquarters and manufacturing facilities in Changzhou China, plays a key role in sustaining our leadership in production cost efficiencies through lean manufacturing, advanced supply chains, and cell and module efficiency initiatives. In 2012, it contributed to Trina Solar becoming the first solar PV company to be awarded the Client Test Data Program certification from Underwriters Laboratories (UL). Reflecting our

## Strategic Highlights

**205 PATENTS RECEIVED**

**MARKET EXPANSION:  
OPENED LATIN AMERICAN  
OFFICE**

**PRODUCT PORTFOLIO:  
ANNOUNCED TRINASMART  
OPTIMIZATION AND  
MONITORING SOLUTIONS**

**REACHED 500 MW CAPACITY  
OF HIGH-OUTPUT HONEY  
MODULES**



company's continued commitment to PV testing capabilities and our emphasis on product quality and reliability, this certification means Trina Solar is able to independently conduct testing programs and issue UL recognized test data without requiring the on-site presence of UL dispatched engineers.

In 2013 we continued to increase our visibility in the area of corporate social responsibility (CSR). In 2012, we received the global No. 1 ranking by the Silicon Valley Toxics Coalition's Solar Scorecard, which rates PV manufacturers based on responsible product stewardship, extended producer responsibility, occupational health and safety, chemical use, as well as on supply chain monitoring and creating green jobs. Our 2012 CSR activities also included philanthropic efforts to bring reliable energy to three healthcare centers in Malawi servicing over 85,000 people, and clean power to the American Lung Association's offices to promote air quality and raise awareness of air pollution.

Since being selected by the World Economic Forum as the first "Global Growth Company Industry Shaper" in the solar sector in 2010, we have endeavored to solidify our industry-leading position and in January 2012 once again participated in the World Economic Forum in Davos, Switzerland. Together with other industrial leaders in the energy and utility sectors, our efforts during the 2012 Forum focused on optimizing the global energy structure. In September 2012, I furthered my engagement by becoming a Mentor at the World Economic Forum

Annual Meeting of the New Champions held in Tianjin, China. This global platform allows Trina Solar to advocate the importance of sustainability and to have a voice among policymakers involved in the promotion and adoption of renewable energy.

Furthermore, the strength of our brand, as well as our global presence, operational excellence and innovation were once again recognized by the Boston Consulting Group who named Trina Solar as one of the 50 Chinese Global Challengers in 2012. In addition, Fast Company Magazine included Trina Solar in their 2013 list of The World's Top 10 Most Innovative Companies in China.

As a leading solar brand and well-known global company, we are confident we can overcome the current challenges facing our industry and I would like to take this opportunity to extend our appreciation to our shareholders, customers, partners and employees for their continued trust and support.

Yours faithfully,



**Jifan Gao**  
**Chairman & CEO**

**ONE OF THE 50 CHINESE  
GLOBAL CHALLENGERS IN  
2012**



**THE WORLD'S TOP 10 MOST  
INNOVATIVE COMPANIES IN  
CHINA**

**FAST COMPANY**

**NO. 1 MOST RESPONSIBLE  
PV MANUFACTURER  
FOR SOCIAL AND  
ENVIRONMENTAL  
RESPONSIBILITY IN 2012**











📍 KATOEN NATIE // ANTWERP, BELGIUM

🏢 Once the world's largest rooftop solar PV installation, generating **40 MW** capacity of electricity and occupying almost 800,000 m<sup>2</sup> (the size of approximately 160 football fields), the rooftop system is expected to offset **17,000 tons** of CO<sub>2</sub> emissions.





Trina Solar's premium PV modules have brought clean, reliable solar energy to residential, commercial, industrial and utility applications, both on and off-grid, worldwide.





# about trina solar

Founded in 1997, and listed on the New York Stock Exchange in 2006, Trina Solar specializes in the manufacture of crystalline silicon photovoltaic modules and system integration. Trina Solar is not only a pioneer of China's PV industry, but has become an influential shaper of the global solar industry and a leader in solar modules, solutions and services. In 2012, the company achieved revenues of 1.3 billion USD and shipments of 1.59 GW.

Trina Solar ranked top two worldwide according to the global PV industry sustainable growth index reports released annually by Pricewaterhouse Coopers from 2010 to 2013. This sustainable report measured the Company's comprehensive strength benchmarked against its leadership position, market share, profitability, and capital chain, among others. In the Solar Scorecard 2012 world ranking for PV manufacturer's toxics coalition, Trina Solar was ranked No. 1 among all global PV manufacturers. This ranking assessed companies based off of indicators of product recycling, the use of toxic material in production, the creation of green jobs, as well as other relevant information disclosed.

The Company's premium PV modules have brought clean, reliable solar energy to residential, commercial, industrial and utility applications, both on and off-grid, worldwide. By relying on the local sales and marketing networks, and installation partners throughout Asia, Europe and North America among other regions, Trina Solar is committed to developing a sustainable PV industry through enhancing PV competitiveness and energy efficiency. Thanks to its tremendous achievements in advancing PV-generated electricity towards grid-parity level and in promoting the use of solar energy, Trina Solar became the first industry shaper worldwide in the PV industry of the Davos World Economic Forum in 2010.

In 2012, Trina Solar launched 'Friends of Rio' initiative jointly with 25 companies and organizations such as World Economic Forum, Siemens, Nestle, Philips, Camargo Correa, and the Climate Group,

and participated the Rio 20+ event in Brazil. The initiative called for a broad public and private partnership around the globe to cope with key challenges including water, energy and food, for the sustainability of the human beings.

In September 2011 the Company's new module based on Honey technology set a world record or power output tested by TUV. This record was renewed by the Company in May 2012. In May 2012, Trina Solar inaugurated its State Key Lab of PV Science and Technology, setting the foundation for a world-class open and collaborative innovation platform for the Company.

The Company is actively stepping up its pace of globalization and the development of its senior leadership team. Over the last few years, an international team of senior managers and researchers from more than 20 nations and regions has joined the Company. The Company has established its European headquarters in Zurich, Switzerland, the North American headquarters in San Jose, California, USA, and its Asia-Pacific Middle East and Africa Headquarters in Singapore. The Company's PV products, including modules, are sold in over 30 countries.

Guided by the mission to Use Solar to Benefit Mankind, the company is committed to further grow the world solar industry sustainably under the corporate core values of 'Customer Focus, Open and Inclusive, Respect and Collaborate for Win-win, Pursuing Excellence'.

# milestones

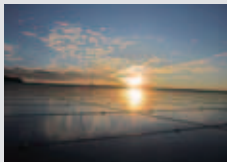


1997 - 2005

## Trina founded by Jifan Gao in 1997

Meaning of Trina in Chinese

**Technology that creates harmony between people and nature**



Trina Solar's Vision  
**Let Solar Benefit Mankind**

Provided modules for the first BIPV house in China



Installed **39 PV power stations** in Tibet for the China National Brightness Program to bring electricity to remote parts of China

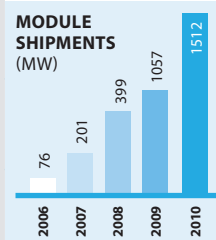
Participated in the development of China's first renewable energy law, which set a goal of **15%** renewable by 2020



2006 - 2010

## Trina Solar IPO (TSL) in 2006

**MODULE SHIPMENTS (MW)**



Opened regional offices in US, Europe and Asia

Revenue grew **2x** each year on average

Employees more than **tripled** worldwide



US's largest rooftop PV installation (**2.4 MW**) located in Atlantic City



World's largest rooftop PV installation (**44 MW**) located in Antwerp, Belgium



Italy's largest rooftop PV installation (**4.7 MW**) located in Piedmont, Italy

**Deloitte**  
Technology Fast50

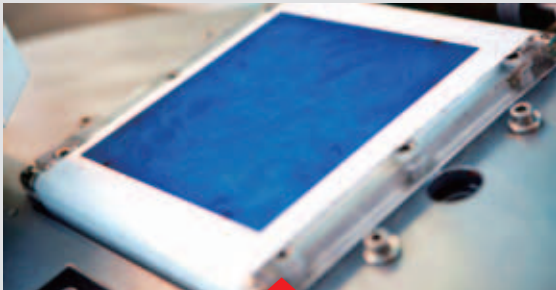
Named by **Deloitte** as the fastest growing company in China's high-tech sector.

**FORTUNE**

Ranked in the **Fortune Fast Global 100**



Over the last 15 years Trina Solar has grown from a pioneer of China's PV industry to an influential shaper of the global solar industry and a leader in solar modules, solutions and services.



2011

### Driving Sustainable Growth

Launched Honey Cell Technology with a world record output of **274 W**



Grew cumulative shipments to **3.3 GW**

Established China's only **State Key Laboratory for Photovoltaics (PVST)**



Germany's largest PV power plant (**84 MW**) located in Eggebek, Germany



Australia's largest rooftop PV system (**1.22 MW**) located in Queensland, Australia

Named by the **World Economic Forum** as the first industry shaper of the global solar sector.

Ranked **No. 1** by **Price Waterhouse Coopers** Global PV Sustainability Index

Ranked in the **Fortune Fast Global 100**



2012

### Leadership Through Innovation

Ranked **No. 1** by the California Energy Commission for solar module field performance (PTC/STC ratio)

Grew cumulative shipments to **4.8 GW**

Set second power output of **284.7 W** world record for a 60-cell multi module with Honey Cell Technology

Became the **first and only** PV firm to receive the CTDP certification from **UL** to independently test for and release UL-recognized data

Partnered with **Innovation: Africa** to power hospitals that service 85,000 people in Malawi and Tanzania



Donated solar system to **Martin Luther King Charter School** in New Orleans, USA

Donated solar system to the **American Lung Association** in San Diego, USA

CEO Jifan Gao participated in the **World Economic Forum** as one of the eight mentors

Ranked **No. 1** solar manufacturer for social and environmental responsibility by **SVTC**

Named as **Top Brand** in Europe PV market by **EuPD Research**





📍 UNIVERSITY OF QUEENSLAND // AUSTRALIA

🏢 **1.2 MW** installation at the University of Queensland is the largest roof top ongrid PV system in Australia supplying around 6% of peak electricity demand on campus during the day, enough to power 800 households at once, totaling 1.85 GWh of electricity a year, reducing the University's carbon footprint equivalent to taking 335 cars off the road each year.







# innovation

Technology and product innovation are key to driving smarter technology solutions and the affordability of solar-generated electricity.

## Product Innovation

### Cell Technology Innovation

**Honey Cell Technology:** Advanced cell texturing techniques have enabled our Honey products to set two world output records, including a 2012 record of 284.7 Wp output for a 60-cell module.

### Module Innovation

**Dual Glass PDG5:** By replacing the traditional backsheet materials of conventional solar modules with heat-strengthened glass, the PDG5 is optimized for reliable performance under stressful environmental conditions and is among the most durable modules on the market.

### Solutions Innovation

Our solutions such as our **Trinamount** racking system and the **Trinasmart** optimizer and monitoring system increase project efficiency by installing up to three times faster and allowing you to design larger projects. These products lower the installed costs of solar energy and are key to making solar ready today.

## Research

The new Trina State Key Laboratory is a state of the art facility designed to foster technological innovations and drive PV technologies. Its goal is to explore promising PV materials, cell and module technologies, and improve system level performance. The lab will also serve as a platform to bring together technical capabilities from strategic partners including customers, PV component suppliers, universities, and other research institutions.

Encompassing a total area of over 7000 square meters, Trina Solar's Testing Center supports product certification, material reliability testing, highly accelerated aging test, and a comprehensive range of test material evaluation and research. Testing capabilities cover PV product testing standards including IEC61215, IEC61730 and UL1703. These tests simulate stresses in the natural environment and examine the ability of PV products to withstand and maintain performance in the extreme weather conditions, which they are subject to.



## Facts & Figures



Over 435 solar photovoltaic patents received



Two world records set for multicrystalline module output



Trina Solar PV Park is home to many of our suppliers, leading to complete vertical integration



Trina Solar continues to advance efficiency boundaries. We have achieved 19.6% efficiency for multicrystalline cells and 20.3% efficiency for monocrystalline cells.



## Partnerships

Trina Solar has partnered with many of the world's leading PV standards and research institutes to advance solar technology, and create cutting-edge solutions for our customers.



### UL

We were the first and only PV firm to receive UL's Client Test Data Program CTDTP Certification. Trina Solar laboratories can independently test for and issue UL recognized data.



Solar Energy Research  
Institute of Singapore

### Solar Energy Research Institute of Singapore

Co-development of a back contact cell. Targeting 21.5% production efficiency, and up to 23.5% laboratory test efficiency within 3 years.



### Australia National University

Co-development of an n-type mono c-Si cells with 20% conversion efficiencies for mass production and p-type multi c-Si cells with 19% conversion efficiencies.



UNIVERSITAT  
POLITÈCNICA  
DE VALÈNCIA

### Universidad Politécnica de Valencia

Guest lectureship of PV specialization training program; Cooperation on doctorate-level photovoltaics research.





📍 PARK VILLAS ROOFTOP // NATIONAL CITY, CA, USA  
🏠 **464 KW** system uses 2,000 panels mounted on roofs of apartment buildings and will save CO<sub>2</sub> by **500 tons**.

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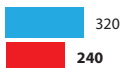


# csr & sustainability

Clean, sustainable solar energy will be central to reducing our emissions as the global community works together to stabilize climate change and minimize its effects. Ensuring that our product has a minimal carbon footprint is central to our commitment to both our customers and our community.

## GREENHOUSE GAS EMISSIONS 2010-2011 (TONS OF CO<sub>2</sub>/MW)

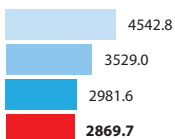
Source: Verified by British Standards Institution (BSI) June, 2012



*Note: Greenhouse gas emissions verification is carried out by a third party (British Standards Institution) for the previous calendar year: for example, verification of for 2011 GHGs emissions was performed in 2012. Verification for 2012 will be performed in the fall of 2013.*

■ 2010 ■ 2011

## WATER CONSUMPTION PER MW MODULE PRODUCTION 2010-2011 (m<sup>3</sup>/MW)



■ 2009 ■ 2010  
■ 2011 ■ 2012

## Key Facts and Figures

- Ranked #1 in SVTC's 2012 Solar Scorecard for Social and Environmental Responsibility
- 782 kg carbon footprint for our entire manufacturing process
- 65% reduction in electricity usage per MW produced from 2008 to 2012
- 64% reduction in water use per MW produced from 2008 to 2012
- 25% reduction in greenhouse gas per MW produced from 2010 to 2012
- ISO 14001 (Environmental management) and ISO 14046 (GHG Emissions Reporting) certified

## Sustainable Manufacturing

We carefully monitor our annual manufacturing emissions and the carbon footprint of our product. As we reduce our manufacturing resource usage, annual audits by the British Standards Institute (BSI) help us to reliably track and report our progress.

Third party institutes have recognized this commitment to our workers, community and environment. Trina Solar has been ranked No. 1 globally for environmental and social performance in the Silicon Valley Toxics Coalition's (SVTC) 2012 Solar Scorecard. The Solar Scorecard evaluates factors such as extended producer responsibility and takeback, supply chain monitoring, green jobs, chemical-use and product life cycle analysis and disclosure. We are also a member of PV Cycle, to ensure that our products are recycled at the end of their lifetime.





## Community Partnerships

Technology is just one part of our contribution. We are working hard to lead the industry in empowering individuals and their communities. Our giving program works with partners in education, health and underserved communities to help them spend our resources where they are needed most.

### Highlighted 2012 Partnerships

**Innovation: Africa, Malawi:** We donated solar modules to three health care centers in Malawi servicing over 85,000 people. Together with partner Innovation: Africa, we made clean energy available to two remote medical centres and a community-based organization offering HIV/AIDS support, vocational training, adult education, orphan care and more. In combination with a storage system, our solar modules will allow all three facilities to offer 24 hour care and services.

**America Lung Association, California:** We donated a 10.5 kW solar installation to the American Lung Association's San Diego offices. Clean renewable technologies like solar energy help reduce the serious health threat of air pollution. The system will provide an estimated 25 percent of the building's power and will reduce CO<sub>2</sub> emissions by 500 tons over 25 years - the equivalent of planting 10,220 trees.

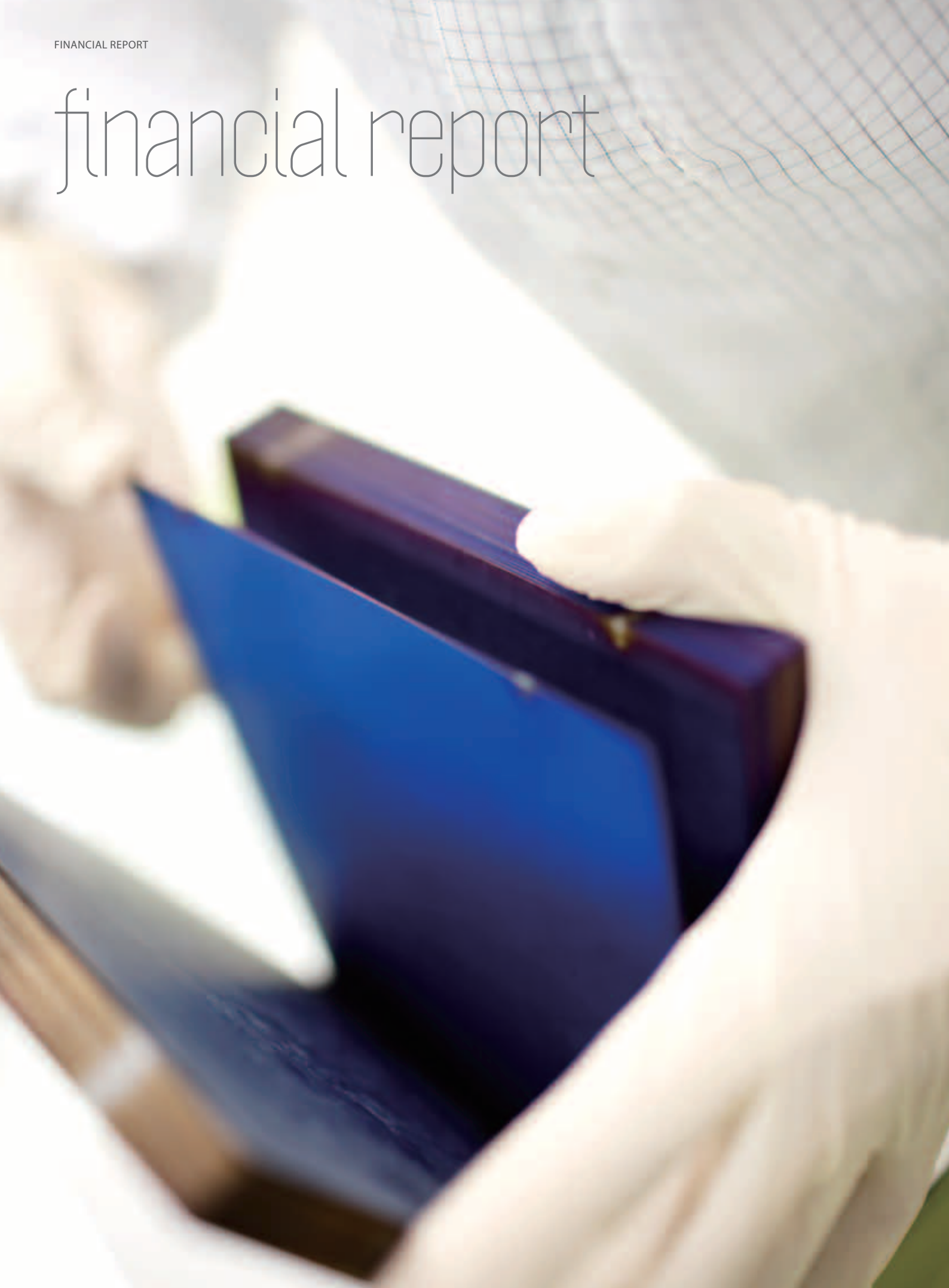
**10.5 KW SOLAR  
INSTALLATION DONATED  
TO THE AMERICAN LUNG  
ASSOCIATION'S SAN DIEGO  
OFFICES**



**DONATED SOLAR MODULES  
TO THREE HEALTH CENTERS  
CATERING TO 85,000 PEOPLE**



# financial report





## TABLE OF CONTENTS

<u>INTRODUCTION</u>	1
<u>PART I</u>	2
<u>Item 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS</u>	2
<u>Item 2. OFFER STATISTICS AND EXPECTED TIMETABLE</u>	2
<u>Item 3. KEY INFORMATION</u>	2
<u>Item 4. INFORMATION ON THE COMPANY</u>	26
<u>Item 4A. UNRESOLVED STAFF COMMENTS</u>	44
<u>Item 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS</u>	44
<u>Item 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES</u>	67
<u>Item 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS</u>	79
<u>Item 8. FINANCIAL INFORMATION</u>	80
<u>Item 9. THE OFFER AND LISTING</u>	81
<u>Item 10. ADDITIONAL INFORMATION</u>	82
<u>Item 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK</u>	91
<u>Item 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES</u>	92
<u>PART II</u>	93
<u>Item 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES</u>	93
<u>Item 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS</u>	94
<u>Item 15. CONTROLS AND PROCEDURES</u>	94
<u>Item 16A. AUDIT COMMITTEE FINANCIAL EXPERT</u>	94
<u>Item 16B. CODE OF ETHICS</u>	95
<u>Item 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES</u>	95
<u>Item 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES</u>	95
<u>Item 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS</u>	95
<u>Item 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT</u>	95
<u>Item 16G. CORPORATE GOVERNANCE</u>	96



<u>PART III</u>	96
<u>Item 17. FINANCIAL STATEMENTS</u>	96
<u>Item 18. FINANCIAL STATEMENTS</u>	96
<u>Item 19. EXHIBITS</u>	96



## INTRODUCTION

Unless the context otherwise requires, in this annual report on Form 20-F:

- “We,” “us,” “our,” and “our company” refer to Trina Solar Limited, its predecessor entities and its subsidiaries;
- “Trina” refers to Trina Solar Limited;
- “Trina China” refers to Changzhou Trina Solar Energy Co., Ltd.;
- “TST” refers to Trina Solar (Changzhou) Science and Technology Co., Ltd.;
- “ADSs” refers to our American depositary shares, each of which represents 50 ordinary shares;
- “ADRs” refers to the American depositary receipts, which, if issued, evidence our ADSs;
- “China” or “PRC” refers to the People’s Republic of China, excluding, for the purpose of this annual report, Taiwan, Hong Kong and Macau;
- “RMB” or “Renminbi” refers to the legal currency of China, “\$” or “U.S. dollars” refers to the legal currency of the United States, and “€” or “Euro” refers to the legal currency of the European Union;
- “shares” or “ordinary shares” refers to our ordinary shares, par value \$0.00001 per share; and
- “issued and outstanding” refers to our shares that have been issued, outstanding and paid in full, for the avoidance of doubt, excluding shares that have been set aside in relation to any share incentive plan or convertible debt security.

Names of certain companies provided in this annual report are translated or transliterated from their original Chinese legal names.

Discrepancies in any table between the amounts identified as total amounts and the sum of the amounts listed therein are due to rounding.

This annual report on Form 20-F includes our audited consolidated financial statements for the years ended December 31, 2010, 2011 and 2012.

This annual report contains translations of certain Renminbi amounts into U.S. dollars at the rate of RMB6.2301 to \$1.00, the noon buying rate in effect on December 31, 2012 in New York City for cable transfers of Renminbi as certified for customs purposes by the Federal Reserve Bank of New York. We make no representation that the Renminbi or U.S. dollar amounts referred to in this annual report could have been or could be converted into U.S. dollars or Renminbi, as the case may be, at any particular rate or at all. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Fluctuations in exchange rates could adversely affect our business.” On March 22, 2013, the noon buying rate was RMB6.2120 to \$1.00.

We completed the initial public offering of 5,300,000 ADSs on December 22, 2006. On December 19, 2006, we listed our ADSs on the New York Stock Exchange under the symbol “TSL.” On November 22, 2010, our ADRs started trading on the Singapore Exchange GlobalQuote Board under the symbol “K3KD.”

## PART I

### Item 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not Applicable.

### Item 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not Applicable.

### Item 3. KEY INFORMATION

#### A. Selected Financial and Operational Data

The following selected consolidated statement of operations data (other than ADS data) for the years ended December 31, 2010, 2011 and 2012 and the selected consolidated balance sheet data as of December 31, 2011 and 2012 have been derived from our audited financial statements included elsewhere in this annual report. The selected consolidated financial data should be read in conjunction with those financial statements and the accompanying notes and “Item 5. Operating and Financial Review and Prospects” below. Our consolidated financial statements are prepared and presented in accordance with United States generally accepted accounting principles, or U.S. GAAP. Our historical results do not necessarily indicate our results expected for any future periods.

Our selected consolidated statements of operations data (other than ADS data) for the years ended December 31, 2008 and 2009 and our consolidated balance sheets data as of December 31, 2008, 2009 and 2010 have been derived from our audited consolidated financial statements, which are not included in this annual report.

	Year Ended December 31,				
	2008	2009	2010	2011	2012
	(in thousands, except for share, per share, operating data and percentages)				
Consolidated Statement of Operations Data					
Net sales	\$ 831,901	\$ 845,136	\$ 1,857,689	\$ 2,047,902	\$ 1,296,655
Cost of goods sold	667,459	607,982	1,273,328	1,715,260	1,239,412
Gross profit	164,442	237,154	584,361	332,642	57,243
Operating expenses:					
Selling expenses	20,302	30,940	75,677	100,427	118,885
General and administrative expenses	41,114	65,406	72,711	157,129	176,719
Research and development expenses	3,039	5,439	18,625	44,120	26,511
Total operating expenses	64,455	101,785	167,013	301,676	322,115
Income (loss) from operations	99,987	135,369	417,348	30,966	(264,872)
Foreign exchange (loss) gain	(11,802)	9,958	(36,156)	(27,435)	908
Interest expense	(24,558)	(27,095)	(33,952)	(35,021)	(51,887)
Interest income	2,944	1,667	2,590	3,056	8,552
Derivatives (loss) gain	(1,067)	(1,590)	9,476	(11,393)	8,542
Other (expense) income, net	(156)	2,613	216	9,317	6,797
Income (loss) before income taxes	65,348	120,922	359,522	(30,510)	(291,960)
Income tax (expense) benefit	(4,609)	(24,696)	(48,069)	(7,310)	25,405
Net income (loss)	60,739	96,226	311,453	(37,820)	(266,555)
Net loss attributable to the noncontrolling interest	—	—	—	— <sup>(1)</sup>	— <sup>(1)</sup>
Net income (loss) attributable to Trina Solar Limited Shareholders	\$ 60,739	\$ 96,226	\$ 311,453	\$ (37,820)	\$ (266,555)
Earnings (loss) per ordinary					



	Year Ended December 31,				
	2008	2009	2010	2011	2012
	(in thousands, except for share, per share, operating data and percentages)				
share:					
Basic	\$ 0.02	\$ 0.04	\$ 0.09	\$ (0.01)	\$ (0.08)
Diluted	\$ 0.02	\$ 0.03	\$ 0.08	\$ (0.01)	\$ (0.08)
Earnings (loss) per ADS <sup>(2)</sup> :					
Basic	\$ 1.23	\$ 1.77	\$ 4.58	\$ (0.54)	\$ (3.77)
Diluted	\$ 1.20	\$ 1.69	\$ 4.18	\$ (0.54)	\$ (3.77)
Weighted average ordinary shares outstanding:					
Basic	2,501,202,680	2,724,185,761	3,402,701,503	3,521,182,416	3,534,829,694
Diluted	2,690,723,390	3,131,505,181	3,833,713,796	3,521,182,416	3,534,829,694
Weighted average ADS outstanding: <sup>(2)</sup>					
Basic	50,024,054	54,483,715	68,054,030	70,423,648	70,696,594
Diluted	53,814,468	62,630,104	76,674,276	70,423,648	70,696,594

#### Consolidated Financial Data

Gross margin	19.8%	28.1%	31.5%	16.2%	4.4%
Net margin	7.3%	11.4%	16.8%	(1.8)%	(20.6)%

#### Consolidated Operating Data

PV modules shipped (in MW)	201.0	399.0	1,057.0	1,512.0	1,594.0
Average selling price (\$/W)	\$ 3.92	\$ 2.10	\$ 1.75	\$ 1.33	\$ 0.78

	As of December 31,				
	2008	2009	2010	2011	2012
	(in thousands)				
Consolidated Balance Sheet Data					
Cash and cash equivalents	\$ 132,224	\$ 406,058	\$ 752,748	\$ 816,780	\$ 807,276
Restricted cash	44,991	72,006	38,035	79,602	110,920
Inventories	85,687	81,154	79,126	249,779	318,504
Accounts receivable, net	105,193	287,950	377,317	466,537	390,157
Total current assets	419,883	927,517	1,415,139	1,768,722	1,765,487
Property, plant and equipment, net	357,594	476,858	571,467	919,727	893,340
Total assets	940,116	1,548,698	2,132,089	2,877,448	2,864,857
Short-term borrowings and current portion of long-term borrowings	248,558	267,428	158,652	389,472	875,821
Accounts payable	62,504	186,535	188,000	472,092	423,985
Total current liabilities	335,714	515,401	600,070	1,007,435	1,479,155
Accrued warranty costs	12,473	21,023	38,711	58,810	65,780
Long-term borrowings, excluding current portion	14,631	182,516	299,977	520,151	415,150
Total equity	436,501	679,312	1,173,647	1,145,325	881,785
Total liabilities and equity	\$ 940,116	\$ 1,548,698	\$ 2,132,089	\$ 2,877,448	\$ 2,864,857

(1) The amount of net loss attributable to the noncontrolling interest is less than one thousand for the years ended December 31, 2011 and 2012.

(2) Reflects ADS ratio change effective January 2010.

#### B. Capitalization and Indebtedness

Not Applicable.

C. Reasons for the Offer and Use of Proceeds

Not Applicable.

D. Risk Factors

**Risks Related to Our Company and Our Industry**

***We may be adversely affected by volatile market and industry trends, in particular, the growth for solar power projects may decline, which may reduce our revenues and earnings.***

We are affected by solar power markets and industry trends. Weakened global economic conditions may affect the availability of financing, which in turn would slow the demand for photovoltaic, or PV, projects. As a result of global economic conditions, some governments may implement austerity measures that reduce the feed-in tariffs and other subsidies designed to benefit the solar industry. In the fourth quarter of 2008 and the first quarter of 2009, the global solar power industry experienced a precipitous decline in demand due to decreased availability of financing for downstream buyers of solar power products as a result of the global economic crisis. During the same period, increased manufacturing capacity combined with decreased demand for and prices of polysilicon caused a decline in the prices of solar power products. In 2011, a decrease in payment to solar power producers, in the form of feed-in tariffs and other reimbursements, and a reduction in available financing caused a decrease in the growth in a number of solar power projects in the European markets. Payments to solar power producers decreased as governments in Europe, under pressure to reduce sovereign debt levels, reduced subsidies such as feed-in tariffs, which tariffs require public utility companies to pay higher prices for solar power than for power generated through conventional means. Furthermore, many downstream purchasers of solar power products were unable to secure sufficient financing for the solar power projects due to the global credit crunch. As a result, many solar power producers that purchase solar power products from manufacturers like us were unable or unwilling to expand their operations. These market conditions were exacerbated by an over-supply of solar power products primarily driven by an increase in manufacturing capacity that continued through 2011, which adversely affected the prices of solar power products. In 2012, the European governments reduced their support in the European markets that have traditionally relied upon feed-in-tariffs to support demand and newer markets utilized feed-in-tariffs and power purchase agreement to support demand, which in the aggregate resulted in a marked decline in the global growth rate of demand for solar products. In addition, a number of manufacturers faced cash liquidity pressures, which caused the prices of solar power products to decrease. Demand for solar power is also influenced by macroeconomic factors such as global economic conditions, the supply and prices of other energy products such as oil, coal and natural gas, and government regulations and policies concerning the electric utility industry. A decrease in oil prices, for example, may reduce demand for investment in alternative energy.

If these negative market and industry trends continue and demand for solar power projects and solar power products weakens as a result, our business and results of operations may be materially and adversely affected.

***Fluctuations in polysilicon prices may affect our margins.***

Polysilicon is an essential raw material used in the production of solar cells and modules. Prior to the second half of 2008, there was an industry-wide shortage of polysilicon, primarily as a result of the growing demand for solar power products. According to Solarbuzz, an independent solar energy research and consulting firm, spot prices for solar grade polysilicon were in the range of \$230-\$375 per kilogram for most of the first half of 2008 and rose to a peak of \$450-\$475 per kilogram by mid-2008. Increases in the price of polysilicon have in the past increased our production costs, and any significant price increase in the future may adversely impact our business and results of operations. Due to the historical scarcity of polysilicon, supply chain management and financial strength were the key barriers to entry. Beginning in late 2008, however, newly available polysilicon capacity has resulted in an increased supply of polysilicon, which created downward pressure on prices. According to Solarbuzz, the average prices of long-term polysilicon supply contracts were \$52-\$57 per kilogram, approximately \$38 per kilogram and approximately \$22-\$24 per kilogram during the fourth quarters of 2010, 2011 and 2012, respectively. According to Solarbuzz, spot prices for solar grade polysilicon were \$75-\$85 per kilogram, approximately \$30 per kilogram and \$16-\$17 per kilogram during the fourth quarters of 2010, 2011 and 2012, respectively.

The price of polysilicon may not continue to decline or remain at its current levels. Increases in the price of polysilicon have in the past increased our cost of goods sold, and any significant price increase in the future may adversely impact our margins. We purchase polysilicon from a limited number of international and domestic suppliers. Consistent



with market practice, our medium and long-term supply contracts generally contain price adjustment provisions that offer both parties the right to adjust contract price when the fluctuation of market price during a specified period has exceeded a threshold as agreed to by both parties. If the market price of polysilicon increases significantly in the future, our counterparties will be able to renegotiate contract prices with us based on the then market price. Further, in 2011 and 2012, we renegotiated several medium-term and long-term supply contracts that required us to purchase polysilicon at a predetermined price or quantity to more closely link our purchase costs with market prices. If there is a significant increase in polysilicon price and the contract prices are renegotiated or adjusted higher, our cost of goods sold may be materially and adversely affected. Moreover, as the prices of other silicon-based raw materials, including ingots and wafers, are correlated to the price of polysilicon, an increase in the price of polysilicon would likely lead to increases in the prices of other silicon-based raw materials that we source from third parties. Due to the volatility of polysilicon prices, we also recently renegotiated our wafer purchase amounts and prices under a long-term framework agreement with a third party to more closely track market prices. We cannot assure you that our polysilicon procurement strategy will be successful in ensuring that we have an adequate supply of polysilicon at commercially viable prices to meet our requirements. Further, if the price of polysilicon increases faster than the increase in the price of PV modules, we may be unable to pass the increase to our customers, or if the price of PV modules decreases more quickly than the decrease in the price of polysilicon, our results of operations could be materially and adversely affected.

***We continue to rely on a limited number of third-party suppliers and manufacturers for silicon-based raw materials for our products and toll services, which could prevent us from delivering our products to our customers within required time frames and result in sales and installation delays, cancellations, liquidated damages and loss of market share.***

We purchase silicon-based raw materials, including polysilicon, ingots and wafers, from a limited number of domestic and international suppliers, and from time to time we source or contract toll services from third party manufacturers to manufacture some of our wafers. We purchase non-silicon-based raw materials from many sources. If we fail to develop or maintain our relationships with key third party suppliers or manufacturers, we may be unable to manufacture our products timely or our products may only be available at a higher cost or after a long delay. If we do not deliver products to our customers within the required time frames, we may experience order cancellations, loss of market share and legal action.

Furthermore, the global economic crisis and the resulting decrease in availability of financing had a significant negative impact on suppliers and manufacturers of raw materials. Suppliers typically require a significant amount of cash to fund their production and operation. The suppliers also require a significant amount of cash to meet future capital requirements, including the expansion of manufacturing facilities, as well as research and development activities. The inability of our suppliers to access capital or the insolvency of our suppliers could lead to their failure to deliver raw materials to us. Our inability to obtain raw materials in a timely manner from suppliers could have a material adverse effect on our business, financial conditions and results of operations.

***If we do not successfully renegotiate our medium-term and long-term contracts with our polysilicon and wafer suppliers, our raw material costs and our excess inventory may increase.***

We purchase polysilicon from a limited number of international and domestic suppliers using short-term, medium-term and long-term contracts. Several of these medium-term and long-term contracts are partially pre-paid. From the fourth quarter of 2008, the price of polysilicon decreased rapidly due to the increased supply of polysilicon that resulted from intensive investments in silicon manufacturing. As a result of the decrease in the price of polysilicon in late 2008 and early 2009 we renegotiated most of our medium-term and long-term contracts to reduce the purchase price, thereby reducing our costs. In 2011 and 2012, due to a general decrease in polysilicon prices, we renegotiated several medium-term and long-term supply contracts that required us to purchase polysilicon at a pre-determined price or quantity to more closely link our purchase costs with market prices. Due to the volatility of polysilicon prices, we also recently renegotiated our wafer purchase amounts and prices under a long-term framework agreement with a third party to more closely track market prices. See “Item 4. Information on the Company—B. Business Overview—Silicon-based Raw Material Supplies” for more information. If we are required to renegotiate our polysilicon and wafer contracts in the future and we are unable to reach an agreement with terms favorable to us, we may be placed at a competitive disadvantage compared to our competitors, and our earnings could decline. In addition, if demand for our PV products decreases, yet our supply agreements require us to purchase more polysilicon or wafers than required to meet our actual customer demand, we may incur costs associated with carrying excess inventory. To the extent we are not able to pass these increased costs on to our customers, our business, cash flows, financial condition and results of operations may be materially and adversely affected.

***The determination by U.S. and European Union authorities that our export sales are in violation of international fair trade rules could impede our access to important export markets.***

Solar panel manufacturing companies in the United States filed antidumping and countervailing duty actions against imports of Chinese solar panels in 2011. These actions resulted in investigations by U.S. authorities, namely the Department of Commerce and International Trade Commission. On October 10, 2012, the Department of Commerce announced its final affirmative determination regarding antidumping and countervailing duties applicable to the importation of crystalline silicon PV cells into the United States, whether or not assembled into modules, from China. On November 7, 2012, the International Trade Commission announced its affirmative determination that imports of crystalline silicon PV cells into the United States from China cause “material injury” to the U.S. domestic industry. As a result, the Department of Commerce has issued antidumping and countervailing duty orders on our imports at an effective net rate of 23.75%, comprised of an antidumping duty margin of 18.32% and subsidy rate of 15.97%, minus 10.54% under the Department of Commerce rules to avoid a double application of calculated duties. In February 2013, we filed appeals, as did other parties, with the U.S. Court of International Trade, challenging various aspects of the Department of Commerce’s findings. We may not be successful in our appeals, and if the domestic industry’s appeals are successful, the scope of the antidumping and countervailing duty orders could be expanded and the net rate applicable to our imports into the United States could be increased, which could adversely affect our export sales to the United States.

In addition, on September 6, 2012, the European Commission announced the initiation of an anti-dumping investigation concerning imports into the European Union of crystalline silicon PV modules and key components (i.e., cells and wafers), originating in China. On November 8, 2012, the European Commission announced the initiation of an anti-subsidy investigation concerning imports into the European Union of crystalline silicon PV modules and key components originating in China. Further, on March 6, 2013, the European Commission also moved to require registration of imports of silicon PV modules and key components into the European Union from China. The European Commission is expected to issue its provisional findings concerning its anti-dumping investigation by June 5, 2013, and concerning its anti-subsidy investigation by August 5, 2013. Its decision as to the imposition of any definitive measures will be presented before December 5, 2013. As one of the China-based suppliers of these products to the European Union, if the European Commission assesses duties on the importation of these products, it could materially and adversely affect our affiliated European Union import operations and increase our cost of selling into the region and thus could adversely impact our export sales to the European Union, which is our largest market.

It is also possible that other antidumping or countervailing duty or other import restrictive proceedings will be initiated in any number of additional jurisdictions. For example, in November 2012 India also initiated anti-dumping investigations against solar cell imports from China, the United States, Malaysia and Taiwan. Though our policy is that all of our export sales comply with international trade practices, we cannot guarantee that the government agencies in the jurisdictions in which actions are brought will reach the same conclusion. Violations of antidumping and countervailing duty laws can result in significant additional duties imposed on imports of our products into these countries, which increase our costs of accessing future additional markets. As a result of the duties imposed by U.S. authorities, or if duties are imposed on our PRC-manufactured products, we may adjust our business strategy for selling into these jurisdictions, including moving part of our manufacturing operations overseas. Any change in our business strategy would create a number of operational and legal uncertainties. Any of the above scenarios may materially and adversely impact our sales, thereby limiting our opportunities for growth.

***We have been named as a defendant in certain purported legal and administrative actions that may have a material adverse impact on our operating results and financial condition.***

We have to defend against legal and administrative actions described in Item 8 of this annual report, “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal and Administrative Proceedings,” including a lawsuit brought by the trustee of Solyndra LLC and trade actions. We may consider appealing the outcome of such legal and administrative actions should our initial defense be unsuccessful. We are currently unable to estimate the possible loss or possible range of loss, if any, associated with the resolution of these legal and administrative actions and disputes. Any unfavorable outcome from these actions and disputes, including an appeal of the judgment or outcome in these actions and disputes, may have a material adverse effect on our consolidated financial position, results of operations, or cash flows in the future. The legal and administrative proceedings may utilize a material portion of our cash resources and divert management’s attention from the day-to-day operations of our company, all of which could harm our business. There can be no assurance that we will prevail in any such appeal and any adverse outcome of these cases could have a material adverse effect on our business or results of operations.



***A significant reduction or elimination of government subsidies and economic incentives or change in government policies may have a material adverse effect on our business and prospects.***

Demand for our products depends substantially on government incentives aimed to promote greater use of solar power. In many countries in which we are currently, or intend to become, active, the solar power markets, particularly the market of on-grid PV systems, would not be commercially viable without government incentives. This is because the cost of generating electricity from solar power currently exceeds, and we believe will continue to exceed for the foreseeable future, the costs of generating electricity from conventional or non-solar renewable energy sources.

The scope of the government incentives for solar power depends, to a large extent, on political and policy developments relating to environmental concerns in a given country, which could lead to a significant reduction in or a discontinuation of the support for renewable energies in such country. Federal, state and local governmental bodies in many of our primary-targeted markets, notably, Germany, Italy, the United Kingdom and other countries in Europe, China, the United States, Australia, India, Japan, as well as other markets in Asia, Africa, the Middle East, Latin America and the Caribbean Islands have provided subsidies and economic incentives in the form of capital cost rebates, feed-in tariffs, tax credits and other incentives to end users, distributors, system integrators and manufacturers of solar power products. Policy shifts could reduce or eliminate these government economic incentives altogether. For example, the rapid rises of the German and Spanish markets were largely due to the government policies of those countries that set feed-in tariff terms at attractive rates.

However, in September 2008, the Spanish government introduced a feed-in-tariff cap of 500 megawatts, or MW, which limited demand in the grid-connected market in Spain. Additionally, in December 2010, the Spanish government reduced the maximum allowable annual operating hours for which PV systems could earn feed-in-tariff payments. In 2009, the German government reduced solar feed-in tariffs by 9%. In January, July and October of 2010, Germany introduced further solar feed-in tariffs reductions of approximately 24—26% for rooftop systems and 20—25% for ground-based systems. Germany further reduced its feed-in tariffs in the beginning of 2012 by 15% to up to 24.43 Euro cents per kilowatt hour for rooftop systems and up to 18.76 Euro cents per kilowatt hour for ground-based systems. In September 2012, Germany introduced further feed-in tariff reduction of 1% monthly for roof-based systems while reducing or eliminating feed-in tariffs for ground-based systems. All such reductions may result in a significant fall in the price of PV products in order to support continued demand. In 2010, 2011 and 2012, Germany accounted for 24.1%, 37.0% and 33.1% of our net sales, respectively, Spain accounted for 21.8%, 13.2% and 1.3% of our net sales, respectively, and the United States accounted for 14.1%, 21.5% and 25.5% of our net sales, respectively, based on record country of sales. We believe that uncertainty in political and policy developments may lead to increased competition among solar manufacturers. Electric utility companies that have significant political lobbying powers may also seek changes in the relevant legislation in their markets that may adversely affect the development and commercial acceptance of solar energy. Further, austerity measures being implemented by many countries attempting to lower national spending may reduce subsidies to the solar industry. A significant reduction in the scope or discontinuation of government incentive programs, especially those in our target markets, could cause demand for our products and our revenues to decline, and have a material adverse effect on our business, financial condition, results of operations and prospects.

***Demand for our products may be adversely affected by the effect of the current economic and credit environment on our customers.***

Europe, the United States and international economies have recently experienced a period of slow economic growth. Near-term economic recovery remains uncertain. In particular, the credit and housing crises, terrorist acts and similar events, continued turmoil in the Middle East or war in general could contribute to a slowdown of the market demand for products that require significant initial capital expenditures, including demand for solar power products. For example, global economics, capital markets and credit disruptions have resulted in slower investments in new installation projects that make use of solar power products. Existing projects have also been delayed as a result of the credit crisis and other disruptions. If the economic recovery slows as a result of the economic turmoil we may experience decreases in the demand for our solar power products, which may harm our operating results.

Global economics, capital markets and credit disruptions also pose risks for our customers. We have benefited from historically low interest rates that have made it more attractive for our customers to use credit to purchase our products. Interest rates have fluctuated recently, which could increase the cost of financing these purchases and may reduce our customers' profits and investors expected returns on investment. Given the current credit environment, particularly the tightening of the credit markets, there can be no assurance that our customers will be able to borrow money on a timely basis or on reasonable terms, which could have a negative impact on their demand for our products. If economic recovery is slow in the United States or elsewhere, we may experience decreases in the demand for our solar power products, which

may harm our operating results. These factors may adversely impact our existing or future sales agreements, including increasing the likelihood of contract breaches. Our sales are affected by interest rate fluctuations and the availability of liquidity, and would be adversely affected by increases in interest rates or liquidity constraints. Rising interest rates may also make certain alternative investments more attractive to investors, and therefore lead to a decline in demand for our solar power products, which could have a material adverse effect on our business, results of operations, financial conditions and cash flows.

***Some of the suppliers of polysilicon with whom we have entered into long-term contracts may not be able to produce polysilicon of sufficient quantity and quality or on schedule to meet our manufacturing requirements.***

Manufacturing polysilicon is a highly complex process and these suppliers may not be able to produce polysilicon of sufficient quantity and quality or on schedule to meet our wafer manufacturing requirements. Minor deviations in the manufacturing process can also cause substantial decreases in yield and, in some cases, cause production to be suspended or result in minimal output. If shipments of polysilicon from these suppliers experience major delays or our suppliers are unable to supply us with polysilicon as planned, we may suffer a setback to our raw material procurement, which could materially and adversely affect our growth strategy and our results of operations. Moreover, we may be involved in disputes to retrieve prepayments we made for the polysilicon delivery, which would expose us to risks of losing the prepayment or entering into settlements which may result in losses to us. In addition, the polysilicon supplied by suppliers may contain quality defects. For example, PV modules produced using polysilicon of substandard quality would result in lower cell efficiency and conversion rates than that which the supplier has claimed or provided a warranty for. From time to time, we may engage in negotiations and disputes with certain suppliers that supplied us with polysilicon with quality defects. Any litigation arising out of the disputes could subject us to potentially expensive legal expenses, distract management from the day-to-day operation of our business and expose us to risks for which appropriate damages may not be awarded to us, all of which could materially and adversely affect our business and financial condition.

***Prepayments to our polysilicon suppliers and equipment suppliers expose us to the credit risks of such suppliers and may increase our costs and expenses, which could in turn have a material adverse effect on our liquidity.***

Under supply contracts with several of our multi-year polysilicon and our equipment suppliers, consistent with industry practice, we have made prepayments to our suppliers prior to the scheduled delivery dates for polysilicon and equipment. In many such cases, we made the prepayments without receiving collateral for such payments. As a result, our claims for such payments would rank as unsecured claims, which would expose us to the credit risks of our suppliers in the event of their insolvency or bankruptcy. Our claims against the defaulting suppliers would rank below those of secured creditors, which would undermine our chances of obtaining the return of our prepayments. Furthermore, if demand for our products decreases, we may incur costs associated with carrying excess materials. Accordingly, any of the above scenarios may have a material adverse effect on our financial condition and results of operations.

***We have significant outstanding bank borrowings and capital expenditure needs, and we may not be able to arrange adequate financing when our outstanding borrowings mature or when capital expenditures are required.***

We typically require a significant amount of cash to fund our operations, especially prepayments or loans to suppliers to secure our polysilicon supply requirements. We also require a significant amount of cash to meet future capital requirements, including the expansion of our PV product manufacturing facilities and research and development activities in order to remain competitive. Future acquisitions, expansions, market changes or other developments may cause us to require additional funds. As of December 31, 2012, we had \$807.3 million in cash and cash equivalents, \$110.9 million in restricted cash and \$1,374.6 million in outstanding borrowings, including convertible senior notes, of which approximately \$959.4 million was due within one year. We have historically negotiated to renew our loans shortly before they mature. In the event that we are unable to extend or renew these borrowings, or if we are unable to obtain sufficient alternative funding at reasonable terms to make repayments, we will have to repay these borrowings with cash generated by our operating activities. We do not plan to utilize capital expenditures for capacity expansion in 2013 in addition to our working capital requirements. Our business might not generate sufficient cash flow from operations to repay these borrowings, some of which are secured by significant amounts of our assets, and at the same time fund our capital expenditures. In addition, repaying these borrowings and capital expenditures with cash generated by our operating activities will divert our financial resources from the requirements of our ongoing operations and future growth, and may have a material adverse effect on our business, financial condition and future prospects. If we are unable to obtain funding in a timely manner or on commercially acceptable terms, or at all, our growth prospects and future profitability may decrease materially. Moreover, future turmoil in the credit markets and the potential impact on the liquidity of financial institutions may have an adverse effect on our ability to fund our business through borrowings, under either existing or newly created instruments in the public or private markets on terms that we believe to be reasonable, if at all. Failure to secure any necessary financing in a



timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and market price of ADSs and could require us to delay or abandon critical development plans.

***Because the markets in which we compete are highly competitive and many of our competitors have greater resources than us, we may not be able to compete successfully and we may lose or be unable to gain market share.***

The market for solar power products is competitive and fast evolving. We expect to face increased competition, which may result in price reductions, reduced margins or loss of market share. We compete with other PV module manufacturing companies, including dedicated PV manufacturers such as Yingli Green Energy Holding Co., Ltd., Suntech Power Holdings Co., Ltd., First Solar, Inc. and GCL Solar Energy Technology Holdings Inc. as well as multinational conglomerates such as Sharp Electronic Corporation and Mitsubishi Electric Corporation. Some of our competitors have also become vertically integrated, from polysilicon production, silicon ingot and wafer manufacturing to solar power system integration, such as Renewable Energy Corporation ASA and SolarWorld AG. Some of our competitors may have a stronger market position than ours, more sophisticated technologies and products, greater resources and better name recognition than we do. Further, many of our competitors are developing and are currently producing products based on new solar power technologies, such as thin-film technology, which may ultimately have costs similar to, or lower than, our projected costs.

The barriers to entry are relatively low in the PV module manufacturing business, given that manufacturing PV modules is labor intensive and requires limited technology. Because of the scarcity of polysilicon in the past few years, supply chain management and financial strength were the key barriers to entry. As the shortage of polysilicon has eased since 2008, these barriers to entry become less significant and many new competitors may enter the industry and cause the industry to rapidly become over-saturated. Many mid-stream solar power products manufacturers have been seeking to move downstream to strengthen their position in regional markets. They are expected to leverage their existing sales capacity as the industry faces challenges posed by the economic downturn. In addition, we may also face new competition from semiconductor and other manufacturers who are developing thin film and other PV technologies that are designed to offer economic or performance advantages, several of which have already announced their intention to start production of solar cells or module products. Decreases in polysilicon prices and increases in PV module production could result in substantial downward pressure on the price of PV modules and intensify the competition we face.

Some of our current and potential competitors have longer operating histories, access to a larger customer base, stronger relationships with customers, access to greater resources, and greater economies of scale, financing, sales and marketing, manufacturing, distribution, research and development, technical and other advantages over us. As a result, they may be able to respond more quickly to changing customer demands or market conditions or to devote greater resources to the development, promotion and sales of their products than we can. Our business relies on sales of our PV modules, and our competitors with more diversified product offerings may be better positioned to withstand a decline in the demand for PV modules. New competitors or alliances among existing competitors could emerge and rapidly acquire a significant market share, which would harm our business. If we fail to compete successfully, our business would suffer and we may lose or be unable to gain market share.

***Our dependence on a limited number of customers may cause significant fluctuations or declines in our revenues.***

We currently sell a significant portion of our PV modules to a limited number of customers. In 2010, 2011 and 2012, sales to our top five customers accounted for approximately 24.9%, 23.3% and 25.1%, respectively, of our total net sales. Our largest customer contributed approximately 9.1% of our net sales in 2012. Sales to our customers are typically made through non-exclusive, short-term arrangements. We anticipate that our dependence on a limited number of customers will continue for the foreseeable future. Consequently, any one of the following events may cause material fluctuations or declines in our revenues:

- reduction, delay or cancellation of orders from one or more of our significant customers;
- selection of competing products by one or more of our significant customers;
- loss of one or more of our significant customers due to disputes, dissatisfaction with our products or otherwise and our failure to attract additional or replacement customers; and
- failure of any of our significant customers to make timely payment for our products.

We are exposed to the credit risk of these customers, some of which are new customers with whom we have not

historically had extensive business dealings. Starting from February 2009, a majority of our overseas sales have been insured by China Export & Credit Insurance Corporation, or Sinosure. The amount of insurance coverage for each transaction is based on a rating assigned by Sinosure to the customer based on such customer's credit history. However, we cannot assure you that all our accounts receivable are sufficiently covered or that Sinosure will be able to make payments on our claims. The failure of any of these significant customers to meet their payment obligations would materially and adversely affect our financial position, liquidity and results of operations.

***The practice of requiring customers to make advance payments when they place orders with us has declined, and we have experienced and will continue to experience increased needs to finance our working capital requirements and are exposed to increased credit risk.***

We have historically required our customers to make an advance payment of a certain percentage of their orders, a business practice that helped us to manage our accounts receivable, prepay our suppliers and reduce the amount of funds that we needed to finance our working capital requirements. In line with market trends, this practice of requiring our customers to make advance payments is on the decline, which in turn has increased our need to obtain additional short-term borrowings to fund our working capital requirements. In 2012, a majority of our revenues were derived from credit sales, generally with payment schedules due according to negotiated contracts. In addition, some of our customers pay us through drawn upon acceptance, open account and letter of credit terms, which typically take 90 to 120 days to process in order for us to be paid, though in some instances the pay period may be longer. Despite the more lenient payment terms, any of our customers may fail to meet their payment obligations, especially due to the global economic crisis and the resulting decrease in the availability of financing, which would materially and adversely affect our financial position, liquidity and results of operations.

***We may experience difficulty in achieving acceptable yields and product performance as a result of manufacturing problems.***

The technology for the manufacturing of silicon ingots and wafers is complex, requires costly equipment and is continuously being modified in an effort to improve yields and product performance. Microscopic impurities such as dust and other contaminants, difficulties in the manufacturing process, disruptions in the supply of utilities or defects in the key materials and tools used to manufacture wafers can cause a percentage of the wafers to be rejected, which in each case negatively affects our yields. We have, from time to time, experienced production difficulties that have caused manufacturing delays and lower than expected yields.

Because our manufacturing capabilities are concentrated in our manufacturing facilities in Changzhou, China, any problem in our facilities may limit our ability to manufacture products. We may encounter problems in our manufacturing facilities as a result of, among other things, production failures, construction delays, human errors, equipment malfunction or process contamination, which could seriously harm our operations. We may also experience fires, floods, droughts, power losses and similar events beyond our control that would affect our facilities. For example, shortages or suspensions of power supplied to us have occasionally occurred due to severe thunderstorms in the area, and have disrupted our operations and caused severe damages to wafers in the process. We experienced an accidental fire in our wafer facilities in March 2010 caused by a hot spot in an electrical installation resulted in damages to our cleaning equipment and temporary disruption to a segment of our production line. A disruption to any step of our manufacturing process will require us to repeat each step and recycle the silicon debris, thus adversely affecting our yields. Operating hazards and natural disasters may cause interruption to our operations, property and/or environmental damage as well as personal injuries, and each of these incidents could have a material adverse impact on our results of operations. Although we carry business interruption insurance, losses incurred or payments required to be made by us due to operating hazards or natural disasters that are not fully insured may have a material adverse effect on our financial condition and results of operations.

As of December 31, 2012, we had an annual manufacturing capacity of ingots and wafers of approximately 1,200 MW and cells and modules of approximately 2,400 MW. We do not currently plan to build new facilities to increase our annual manufacturing capacity of cells, ingots, wafers or modules during 2013 and plan to incur capital expenditures of up to \$65 million to maintain or enhance our existing manufacturing facilities for new products, increased module efficiencies and systems-related initiatives. However, as we take into account market views concerning both customer demand and the commercial lending environment for financing PV system installations in our respective sales markets, as well as our strategy to expand prudently while preserving liquidity, we may later decide to expand our capacity during 2013 or at a future date. If we develop an expansion plan but fail to implement that plan as expected, experience a delay in the ramp up or fail to achieve our targeted yields, our business and results of operations may be materially and adversely affected.



***Problems with product quality or product performance could damage our reputation, or result in a decrease in customers and revenues, unexpected expenses or loss of market share, and may cause us to incur significant warranty expenses.***

Our products may contain defects that are not detected until after they are shipped or are installed because we cannot test for all possible scenarios. Unlike PV modules, which are subject to certain uniform international standards, solar cells generally are not subject to uniform international standards, and it is often difficult to determine whether solar power product defects are a result of defective solar cells, other defective components of PV modules or other reasons. Furthermore, the solar wafers and other components that we purchase from third-party suppliers are typically sold to us with no or only limited warranties. Also, as many of our customers place orders for bulk deliveries, the large number of items delivered increases the likelihood that a defective or low quality module may be delivered to a customer. We have received in the past, and may receive from time to time in the future, complaints from certain customers that portions of our PV modules have quality deficiencies. For example, in certain instances in the past, customers raised concerns about the stated versus actual performance output of some of our PV modules. We determined that these concerns resulted from differences in calibration standards we used. However, the corrective actions and procedures that we took may turn out to be inadequate to prevent further similar incidents or to protect against future errors or defects. If we deliver PV module products that do not satisfy our customers' or end users' quality requirements, or if there is a perception that our products are of poor quality, our credibility and the market acceptance and sales of our PV module products could be harmed. We may also incur substantial expense to replace products that do not meet our quality standards.

Our PV modules have typically been sold with a five-year warranty for defects in materials and product workmanship and a minimum power output warranty of up to 25 years following the date of purchase or installation. In 2011, we extended the product workmanship warranty to 10 years and began to guarantee that module power output will not decrease by more than approximately 0.7% per year after the initial year of service. We believe our warranty periods are consistent with industry practice. We only began to sell PV modules in November 2004. Although we conduct accelerated reliability testing of our PV modules, our PV modules have not been and cannot be tested in an environment simulating the 25-year warranty period. As a result, we may be subject to unexpected warranty expense and associated harm to our financial results for as long as 25 years after the sale of our products. Our warranty provisions for the years ended December 31, 2010, 2011 and 2012 were \$17.9 million, \$21.9 million and \$12.5 million, respectively. Any increase in the defect rate of our products would cause us to increase the amount of our warranty reserves and have a correspondingly negative impact on our operating results. Furthermore, widespread product failures may damage our market reputation, reduce our market share and cause our sales to decline.

***We may not be successful in the commercial production of new products, which could adversely affect our business and prospects.***

We may develop and produce new products from time to time, such as high-efficiency monocrystalline and multicrystalline modules, colored modules for architectural applications and larger sized modules for utility grid applications. Further, we recently introduced our "Honey" cell technology, which we will use to develop and manufacture a number of new products. We may be unable to generate sufficient customer demand for our new products if we are unable to develop and produce new products that provide the expected performance in a cost-effective manner. If we fail to generate demand for our new products, our business and prospects may be adversely affected and we may be unable to recoup our investment in the development and production of such products.

***Our future success depends in part on our ability to expand our business into downstream markets. Any failure to successfully implement this strategy could have a material adverse effect on our growth, business prospects and results of operations in future periods.***

Our current business strategy includes plans to expand into select downstream markets, such as systems integration and project development, which we believe are natural extensions of our vertically integrated business model. These expansion plans may include investments in downstream companies and joint ventures and formation of strategic alliances with third parties for balance of system technologies, engineering, procurement and construction services, and related financing needs. However, these plans may require significant capital expenditures, which could be used in pursuit of other opportunities and investments. Additionally, our experience in the solar power products manufacturing industry may not be as relevant or applicable in downstream markets. We may also face intense competition from companies with greater experience or established presence in the targeted downstream markets or competition from our industry peers with similar expansion plans. Furthermore, we may not be able to manage or control entities which we invest in or provide adequate resources to such entities to maximize the return on our investments. In the case of joint ventures and strategic alliances with third parties, we may face risks associated with the sharing of proprietary information, loss of control of operations that

are material to our business and profit sharing arrangements. We may also consider acquisitions of existing downstream players, in which we may face difficulties related to the integration of the operations and personnel of acquired businesses and the division of resources between our existing and acquired downstream operations.

We cannot assure you that we will be successful in expanding our business into downstream markets along the solar power product value chain. Any failure to successfully identify, execute and integrate our acquisitions, investments, joint ventures and alliances as part of entering into downstream markets may have a material adverse impact on our growth, business prospects and results of operations, which could lead to a decline in the price of our ADSs.

***Existing regulations and policies and changes to these regulations and policies may present technical, regulatory and economic barriers to the purchase and use of solar power products, which may significantly reduce demand for our products.***

The market for electricity generation products is heavily influenced by government regulations and policies concerning the electric utility industry, as well as policies adopted by electric utilities. These regulations and policies often relate to electricity pricing and technical interconnection of customer-owned electricity generation. In a number of countries, these regulations and policies are being modified and may continue to be modified. Customer purchases of, or further investment in the research and development of, alternative energy sources, including solar power technology, could be deterred by these regulations and policies, which could result in a significant reduction in the demand for our products. For example, without a regulatory mandated exception for solar power systems, utility customers are often charged interconnection or standby fees for putting distributed power generation on the electric utility grid. These fees could increase the cost to our customers of using our solar power products and make them less desirable, thereby harming our business, prospects, financial condition and results of operations.

We anticipate that our products and their installation will be subject to oversight and regulation in accordance with national and local regulations relating to building codes, safety, environmental protection, utility interconnection and metering and related matters. It is difficult to track the requirements of individual jurisdictions and design products to comply with the varying standards. Any new government regulations or utility policies pertaining to our solar power products may result in significant additional expenses to us and, as a result, could cause a significant reduction in demand for our solar power products.

***If solar power technology is not adopted widely, or sufficient demand for solar power products does not develop or takes longer to develop than we anticipate, our revenues may further decline and we may be unable to sustain our profitability.***

The solar power market is at a relatively early stage of development, and the extent of acceptance of solar power products is uncertain. Market data on the solar power industry are not as readily available as those for other more established industries where trends can be assessed more reliably from data gathered over a longer period of time. We sell and market our products to a growing number of worldwide markets where government incentives are accelerating the adoption of solar power. In recent years, we have also increased our sales in newer and emerging solar power markets, which include China, the United States, the United Kingdom, Australia, India, Israel and Japan, as well as other markets in Asia, Africa, the Middle East, Latin America and the Caribbean Islands. Many factors may affect the viability of widespread adoption of solar power technology and demand for solar power products in our targeted markets, including:

- availability of government subsidies and incentives to support the development of the solar power industry;
- availability and access to grid infrastructure, including interconnection facilities, for solar power producers;
- success of other alternative energy generation technologies, such as wind power, hydroelectric power and biomass;
- fluctuations in economic and market conditions that affect the viability of conventional and other renewable energy sources, such as increases or decreases in the prices of oil and other fossil fuels;
- capital expenditures by end users of solar power products, which tend to decrease when the economy slows down; and
- deregulation of the electric power industry and broader energy industry.



If solar power technology is not adopted widely or sufficient demand for solar power products does not develop or takes longer to develop than we anticipate, our revenues may suffer and we may be unable to sustain our profitability.

***Further technological changes in the solar power industry could render our products uncompetitive or obsolete, which could reduce our market share and cause our sales and profit to decline.***

The solar power market is characterized by evolving technologies and standards that result in improved features, such as more efficient and higher power output, improved aesthetics and smaller size. This requires us to develop new solar power products and enhance existing products to keep pace with evolving technologies and changing customer requirements. A variety of competing solar technologies that other companies may develop could prove to be more cost-effective and perform better than our technologies. For example, thin-film technologies are competing technologies in the solar power industry. According to Solarbuzz, in 2012, thin-film technologies represented approximately 10% of the solar market, compared to approximately 90% for crystalline technology. Thin-film technologies allow for lower production costs for solar cells by using lower amounts of semiconductor materials. Thin-film solar cells generally have a lower conversion efficiency rate than crystalline solar cells.

Further development in competing solar power technologies may result in lower manufacturing costs or higher product performance than those expected from our PV modules. We will need to invest significant financial resources in research and development to maintain our market position, keep pace with technological advances in the solar power industry and effectively compete in the future. Our failure to further refine our technology, enhance our existing solar power products, or develop and introduce new products, could cause our products to become uncompetitive or obsolete, which could reduce our market share and cause our revenues to decline.

***Non-compliance with present or future construction and environmental regulations may result in potentially significant monetary damages and fines.***

In the past, we began constructing and operating facilities without having obtained all of the necessary construction and environmental permits. Although we have subsequently obtained all of the construction and environmental permits and approvals for these facilities, we could be subject to fines or penalties for our past non-compliance.

Because our manufacturing processes generate noise, waste water, gaseous wastes and other industrial wastes, we are required to comply with national and local environmental regulations. If we fail to comply with present or future environmental regulations, we may be required to pay substantial fines, suspend production or cease operations. Any failure by us to control the use or to adequately restrict the discharge of hazardous substances could subject us to potentially significant monetary damages and fines or suspensions in our business operations, which would have a materially adverse effect on our business and results of operations.

In particular, the manufacturing processes for producing polysilicon employ processes that generate toxic waste products, including the highly volatile and highly toxic substance silicon-tetrachloride. We purchase our polysilicon from our suppliers in the United States, Germany, South Korea and China. If any of our suppliers fails to comply with environmental regulations for the production of polysilicon and the discharge of the highly toxic waste products, we may face negative publicity which may have a material adverse effect on our business and results of operations. Furthermore, if any of our suppliers are forced to suspend or shut down production due to violations of environmental regulations, we may not be able to secure enough polysilicon for our production needs on commercially reasonable terms, or at all.

***Our future success substantially depends on our ability to significantly expand both our manufacturing capacity and output, which exposes us to a number of risks and uncertainties.***

Our future success depends on our ability to significantly increase both our manufacturing capacity and output. If we are unable to do so, we may be unable to expand our business, decrease our costs per watt, maintain our competitive position and improve our profitability. Our ability to establish additional manufacturing capacity and increase output is subject to significant risks and uncertainties, including:

- the need to raise significant additional funds to purchase raw materials or to build additional manufacturing facilities, which we may be unable to obtain on commercially viable terms or at all;
- delays and cost overruns as a result of a number of factors, many of which are beyond our control, such as increases in the price of polysilicon and problems with equipment vendors, particularly with respect to major

equipment such as ingot pulling or growing machines;

- delays or denial of required approvals by relevant government authorities;
- diversion of significant management attention and other resources; and
- failure to execute our expansion plan effectively.

If we are unable to establish or successfully operate additional manufacturing capacity, or if we encounter any of the risks described above, we may be unable to expand our business as planned. Moreover, even if we do expand our manufacturing capacity we might not be able to generate sufficient customer demand for our solar power products to support our increased production levels.

In particular, we believe that the expansion of our manufacturing capacity is an integral part of our long-term strategy to achieve a grid parity cost structure. Our ability to meet our estimate for the scale of production needed to achieve grid parity is affected by a number of factors, including our ability to improve and maintain the degree of vertical integration and to increase our efficiencies and margins, the likelihood that we may approach or reach a point of diminishing returns as we continue to expand our scale, the average purchase price we will pay for silicon in the future to meet our expansion requirements, and the cost of conventional grid electricity which will determine at which point grid parity can be reached. We might not be able to meet our desired scale of production in order to fully implement our strategy.

In addition, in order to increase our production output of solar PV products, it may be necessary to outsource certain phases of the production process, such as the manufacturing of silicon wafers, to third party manufacturers. Outsourcing portions of the production process leave us more vulnerable to fluctuations in the costs of outsourced products and could further reduce our profit margins. In addition, outsourcing exposes us to quality control, payment, delivery and a number of other risks that, if realized, could materially and adversely affect our business and results of operations.

***Our business depends substantially on the continuing efforts of our executive officers, and our business may be severely disrupted if we lose their services.***

Our future success depends substantially on the continued services of our executive officers, especially Mr. Jifan Gao, our chairman and chief executive officer. If one or more of our executive officers or key employees were unable or unwilling to continue in their present positions, we might not be able to replace them easily or at all. Our business may be severely disrupted, our financial condition and results of operations may be materially and adversely affected, and we may incur additional expenses to recruit, train and retain personnel. Since our industry is characterized by high demand and intense competition for talent, we also may not be able to attract or retain additional highly skilled employees or other key personnel that we will need to achieve our strategic objectives. As we are still a relatively young company and our business has grown rapidly, our ability to train and integrate new employees into our operations may not meet the growing demands of our business.

If any of our executive officers or key employees joins a competitor or forms a competing company, we may lose customers, suppliers, know-how and key professionals and staff members. Each of our executive officers has entered into an employment agreement with us, which contains non-competition provisions. If any dispute arises between our executive officers and us, these agreements may not be enforceable in China in light of the uncertainties with China's legal system, or in another country where they obtain employment. See "—Risks Related to Doing Business in China—Uncertainties with respect to the Chinese legal system could have a material adverse effect on us."

***If we are unable to attract, train and retain qualified technical personnel, our business may be materially and adversely affected.***

Our future success depends, to a significant extent, on our ability to attract, train and retain qualified technical personnel, particularly those with expertise in the solar power industry. There is substantial competition for qualified technical personnel, and we might not be able to attract or retain our qualified technical personnel. If we are unable to do so, our business may be materially and adversely affected.

***If we fail to manage our growth effectively, our business may be adversely affected.***

We have experienced a period of rapid growth and expansion that has placed, and continues to place, significant strain on our management personnel, systems and resources. To accommodate our growth, we anticipate that we will need to implement a variety of new and upgraded operational and financial systems, procedures and controls, including the improvement of our accounting and other internal management systems, all of which require substantial management efforts. We also will need to continue to expand, train, manage and motivate our workforce, manage our customer relationships and manage our relationship with foundries and assembly and testing houses. All of these endeavors will require substantial management effort and skill and incurrence of additional expenditures. We might not be able to manage our growth effectively, and any failure to do so may have a material adverse effect on our business.

***We face risks associated with the marketing, distribution and sale of our solar power products internationally, and if we are unable to effectively manage these risks, they could impair our ability to expand our business abroad.***

In 2010, 2011 and 2012, we sold approximately 96.2%, 92.9% and 87.0%, respectively, of our products to customers outside of China. The marketing, distribution and sale of our solar power products in the international markets expose us to a number of risks, including:

- fluctuations in currency exchange rates;
- difficulty in engaging and retaining distributors who are knowledgeable about, and can function effectively in, overseas markets;
- increased costs associated with maintaining marketing efforts in various countries;
- difficulty and costs relating to compliance with the different commercial and legal requirements of the overseas markets in which we offer our products;
- trade barriers such as export requirements, tariffs, taxes and other restrictions and expenses, which could increase the prices of our products and make us less competitive in some countries; and
- demand for solar power products in overseas markets as influenced by the global economic downturn and its effects.

***We may be exposed to intellectual property infringement or misappropriation claims by third parties, which, if determined adversely to us, could cause us to pay significant damage awards.***

Our success depends largely on our ability to use and develop our technology and know-how without infringing the intellectual property rights of third parties. The validity and scope of claims relating to solar power technology patents involve complex scientific, legal and factual issues and analysis and, therefore, may be highly uncertain. We may be subject to litigation involving claims of patent infringement or violation of intellectual property rights of third parties. The defense and prosecution of intellectual property suits, patent opposition proceedings and related legal and administrative proceedings can be both costly and time consuming and may significantly divert the efforts and resources of our technical and management personnel. An adverse determination in any such litigation or proceedings to which we may become a party could subject us to significant liability to third parties, require us to seek licenses from third parties, to pay ongoing royalties, or to redesign our products or subject us to injunctions prohibiting the manufacturing and sale of our products or the use of our technologies. Protracted litigations could also result in our customers or potential customers deferring or limiting their purchase or use of our products until resolution of such litigation.

***Our failure to protect our intellectual property rights may undermine our competitive position, and litigation to protect our intellectual property rights or defend against third-party allegations of infringement may be costly.***

We rely primarily on patent, trademark, trade secret, copyright law and other contractual restrictions to protect our intellectual property. Nevertheless, these afford only limited protection and the actions we take to protect our intellectual property rights may not be adequate. Third parties, including current and former employees, may infringe or misappropriate our proprietary technologies or other intellectual property rights, which could have a material adverse effect on our business, financial condition or operating results. Policing unauthorized use of proprietary technology can be difficult and expensive. Also, litigation may be necessary to enforce our intellectual property rights, protect our trade secrets or determine the validity and scope of the proprietary rights of others. We cannot assure you that the outcome of such potential litigation will be in our favor. An adverse determination in any such litigation will impair our intellectual property rights and may harm



our business, prospects and reputation. Implementation of PRC intellectual property-related laws has historically been lacking, primarily because of ambiguities in the PRC laws and difficulties in enforcement. Accordingly, intellectual property rights and confidentiality protections in China may not be as effective as in the United States or other countries.

***We have limited insurance coverage and may incur losses resulting from product liability claims.***

As with other solar power product manufacturers, we are exposed to risks associated with product liability claims should the use of our solar power products results in injury. Since our products generate electricity, it is possible that users could be injured or killed by our products as a result of product malfunctions, defects, improper installation or other causes. We only began commercial shipment of our PV modules in November 2004 and, because of our limited operating history, we cannot predict whether product liability claims will be brought against us in the future or the effect of any resulting negative publicity on our business. We have limited worldwide product liability insurance coverage for our products manufactured in China. Product liability claims successfully brought against us in excess of our coverage amount could result in monetary damages and require us to make significant payments.

***If we fail to maintain an effective system of internal control over financial reporting, we may lose investor confidence in the reliability of our financial statements.***

We are subject to reporting obligations under the U.S. securities laws. The SEC, as required by Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, adopted rules requiring every public company to include a management report on such company's internal control over financial reporting in its annual report, which contains management's assessment of the effectiveness of the company's internal control over financial reporting. In addition, an independent registered public accounting firm must render an opinion on the effectiveness of the company's internal control over financial reporting.

Our management has concluded that our internal control over financial reporting is effective as of December 31, 2012. See "Item 15. Controls and Procedures." If we fail to maintain effective internal control over financial reporting in the future, it could result in the loss of investor confidence in the reliability of our financial statements and negatively impact the trading price of our ADSs. We have incurred and anticipate that we will continue to incur considerable costs, management time and other resources in an effort to comply with Section 404 and other requirements of the Sarbanes-Oxley Act.

***Our independent registered public accounting firm's audit documentation related to their audit report included in this annual report may be located in China. The Public Company Accounting Oversight Board currently cannot inspect audit documentation located in China and, as such, you may be deprived of the benefits of such inspection.***

Our independent registered public accounting firm that issues the audit report included in our annual reports filed with the SEC, as auditors of companies that are traded publicly in the United States and a firm registered with the Public Company Accounting Oversight Board, or the PCAOB, is required by the laws of the United States to undergo regular inspections by the PCAOB to assess its compliance with the applicable laws of the United States and professional standards. Our operations are principally conducted in China, a jurisdiction where the PCAOB is currently unable to conduct inspections without the approval of the PRC authorities. Accordingly, any audit documentation located in China related to our independent registered public accounting firm's report included in our filings with the SEC is not currently inspected by the PCAOB.

Inspections conducted by the PCAOB outside China have identified deficiencies in those firms' audit procedures and quality control procedures, which may be addressed as part of the inspection process to improve future audit quality. This lack of PCAOB inspections in China prevents the PCAOB from regularly evaluating audit documentation located in China and its related quality control procedures. As a result, investors may be deprived of the benefits of PCAOB inspections.

The inability of the PCAOB to conduct inspections in China makes it more difficult to evaluate the effectiveness of our independent registered public accounting firm's audit procedures or quality control procedures as compared to audits outside China that are subject to PCAOB inspections. Investors may lose confidence in our reported financial information and procedures and the quality of our financial statements.

Recently, the SEC commenced administrative proceedings under Rule 102(e) of its Rules of Practice and also under the Sarbanes-Oxley Act against the Chinese affiliates of five global accounting firms, including our independent registered public accounting firm. The Rule 102(e) proceedings initiated by the SEC relate to these firms' failure to produce documents, including audit work papers, at the request of the SEC pursuant to Section 106 of the Sarbanes-Oxley Act, as

the auditors located in the PRC are not in a position lawfully to produce documents directly to the SEC because of restrictions under PRC law and specific directives issued by the China Securities Regulatory Commission, or CSRC. As the administrative proceedings are ongoing, it is impossible to determine their outcome or the consequences thereof to us. The issues raised by the proceedings are not specific to our independent registered public accounting firm or to us, but affect equally all audit firms based in China and all China-based businesses with securities listed in the United States. However, if the administrative judge were to find in favor of the SEC under the proceeding and depending upon the remedies sought by the SEC, these audit firms could be barred from practicing before the SEC. As a result, listed companies in the United States with major PRC operations will find it difficult or impossible to retain auditors in respect of their operations in the PRC, which may result in their delisting. Moreover, any negative news about the proceedings against these audit firms may erode investor confidence in China-based, United States-listed companies and the market price of our ADSs may be adversely affected.

***Fluctuations in exchange rates could adversely affect our business.***

The value of the Renminbi against the U.S. dollar, Euro and other currencies is affected by, among other things, changes in China's political and economic conditions and China's foreign exchange policies. On July 21, 2005, the PRC government changed its decade-old policy of pegging the value of the Renminbi to the U.S. dollar. Under the new policy, the Renminbi was permitted to fluctuate within a narrow and managed band against a basket of certain foreign currencies. This change in policy caused the Renminbi to appreciate approximately 21.5% against the U.S. dollar over the following three years. However, from July 2008 until June 2010, the Renminbi traded stably within a narrow range against the U.S. dollar. In June 2010, the People's Bank of China announced that the PRC government would reform the Renminbi exchange rate regime and increase the flexibility of the exchange rate. Between June 30, 2010 and December 31, 2012, the value of the Renminbi appreciated approximately 8.9% against the U.S. dollar and we cannot predict how this new policy will impact the Renminbi exchange rate going forward.

Most of our sales are denominated in Euros, with the remainder in U.S. dollars and Renminbi, while a substantial portion of our costs and expenses is denominated in Renminbi, with the remainder in U.S. dollars. Fluctuations in exchange rates, particularly among the U.S. dollar, Renminbi and Euro, may affect our net profit margins and could result in fluctuations in foreign currency exchange and operating gains and losses. We had a foreign exchange gain of approximately \$0.9 million in 2012. We cannot predict the impact of future exchange rate fluctuations on our results of operations and may incur net foreign currency losses in the future. In addition, as we rely entirely on dividends paid to us by our operating subsidiaries in China, any significant fluctuation of the Renminbi may have a material adverse effect on our revenues and financial condition, and the value of, and any dividends payable on, our ordinary shares. As a large proportion of our revenues are paid to us in Euros, fluctuation between the Euro and the Renminbi may also have a material effect on our results of operations.

Starting from October 2008, we have entered into a series of foreign currency forward contracts with several commercial banks to hedge our exposure to foreign currency exchange risk. As of December 31, 2012, we had foreign currency forward contracts with a total contract value of approximately \$177.5 million. We do not use foreign currency forward contracts to hedge all of our foreign currency denominated commitments. As with all hedging instruments, there are risks associated with the use of foreign currency forward contracts. While the use of such foreign currency forward contracts provides us with protection from certain fluctuations in foreign currency exchange, we forgo the potential benefits that might result from favorable fluctuations in foreign currency exchange. Any default by the counterparties to these transactions could adversely affect our financial condition and results of operations. Furthermore, these financial hedging transactions may not provide adequate protection against future foreign currency exchange rate fluctuations and, consequently, such fluctuations could adversely affect our financial condition and results of operations.

***We may be classified as a passive foreign investment company, which could result in adverse U.S. federal income tax consequences to U.S. Holders of our ADSs or ordinary shares.***

Based on the market price of our ADSs, the value of our assets, and the composition of our income and assets, we do not believe we were a passive foreign investment company, or PFIC, for U.S. federal income tax purposes for our taxable year ended December 31, 2012. However, the application of the PFIC rules is subject to uncertainty in several respects, and we cannot assure you the U.S. Internal Revenue Service will not take a contrary position. A non-U.S. corporation will be a PFIC for any taxable year if either (i) at least 75% of its gross income for such year is passive income or (ii) at least 50% of the value of its assets (based on an average of the quarterly values of the assets) during such year is attributable to assets that produce passive income or are held for the production of passive income. We must make a separate determination after the close of each taxable year as to whether we were a PFIC for that year. Because the value of our assets for purposes of the PFIC test generally will be determined by reference to the market price of our ADSs and ordinary shares, fluctuations in

the market price of the ADSs and ordinary shares may cause us to become a PFIC. In addition, changes in the composition of our income or assets may cause us to become a PFIC. If we are a PFIC for any taxable year during which a U.S. Holder (as defined in “Item 10. Additional Information—E. Taxation—United States Federal Income Taxation”) holds an ADS or an ordinary share, certain adverse U.S. federal income tax consequences could apply to such U.S. Holder. See “Item 10. Additional Information—E. Taxation—United States Federal Income Taxation—Passive Foreign Investment Company.”

## **Risks Related to Doing Business in China**

***Adverse changes in political and economic policies of the PRC government could have a material adverse effect on the overall economic growth of China, which could reduce the demand for our products and materially and adversely affect our competitive position.***

All of our business operations are conducted in China and some of our sales are made in China. Accordingly, our business, financial condition, results of operations and prospects are affected significantly by economic, political and legal developments in China. The Chinese economy differs from the economies of most developed countries in many respects, including:

- the amount of government involvement;
- the level of development;
- the growth rate;
- the control of foreign exchange; and
- the allocation of resources.

While the Chinese economy has grown significantly in the past 30 years, the growth has been uneven, both geographically and among various sectors of the economy. The PRC government has implemented various measures to encourage economic growth and guide the allocation of resources. Some of these measures benefit the overall Chinese economy, but may also have a negative effect on us. For example, our financial condition and results of operations may be adversely affected by government control over capital investments or changes in tax regulations that are applicable to us.

The Chinese economy has been transitioning from a planned economy to a more market-oriented economy. Although in recent years the PRC government has implemented measures emphasizing the utilization of market forces for economic reform, the reduction of state ownership of productive assets and the establishment of sound corporate governance in business enterprises, a substantial portion of the productive assets in China is still owned by the PRC government. The continued control of these assets and other aspects of the national economy by the PRC government could materially and adversely affect our business. The PRC government also exercises significant control over Chinese economic growth through the allocation of resources, controlling payment of foreign currency-denominated obligations, setting monetary policy and providing preferential treatment to particular industries or companies. Efforts by the PRC government to control the pace of growth of the Chinese economy could result in decreased capital expenditure by solar energy users, which in turn could reduce demand for our products.

***Uncertainties with respect to the Chinese legal system could have a material adverse effect on us.***

We conduct substantially all of our manufacturing operations through our wholly-owned subsidiaries, Trina China and TST, both of which are limited liability companies established in China. Trina China and TST are generally subject to laws and regulations applicable to foreign investment in China and, in particular, laws applicable to wholly foreign-owned enterprises. The PRC legal system is based on written statutes. Prior court decisions may be cited for reference but have limited precedential value. Since 1979, PRC legislation and regulations have significantly enhanced the protections afforded to various forms of foreign investments in China. However, since these laws and regulations are relatively new and the PRC legal system continues to rapidly evolve, the interpretations of many laws, regulations and rules are not always consistent and enforcement of these laws, regulations and rules involves uncertainties. We cannot predict the effect of future developments in the PRC legal system, including the promulgation of new laws, changes to existing laws or the interpretation or enforcement thereof, the preemption of local regulations by national laws, or the overturn of local government decisions by the superior government. These uncertainties may limit legal protections available to us. In addition, any litigation in China may be protracted and result in substantial costs and diversion of resources and



management attention.

***Our ability to make distributions and other payments to our shareholders depends to a significant extent upon the distribution of earnings and other payments made by Trina China and TST.***

We conduct substantially all of our operations through Trina China and TST. Our ability to make distributions or other payments to our shareholders depends on payments from Trina China and TST, whose ability to make such payments is subject to PRC regulations. Regulations in the PRC currently permit payment of dividends only out of accumulated profits as determined in accordance with accounting standards and regulations in China. According to the relevant PRC laws and regulations applicable to Trina China and TST and their respective articles of association, Trina China and TST are required to set aside at least 10% of its after-tax profit based on PRC accounting standards each year to its general reserves until the accumulative amount of these reserves reaches 50% of its registered capital. These reserves are not distributable as cash dividends. As of December 31, 2012, these general reserves amounted to \$49.3 million, accounting for 8.5% of the registered capital of Trina China and TST. In addition, under the Enterprise Income Tax Law and its Implementation Regulations, or the EIT Law, which became effective January 1, 2008, dividends from Trina China to us are subject to a 10% withholding tax to the extent that we are considered a non-resident enterprise under the EIT Law. See “—The expiration or reduction of tax incentives by the PRC government may have a material adverse effect on our results of operations” and “Item 4. Information on the Company—Regulation—Tax.” Furthermore, if Trina China incurs debt on its own behalf in the future, the instruments governing the debt may restrict its ability to pay dividends or make other distributions to us.

***Restrictions on currency exchange may limit our ability to receive and use our revenues effectively.***

Certain portions of our revenues and expenses are denominated in Renminbi. If our revenues denominated in Renminbi increase or expenses denominated in Renminbi decrease in the future, we may need to convert a portion of our revenues into other currencies to meet our foreign currency obligations, including, among others, payment of dividends declared, if any, in respect of our ordinary shares or ADSs. Under China’s existing foreign exchange regulations, foreign currency under current account transactions such as dividend payments and trade-related transactions are generally convertible. Accordingly, Trina China is able to pay dividends in foreign currencies without prior approval from the State Administration of Foreign Exchange, or the SAFE, by complying with certain procedural requirements. However, the PRC government could take further measures in the future to restrict access to foreign currencies for current account transactions.

Foreign exchange transactions by Trina China under capital accounts continue to be subject to significant foreign exchange controls and require the approval of, or registration with, PRC governmental authorities. In particular, if either Trina China or TST borrows foreign currency loans from us or other foreign lenders, these loans must be registered with the SAFE, and if we finance Trina China and TST by means of additional capital contributions, these capital contributions must be approved by certain government authorities including the Ministry of Commerce, or MOFCOM, or its local counterparts. These limitations could affect the ability of Trina China to obtain foreign exchange through debt or equity financing.

***SAFE regulations may limit our ability to finance our PRC subsidiaries effectively and affect the value of your investment and may make it more difficult for us to pursue growth through acquisition.***

If we finance our PRC subsidiaries through additional capital contributions, the MOFCOM in China or its local counterpart must approve the amount of these capital contributions. On August 29, 2008, SAFE promulgated Circular 142, a notice regulating the conversion by a foreign-invested company of foreign currency into Renminbi by restricting how the converted Renminbi may be used. The notice requires that Renminbi converted from the foreign currency-denominated capital of a foreign-invested company may only be used for purposes within the business scope approved by the applicable governmental authority and may not be used for equity investments in the PRC unless otherwise provided by laws and regulations. In addition, SAFE strengthened its oversight of the flow and use of Renminbi funds converted from the foreign currency denominated capital of a foreign-invested company. The use of such Renminbi may not be changed without approval from SAFE, and may not be used to repay Renminbi loans if the proceeds of such loans have not yet been used for purposes within the company’s approved business scope. Furthermore, on November 9, 2010, SAFE promulgated a notice on relevant issues concerning strengthening the administration of foreign exchange business, which requires the authenticity of settlement of net proceeds from an offshore offering to be closely examined and the net proceeds to be settled in the manner described in the offering documents.

Violations of Circular 142 may result in severe penalties, including substantial fines as set forth in the Foreign Exchange Administration Regulations. We cannot assure you that we will be able to complete the necessary government registrations or obtain the necessary government approvals on a timely basis, if at all, with respect to future loans by us to

our PRC subsidiaries or with respect to future capital contributions by us to our PRC subsidiaries. If we fail to complete such registrations or obtain such approvals, our ability to contribute additional capital to fund our PRC operations may be negatively affected, which could materially adversely affect our liquidity and our ability to fund and expand our business.

***The expiration or reduction of tax incentives by the PRC government may have a material adverse effect on our results of operations.***

The EIT Law imposes a uniform tax rate of 25% on all PRC enterprises, including foreign-invested enterprises, and eliminates or modifies most of the tax exemptions, reductions and preferential treatments available under the previous tax laws and regulations. Under the EIT law, enterprises that were established before March 16, 2007 and already enjoy preferential tax treatments will (i) in the case of preferential tax rates, continue to enjoy the tax rates which will be gradually increased to the new tax rates within five years from January 1, 2008 or (ii) in the case of preferential tax exemption or reduction for a specified term, continue to enjoy the preferential tax holiday until the expiration of such term. In addition, certain enterprises may still benefit from a preferential tax rate of 15% under the new EIT Law if they qualify as “high and new technology enterprises strongly supported by the State,” subject to certain general factors described therein. In September 2008, Trina China obtained the High and New Technology Enterprise Certificate with a valid term of three years starting from 2008. In 2011, Trina China renewed its High and New Technology Enterprise Certificate, effective from 2011 to 2013. Therefore, Trina China is entitled to a preferential income tax rate of 15% from 2008 through 2013 as long as it maintains its qualification as a “high and new technology enterprise strongly supported by the State” under the EIT Law. Also, in 2011, TST obtained the High and New Technology Enterprise Certificate, effective from 2011 to 2013 and is entitled to a preferential income tax rate of 15%. If either Trina China or TST fails to maintain the “high and new technology enterprise” qualification, their applicable EIT rate may increase to up to 25%, which could have a material adverse effect on our results of operations. We cannot assure you that we will be able to maintain our current effective tax rate in the future. Any discontinuation of preferential tax treatment or any increase of the enterprise income tax rate applicable to Trina China could have a material adverse effect on our financial condition and results of operations.

***The dividends we receive from our PRC subsidiaries and our global income may be subject to PRC tax under the EIT law, which would have a material adverse effect on our results of operations; our foreign ADS holders may be subject to a PRC withholding tax upon the dividends payable by us and upon gains realized on the sale of our ADSs, if we are classified as a PRC “resident enterprise.”***

Under the EIT law, dividends, interests, rents and royalties payable by a foreign-invested enterprise in the PRC to its foreign investor who is a non-resident enterprise, as well as gains on transfers of shares of a foreign-invested enterprise in the PRC by such a foreign investor, will be subject to a 10% withholding tax, unless such non-resident enterprise’s jurisdiction of incorporation has a tax treaty with the PRC that provides for a reduced rate of withholding tax. The Cayman Islands, where Trina is incorporated, does not have such a tax treaty with the PRC. Therefore, if Trina is considered a non-resident enterprise for purposes of the EIT law, this 10% withholding tax imposed on dividends paid to Trina by its PRC subsidiaries would reduce Trina’s net income and have an adverse effect on Trina’s operating results.

Under the EIT law, an enterprise established outside the PRC with its “de facto management body” within the PRC is considered a “resident enterprise” and will be subject to the enterprise income tax at the rate of 25% on its worldwide income. The “de facto management body” is defined as the organizational body that effectively exercises overall management and control over production and business operations, human resources, finance and accounting, and properties of the enterprise. The State Administration of Taxation, or SAT, issued the Notice Regarding the Determination of Chinese-Controlled Offshore Incorporated Enterprises as PRC Tax Resident Enterprises on the Basis of De Facto Management Bodies, or SAT Circular 82, on April 22, 2009. SAT Circular 82 provides certain criteria for determining whether the “de facto management body” of an offshore-incorporated enterprise controlled by PRC enterprises is located in China. On July 27, 2011, the SAT issued Administrative Measures of Enterprise Income Tax of Chinese-controlled Offshore Incorporated Resident Enterprises (Trial), or Bulletin 45, which became effective on September 1, 2011, to provide further guidance on the implementation of SAT Circular 82. Bulletin 45 clarifies certain issues relating to the determination of PRC resident enterprise status, post determination administration and the authorities responsible for determining offshore incorporated PRC resident enterprise status. Bulletin 45 specifies that when provided with a copy of a Chinese tax resident determination certificate issued by the competent tax authorities from an offshore incorporated PRC resident enterprise, the payer should not withhold 10% income tax when paying Chinese-sourced dividends, interest and royalties to the offshore incorporated PRC resident enterprise. Although SAT Circular 82 only applies to offshore enterprises controlled by PRC enterprises and not those controlled by PRC or foreign individuals or foreign enterprises, the criteria set forth therein may reflect the SAT’s general position on how the “de facto management body” test should be applied in determining the tax resident status of offshore enterprises, regardless of whether they are controlled by PRC or foreign enterprises or individuals. Accordingly, we may be considered a resident enterprise and may therefore be subject to

the enterprise income tax at 25% on our global income other than dividends from our PRC subsidiaries, which could significantly increase our tax burden and materially adversely affect our cash flow and profitability. Notwithstanding the foregoing provision, the EIT law also provides that, if a resident enterprise directly invests in another resident enterprise, the dividends received by the investing resident enterprise from the invested enterprise are exempted from income tax, subject to certain conditions. Therefore, if Trina is classified as a resident enterprise, the dividends received from its PRC subsidiary may be exempted from income tax. However, it remains unclear how the PRC tax authorities will interpret the PRC tax resident treatment of an offshore company, like Trina, having ownership interest in a PRC enterprise.

Moreover, under the EIT law, a withholding tax at the rate of 10% is applicable to dividends payable to investors that are “non-resident enterprises,” which do not have an establishment or place of business in the PRC, or which have such establishment or place of business but the relevant income is not effectively connected with the establishment or place of business, to the extent such interest or dividends have their sources within the PRC unless such non-resident enterprises can claim treaty protection. As such, these non-resident enterprises would enjoy a reduced withholding tax from treaty. Similarly, any gain realized on the transfer of ADSs or shares by such investors is also subject to a 10% withholding tax if such gain is regarded as income derived from sources within the PRC. If Trina is considered a PRC resident enterprise, it is likely that the dividends Trina pays with respect to its ordinary shares or ADSs, or the gain you may realize from the transfer of Trina’s ordinary shares or ADSs, would be treated as income derived from sources within the PRC and be subject to PRC withholding tax.

Under the PRC Individual Income Tax Law, or IITL, if we are treated as a PRC resident enterprise, it is possible that non-resident individual investors of our shares or ADSs would be subject to PRC individual income tax at a rate of 20% on dividends paid to such investors and any capital gains realized from the transfer of our common shares, ADSs or both, if such dividends or capital gains are deemed income derived from sources within the PRC, except in the case of individuals that qualify for a lower rate under a tax treaty. Under the PRC-U.S. tax treaty, a 10% preferential rate of withholding tax will apply to dividends provided that the recipients are U.S. tax residents that are eligible for the benefits of the PRC-U.S. tax treaty. A non-resident individual is an individual who has no domicile in the PRC and does not stay within the PRC or has stayed within the PRC for less than one year. Pursuant to the IITL and its implementation rules, for purposes of the PRC capital gains tax, the taxable income will be based on the total income obtained from the transfer of our common shares or ADSs minus all the costs and expenses that are permitted under PRC tax laws to be deducted from the income.

***We face uncertainty with respect to indirect transfers of equity interests in PRC resident enterprises by their non-PRC holding companies.***

Pursuant to the Notice on Strengthening Administration of Enterprise Income Tax for Share Transfers by Non-PRC Resident Enterprises, or SAT Circular 698, issued by the SAT on December 10, 2009 with retroactive effect from January 1, 2008, where a non-resident enterprise transfers the equity interests of a PRC resident enterprise indirectly via disposing of the equity interests of an overseas holding company, or an Indirect Transfer, and such overseas holding company is located in a tax jurisdiction that: (i) has an effective tax rate less than 12.5% or (ii) does not tax foreign income of its residents, the foreign investor shall report to the competent tax authority of the PRC resident enterprise this Indirect Transfer. Using a “substance over form” principle, the PRC tax authority may disregard the existence of the overseas holding company if it lacks a reasonable commercial purpose and was established for the purpose of avoiding PRC tax. As a result, gains derived from such Indirect Transfer may be subject to PRC withholding tax at a rate of up to 10%. SAT Circular 698 also provides that, where a non-PRC resident enterprise transfers its equity interests in a PRC resident enterprise to its related parties at a price lower than the fair market value, the relevant tax authority has the power to make a reasonable adjustment to the taxable income of the transaction.

There is uncertainty as to the application of SAT Circular 698. For example, while the term “Indirect Transfer” is not clearly defined, it is understood that the relevant PRC tax authorities have jurisdiction regarding requests for information over a wide range of foreign entities having no direct contact with China. Moreover, the relevant authority has not yet promulgated any formal provisions or formally declared or stated how to calculate the effective tax rates in foreign tax jurisdictions, and the process and format of the reporting of an Indirect Transfer to the competent tax authority of the relevant PRC resident enterprise. In addition, there are not any formal declarations with regard to how to determine whether a foreign investor has adopted an abusive arrangement in order to avoid PRC tax. As a result, we may become at risk of being taxed under SAT Circular 698 and we may be required to expend valuable resources to comply with SAT Circular 698 or to establish that we should not be taxed under SAT Circular 698, which may materially adversely affect our financial condition and results of operations.

***The approval of the China Securities Regulatory Commission might have been required in connection with our initial public offering, and, if required, we could be subject to sanction, fines and other penalties.***



On August 8, 2006, six PRC regulatory agencies, including the CSRC, promulgated the Regulation on Mergers and Acquisitions of Domestic Companies by Foreign Investors, or the M&A Rules, which became effective on September 8, 2006 and was amended on June 22, 2009. The M&A Rules, among other things, require offshore special purpose vehicles, formed for overseas listing purposes through acquisitions of PRC domestic companies and controlled by PRC enterprises or individuals, to obtain the approval of the CSRC prior to publicly listing their securities on an overseas stock exchange. On September 21, 2006, the CSRC published a notice specifying the documents and materials that are required to be submitted for obtaining CSRC approval. Based on the advice we received from Fangda Partners, our PRC counsel, we did not seek the CSRC approval in connection with our initial public offering as we believe that this regulation does not apply to us and that CSRC approval is not required because (1) Trina is not a special purpose vehicle formed for the purpose of acquiring a PRC domestic company because Trina China was a foreign-invested enterprise before it was acquired by Trina, and, accordingly, Trina China did not fall within the definition of a PRC domestic company as set forth in the new regulation; and (2) such acquisition was completed before the new regulation became effective.

Uncertainty still exists as to how the M&A Rules will be interpreted and implemented, and the opinion of our PRC counsel is subject to any new laws, regulations, rules and their detailed implementations in the future in any form relating to the M&A Rules. If the CSRC or other PRC regulatory body subsequently determines that the CSRC's approval was required for our initial public offering, we may face sanctions by the CSRC or other PRC regulatory agencies. In that case, these regulatory agencies may impose fines and penalties on our operations in the PRC, limit our operating privileges in the PRC, restrict or prohibit payment or remittance of dividends by Trina China, or take other actions that could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects, as well as the trading price of our ADSs.

The regulations also established additional procedures and requirements that could make merger and acquisition activities by foreign investors more time-consuming and complex, including requirements in some instances that the MOFCOM be notified in advance of any change-of-control transaction in which a foreign investor takes control of a PRC domestic enterprise. As we may grow our business in part by acquiring complementary businesses in the future, complying with the requirements of the new regulations to complete such transactions could be time-consuming, and any required approval processes, including obtaining approval from the MOFCOM, may delay or inhibit our ability to complete such transactions. Any such delay or inability to obtain applicable approvals to complete our potential future acquisitions could affect our ability to expand our business or maintain our market share.

***We may be subject to Regulations on National Security Review of Merger and Acquisition by Foreign Investors, which could jeopardize future transactions***

On February 3, 2011, the State Council promulgated Circular 6, a notice on the establishment of the security review system for mergers and acquisitions of domestic enterprises by foreign investors, which became effective on March 3, 2011. To implement Circular 6, the MOFCOM promulgated the MOFCOM Security Review Rules on August 25, 2011 which became effective on September 1, 2011. According to Circular 6 and the MOFCOM Security Review Rules, a national security review is required for certain mergers and acquisitions by foreign investors of enterprises relating to national defense and certain mergers and acquisitions by which foreign investors may acquire de facto control of domestic enterprises raising national security concerns. When deciding whether a specific merger or acquisition of a domestic enterprise by foreign investors is subject to the national security review, the MOFCOM will look into the substance and actual impact of the transaction and the foreign investors are prohibited from bypassing the national security review requirement by structuring transactions through proxies, trusts, indirect investments, leases, loans, control through contractual arrangements or offshore transactions. In addition, if a merger or acquisition by foreign investors which was not submitted for national security review, or was determined to have no impact on national security after such review, but thereafter, due to changed elements, including modification of the merger, change of business activities or acquisition transaction or amendment of the relevant agreements or documents and other changes, involves an enterprise relating to national defense or a change of de facto control of a domestic enterprise raising national security concerns such that it becomes subject to national security review, the foreign investor to such merger or acquisition will be required to file an application for national security review with the MOFCOM. Currently, there are no public provisions or official interpretations specifically providing that our current businesses fall within the scope of national security review and there is no requirement that foreign investors to those merger and acquisition transactions completed prior to the promulgation of the Circular 6 take initiatives to submit such transactions to MOFCOM for national security review. However, as the MOFCOM Security Review Rules and the Circular 6 are relatively new and there is no clear statutory interpretation on their implementation, there is no assurance that the relevant PRC regulatory authorities will have the same view as us when applying them. Moreover, there exists the possibility that our future merger and acquisition transactions will be subject to the national security review under the MOFCOM Security Review Rules and the Circular 6.

***Regulations relating to offshore investment activities by PRC residents may limit our ability to acquire PRC companies and could adversely affect our business, financial condition and results of operations. The regulations also establish more complex procedures for acquisitions by foreign investors, which could make it more difficult to pursue growth through acquisitions.***

In October 2005, SAFE promulgated a regulation known as Circular No. 75 that states that if PRC residents use assets or equity interests in their PRC entities as capital contributions to establish offshore companies or inject assets or equity interests of their PRC entities into offshore companies to raise capital overseas, they must register with local SAFE branches with respect to their overseas investments in offshore companies. They must also file amendments to their registrations if their offshore companies experience material events involving capital variation, such as changes in share capital, share transfers, mergers and acquisitions, spin-off transactions, long-term equity or debt investments or uses of assets in China to guarantee offshore obligations. Under this regulation, failure to comply with the registration procedures set forth in such regulation may result in restrictions being imposed on the foreign exchange activities of the relevant PRC entity, including the payment of dividends and other distributions to its offshore parent, as well as restrictions on the capital inflow from the offshore entity to the PRC entity. On May 20, 2011, SAFE issued the Operational Rules on Foreign Exchange Administration for Financing and Return Investments by Domestic Residents through Special-Purpose Overseas Companies or Circular 19, which provides detailed procedures and specific instructions for SAFE registration under the Circular 75. While we believe our shareholders have complied with existing SAFE registration procedures, any future failure by any of our shareholders who is a PRC resident, or controlled by a PRC resident, to comply with relevant requirements under this regulation could subject our company to fines or sanctions imposed by the PRC government, including restrictions on Trina China's ability to pay dividends or make distributions to us and our ability to increase our investment in or to provide loans to Trina China.

On December 25, 2006, the People's Bank of China promulgated the "Measures for Administration of Individual Foreign Exchange." On January 5, 2007, the SAFE promulgated Implementation Rules for those measures and on February 15, 2012, the SAFE promulgated the notice on issuers concerning the Foreign Exchange Administration for Domestic Individuals Participating in Stock Incentive Plan of Overseas Listed Company which terminated the Operating Procedures on Administration of Foreign Exchange regarding PRC individuals' Participation in Employee Share Ownership Plans and Employee Stock Option Plans of Overseas Listed Company issued by SAFE on March 28, 2007 (collectively, referred to as the "Individual Foreign Exchange Rules"). According to the Individual Foreign Exchange Rules, PRC citizens who are granted shares or share options by a company listed on an overseas stock market according to its employee share option or share incentive plan are required to register with the SAFE or its local counterparts by following certain procedures. We and our employees who are PRC citizens and individual beneficiary owners, or have been granted restricted shares or share options, are subject to the Individual Foreign Exchange Rules and its relevant implementation regulations. The failure of our PRC individual beneficiary owners and the restricted holders to complete their SAFE registrations pursuant to the SAFE Jiangsu Branch's requirement or the Individual Foreign Exchange Rules may subject these PRC citizens to fines and legal sanctions and may also limit our ability to contribute additional capital into our PRC subsidiaries, limit our PRC subsidiaries' ability to distribute dividends to us or otherwise materially adversely affect our business.

***Labor laws in the PRC may adversely affect our results of operations.***

On June 29, 2007, the PRC government promulgated the Labor Contract Law of the PRC, or the PRC Labor Contract Law, which became effective on January 1, 2008. On September 3, 2008, the PRC government promulgated the Implementing Rules on PRC Labor Contract Law, or the Implementing Rules. The PRC Labor Contract Law and the Implementing Rules impose requirements concerning contracts entered into between an employer and its employees and establish time limits for probationary periods and for how long an employee can be placed in fixed-term labor contracts. According to the PRC Labor Contract Law and the Implementing Rules, employers must pay their employees wages equal to or above the local minimum wage standards, establish labor safety and workplace sanitation systems, comply with national labor rules and standards and provide employees with appropriate training regarding workplace safety. Furthermore, if we enforce the non-compete provision in a labor contract, we have to compensate the employee on a monthly basis during the term of the non-compete period after the termination or expiration of the labor contract, which may cause additional expenses to us.

In addition, the PRC regulatory authorities have enacted a variety of laws and regulations regarding social insurance and housing funds. Pursuant to these laws and regulations, PRC companies have to make contributions to the relevant local social insurance and housing funds regulatory authorities for their employees. Due to the limited period of effectiveness of the PRC Labor Contract Law and the Implementing Rules and the lack of clarity with respect to their implementation and potential penalties and fines, it is uncertain how they will impact our current employment policies and practices. Therefore,

we cannot assure you that our employment policies and practices do not, or will not, violate these laws and regulations and that we will not be subject to related penalties, fines or legal fees. If we are subject to large penalties or fees related to these laws and regulations, our business, financial condition and results of operations may be materially and adversely affected.

***We face risks related to health epidemics and other outbreaks.***

Our business could be adversely affected by the effects of swine flu, avian flu, SARS or other epidemics or outbreaks. China reported a number of cases of SARS in April 2004. In 2006, 2007, 2008 and 2011, there have been reports on the occurrences of avian flu in various parts of China, including a few confirmed human cases and deaths. In April 2009, an outbreak of swine flu occurred in Mexico and the United States. In May 2009, the World Health Organization declared a level 6 flu pandemic, its highest pandemic alert phase, indicating a global pandemic underway. Any prolonged occurrence or recurrence of swine flu, avian flu, SARS or other adverse public health developments in China or any of the major markets in which we do business may have a material adverse effect on our business and operations. These could include our ability to travel or ship our products outside of China and to designated markets, as well as temporary closure of our manufacturing facilities, logistic facilities and/or our customers' facilities, leading to delayed or cancelled orders. Any severe travel or shipment restrictions and closures would severely disrupt our operations and adversely affect our business and results of operations. We have not adopted any written preventive measures or contingency plans to combat any future outbreak of swine flu, avian flu, SARS or any other epidemic.

**Risks Related to Our Ordinary Shares and ADSs**

***The market price for our ADSs has been and is likely to continue to be highly volatile.***

The market price for our ADSs has been and is likely to continue to be highly volatile and subject to wide fluctuations in response to factors including the following:

- announcements of technological or competitive developments;
- regulatory developments in our target markets affecting us, our customers or our competitors;
- announcements of studies and reports relating to the conversion efficiencies of our products or those of our competitors;
- actual or anticipated fluctuations in our quarterly operating results;
- changes in financial estimates by securities research analysts;
- changes in the economic performance or market valuations of other solar power technology companies;
- addition or departure of our executive officers and key research personnel;
- financial blogs, Internet chat room or other media forms which publish unsubstantiated opinions or claims in support of undisclosed trades, including short selling, of the Company's ADSs;
- announcements regarding patent litigation or the issuance of patents to us or our competitors;
- conditions affecting general economic performance in the United States;
- fluctuations in the exchange rates between the U.S. dollar, the Euro and Renminbi;
- release or expiry of lock-up or other transfer restrictions on our outstanding ordinary shares; and
- sales or perceived sales of additional ADSs.

In addition, the securities market has from time to time experienced significant price and volume fluctuations that are not related to the operating performance of particular companies. These market fluctuations may also have a material adverse effect on the market price of our ADSs. For example, financial markets have experienced extreme disruption in recent months, including, among other things, extreme volatility in securities prices. In the event of a continuing market



downturn, the market price of our ADSs may decline further.

***Holders of our ADSs do not have the same voting rights as the holders of our ordinary shares and may not receive voting materials in time to be able to exercise their right to vote.***

Holders of our ADSs are not treated as shareholders. Instead, the depositary will be treated as the holder of the shares underlying the ADSs. Holders of our ADSs, however, may exercise some of the shareholders' rights through the depositary and have the right to withdraw the shares underlying their ADSs from the deposit facility.

Except as described in this annual report and provided in the deposit agreement, holders of our ADSs will not be able to exercise voting rights attaching to the shares evidenced by our ADSs on an individual basis. Holders of our ADSs may instruct the depositary to exercise the voting rights attaching to the shares represented by the ADSs. If no instructions are received by the depositary on or before a date established by the depositary, the depositary shall deem the holders to have instructed it to give a discretionary proxy to a person designated by us to exercise their voting rights. Holders of our ADSs may not receive voting materials in time to instruct the depositary to vote, and holders of our ADSs, or persons who hold their ADSs through brokers, dealers or other third parties, might not have the opportunity to exercise a right to vote.

***We have adopted a shareholders rights plan, which, together with the other anti-takeover provisions of our articles of association, could discourage a third party from acquiring us, which could limit our shareholders' opportunity to sell their shares, including ordinary shares represented by our ADSs, at a premium.***

In November 2006, we adopted our amended and restated articles of association, which became effective immediately upon completion of our initial public offering in December 2006. Our current articles of association contain provisions that limit the ability of others to acquire control of our company or cause us to engage in change-of-control transactions. In November 2008, our board of directors adopted a shareholders rights plan. Under this rights plan, one right was distributed with respect to each of our ordinary shares outstanding at the closing of business on December 1, 2008. These rights entitle the holders to purchase ordinary shares from us at half of the market price at the time of purchase in the event that a person or group obtains ownership of 15% or more of our ordinary shares (including by acquisition of the ADSs representing an ownership interest in the ordinary shares) or enters into an acquisition transaction without the approval of our board of directors.

This rights plan and the other anti-takeover provisions of our articles of association could have the effect of depriving our shareholders of an opportunity to sell their shares at a premium over prevailing market prices by discouraging third parties from seeking to obtain control of our company in a tender offer or similar transaction. Our existing authorized ordinary shares confer on the holders of our ordinary shares equal rights, privileges and restrictions. Our board of directors may, without further action by our shareholders, issue additional ordinary shares, or issue shares of a preferred class and attach to such shares special rights, privileges or restrictions, which may be different from those associated with our ordinary shares, up to the amount of the authorized capital and the number of authorized shares of our company. Preferred shares could also be issued with terms calculated to delay or prevent a change in control of our company or make removal of management more difficult. If our board of directors decides to issue ordinary shares or preferred shares, the price of our ADSs and the notes may fall and the voting and other rights of the holders of our ordinary shares and ADSs may be materially and adversely affected.

***Holders of our ADSs may not be able to participate in rights offerings that are made available to our shareholders, and may not receive cash dividends if it is impractical to make them available to them.***

We may from time to time distribute rights to our shareholders, including rights to acquire our securities. Under the deposit agreement, the depositary bank will not make rights available to holders of our ADSs unless the distribution to ADS holders of both the rights and any related securities are either registered under the Securities Act of 1933, as amended, or the Securities Act, or exempted from registration under the Securities Act with respect to all holders of ADSs. We are under no obligation to file a registration statement with respect to any such rights or securities or to endeavor to cause such a registration statement to be declared effective. Moreover, we may not be able to establish an exemption from registration under the Securities Act. Accordingly, holders of our ADSs may be unable to participate in our rights offerings and may experience dilution in their holdings.

In addition, the depositary of our ADSs has agreed to pay to holders of our ADSs the cash dividends or other distributions it or the custodian receives on our ordinary shares or other deposited securities after deducting its fees and expenses. Holders of our ADSs will receive these distributions in proportion to the number of ordinary shares their ADSs represent. However, the depositary may, at its discretion, decide that it is inequitable or impractical to make a distribution

available to any holders of ADSs. For example, the depositary may determine that it is not practicable to distribute certain property through the mail, or that the value of certain distributions may be less than the cost of mailing them. In these cases, the depositary may decide not to distribute such property and holders of our ADSs will not receive such distribution.

***Holders of our ADSs may be subject to limitations on transfer of their ADSs.***

Our ADSs are transferable on the books of the depositary. However, the depositary may close its transfer books at any time or from time to time when it deems expedient in connection with the performance of its duties. In addition, the depositary may refuse to deliver, transfer or register transfers of ADSs generally when our books or the books of the depositary are closed, or at any time if we or the depositary deem it advisable to do so because of any requirement of law or of any government or governmental body, or under any provision of the deposit agreement, or for any other reason.

***We are a Cayman Islands company and, because judicial precedent regarding the rights of shareholders is more limited under Cayman Islands law than that under U.S. law, our shareholders may have less protection for their shareholder rights than they would under U.S. law.***

Our corporate affairs are governed by our memorandum and articles of association, the Companies Law, Cap. 22 (Law 3 of 1961, as consolidated and revised) of the Cayman Islands and the common law of the Cayman Islands. The rights of shareholders to take action against the directors, actions by minority shareholders and the fiduciary responsibilities of our directors to us under Cayman Islands law are to a large extent governed by the common law of the Cayman Islands. The common law of the Cayman Islands is derived in part from comparatively limited judicial precedent in the Cayman Islands as well as that from English common law, which has persuasive, but not binding, authority on a court in the Cayman Islands. The rights of our shareholders and the fiduciary responsibilities of our directors under Cayman Islands law are not as clearly established as they would be under statutes or judicial precedent in some jurisdictions in the United States. In particular, the Cayman Islands has a less developed body of securities laws than the United States. In addition, some U.S. states, such as Delaware, have more fully developed and judicially interpreted bodies of corporate law than the Cayman Islands. As a result of all of the above, shareholders of a Cayman Islands company may have more difficulty in protecting their interests in the face of actions taken by management, members of the board of directors or controlling shareholders than they would as shareholders of a company incorporated in a jurisdiction in the United States. The limitations described above will also apply to the depositary, which is treated as the holder of the shares underlying our ADSs.

***You may have difficulty enforcing judgments obtained against us.***

We are a Cayman Islands company and substantially all of our assets are located outside of the United States. Substantially all of our current operations are conducted in the PRC. In addition, most of our directors and officers are nationals and residents of countries other than the United States. A substantial portion of the assets of these persons are located outside the United States. As a result, it may be difficult for you to effect service of process within the United States upon these persons. It may also be difficult for you to enforce in U.S. courts judgments obtained in U.S. courts based on the civil liability provisions of the U.S. federal securities laws against us and our officers and directors, most of whom are not residents in the United States and the substantial majority of whose assets are located outside of the United States. In addition, there is uncertainty as to whether the courts of the Cayman Islands or the PRC would recognize or enforce judgments of U.S. courts.

**Item 4. INFORMATION ON THE COMPANY**

**A. History and Development of the Company**

Our legal and commercial name is Trina Solar Limited. Our predecessor company, Trina China, was incorporated in December 1997. In anticipation of our initial public offering, we incorporated Trina in the Cayman Islands as a listing vehicle on March 14, 2006. Trina acquired all of the equity interests in Trina China through a series of transactions that have been accounted for as a recapitalization and Trina China became our wholly-owned subsidiary. In the past, we conducted substantially all of our operations (and we continue to conduct a significant part of our operations) through Trina China. In December 2006, we completed our initial public offering of our ADSs and listed our ADSs on the New York Stock Exchange. In June 2007, we completed a follow-on public offering of 5,406,280 ADSs sold by us and certain selling shareholders. In July 2008, we completed public offerings of \$138 million aggregate principal amount of convertible senior notes due 2013 and 8,146,388 ADSs for a related ADS borrowing facility. In August 2009, we completed a follow-on public offering of 5,175,000 ADSs. In March 2010, we completed another follow-on public offering of 9,085,000 ADSs.

Our principal executive offices are located at No. 2 Tian He Road, Electronics Park, New District, Changzhou,

Jiangsu 213031, People's Republic of China. Our telephone number at this address is (+86) 519 8548-2008 and our fax number is (+86) 519 8517-6023. Our registered office in the Cayman Islands is located at the offices of Codan Trust Company (Cayman) Limited, Cricket Square, Hutchins Drive, P.O. Box 2681, Grand Cayman, KY1-1111, Cayman Islands.

For information regarding our principal capital expenditures, see “—D. Property, Plants and Equipment.”

Investor inquiries should be directed to us at the address and telephone number of our principal executive offices set forth above. Our website is <http://www.trinasolar.com>. The information contained on our website does not form part of this annual report. Our agent for service of process in the United States is CT Corporation System located at 111 Eighth Avenue, New York, New York 10011.

## **B. Business Overview**

### **Overview**

We are a large-scale integrated solar-power products manufacturer based in China with a global distribution network covering Europe, North and South America and Asia. Since we began our solar-power products business in 2004, we have integrated the manufacturing of ingots, wafers and solar cells for use in our PV module production. Our PV modules provide reliable and environmentally-friendly electric power for residential, commercial, industrial and other applications worldwide.

We produce standard monocrystalline PV modules ranging from 185 watts, or W, to 210 W in power output and multicrystalline PV modules ranging from 230 W to 310 W in power output. We build our PV modules to general specifications, as well as to our customers' and end-users' specifications. We sell and market our products worldwide, including in a number of European countries, such as Germany, Spain and Italy, where government incentives have accelerated the adoption of solar power. In recent years, we have also increased our sales in newer and emerging solar power markets, which include China, the United States, the United Kingdom, Australia, India, Israel and Japan, as well as other markets in Asia, Africa, the Middle East, Latin America and the Caribbean Islands. We have established regional headquarters and offices located in Europe, North America and Asia to target sales and distribution in those markets. We sell our products to distributors, wholesalers, power plant developers and operators and PV system integrators, including Enerparc AG, SolarCity, Parabel AG, GCL Solar Energy, Inc., Solartechnik Stiens GmbH & Co. KG and Fluor Corporation.

As of December 31, 2012, we had an annual manufacturing capacity of ingots and wafers of approximately 1,200 MW and cells and modules of approximately 2,400 MW. In 2011 and 2012, we fulfilled some of our ingot and wafer requirements by sourcing and obtaining toll services from our strategic partners. We will continue to contract toll services from third party manufacturers to process ingots and wafers and source wafers from our suppliers and strategic partners in order to fill the gap between our PV cell and module manufacturing capacity and our ingot and wafer manufacturing capacity as a result of strong market demand and to achieve import cost advantages to certain markets. As a result, we have developed relationships with various domestic and international suppliers of ingots and wafers.

We purchase polysilicon from our network of over ten suppliers, including several leading global producers of polysilicon, and have developed strong relationships with our suppliers. To reduce raw material costs, we continue to focus on improving solar cell conversion efficiency and enhancing manufacturing yields. Our research and development platform will be further enhanced by the R&D Laboratory we have been commissioned by the PRC Ministry of Science and Technology to establish in the Changzhou PV Park, or the PV Park, located adjacent to our headquarters. We completed construction of our R&D laboratory during the second quarter of 2012 and began utilizing the new facilities in March 2012.

We began our research and development efforts in solar power products in 1999. We began our system integration business in 2002, our PV module business in late 2004 and our production of solar cells in April 2007. In 2010, 2011 and 2012, we generated net sales of \$1,857.7 million, \$2,047.9 million and \$1,296.7 million, respectively. We recorded a net income of \$311.5 million in 2010, a net loss of \$37.8 million in 2011 and a net loss of \$266.6 million in 2012.

### **Products**

We design, develop, manufacture and sell high efficiency PV modules. PV modules are arrays of interconnected solar cells encased in a weatherproof frame. We produce standard solar monocrystalline modules ranging from 185 W to 210 W in power output and multicrystalline modules ranging from 230 W to 310 W in power output, built to general specifications for use in a wide range of residential, commercial, industrial and other solar power generation systems. The



variation in power output is based on the conversion efficiency of the cells used in our PV modules, as well as the types of cells. We assemble PV modules either from monocrystalline or multicrystalline cells. We also design and produce PV modules based on our customers' and end-users' specifications, such as colored modules for architectural applications and larger sized modules for utility grid applications. Our PV modules are sealed, weatherproof and able to withstand high levels of ultraviolet radiation and moisture. We sell our module products under our own brand.

## Manufacturing

We manufacture ingots, wafers, cells and modules. As of December 31, 2012, we had an annual manufacturing capacity of ingots and wafers of approximately 1,200 MW and cells and modules of approximately 2,400 MW. We do not currently plan to build new facilities to increase our annual manufacturing capacity of cells, ingots, wafers or modules during 2013, though we expect small gains in capacity through increased efficiency. However, as we take into account market views concerning customer demand and the commercial lending environment, which is essential for the financing of PV system installations in our respective sales markets as well as our strategy to expand while preserving liquidity, we may later decide to expand our capacity during 2013 or at a future date. The following table sets forth our manufacturing capacity and production output in MW equivalent of module production as a result of our ramp-up for each of our facilities.

Manufacturing Facility	Manufacturing Commencement Date	Annual Manufacturing Capacity as of December 31, 2012	Production Output for the Year Ended December 31, 2012	Estimated Maximum Annual Manufacturing Capacity as of December 31, 2013
Silicon ingots	August 2005	1,200 MW <sup>(1)</sup>	1,140 MW <sup>(2)</sup>	1,250 MW
Silicon wafers	February 2006	1,200 MW <sup>(1)</sup>	1,080 MW <sup>(2)</sup>	1,250 MW
Solar cells	April 2007	2,400 MW <sup>(1)</sup>	1,550 MW <sup>(2)</sup>	2,500 MW
PV modules	November 2004	2,400 MW <sup>(1)</sup>	1,720 MW <sup>(2)</sup>	2,500 MW

(1) Approximate figures.

(2) Includes modules produced but not shipped as of December 31, 2012.

- Silicon feedstock.* We purchase polysilicon from various suppliers, including silicon distributors, silicon manufacturers, semiconductor manufacturers and silicon processing companies. Our ability to mix the materials in the right proportion is critical to the production of high-quality silicon ingots. In the fourth quarter of 2012, we had an average silicon usage of approximately 5.4 grams per watt, compared to approximately 5.8 and 5.9 grams per watt in the fourth quarters of 2011 and 2010, respectively.
- Ingots.* We began manufacturing monocrystalline ingots in August 2005 with silicon crystal growing furnaces. As of December 31, 2012, we had 110 silicon crystal growing furnaces for manufacturing monocrystalline ingots, which can yield 110 MW of modules annually based on current manufacturing processes, and 166 directional solidification system, or DSS, furnaces for the manufacturing of multicrystalline ingots, which can yield 1,090 MW of modules annually based on current manufacturing processes.

To produce monocrystalline silicon ingots, silicon raw materials are first melted in a quartz crucible in the pulling furnace. Then, a thin crystal seed is dipped into the melted material to determine the crystal orientation. The seed is rotated and then slowly extracted from the melted material which solidifies on the seed to form a single crystal.

We began commercial production of multicrystalline ingots in November 2007. To produce multicrystalline ingots, molten silicon is changed into a block through a casting process in a DSS furnace. Crystallization starts by gradually cooling the crucibles in order to create multicrystalline ingot blocks. The resulting ingot blocks consist of multiple smaller crystals as opposed to the single crystal of a monocrystalline ingot.

- Wafers.* We began manufacturing wafers in February 2006. Currently, we slice monocrystalline and multicrystalline wafers to a thickness of approximately 180 microns, while maintaining a low breakage rate. After the ingots are inspected, monocrystalline ingots are squared by squaring machines. Through high-precision cutting techniques, the squared ingots are then sliced into wafers by wire saws using steel

wires and silicon carbon powder. To produce multicrystalline wafers, multicrystalline ingots are first cut into pre-determined sizes. After a testing process, the multicrystalline ingots are cropped and the usable parts of the ingots are sliced into wafers by wire saws by the same high-precision cutting techniques used for slicing monocrystalline wafers, while the unusable parts are melted down for reuse. After being inserted into frames, the wafers go through a cleansing process to remove debris from the previous processes, and are then dried. Wafers are inspected for contaminants then packed and transferred to our solar cell production facilities. Our annual wafer manufacturing capacity as of December 31, 2012 was approximately 1,200 MW based on current manufacturing processes.

We fulfill some of our wafer requirements by sourcing from strategic partners. We will continue to source wafers through long-term supply agreements in order to fill the gap between our PV cell and module manufacturing capacity and our wafer manufacturing capacity and to achieve import cost advantages to certain markets. As a result, we have developed relationships with various domestic and international suppliers of wafers. From time to time, we also fulfilled some of our ingot and wafer requirements through toll services from our strategic partners. We will continue to contract toll services from third party manufacturers to process ingots and wafers in the future.

- *Solar cells.* We currently produce our own solar cells for use in our PV modules. After we installed our ingot and wafer production lines, we began manufacturing ingots and wafers in-house and outsourced the fabrication of solar cells to solar cell manufacturers. To reduce our dependence on third-party solar cell manufacturers and to increase our efficiencies both in solar cell and PV module manufacturing, we began the production of monocrystalline cells in April 2007 and achieved a conversion efficiency of up to 19.0% as of December 31, 2012 on a test production line basis. In November 2007, we began producing multicrystalline cells and achieved a conversion efficiency of up to 18.1% as of December 31, 2012 on a test production line basis. As of December 31, 2012, we had 64 production lines with an annual manufacturing capacity of approximately 2,400 MW.

To manufacture solar cells, the crystalline silicon wafer is used as the base substrate. After cleaning and texturing the surface, an emitter is formed through a diffusion process. The front and back sides of the wafer are then isolated using the plasma etching technique, the oxide formed during the diffusion process is removed and thus an electrical field is formed. We then apply an anti-reflective coating to the surface of the cell using plasma enhanced chemical vapors to enhance the absorption of sunlight. The front and back sides of the cell are screen printed with metallic inks and the cell then undergoes a fire treatment in order to preserve its mechanical and electrical properties. The cell is tested and classified according to its parameters.

We have also selectively entered into short-term agreements to both purchase and sell solar cells with commercially favorable terms to meet the fluctuations in PV module demand, or to achieve import cost advantages to certain markets.

- *PV modules.* We began module manufacturing in November 2004. We increased our annual manufacturing capacity of modules from approximately 6 MW per year as of November 2004 to approximately 2,400 MW per year as of December 31, 2012.

To assemble PV modules, we interconnect multiple solar cells by taping and stringing the cells into a desired electrical configuration. The interconnected cells are laid out, laminated in a vacuum, cured by heating and then packaged in a protective light-weight aluminum frame. Through this labor-intensive process, our PV modules are sealed and become weatherproof and are able to withstand high levels of ultraviolet radiation and moisture.

PV module assembly remains a labor intensive process. We leverage China's lower labor costs by using a greater degree of labor in our manufacturing process when it proves to be more efficient and cost-effective than using automated equipment. We are in close proximity to Chinese solar equipment manufacturers that offer much of the solar manufacturing equipment we require at competitive prices compared to similar machinery offered by international solar equipment manufacturers.

## **Solar Power Projects**

Many solar power projects are being commissioned in Europe, the United States and other countries, largely driven

by government mandates that require electric utility companies to use renewable energy to produce a certain percentage of their power by a future date. In 2009, we began to develop commercial solar power systems for these solar power projects on our own with the intent to sell them to third-parties upon completion of their development. Once construction on the project is completed, the project begins operating and generating power. Power is sold on the power grid, which may generate revenues for us, depending upon the project structure and whether there is a predetermined or committed purchaser. Once a purchaser for the project has been identified, we then complete the sale to the purchaser.

As of December 31, 2012, we had total solar power projects of approximately \$41.0 million, including both projects operated by us and projects either completed or in construction for future sales. We completed construction of a solar power project located in four different sites in the Basilicata region of Italy, which has 2 MW of installed PV systems and has connected to the local electricity grid to generate power with total assets of \$9.6 million. We are also in the early stages of development on several other solar power projects, including partially completed projects in the United States and China. We intend to begin construction on projects in China, the United States and the United Kingdom during 2013.

### **Silicon-based Raw Material Supplies**

Our business depends on our ability to obtain silicon-based raw materials, including polysilicon, ingots and wafers. We procure polysilicon from domestic and international manufacturers as well as domestic and international distributors. In addition to our headquarters, we have three offices located in the United States, Asia and Europe to conduct procurement activities. We believe our procurement team's geographical proximity to the supply sources helps us better communicate with the suppliers and respond to them more efficiently. We believe our efforts to procure silicon-based raw materials from various sources will enable us to better control the silicon supply chain, increase manufacturing efficiency, and reduce margin pressure.

According to Solarbuzz, the average long-term supply contract price of polysilicon increased from approximately \$60-\$65 per kilogram delivered in 2007 to \$60-\$75 per kilogram in 2008. In addition, according to Solarbuzz, spot prices for solar grade polysilicon were in the range of \$230-\$375 per kilogram for most of the first half of 2008 and rose to a peak of \$450-\$475 per kilogram by mid-2008. During the fourth quarter of 2008, the price of polysilicon began to decrease rapidly due to increased supply of polysilicon resulting from intensive investments in silicon manufacturing. According to Solarbuzz, the average price range of long-term polysilicon supply contracts had decreased to approximately \$22-\$24 per kilogram by the fourth quarter of 2012, and spot prices for solar grade polysilicon had decreased to approximately \$16-\$17 per kilogram in the fourth quarter of 2012. However, we cannot assure you that the price of polysilicon will continue to decline or remain at its current levels.

We have entered into medium-term and long-term supply contracts to procure silicon feedstock of different grades with Chinese and international suppliers, which provide us with the ability to meet our future requirements. These medium-term and long-term suppliers include Jiangsu Zhongneng Polysilicon Technology Development Co., Ltd., or Jiangsu Zhongneng, and Changzhou GCL Photovoltaic Technology Co., Ltd., or GCL (Changzhou), both of which are wholly-owned subsidiaries of GCL-Poly Energy Holdings Limited, or GCL-Poly, among others. Our medium-term and long-term contracts have delivery terms beginning in 2008 and ending in 2020 and generally have fixed quantities and variable prices referenced to prevailing market price or a range of fixed prices subject to negotiation. These contracts also require us to make an advance payment of a certain negotiated amount. In 2011 and 2012, due to generally declining polysilicon prices, we successfully renegotiated several medium-term and long-term supply contracts that required us to purchase polysilicon at a predetermined price or quantity to more closely link our purchase costs with market prices.

To secure sufficient feedstock to support our planned sales growth, in March 2008, we entered into an eight-year framework polysilicon supply agreement with Jiangsu Zhongneng, a supplier of polysilicon based in Jiangsu, China. In August 2008, we expanded the scope of the supply of polysilicon under this agreement to wafers. In August 2009, we extended the term of this supply agreement by another five years. In December 2010, Jiangsu Zhongneng assigned all of its obligations and rights under this supply agreement with respect to the wafer supply to GCL (Changzhou), a wafer supplier based in Jiangsu, China. Under a supplemental framework long-term agreement we entered into in March 2010 with Jiangsu Zhongneng, Jiangsu Zhongneng has agreed to supply to us up to an aggregate of 27,220 tons of polysilicon through 2020. Under a supplemental framework long-term wafer supply agreement we entered into with GCL (Changzhou) in January 2011, GCL (Changzhou) has agreed to supply to us wafers sufficient to produce up to an aggregate of 19,737 MW of PV modules over ten years from January 2011 to December 2020, and we have agreed to procure not less than 50% of our outsourced wafer requirement from GCL (Changzhou) each year during the term of the agreement. Under this agreement and its supplemental agreements, the prices of the polysilicon and wafers were initially predetermined subject to periodic adjustments. Due to the volatility of polysilicon prices, we have negotiated actual polysilicon and wafer purchase amounts and prices under our long-term framework agreement with GCL from time to time. For example, in March 2012



and then again in March 2013, we entered into supplemental agreements with GCL (Changzhou) and Jiangsu Zhongneng to modify our total wafer and polysilicon purchase quantities for 2012 and 2013, respectively, among other things. We expect to further negotiate our purchase commitments in the future taking into account market conditions.

In April 2008, in order to encourage the development of the solar power industry in Changzhou, the Changzhou municipal government established the PV Park adjacent to our headquarters, which has attracted and continues to attract PV supply chain component manufacturers. Several of our key suppliers have established or plan to establish production facilities in the PV Park. We believe the relocation of suppliers to the PV Park will help us to realize procurement and logistical advantages, accelerate our cost reduction initiatives, as well as providing synergies for research and development. For example, in 2010 we commenced sourcing wafers and slurry for wafer slicing from the new facilities of several of our vendors located in the PV Park. Sourcing from suppliers located within the PV Park and expanding our “close-in” supply system to cover a greater number of vendors would allow us to collaborate with our vendors for better inventory and production management control, better monitoring of supply quality and easy access to onsite inventory.

## Quality Assurance

Our quality control was set up according to the quality system requirements of ISO 9001:2000. Our quality control consists of three components: incoming inspections through which we ensure the quality of the raw materials that we source from third parties, in-process quality control of our manufacturing processes, and outgoing quality control of finished products through inspection and by conducting reliability and other tests. We possess a nationally recognized quality test laboratory in China that performs product and reliability testing on all of our products.

We have received international certifications for our quality assurance programs, including ISO 9001:2000, which we believe demonstrates our technological capabilities as well as instills customer confidence. The following table sets forth the major certifications we have received and major test standards our products have met as of the date of this annual report.

Certification Test Date	Certification or Test Standard	Relevant Products
December 2007	ISO 9001:2000 quality system certification	Manufacturing and sales of silicon, ingots, casting, silicon wafers, solar cells and PV modules
December 2008	ISO 14001:2004 environmental management system	Manufacturing and sales of silicon, ingots, casting, silicon wafers, solar cells and PV modules
March 2008, May 2008, October 2008, February 2009, April 2009, September 2009, April 2010, December 2010, January 2011, February 2011	ICIM product certification	PV modules sold in Europe
August 2006, June 2007, July 2007, February 2009, April 2009, May 2009, June 2009, November 2009, October 2010, December 2010, February 2011, March 2011, April 2011, May 2011, June 2011, July 2011, November 2011, January 2012, February 2012, December 2012	TÜV Rheinland product certification	PV modules sold in Europe
May 2009, April 2011, June 2011	TÜV SUD product certification	PV modules sold in Europe
May 2010, July 2011, August 2011, May 2012	MCS certification	PV modules sold in UK

<b>Certification Test Date</b>	<b>Certification or Test Standard</b>	<b>Relevant Products</b>
April 2008, February 2010, November 2011, February 2012, November 2012	Golden Sun product certification	PV modules sold in China
<b>Certification Test Date</b>	<b>Certification or Test Standard</b>	<b>Relevant Products</b>
February 2009, May 2009, September 2009, December 2010, November 2011, December 2011, June 2012	KEMCO product certification	PV modules sold in Korea
March 2009, October 2009, May 2010, October 2010, February 2011	JET product certification	PV modules sold in Japan
February 2012	J-pec listing	PV modules sold in Japan
February 2011, September 2011, March 2012, October 2012	Clean Energy Council (CEC)	PV modules sold in Australia
October 2011, April 2012	SII product certification	PV modules sold in Israel
April 2010	ISO/IEC17025 CNAS laboratory accreditation certification	PV product testing center
December 2010	OHSAS18001:2007 occupational health and safety management system certification	Manufacturing and sales of silicon, ingots, casting, silicon wafers, solar cells and PV modules
December 2010	ISO 9001:2008 quality management system certification	Manufacturing and sales of silicon, ingots, casting, silicon wafers, solar cells and PV modules
January 2012	ISO 14001:2004 environmental management system	Designing, manufacturing and sales of silicon, ingots, casting, silicon wafers, solar cells and PV modules
August 2008, July 2009, April 2011, May 2011, June 2011, August 2011, September 2011, January 2012, July 2012, November 2012	UL 1703 certification	PV modules sold in North America
January 2010, March 2010, January 2011, November 2011	CSA certification(UL1703)	PV modules sold in North America
January 2011	OHSAS18001 occupational health and safety management system	Manufacturing and sales of silicon, ingots, casting, silicon wafers, solar cells and PV modules.
July 2012	ISO 14064-1:2006 environmental management system	

Certification Test Date	Certification or Test Standard	Relevant Products
July 2011, October 2011	Ammonia test	Special requirement from customer
May 2011, October 2011, December 2012	Salt mist test	Special requirement from customer
January 2012	ISO9001:2008 Management System Certification	Designing, manufacturing and sales of ingot, casting, silicon wafers, solar cells, PV solar modules; design, installation and service of PV system engineering
December 2011, February 2012	European Module certification	PV modules sold in Italy
September 2012	PAS2050:2011 product carbon footprint certification	TSM-PC05 PV modules TSM-DC/DA01A PV module
September 2012	ISO 14067(DIS) 2012-01-06	TSM-PC05 PV modules TSM-DC/DA01A PV module
November 2012	Client Test Data Program	PV product
December 2012	Sand blast test	PV modules
July 2012, December 2012	PID testing	PC05, PC14

In May 2010, we entered into a strategic partnership agreement with TÜV Rheinland Group, or TÜV Rheinland, Underwriters Laboratories Inc., or Underwriters Laboratories, and China General Certification Center, three of the leading certification bodies. Under the agreement, TÜV Rheinland, Underwriters Laboratories and China General Certification Center will perform product certification tests at our Changzhou PV testing center and other facilities, allowing us to introduce our newest certified product lines in the shortest time to our customers. In October 2012, the testing center for key national PV science and technology laboratories at Trina Solar received the official certification issued by Underwriters Laboratories, which certification recognizes our testing center as Underwriters Laboratories' first global PV customer data program testing center.

In June 2012, we announced that we have achieved what is believed to be a new world record for laboratory-tested multicrystalline module power output, with a standard-size Honey Ultra (1650x992mm) module reaching a peak of 284.7 watts. The record was set using our "Honey" cell technology and the result was confirmed by TÜV Rheinland.

## Customers and Markets

We currently sell our PV modules primarily to power plant developers and operators, distributors, wholesalers and PV system integrators. We focus on different types of clients depending largely upon the demand in specific markets. We work with solar power plant developers and operators, who tend to be large volume purchasers, by supplying PV modules for downstream projects. PV system integrators typically design and sell integrated systems that include our branded PV modules along with other system components. Some of the PV system integrators also resell our modules to other system integrators. Our major customers in 2012 included Enerparc AG, SolarCity, Parabel AG, GCL Solar Energy, Inc., Solartechnik Stiens GmbH & Co. KG and Fluor Corporation. We have a quality customer base as many of our customers are well-known wholesalers and system integrators in their respective markets and are expanding to become multinational PV companies.

A small number of customers have historically accounted for a majority of our net sales. Our top five customers



collectively accounted for approximately 24.9%, 23.3% and 25.1% of our net sales in 2010, 2011 and 2012, respectively. Our largest customer contributed approximately 9.1% of our net sales in 2012.

We currently sell most of our PV modules to customers located in Europe, the United States and China. Solar manufacturers like us have capitalized on government and regulatory policies for the promotion of solar power in many jurisdictions. In order to continue growing our sales and to reduce our exposure to any particular market segment, we intend to broaden our geographic presence and customer base. While Germany continues to be our largest market, we have significantly expanded our sales of PV modules to solar power markets in Europe, North America and Asia, including the United States, China and Italy. As of December 31, 2012, the United States, China, Italy and European countries other than Germany, Italy and Spain accounted for 25.5%, 13.0%, 6.1% and 7.5% of our net sales, showing that we have been increasing our market presence in European countries other than Germany and building our brand as one of the top global solar brands.

To enhance our sales capabilities in the European and American markets, we have regional headquarters in Switzerland; San Jose, California and Santiago, Chile. We began operating from a new Asia Pacific regional headquarters in Singapore in October 2012, we opened new sales and project development offices in Chengdu and Urumqi, China in March 2012 and we opened new sales and business development offices in Ontario, Canada in July 2012 and Santiago, Chile in September 2012, all to support our growing base of customers and to seek out business development opportunities in the regions. We also plan to drive our sales growth through expansion into downstream arrangements in major markets such as system integrations and project developments. We believe these actions will help reduce the effects of reduced incentives from the governments of certain European countries.

The following table sets forth our total net sales by geographical region, based on record country of sales, for the periods indicated:

Region	Year Ended December 31,					
	2010		2011		2012	
	Total Net Sales	Percent	Total Net Sales	Percent	Total Net Sales	Percent
(in thousands, except for percentages)						
Europe						
Germany	\$ 447,316	24.1%	\$ 756,575	36.9%	\$ 428,964	33.1%
Italy	409,561	22.0%	262,492	12.8%	79,533	6.1%
Spain	404,131	21.8%	271,071	13.2%	16,744	1.3%
Others	175,114	9.4%	107,396	5.3%	97,667	7.5%
Europe Total	1,436,122	77.3%	1,397,534	68.2%	622,908	48.0%
China	70,782	3.8%	144,739	7.1%	167,953	13.0%
USA	262,300	14.1%	440,299	21.5%	331,213	25.5%
Others	88,485	4.8%	65,330	3.2%	174,581	13.5%
Total	<u>\$ 1,857,689</u>	<u>100.0%</u>	<u>\$ 2,047,902</u>	<u>100.0%</u>	<u>\$ 1,296,655</u>	<u>100.0%</u>

We conduct our PV module sales typically through short-term contracts with terms of one year or less or, to a lesser extent, long-term sales or framework agreements with terms of generally one to two years. Our short-term contracts provide for an agreed sales volume at a fixed price. Our long-term sales or framework agreements provide for a fixed sales volume or a fixed range of sales volume to be determined generally two to three quarters before the scheduled shipment date. Prices for long-term sales or framework agreements are generally determined one month prior to the start of the quarter of the scheduled shipment date. Compared to short-term contracts, we believe our long-term sales or framework agreements not only provide us with better visibility into future revenues, but also help us enhance our relationships with our customers.

We may require advance payments depending on the credit status of our customer, our relationship with the customer, market demand and the terms of the particular contract. Our contracts with customers stipulate different post-delivery payment schedules based on the credit worthiness of the customer. We have also increased our sales to customers using credit sales, generally with payments due within 120 days. Starting from February 2009, a majority of our overseas sales have been insured by Sinasure. The amount of insurance coverage for each transaction is based on a rating assigned by Sinasure to the customer based on such customer's credit history.

Pursuant to our sales contracts, we provide customers with warranty services. Our PV modules have typically been sold with a five-year warranty for defects in materials and workmanship and a minimum power output warranty for up to 25

years following the date of purchase or installation. In 2011, we extended the product workmanship warranty to ten years and began to guarantee that module power output will not decrease by more than approximately 0.7% per year after the initial year of service.

We seek to better serve our customers or their end-customers by setting up local offices with sales and marketing, sales support and logistics teams close to them. We are also expanding our range of value-added services to customers. We service residential and commercial end-customers through a network of local distributors and system integrator partners. For distributors and system integrators, we provide marketing support, logistics support that minimizes handling and administrative costs, and pre-sale and post-sale supports that include customized product selection, technological and installation support. In January 2012, we announced the offering of a three-pronged service solution featuring complimentary design services, high performance “Honey” modules and the rapid install Trinamount racking system, a proprietary system to mount PV modules onto residential and commercial rooftops. For our customers in the utility sector, we will continue to provide a greater level of pre-sale due diligence and technical input to facilitate their procurement.

## **Sales and Marketing**

Over the years, we have expanded our distribution network globally. While our core solar module customer base continues to expand in Germany, Italy and Spain, we continue to grow our sales and distribution channels into newer and emerging solar power markets, which include China, the United States, Australia, the United Kingdom, India, Israel, Israel and Japan, as well as other markets in Asia, Africa, the Middle East, Latin America and the Caribbean Islands. To grow our sales and reduce exposure to any particular market, we have broadened our geographic presence and diversified our sales among distributors, wholesalers, power plant developers and operators, PV system integrators and regional and national grid operators through increased sales and marketing and customer support efforts. In 2012, the Company launched its “Partner Plus” customer loyalty program in Germany, Italy, the United Kingdom, Austria, Switzerland and the United States

To further expand our distribution network and enhance our sales and delivery capabilities, we have established regional headquarters, warehouse operations and have opened sales offices in the locations listed below. Our localized offices will continue to be supported by our global operations and administration headquarters located in Changzhou, China.

### Global Headquarters

Changzhou, China

### Regional Headquarters

San Jose, California, US (January 2010)

Zurich, Switzerland (January 2010)

Singapore (November 2011)

### Warehouse Operations

Rotterdam, Netherlands (December 2008)

San Jose, California, US (June 2009)

### Sales Offices

Seoul, South Korea (September 2008)

Tokyo, Japan (March 2010)

Abu Dhabi, United Arab Emirates (December 2011)

Sydney, Australia (May 2011)

Chengdu, China (March 2012)

Urumqi, China (March 2012)

Santiago, Chile (September 2012)

Our marketing programs include participation in industry conferences, trade fairs and public relations events. Our sales and marketing group works closely with our research and development and manufacturing groups to coordinate our product development activities, product launches and ongoing demand and supply planning. In May 2010, we became a sponsor and partner of the Renault Formula One Team, which we believe will increase our brand awareness and enhance our marketing efforts.

## **Intellectual Property**

In manufacturing our solar power products, we use know-how available in the public domain and unpatented know-how developed in-house. We rely on a combination of trade secrets and employee contractual protections to establish

and protect our proprietary rights. We believe that many elements of our solar power products and manufacturing processes involve proprietary know-how, technology or data that are not coverable by patents or patent applications, including technical processes, equipment designs, algorithms and procedures. We have taken security measures to protect these elements. All senior research and development personnel employed by us have entered into confidentiality, non-competition and proprietary information agreements with us. These agreements address intellectual property protection issues and require our employees to assign to us all of the inventions, designs and technologies they develop during their terms of employment with us.

As of December 31, 2012, we had 435 issued patents and 406 patent applications pending in China. We obtained an additional 205 patents in 2012. Our issued patents and our pending patent applications mainly relate to technology that we are currently using, including technology relating to improvements to the solar power product manufacturing process and integration of construction elements into our PV modules or solar systems. 21 of our issued patents and patent applications relate to technology that we do not use in our current production of solar power products. As we expand our product portfolio, continue our expansion into solar cell manufacturing and enter into polysilicon manufacturing in the future, we believe that the development and protection of our intellectual property will become more important to our business. We intend to continue to assess appropriate opportunities for patent protection of those aspects of our technology that we believe provide a significant competitive advantage to us.

We have registered as a trademark the logo “Trina” in China, the European Union, Japan, Singapore, Switzerland, Morocco, Taiwan, Thailand, Croatia, Canada, South Korea, the Philippines, Australia, the United States and the United Arab Emirates and Vietnam. We have registered as a trademark the logo “Trinasolar” in China, the United States, Canada, the European Union, Australia, the United Arab Emirates, Croatia, Thailand, the Philippines, Japan, Singapore, Switzerland, Morocco, Taiwan, South Korea, India, Vietnam and Turkey and the logo “TSM” in the European Union, Australia, China, Croatia, Japan, Morocco, South Korea, Singapore, Switzerland, Turkey, the United States and Vietnam. We have pending trademark registration applications for the logos “Trina” and “Trinasolar” in Pakistan, Indonesia and several other countries. We filed a trademark registration application for the logo “天合光能” in the PRC in December 2007 and in Taiwan in September 2009. We also registered as a trademark the logo “MeSolar” in China, Croatia, Singapore, Canada, Morocco, Turkey, the United Arab Emirates, Thailand, the European Union, Taiwan, Japan, Australia and Switzerland and registered as a trademark the logo “YouSolar” in China, the United States, Australia, Morocco, the United Arab Emirates, Taiwan, Japan, South Korea, Croatia, the European Union, Thailand, Philippines, Turkey, Vietnam, Switzerland and Singapore. We have filed trademark registration applications for the logo “Trinasolar 天合光能” in China, the European Union, Croatia, South Korea, Singapore, Japan and several other countries. We have also recently filed European Community Trade Mark (CTM) registration for the logo “Honey” and “Comax” in twenty-seven European Union member states and will extend the registration to other states afterwards. Additionally, we have filed the trademark registration applications for the logos “天合光能,” “天合,” “天和,” “天何,” “天河,” “天禾,” and “天核” individually with the trademark office in the PRC in November 2009, and we also filed the trademark registration applications for the logo “Smart energy together” with the trademark office in the PRC in September 2012. In December 2012, the trademarks “天合光能” and “TrinaSolar” were certified as well-known trademarks of Changzhou city.

## Competition

The market for solar power products is competitive and it evolves quickly. We expect to face increasing competition, which may result in price reductions, reduced margins or loss of market share. We believe that the key competitive factors in the market for PV modules include:

- manufacturing efficiency;
- power efficiency and performance;
- price;
- strength of supplier relationships;
- aesthetic appearance of PV modules; and
- brand name and reputation.

We compete with other PV module manufacturing companies, including dedicated PV manufacturers such as Yingli



Green Energy Holding Co., Ltd., Suntech Power Holdings Co., Ltd., First Solar, Inc. and GCL Solar Energy Technology Holdings Inc. as well as multinational conglomerates such as Sharp Electronic Corporation and Mitsubishi Electric Corporation. Some of our competitors have also become vertically integrated, from polysilicon production, silicon ingot and wafer manufacturing to solar power system integration, such as Renewable Energy Corporation ASA, SolarWorld AG and Yingli Green Energy Holding Co., Ltd. Some of our competitors may have a stronger market position than ours and greater resources than we do. Further, many of our competitors are developing and are currently producing products based on new solar power technologies, such as thin-film technology, which may ultimately have costs similar to, or lower than, our projected costs.

The barriers to entry are relatively low in the PV module manufacturing business, given that manufacturing PV modules is labor intensive and requires limited technology. Because of the scarcity of polysilicon in the past few years, supply chain management and financial strength were the key barriers to entry. As the shortage of polysilicon has eased, these barriers to entry have become less significant and many new competitors may enter the industry and cause the industry to rapidly become over-saturated and eventually leading to industry consolidation. Many mid-stream solar power products manufacturers have been seeking to move downstream to strengthen their position in regional markets. They are expected to leverage on their existing sales capacity as the industry faces challenges posed by the economic downturn. In addition, we may also face new competition from semiconductor manufacturers, several of which have already announced their intention to start production of solar cells. Decreases in polysilicon prices and increases in PV module production could result in substantial downward pressure on the price of PV modules and intensify the competition we face.

### **Environmental Matters**

We believe we have obtained the environmental permits necessary to conduct our business. Our manufacturing processes generate noise, waste water, gaseous wastes and other industrial wastes. However, we have devoted efforts to reduce such wastes to acceptable levels. We have installed various types of anti-pollution equipment in our facilities to reduce, treat and, where feasible, recycle the wastes generated in our manufacturing process. We believe we are currently in compliance with all applicable environmental laws and regulations. Our operations are subject to regulation and periodic monitoring by local environmental protection authorities. If we fail to comply with present or future environmental laws and regulations, we could be subject to fines, suspension of production or a cessation of operations.

### **Insurance**

We maintain property insurance policies with reputable insurance companies for covering our equipment, facilities, buildings and their improvements, and office furniture. These insurance policies cover losses due to fire, earthquake, flood and a wide range of other natural disasters. We maintain director and officer liability insurance for our directors and executive officers. We have limited worldwide product liability insurance coverage for our products manufactured in China. We consider our insurance coverage to be in line with other manufacturing companies of similar size in China. However, significant damage to any of our manufacturing facilities, whether as a result of fire or other causes, could have a material adverse effect on our results of operation. We paid an aggregate of approximately \$4.0 million in insurance premiums in 2012.

Starting from February 2009, a majority of our overseas sales have been insured by Sinasure. The amount of insurance coverage for each transaction is based on a rating assigned by Sinasure to the customer based on such customer's credit history.

### **Regulation**

This section sets forth a summary of the most significant regulations or requirements that affect our business activities in China or our shareholders' right to receive dividends and other distributions from us.

#### ***Renewable Energy Law and Other Government Directives***

In February 2005, China enacted its Renewable Energy Law, which became effective on January 1, 2006 and was amended on December 26, 2009. The Renewable Energy Law sets forth policies to encourage the development and use of solar energy and other non-fossil energy. The law sets forth the national policy to encourage and support the use of solar and other renewable energy and the use of on-grid generation. It also authorizes the relevant pricing authorities to set favorable prices for the purchase of electricity generated by solar and other renewable power generation systems.

The law also sets forth the national policy to encourage the installation and use of solar energy water-heating systems,

solar energy heating and cooling systems, solar PV systems and other solar energy utilization systems. It also provides financial incentives, such as national funding, preferential loans and tax preferences for the development of renewable energy projects. In January 2006, China's National Development and Reform Commission, or NDRC, promulgated two implementation directives of the Renewable Energy Law. These directives set forth specific measures in setting prices for electricity generated by solar and other renewal power generation systems and in sharing additional expenses occurred. The directives further allocate the administrative and supervisory authorities among different government agencies at the national and provincial levels and stipulate responsibilities of electricity grid companies and power generation companies with respect to the implementation of the Renewable Energy Law.

China's Ministry of Construction also issued a directive in June 2005 that seeks to expand the use of solar energy in residential and commercial buildings, and encourages the increased application of solar energy in different townships. In addition, China's State Council promulgated a directive in July 2005 that sets forth specific measures to conserve energy resources.

On September 4, 2006, China's Ministry of Finance and Ministry of Construction jointly promulgated the Interim Measures for Administration of Special Funds for Application of Renewable Energy in Building Construction, which provides that the Ministry of Finance will arrange special funds to support the application of renewable energy in building construction in order to enhance building energy efficiency, protect the ecological environment and reduce the consumption of fossil energy. These special funds provide significant support for the application of solar energy in hot water supply, refrigeration and heating, PV technology and lighting integrated into building construction materials.

In August 2007, the NDRC issued the Medium and Long-term Development Plan for Renewable Energy which describes the national government's financial incentives for the renewable energy industry for the multi-year period ending 2020, with an estimated required investment amount of approximately \$300 billion. The plan also calls for increasing the overall installation capacity for solar energy to 300 MW by 2010 and 1.8 gigawatts, or GW, by 2020. Recent policy statements have indicated that these targets may rise to 400 MW to 500 MW by 2010 and 2 GW by 2020.

On April 1, 2008, the PRC Energy Conservation Law came into effect. Among other objectives, this law encourages the utilization and installation of solar power facilities in buildings for energy-efficiency purposes.

In March 2009, China's Ministry of Finance promulgated the Interim Measures for Administration of Government Subsidy Funds for Application of Solar Photovoltaic Technology in Building Construction, or the Interim Measures, to support the demonstration and the promotion of solar PV applications in China. Local governments are encouraged to issue and implement supporting policies for the development of solar PV technology. These Interim Measures, set forth subsidy funds set at RMB20 per watt for 2009 to cover solar PV systems integrated into building construction that have a minimum capacity of 50 kilowatt peak.

In April 2009, the Ministry of Finance and the Ministry of Housing and Urban-Rural Development jointly issued the "Guidelines for Declaration of Demonstration Project of Solar Photovoltaic Building Applications." These guidelines created a subsidy of up to RMB20 per watt for building integrated PV or BIPV projects using solar-integrated building materials and components and up to RMB15 per watt for BIPV projects using solar-integrated materials for rooftops or walls.

In July 2010, the Ministry of Housing and Urban-Rural Development issued the "City Illumination Administration Provisions" or the Illumination Provision. The Illumination Provisions encourage the installation and use of renewable energy system such as PV systems in the process of construction and re-construction of city illumination projects.

On July 24, 2011, NDRC released the "Notice Regarding the Pricing Policy of the Feed-in Tariffs" (NDRC Pricing [2011] No. 1594), or the Notice. According to the Notice, all solar energy projects that were approved before July 1, 2011 and completed construction and commenced manufacturing before December 31, 2011 shall price their feed-in tariff at RMB1.15 per kilowatt-hour, or kwhr, (tax included), if such price had not been set by NDRC before the date of the Notice. All other solar energy projects, except for the solar energy projects in Tibet which shall still price their feed-in tariff at RMB1.15/kwhr (tax included), shall price at RMB 1/kwhr (tax included). The solar power projects granted through special auction procedures shall follow the auction price, which shall not exceed the relevant prices set forth in the Notice. In addition, according to the Notice, the solar power projects receiving governmental subsidies shall follow certain local feed-in tariff guidance.

On March 1, 2013, China's State Council issued the "Twelfth Five Year Plan." The plan supports the promotion and development of renewable energy, including the solar energy. The plan also encourages the development of solar PV

power stations in the areas with abundant solar power resource.

### ***Environmental Regulations***

We are subject to a variety of governmental regulations related to environmental protection and the prevention and control of water, air, solid waste and noise pollution. The major environmental regulations applicable to us include the Environmental Protection Law of the PRC, the Law of PRC on the Prevention and Control of Water Pollution, Implementation Rules of the Law of PRC on the Prevention and Control of Water Pollution, the Law of PRC on the Prevention and Control of Air Pollution, Implementation Rules of the Law of PRC on the Prevention and Control of Air Pollution, the Law of PRC on the Prevention and Control of Solid Waste Pollution, and the Law of PRC on the Prevention and Control of Noise Pollution and the PRC Law on Appraising Environment Impacts.

### ***Labor Laws and Regulations***

The Work Safety Law, or the WSL, was adopted at the 28th meeting of the Standing Committee of the Ninth People's Congress on June 29, 2002, and was promulgated for implementation as of November 1, 2002. The WSL is applicable to the work safety for entities engaging in manufacturing and business operation activities within the PRC. Such entities must comply with the WSL and other relevant laws and regulations concerning work safety and strengthen the administration of work safety, establish and perfect the system of responsibility for work safety and ensure safe manufacturing conditions.

The PRC Labor Contract Law was promulgated on June 29, 2007 and became effective on January 1, 2008. On September 3, 2008, the PRC government promulgated the Implementing Rules on the PRC Labor Contract Law. On December 28, 2012, the Standing Committee of the National People's Congress issued the amendments to the PRC Labor Contract Law, which will become effective on July 1, 2013. Pursuant to the PRC Labor Contract Law, employers must enter into written labor contracts with employees. Employers must pay their employees wages equal to or above local minimum wage standards, establish labor safety and workplace sanitation systems, comply with government labor rules and standards and provide employees with appropriate training regarding workplace safety. In addition, the PRC Labor Contract Law imposes more stringent requirements on employers with regard to, among others, severance payment and non-fixed-term employment contracts, time limits for probation periods, as well as the duration and the times that an employee can be placed on a fixed-term employment contract. Violations of the PRC Labor Contract Law and the PRC Labor Law may result in liabilities to employees and subject employer to administrative sanctions including fines or, in the case of serious violations, criminal liability.

The PRC regulatory authorities have passed a variety of laws and regulations regarding statutory social welfare benefits, including, among others, the PRC Social Insurance Law, the Regulations of Insurance for Occupational Injury, the Regulations of Insurance for Unemployment, the Provisional Insurance Measures for Maternal Employees, and the Interim Provisions on Registration of Social Insurance. Pursuant to these laws and regulations, companies in China have to make sufficient contributions of statutory social welfare benefits for their employees, including medical care insurance, occupational injury insurance, unemployment insurance, maternity insurance, pension benefits and housing funds. Failure to comply with such laws and regulations may result in supplementary payments, surcharges or fines.

### ***Restriction on Foreign Ownership***

The principal regulation governing foreign ownership of solar power businesses in the PRC is the Foreign Investment Industrial Guidance Catalogue (effective as of January 30, 2012), or the Catalogue. The Catalogue classifies industries into four categories: encouraged, permitted, restricted and prohibited. As confirmed by the government authorities, Trina China, our operating subsidiary, is engaged in an encouraged industry. Trina China is permitted under the PRC laws to be wholly owned by a foreign company. Trina China is, accordingly, also entitled to certain preferential treatment granted by the PRC government authorities, such as exemption from tariffs on equipment imported for its own use.

### ***Tax***

China's parliament, the National People's Congress, adopted the Enterprise Income Tax Law on March 16, 2007. On December 6, 2007, the PRC State Council issued the Implementation Regulations of the Enterprise Income Tax Law, both of which became effective on January 1, 2008. The EIT Law imposes a uniform tax rate of 25% on all PRC enterprises, including foreign-invested enterprises, and eliminates or modifies most of the tax exemptions, reductions and preferential treatments available under the previous tax laws and regulations. Under the EIT Law, enterprises that were established



before March 16, 2007 and already enjoy preferential tax treatments will (i) in the case of preferential tax rates, continue to enjoy the tax rates which will be gradually increased to the new tax rates within five years from January 1, 2008 or (ii) in the case of preferential tax exemption or reduction for a specified term, continue to enjoy the preferential tax holiday until the expiration of such term. In addition, certain enterprises may still benefit from a preferential tax rate of 15% under the new EIT Law if they qualify as “high and new technology enterprises strongly supported by the State,” subject to certain general factors described therein. In September 2008, Trina China obtained the High and New Technology Enterprise Certificate with a valid term of three years starting from 2008. In 2011, Trina China renewed its High and New Technology Enterprise Certificate, effective from 2011 to 2013. Therefore, Trina China is entitled to a preferential income tax rate of 15% from 2008 through 2013 as long as it maintains its qualification as a “high and new technology enterprise strongly supported by the State” under the EIT Law. Also, in 2011, TST obtained the High and New Technology Enterprise Certificate, effective from 2011 to 2013, and is entitled to a preferential income tax rate of 15% during that period.

Pursuant to the Provisional Regulation of China on Value Added Tax and its implementing rules, all entities and individuals that are engaged in the sale of goods, the provision of processing, repairs and replacement services and the importation of goods in China are generally required to pay value added tax, or VAT, at a rate of 17.0% of the gross sales proceeds received, less any deductible VAT already paid or borne by the taxpayer. Further, when exporting goods, the exporter is entitled to a portion or all of the refund of VAT that it has already paid or borne. Imported raw materials that are used for manufacturing export products and are deposited in bonded warehouses are exempt from import VAT.

Under the EIT Law, enterprises organized under the laws of jurisdictions outside China with “de facto management bodies” located within China may be considered PRC resident enterprises and therefore subject to a 25% PRC enterprise income tax on their worldwide income. The implementing rules define “de facto management body” as the management body that exercises full and substantial control and overall management over the business, productions, personnel, accounts and properties of an enterprise. In addition, SAT Circular 82 provides that a foreign enterprise controlled by a PRC company or a PRC company group will be classified as a “resident enterprise” with its “de facto management bodies” located within China if the following requirements are satisfied: (i) the senior management and core management departments in charge of its daily operations function mainly in the PRC; (ii) its financial and human resource decisions are subject to determination or approval by persons or bodies in the PRC; (iii) its major assets, accounting books, company seals, and minutes and files of its board and shareholders’ meetings are located or kept in the PRC; and (iv) more than half of the enterprise’s directors or senior management with voting rights reside in the PRC. On July 27, 2011, the SAT issued the Bulletin 45, which became effective on September 1, 2011, to provide further guidance on the implementation of SAT Circular 82. Bulletin 45 clarifies certain issues related to the determination of PRC resident enterprise status, post determination administration and authorities responsible for determining Offshore incorporated PRC resident enterprise status. Bulletin 45 specifies that when provided with a copy of a Chinese tax resident determination certificate issued by the competent tax authorities from an offshore incorporated PRC resident enterprise, the payer should not withhold 10% income tax when paying Chinese-sourced dividends, interest and royalties to the offshore incorporated PRC resident enterprise.

Although the SAT Circular 82 only applies to offshore enterprises controlled by PRC enterprises and not those controlled by PRC individuals, foreigners or foreign enterprises, the determining criteria set forth in the Identification Circular may reflect the SAT’s general position on how the “de facto management body” test should be applied in determining the tax resident status of offshore enterprises, regardless of whether they are controlled by PRC or foreign enterprises or individuals.

Under the IITL, which was adopted and promulgated at the third meeting of the Standing Committee of the fifth People’s Congress on September 10, 1980 and amended on October 31, 1993, August 30, 1999, October 27, 2005, June 29, December 29, 2007 and June 30, 2011, if we are treated as a PRC resident enterprise, it is possible that non-resident individual investors of our shares or ADSs be subject to PRC individual income tax at a rate of 20% on dividends paid to such investors and any capital gains realized from the transfer of our common shares or ADSs if such dividends or capital gains are deemed income derived from sources within the PRC, except in the case of individuals that qualify for a lower rate under a tax treaty. Under the PRC-U.S. tax treaty, a 10% preferential rate of withholding tax will apply to dividends provided that the recipients are U.S. tax residents that are eligible for the benefits of the PRC-U.S. tax treaty. A non-resident individual is an individual who has no domicile in the PRC and does not stay within the PRC or has stayed within the PRC for less than one year. Pursuant to the IITL and its implementation rules, for purposes of the PRC capital gains tax, the taxable income will be based on the total income obtained from the transfer of our common shares or ADSs minus all the costs and expenses that are permitted under PRC tax laws to be deducted from the income.

Pursuant to SAT Circular 698, issued by the SAT on December 10, 2009, if a non-resident enterprise transfers the equity interests of a PRC resident enterprise indirectly via disposing of the equity interests of an overseas holding company,

or Indirect Transfer, and such overseas holding company is located in a tax jurisdiction that: (i) has an effective tax rate less than 12.5% or (ii) does not tax foreign income of its residents, the foreign investor shall report to the competent tax authority of the PRC resident enterprise this Indirect Transfer. Using a “substance over form” principle, the PRC tax authority may disregard the existence of the overseas holding company if it lacks a reasonable commercial purpose and was established for the purpose of avoiding PRC tax. As a result, gains derived from such Indirect Transfer may be subject to PRC withholding tax at a rate of up to 10%. SAT Circular 698 also provides that, where a non-PRC resident enterprise transfers its equity interests in a PRC resident enterprise to its related parties at a price lower than the fair market value, the relevant tax authority has the power to make a reasonable adjustment to the taxable income of the transaction. SAT Circular 698 is retroactively effective on January 1, 2008.

### ***Foreign Currency Exchange***

Pursuant to the Foreign Currency Administration Rules promulgated in 1996 and amended in 1997 and 2008 and various regulations issued by SAFE, and other relevant PRC government authorities, the Renminbi is freely convertible only to the extent of current account items, such as trade-related receipts and payments, interests and dividends. An enterprise can choose to either keep or sell its foreign exchange income under the current account to financial institutions authorized to engage in foreign exchange settlement or sales business. Capital account items, such as direct equity investments, loans and repatriation of investment, require the prior approval from SAFE or its local counterpart for conversion of Renminbi into a foreign currency, such as U.S. dollars, and remittance of the foreign currency outside the PRC.

Payments for transactions that take place within the PRC must be made in Renminbi. Absent circumstances specified under Chinese laws and regulations, upon approvals from SAFE, an enterprise can choose to either keep or sell its foreign exchange income under capital account to financial institutions authorized to engage in foreign exchange settlement and sales business. On the other hand, foreign-invested enterprises may retain foreign exchange in accounts with designated foreign exchange banks, subject to a cap set by SAFE or its local counterpart.

On August 29, 2008, SAFE promulgated Circular 142, a notice regulating the conversion by a foreign-invested company of foreign currency into Renminbi by restricting how the converted Renminbi may be used. Pursuant to Circular 142, the RMB fund from the settlement of foreign currency capital of a foreign-invested enterprise must be used within the business scope as approved by the examination and approval department of the government, and cannot be used for domestic equity investment unless it is otherwise provided for. Documents certifying the purposes of the RMB fund from the settlement of foreign currency capital, including a business contract, must also be submitted for the settlement of the foreign currency. In addition, SAFE strengthened its oversight of the flow and use of the RMB capital converted from foreign currency registered capital of a foreign-invested company. The use of such RMB capital may not be altered without SAFE’s approval, and such RMB capital may not in any case be used to repay RMB loans if the proceeds of such loans have not been used. Violations of the Circular 142 could result in severe monetary fines or penalties. Furthermore, on November 9, 2010 the SAFE promulgated a notice on relevant issues concerning strengthening the administration of foreign exchange business, which requires the authenticity of settlement of net proceeds from an offshore offering to be closely examined and the net proceeds to be settled in the manner described in the offering documents.

### ***Foreign Exchange in Certain Onshore and Offshore Transactions***

In October 2005, SAFE promulgated a regulation known as Circular No. 75, which states that if PRC residents use assets or equity interests in their PRC entities as capital contributions to establish offshore companies or inject assets or equity interests of their PRC entities into offshore companies to raise capital overseas, they must register with local SAFE branches with respect to their overseas investments in offshore companies. They must also file amendments to their registrations if their offshore companies experience material events involving capital variation, such as changes in share capital, share transfers, mergers and acquisitions, spin-off transactions, long-term equity or debt investments or uses of assets in China to guarantee offshore obligations. Under this regulation, failure to comply with the registration procedures set forth in such regulation may result in restrictions being imposed on the foreign exchange activities of the relevant PRC entity, including the payment of dividends and other distributions to its offshore parent, as well as restrictions on the capital inflow from the offshore entity to the PRC entity.

In May 2011, SAFE issued Circular 19 which provides for detailed operating procedures and specific instructions for SAFE registration under the Circular 75. According to Circular 19, before SAFE accepts the application for remedial registration under Circular 75, SAFE may impose administrative penalties on the PRC resident individuals and the relevant PRC domestic enterprises if: (i) the relevant offshore enterprise has undergone a material change in its assets or equity interests, (ii) such domestic enterprise made any false statement when applied for the SAFE registration, and/or (iii) the

domestic enterprise directly or indirectly controlled by the offshore enterprise has made any overseas payment such as dividend distribution, equity transfer, capital decrease and repayment of shareholder loan since November 1, 2005.

On December 25, 2006, the People's Bank of China promulgated the "Measures for Administration of Individual Foreign Exchange." On January 5, 2007, the SAFE promulgated the Implementation Rules of Measures for Administration of Individual Foreign Exchange. On February 15, 2012, the SAFE promulgated the Individual Foreign Exchange Rules. According to the Individual Foreign Exchange Rules, PRC citizens who are granted shares or share options by a company listed on an overseas stock market according to its employee share option or share incentive plan are required to register with the SAFE or its local counterparts.

### ***Dividend Distribution***

The principal regulations governing distribution of dividends of wholly foreign-owned enterprises include the Wholly Foreign-owned Enterprise Law (1986), as amended by the Decision on Amending the Law of the People's Republic of China on Wholly Foreign-owned Enterprise (2000), and the Implementing Rules of the Wholly Foreign-owned Enterprise Law (1990), as amended by the Decision of the State Council on Amending the Implementing Rules of the Law of the People's Republic of China on Wholly Foreign-owned Enterprise (2001).

Under these regulations, foreign invested enterprises in China may pay dividends only out of their accumulated profits, if any, determined in accordance with Chinese accounting standards and regulations. In addition, wholly foreign-owned enterprises in China are required to set aside at least 10% of their respective after-tax profits based on PRC accounting standards each year, if any, to fund its general reserves fund, until the accumulative amount of such reserves reaches 50% of its registered capital. These reserves are not distributable as cash dividends. Wholly foreign-owned enterprises are also required to allocate a portion of its after-tax profits, as determined by its board of directors, to its staff welfare and bonus funds, which may not be distributed to equity owners. As of December 31, 2012, the restricted portion of our PRC subsidiaries' net assets was \$675.7 million, which consists of their registered capital and statutory reserves.

### ***Mergers and Acquisitions***

On August 8, 2006, six PRC regulatory agencies, including the CSRC, promulgated the M&A Rules which became effective on September 8, 2006 and was amended on June 22, 2009. The M&A Rules, among other things, require offshore special purpose vehicles, formed for overseas listing purposes through acquisitions of PRC domestic companies and controlled by PRC enterprises or individuals, to obtain the approval of the CSRC prior to publicly listing their securities on an overseas stock exchange. On September 21, 2006, the CSRC published a notice specifying the documents and materials that are required to be submitted for obtaining CSRC approval. Based on the advice we received from Fangda Partners, our PRC counsel, we did not seek the CSRC approval in connection with our initial public offering as we believe that this regulation does not apply to us and that CSRC approval is not required because (1) Trina is not a special purpose vehicle formed for the purpose of acquiring a PRC domestic company because Trina China was a foreign-invested enterprise before it was acquired by Trina, and, accordingly, Trina China did not fall within the definition of a PRC domestic company as set forth in the M&A Rules; and (2) such acquisition was completed before the M&A Rules became effective. Uncertainty still exists as to how the M&A Rules will be interpreted and implemented, and the opinion of our PRC counsel is subject to any new laws, regulations, rules and their detailed implementations in the future in any form relating to the M&A Rules.

The regulations also established additional procedures and requirements that could make merger and acquisition activities by foreign investors more time-consuming and complex, including requirements in some instances that MOFCOM be notified in advance of any change-of-control transaction in which a foreign investor takes control of a PRC domestic enterprise.

In February 2011, the State Council promulgated Circular 6, a notice on the establishment of the security review system for mergers and acquisitions of domestic enterprises by foreign investors, which became effective on March 3, 2011. To implement Circular 6, MOFCOM promulgated the MOFCOM Security Review Rules on August 25, 2011 which became effective on September 1, 2011. According to Circular 6 and MOFCOM Security Review Rules, a national security review is required for certain mergers and acquisitions by foreign investors of enterprises relating to national defense and certain mergers and acquisitions by which foreign investors may acquire de facto control of domestic enterprises raising national security concerns. When deciding whether a specific merger or acquisition of a domestic enterprise by foreign investors is subject to the national security review, MOFCOM will look into the substance and actual impact of the transaction and the foreign investors are prohibited from bypassing the national security review requirement by structuring transactions through proxies, trusts, indirect investments, leases, loans, control through contractual arrangements or offshore transactions. In addition, if a merger or acquisition by foreign investors which was not submitted for national security



review, or was determined to have no impact on national security after such review, but thereafter, due to changed elements, including modification of the merger, change of business activities or acquisition transaction or amendment of the relevant agreements or documents and other changes, involves an enterprise relating to national defense or a change of de facto control of a domestic enterprise raising national security concerns such that it becomes subject to national security review, the foreign investor to such merger or acquisition will be required to file an application for national security review with MOFCOM.

### C. Organizational Structure

The following table sets out the details of our subsidiaries as of December 31, 2012.

<u>Name of Entity</u>	<u>Country of Incorporation</u>	<u>Ownership Interest</u>
Changzhou Trina Solar Energy Co., Ltd.	China	100%
Top Energy International Limited	Hong Kong	100%
Trina Solar Korea Limited	Korea	100%
Trina Solar (Singapore) Pte. Ltd.	Singapore	100%
Trina Solar (Luxembourg) Holdings S.A.R.L.	Luxembourg	100%
Trina Solar (U.S.) Inc.	United States	100%
Trina Solar (U.S.) Holding Inc.	United States	100%
Trina Solar (Germany) GmbH	Germany	100%
Trina Solar (Schweiz) AG	Switzerland	100%
Trina Solar (Luxembourg) S.A.R.L.	Luxembourg	100%
Trina Solar (Spain) S.L.U.	Spain	100%
Trina Solar (Italy) S.r.l.	Italy	100%
Trina Solar (Japan) Limited	Japan	100%
Trina Solar Energy Development Pte. Ltd.	Singapore	100%
Trina Solar (Hong Kong) Enterprise Limited	Hong Kong	100%
Trina Solar (Changzhou) Science and Technology Co., Ltd.	China	100%
Trina Solar Energy (Shanghai) Co., Ltd.	China	100%
Trina Solar (U.S.) Development LLC	United States	100%
TP-CA-SOUTH LLC	United States	100%
Trina Solar (Australia) Pty Ltd.	Australia	100%
Trina Solar Middle East Limited	United Arab Emirates	100%
Trina Solar (Italy) Development SPA	Italy	100%
Trina Solar (France) SAS	France	100%
Upper Deerfield TP1 LLC	United States	100%
Upper Deerfield Solar LLC	United States	100%
LightBeam Power Company Gridley Main, LLC	United States	100%
Placer Solar, LLC	United States	90%
Lucania S.r.l.	Italy	100%
Yan Cheng Trina Solar Science & Technology Co., Ltd	China	100%
Changzhou Trina PV Electricity Generation Sys Ltd	China	100%
GWF Henrietta Solar	United States	100%
Jiangsu Trina Solar Electric Power Development Co., Ltd.	China	100%
Trina Solar (Chile) SPA	United States	100%
Wu Wei Trina Solar Electricity Generation Pte Ltd	China	100%
LightBeam Power Company Gridley Main Two LLC	United States	100%
Top Sun 1 srl	Italy	100%
Top Sun2 srl	Italy	100%
Trina Solar (Malaysia) SDN.BHD	Malaysia	100%
Trina Solar (United Kingdom) Limited	United Kingdom	100%
Trina Solar (Canada) Inc.	Canada	100%

### D. Property, Plants and Equipment

All of our research, development and manufacturing of ingots, wafers, cells and PV modules are conducted at our facilities in Changzhou, China, where we occupy a main campus site area of approximately 545,248 square meters for the facilities currently owned and operated by us and a total reserve site area of approximately 297,696 square meters. We do not currently plan to build new facilities to increase our annual manufacturing capacity of cells, ingots, wafers or modules during 2013. See “—B. Business Overview—Manufacturing” for more details. We believe our current and planned facilities will meet our current and foreseeable requirements.

We selectively use automation to enhance the quality and consistency of our finished products and improve efficiency in our manufacturing processes. We use manufacturing equipment purchased primarily from solar equipment suppliers in Europe, North America and Asia, including China and Japan. Other critical equipment is also sourced worldwide. Key equipment used in our manufacturing facilities includes silicon crystal growing furnaces, DSS furnaces, high-precision wafer sawing machines, diffusion furnaces (tube), screen print machine sets and automatic laminators. Set forth below is a list of our major equipment as of December 31, 2012:

<b>Manufacturing Facility</b>	<b>Major Equipment</b>	<b>No. of Units in Operation as of December 31, 2012</b>	<b>Source (Country)</b>
Silicon ingots	Silicon crystal growing furnaces	110	China
	DSS furnaces	166	China, United States
Silicon wafers	Wafer sawing machines	181	Japan, Switzerland
Solar cells	Diffusion furnaces (tube)	61	China, Germany, Netherlands
	Screen print machine sets	64	Italy
PV modules	Automatic laminators	107	China

With respect to encumbrances, as of December 31, 2012, we pledged our equipment of a total carrying value of \$564.2 million to secure repayment of our borrowings of \$351.6 million.

For a discussion of our capital expenditures targeted for our capacity expansion, see “Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Capital Expenditures.”

#### **Item 4A. UNRESOLVED STAFF COMMENTS**

None.

#### **Item 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS**

The following discussion of our financial condition and results of operations is based upon and should be read in conjunction with our consolidated financial statements and their related notes included in this annual report. This report contains forward-looking statements. See “—G. Safe Harbor.” In evaluating our business, you should carefully consider the information provided under the caption “Item 3. Key Information—D. Risk Factors” in this annual report. We caution you that our businesses and financial performance are subject to substantial risks and uncertainties.

##### **A. Operating Results**

##### **Overview**

We are a large-scale integrated solar-power products manufacturer based in China with a global distribution network covering Europe, North and South America and Asia. Since we began our solar-power products business in 2004, we have integrated the manufacturing of ingots, wafers and solar cells for use in our PV module production. Our PV modules provide reliable and environmentally-friendly electric power for residential, commercial, industrial and other applications worldwide.

We produce standard monocrystalline PV modules ranging from 185 W to 210 W in power output and multicrystalline PV modules ranging from 230 W to 310 W in power output. We build our PV modules to general

specifications as well as to our customers' and end-users' specifications. We sell and market our products worldwide, including in a number of European countries, such as Germany, Spain and Italy, where government incentives have accelerated the adoption of solar power. We also target sales in newer and emerging solar power markets, which include China, the United States, the United Kingdom, Australia, India, Israel and Japan, as well as other markets in Asia, Africa, the Middle East, Latin America and the Caribbean Islands. We sell our products to distributors, wholesalers, power plant developers and operators and PV system integrators, including Enerparc AG, SolarCity, Parabel AG, GCL Solar Energy, Inc., Solartechnik Stiens GmbH & Co. KG and Fluor Corporation.

In 2012, our net sales were \$1,296.7 million, compared to \$2,047.9 million in 2011 and \$1,857.7 million in 2010. We recorded a net loss of \$266.6 million in 2012, compared to a net loss of \$37.8 million in 2011 and a net income of \$311.5 million in 2010.

The most significant factors that affect the financial performance and results of operations of our solar power products business are:

- industry demand;
- government subsidies and economic incentives;
- product pricing;
- vertically integrated manufacturing capabilities;
- availability and prices of polysilicon; and
- solar power projects

### ***Industry Demand***

Our business and revenue growth depends on market demand for solar power. Although solar power technology has been used for several decades, the global solar power market has grown significantly only in the past several years. According to Solarbuzz, the global solar power market, as measured by annual volume of modules delivered to installation sites, grew at a compound annual growth rate of approximately 60% from approximately 2.82 GW in 2007 to approximately 29.1 GW in 2012. According to Solarbuzz, annual volume of modules delivered to installation sites may further increase to approximately 45.6 GW in 2015, which we believe will be driven largely by market demand related to falling PV system installation costs, rising grid prices, and government initiatives.

In the fourth quarter of 2008 and the first quarter of 2009, the global solar power industry experienced a precipitous decline in demand due to decreased availability of financing for downstream buyers of solar power products as a result of the global economic crisis. During the same period, increased manufacturing capacity combined with decreased demand and prices of polysilicon caused a decline in the prices of solar power products. In 2011, weakened global economic conditions continued to affect the availability of financing in the European markets, which in turn slowed the demand for solar power projects. In 2012, the overall reduction in government support for traditional European feed-in-tariffs in favor of reduced feed-in-tariffs and power purchase agreements caused a marked decline in the growth rate of global solar demand. These market conditions were exacerbated by an over-supply of solar power products, which adversely affected the prices of solar power products. Consistent with market trend, the average selling price of our PV modules decreased from \$1.75 per watt in 2010 to \$1.33 per watt in 2011 and \$0.78 per watt in 2012. These price erosions have had a negative impact on our revenues and earnings.

The demand for solar power is also influenced by macroeconomic factors such as the global economic downturn, the supply and prices of other energy products, such as oil, coal and natural gas, as well as government regulations and policies concerning the electric utility industry. A decrease in oil prices, for example, may reduce demand for investment in alternative energy. Please see "Item 3. Key Information—D. Risk Factors" for discussions of the risks related to declining industry demand for solar power products.

### ***Government Subsidies and Economic Incentives***

We believe that the near-term growth of the market for on-grid applications depends in large part on the availability

and size of government subsidies and economic incentives. Today, the cost of solar power substantially exceeds the cost of power provided by the electric utility grid in many locations, when upfront system costs are factored into cost per kilowatt. As a result, federal, state and local governmental bodies in many of our primary-targeted markets, notably, Germany, Italy, the United Kingdom and other countries in Europe, China, the United States, Australia, India, Japan, and several Middle Eastern and African countries, have provided subsidies and economic incentives in the form of capital cost rebates, feed-in tariffs, tax credits and other incentives to end users, distributors, system integrators and manufacturers of solar power products. Accordingly, demand for PV modules in our targeted or potential markets is affected significantly by government subsidies and economic incentives. According to Solarbuzz, Germany had the largest PV market in 2012 with a market size of 7.5 GW, which accounted for approximately 26% of the global PV market demand in 2012 and represented an increase of 0.7% from 2011. The United States had a market size of 3.5 GW, an increase of 41.3% from 2011 and accounted for approximately 12% of the global PV market demand in 2012.

In 2012, Germany, Italy and Spain accounted for 33.1%, 6.1% and 1.3% of our net sales, respectively, compared to 36.9%, 12.8% and 13.2%, respectively, in 2011. Despite expiring or declining incentives in several European countries including Germany, Italy and Spain, our net sales generated from Europe remained approximately 48.0% of our total net sales. We seek to counteract the impact of the expiring incentives by enhancing our brand recognition and shifting some of our sales focus to newer and emerging solar power markets, which include China, the United States, the United Kingdom, Australia, India, Israel and Japan, as well as other markets in Asia, Africa, the Middle East, Latin America and the Caribbean Islands. To enhance our global sales capabilities, we established regional headquarters in Switzerland, San Jose, California and Singapore, as well as sales and business development offices in Tokyo, Seoul, Abu Dhabi, Sydney, Chengdu, Urumqi, Ontario, Canada, and Santiago, Chile.

Furthermore, we believe that although the expiration of incentive policies in several European countries will result in a decrease in the average selling price of solar products globally, global demand will have a positive upward trend. According to Solarbuzz, the average sales price of modules in Europe and the United States will decrease to \$0.63 per watt during the fourth quarter of 2013, compared with \$0.74 per watt during the fourth quarter of 2012, but volume globally will increase from 29.1 GW in 2012 to 45.6 GW in 2015. We believe reduced feed-in tariffs will force customers to concentrate even more on quality and price, which will be to our advantage given our favorable rankings by third party sources, such as TÜV Rheinland, a global independent safety and quality testing agency for PV modules, and Photon International, an international solar power magazine.

### ***Product Pricing***

We began selling our PV module products in November 2004. Our PV modules are priced based on the number of watts of electricity they generate as well as the market price per watt for PV modules. We price our standard PV modules based on the prevailing market prices at the time we enter into sales contracts with our customers or when our customers place their purchase orders with us, taking into account the size of the contract or the purchase order, the strength and history of our relationship with each customer, and our silicon-based raw materials costs. In the last several years, the average selling price of our PV modules declined as a result of market trends and conditions. See “—Industry Demand” for more information. The average selling price of our PV modules decreased from \$1.75 per watt in 2010 to \$1.33 per watt in 2011 and \$0.78 per watt in 2012. We plan to mitigate the effects of decreased average selling prices by continuing to lower our silicon and non-silicon processing and supply chain costs, improve our inventory management control and increase sales of high-efficiency and other premium products for which we are able to charge higher prices. We also announced our goal of increasing our downstream systems business to represent approximately 50% of our total annual revenues by 2015.

We conduct our PV module sales typically through short-term contracts with terms of one year or less or, to a lesser extent, long-term sales or framework agreements with terms of generally one to two years. Our short-term contracts provide for an agreed sales volume at a fixed price. Our long-term sales or framework agreements provide for a fixed sales volume or a fixed range of sales volume to be determined generally two to three quarters before the scheduled shipment date. Prices for long-term sales or framework agreements are generally determined one month prior to the start of the quarter of the scheduled shipment date. Compared to short-term contracts, we believe our long-term sales or framework agreements not only provide us with better visibility into future revenues, but also help us enhance our relationships with our customers. Our contracts with customers stipulate different post-delivery payment schedules based on the credit worthiness of the customer. We have also increased our sales to customers using credit sales, generally with payments due within 120 days. Starting from February 2009, a majority of our overseas sales have been insured by Sinasure. The amount of insurance coverage for each transaction is based on a rating assigned by Sinasure to the customer based on such customer's credit history.



### ***Flexible Vertically Integrated Manufacturing Capabilities***

We believe that our flexible vertical integration strategy has allowed us, and will continue to allow us, to capture value throughout the solar power product value chain. Our flexible vertically integrated business model enables us to:

- reduce excess costs, such as those associated with packaging and transportation, and the breakage loss that usually occurs during shipment between various production locations;
- achieve better quality control of our products;
- shorten production cycle and improve value chain coordination;
- discontinue excess reliance on toll manufacturing;
- capture upstream or downstream profit margins; and
- adjust our capacity expansion plan by outsourcing certain products from third parties when we can obtain good prices.

In 2008 and 2009, we met nearly all of our solar cell needs with our in-house production capabilities. Starting in 2010, we fulfilled some of our ingot and wafer requirements by sourcing and obtaining toll services from our strategic partners. In 2012, we sourced both wafers and cells from our suppliers and strategic partners in order to fill the gap between our PV cell and module manufacturing capacity and our ingot and wafer manufacturing capacity and to achieve import cost advantages to certain markets. As a result, we have developed relationships with various domestic and international suppliers of ingots and wafers.

### ***Availability and Prices of Polysilicon***

Polysilicon is an essential raw material for our business. We purchase polysilicon from our network of over ten suppliers. We have entered into long-term contracts with our principal suppliers of polysilicon, including several leading domestic and international producers, to secure favorable pricing for the majority of our raw material costs through long-term supply agreements.

Increases in the price of polysilicon have in the past increased our production costs and impacted our cost of goods sold and net income. According to Solarbuzz, the average long-term supply contract price of polysilicon increased from approximately \$60-\$65 per kilogram delivered in 2007 to \$60-\$75 per kilogram in 2008. In addition, according to Solarbuzz, spot prices for solar grade polysilicon were in the range of \$230-\$375 per kilogram for most of the first half of 2008 and rose to a peak of \$450-\$475 per kilogram by mid-2008. According to Solarbuzz, the average prices of long-term polysilicon supply contracts were \$52-\$57 per kilogram, approximately \$38 per kilogram and approximately \$22-\$24 per kilogram during the fourth quarters of 2010, 2011 and 2012, respectively. According to Solarbuzz, spot prices for solar grade polysilicon were \$75-\$85 per kilogram, approximately \$30 per kilogram and approximately \$16-\$17 per kilogram during the fourth quarters of 2010, 2011 and 2012, respectively.

We purchase polysilicon from silicon distributors and silicon manufacturers by contract. For procurement of polysilicon, we enter into short-term, medium-term and long-term contracts. Our short-term contracts have terms of no more than one year each. The contracts provide for a variable price and fixed quantity and generally require prepayment prior to shipment. Most of the contracts give us the right to reject any shipment by our suppliers that does not meet our quality standards based on grade levels, such as semiconductor grade or solar grade, of the polysilicon. The contracts also specify a time period during which we can inspect the goods to ensure their quality. Our medium-term contracts have terms ranging from one to three years, and our long-term contracts have terms ranging from five to ten years. Our medium-term and long-term suppliers include Jiangsu Zhongneng and GCL (Changzhou), among others. These medium-term and long-term contracts have delivery terms beginning in 2008 and ending in 2020 and generally have fixed quantities and variable prices referenced to prevailing market price or a range of fixed prices subject to negotiation. These contracts also require us to make an advance payment of a certain negotiated amount. As a result of the general decline in the prices of polysilicon in late 2008 and early 2009, we renegotiated most of our medium-term and long-term contracts to reduce the purchase price, thereby reducing our costs. In 2011 and 2012, due to fluctuating polysilicon prices, we further successfully renegotiated several medium-term and long-term supply contracts to reduce our purchase price to more closely link our purchase costs with market prices, thereby reducing our costs.

Suppliers of polysilicon typically require customers to make payments in advance of shipment. Some of our long-term suppliers require us to make a prepayment at a certain percentage of the order value prior to shipping. Due to the availability of polysilicon, prepayment as a percentage of the entire contract has been reducing.

### ***Solar Power Projects***

Many solar power projects are being commissioned in Europe, China, the United States and other countries, largely driven by government mandates that require electric utility companies to use renewable energy to produce a certain percentage of their power by a future date. In 2009, we began to develop commercial solar power systems for these solar power projects on our own with the intent to sell them to third-parties upon completion of their development. Once construction on the project is completed, the project begins operating and generating power. Power is sold on the power grid, which may generate revenues for us, depending upon the project structure and whether there is a predetermined or committed purchaser. Once a purchaser for the project has been identified, we then complete the sale to the purchaser.

As of December 31, 2012, we had total solar power projects of approximately \$41.0 million, including both projects operated by us and projects either completed or in construction for future sales. We completed construction of a solar power project located in four different sites in the Basilicata region of Italy, which has 2 MW of installed PV systems and has connected to the local electricity grid to generate power with total assets of \$9.6 million. We are also in the early stages of development on several other solar power projects, including partially completed projects in the United States and China. We intend to begin construction on projects in China, the United States and the United Kingdom during 2013.

### **Overview of Financial Results**

We evaluate our business using a variety of key financial measures.

#### ***Net Sales***

Our net sales are net of business tax, VAT and returns and exchanges, as applicable. We began to generate net sales primarily from the sales of PV modules in November 2004. We generated revenues from other products and services such as system integration prior to 2006, but such revenues are not significant after 2006. Factors affecting our net sales include average selling price per watt, market demand for our PV modules, unit volume shipped and our production capacity expansion.

In 2010, 2011 and 2012, sales to our top five customers accounted for approximately 24.9%, 23.3% and 25.1% of our net sales, respectively, and sales to our largest customer accounted for 9.5%, 8.9% and 9.1% of our net sales, respectively.

We have historically sold most of our PV modules to customers located in Europe, in particular Germany, Italy and Spain. In an industry in which demand is significantly impacted by government incentives and policies, Germany, Italy and Spain were historically the largest solar power products markets and through 2012 accounted for the largest concentrations of our sales. In each of the last three years, Germany was the largest solar power products market in the world and accounted for a major portion of our sales. We expect the percentage contribution of our European sales to decrease due to the reduction of feed-in tariffs in mature PV markets, such as Germany, Italy and Spain. We have also expanded our business presence in newer and emerging solar power markets, which include China, the United States, the United Kingdom, Australia, India, Israel, and Japan, as well as other markets in Asia, Africa, the Middle East, Latin America and the Caribbean Islands. Some of these markets have experienced rapid growth due to government incentives and mandates that require electric utility companies to use renewable energy to produce a certain percentage of their power by a future date, and because the decreased costs of grid-scale solar projects make such projects more competitive with conventional energy forms. We expect to continue to expand our customer base geographically in 2013.

The following table sets forth our total net sales by geographical region, based on record country of sales, for the periods indicated:

Region	Year Ended December 31,					
	2010		2011		2012	
	Total Net sales	Percent	Total Net sales	Percent	Total Net sales	Percent
(in thousands, except for percentages)						
Europe						
Germany	\$ 447,316	24.1%	\$ 756,575	36.9%	\$ 428,964	33.1%
Italy	409,561	22.0%	262,492	12.8%	79,533	6.1%
Spain	404,131	21.8%	271,071	13.2%	16,744	1.3%
Others	175,114	9.4%	107,396	5.3%	97,667	7.5%
Europe Total	1,436,122	77.3%	1,397,534	68.2%	622,908	48.0%
China	70,782	3.8%	144,739	7.1%	167,953	13.0%
United States	262,300	14.1%	440,299	21.5%	331,213	25.5%
Others	88,485	4.8%	65,330	3.2%	174,581	13.5%
Total	<u>\$ 1,857,689</u>	<u>100.0%</u>	<u>\$ 2,047,902</u>	<u>100.0%</u>	<u>\$ 1,296,655</u>	<u>100.0%</u>

### Cost of Goods Sold

Our cost of goods sold consists primarily of:

- *Polysilicon raw materials.* We purchase polysilicon from various suppliers, including silicon distributors, silicon manufacturers, semiconductor manufacturers and silicon processing companies.
- *Other direct materials.* Such materials include direct materials for the production of PV modules such as plastic, metallic pastes, tempered glass, laminate material, connecting systems and aluminum frames.
- *Sourcing costs.* We fulfill some of our wafer requirements by sourcing from strategic partners. We will continue to source wafers through medium-term and long-term supply agreements in order to fill the gap between our PV cell and module manufacturing capacity and our wafer manufacturing capacity.
- *Toll manufacturing.* Prior to 2008, we entered into toll manufacturing arrangements by providing wafers to toll manufacturers for processing and receiving solar cells from them in return. The toll manufacturing cost is capitalized as inventory, and recorded as a part of our cost of goods sold when our finished PV modules are sold. Starting from 2010, we were able to meet nearly all of our solar cell needs with our in-house production capabilities and we discontinued our reliance on toll manufacturers for processing solar cells. In 2010, 2011 and 2012, we fulfilled some of our ingot and wafer requirements by obtaining toll services from our strategic partners.
- *Overhead.* Overhead costs include equipment maintenance and utilities such as electricity and water used in manufacturing.
- *Direct labor.* Direct labor costs include salaries and benefits for our manufacturing personnel.
- *Depreciation of facilities and equipment.* Depreciation of manufacturing facilities and related improvements is provided on a straight-line basis over the estimated useful life of 10 to 20 years and commences from the date the facility is ready for its intended use. Depreciation of manufacturing equipment is provided on a straight-line basis over the estimated useful life of five to ten years, commencing from the date that the equipment is placed into productive use.

Our cost of goods sold is affected by our ability to control raw material costs, to achieve economies of scale in our operations, and to efficiently manage our supply chain, including our successful execution of our vertical integration strategy and our judicious use of toll manufacturers or third-party wafer suppliers to fill potential shortfalls in production capability along the supply chain.

### Gross Margin

Our gross margin is affected by changes in our net sales and cost of goods sold. Our gross margins decreased from

31.5% in 2010 to 16.2% in 2011 and 4.4% in 2012. The margin decrease from 2011 to 2012 was primarily due to decreases in our average sales price that were greater than both decreases in polysilicon purchase prices and reductions in per watt non-silicon manufacturing costs in 2012. The margin decrease from 2010 to 2011 was primarily due to a decrease in average selling price of our PV modules, offset in part by increased shipping volume and decreased polysilicon and non-polysilicon material prices. We may continue to face margin compression in the sales of PV modules if the average selling price of our PV modules continues to decline and we are unable to lower our cost of goods sold due to our existing, higher priced medium-term and long-term contract. As our PV module business expands, we believe additional economies of scale will help to improve our margins to offset negative market trends.

### ***Operating Expenses***

Our operating expenses include selling expenses, general and administrative expenses and research and development expenses.

#### *Selling expenses*

Selling expenses consist primarily of provisions for product warranties, outbound freight, employee salaries, pensions, share-based compensation expenses and benefits, travel and other sales and marketing expenses. Our PV modules have typically been sold with a five-year warranty for defects in material and workmanship and a minimum power output warranty of up to 25 years following the date of purchase or installation. In 2011, we extended the product workmanship warranty to ten years and began to guarantee that module power output will not decrease by more than approximately 0.7% per year after the initial year of service. We accrue the estimated cost of warranty based on 1% of the revenues generated from PV modules, consistent with the average industry level. Our selling expenses as a percentage of net sales increased from 4.1% in 2010 to 4.9% in 2011 and 9.2% in 2012 due to lower revenues as a result of lower average selling price and increased sales efforts, including hiring additional sales personnel, targeting of new markets, establishing representative offices and subsidiaries and additional marketing programs to continue to build our brand. We expect our variable selling expenses to increase in 2013 at a rate consistent with the increase in the volume of our solar module shipments.

#### *General and administrative expenses*

General and administrative expenses consist primarily of salaries and benefits for our administrative personnel, compliance related consulting and professional fees and travel expenses. Our general and administrative expenses as a percentage of net sales increased from 3.9% in 2010 to 7.7% in 2011, due to the establishment of local operations in international markets and provision for doubtful receivables for certain customers, and increased further to 13.6% in 2012, mainly due to lower revenues as a result of lower average selling price and more provision for doubtful receivables for certain specific customers. We expect our general and administrative expenses to decrease in 2013 as we realize the full effects of our organizational restructuring and streamlining performed in the second half of 2012, which included initial headcount reductions and other cost control measures, together with management efforts to mitigate receivable collection risk.

#### *Research and development expenses*

Research and development expenses consist primarily of costs of raw materials used in our research and development activities, salaries and benefits for research and development personnel, share-based compensation, outsourced research contracts and prototype and equipment costs relating to the design, development, testing and enhancement of our products and manufacturing process. In 2012, our research efforts focused on high efficiency multi- and mono-crystalline cells, p-type and n-type solar cells, high reliability modules (such as double glass modules), quick-install PV module kits and improved ingot crystallization technologies. In 2011, our research efforts focused on high efficiency cell and module technologies and their manufacturing processes. In 2010, our research efforts focused on further increasing our cell efficiencies and improving the performance of our module. In June 2010, we announced our research agreement with Solar Energy Research Institute of Singapore to develop an all-back-contact high-efficiency silicon wafer solar cell using our monocrystalline wafers. In April 2011, we entered into a three year research agreement with the Australian National University to develop high efficiency n-type silicon solar cells with conversion efficiencies of 20% for mass production. In particular, we have invested significantly in research and development of solar cell technology in order to achieve high conversion efficiency rates required for our advanced solar cells and modules, such as our "Honey" cell technology. As of December 31, 2012, we had achieved an independently confirmed conversion efficiency of monocrystalline cells of up to 19.9% and multicrystalline cells of up to 19.6% on a third-party laboratory test. We also designed products with specific applications. We have developed a variety of PV solar power product applications based on our existing monocrystalline



and multicrystalline technologies. These products and solutions include Trinamount mounting solution, a proprietary system to mount PV modules onto residential and commercial rooftops, Trinasmart, which provides maximizing and monitoring technologies to maximize roof space utilization and overall power output, architecturally-friendly modules of different colors, shapes and sizes, such as black modules, square monocrystalline modules and large-size modules. We will continue to expand and promote innovation in our process technologies of manufacturing ingots, wafers, cells and PV modules. In particular, we plan to focus on improving cell efficiency and reducing our production costs by enhancing manufacturing yields, which enable us to deliver higher-efficiency products at a lower cost. To enhance the quality and performance of our solar products, our research and development efforts also include leveraging on existing and newer technologies and supply chain options to optimize our silicon and non-silicon feedstock and processing costs.

### **Share-based Compensation Expenses**

We adopted our share incentive plan in July 2006 and a total of 40,464,927 restricted shares and 99,161,181 share options were outstanding as of December 31, 2012. For a description of the restricted shares and share options granted, including the exercise prices and vesting periods thereof, see “Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers—Share Incentive Plan.” We are required to recognize share-based compensation as compensation expense in our statement of operations based on the fair value of equity awards on the date of the grant, with the compensation expense recognized on a straight-line basis over the period in which the recipient is required to provide services to us in exchange for the equity award. For restricted shares granted to our employees, we record share-based compensation expense for the excess of the fair value of the restricted shares at the date of the grant over the purchase price that a grantee must pay to acquire the shares during the period in which the shares may be purchased. We have categorized these share-based compensation expenses in our (i) cost of goods sold; (ii) selling expenses; (iii) general and administrative expenses; and (iv) research and development expenses, depending on the job functions of the grantees of our restricted shares and share options.

The following table sets forth the allocation of our share-based compensation expenses both in absolute amount and as a percentage of total share-based compensation expenses.

	Year Ended December 31,								
	2010		2011		2012				
	(in thousands, except for percentages)								
Cost of goods sold	\$	63	1.1%	\$	58	0.7%	\$	49	0.8%
Selling expenses		484	8.1%		683	8.6%		628	10.5%
General and administrative expenses		5,131	86.1%		6,895	86.7%		5,029	83.8%
Research and development expenses		278	4.7%		322	4.0%		293	4.9%
Total share-based compensation expenses	\$	5,955	100.0%	\$	7,958	100.0%	\$	5,999	100.0%

### **Taxation**

We operate mainly in the PRC, Hong Kong, Singapore, Switzerland, United States and Japan.

The EIT Law, which became effective on January 1, 2008, imposes a uniform tax rate of 25% on all PRC enterprises, including foreign-invested enterprises, and eliminates or modifies most of the tax exemptions, reductions and preferential treatments available under the previous tax laws and regulations. Under the EIT Law, enterprises that were established before March 16, 2007 and already enjoy preferential tax treatments will (i) in the case of preferential tax rates, continue to enjoy those tax rates which will be gradually increased to the new tax rates within five years from January 1, 2008 or (ii) in the case of preferential tax exemption or reduction for a specified term, continue to enjoy the preferential tax holiday until the expiration of such term.

In addition, certain enterprises may still benefit from a preferential tax rate of 15% under the new EIT Law if they qualify as “high and new technology enterprises strongly supported by the State,” subject to certain general factors described therein. In September 2008, Trina China obtained the High and New Technology Enterprise Certificate with a valid term of three years starting from 2008. In 2011, Trina China renewed its High and New Technology Enterprise Certificate, effective from 2011 to 2013. Therefore, Trina China is entitled to a preferential income tax rate of 15% from 2008 through 2013 as long as it maintains its qualification as a “high and new technology enterprise strongly supported by the State” under the EIT Law. Also, in 2011, TST obtained the High and New Technology Enterprise certificate, effective from 2011 to 2013, and is entitled to a preferential income tax rate of 15% during that period.

Under the current laws of the Cayman Islands, our company is not subject to tax on income or capital gain.

Our wholly-owned subsidiary, Trina Solar (Hong Kong) Enterprise Limited was subject to Hong Kong profit tax at a rate of 16.5% in 2010, 2011 and 2012, respectively. No Hong Kong profit tax has been provided as our subsidiary has not had assessable profit that was earned in or derived from Hong Kong during the years presented.

Our wholly-owned subsidiaries, Trina Solar (Singapore) Pte. Ltd., and Trina Solar Energy Development Pte. Ltd., were subject to Singapore profit tax at a rate of 17% in 2010, 2011, respectively. In 2012, Trina Solar (Singapore) Pte. Ltd. is subject to Singapore profit tax at a rate of 17% and Trina Solar Energy Development Pte. Ltd. is subject to a preferential Singapore profit tax at an effective rate of 5%, respectively. No Singapore profit tax has been provided as our subsidiaries did not have assessable profit that was earned in or derived from Singapore during the year presented.

Our wholly-owned subsidiary, Trina Solar (Schweiz) AG was subject to Switzerland profit tax at preferential tax rate of 10.12% in 2010 and 7.65% in 2011 and 2012, respectively.

The statutory tax rate in Luxemburg is 28.8%. Our wholly-owned subsidiary, Trina Solar (Luxembourg) S.A.R.L., has filed all necessary documents to obtain the ruling of participation exemption on the gain in Luxembourg. Subject to the participation exemption ruling agreed by the tax bureau, the capital gains tax rate derived from the disposal of projects is 0%.

Our wholly-owned subsidiaries, Trina Solar (U.S.) Inc., Trina Solar (U.S.) Development LLC and TP-CA-SOUTH LLC were subject to U.S. profit tax at a rate of 40% in each of 2010, 2011 and 2012.

Our wholly-owned subsidiary, Trina Solar (Japan) Limited was subject to Japan profit tax at a rate of 40% in each of 2010, 2011 and 2012.

Our wholly-owned subsidiary, Trina Solar (Germany) GmbH was subject to Germany profit tax at a rate of 32.9% in each of 2010, 2011 and 2012.

Our wholly-owned subsidiary, Trina Solar (Italy) S.R.L. was subject to Italian profit tax at a rate of 31.4% in each of 2010, 2011 and 2012.

Our wholly-owned subsidiary, Trina Solar (Spain) S.L.U. was subject to Spanish profit tax at a rate of 30.0% in each of 2010, 2011 and 2012.

We make an assessment of the level of authority for each of our uncertain tax positions (including the potential application of interests and penalties) based on their technical merits, and have measured the unrecognized benefits associated with such tax positions. As of December 31, 2010, the amount of gross unrecognized tax benefits was \$2.3 million. The aforementioned liability is recorded in liability for uncertain tax positions in the consolidated balance sheet. In accordance with our policies, we accrue and classify interest and penalties related to unrecognized tax benefits as a component of our income tax provision. In 2011, the unrecognized tax benefits were settled pursuant to an Advance Pricing Agreement between Trina China and Trina Solar (Schweiz) AG which was approved by the local tax bureau. As of December 31, 2012, the amount of gross unrecognized tax benefits was nil.

### **Critical Accounting Policies**

We prepare our consolidated financial statements in accordance with U.S. GAAP which requires us to make judgments, estimates and assumptions that affect (i) the reported amounts of our assets and liabilities, (ii) the disclosure of our contingent assets and liabilities at the end of each reporting period and (iii) the reported amounts of revenues and expenses during each reporting period. We continually evaluate these estimates based on our own historical experience, knowledge and assessment of current business and other conditions, our expectations regarding the future based on available information and reasonable assumptions, which together form our basis for making judgments about matters that are not readily apparent from other sources. Since the use of estimates is an integral component of the financial reporting process, our actual results could differ from those estimates. Some of our accounting policies require a higher degree of judgment than others in their application.

When reading our consolidated financial statements, you should consider (i) our selection of critical accounting policies, (ii) the judgment and other uncertainties affecting the application of such policies and (iii) the sensitivity of reported results to changes in conditions and assumptions. We believe the following accounting policies involve the most

significant judgments and estimates used in the preparation of our consolidated financial statements.

### ***Revenue Recognition***

We recognize revenues for product sales when persuasive evidence of an arrangement exists, delivery of the product has occurred and title and risk of loss has passed to the customer, the sales price is fixed or determinable, and the collectability of the resulting receivable is reasonably assured. Our sales agreements typically contain our customary product warranties but usually do not contain post-shipment obligations or any return or credit provisions. We recognize sales of our PV modules based on the terms of the specific sales contract. Generally, we recognize sales when we have delivered our products to our customers' designated point of shipment, which may include commercial docks or commercial shipping vessels.

In 2009, in response to the financing constraints, our customers requested longer credit terms. As a result, we began granting extended credit terms to customers with whom we had positive historical collection experience and overall creditworthiness. In addition, some of our customers pay us through drawn upon acceptance, open account and letter of credit terms, which typically take 90 to 120 days to process in order for us to be paid. To assess the creditworthiness of our customers, we generally obtain credit information from reputable third-party sources, including Dunn & Bradstreet and insurance companies that ultimately insure us against customer credit default. Our senior management also performs on-site customer visits, monitors customer payments and adjusts customer credit limits as appropriate. Using the information collected, we further evaluate the potential effect of a delay in financing on the customers' liquidity and financial position, their ability to draw down financing as well as their ability and intention to pay should it not obtain the related financing. Based on this analysis, we determine what credit terms, if any, to offer to each customer individually. If our assessment indicates a likelihood of collection risk, we do not sell the products or sell on a cash or prepayment basis. Therefore, based on our strict credit assessment, we attempt to conduct business with those customers we believe have the ability and intent to pay.

Revenue recognition for a given solar power project is dependent on the structure of the agreement and our intention on holding the project asset. For all our existing project assets, we have gained control of land or land rights. If we hold the project asset with the intention of developing it for sale, it accounts for the project following the provisions of real estate accounting. Under the provisions of real estate accounting, we recognize revenue and the corresponding costs once the sale is consummated, the buyer's initial and any continuing investments are adequate, the resulting receivables are not subject to subordination and we have transferred the customary risk and rewards of ownership to the buyer. In general, the sale is consummated upon the execution of an agreement documenting the terms of the sale and a minimum initial payment by the buyer to substantiate the transfer of risk to the buyer. As a result, depending on the value of the initial and continuing payment commitment by the buyer, we generally align the revenue recognition and release of project assets to cost of sale with the receipt of payment from the buyer. If we hold the project developed for use, the project asset is deemed as an operating asset, and the revenue from connection to the grid, as well as any other revenue generated by the solar power project prior to its sale, would be classified as operating revenue for the Company. Once the operating asset is sold to the buyer, the proceeds from the sale of the solar power project would be classified as gain/loss on sale of asset.

### ***Warranty Cost***

It is customary in our business and industry to warrant or guarantee the performance of our solar module products at certain levels of power output for extended periods. Our PV modules have typically been sold with a five-year warranty for defects in material and workmanship and a minimum power output warranty of up to 25 years following the date of delivery or installation. In 2011, we extended the product workmanship warranty to ten years and began to guarantee that module power output will not decrease by more than approximately 0.7% per year after the initial year of service. If a solar module is defective, we will either repair or replace the module at our discretion. Warranty costs primarily consist of replacement costs for parts and materials and labor costs for maintenance personnel.

We maintain warranty reserves (recorded as accrued warranty costs) to cover potential liabilities that could arise from our warranties. Due to our limited solar module manufacturing history, we do not have a significant history of warranty claims. Our accrued warranty cost reflects our best estimate of the probability of incurring warranty claims and costs associated with those warranty claims. These significant estimates are determined based on a number of factors, primarily including (1) an ongoing analysis of our actual historical costs incurred in connection with our warranty claims, (2) an assessment of our competitors' accrual and claim history and (3) analysis of academic research results, available from industry research publications and papers, and other assumptions that we believe to be reasonable under the circumstances. Based on the results of analysis and technical testing, the revision to our warranty policy in June 2011 did not have a material effect on our warranty accrual rate. We acknowledge that such estimates are subjective and we will continue to

analyze our claim history and the performance of our products compared to our competitors and future academic research results to determine whether the accrual is appropriate. To the extent that actual warranty costs differ from the estimates, or our expectations of future costs change, we will prospectively revise our accrual rate and/or the accrual balance. Such adjustments could have a material effect on our consolidated results of operations. For example, an increase or decrease of 0.1% accrual rate (i.e., to 1.1% or 0.9%) would have resulted in an in corresponding increase or decrease in warranty expense of \$1.2 million for the year ended December 31, 2012.

### ***Impairment of Long-lived Assets***

We evaluate our long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. These events include but are not limited to significant current period operation or cash flow losses associated with the use of a long-lived asset or group of assets combined with a history of such losses, significant changes in the manner of use of assets and significant negative industry or economic trends. If circumstances require a long-lived asset or asset group be tested for possible impairment, we first compare undiscounted cash flows expected to be generated by that asset or asset group to its carrying amount. If the carrying amount of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, an impairment is recognized to the extent that the carrying amount exceeds its fair value. The determination of fair value of the intangible and long lived assets acquired involves certain judgments and estimates. These judgments can include, but are not limited to, the cash flows that an asset is expected to generate in the future. Future cash flows can be affected by factors such as changes in global economies, business plans and forecast, regulatory developments, technological improvements, and operating results. Any impairment write-downs would be treated as permanent reductions in the carrying amounts of the assets and a charge to operations would be recognized. We did not recognize any loss on impairment of long-lived assets for the years ended December 31, 2010, 2011 and 2012.

Generally, our actual shipments for a given year are lower than the year-ending annual manufacturing capacity for that year. We believe that there is sufficient evidence that demand for our PV products will increase. We view under-utilization of our capacity as a potential indicator of impairment, and we will continue to evaluate our capacity utilization in determining whether our assets are recoverable. However, we have effectively utilized most, if not all, of our capacity in the past and have had to outsource some of our production in order to meet demand.

### ***Allowance for Doubtful Accounts and Provision for Losses of Advances to Suppliers***

Before conducting business with customers, we assess and evaluate customer creditworthiness which was primarily based on information provided by third party credit rating agencies, validation of the project specifications with the customers and their financing banks, and customer onsite visits by senior management. We review the collectability of accounts receivable on a quarterly basis and provide allowances when there is doubt as to collectability. In addition to the specific allowance applied on the balance of individual customers, we group the remaining receivables without specific allowance based on overdue aging. An estimated loss percentage is then applied to each overdue aging group based on historical collection experiences, previous loss history and current credit conditions. During the fiscal years of 2011 and 2012 when the solar industry has been experiencing continuous declines in selling price and stagnated operating and financing cash flows, we have been focusing our assessment and evaluation much more on certain specific customers with significant doubt to the collectability of their past due balances based on a number of factors, including the long-overdue aging of the receivables, the customer's current ability to pay, past payment patterns and their failure to adhere to previously negotiated repayment schedules, as well as the market conditions in Europe and United States, and how those conditions may affect the relevant customers. Based on such assessment, we made provision for doubtful recoveries totaling \$5.4 million, \$26.6 million and \$61.4 million during the years ended December 31, 2010, 2011 and 2012, respectively, against the accounts receivable.

With respect to advances to suppliers, who are primarily suppliers of silicon and wafer raw materials, we perform ongoing credit evaluations of our suppliers' financial conditions. Some of our suppliers require prepayments and our prepayments are recorded either as current portion of advances to suppliers, if they are expected to be utilized within 12 months of each balance sheet date, or as advances to suppliers, net of current portion, if they represent the portion expected to be utilized after 12 months. Based on such assessment, we made provision for potential losses of advances to suppliers totaling \$0.2 million, \$9.5 million and \$2.8 million during the years ended December 31, 2010, 2011 and 2012 against the advances to suppliers, respectively, for balances paid to vendors who did not conduct delivery as scheduled so that we consider the recoverability is remote. We generally do not require collateral or security against advances to suppliers.

### ***Share-based Compensation***



We have granted restricted shares and share options to our directors, officers and employees. Share-based payment compensation is based on grant-date fair value and is recognized in our consolidated financial statements over the requisite service period, which is generally the vesting period. We grant our restricted shares at their fair value which generally represents the fair value of an unrestricted share. For share options, determining the value of our share-based compensation expense in future periods requires the input of highly subjective assumptions, including the expected terms of the options, the price volatility of our underlying shares, the risk free interest rate, the expected dividend rate, as well as estimated forfeitures of the options. We estimate our forfeitures based on past employee retention rates, our expectations of future retention rates, and we will prospectively revise our forfeiture rates based on actual history. Our compensation charges may change based on changes to our actual forfeitures.

### ***Inventories***

We report inventories at the lower of cost or market. We determine cost on a weighted-average basis. These costs include direct material, direct labor, tolling manufacturing costs, and fixed and variable indirect manufacturing costs, including depreciation and amortization, and our outsourced wafers and cells.

We regularly review the cost of inventory against our estimated market value and record a lower of cost or market write-down if any inventories have a cost in excess of market value. Market value does not exceed the net realizable value of the inventory, which is the estimated selling price of our inventory in the ordinary course of business, less reasonably predicable costs of completion and disposal. The evaluation of net realizable value takes into consideration a number of factors including actual consumption of our finished goods compared to forecasted market demand, actual selling prices as agreed in our sales contracts and orders on hand for finished goods, the anticipated changes in the market selling price of our finished goods, seasonality fluctuations, and conversion costs in our production.

In addition, we regularly evaluate the quantity and value of our inventory in light of current market conditions and market trends and record write-downs for any quantities in excess of demand and for any product obsolescence. This evaluation considers historic usage, expected demand, market price, new product development schedules, the effect new products might have on the sale of existing products, product obsolescence, customer concentrations, product merchantability and other factors. We also write off silicon materials that may not meet our required specifications for inclusion in our manufacturing process. These materials are periodically sold for scrap.

Based on such estimates, we had inventory write-downs totaling \$10.2 million, \$22.2 million and \$39.6 million in the years ended December 31, 2010, 2011 and 2012, respectively.

To date, the majority of the inventory write-downs were due to the rapid decline in the market price of PV modules. We may not be able to reasonably predict the price trend of PV modules. If the price of PV modules continues to decrease, we may have to take additional write-downs on inventory in the future. Additionally, market conditions are subject to change and actual consumption of our inventory could differ from forecasted demand. Historically, our estimates of future demand have been materially accurate and, as a result, we were not required to make significant revision to such estimates. Our inventories have a long life cycle and obsolescence has not historically been a significant factor in their valuation.

We have entered into purchase commitments through certain medium-term and long-term supply contracts to acquire materials from our suppliers to secure adequate and stable supply of silicon feedstock and wafer. Our commitments generally specify volume to be delivered on a periodic frequency within each fiscal year with the purchase price determined based on either variable price with reference to prevailing market price or a range of fixed prices subject to negotiation. We evaluate these commitments and record a loss if the anticipated purchase price is higher than the market value of those raw materials. The estimation of market value is using the same lower of cost or market approach as that used to value inventory. We have historically negotiated several medium-term and long-term supply contracts successfully so as to reduce our purchase price to more closely link our purchase costs with market price which is below the market value used to value the inventory. As a result, we did not recognize any loss on the commitments for the years ended December 31, 2010, 2011 and 2012.

### ***Project Assets***

Project assets consist primarily of costs relating to solar power projects in various stages of development that are capitalized prior to the sale of the solar power project. These costs include modules, installation and other development costs, such as legal, consulting and permitting. While the project assets are not constructed for any specific customers, we intend to sell the project assets upon their completion.

We review project assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. We consider the project commercially viable if it is anticipated to be sellable for a profit once it is either fully developed or constructed. We also consider a partially developed or partially constructed project commercially viable if the anticipated selling price is higher than the carrying value of the related project assets plus the estimated cost to completion. In determining whether or not the project assets are recoverable, we consider a number of factors, including changes in environmental, ecological, permitting, or regulatory conditions that may change for the project since the start of development. Such changes may cause the cost of the project to increase or the selling price of the project to decrease. We did not recognize any impairment loss on project assets for the years ended December 31, 2010, 2011 and 2012.

### ***Income Taxes***

Deferred income taxes are recognized for temporary differences between the tax basis of assets and liabilities and their reported amounts in the financial statements, net operating loss carry forwards by applying enacted statutory tax rates applicable to future years. Deferred tax assets are reduced by a valuation allowance when, in our opinion, it is more likely than not that some portion or all of the deferred tax assets will not be realized. All available evidence, both positive and negative, shall be considered to determine whether a valuation allowance for deferred tax assets is needed. In 2010, 2011 and 2012, our deferred tax assets were reduced by a valuation allowance amounting to \$2.9 million, \$0.2 million and \$45.2 million. The significant amount of valuation allowance provided in 2012 is based on our evaluation of both positive and negative evidence available to us, including the net losses in recent years for our major operating subsidiaries, and our projection of future taxable income of those subsidiaries. Current income taxes are provided for in accordance with the laws of the relevant taxing authorities. The components of the deferred tax assets and liabilities are individually classified as current and non-current based on the characteristics of the underlying assets and liabilities.

We recognize a tax benefit associated with an uncertain tax position when, in our judgment, it is more likely than not that the position will be sustained upon examination by a taxing authority. For a tax position that meets the more-likely-than-not recognition threshold, we initially and subsequently measure the tax benefit as the largest amount that we judge to have a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority. Our liability associated with unrecognized tax benefits is adjusted periodically due to changing circumstances, such as the progress of the tax audits, case law developments and new or emerging legislation. Such adjustments are recognized entirely in the period in which they are identified. Our effective tax rate includes the net impact of changes in the liability for unrecognized tax benefits and subsequent adjustments as considered appropriate by management. We classify interest and penalties recognized on the liability for unrecognized tax benefits as income tax expense.

### ***Derivative Financial Instruments***

Our primary objective for holding derivative financial instruments is to manage currency risk. We record derivative instruments as assets or liabilities, measured at fair value. The recognition of gains or losses resulting from changes in fair values of those derivative instruments is based on the use of each derivative instrument and whether it qualifies for hedge accounting.

We have entered into a series of forward foreign currency exchange contracts with several commercial banks to protect against volatility of future cash flows caused by the changes in foreign exchange rates associated with the outstanding accounts receivable. The forward foreign currency exchange contracts do not qualify for hedge accounting and, as a result, the changes in fair value of the derivatives are recognized in the statement of operations. In 2010, 2011 and 2012, we recorded a gain of \$9.5 million, a loss of \$11.4 million and a gain of \$8.5 million, respectively. These losses and gains are included in the line item "Derivatives gain (loss)" in the consolidated statements of operations.

When available, we measure the fair value of financial instruments based on quoted market prices in active markets, valuation techniques that use observable market-based inputs or unobservable inputs that are corroborated by market data. When observable market prices are not readily available, we generally estimate the fair value using valuation techniques that rely on alternate market data or inputs that are generally less readily observable from objective sources and are estimated based on pertinent information available at the time of the applicable reporting periods.

### ***Results of Operations***

The following table sets forth a summary, for the periods indicated, of our consolidated results of operations and each item expressed as a percentage of our total net sales. Our historical results presented below are not necessarily indicative of the results that may be expected for any future period.

	Year Ended December 31,					
	2010		2011		2012	
	(in thousands, except for percentages)					
Netsales	\$ 1,857,689	100%	\$ 2,047,902	100.0%	\$ 1,296,655	100.0%
Cost of goods sold	1,273,328	68.5%	1,715,260	83.8%	1,239,412	95.6%
Gross profit	584,361	31.5%	332,642	16.2%	57,243	4.4%
Operating expenses:						
Selling expenses	75,677	4.1%	100,427	4.9%	118,885	9.2%
General and administrative expenses	72,711	3.9%	157,129	7.7%	176,719	13.6%
Research and development expenses	18,625	1.0%	44,120	2.1%	26,511	2.0%
Total operating expenses	167,013	9.0%	301,676	14.7%	322,115	24.8%
Income(loss)from operations	417,348	22.5%	30,966	1.5%	(264,872)	(20.4)%
Foreign exchange (loss) gain	(36,156)	(1.9)%	(27,435)	(1.3)%	908	0.1%
Interest expense	(33,952)	(1.8)%	(35,021)	(1.7)%	(51,887)	(4.0)%
Interest income	2,590	0.1%	3,056	0.1%	8,552	0.6%
Derivatives gain (loss)	9,476	0.5%	(11,393)	(0.6)%	8,542	0.6%
Other income, net	216	0.0%	9,317	0.5%	6,797	0.5%
Income (loss) before income taxes	359,522	19.4%	(30,510)	(1.5)%	(291,960)	(22.6)%
Income tax (expense) benefit	(48,069)	(2.6)%	(7,310)	(0.3)%	25,405	2.0%
Net income (loss) from operations	311,453	16.8%	(37,820)	(1.8)%	(266,555)	(20.6)%

#### ***Year Ended December 31, 2012 Compared to Year Ended December 31, 2011***

**Net Sales.** Our total net sales decreased by \$751.2 million, or 36.7%, from \$2,047.9 million in 2011 to \$1,296.7 million in 2012, primarily due to lower average selling price of PV modules, which decreased from \$1.33 per watt in 2011 to \$0.78 per watt in 2012.

**Cost of Goods Sold.** Our cost of goods sold decreased by \$475.8 million, or 27.7%, from \$1,715.3 million in 2011 to \$1,239.4 million in 2012, primarily due to lower polysilicon and non-silicon raw material prices. As a percentage of our total net sales, our cost of goods sold increased from 83.8% to 95.6% during the same periods.

**Gross Profit.** As a result of the foregoing, our gross profit decreased by \$275.4 million, or 82.8%, from \$332.6 million in 2011 to \$57.2 million in 2012. Our gross margin decreased from 16.2% to 4.4% during the same period, primarily due to decreases in our average selling price that were greater than both decreases in polysilicon purchase prices and reductions in per watt non-silicon manufacturing costs in 2012.

**Operating Expenses.** Our operating expenses increased by \$20.4 million, or 6.8%, from \$301.7 million in 2011 to \$322.1 million in 2012. The increase in operating expenses was due to increases in selling expenses and general and administrative expenses. As a percentage of total net sales, operating expenses increased from 14.7% in 2011 to 24.8% in 2012. Share-based compensation expenses allocated to our selling expenses, general and administrative expenses and research and development expenses in 2012 were \$0.6 million, \$5.0 million and \$0.3 million, respectively, based on the respective departments where such employees worked at the time of the grant.

**Selling Expenses.** Our selling expenses increased by \$18.5 million, or 18.4%, from \$100.4 million in 2011 to \$118.9 million in 2012, primarily due to increases in salary and overall shipping costs due to greater sales volume. Selling expenses as a percentage of net sales increased from 4.9% to 9.2%. The increase of selling expenses was primarily due to additional marketing expenses incurred with our increased sales efforts and the expansion of our sales team by hiring additional sales personnel, expenses incurred in our targeting to new markets and establishing new representative offices and subsidiaries, and additional marketing programs to continue our brand.

**General and Administrative Expenses.** Our general and administrative expenses increased by \$19.6 million, or 12.5%, from \$157.1 million in 2011 to \$176.7 million in 2012. General and administrative expenses as a percentage of net sales increased from 7.7% to 13.6%. The increase in our general and administrative expenses is mainly as a result of higher

amount of provision for doubtful receivables offset by the lower administrative personnel costs, which included both salary and welfare expenses, as a result of our efforts to reallocate and reduce our manager-level headcount.

*Research and Development Expenses.* Our research and development expenses decreased by \$17.6 million, or 39.9%, from \$44.1 million in 2011 to \$26.5 million in 2012, primarily due to the implementation of cost control measures, including the transition to increased self-developed research projects, the selective reduction of investment in utilization of external research institutes and resource consolidation. Research and development expenses as a percentage of net sales decreased from 2.1% to 2.0%.

*Foreign Exchange (Loss Gain).* We had a foreign exchange gain of \$0.9 million in 2012, compared to a foreign exchange loss of \$27.4 million in 2011. The gain was primarily due to slight appreciation of the Euro against the U.S. dollar in 2012 compared to the continuous depreciation of Euro against U.S. dollar in 2011.

*Interest Expenses, Net.* Our interest expenses, net, increased from \$32.0 million in 2011 to \$43.3 million in 2012, primarily due to increased average loan balance.

*Derivatives Gain (Loss).* In 2012, we had a derivatives gain of \$8.5 million, compared to a loss of \$11.4 million in 2011, primarily due to foreign currency forward contracts between the Euro and the U.S. dollar used to mitigate the effects of exchange rate volatility. See “—Critical Accounting Policies—Derivative Financial Instruments” for more details.

*Income Tax Expenses (Benefit).* Our income tax expenses decreased by \$32.7 million, or 447.6%, from \$7.3 million in 2011 to an income tax benefit of \$25.4 million in 2012, primarily due to the recognition of deferred income tax benefit resulted from the net operating losses incurred in 2012. Our effective income tax rate was 8.7% and a negative 24.0% for the years ended December 31, 2012 and 2011, respectively. Our effective income tax rate for the year ended December 31, 2012 was lower than the PRC statutory enterprise income tax rate of 25%, primarily due to the recognition of \$45.2 million valuation allowance on deferred income tax assets as we determined that not all of the deferred income tax assets could be realized.

*Net Income (Loss).* As a result of the foregoing, our net loss increased from a loss of \$37.8 million in 2011 to \$266.6 million in 2012, representing an increase of 604.8%. Our net margin decreased from negative 1.8% in 2011 to negative 20.6% in 2012, primarily due to decreased gross profits and higher operating expenses.

#### ***Year Ended December 31, 2011 Compared to Year Ended December 31, 2010***

*Net Sales.* Our total net sales increased by \$190.2 million, or 10.2%, from \$1,857.7 million in 2010 to \$2,047.9 million in 2011, primarily due to increased shipments from 1,057.0 MW in 2010 to 1,511.8 MW in 2011, an increase of 43.1%, offset by a decrease in average selling price of our PV modules. Our average selling price decreased from \$1.75 per watt in 2010 to \$1.33 per watt in 2011. The decrease in the average selling price of our PV modules in 2011 was primarily due to changes in government subsidies and economic incentives in many markets, including Germany, our largest market, as well as Italy and Spain, over-supply of solar power products due to increased manufacturing capacity and reduced silicon raw material costs.

*Cost of Goods Sold.* Our cost of goods sold increased by \$442.0 million, or 34.7%, from \$1,273.3 million in 2010 to \$1,715.3 million in 2011, primarily due to increased production and shipments, offset by decreased prices of polysilicon-based raw materials. As a percentage of our total net sales, our cost of goods sold increased from 68.5% to 83.8% during the same periods.

*Gross Profit.* As a result of the foregoing, our gross profit decreased by \$251.8 million, or 43.1%, from \$584.4 million in 2010 to \$332.6 million in 2011. Our gross margin decreased from 31.5% to 16.2% during the same period, primarily due to the decrease in average selling prices per watt exceeded the decreases in polysilicon purchase prices and non-silicon manufacturing costs per watt in 2011.

*Operating Expenses.* Our operating expenses increased by \$134.7 million, or 80.6%, from \$167.0 million in 2010 to \$301.7 million in 2011. The increase in operating expenses was due to increases in selling expenses, general and administrative expenses and research and development expenses. As a percentage of total net sales, operating expenses increased from 9.0% in 2010 to 14.7% in 2011. Share-based compensation expenses allocated to our selling expenses, general and administrative expenses and research and development expenses in 2011 were \$0.7 million, \$6.9 million and \$0.3 million, respectively, based on the respective departments where such employees worked at the time of the grant.



*Selling Expenses.* Our selling expenses increased by \$24.7 million, or 32.7%, from \$75.7 million in 2010 to \$100.4 million in 2011, primarily due to increases in salary and overall shipping costs due to greater sales volume as well as our overseas expansion efforts. Selling expenses as a percentage of net sales increased from 4.1% to 4.9%.

*General and Administrative Expenses.* Our general and administrative expenses increased by \$84.4 million, or 116.1%, from \$72.7 million in 2010 to \$157.1 million in 2011. The increase in general and administrative expenses was primarily due to increased salaries and benefits and costs related to the development and expansion of our overseas offices, including increasing our sales and marketing team from 90 employees as of December 31, 2010 to 154 by December 31, 2011, as well as allowances for doubtful receivables for certain customers. General and administrative expenses as a percentage of net sales increased from 3.9% to 7.7%.

*Research and Development Expenses.* Our research and development expenses increased by \$25.5 million, or 136.9%, from \$18.6 million in 2010 to \$44.1 million in 2011, primarily due to increased headcount of our research and development personnel, salaries and investments in research and development projects. Research and development expenses as a percentage of net sales increased from 1.0% to 2.1%.

*Foreign Exchange Gain (Loss).* We had a foreign exchange loss of \$27.4 million in 2011, compared to a foreign exchange loss of \$36.2 million in 2010. The loss was primarily due to the depreciation of the Euro against the U.S. dollar.

*Interest Expenses, Net.* Our interest expenses, net, increased from \$31.4 million in 2010 to \$32.0 million in 2011.

*Derivatives Gain (Loss).* In 2011, we had a derivatives gain of \$11.4 million, compared to a gain of \$9.5 million in 2010, primarily due to foreign currency forward contracts between the Euro and the U.S. dollar used to mitigate the effects of exchange rate volatility. See “—Critical Accounting Policies—Derivative Financial Instruments” for more details.

*Income Tax Expenses.* Our income tax expenses decreased by \$40.8 million, or 84.8%, from \$48.1 million in 2010 to \$7.3 million in 2011, primarily due to our decreased profitability.

*Net Income (Loss).* As a result of the foregoing, our net income decreased from \$311.5 million in 2010 to a loss of \$37.8 million in 2011, representing a decrease of 112.1%. Our net margin decreased from 16.8% in 2010 to negative 1.8% in 2011, primarily due to decreased gross profits and increased operating expenses.

## B. Liquidity and Capital Resources

We finance our operations primarily through short-term and long-term borrowings, proceeds from public offerings, including our convertible senior notes offering in July 2008, our follow-on offerings of ADSs in July 2009 and March 2010, and, to a lesser extent, cash generated from operations. We believe that our current cash and cash equivalents, short-term and long-term borrowings and anticipated cash flows from operations and the renewal of short-term bank borrowings will be sufficient to meet our anticipated cash needs, including our cash needs for working capital and capital expenditures, for at least the next 12 months. We may, however, require additional cash due to changing business conditions or other future developments, including any investments or acquisitions we may decide to pursue. If our existing cash is insufficient to meet our requirements, we may seek to sell additional equity or debt securities or borrow additional loans from banks. However, the current financial downturn affecting the financial markets and banking system may significantly restrict our ability to obtain financing in the capital markets or from financial institutions. We cannot assure you that financing will be available in the amounts we need or on terms acceptable to us, if at all. The sale of additional equity securities, including convertible debt securities, would dilute our earnings per share. The incurrence of debt would divert cash for working capital and capital expenditures to service debt obligations and could result in operating and financial covenants that restrict our operations and our ability to pay dividends to our shareholders.

As of December 31, 2012, we had \$807.3 million in cash and cash equivalents, \$110.9 million in restricted cash and \$1,374.6 million in outstanding borrowings (inclusive of convertible senior notes outstanding of \$83.6 million). Our cash and cash equivalents primarily consist of cash on hand and demand deposits with original maturities of three months or less that are placed with banks and other financial institutions. We plan to use the cash available as of December 31, 2012, for potential future capital expenditures, including but not limited to the maintenance and enhancement of existing facilities, potential project systems related investments, and for working capital and other day-to-day operating purposes.

Our bank borrowing facilities include both short-term and long-term bank borrowings. We had total bank borrowing facilities of \$1,461.9 million with various banks, of which \$1,291.0 million had been drawn down with the remaining \$170.9 million unused as of December 31, 2012. We have historically renewed or rolled over our short-term bank

borrowings upon the maturity date. In addition to bank borrowing facilities, as of December 31, 2012, we also have facilities for trade financing in the amount of \$1,332.0 million, of which \$240.8 million has been used, as well as \$83.6 million in principal amount of 4% convertible senior notes outstanding. For details on our borrowings, please see “—Borrowings.”

In the past, we had significant working capital commitments for purchases of polysilicon and wafers. Our prepayments to suppliers were recorded either as current portion advances to suppliers, if they were expected to be utilized within 12 months of each balance sheet date, or as advances to suppliers, net of current portion, if they represented the portion expected to be utilized after 12 months. As of December 31, 2012, we had advances to suppliers, net of current portion, of \$87.0 million, compared to \$120.1 million as of December 31, 2011, due to that we are decreasing our use of long-term supply contracts that require prepayments to meet our needs for silicon-based raw materials. We also had the current portion of advances to suppliers of \$57.8 million as of December 31, 2012, a decrease from \$63.5 million as of December 31, 2011. We generally make prepayments without receiving collateral. As a result, our claims for such prepayments would rank only as an unsecured claim, which exposes us to the credit risks of these suppliers in the event of their insolvency or bankruptcy. Going forward, we expect our advances to suppliers to decline as the polysilicon supply market further improves, offset by greater volume purchases as we expand our manufacturing capacity.

We do not currently plan to build new facilities to increase our annual manufacturing capacity of cells, ingots, wafers or modules during 2013 and plan to incur capital expenditures of up to \$65 million to maintain or enhance our existing manufacturing facilities for new products, increased module efficiencies and systems-related initiatives. See “—Capital Expenditures.” However, as we take into account market views concerning customer demand and the commercial lending environment, which is essential for the financing of PV system installations in our respective sales markets as well as our strategy to expand while preserving liquidity, we may later decide to expand our capacity during 2013 or at a future date.

With the decrease of revenue as a result of declining average selling price, we expect that our accounts receivable and inventories, two of the principal components of our current assets, will continue to be maintained at an appropriate level facilitating our working capital management, though the accounts receivable is expected to increase with more credit sales. We require prepayments from certain customers, depending on the credit status of the customers, market demand and the term of the contracts, but have been required to accept reduced prepayments from customers and may continue to see reductions in the amounts of prepayment we are able to obtain. We also allow some of our customers to pay all or a major portion of the purchase price by letters of credit. Until the letters of credit are drawn in accordance with their terms, the amount earned is recorded as accounts receivable.

## Cash Flows and Working Capital

The following table sets forth a summary of our cash flows for the periods indicated:

	Year Ended December 31,		
	2010	2011	2012
	(in thousands)		
Net cash provided by (used in) operating activities	\$ 263,929	\$ 21,927	\$ (178,199)
Net cash used in investing activities	(102,852)	(402,525)	(170,586)
Net cash provided by financing activities	186,046	443,446	342,266
Effect of exchange rate changes	(433)	1,184	(2,985)
Net change in cash and cash equivalents	346,690	64,032	(9,504)
Cash and cash equivalents at the beginning of the year	406,058	752,748	816,780
Cash and cash equivalents at the end of the year	\$ 752,748	\$ 816,780	\$ 807,276

## Operating Activities

Net cash used in operating activities amounted to \$178.2 million in 2012. The net cash used in operating activities in 2012 was primarily due to (i) a net loss of \$266.6 million, (ii) an increase in inventory of \$64.5 million, due to our capacity expansion and slower turnover of finished goods and (iii) a decrease in accrued expenses and other current liabilities of \$44.7 million, due to the timing of payments. Net cash used was partially offset by (a) depreciation and amortization of \$111.1 million, (b) an increase in the allowance for accounts receivable of \$61.4 million and (c) an inventory write-down of \$39.6 million.

Net cash provided by operating activities amounted to \$21.9 million in 2011. The net cash provided by operating

activities in 2011 was primarily due to non-cash adjustments including depreciation of \$69.8 million and an increase in accrued expenses and other current liabilities of \$67.0 million, offset in part by (i) an increase in inventory of \$192.9 million due to our capacity expansion and finished goods held by overseas subsidiaries, (ii) an increase in accounts receivable of \$115.8 million due to increased sales and extension of credit terms, (iii) an increase in accounts payable of \$221.8 million due to increase in purchases of raw materials as a result of our increased sales and extension of credit terms, and (iv) a decrease in income tax payable of \$29.7 million due to that we made payments to PRC tax authorities based upon profits during the first half of 2011 followed by substantial losses during the second half of 2011.

Net cash provided by operating activities amounted to \$263.9 million in 2010. The net cash provided by operating activities in 2010 was primarily due to higher net income offset by (i) an increase in accounts receivable of \$94.8 million due to increased sales, (ii) an increase in advances to suppliers of \$28.2 million due to increase in prepayments to our polysilicon suppliers to secure polysilicon feedstock, and (iii) an increase in project assets of \$33.0 million due to the development of solar power projects in Europe.

### ***Investing Activities***

Net cash used in investing activities amounted to \$170.6 million in 2012. The net cash used in investing activities in 2012 was primarily a result of capital expenditures for property, plant and equipment of \$141.1 million for capacity expansion in first half of 2012, and an increased in restricted cash of \$31.3 million.

Net cash used in investing activities amounted to \$402.5 million in 2011. The net cash used in investing activities in 2011 was primarily a result of an increase in property, plant and equipment expenditures of \$418.1 million, comprised mainly of purchases of cell production equipment, offset in part by an increased in restricted cash of \$41.6 million.

Net cash used in investing activities amounted to \$102.9 million in 2010. The net cash used in investing activities in 2010 was primarily a result of an increase in property, plant and equipment expenditures of \$144.1 million, comprised mainly of purchases of cell, ingot and wafer production equipment, and a decrease in restricted cash of \$34.0 million.

### ***Financing Activities***

Net cash provided by financing activities amounted to \$342.3 million in 2012, which is primarily generated from proceeds of \$1,126.3 million from bank borrowings (short-term and long-term), offset by repayment of \$745.0 million in bank borrowings and \$39.1 million cash payment for repurchasing convertible senior notes.

Net cash provided by financing activities amounted to \$443.4 million in 2011, which consisted primarily of proceeds of \$220.2 million from long-term bank borrowings and net proceeds (net of repayment) of short-term bank borrowings of \$230.8 million.

Net cash provided by financing activities amounted to \$186.0 million in 2010, which consisted primarily of net proceeds received from our follow-on public offering of \$176.3 million completed in March 2010 and proceeds of \$117.5 million from long-term bank borrowings, offset by net repayment of short-term bank borrowings of \$108.8 million.

### ***Restrictions on Cash Dividends***

For a discussion on the ability of our subsidiaries to transfer funds to our company, and the impact this has on our ability to meet our cash obligations, see “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China—Our ability to make distributions and other payments to our shareholders depends to a significant extent upon the distribution of earnings and other payments made by Trina China and TST,” and “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China—The dividends we receive from our PRC subsidiaries and our global income may be subject to PRC tax under the EIT law, which would have a material adverse effect on our results of operations; our foreign ADS holders may be subject to a PRC withholding tax upon the dividends payable by us and upon gains realized on the sale of our ADSs, if we are classified as a PRC ‘resident enterprise.’”

### ***Borrowings***

We had short-term borrowings of \$303.3 million and \$711.8 million as of December 31, 2011 and 2012. The average interest rate on short term borrowings was 3.65% and 3.88% per annum for the years ended December 31, 2011 and 2012, respectively. The funds borrowed under short-term arrangements are repayable within one year. As of December 31, 2012, two short-term loans were secured by the plant and machinery of Trina China with a carrying value of \$133.4 million.

We had current portion of long term borrowings of \$86.2 million and \$164.0 million and we had long-term borrowings, excluding current portion, of \$520.2 million and \$415.2 million as of December 31, 2011 and 2012, respectively. Certain of our long term borrowings contain restrictive covenants, and, except as disclosed below, as of December 31, 2012, we were in compliance with these covenants.

In July 2008, we completed an offering of \$138 million of 4% convertible senior notes. The debt issuance costs of \$11.7 million are being amortized over the life of the convertible senior notes using the interest method. Holders of our convertible senior notes may require us to repurchase all or a portion of the notes upon the occurrence of certain change in control events. The notes are convertible at any time prior to maturity, which is on July 15, 2013, unless previously redeemed at the option of the holders into our ADSs at a conversion price of \$16.94 per ADS, subject to certain adjustments. We used the net proceeds received from the offering to expand our manufacturing lines for the production of silicon ingots, wafers, solar cells and PV modules, to purchase raw materials and other general corporate purposes. In connection with the convertible senior notes offering, we also offered 8,146,388 ADSs in an ADS borrowing facility. The ADS borrower will be required to return the borrowed ADSs by the scheduled maturity date of the notes in July 2013. In July 2011 and in accordance with the terms of the convertible senior notes, we tendered a put right purchase offer to our holders of convertible senior notes, and after this purchase, \$137,680,000 principal amount of the convertible senior notes remained outstanding. In 2011 and 2012, we repurchased a portion of the convertible senior notes with an aggregate principle amount of \$9,924,000 and \$44,174,000, which resulted in a gain of \$2,341,290 and \$5,091,424, respectively. After the repurchase, \$83,582,000 principal amount of the convertible senior notes remains outstanding, as of December 31, 2012.

On September 8, 2009, Trina China entered into a five-year credit facility with a syndicate of banks, or the Facility, including both Renminbi facility and US dollar facility of RMB1,524.6 million (\$242.0 million) and \$80.0 million, respectively, of which RMB1,292.0 million (\$205.1 million) and \$80.0 million are designated solely for the expansion of our production capacity, and the remaining amount to be used to supplement working capital requirements once the capacity expansion is completed. The Facility can be drawn down either in Renminbi or US dollar. As of December 31, 2011 and 2012, we had fully drawn down the capacity expansion portion under the Facility and had a loan balance of \$254.0 million and \$184.6 million, respectively. The remaining Renminbi Facility of RMB232.6 million (\$36.9 million) can only be drawn down on or after completion of capacity expansion. The weighted-average interest rate for borrowings under the facility is 6.50% and 6.43% for the years ended December 31, 2011 and 2012, respectively. Interest is payable quarterly or biannually in arrears for loans denominated in RMB and US dollars, respectively. The interest rate on RMB-denominated borrowings is 110% of the prevailing base lending rate pronounced by People's Bank of China for loans of similar duration. The interest rate on US dollar-denominated borrowings is the prevailing six-month US London Interbank Offered Rate plus 300 basis points. As of December 31, 2012, the Facility is guaranteed by Trina as well as by the property, plant and equipment with carrying value of \$283.4 million and the related land use rights of \$14.3 million. For purposes of the expansion, we are required to match the Facility draw-down with an equal amount of cash from sources other than the Facility. The Facility contains certain financial covenants which require that specified debt to total assets ratio, net profit ratio and income to interest ratio to be maintained. As of December 31, 2011, Trina China violated the net profit ratio and income to interest ratio covenants. Trina China obtained a waiver letter from the Agriculture Bank of China, the leading bank in the syndicated loan, on February 8, 2012 to waive the covenants for the entire facility period.

On January 11, 2010, Trina Solar (Luxembourg) S.A.R.L., or Trina Luxembourg, entered into a fifteen-year facility with China Development Bank, or the TLB CDB Facility, of Euro 100.0 million, which is designated solely for the construction of certain planned PV projects. Trina Luxembourg had drawn down Euro 50.0 million and the remaining Euro 50.0 million had expired on March 14, 2011. The TLB CDB Facility is guaranteed by Trina China and the Company is required to match the TLB CDB Facility draw-down with the construction of those specified PV projects. Trina Luxembourg had a loan balance outstanding as of December 31, 2011 and 2012 of Euro 41.3 million (\$53.4 million) and Euro 13.1 million (\$17.3 million), respectively. The weighted-average interest rate for the borrowings was 4.66% and 4.26% for the years ended December 31, 2011 and 2012, respectively, and is computed as the prevailing six-month EUR LIBOR plus 300 basis points. There are no loan covenants with respect to this facility.

On May 17, 2011, Trina China entered into a three year credit facility with the Export-Import Bank of China, or the Ex-Imp Facility, amounting to \$40.0 million, which is designated solely for capital expenditure purposes. As of December 31, 2012, the Company had drawn down \$14.0 million and the remaining \$26.0 million had expired due to the completion of underlying capital project. Trina China had a loan balance outstanding as of December 31, 2011 and 2012 of \$14.0 million and \$10.5 million, respectively. The interest rate is the prevailing six-month US LIBOR plus 380 basis points, which is 4.59% and 4.47% in 2011 and 2012, respectively. As of December 31, 2012, the Ex-Imp facility is guaranteed by Trina as well as by the property, plant and equipment with a carrying value of \$30.7 million. The facility contains a debt payment coverage ratio covenant. Trina China was in compliance with the covenant as of December 31, 2011 and 2012.



On June 29, 2011, Trina China entered into a three-year credit facility with China Development Bank, or the TCZ CDB Facility, of \$180.0 million, which is designated for the working capital. As of December 31, 2011 and 2012, the Company had fully drawn down the TCZ CDB Facility. Trina China had a loan balance outstanding of \$180.0 million as of December 31, 2011 and 2012 respectively. The interest rate is the prevailing three-month US LIBOR plus 300 basis points, which is 3.25% and 3.47% in 2011 and 2012, respectively. The TCZ CDB facility contains certain financial covenants which require that specified current ratio, quick ratio, debt to asset ratio, debt repayment coverage ratio, interest coverage ratio, contingent liability ratio, current assets turnover and accounts receivable turnover be maintained. As of December 31, 2012, Trina China violated the required threshold of relevant covenants of debt to asset ratio, current assets turnover and accounts receivable turnover. Trina China obtained a written letter from CDB stating that the bank waives Trina China's covenants breach by revising those relevant covenants. As of December 31, 2012, Trina China was in compliance with the revised covenants. Management have evaluated Trina China's compliance with those revised covenants through the calendar year of 2013 and determined that it is not probable that Trina China will violate those revised covenants for a period of one year from December 31, 2012.

On December 7, 2011, TST entered into a three-year structured term loan facility with Standard Chartered Bank (Hong Kong) Limited, or the SC Facility, of \$100.0 million, which can be drawn down in single or multiple tranches within the first 12 months either in Hong Kong dollars or U.S. dollars. Each tranche is for a term of up to 36 months from the initial drawdown date, and may be extended for up to another two years at TST's discretion. The SC Facility is designated solely for the Company's East Campus construction, which is expected to add approximately 500 MW of cell and module capacity to facilitate the Company's high-efficiency Honey cell technology. As of December 31, 2011 and 2012, the Company had fully drawn down the SC Facility. TST had a loan balance outstanding of \$100.0 million as of December 31, 2011 and 2012 respectively. The interest rate is the Hong Kong Interbank Offered Rate plus 2.25%, which is 2.61% and 2.63% in 2011 and 2012, respectively. The SC Facility is guaranteed by Trina as well as by the property, plant and equipment for which this borrowing is used to construct with carrying value of \$116.8 million as of December 31, 2012. The SC Facility contains certain financial covenants which require that specified gearing, net tangible assets value and EBITDA-to-interest ratio be maintained. TST was in compliance with the covenants as of December 31, 2011 and 2012.

On December 23, 2011, Trina China entered into a three-year credit facility with Agriculture Bank of China, or the ABC Facility, of RMB30.0 (\$4.8 million) million at an interest rate of 6.65% per year, which is designed solely for the "MW Square Crystal Silicon Heterojunction Solar Battery Research, Development and Industrialization Project". As of December 31, 2011 and 2012, the Company had fully drawn down the facility. Trina China had a loan balance outstanding of \$4.8 million as of December 31, 2011 and 2012, respectively. As of December 31, 2012, the ABC Facility is secured by the land use rights with carrying value of \$2.3 million. There are no covenants in the facility.

On December 31, 2012, Trina Solar (Luxembourg) Holdings S.A.R.L., or TLH, entered into a three-year credit facility with China Development Bank of \$80.0 million which is designated for working capital. As of December 31, 2012, the Company had fully drawn down the facility. TLH had a loan balance outstanding of \$80.0 million as of December 31, 2012. The interest rate is the prevailing six-month US LIBOR plus 370 basis points which is 4.21% in 2012. The facility is guaranteed by Trina. The facility contains financial covenants and TLH was in compliance with the covenants as of December 31, 2012.

We have historically been able to repay our total borrowings as they became due mostly from cash from operations, proceeds from additional short-term and long-term borrowings or renewing the loans upon maturity. We may also seek additional debt or equity financing to repay the remaining portion of our borrowings. As we continue to ramp up our current and planned operations in order to complete our vertical integration and expansion strategies, we also expect to generate cash from our expanded operations to repay a portion of our borrowings.

## **Capital Expenditures**

We had capital expenditures of \$148.8 million, \$418.2 million and \$141.1 million in 2010, 2011 and 2012, respectively. Our capital expenditures were used primarily for purchases of equipment and facilities for the production of ingots, wafers, cells and modules. As of December 31, 2012, we had an annual manufacturing capacity of ingots and wafers of approximately 1,200 MW and cells and modules of approximately 1,900 MW. We do not currently plan to build new facilities to increase our annual manufacturing capacity of cells, ingots, wafers or modules during 2013 and plan to incur capital expenditures of up to \$65 million to maintain or enhance our existing manufacturing facilities for new products, increased module efficiencies and system-related initiatives. However, as we take into account market views concerning customer demand and the commercial lending environment, which is essential for the financing of PV system installations in our respective sales markets as well as our strategy to expand while preserving liquidity, we may later decide to expand

our capacity during 2013 or at a future date.

## **Contingencies**

On October 11, 2012, the trustee of Solyndra LLC, a manufacturer of solar panels based in California, filed a lawsuit against us, including our subsidiary Trina Solar (U.S.), Inc., and other Chinese manufacturers of PV solar panels in the U.S. District Court in California. The plaintiff has asserted antitrust and related state-law claims against the defendants in this lawsuit. The plaintiff's complaint alleges that defendants have violated Section 1 of the Sherman Antitrust Act by conspiring among each other and with additional co-conspirators to fix prices of solar panels by dumping products in the United States and to destroy fair competition in the U.S. market. The plaintiff similarly alleges conspiracy to fix prices and predatory pricing under California's Cartwright Act and Unfair Practices Act. In addition, the plaintiff has brought state-law claims of tortious interference with existing agreements and tortious interference with prospective economic advantage, alleging that the defendants interfered with Solyndra's existing agreements with its customers by selling their products to Solyndra's customers at below-cost prices. The defendants have not yet filed an answer or responsive pleading. At this early stage, the Company is not able to assess the exposure in connection with the lawsuit.

## **Recent Accounting Pronouncements**

In May 2011, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, 2011-04, Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs, which amended accounting guidance related to fair value measurements and disclosures with the purpose of converging the fair value measurement and disclosure guidance issued by the FASB and the International Accounting Standards Board. The guidance is effective for reporting periods beginning after December 15, 2011. The guidance includes amendments that clarify the intent of the application of existing fair value measurement requirements along with amendments that change a particular principle or requirement for fair value measurements and disclosures. We adopted the new guidance on January 1, 2012. The adoption did not have a material impact on its Consolidated Financial Statements or related disclosures.

In June 2011, the FASB issued ASU 2011-05, Presentation of Comprehensive Income, or ASU 2011-05, which amended accounting guidance related to presentation of comprehensive income. The standards update is intended to help financial statement users better understand the causes of an entity's change in financial position and results of operation. The amendment eliminates the option to present components of other comprehensive income as part of the statement of changes in stockholders' equity. The amendment requires that all non-owner changes in stockholders' equity be presented either in a single continuous statement of comprehensive income or in two separate but consecutive statements. The guidance also requires that reclassification adjustments for items that are reclassified from other comprehensive income to net income be presented on the face of the financial statement where the components of net income and other comprehensive income are presented. In December 2011, the FASB issued ASU 2011-12, Deferral of the Effective Date for Amendments to the Presentation of Items Out of Accumulated Other Comprehensive Income in Accounting Standards Update No. 2011-05, or ASU 2011-12, which defers only those changes in ASU 2011-05 that relate to the presentation of reclassification adjustments out of accumulated other comprehensive income. ASU 2011-05 and ASU 2011-12 are effective for reporting periods beginning after December 15, 2011. We adopted the new guidance on January 1, 2012.

In February 2013, the FASB issued ASU 2013-02, Reporting of Amounts Reclassified out of Accumulated Other Comprehensive Income, or ASU 2013-02. The standard requires that companies present either in a single note or parenthetically on the face of the financial statements, the effect of significant amounts reclassified from each component of accumulated other comprehensive income based on its source (e.g., the release due to cash flow hedges from interest rate contracts) and the income statement line items affected by the reclassification (e.g., interest income or interest expense). If a component is not required to be reclassified to net income in its entirety (e.g., the net periodic pension cost), companies would instead cross reference to the related footnote for additional information (e.g., the pension footnote). ASU 2013-02 is effective for interim and annual reporting periods beginning after December 15, 2012. We will adopt the provisions of the new guidance. The adoption will not have a material impact on our consolidated financial statements or related disclosures.

## **C. Research and Development, Patents and Licenses, etc.**

We focus our research and development efforts towards improving our ingot, wafer, solar cell and solar module manufacturing capabilities. We seek to reduce manufacturing costs and improve the performance of our products. As of December 31, 2012, we had a total of 425 employees involved in our research and development activities. Among them, 79 employees are under our technology development department and are dedicated to research and development. We also have a team of 346 employees under our engineering department and responsible for manufacturing technology development and

further fine-tuning our production processes.

Our research and development department is divided into teams responsible for research in each stage of the solar power product value chain, such as ingot, wafer, solar cell and module production and system integration. We also have a technology committee, which meets regularly to review current development progress and identify new research and development areas. Our technology committee is led by our senior management and comprised of both our employees and external solar energy experts.

Our research and development efforts will be further enhanced by the R&D laboratory in the PV Park, a research and development center that focuses on developing PV technologies, including utilizing of alternative materials, increasing cell conversion efficiencies and conducting assembly and system research. The location of our R&D laboratory will allow us to more easily conduct technology exchanges with PV experts from world leading companies, research institutes and emerging technology companies also located within the PV Park. We completed construction of our R&D laboratory during the second quarter of 2012 and began utilizing the new facility in March 2012. We have also formed a world-class academic committee dedicated to creating a technology platform for the development of PV technologies. We are one of the two solar companies in China commissioned by the PRC government to establish and operate research and development centers.

Our research efforts are currently focused on four main product areas, namely ingots, wafers, solar cells and PV modules. We focus on improving cell efficiency and reducing our production costs by enhancing manufacturing yields, which enable us to deliver higher-efficiency products at a lower cost. To enhance the quality and performance of our solar products, our research and development efforts also include leveraging on existing and newer technologies and supply chain options to optimize our silicon and non-silicon feedstock and processing costs. In the fourth quarter of 2012, our average silicon usage was approximately 5.4 grams per watt, compared to approximately 5.8 and 5.9 grams per watt in the fourth quarters of 2011 and 2010, respectively.

Currently, we slice monocrystalline and multicrystalline wafers to approximately 180 micron thickness, while maintaining a low breakage rate. A thickness of 180 microns is preferred by customers because thinner wafers are not as durable and are subject to cell micro-cracking. Given the current historically low costs of polysilicon, any potential cost savings from thinner slicing would be minimal and not valued by the market.

For the assembly of modules, our research and development team works closely with our manufacturing team and customers to improve our solar module and system designs. We have designed products with specific applications. We have developed a variety of PV solar power product applications based on our existing monocrystalline and multicrystalline technologies. These products include architecturally-friendly modules of different colors, shapes and sizes, such as black modules and large-size modules. In April 2010, we announced our new utility-scale TSM-PC14 solar module, our most powerful module to date with expected power output targets ranging from 265 W to 295 W. In July 2011, we began shipping Trinamount mounting solution, a proprietary system to mount PV modules onto residential and commercial rooftops.

In July 2012, we launched Trinasmart, which provides maximizing and monitoring technologies to maximize roof space and overall power output. Trinasmart's proprietary intelligent technology is integrated into the module junction box, which allows monitoring and control of the PV array at the module level. We have also entered into collaborative relationships with developers and manufacturers of balance of system technologies, with the goal of lowering the overall unit cost of solar energy produced when combined with our module products.

We have invested significantly in research and development of solar cell technology in order to achieve high conversion efficiency rates required for our advanced solar cells and modules. We achieved conversion efficiencies of up to 19.9% in monocrystalline solar cells and 19.6% in multicrystalline solar cells in 2012 on a third party laboratory test, and plan to increase the efficiencies to up to 21.5% and 20.0%, respectively, by the end of 2013. In June 2010, we announced our research agreement with Solar Energy Research Institute of Singapore to develop an all-back-contact high-efficiency silicon wafer solar cell using our monocrystalline wafers. We have a team of 27 employees dedicated to the development and implementation of this process technology. We also plan to make additional efforts to realize the technical and cost synergies of having in-house vertically integrated manufacturing capabilities. Further, in April 2011, we entered into a three year research agreement with the Australian National University to develop high efficiency n-type silicon solar cells with conversion efficiencies of 20% for mass production.

In each of the three years ended December 31, 2010, 2011 and 2012, our research and development expenditures were \$18.6 million, \$44.1 million and \$26.5 million, respectively, representing 1.0%, 2.1% and 2.0% of our total revenues for those periods. We will continue to drive and promote innovation in our process technologies of manufacturing ingots,

wafers, cells and PV modules. Accordingly, we expect our research and development expenses to remain significant as we advance our research and development projects.

D. Trend Information

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for the period from January 1, 2012 to December 31, 2012 that are reasonably likely to have a material adverse effect on our net sales, income, profitability, liquidity or capital resources, or that caused the disclosed financial information to be not necessarily indicative of future operating results or financial conditions.

E. Off-Balance Sheet Arrangements

Other than our purchase obligations for raw materials and equipment, we have not entered into any financial guarantees or other commitments to guarantee the payment obligations of third parties. We have not entered into any derivative contracts that are indexed to our shares and classified as shareholders' equity, or that are not reflected in our consolidated financial statements. Furthermore, we do not have any retained or contingent interest in assets transferred to an unconsolidated entity that serves as credit, liquidity or market risk support to such entity. We do not have any variable interest in any unconsolidated entity that provides financing, liquidity, market risk or credit support to us or that engages in leasing, hedging or research and development services with us. There are no off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, net sales or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to you and other investors.

F. Contractual Obligations and Commercial Commitments

The following table sets forth our contractual obligations and commercial commitments as of December 31, 2012:

	Payment Due by Period				
	Total	Less than 1 Year	1-3 Years (in thousands)	3-5 Years	More than 5 Years
Long-term borrowings <sup>(1)</sup>	\$ 628,893	\$ 190,799	\$ 438,094	\$ —	\$ —
Short-term borrowings	739,390	739,390	—	—	—
Purchase obligations <sup>(2)</sup>	259,957	76,290	84,467	67,200	32,000
Convertible senior notes <sup>(3)</sup>	85,252	85,252	—	—	—
Total	<u>\$ 1,713,492</u>	<u>\$ 1,091,731</u>	<u>\$ 522,561</u>	<u>\$ 67,200</u>	<u>\$ 32,000</u>

- (1) Includes interests that are derived using an average rate of 4.62% per annum for long-term borrowings.
- (2) Consists of raw material and equipment purchase commitments and operating lease commitments. The raw material purchase commitment includes only the fixed and determinable portion under take-or-pay agreements, and does not include purchase commitments for which we are committed to purchase a specific volume amount but the purchase price is not fixed or determinable since the price is based upon the prevailing market price near the time of purchase.
- (3) Includes interests that are derived using the coupon rate of 4% per annum for convertible senior notes. The convertible senior notes will mature on July 15, 2013.

G. Safe Harbor

This annual report on Form 20-F contains forward-looking statements that relate to future events, including our future operating results and conditions, our prospects and our future financial performance and condition, all of which are largely based on our current expectations and projections. The forward-looking statements are contained principally in the sections entitled "Item 3. Key Information—D. Risk Factors," "Item 4. Information on the Company" and "Item 5. Operating and Financial Review and Prospects." These statements are made under the "safe harbor" provisions of the U.S. Private Securities Litigation Reform Act of 1995.

You can identify these forward-looking statements by terminology such as "may," "will," "expect," "anticipate," "future," "intend," "plan," "believe," "estimate," "is/are likely to" or other and similar expressions. Forward-looking

statements involve inherent risks and uncertainties. A number of factors could cause actual results to differ materially from those contained in any forward-looking statement, including but not limited to the following: expectations regarding the worldwide demand for electricity and the market for solar energy; the company's beliefs regarding the effects of environmental regulation, the lack of infrastructure reliability and long-term fossil fuel supply constraints; the importance of environmentally friendly power generation; expectations regarding governmental support for the deployment of solar energy; expectations regarding the scaling of the company's manufacturing capacity; expectations with respect to the company's ability to secure raw materials in the future; future business development, results of operations and financial condition; and competition from other manufacturers of PV products and conventional energy suppliers.

This annual report on Form 20-F also contains data related to the PV market worldwide and in China taken from third party reports. The PV market may not grow at the rates projected by the market data, or at all. The failure of the market to grow at the projected rates may have a material adverse effect on our business and the market price of our ADSs. In addition, the rapidly changing nature of the PV market subjects any projections or estimates relating to the growth prospects or future condition of our market to significant uncertainties. If any one or more of the assumptions underlying the market data turns out to be incorrect, actual results may differ from the projections based on these assumptions. You should not place undue reliance on these forward-looking statements.

The forward-looking statements made in this annual report on Form 20-F relate only to events or information as of the date on which the statements are made in this annual report on Form 20-F. Except as required by law, we undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise, after the date on which the statements are made or to reflect the occurrence of unanticipated events. You should read this annual report on Form 20-F completely and with the understanding that our actual future results may be materially different from what we expect.

## **Item 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES**

### **A. Directors and Senior Management**

The following table sets forth information regarding our directors and executive officers as of the date of this annual report.

<b>Directors and Executive Officers</b>	<b>Age</b>	<b>Position/Title</b>
Jifan Gao	48	Chairman and Chief Executive Officer
Liping Qiu	48	Independent Director
Jerome Corcoran	63	Independent Director
Qian Zhao	44	Independent Director
Yeung Kwok On	51	Independent Director
Henry Wai Kwan Chow	67	Independent Director
Terry Wang	53	Chief Financial Officer
Yang Shao	47	Chief Human Resources Officer
Zhiguo Zhu	50	Senior Vice President of Module Business Unit
Qiang Huang	39	Senior Vice President of Blue Ocean Business Unit
Jim Wang	51	Vice President of European and American PV Systems Business Unit
Jiqing Gao	45	Vice President of China and APMEA PV Systems Business Unit
Benjamin Hill	42	President of Europe Region
Mark Mendenhall	54	President of Americas Region
Haiyan Sun	51	President of APMEA Region
Qi Lin	50	President of China Region

### ***Directors***

*Mr. Jifan Gao* founded our company in 1998. He has been our chairman and chief executive officer since January 1998. From August 2001 to October 2006, Mr. Gao served as the chairman of Changzhou Tianhe Investment Co., Ltd., a Chinese company that invests in new energy technologies, and he served as the chairman of Changzhou Tianhe New Energy Institute Co., Ltd., a Chinese company that is engaged in R&D and consulting services for new energy technologies, from May 2003 to October 2006. Mr. Gao also served as the vice chairman of Changzhou Minsheng



Financing Guarantee Co., Ltd, a Chinese company that provides guarantee, investment and consulting services, from June 2004 to October 2006. Prior to founding our company, Mr. Gao was the founder and the head of Wujin Xiehe Fine Chemical Factory, a Chinese company that manufactures detergents for metal surfaces, from 1992 through 1997. From 1989 to 1992, Mr. Gao was one of the co-founders and the head of Guangdong Shunde Fuyou Detergent Factory. Mr. Gao currently serves as the executive member of the China Renewable Energy Society and as the standing vice chairman of the China New Energy Chamber of Commerce of the All-China Federation of Industry and Commerce. Mr. Gao is also an executive member of China Photovoltaic Society, an international director of Semiconductor Equipment and Materials International and a vice chairman of the executive committee of Asian Photovoltaic Industry Association. Mr. Gao has published and presented several articles and papers in solar power related magazines and conferences. Mr. Gao received his master's degree in physical chemistry from Jilin University in 1988 and his bachelor's degree in chemistry from Nanjing University in 1985.

### ***Independent Directors***

*Mr. Liping Qiu* has been a director of our company since May 2006. He is a co-founder of Milestone Capital, a China-focused private equity investment company, and the general partner of Milestone China Opportunities Fund I and Fund II, L.P., a partnership that invests primarily in high-growth Chinese companies, since 2002. In 2001, Mr. Qiu was Bear Stearns's Beijing Office Representative, responsible for investment banking operations in China. From 1997 to 2000, Mr. Qiu worked at Merrill Lynch's direct investment group and corporate finance group in Beijing and Hong Kong. Mr. Qiu received his bachelor's degree and master's degree in engineering from the National University of Defense Technology of China in 1984 and 1986, respectively.

*Mr. Jerome Corcoran* has been an independent director of our company since December 2006. From 1995 to 1998, Mr. Corcoran was a managing director at Merrill Lynch's China Private Equity Group in Beijing, China. From 1989 to 1994, Mr. Corcoran served as a managing director and the head of international investment banking of Merrill Lynch in New York and London. Mr. Corcoran retired from his investment banking career in 1998 and has been managing his personal wealth since his retirement. Mr. Corcoran received his bachelor's degree in political philosophy from Loyola University in 1971 and his MBA degree from St John's University in 1974.

*Mr. Qian Zhao* has been an independent director of our company since May 2007. Mr. Zhao is a founding partner of CXC China Sustainable Growth Fund, a private equity fund that makes investments in China-based companies. He is also a managing director of CXC Capital, Inc., which is the management company of CXC China Sustainable Growth Fund. Mr. Zhao co-founded Haiwen & Partners, a preeminent China corporate finance law firm in Beijing, and was a senior partner of the law firm. He worked in Sullivan & Cromwell LLP's New York office from 1996 to 2000, and Skadden, Arps, Slate, Meagher & Flom LLP and Affiliates' Beijing office from 2000 to 2003. He is admitted to practice law in both China and New York. Mr. Zhao received his J.D. degree from New York University School of Law in 1998 and his LL.B from University of International Business & Economics, Beijing in 1990. Mr. Zhao has also served on the board of SouFun Holdings Limited since 2010 and on the board of Camelot Information System Inc. since October 2011.

*Dr. Yeung Kwok On* has been an independent director of our company since August 2010. Dr. Yeung is the Philips Chair Professor of Human Resource Management and Director of the Centre of Organization and People Excellence at China Europe International Business School. He was the founding director of CEO Learning Consortium, a learning platform where CEOs from more than 30 leading firms in China joined together to share the best practices on issues critical to business growth and success in China. Between January 1999 and June 2002, Dr. Yeung served as chief learning officer and chief human resources officer of Acer Group. Dr. Yeung currently serves as a member of the board of directors at Kingdee International Software Group and SITC, both of which are listed on the Hong Kong Stock Exchange, and as an independent director of three private companies. He was also elected as ex-officio board member for Human Resource Planning Society, the leading association for senior human resources executives in the United States. Dr. Yeung also teaches regularly in executive programs in association with Harvard, INSEAD, and The University of Michigan. Dr. Yeung received his bachelor's and master's degrees in management from the University of Hong Kong and Ph.D. in human resource management from the University of Michigan.

*Mr. Henry Wai Kwan Chow* has been an independent director of our company since July 1, 2012. Prior to his retirement from IBM in 2009, Mr. Chow served in numerous executive positions in the Asia Pacific region, and was most recently general manager and then chairman of the IBM Greater China Group. He also served on IBM's Worldwide Management Council and IBM's Strategy Team, a group of senior IBM executives responsible for advising, reviewing, and formulating IBM's strategy. Mr. Chow currently serves as a non-executive director to Advanced Micro Devices, Inc., a semiconductor company based in the United States, and also as a member of the European Advisory Committee of Bridgepoint Investment Ltd., a British private equity company. Mr. Chow received a bachelor's degree in electrical

engineering from the University of Hong Kong.

### ***Executive Officers***

*Mr. Terry Wang* has been our chief financial officer since June 2008. He served as our senior vice president of finance from January 2008 to June 2008. Mr. Wang has 20 years of extensive experience in international financial operations and management in technology and manufacturing industries. Prior to joining us, Mr. Wang served as the executive vice president of finance of Spreadtrum Communications, Inc., a fabless semiconductor company listed on NASDAQ, from 2004 to 2007. Before that, Mr. Wang served as CFO of a silicon valley-based technology company and controller at one of the largest NASDAQ-listed semiconductor assembly and testing companies. Since April 2011, Mr. Wang has also served as independent director and audit committee chairman for 21Vianet.com, a NASDAQ-listed Internet data center services provider in China. Mr. Wang is a Certified Management Accountant, is certified in financial management and holds an MBA in finance from the University of Wisconsin.

*Ms. Yang Shao* has been our chief human resources officer since September 2010. Ms. Shao has more than 18 years of global experience in Fortune 500 companies and expertise in key human resources areas, including corporate and international recruitment, performance management and organization development. Prior to joining us, Ms. Shao worked at Colgate-Palmolive (New York) in various roles, including the position of global employee relations & engagement director, from 2002 to 2010. Prior to joining Colgate-Palmolive, Ms. Shao worked at Bristol-Myers Squibb from 2001 to 2002 and The Dun & Bradstreet Corporation from 1993 to 2001, serving roles relating to human resources, marketing and business development. Ms. Shao received a doctorate degree in social and organizational psychology from Rutgers University in 1995 and received an Executive Education in Marketing Management at the Graduate School of Business of Columbia University in New York in 2000.

*Mr. Zhiguo Zhu* has been our senior vice president of Module Business Unit since January 2012. Mr. Zhu served as our vice president of finance from February 2011 to December 2011. He has over 20 years of professional experience in finance and general management with leading global and Chinese companies. Prior to joining us, Mr. Zhu was the global finance operation controller and internal control and audit director and chief financial officer at Haier Group from June 2009 to January 2011. From May 2004 to June 2009, he worked at Lucent Technologies, including serving as a regional chief financial officer and vice president of Lucent Technologies (China) and a chief financial officer of Lucent Technologies (Qingdao) from 2008 to 2009. He also worked at China Track Group from 2002 to 2004 as finance controller and deputy general manager. From 1996 to 2002, Mr. Zhu worked for Howden Power and Howden Hua Engineering Company as financial controller and acting general manager. Mr. Zhu received a bachelor's degree in engineering from Tsinghua University in 1984, a master's degree from University of Shanghai Science and Technology in 1987 and an MBA from Imperial College London in 1995.

*Dr. Qiang Huang* has been our senior vice president of Blue Ocean Business Unit since September 2012. Dr. Huang was our vice president of technology since October 2008 and was appointed our senior vice president of technology in December 2011. Dr. Huang served as our director of manufacturing engineering from May 2007 to July 2008. Prior to joining us, he served as senior manager of device integration of ST Microelectronics in Singapore from September 2006 to April 2007. From July 2004 to September 2006, he served as the thin-film module manager in X-Fab Sarawak in Malaysia. From April 2001 to July 2004, he served as a senior engineer, and then the acting engineering manager in System-on-Silicon Manufacturing Co. Ltd. Dr. Huang received a Ph.D degree in physics specializing in thin-film technology from National University of Singapore in Singapore in 2002 and a master's degree in electronics materials and devices from Huazhong University of Science and Technology in China in 1998.

*Mr. Jim Wang* has been our vice president of European and American PV Systems Business Unit since November 2012. Mr. Wang joined us as our vice president of special projects since in 2012. Mr. Wang has over 20 years of management experience in semiconductor and photovoltaic industries. Prior to joining our company in 2011, Jim served as a vice president of sales and marketing at GCL-Poly Energy Holdings Limited, a leading polysilicon and wafer manufacturer listed on the Hong Kong Stock Exchange. During 2009 and 2010, Mr. Wang served as the chief operating officer at Comtec Solar Systems Company Ltd., a China-based photovoltaic company listed on the Hong Kong Stock Exchange. During 2008 and 2009, he served as a senior director of business development at JA Solar Holdings Co., Ltd., a manufacturer of high-performance solar power products listed on the Nasdaq. Mr. Wang received a bachelor's degree in mechanical engineering from the Institute of Vocational Training Kanagawa, Japan in 1986, a master's degree and a Ph.D. degree in precision machinery systems from Tokyo Institute of Technology in 1988 and 1989, respectively, and a Ph.D. degree in aerospace engineering from University of Arizona in Tucson in 1991.

*Mr. Jiqing Gao* has been our vice president of China and APMEA PV System Business Unit since November 2012.

As one of the founders of our company, he has extensive experiences across various departments of our company, including production quality management, operations, research and development. He received a bachelor's degree from Jilin University in 1990.

*Mr. Benjamin Hill* has been our vice president of Europe region since July 2012. During his time at Trina, he has served as the head of global sales and marketing and as vice president of sales and marketing in Europe. Prior to joining us, he worked with BP Solar for over ten years, serving as a sales director of Europe, Africa and the Middle East from September 1998 to January 2003, a regional director of North Europe from January 2003 to November 2005, a European sales director from November 2005 to July 2007 and a general manager of performance unit for South Europe from July 2007 to April 2009. From August 1986 to August 1998, he worked at Hiltex Solar Ltd., Nestec Ltd. and Sollatek Ltd. (UK). Mr. Hill has 25 years of experience in business development in the PV industry.

*Mr. Mark Mendenhall* has been our vice president of Americas region since August 2012. Before joining our company, from March 2011 to May 2012, Mr. Mendenhall has worked as a president and general manager for the North America division of Sun Edison, where he was responsible for developing Sun Edison's solar power plant business in North America. Prior to that, Mr. Mendenhall worked for more than 30 years at Tyco International, where he served a president, general manager and director across a number of its various subsidiaries, including Raychem. He also held roles relating to strategic development, marketing, sales, operations management and technical engineer at Raychem prior to becoming a general manager. He also has experience operating in different cultures and global markets and has set up multiple manufacturing facilities in China. Mr. Mendenhall received a bachelor's degree in physics and electronic engineering from the University of California at Berkeley in 1980.

*Dr. Haiyan Sun* has been as our vice president of APMEA region since July 2012. He joined us in February 2010 as vice president of the department of system engineering solutions & services. Prior to joining us, he worked at Oerlikon Solar as head of technical marketing in Asia and managing director in China for more than four years. Dr. Sun received a master's degree in mechanical engineering from Wuhan Huazhong University of Science & Technology in China in 1985 and a Ph.D. degree in material science and engineering from Swiss Federal Institute of Technology in Switzerland in 1991.

*Mr. Qi Lin* has been our vice president of China region since July 2012. Prior to joining us, Mr. Lin worked at Siemens as senior vice president of Siemens SLC and general manager of the division of renewable energy for Northeast Asia. Before joining Siemens since 2004, Mr. Lin was general manager and group vice president in China for LM Glasfiber, a leading manufacturer of wind turbine rotor blades. Prior to joining LM Glasfiber in 2003, Mr. Lin worked for FOSS, a leading analytical instrument manufacturer in Denmark, and served as general manager of China. Mr. Lin received a bachelor's degree from Beijing University of Technology in 1985 and an MBA degree from City University of Seattle in 2001.

## **B. Compensation of Directors and Executive Officers**

### **Compensation of Directors and Executive Officers**

For the year ended December 31, 2012, the aggregate cash compensation that we paid to directors and executive officers was \$4.8 million, including the compensation we paid to two of our former executive officers who left our company in June 2012. Our executive officers may be entitled to severance benefits upon termination of his or her employment depending on the reason for the termination. If the termination is without cause, then the executive officer is entitled to a certain amount of severance. Our directors and executive officers have also been paid pursuant to the share incentive plan in the form of restricted shares and share options.

### **Share Incentive Plan**

In July 2006, our board of directors adopted a share incentive plan to link the personal interests of our board members, employees and consultants to those of our shareholders by providing them with an incentive to generate superior returns for our shareholders, as well as to provide us with the flexibility to motivate, attract and retain the services of these individuals upon whose judgment, interest and special effort the successful conduct of our operations is dependent. Our share incentive plan, as amended by our board of directors in February 2007, May 2008 and August 2010, reserves 352,718,350 shares for issuance, among which 217,928,091 were granted.

The following paragraphs describe the principal terms of our share incentive plan.

*Administration.* Our share incentive plan is administered by our compensation committee or, in its absence, by our

board of directors. Our compensation committee will determine the provisions, terms and conditions of our awards, including, but not limited to, vesting schedule, repurchase provisions, forfeiture provisions, form of payment upon settlement of the award, payment contingencies and satisfaction of any performance criteria. The compensation committee may delegate to a committee of one or more members of our board of directors the authority to make grants or amend prior awards to employees, consultants and directors.

*Awards.* The following briefly describe the principal features of the various awards that may be granted under our share incentive plan.

- *Options.* Options provide for the right to purchase our ordinary shares at a specified price, and usually will become exercisable at the discretion of our compensation committee in one or more installments after the grant date. The option exercise price may be paid in cash, by check, our ordinary shares which have been held by the option holder for such time as may be required to avoid adverse accounting treatment, other property with value equal to the exercise price, through a broker assisted cash-less exercise or such other methods as our compensation committee may approve from time to time.
- *Restricted Shares.* A restricted share award is the grant of our ordinary shares at a price determined by our compensation committee. A restricted share is nontransferable, unless otherwise determined by our compensation committee at the time of award and may be repurchased by us upon termination of employment or service during a restricted period. Our compensation committee shall also determine in the award agreement whether the participant will be entitled to vote the restricted shares or receive dividends on such shares.
- *Restricted Share Units.* Restricted share units represent the right to receive our ordinary shares at a specified date in the future, subject to forfeiture of such right. If the restricted share unit has not been forfeited, then on the date specified in the award agreement we shall deliver to the holder unrestricted ordinary shares, which will be freely transferable.

*Termination of Plan.* Unless terminated earlier, our share incentive plan will expire in 2016. Our board of directors has the authority to amend or terminate our share incentive plan subject to shareholder approval to the extent necessary to comply with applicable law. However, no such action may impair the rights of any recipient of the awards unless agreed by the recipient and the share incentive plan administrator.

### ***Share Options***

As of March 1, 2013, our directors, officers, employees and consultants held an aggregate of 98,194,338 options in our Company. The following paragraphs describe the principal terms of our options.

*Option Agreement.* Options granted under our share incentive plan are evidenced by an option agreement that contains, among other things, provisions concerning exercisability and forfeiture upon termination of employment arrangement, as determined by our board.

*Vesting Schedule.* Options granted under our share incentive plan generally vest over a three-year period following a specified grant date. Our options vest on a yearly basis. One-third of the options granted vest and become exercisable at the first, second and third anniversary of the grant date, subject to the optionee continuing to be an employee on each vesting date.

*Option Exercise.* Once vested, the options may be exercised, in whole or in part, at any time prior to the either the third or the fifth anniversary of the grant date, depending upon the terms of the grant.

*Termination of Options.* Options that were vested before the recipient's termination of service with us, or the recipient's disability or death, will terminate to the extent not exercised or purchased on the last day of a specified period or the last day of the original term of the options, whichever occurs first. If the recipient's termination of service with us is by reason of cause, the options will terminate concurrently with the termination of service with us.

The following table summarizes, as of March 1, 2013, the outstanding options that we granted to our directors and executive officers and to other individuals as a group under our share incentive plan.

<u>Directors and Executive Officers</u>	<u>Ordinary Shares Underlying Outstanding Options</u>	<u>Exercise Price (\$ per ADS)</u>	<u>Date of Grant</u>	<u>Final Expiration Date</u>
Jifan Gao	*	16.275 7.42 22.89 27.29 3.94	April 11, 2008 May 14, 2009 May 19, 2010 May 13, 2011 November 15, 2012	April 11, 2013 May 14, 2014 May 19, 2015 May 13, 2016 May 15, 2015
Liping Qiu	—	—	—	—
Jerome Corcoran	—	—	—	—
Qian Zhao	—	—	—	—
Yeung Kwok On	—	—	—	—
Henry Wai Kwan Chow	—	—	—	—
Terry Wang	*	7.42 22.89 27.29 3.94	May 14, 2009 May 19, 2010 May 13, 2011 November 15, 2012	May 14, 2014 May 19, 2015 May 13, 2016 May 15, 2015
Yang Shao	*	27.29 3.94	May 13, 2011 November 15, 2012	May 13, 2016 May 15, 2015
Zhiguo Zhu	*	3.94	November 15, 2012	November 15, 2017

<u>Directors and Executive Officers</u>	<u>Ordinary Shares Underlying Outstanding Options</u>	<u>Exercise Price (\$ per ADS)</u>	<u>Date of Grant</u>	<u>Final Expiration Date</u>
Qiang Huang	*	7.42 22.89 27.29 3.94	May 14, 2009 May 19, 2010 May 13, 2011 November 15, 2012	May 14, 2014 May 19, 2015 May 13, 2016 May 15, 2015
Jim Wang	—	—	—	—
Jiqing Gao	*	16.275 7.42 22.89 27.29	April 11, 2008 May 14, 2009 May 19, 2010 May 13, 2011	April 11, 2013 May 14, 2014 May 19, 2015 May 15, 2015
Benjamin Hill	*	22.89 27.29 3.94	May 19, 2010 May 13, 2011 November 15, 2012	May 19, 2015 May 13, 2016 May 15, 2015
Mark Mendenhall	—	—	—	—



Directors and Executive Officers	Ordinary Shares Underlying Outstanding Options	Exercise Price (\$ per ADS)	Date of Grant	Final Expiration Date
Haiyan Sun	*	27.29 3.94	May 13, 2011 November 15, 2012	May 13, 2016 November 15, 2017
Qi Lin	—	—	—	—
Directors and executive officers as a group	38,220,500			
Other individuals as a group	59,973,838		April 11, 2008 to November 15, 2012	April 11, 2013 to May 13, 2016

\* Less than 1% of total outstanding ordinary shares.

### ***Restricted Shares***

As of March 1, 2013, our directors, officers, employees and consultants held an aggregate of 37,505,885 restricted shares in our company. The following paragraphs describe the principal terms of our restricted shares.

***Restricted Share Award Agreement.*** Restricted shares issued under our share incentive plan will be evidenced by a restricted share award agreement that contains, among other things, provisions concerning the purchase price for the shares, if any, vesting and repurchase by us upon termination of employment or consulting arrangement, as determined by our compensation committee.

***Vesting Schedule.*** Restricted shares granted under our share incentive plan vest over a five-year period following a specified grant date, with the exception of restricted shares granted to our independent directors, which vest over a three-year period, and restricted shares granted to our chief executive officer and chief financial officer, which completely vest at grant date. Subject to certain exceptions, our restricted share vest on a yearly basis. For restricted shares granted prior to April 11, 2008, typically, twenty percent of the restricted shares shall vest at the first anniversary of the grant date and the remaining eighty percent shall vest at the second, third, fourth and fifth anniversary of the grant date. For restricted shares granted on or after April 11, 2008, 15%, 15%, 20%, 25% and 25% of the restricted shares, typically, shall vest at the first, second, third, fourth and fifth anniversary of the grant date, respectively. These vesting schedules are subject to the grantee continuing to be an employee on each vesting date. Restricted shares also fully vest upon termination of service due to death or disability.

***Transfer Restrictions.*** Until vested, the restricted shares are not transferable and may not be sold, pledged or otherwise transferred.

***Dividend and Voting Rights.*** The restricted shares will not be entitled to dividends paid on the ordinary shares until such restricted shares are vested. A holder will not be entitled to vote restricted shares until such restricted shares are vested.

***Repurchase of Restricted Shares.*** Following the holder's termination of service with us, except if such termination is a result of death or disability, the restricted shares that are unvested will be repurchased by us for an amount equal to the price paid, if anything, for such shares. Such repurchase must be accomplished within 180 days after the termination of service.

***Third-Party Acquisition.*** If a third party acquires us through the purchase of all or substantially all of our assets, a merger or other business combination, all outstanding awards will be assumed or equivalent awards substituted by the successor corporation or parent or subsidiary of successor corporation. In the event that the successor corporation refuses to assume or substitute for awards, all awards will become fully vested and exercisable immediately so long as the recipient remains an employee, consultant or director on the effective date of the acquisition.

The following table summarizes, as of March 1, 2013, the outstanding restricted shares held by our directors and executive officers and other individuals as a group pursuant to the share incentive plan.

<u>Directors and Executive Officers</u>	<u>Restricted Shares Held</u>	<u>Purchase Price (\$ per share)</u>	<u>Date of Grant</u>	<u>End of Vesting Period</u>
Jifan Gao	*	0.00001	April 11, 2008 May 14, 2009 May 19, 2010 May 13, 2011 November 15, 2012	April 11, 2013 May 14, 2014 May 19, 2015 May 13, 2016 November 15, 2017
Liping Qiu	*	0.00001	July 4, 2012	July 4, 2014
Jerome Corcoran	—	—	—	—
Qian Zhao	*	0.00001	May 18, 2010	May 18, 2013
Yeung Kwok On	*	0.00001	August 6, 2010	August 6, 2013
Henry Wai Kwan Chow	*	0.00001	July 4, 2012	July 4, 2015
Terry Wang	*	0.00001	May 14, 2009 May 19, 2010 May 13, 2011 November 15, 2012	May 14, 2014 May 19, 2015 May 13, 2016 November 15, 2017
Yang Shao	*	0.00001	September 15, 2010 May 13, 2011 November 15, 2012	September 15, 2015 May 13, 2016 November 15, 2017
Zhiguo Zhu	*	0.00001	February 14, 2011 November 15, 2012	February 14, 2016 November 15, 2017
Qiang Huang	*	0.00001	November 1, 2008 May 14, 2009 May 19, 2010 May 13, 2011 November 15, 2012	November 1, 2013 May 14, 2014 May 19, 2015 May 13, 2016 November 15, 2017

<u>Directors and Executive Officers</u>	<u>Restricted Shares Held</u>	<u>Purchase Price (\$ per share)</u>	<u>Date of Grant</u>	<u>End of Vesting Period</u>
Jim Wang	*	0.00001	July 9, 2012	July 9, 2017
Jiqing Gao	*	0.00001	April 11, 2008 May 14, 2009 May 19, 2010 May 13, 2011	April 11, 2013 May 14, 2014 May 19, 2015 May 13, 2016
Benjamin Hill	*	0.00001	May 1, 2009 May 19, 2010 May 13, 2011 November 15, 2012	May 1, 2014 May 19, 2015 May 13, 2016 November 15, 2017
Mark Mendenhall	—	—	—	—

<u>Directors and Executive Officers</u>	<u>Restricted Shares Held</u>	<u>Purchase Price (\$ per share)</u>	<u>Date of Grant</u>	<u>End of Vesting Period</u>
Haiyan Sun	*	0.00001	Feb 1, 2010 May 13, 2011 November 15, 2012	Feb 1, 2015 May 13, 2016 November 15, 2017
Qi Lin	*	0.00001	July 2, 2012	July 2, 2017
Directors and executive officers as a group	14,822,221			
Other individuals as a group	22,683,664	0.00001	April 11, 2008 to November 15, 2012	April 11, 2013 to November 15, 2017

\* Less than 1% of total outstanding ordinary shares.

#### C. Board Practices

##### **Board of Directors**

Our board of directors consists of six directors. Our directors are elected by the holders of our ordinary shares. At each annual general meeting, one-third of our directors are subject to re-election. The directors to retire by rotation shall include (so far as necessary to ascertain the number of directors to retire by rotation) any director who wishes to retire and does not offer himself for re-election. Any other directors to retire will be those of the other directors who are longest in office since their last re-election or appointment, or by lot should they be of the same seniority. Our directors have the power to appoint a director to fill a vacancy on our board or as an addition to the existing board. Any director so appointed shall hold office only until the next annual general meeting and shall then be eligible for re-election. In September 2012, Mr. Jerome Corcoran and Mr. Henry Wai Kwan Chow, who have been independent directors of our company since July 1, 2012, were re-elected as directors by our shareholders during the annual general meeting. A director may be removed by ordinary resolution passed by our shareholders before the expiration of such director's term. A director is not required to hold any shares in our company by way of qualification. A director may vote with respect to any contract, proposed contract or arrangement in which he is materially interested. A director may exercise all the powers of the company to borrow money, mortgage its undertakings, property and uncalled capital, and issue debentures or other securities whenever money is borrowed or pledged as security for any obligation of our company or of any third party.

##### **Committees of the Board of Directors**

We have three committees under the board of directors: an audit committee, a compensation committee and a corporate governance and nominating committee. We have adopted a charter for each of the three committees.

##### ***Audit Committee***

Our audit committee consists of Mr. Jerome Corcoran, Mr. Liping Qiu and Mr. Qian Zhao. Mr. Corcoran, Mr. Qiu and Mr. Zhao satisfy the "independence" requirements of Section 303A of the Corporate Governance Rules of the New York Stock Exchange and Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Mr. Corcoran qualifies as an "audit committee financial expert" as defined in Item 16A of Form 20-F. The audit committee oversees our accounting and financial reporting processes and audits of the financial statements of our company. The audit committee is responsible for, among other things:

- selecting the independent auditors and pre-approving all auditing and non-auditing services permitted to be performed by the independent auditors;
- reviewing with the independent auditors any audit problems or difficulties and management's response;
- reviewing and approving all proposed related party transactions, as defined in Item 404 of Regulation S-K

under the Securities Act;

- discussing the annual audited financial statements with management and the independent auditors;
- reviewing major issues as to the adequacy of our internal controls and any special audit steps adopted in light of material control deficiencies; and
- meeting separately and periodically with management and the independent auditors.

In 2012, our audit committee met four times.

### ***Compensation Committee***

Our compensation committee consists of Mr. Qian Zhao, Mr. Jerome Corcoran, and Dr. Yeung Kwok On. Mr. Zhao, Mr. Corcoran, and Mr. Yeung satisfy the “independence” requirements of Section 303A of the Corporate Governance Rules of the New York Stock Exchange. The compensation committee assists the board in reviewing and approving the compensation structure, including all forms of compensation, relating to our directors and executive officers. Our chief executive officer may not be present at any committee meeting during which his compensation is deliberated. The compensation committee is responsible for, among other things:

- reviewing and recommending to the board the compensation of our directors; and
- reviewing periodically and approving any long-term incentive compensation or equity plans, programs or similar arrangements, annual bonuses, employee pension and welfare benefit plans.

In 2012, our compensation committee met three times.

### ***Corporate Governance and Nominating Committee***

Our corporate governance and nominating committee consists of Dr. Yeung Kwok On, Mr. Jerome Corcoran and Mr. Qian Zhao. Mr. Yeung, Mr. Corcoran and Mr. Zhao satisfy the “independence” requirements of Section 303A of the Corporate Governance Rules of the New York Stock Exchange. The corporate governance and nominating committee assists the board of directors in selecting individuals qualified to become our directors and in determining the composition of the board and its committees. The corporate governance and nominating committee is responsible for, among other things:

- identifying and recommending qualified candidates to the board for selection of directors nominees for election or re-election to the board of directors, or for appointment to fill any vacancy;
- reviewing annually with the board of directors the current composition of the board of directors with regards to characteristics such as independence, age, skills, experience and availability of service to us;
- advising the board of directors periodically with regard to significant developments in the law and practice of corporate governance as well as our compliance with applicable laws and regulations, and making recommendations to the board of directors on all matters of corporate governance and on any remedial actions to be taken; and
- monitoring compliance with our code of business conduct and ethics, including reviewing the adequacy and effectiveness of our procedures to ensure proper compliance.

In 2012, our corporate governance and nominating committee met two times.

### ***Duties of Directors***

Under Cayman Islands law, our directors have a statutory duty of loyalty to act honestly in good faith with a view to our best interests. Our directors also have a duty to exercise the skill they actually possess with the care and diligence that a reasonably prudent person would exercise in comparable circumstances. In fulfilling their duty of care to us, our directors must ensure compliance with our memorandum and articles of association. A shareholder in our name may have the right to

seek damages if a duty owed by our directors is breached.

## Employment Agreements

We have entered into employment agreements with each of our executive officers. Under these agreements, each of our executive officers is employed for a specified time period. We may terminate the employment for cause, at any time, without notice or remuneration, for certain acts of the employee, including but not limited to a conviction or plea of guilty to a felony, negligence or dishonesty to our detriment and failure to perform the agreed-to duties after a reasonable opportunity to cure the failure. An executive officer may terminate his employment at any time without notice or penalty if there is a material reduction in his authority, duties and responsibilities or if there is a material reduction in his annual salary before the next annual salary review. Furthermore, either party may terminate the employment at any time without cause upon advance written notice to the other party. If we terminate the executive officer's employment without cause, the executive officer will be entitled to a severance payment equal to a certain specified number of months of his or her then base salary, depending on the length of his or her employment with us.

Each executive officer has agreed to hold, both during and after the employment agreement expires or is earlier terminated, in strict confidence and not to use, except as required in the performance of his duties in connection with the employment, any confidential information, technical data, trade secrets and know-how of our company or the confidential information of any third party, including our affiliated entities and our subsidiaries, received by us. The executive officers have also agreed to disclose in confidence to us all inventions, designs and trade secrets which they conceive, develop or reduce to practice and to assign all right, title and interest in them to us.

### D. Employees

We had 12,863, 14,386 and 11,670 employees as of December 31, 2010, 2011 and 2012, respectively. As of December 31, 2012, we had 11,646 full-time employees, including 9,999 in manufacturing, 425 in research and development, 221 in sales and marketing and 1,001 in administration.

From time to time, we also employ part-time employees and independent contractors to support our research and development, manufacturing and sales and marketing activities. We plan to hire additional employees as we expand.

During 2012, we restructured our global sales, marketing and project development management structure and our operations are now divided into four regions, the Americas, Europe, China, and Asia Pacific, Middle East and Africa. We believe this restructuring will allow us to streamline the communications and process times involved in key commercial decisions. In conjunction with this restructuring, we performed a top-down review of our operations to reallocate and reduce our headcount and other operating expenses.

### E. Share Ownership

The following table sets forth information with respect to the beneficial ownership of our shares as of March 1, 2013 by:

- each of our directors and executive officers; and
- each person known to us to own beneficially more than 5% of our shares.

	Ordinary Shares Beneficially Owned (1)(2)	%
<b>Directors and Executive Officers:</b>		
Jifan Gao <sup>(3)</sup>	262,644,459	6.7%
Liping Qiu	*	*
Jerome Corcoran	*	*
Qian Zhao	*	*
Yeung Kwok On	*	*
Henry Wai Kwan Chow	*	*
Terry Wang	*	*
Yang Shao	*	*



	Ordinary Shares Beneficially Owned <sup>(1)(2)</sup>	%
Zhiguo Zhu	*	*
Qiang Huang	*	*
Jim Wang	*	*
Jiqing Gao	*	*
Benjamin Hill	*	*
Mark Mendenhall	*	*
Haiyan Sun	*	*
Qi Lin	*	*
All Directors and Executive Officers as a Group <sup>(4)</sup>	287,809,674	7.3%
<b>Principal Shareholders:</b>		
Wonder World Limited <sup>(5)</sup>	242,587,083	6.1%
Franklin Resources, Inc. and the group <sup>(6)</sup>	606,796,000	15.4%
Citadel Advisors LLC and the group <sup>(7)</sup>	252,438,400	6.4%

\* The person beneficially owns less than 1% of our outstanding ordinary shares.

- (1) Beneficial ownership is determined in accordance with Rule 13d-3 of the General Rules and Regulations under the Exchange Act and includes voting or investment power with respect to the securities.
- (2) The percentage of beneficial ownership is calculated by dividing the number of shares beneficially owned by such person or group by 3,948,022,836 ordinary shares, being the number of shares outstanding as of March 1, 2013.
- (3) Includes (i) 3,782,551 ordinary shares held by Mr. Gao, (ii) 10,760,367 ordinary shares issuable upon the exercise of options exercisable within 60 days of the date of this annual report, (iii) 242,587,083 ordinary shares held by Wonder World Limited, a Cayman Islands company wholly owned by The Gao Trust, of which Mr. Gao is the settler and the sole member of the management committee, (iv) 4,666,133 ordinary shares held by Ms. Chunyan Wu, Mr. Gao's wife, and (v) 848,325 ordinary shares issuable upon the exercise of options held by Ms. Wu exercisable within 60 days of this annual report. Mr. Gao's business address is No. 2 Tian He Road, Electronics Park, New District, Changzhou, Jiangsu 213031, China.
- (4) The business address of directors and officers is No. 2, Tian He Road, Electronics Park, New District, Changzhou Jiangsu 213031, China.
- (5) Wonder World Limited is a company incorporated in the Cayman Islands and wholly owned by The Gao Trust. The management committee of The Gao Trust consists of the settler, Mr. Jifan Gao. The trustee of The Gao Trust is Merrill Lynch Bank and Trust Company (Cayman) Limited. Mr. Gao's business address is No. 2 Tian He Road, Electronics Park, New District, Changzhou, Jiangsu 213031, China.
- (6) According to the Schedule 13G/A filed on February 12, 2013 by (i) Franklin Resources, Inc., a company incorporated in Delaware, and jointly filed by (ii) Charles B. Johnson and (iii) Rupert H. Johnson, Jr., each a U.S. citizen and owner of more than 10% of the outstanding common stock of Franklin Resources, Inc., and (iv) Templeton Global Advisors Limited, a company incorporated in Bahamas and a subsidiary of Franklin Resources, Inc. The principal business address of Franklin Resources, Inc., Charles B. Johnson and Rupert H. Johnson, Jr. is One Franklin Parkway, San Mateo, CA 94403-1906 and the principal business office of Templeton Global Advisors Limited is Templeton Building, Lyford Cay, Nassau, Bahamas.
- (7) According to the Schedule 13G filed on February 7, 2013 by (i) Citadel Advisors LLC, a limited liability company incorporated in Delaware, and jointly filed by (ii) Citadel Advisors Holdings LP, a limited partnership incorporated in Delaware, (iii) Citadel Investment Group II, L.L.C., a limited liability company incorporated in Delaware, and (iv) Mr. Kenneth Griffin, a U.S. citizen and president and chief executive officer of Citadel Investment Group II, L.L.C. The address of the principal business office of the above reporting persons is c/o Citadel LLC, 131 S. Dearborn Street, 32nd Floor, Chicago, Illinois 60603.

As of March 1, 2013, 3,948,022,836 of our ordinary shares were issued and outstanding. Based on a review of the

register of members maintained by our Cayman Islands registrar, 3,594,301,350 ordinary shares, or approximately 91.0% of our issued and outstanding shares, represented by 71,886,027 ADSs, were held by The Bank of New York Mellon, the depositary of our ADS program and a shareholder of record in the United States.

None of our shareholders has different voting rights from other shareholders as of the date of this annual report. We are currently not aware of any arrangement that may, at a subsequent date, result in a change of control of our company.

## **Item 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS**

### **A. Major Shareholders**

Please refer to “Item 6. Directors, Senior Management and Employees—E. Share Ownership.”

### **B. Related Party Transactions**

#### **Transactions with Certain Directors, Shareholders and Affiliates**

##### ***Loans and Guarantees***

We have in the past entered into short-term loans with domestic banks, some of which were guaranteed by related parties, but all of which have been fully repaid. In addition, we had some borrowings guaranteed by Mr. Jifan Gao and Ms. Chunyan Wu in 2009 and 2010, after which such guarantees were cancelled in 2011 as they were no longer required.

##### ***Purchase Contract***

In 2010, 2011 and 2012, Trina China purchased wafers for a total price of \$10.6 million, \$26.5 million and \$36.7 million, respectively, from Changzhou Youze S&T Co., Ltd., a company controlled by Mr. Weizhong Wu, the brother of Ms. Chunyan Wu. The transactions were approved by the audit committee.

In 2011 and 2012, Trina China sold ingots for a total price of \$0.6 million and \$1.0 million, respectively, to Changzhou Youze S&T Co., Ltd., a company controlled by Mr. Weizhong Wu, the brother of Ms. Chunyan Wu. The transactions were approved by the audit committee.

In 2010, 2011 and 2012, Trina China purchased goods and equipment maintenance services for a total price of \$1.6 million, \$2.0 million and \$1.5 million, respectively, from Changzhou Junhe Mechanical Co., Ltd., a company controlled by the brother-in-law of Mr. Jifan Gao. The transactions were approved by the audit committee.

In 2010, Trina China provided PV technical consulting services for a total price of \$0.5 million to Shanghai Zhenhe New Energy S&T Development Co., Ltd., a company in which Trina China holds a 20% interest. The transactions were approved by the audit committee. In 2011, we received a dividend of \$0.1 million from Shanghai Zhenhe New Energy S&T Development Co., Ltd.

Amounts due to related parties were \$0.7 million, \$6.7 million and \$4.9 million as of December 31, 2010, 2011 and 2012, respectively, include amounts payable to Changzhou Youze S&T Co., Ltd. and Changzhou Junhe Mechanical Co., Ltd. controlled by Mr. Weizhong Wu and Mr. Weifeng Wu, respectively, the brothers of Ms. Chunyan Wu, for the purchase of wafers by Trina China.

##### **Employment Agreements**

See “Item 6. Directors, Senior Management and Employees—C. Board Practices—Employment Agreements.”

##### **Share Incentive Plan**

See “Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers—Share Incentive Plan.”

##### **Related Party Transaction Policy**

After the completion of our initial public offering on December 22, 2006, we adopted an audit committee charter and

a related party transaction policy, which require that the audit committee review all related party transactions on an ongoing basis and all such transactions be approved by the committee.

C. Interests of Experts and Counsel

Not applicable.

**Item 8. FINANCIAL INFORMATION**

A. Consolidated Statements and Other Financial Information

We have appended consolidated financial statements filed as part of this annual report.

**Legal and Administrative Proceedings**

On October 10, 2012, the Department of Commerce announced its final affirmative determination regarding antidumping and countervailing duties applicable to the importation of crystalline silicon PV cells into the United States, whether or not assembled into modules, from China. On November 7, 2012, the International Trade Commission announced its affirmative determination that imports of crystalline silicon PV cells into the United States from China cause “material injury” to the U.S. domestic industry. As a result, the Department of Commerce has issued antidumping and countervailing duty orders on our imports at an effective net rate of 23.75%, comprised of an antidumping duty margin of 18.32% and subsidy rate of 15.97%, minus 10.54% under the Department of Commerce rules to avoid a double application of calculated duties. In February 2013, we filed appeals, as did other parties, with the U.S. Court of International Trade, challenging various aspects of the Department of Commerce’s findings. There is no certainty that our appeal will prevail.

In addition, on September 6, 2012, the European Commission announced the initiation of an anti-dumping investigation concerning imports into the European Union of crystalline silicon PV modules and key components (i.e., cells and wafers), originating in China. On November 8, 2012, the European Commission announced the initiation of an anti-subsidy investigation concerning imports into the European Union of crystalline silicon PV modules and key components originating in China. Further, on March 6, 2013, the European Commission moved to require registration of imports of silicon PV modules and key components into the European Union from China. The European Commission is expected to issue its provisional findings concerning its anti-dumping investigation by June 5, 2013, and concerning its anti-subsidy investigation by August 5, 2013. Its decision as to the imposition of any definitive measures will be presented before December 5, 2013.

On October 11, 2012, the trustee of Solyndra LLC, a manufacturer of solar panels based in California, filed a lawsuit against us, including our subsidiary Trina Solar (U.S.), Inc., and other Chinese manufacturers of photovoltaic solar panels in the U.S. District Court in California. The plaintiff has asserted antitrust and related state-law claims against the defendants in this lawsuit. The plaintiff’s complaint alleges that defendants have violated Section 1 of the Sherman Antitrust Act by conspiring among each other and with additional co-conspirators to fix prices of solar panels by dumping products in the United States and to destroy fair competition in the U.S. market. The plaintiff similarly alleges conspiracy to fix prices and predatory pricing under California’s Cartwright Act and Unfair Practices Act. In addition, the plaintiff has brought state-law claims of tortious interference with existing agreements and tortious interference with prospective economic advantage, alleging that the defendants interfered with Solyndra’s existing agreements with its customers by selling their products to Solyndra’s customers at below-cost prices. The defendants have not yet filed an answer or responsive pleading. At this early stage, we are not able to assess the exposure in connection with the lawsuit.

Other than the aforementioned, we are currently not a party to any material legal or administrative proceedings, and we are not aware of threatened material legal or administrative proceedings against us. We may from time to time become a party to various legal or administrative proceedings arising in the ordinary course of our business.

**Dividend Policy**

We have never declared or paid any dividends, nor do we have any present plan to pay any cash dividends on our ordinary shares in the foreseeable future. We currently intend to retain most, if not all, of our available funds and any future earnings to operate and expand our business.

Our board of directors has complete discretion whether to distribute dividends. Even if our board of directors decides to pay dividends, the form, frequency and amount of our dividends will depend upon our future operations and earnings,

capital requirements and surplus, financial condition, contractual restrictions and other factors that our board of directors may deem relevant. If we pay any dividends, we will pay our ADS holders to the same extent as holders of our ordinary shares, subject to the terms of the deposit agreement, including the fees and expenses payable thereunder. Cash dividends on our ordinary shares, if any, will be paid in U.S. dollars.

**B. Significant Changes**

Except as disclosed elsewhere in this annual report, we have not experienced any significant changes since the date of our audited consolidated financial statements included in this annual report.

**Item 9. THE OFFER AND LISTING**

**A. Offering and Listing Details.**

Our ADSs are listed on the New York Stock Exchange under the symbol “TSL.” From December 19, 2006 to January 19, 2010, each of ADSs represented 100 ordinary shares. Effective on January 19, 2010, we reduced this ratio to 50 ordinary shares to one ADS. All ADS trading prices on the New York Stock Exchange set forth in this annual report, including historical trading and closing prices, have been adjusted to reflect the new ADS to ordinary shares ratio of 50 ordinary shares to one ADS. For the period from December 19, 2006 to March 25, 2013, the trading price of our ADSs on the New York Stock Exchange has ranged from \$2.04 to \$35.43 per ADS.

The following table provides the high and low trading prices for our ADSs on the New York Stock Exchange for the periods specified.

	Sales Price	
	High	Low
<b>Annual High and Low</b>		
2007	35.43	9.04
2008	27.51	2.86
2009	27.79	2.98
2010	31.89	14.85
2011	31.08	5.28
2012	12.19	2.04
<b>Quarterly High and Low</b>		
First Quarter 2011	31.08	22.90
Second Quarter 2011	30.43	18.56
Third Quarter 2011	22.47	6.00
Fourth Quarter 2011	9.30	5.28
First Quarter 2012	12.19	6.73
Second Quarter 2012	7.99	5.01
Third Quarter 2012	6.87	3.95
Fourth Quarter 2012	4.80	2.04
<b>Monthly High and Low</b>		
September 2012	4.88	3.95
October 2012	4.80	4.11
November 2012	4.29	2.04
December 2012	4.68	2.70
January 2013	5.91	4.40
February 2013	5.78	3.97
March 2013 (through March 28, 2013)	4.35	3.31

**B. Plan of Distribution**

Not applicable.

C. Markets

Our ADSs, each representing 50 ordinary shares, have been listed on the New York Stock Exchange since December 19, 2006 under the symbol “TSL.”

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

**Item 10. ADDITIONAL INFORMATION**

A. Share Capital

Not applicable.

B. Memorandum and Articles of Association

The following are summaries of material provisions of our amended and restated memorandum and articles of association, as well as the Companies Law, Cap. 22 (Law 3 of 1961, as consolidated and revised) of the Cayman Islands, which is referred to as the “Companies Law” below, insofar as they relate to the material terms of our ordinary shares. This summary is not complete, and you should read our memorandum and articles of association.

**Registered Office and Objects**

The Registered Office of our company is at the offices of Codan Trust Company (Cayman) Limited, Cricket Square, Hutchins Drive, P.O. Box 2681, Grand Cayman, KY1-1111, Cayman Islands.

According to Article 3 of our memorandum of association, the objects for which our company is established are unrestricted and shall include, but without limitation: (a) to act and to perform all the functions of a holding company in all its branches and to co-ordinate the policy and administration of any subsidiary company or companies wherever incorporated or carrying on business or of any group of companies of which our company or any subsidiary company is a member or which are in any manner controlled directly or indirectly by our company; (b) to act as an investment company and for that purpose to acquire and hold upon any terms and, either in the name of our company or that of any nominee, shares, stock, debentures, debenture stock, annuities, notes, mortgages, bonds, obligations and securities, foreign exchange, foreign currency deposits and commodities, issued or guaranteed by any company wherever incorporated or carrying on business, or by any government, sovereign, ruler, commissioners, public body or authority, supreme, municipal, local or otherwise, by original subscription, tender, purchase, exchange, underwriting, participation in syndicates or in any other manner and whether or not fully paid up, and to make payments thereon as called up or in advance of calls or otherwise and to subscribe for the same, whether conditionally or absolutely, and to hold the same with a view to investment, but with the power to vary any investments, and to exercise and enforce all rights and powers conferred by or incident to the ownership thereof, and to invest and deal with the moneys of our company not immediately required upon such securities and in such manner as may be from time to time determined.

**Board of Directors**

See “Item 6. Directors, Senior Management and Employees—C. Board Practices—Board of Directors.”

**Ordinary Shares**

On September 1, 2009, our shareholders approved to amend the memorandum of association to increase our authorized share capital. As of the date of this annual report, our authorized share capital is \$730,000 divided into



73,000,000,000 shares of nominal or par value of \$0.00001 each. The following are summaries of material provisions of our currently effective amended and restated memorandum and articles of association and the Companies Law insofar as they relate to the material terms of our ordinary shares.

**General.** All of our outstanding ordinary shares are fully paid and non-assessable. Certificates representing the ordinary shares are issued in registered form. Our shareholders who are nonresidents of the Cayman Islands may freely hold and vote their shares.

**Dividends.** The holders of our ordinary shares are entitled to such dividends as may be declared by our shareholders or board of directors subject to the Companies Law.

**Voting Rights.** Each ordinary share is entitled to one vote on all matters upon which the ordinary shares are entitled to vote. Voting at any meeting of shareholders is by a show of hands unless a poll is demanded as described in our articles of association. A poll may be demanded by (i) the chairman of the meeting, (ii) at least three shareholders present in person or, in the case of a shareholder being a corporation, by its duly authorized representative or by proxy for the time being entitled to vote at the meeting, (iii) any shareholder or shareholders present in person or, in the case of a shareholder being a corporation, by its duly authorized representative or by proxy and representing not less than one-tenth of the total voting rights of all the shareholders having the right to vote at the meeting, or (iv) a shareholder or shareholders present in person or, in the case of a shareholder being a corporation, by its duly authorized representative or by proxy and holding not less than one-tenth of the issued share capital of our voting shares.

A quorum required for a meeting of shareholders consists of at least two shareholders entitled to vote representing not less than one-third of our total outstanding shares present in person or by proxy or, if a corporation or other non-natural person, by its duly authorized representative. Shareholders' meetings are held annually and may be convened by our board of directors on its own initiative. In general, advance notice of at least ten clear days is required for the convening of our annual general meeting and other shareholders' meetings.

An ordinary resolution to be passed by the shareholders requires the affirmative vote of a simple majority of the votes attaching to the ordinary shares cast in a general meeting, while a special resolution requires the affirmative vote of no less than two-thirds of the votes cast attaching to the ordinary shares. A special resolution is required for important matters such as a change of name or an amendment to our memorandum or articles of association. Holders of the ordinary shares may effect certain changes by ordinary resolution, including alter the amount of our authorized share capital, consolidate and divide all or any of our share capital into shares of larger amount than our existing share capital, and cancel any unissued shares.

**Transfer of Shares.** Subject to the restrictions of our articles of association, as more fully described below, any of our shareholders may transfer all or any of his or her ordinary shares by an instrument of transfer in the usual or common form or by any other form approved by our board.

Our board of directors may, in its absolute discretion, decline to register any transfer of any ordinary share which is not fully paid up or on which we have a lien. Our directors may also decline to register any transfer of any ordinary shares unless (a) the instrument of transfer is lodged with us, accompanied by the certificate for the ordinary shares to which it relates and such other evidence as our board of directors may reasonably require to show the right of the transferor to make the transfer; (b) the instrument of transfer is in respect of only one class of ordinary shares; (c) the instrument of transfer is properly stamped, if required; (d) in the case of a transfer to joint holders, the number of joint holders to whom the ordinary share is to be transferred does not exceed four; or (e) a fee of such maximum sum as the New York Stock Exchange may determine to be payable, or such lesser sum as our board of directors may from time to time require, is paid to us in respect thereof. There is presently no legal requirement under Cayman Islands law for instruments of transfer for our ordinary shares to be stamped. In addition, our board of directors has no present intention to charge any fee in connection with the registration of a transfer of ordinary shares.

If our directors refuse to register a transfer they shall, within two months after the date on which the instrument of transfer was lodged, send to each of the transferor and the transferee notice of such refusal. The registration of transfers may, on prior notice being given by advertisement in one or more newspapers or by electronic means, be suspended and the register closed at such times and for such periods as our board of directors may from time to time determine; provided, however, that the registration of transfers shall not be suspended nor the register closed for more than 30 days in any year.

**Liquidation.** On a return of capital on winding-up or otherwise (other than on conversion, redemption or purchase of

shares), assets available for distribution among the holders of ordinary shares shall be distributed among the holders of the ordinary shares on a pro rata basis. If our assets available for distribution are insufficient to repay all of the paid-up capital, the assets will be distributed so that the losses are borne by our shareholders proportionately.

***Calls on Shares and Forfeiture of Shares.*** Our articles of association permit us to issue our shares, including ordinary shares, nil paid and partially paid. This permits us to issue shares where the payment for such shares has yet to be received. Although our articles give us the flexibility to issue nil paid and partly paid shares, our board has no present intention to do so. Our board of directors may from time to time make calls upon shareholders for any amounts unpaid on their shares in a notice served to such shareholders at least 14 clear days prior to the specified time and place of payment. The shares that have been called upon and remain unpaid on the specified time are subject to forfeiture.

***Redemption of Shares.*** Subject to the provisions of the Companies Law, the rules of the designated stock exchange, our memorandum and articles of association and to any special rights conferred on the holders of any shares or class of shares, we may issue shares on terms that they are subject to redemption at our option or at the option of the holders, on such terms and in such manner as may be determined by our board of directors. Our currently outstanding ordinary shares and those to be issued in this offering will not be subject to redemption at the option of the holders or our board of directors.

***Variations of Rights of Shares.*** All or any of the special rights attached to any class of shares may, subject to the provisions of the Companies Law, be varied with the sanction of a special resolution passed at a general meeting of the holders of the shares of that class.

***Inspection of Register of Members.*** Pursuant to our articles of association, our register of members and branch register of members shall be open for inspection by shareholders for such times and on such days as our board of directors shall determine, without charge, or by any other person upon a maximum payment of C\$2.50 or such other sum specified by the board, at the registered office or such other place at which the register is kept in accordance with the Companies Law or, upon a maximum payment of C\$1.00 or such other sum specified by the board, at our registered office, unless the register is closed in accordance with our articles of association.

***Designations and Classes of Shares.*** All of our issued shares upon the closing of this offering will be ordinary shares. Our articles provide that our authorized unissued shares shall be at the disposal of our board of directors, which may offer, allot, grant options over or otherwise dispose of them to such persons, at such times and for such consideration and upon such terms and conditions as our board may in its absolute discretion determine, but so that no shares shall be issued at discount. In particular, our board of directors is empowered to authorize from time to time the issuance of one or more classes or series of preferred shares and to fix the designations, powers, preferences and relative, participating, optional and other rights, if any, and the qualifications, limitations and restrictions thereof, if any, including, without limitation, the number of shares constituting each such class or series, dividend rights, conversion rights, redemption privileges, voting powers, full or limited or no voting powers, and liquidation preferences, and to increase or decrease the size of any such class or series, but not below the number of shares of any class or series of preferred shares then outstanding.

C. Material Contracts

We have not entered into any material contracts other than in the ordinary course of business and other than those described in “Item 4. Information on the Company” or elsewhere in this annual report.

D. Exchange Controls

See “Item 4. Information on the Company—B. Business Overview—Regulation—Foreign Currency Exchange” and “Item 4. Information on the Company—B. Business Overview—Regulation—Dividend Distribution.”

E. Taxation

**Cayman Islands Taxation**

The Cayman Islands currently levies no taxes on individuals or corporations based upon profits, income, gains or appreciation and there is no taxation in the nature of inheritance tax or estate duty. There are no other taxes likely to be material to us levied by the Government of the Cayman Islands except for stamp duties which may be applicable on instruments executed in, or brought within the jurisdiction of the Cayman Islands. There are no exchange control regulations or currency restrictions in the Cayman Islands.

## People's Republic of China Taxation

Under the EIT law which became effective January 1, 2008, dividends, interests, rents, and royalties payable by a foreign-invested enterprise in the PRC to its foreign investor who is a non-resident enterprise, as well as gains on transfers of shares of a foreign-invested enterprise in the PRC by such a foreign investor, will be subject to a 10% withholding tax, unless such non-resident enterprise's jurisdiction of incorporation has a tax treaty with the PRC that provides for a reduced rate of withholding tax. The Cayman Islands, where Trina is incorporated, does not have such a tax treaty with the PRC. Therefore, if Trina is considered a non-resident enterprise for purposes of the EIT law, a 10% withholding tax will be imposed on dividends paid to Trina by its PRC subsidiaries. In such a case, there will be no PRC withholding tax on dividends paid by Trina to investors that are not PRC legal or natural persons or on any gain realized on the transfer of ADSs or shares by such investors. However, PRC income tax will apply to dividends paid by Trina to investors that are PRC legal or natural persons and to any gain realized by such investors on the transfer of ADSs or shares.

Under the EIT law, an enterprise established outside the PRC with its "de facto management body" within the PRC is considered a "resident enterprise" and will be subject to the enterprise income tax at the rate of 25% on its worldwide income. The "de facto management body" is defined as the organizational body that effectively exercises overall management and control over production and business operations, personnel, finance and accounting, and properties of the enterprise. The SAT issued SAT Circular 82 on April 22, 2009. SAT Circular 82 provides certain criteria for determining whether the "de facto management body" of an offshore-incorporated enterprise controlled by PRC enterprises is located in China. On July 27, 2011, the SAT issued the Bulletin 45, which became effective on September 1, 2011, to provide further guidance on the implementation of SAT Circular 82. Bulletin 45 clarifies certain issues related to the determination of PRC resident enterprise status, post determination administration and the authorities responsible for determining Offshore incorporated PRC resident enterprise status. Bulletin 45 specifies that when provided with a copy of a Chinese tax resident determination certificate issued by the competent tax authorities from an offshore incorporated PRC resident enterprise, the payer should not withhold 10% income tax when paying Chinese-sourced dividends, interest and royalties to the offshore incorporated PRC resident enterprise. Although SAT Circular 82 only applies to offshore enterprises controlled by PRC enterprises and not those controlled by PRC or foreign individuals or foreign enterprises, the criteria set forth therein may reflect the SAT's general position on how the "de facto management body" test should be applied in determining the tax resident status of offshore enterprises, regardless of whether they are controlled by PRC or foreign enterprises or individuals. Accordingly, we may be considered a resident enterprise and may therefore be subject to the enterprise income tax at 25% on our global income other than dividends from our PRC subsidiaries, which could significantly increase our tax burden and materially and adversely affect our cash flow and profitability. Notwithstanding the foregoing provision, the EIT law also provides that, if a resident enterprise directly invests in another resident enterprise, the dividends received by the investing resident enterprise from the invested enterprise are exempted from income tax, subject to certain conditions. Therefore, if Trina is classified as a resident enterprise, the dividends received from its PRC subsidiary may be exempted from income tax. However, it remains unclear how the PRC tax authorities will interpret the PRC tax resident treatment of an offshore company like Trina, having ownership interest in a PRC enterprise.

Moreover, under the EIT law, a withholding tax at the rate of 10% is applicable to dividends payable to investors that are "non-resident enterprises," which do not have an establishment or place of business in the PRC, or which have such establishment or place of business but the relevant income is not effectively connected with the establishment or place of business, to the extent such interest or dividends have their sources within the PRC unless such non-resident enterprises can claim treaty protection. As such, these non-resident enterprises would enjoy a reduced withholding tax from treaty. Similarly, any gain realized on the transfer of ADSs or shares by such investors is also subject to a 10% withholding tax if such gain is regarded as income derived from sources within the PRC. If Trina is considered a PRC resident enterprise, it is likely that the dividends Trina pays with respect to Trina's ordinary shares or ADSs, or the gain you may realize from the transfer of Trina's ordinary shares or ADSs, would be treated as income derived from sources within the PRC and be subject to PRC withholding tax.

Pursuant to SAT Circular 698, where a non-resident enterprise transfers the equity interests of a PRC resident enterprise indirectly via disposing of the equity interests of an overseas holding company, or an Indirect Transfer, and such overseas holding company is located in a tax jurisdiction that: (i) has an effective tax rate less than 12.5% or (ii) does not tax foreign income of its residents, the foreign investor shall report to the competent tax authority of the PRC resident enterprise this Indirect Transfer. Using a "substance over form" principle, the PRC tax authority may disregard the existence of the overseas holding company if it lacks a reasonable commercial purpose and was established for the purpose of avoiding PRC tax. As a result, gains derived from such Indirect Transfer may be subject to PRC withholding tax at a rate of up to 10%. SAT Circular 698 also provides that, where a non-PRC resident enterprise transfers its equity interests in a PRC resident enterprise to its related parties at a price lower than the fair market value, the relevant tax authority has the power to make a reasonable adjustment to the taxable income of the transaction.

## United States Federal Income Taxation

The following discussion describes certain U.S. federal income tax consequences to U.S. Holders (as defined below) under present law of an investment in the ADSs or ordinary shares. This discussion applies only to U.S. Holders that hold the ADSs or ordinary shares as capital assets (generally, property held for investment) and that have the U.S. dollar as their functional currency. This discussion is based on the tax laws of the United States as of the date of this annual report and on U.S. Treasury regulations in effect or, in some cases, proposed, as of the date of this annual report, as well as judicial and administrative interpretations thereof available on or before such date. All of the foregoing authorities are subject to change, which change could apply retroactively and could affect the tax consequences described below.

The following discussion neither deals with the tax consequences to any particular investor nor describes all of the tax consequences applicable to persons in special tax situations such as:

- banks;
- certain financial institutions;
- insurance companies;
- regulated investment companies;
- real estate investment trusts;
- broker-dealers;
- traders that elect to mark to market;
- U.S. expatriates or entities covered by U.S. anti-inversion tax rules;
- tax-exempt entities;
- persons liable for alternative minimum tax;
- persons holding an ADS or ordinary share as part of a straddle, hedging, conversion or integrated transaction;
- persons that actually or constructively own 10% or more of the total combined voting power of all classes of our voting stock;
- persons who acquired ADSs or ordinary shares pursuant to the exercise of any employee share option or otherwise as compensation; or
- partnerships or pass-through entities, or persons holding ADSs or ordinary shares through such entities.

In addition, the discussion below does not describe any tax consequences arising out of the 3.8% Medicare tax on “net investment income.”

**INVESTORS ARE URGED TO CONSULT THEIR TAX ADVISORS ABOUT THE APPLICATION OF THE U.S. FEDERAL TAX RULES TO THEIR PARTICULAR CIRCUMSTANCES AS WELL AS THE STATE, LOCAL, NON-U.S. AND OTHER TAX CONSEQUENCES TO THEM OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF ADSs OR ORDINARY SHARES.**

The discussion below of the U.S. federal income tax consequences to “U.S. Holders” will apply to you if you are the beneficial owner of ADSs or ordinary shares and you are, for U.S. federal income tax purposes,

- an individual who is a citizen or resident of the United States;

- a corporation (or other entity taxable as a corporation for U.S. federal income tax purposes) created or organized in the United States or under the laws of the United States, any State thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust that (1) is subject to the primary supervision of a court within the United States and the control of one or more U.S. persons for all substantial decisions or (2) has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

The discussion below assumes the representations contained in the deposit agreement are true and that the obligations in the deposit agreement and any related agreement have been and will be complied with in accordance with their terms. If you own ADSs, you should be treated as the owner of the underlying ordinary shares represented by those ADSs for U.S. federal income tax purposes.

The U.S. Treasury has expressed concerns that intermediaries in the chain of ownership between the holder of an ADS and the issuer of the security underlying the ADS may be taking actions that are inconsistent with the beneficial ownership of the underlying security (for example, pre-releasing ADSs to persons that do not have the beneficial ownership of the securities underlying the ADSs). Accordingly, the creditability of any PRC taxes and the availability of the reduced tax rate for dividends received by certain non-corporate U.S. Holders, including individuals U.S. Holders (as discussed below), could be affected by actions taken by intermediaries in the chain of ownership between the holders of ADSs and our company if as a result of such actions the holders of ADSs are not properly treated as beneficial owners of underlying ordinary shares.

#### *Taxation of Dividends and Other Distributions on the ADSs or Ordinary Shares*

Subject to the PFIC rules discussed below, the gross amount of any distributions we make to you with respect to the ADSs or ordinary shares generally will be includible in your gross income as dividend income on the date of receipt by the depository, in the case of ADSs, or by you, in the case of ordinary shares, but only to the extent the distribution is paid out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). Any such dividends will not be eligible for the dividends-received deduction allowed to corporations in respect of dividends received from other U.S. corporations. To the extent the amount of the distribution exceeds our current and accumulated earnings and profits (as determined under U.S. federal income tax principles), such excess amount will be treated first as a tax-free return of your tax basis in your ADSs or ordinary shares, and then, to the extent such excess amount exceeds your tax basis in your ADSs or ordinary shares, as capital gain. We currently do not, and we do not intend to, calculate our earnings and profits under U.S. federal income tax principles. Therefore, a U.S. Holder should expect that a distribution generally will be reported as a dividend even if that distribution would otherwise be treated as a non-taxable return of capital or as capital gain under the rules described above.

With respect to certain non-corporate U.S. Holders, including individual U.S. Holders, any dividends may be taxed at the lower capital gains rate applicable to “qualified dividend income,” provided (1) either (a) the ADSs are readily tradable on an established securities market in the United States or (b) we are eligible for the benefits of a qualifying income tax treaty with the United States that includes an exchange of information program, (2) we are neither a PFIC nor treated as such with respect to you (as discussed below) for the taxable year in which the dividend was paid and the preceding taxable year, and (3) certain holding period requirements are met. Under U.S. Internal Revenue Service authority, ADSs will be considered for purposes of clause (1) above to be readily tradable on an established securities market in the United States if they are listed on the New York Stock Exchange, as are our ADSs. However, based on existing guidance, it is not entirely clear whether dividends you receive with respect to the ordinary shares will be taxed as qualified dividend income, because the ordinary shares are not themselves listed on a U.S. exchange. If we are treated as a “resident enterprise” for PRC tax purposes under the EIT Law, we may be eligible for the benefits of the income tax treaty between the United States and the PRC. You should consult your tax advisors regarding the availability of the lower capital gains rate applicable to qualified dividend income for any dividends paid with respect to our ADSs or ordinary shares.

Any dividends will constitute foreign source income for foreign tax credit limitation purposes. If the dividends are taxed as qualified dividend income (as discussed above), the amount of the dividend taken into account for purposes of calculating the foreign tax credit limitation will in general be limited to the gross amount of the dividend, multiplied by the reduced tax rate applicable to qualified dividend income and divided by the highest tax rate normally applicable to dividends. The limitation on foreign taxes eligible for credit is calculated separately with respect to specific classes of



income. For this purpose, dividends distributed by us with respect to the ADSs or ordinary shares generally will constitute “passive category income” but could, in the case of certain U.S. Holders, constitute “general category income.”

If PRC withholding taxes apply to any dividends paid to you with respect to our ADSs or ordinary shares, the amount of the dividend would include withheld PRC taxes and, subject to certain conditions and limitations, such PRC withholding taxes generally will be treated as foreign taxes eligible for credit against your U.S. federal income tax liability. The rules relating to the determination of the foreign tax credit are complex, and you should consult your tax advisors regarding the availability of a foreign tax credit in your particular circumstances, including the effects of any applicable income tax treaties.

#### *Taxation of Disposition of ADSs or Ordinary Shares*

Subject to the PFIC rules discussed below, you will recognize taxable gain or loss on any sale, exchange or other taxable disposition of an ADS or ordinary share equal to the difference between the amount realized for the ADS or ordinary share and your tax basis in the ADS or ordinary share. The gain or loss generally will be capital gain or loss. If you are a non-corporate U.S. Holder, including an individual U.S. Holder, that has held the ADS or ordinary share for more than one year, you may be eligible for reduced tax rates. The deductibility of capital losses is subject to limitations. Any gain or loss you recognize on a disposition of ADSs or ordinary shares generally will be treated as U.S. source income or loss for foreign tax credit limitation purposes. However, if we are treated as a “resident enterprise” for PRC tax purposes, we may be eligible for the benefits of the income tax treaty between the United States and the PRC. In such event, if PRC tax were to be imposed on any gain from the disposition of the ADSs or ordinary shares, a U.S. Holder that is eligible for the benefits of the income tax treaty between the United States and the PRC may elect to treat the gain as PRC source income for foreign tax credit purposes. You should consult your tax advisors regarding the proper treatment of gain or loss in your particular circumstances, including the effects of any applicable income tax treaties.

#### *Passive Foreign Investment Company*

Based on the market price of our ADSs, the value of our assets, and the composition of our income and assets, we do not believe we were a PFIC for U.S. federal income tax purposes for our taxable year ended December 31, 2012. However, the application of the PFIC rules is subject to uncertainty in several respects, and we cannot assure you that the U.S. Internal Revenue Service will not take a contrary position. A non-U.S. corporation will be a PFIC for U.S. federal income tax purposes for any taxable year if either:

- at least 75% of its gross income for such year is passive income; or
- at least 50% of the value of its assets (based on an average of the quarterly values of the assets) during such year is attributable to assets that produce passive income or are held for the production of passive income.

For this purpose, we will be treated as owning our proportionate share of the assets and earning our proportionate share of the income of any other corporation in which we own, directly or indirectly, more than 25% (by value) of the stock. In applying this rule, while it is not clear, we believe the contractual arrangements between us and our affiliated entities should be treated as ownership of stock.

A separate determination must be made after the close of each taxable year as to whether we were a PFIC for that year. Because the value of our assets for purposes of the PFIC test generally will be determined by reference to the market price of our ADSs and ordinary shares, fluctuations in the market price of the ADSs and ordinary shares may cause us to become a PFIC. In addition, changes in the composition of our income or assets may cause us to become a PFIC.

If we are a PFIC for any taxable year during which you hold ADSs or ordinary shares, we generally will continue to be treated as a PFIC with respect to you for all succeeding years during which you hold ADSs or ordinary shares, unless we cease to be a PFIC and you make a “deemed sale” election with respect to the ADSs or ordinary shares. If such election is made, you will be deemed to have sold ADSs or ordinary shares you hold at their fair market value on the last day of the last taxable year in which we qualified as a PFIC, and any gain from such deemed sale would be subject to the consequences described in the following two paragraphs. After the deemed sale election, your ADSs or ordinary shares with respect to which the deemed sale election was made will not be treated as shares in a PFIC unless we subsequently become a PFIC.

For each taxable year that we are treated as a PFIC with respect to you, you will be subject to special tax rules with

respect to any “excess distribution” you receive and any gain you recognize from a sale or other disposition (including a pledge) of the ADSs or ordinary shares, unless you make a “mark-to-market” election as discussed below. Distributions you receive in a taxable year that are greater than 125% of the average annual distributions you received during the shorter of the three preceding taxable years or your holding period for the ADSs or ordinary shares will be treated as an excess distribution. Under these special tax rules:

- the excess distribution or recognized gain will be allocated ratably over your holding period for the ADSs or ordinary shares;
- the amount allocated to the current taxable year, and any taxable years in your holding period prior to the first taxable year in which we were a PFIC, will be treated as ordinary income; and
- the amount allocated to each other taxable year will be subject to the highest tax rate in effect for individuals or corporations, as applicable, for each such year and the interest charge generally applicable to underpayments of tax will be imposed on the resulting tax attributable to each such year.

The tax liability for amounts allocated to taxable years prior to the year of disposition or excess distribution cannot be offset by any net operating losses for such years, and gains (but not losses) realized on the sale or other disposition of the ADSs or ordinary shares cannot be treated as capital, even if you hold the ADSs or ordinary shares as capital assets.

If we are treated as a PFIC with respect to you for any taxable year, to the extent any of our subsidiaries are also PFICs or we make direct or indirect equity investments in other entities that are PFICs, you may be deemed to own shares in such lower-tier PFICs that are directly or indirectly owned by us in that proportion which the value of the ADSs or ordinary shares you own bears to the value of all of our ADSs or ordinary shares, and you may be subject to the adverse tax consequences described in the preceding two paragraphs with respect to the shares of such lower-tier PFICs that you would be deemed to own. You should consult your tax advisors regarding the application of the PFIC rules to any of our subsidiaries.

A U.S. Holder of “marketable stock” (as defined below) in a PFIC may make a mark-to-market election for such stock to elect out of the PFIC rules described above regarding excess distributions and recognized gains. If you make a mark-to-market election for the ADSs or ordinary shares, you will include in income for each year we are a PFIC an amount equal to the excess, if any, of the fair market value of the ADSs or ordinary shares as of the close of your taxable year over your adjusted basis in such ADSs or ordinary shares. You will be allowed a deduction for the excess, if any, of the adjusted basis of the ADSs or ordinary shares over their fair market value as of the close of the taxable year. However, deductions will be allowable only to the extent of any net mark-to-market gains on the ADSs or ordinary shares included in your income for prior taxable years. Amounts included in your income under a mark-to-market election, as well as gain on the actual sale or other disposition of the ADSs or ordinary shares, will be treated as ordinary income. Ordinary loss treatment will also apply to the deductible portion of any mark-to-market loss on the ADSs or ordinary shares, as well as to any loss realized on the actual sale or other disposition of the ADSs or ordinary shares, to the extent the amount of such loss does not exceed the net mark-to-market gains previously included for such ADSs or ordinary shares. Your basis in the ADSs or ordinary shares will be adjusted to reflect any such income or loss amounts. If you make a mark-to-market election, any distributions we make would generally be subject to the rules discussed above under “—Taxation of Dividends and Other Distributions on the ADSs or Ordinary Shares,” except the lower rate applicable to qualified dividend income would not apply.

The mark-to-market election is available only for “marketable stock,” which is stock that is regularly traded on a qualified exchange or other market, as defined in applicable U.S. Treasury regulations. Our ADSs are listed on the New York Stock Exchange, which is a qualified exchange or other market for these purposes. Consequently, if the ADSs continue to be listed on the New York Stock Exchange and are regularly traded, and you are a holder of ADSs, we expect the mark-to-market election would be available to you if we were to become a PFIC. Because a mark-to-market election cannot be made for equity interests in any lower-tier PFICs that we own, a U.S. Holder may continue to be subject to the PFIC rules with respect to its indirect interest in any investments held by us that are treated as an equity interest in a PFIC for U.S. federal income tax purposes. You should consult your tax advisors as to the availability and desirability of a mark-to-market election, as well as the impact of such election on interests in any lower-tier PFICs.

Alternatively, if a non-U.S. corporation is a PFIC, a holder of shares in that corporation may avoid taxation under the PFIC rules described above regarding excess distributions and recognized gains by making a “qualified electing fund” election to include in income its share of the corporation’s income on a current basis. However, you may make a qualified

electing fund election with respect to your ADSs or ordinary shares only if we agree to furnish you annually with certain tax information, and we currently do not intend to prepare or provide such information.

Under newly enacted legislation, unless otherwise provided by the U.S. Treasury, each U.S. Holder of a PFIC is required to file an annual report containing such information as the U.S. Treasury may require. If we are or become a PFIC, you should consult your tax advisor regarding any reporting requirements that may apply to you.

**You are strongly urged to consult your tax advisor regarding the application of the PFIC rules (as well as the elections discussed above) to your investment in ADSs or ordinary shares.**

#### *Information Reporting and Backup Withholding*

Any dividend payments with respect to ADSs or ordinary shares and proceeds from the sale, exchange or redemption of ADSs or ordinary shares may be subject to information reporting to the U.S. Internal Revenue Service and possible U.S. backup withholding. Backup withholding will not apply, however, to a U.S. Holder that furnishes a correct taxpayer identification number and makes any other required certification or that is otherwise exempt from backup withholding. U.S. Holders that are required to establish their exempt status generally must provide such certification on U.S. Internal Revenue Service Form W-9. U.S. Holders should consult their tax advisors regarding the application of the U.S. information reporting and backup withholding rules.

Backup withholding is not an additional tax. Amounts withheld as backup withholding may be credited against your U.S. federal income tax liability, and you may obtain a refund of any excess amounts withheld under the backup withholding rules by filing the appropriate claim for refund with the U.S. Internal Revenue Service and furnishing any required information in a timely manner.

#### *Additional Reporting Requirements*

Certain U.S. Holders who are individuals may be required to report information relating to an interest in our ADSs or ordinary shares, subject to certain exceptions (including an exception for ADSs or ordinary shares held in accounts maintained by certain financial institutions). U.S. Holders should consult their tax advisors regarding the effect, if any, of these rules on their ownership and disposition of the ADSs and ordinary shares.

#### F. Dividends and Paying Agents

Not applicable.

#### G. Statement by Experts

Not applicable.

#### H. Documents on Display

We have previously filed with the Commission our registration statements on Form F-1 (File Number 333-139144 and File Number 333-142970), as amended, and registration statements on Form F-3 (File Number 333-152333 and File Number 333-160826).

We are subject to the periodic reporting and other informational requirements of the Exchange Act. Under the Exchange Act, we are required to file reports and other information with the SEC. Specifically, we are required to file annually a Form 20-F within four months after the end of each fiscal year for fiscal years ending on or after December 15, 2011. Copies of reports and other information, when so filed, may be inspected without charge and may be obtained at prescribed rates at the public reference facilities maintained by the Securities and Exchange Commission at Judiciary Plaza, 100 F Street, N.E., Washington, D.C. 20549, and at the regional office of the Securities and Exchange Commission located at Citicorp Center, 500 West Madison Street, Suite 1400, Chicago, Illinois 60661. The public may obtain information regarding the Washington, D.C. Public Reference Room by calling the Commission at 1-800-SEC-0330. The SEC also maintains a web site at <http://www.sec.gov> that contains reports, proxy and information statements, and other information regarding registrants that make electronic filings with the SEC using its EDGAR system. As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act.

We will furnish The Bank of New York Mellon, the depository of our ADSs, with our annual reports, which will include a review of operations and annual audited consolidated financial statements prepared in conformity with U.S. GAAP, and all notices of shareholders' meetings and other reports and communications that are made generally available to our shareholders. The depository will make such notices, reports and communications available to holders of ADSs and, upon our request, will mail to all record holders of ADSs the information contained in any notice of a shareholders' meeting received by the depository from us.

In accordance with the New York Stock Exchange Rules 203.01, we will post this annual report on Form 20-F on our website <http://www.trinasolar.com>. In addition, we will provide hardcopies of our annual report free of charge to shareholders and ADS holders upon request.

#### **I. Subsidiary Information**

For a listing of our subsidiaries, see "Item 4. Information on the Company—C. Organizational Structure".

### **Item 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

#### ***Inflation***

According to the National Bureau of Statistics of China, China's overall national inflation rate, as represented by the general consumer price index, was approximately 3.3% in 2010, 5.4% in 2011 and 2.6% in 2012. We have not in the past been materially affected by any such inflation, but we can provide no assurance that we will not be affected in the future.

#### ***Foreign Exchange Risk***

##### *Transaction risk*

Most of our sales are currently denominated in U.S. dollars and Euros, with the remainder consisting mostly of Renminbi, while a substantial portion of our costs and expenses is denominated in Renminbi, with the remainder in U.S. dollars. Therefore, fluctuations in currency exchange rates could have an adverse impact on our financial stability due to a mismatch among various foreign currency-denominated sales and costs. Fluctuations in exchange rates, particularly among the U.S. dollars, Renminbi and Euros, affect our gross and net profit margins and could result in foreign exchange and operating losses. Our exposure to foreign exchange risk primarily relates to currency gains or losses resulting from timing differences between the signing of sales contracts and the settling of these contracts. As of December 31, 2010, 2011 and 2012, we held \$377.3 million, \$466.5 million and \$390.2 million in accounts receivable, respectively, most of which were denominated in U.S. dollars and Euros. Had we converted all of our accounts receivable as of either date into Renminbi at an exchange rate of RMB6.2301 for \$1.00, the exchange rate as of December 31, 2012, our accounts receivable would have been RMB2,350.7 million, RMB2,906.6 million and RMB2,431.0 million as of December 31, 2010, 2011 and 2012, respectively. Assuming that Renminbi appreciates by a rate of 10% to an exchange rate of RMB5.6071 to \$1.00, we would record a loss in the fair value of our accounts receivable in Renminbi terms. A 10% appreciation of Renminbi would result in our holding Renminbi equivalents of 2,115.7 million, RMB2,615.9 million and RMB2,187.9 million in accounts receivable as of December 31, 2010, 2011 and 2012, respectively. These amounts would therefore reflect a theoretical loss of RMB235.0 million, RMB290.7 million and RMB243.1 million for our accounts receivable as of December 31, 2010, 2011 and 2012, respectively. This calculation model is based on multiplying our accounts receivable, which are held in U.S. dollars, by a smaller Renminbi equivalent amount resulting from an appreciation of Renminbi. This calculation model does not take into account optionality nor does it take into account the use of financial instruments.

In addition, Renminbi is not a freely convertible currency. The SAFE controls the conversion of Renminbi to foreign currencies. The value of the Renminbi is subject to changes of central government policies and international economic and political developments affecting supply and demand in the China foreign exchange trading system market. Our cash and cash equivalents and restricted cash denominated in Renminbi amounted to \$309.6 million, \$208.4 million and \$145.0 million as of December 31, 2010, 2011 and 2012, respectively.

##### *Foreign currency translation risk*

We are subject to foreign currency translation risk. The U.S. dollar is our functional and reporting currency. Monetary assets and liabilities denominated in currencies other than the U.S. dollars are translated into U.S. dollars at the rates of exchange ruling at the balance sheet date. Transactions in currencies other than the U.S. dollar during the year are

converted into U.S. dollars at the applicable rates of exchange prevailing at the beginning of the month transactions occurred. Transaction gains and losses are recognized in the statements of operations.

Depending on movements in foreign exchange rates, the foreign currency translation may have an adverse impact on our consolidated financial statements. We recorded these exchange gains and losses in the statements of operations. In 2010, 2011 and 2012, we had a foreign exchange loss of \$36.1 million, \$27.4 million and a gain of \$0.9 million, respectively. As a significant portion of our sales contracts was denominated in Euros, the slight appreciation of the Euro against the U.S. dollar, resulted in our recording of an exchange gain in 2012.

#### *Risk management*

Our primary objective for holding derivative financial instruments is to manage currency risk. We record derivative instruments as assets or liabilities, measured at fair value.

Starting from October 2008, we have entered into a series of foreign currency forward contracts with commercial banks, to hedge our exposure to foreign currency exchange risk. As of December 31, 2012, we had foreign currency forward contracts with a total contract value of approximately \$177.5 million. We do not use foreign currency forward contracts to hedge all of our foreign currency denominated commitments. As with all hedging instruments, there are risks associated with the use of foreign currency forward contracts. As of December 31, 2012, we recorded a gain in fair value of forward foreign currency exchange contracts of \$8.5 million, which was included in the line item "Derivatives gain (loss)" in the consolidated statements of operations. The Company estimates fair value of forward foreign currency exchange contract at the price that would be received from the sale of the contracts or paid to settle the contracts on the measurement date in an orderly transaction between market participants. While the use of such foreign currency forward contracts provides us with protection from certain fluctuations in foreign currency exchange, we potentially forgo the benefits that might result from favorable fluctuations in foreign currency exchange. In addition, any default by the counterparties to these transactions could adversely affect our financial condition and results of operations. Assuming a 1.0% appreciation of the Euro against the U.S. dollar to the exchange rate as of December 31, 2012, the mark-to-market loss of our outstanding foreign exchange forward contracts (Euros/U.S. dollars) would have increased by approximately \$1.0 million as of December 31, 2012. Assuming a 1.0% appreciation of the Renminbi against the U.S. dollar to the exchange rate as of December 31, 2012, the mark-to-market gain of our outstanding foreign exchange forward contracts (Renminbi/U.S. dollars) would have increased by approximately \$0.7 million as of December 31, 2012.

#### ***Interest Rate Risk***

Our exposure to interest rate risk primarily relates to interest expenses incurred by our short-term and long-term borrowings, as well as interest income generated by excess cash invested in demand deposits and liquid investments with original maturities of three months or less. Such interest-earning instruments carry a degree of interest rate risk. We have not used any derivative financial instruments to manage our interest rate risk exposure. We have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in interest rates. However, our future interest expense may increase due to changes in market interest rates. If market interest rates for short-term demand deposits increase in the near future, such increase may cause the amount of our interest income to rise. A hypothetical 10% increase in the average interest rate for our bank borrowings would result in an increase of approximately \$5.2 million in interest expense in 2012. We may use derivative financial instruments, such as interest rate swaps, to mitigate potential risks of interest expense increases due to changes in market interest rates.

#### **Item 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES**

##### **A. Debt Securities**

Not applicable.

##### **B. Warrants and Rights**

Not applicable.

##### **C. Other Securities**

Not applicable.



#### D. American Depositary Shares

According to our Deposit Agreement with our ADS depository, The Bank of New York Mellon, the depository collects its fees for issuance and cancellation of ADSs directly from investors depositing shares or surrendering ADSs for the purpose of withdrawal or from intermediaries acting for them. The depository collects fees for making distributions to investors by deducting those fees from the amounts distributed or by selling a portion of distributable property to pay the fees. The depository may collect its annual fee for depository services by deduction from cash distributions, or by directly billing investors, or by charging the book-entry system accounts of participants acting for them. The depository may generally refuse to provide fee-attracting services until its fees for those services are paid.

<b>Persons depositing or withdrawing shares must pay:</b>	<b>For:</b>
\$5.00 (or less) per 100 ADSs (or portion of 100 ADSs)	<ul style="list-style-type: none"> <li>• Issuance of ADSs, including issuances resulting from a distribution of shares or rights or other property; or</li> <li>• Cancellation of ADSs for the purpose of withdrawal, including if the deposit agreement terminates</li> </ul>
€	€
\$.02 (or less) per ADS	<ul style="list-style-type: none"> <li>• Any cash distribution to you</li> </ul>
€	€
A fee equivalent to the fee that would be payable if securities distributed to you had been shares and the shares had been deposited for issuance of ADSs	<ul style="list-style-type: none"> <li>• Distribution of securities distributed to holders of deposited securities that are distributed by the depository to ADS holders</li> </ul>
€	€
\$.02 (or less) per ADSs per calendar year	<ul style="list-style-type: none"> <li>• Depository services</li> </ul>
€	€
Registration or transfer fees	<ul style="list-style-type: none"> <li>• Transfer and registration of shares on our share register to or from the name of the depository or its agent when you deposit or withdraw shares</li> </ul>
€	€
Expenses of the depository	<ul style="list-style-type: none"> <li>• Cable, telex and facsimile transmissions (when expressly provided in the deposit agreement); or</li> <li>• Converting foreign currency to U.S. dollars</li> </ul>
€	€
Taxes and other governmental charges the depository or the custodian have to pay on any ADS or share underlying an ADS, for example, stock transfer taxes, stamp duty or withholding taxes	<ul style="list-style-type: none"> <li>• As necessary</li> </ul>
€	€
Any charges incurred by the depository or its agents for servicing the deposited securities	<ul style="list-style-type: none"> <li>• As necessary</li> </ul>

The fees described above may be amended from time to time.

The depository has agreed to reimburse us for expenses we incur that are related to establishment and maintenance of the ADR program, including investor relations expenses and stock exchange application and listing fees. There are limits on the amount of expenses for which the depository will reimburse us, but the amount of reimbursement available to us is not related to the amounts of fees the depository collects from investors. In 2012, we received \$387,121 from the depository in reimbursements relating to the ADS facility.

## PART II

### Item 13. **DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES**

None.

**Item 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS**

None.

**Item 15. CONTROLS AND PROCEDURES**

**Disclosure Controls and Procedures**

Under the supervision and with the participation of our management, including our chief executive officer and our chief financial officer, we carried out an evaluation of the effectiveness of our disclosure controls and procedures, which is defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act, as of the period covered by this annual report. Based on that evaluation, our chief executive officer and chief financial officer concluded that our disclosure controls and procedures were effective in ensuring that the information required to be disclosed by us in the reports that we file and furnish under the Exchange Act was recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms as of the end of the period covered by this annual report.

**Management's Annual Report on Internal Control over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such item is defined in Rules 13a-15(f) under the Exchange Act, for our company. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with U.S. GAAP and includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of a company's assets, (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that a company's receipts and expenditures are being made only in accordance with authorizations of a company's management and directors, and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of a company's assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our financial statements would be prevented or detected. Also, projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As required by Section 404 of the Sarbanes-Oxley Act and related rules as promulgated by the SEC, our management assessed the effectiveness of the internal control over financial reporting as of December 31, 2012 using criteria established in "Internal Control—Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on this assessment, management concluded that our internal control over financial reporting was effective as of December 31, 2012 based on the criteria established in "Internal Control—Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission.

**Attestation Report of the Registered Public Accounting Firm**

The effectiveness of internal control over financial reporting as of December 31, 2012 has been audited by KPMG, an independent registered public accounting firm, who has also audited our consolidated financial statements for the year ended December 31, 2012. The attestation report issued by KPMG can be found on page F-3 of this annual report.

**Changes in Internal Controls**

There were no changes in our internal control over financial reporting that occurred during the year ended December 31, 2012 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

**Item 16A. AUDIT COMMITTEE FINANCIAL EXPERT**

Mr. Jerome Corcoran qualifies as an "audit committee financial expert" as defined in Item 16A of Form 20-F. All the

members of our audit committee, namely, Mr. Jerome Corcoran, Mr. Liping Qiu and Mr. Qian Zhao, satisfy the “independence” requirements of Section 303A of the Corporate Governance Rules of the New York Stock Exchange and Rule 10A-3 under the Exchange Act.

#### **Item 16B. CODE OF ETHICS**

Our board of directors has adopted a code of ethics that applies to our directors, officers, employees and agents, including certain provisions that specifically apply to our chief executive officer, chief financial officer, chief operating officer, chief technology officer, vice presidents and any other persons who perform similar functions for us. We have filed our initial code of business conduct and ethics with the Securities and Exchange Commission on December 7, 2006. We have amended the code of business conduct and ethics on August 16, 2011 and are filing it as Exhibit 11.1 of this annual report. Our code of business conduct and ethics is posted on our website <http://www.trinasolar.com>. We hereby undertake to provide to any person without charge, a copy of our code of business conduct and ethics within ten working days after we receive such person’s written request.

#### **Item 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

Deloitte Touche Tohmatsu Certified Public Accountants LLP, or Deloitte, audited our consolidated financial statements for each of the years ended December 31, 2010 and 2011. Effective June 26, 2012, we dismissed Deloitte and engaged KPMG to act as our independent registered public accounting firm. The change was made as part of a structured rotation of our audit service providers and was approved by our audit committee, our board of directors and our shareholders.

The following table sets forth the aggregate fees by categories specified below in connection with certain professional services rendered by Deloitte and KPMG for the periods indicated.

	2011	2012
Audit fees <sup>(1)</sup>	\$ 1,729,901	\$ 1,068,003
Audit-related fees <sup>(2)</sup>	\$ —	\$ 462,460
Tax fees <sup>(3)</sup>	\$ 160,648	\$ —
All other fees	—	\$ —

- 
- (1) “Audit fees” means the aggregate fees billed in each of the fiscal years listed for professional services rendered by our independent auditors for the audit of our consolidated financial statements.
- (2) “Audit-related fees” means the aggregate fees billed in each of the fiscal years listed for assurance and related services by our independent auditors that are reasonably related to the performance of the audit or review of our consolidated financial statements and are not reported under “Audit fees.”
- (3) “Tax fees” means the aggregate fees billed in each of the fiscal years listed for professional services rendered for tax compliance, tax advice, and tax planning.

The policy of our audit committee is to pre-approve all audit and non-audit services provided by our independent auditor, including audit services, audit-related services, tax services and other services as described above, other than those for *de minimus* services which are approved by the Audit Committee prior to the completion of the audit.

#### **Item 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES**

Not applicable.

#### **Item 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS**

None.

#### **Item 16F. CHANGE IN REGISTRANT’S CERTIFYING ACCOUNTANT**

Effective June 26, 2012, we ended the engagement of Deloitte as our independent registered accounting firm.

Effective June 26, 2012, we engaged KPMG as our independent registered public accounting firm for the fiscal year ended December 31, 2012. The change was approved by our audit committee, our board of directors and our shareholders.

Deloitte's report on our consolidated financial statements as of and for the years ended December 31, 2010 and 2011 did not contain any adverse opinion or a disclaimer of opinion and were not qualified or modified as to uncertainty, audit scope, or accounting principles.

During the two fiscal years ended December 31, 2011, and subsequent interim period preceding the appointment of the new auditors, we did not have any "disagreement", as that term is defined in Item 16F(a)(1)(iv) of Form 20-F and the related instructions to Item 16F of Form 20-F, with Deloitte on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedures that, if not resolved to the satisfaction of Deloitte, would have caused them to make reference to the subject matter of the disagreement in connection with its report on our consolidated financial statements for the two fiscal years ended December 31, 2011.

During the two fiscal years ended December 31, 2011, and subsequent interim period preceding the appointment of the new auditors, there were no "reportable events" (hereinafter defined) requiring disclosure pursuant to Item 16F(a)(1)(v) of Form 20-F.

During the two fiscal years ended December 31, 2011, and subsequent interim period preceding the appointment of the new auditors, neither we nor anyone on our behalf consulted KPMG regarding either (i) the application of accounting principles to a specified transaction, either completed or proposed, or the type of audit opinion that might be rendered on our consolidated financial statements, nor has KPMG provided to us a written report or oral advice that KPMG concluded was an important factor considered by us in reaching a decision as to the accounting, auditing or financial reporting issue, or (ii) any matter that was either the subject of a "disagreement" with Deloitte, as that term is defined in Item 16F(a)(1)(iv) of Form 20-F and the related instructions to Item 16F of Form 20-F, or a "reportable event," as that term is described in Item 16F(a)(1)(v) of Form 20-F.

We provided a copy of this disclosure to Deloitte and requested that Deloitte furnish us with a letter addressed to the Securities and Exchange Commission stating whether it agrees with the statements made above, and if not, stating the respects in which it does not agree. A copy of Deloitte's letter dated April 2, 2013 is attached herewith as Exhibit 4.16.

#### **Item 16G. CORPORATE GOVERNANCE**

We believe that there are no significant differences between our corporate governance practices and those of U.S. domestic companies under the listing standards of the New York Stock Exchange.

### **PART III**

#### **Item 17. FINANCIAL STATEMENTS**

We have elected to provide financial statements pursuant to Item 18.

#### **Item 18. FINANCIAL STATEMENTS**

The consolidated financial statements of Trina and its subsidiaries are included at the end of this annual report.

#### **Item 19. EXHIBITS**

- 1.1 Amended and Restated Memorandum and Articles of Association of the Registrant (incorporated by reference to Exhibit 1.1 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on March 17, 2010)
- 2.1 Registrant's Form American Depositary Receipt (included in Exhibit 2.3)
- 2.2 Registrant's Specimen Certificate for Ordinary Shares (incorporated by reference to Exhibit 4.2 of our Registration Statement on Form F-1 (file No. 333-142970) filed with the Securities and Exchange Commission on May 15, 2007)

- 2.3 Deposit Agreement among the Registrant, the depositary and holder of the American Depositary Shares (incorporated by reference to Exhibit 1 of our Post-Effective Amendment No. 1 to the Registration Statement on Form F-6 (file No. 333-139161) filed with the Securities and Exchange Commission on November 21, 2008)
- 2.4 Form of Share Transfer Agreement relating to Trina China between the Registrant and other parties therein dated March 28, 2006 (incorporated by reference to Exhibit 4.4 of our Registration Statement on Form F-1 (file No. 333-142970) filed with the Securities and Exchange Commission on May 15, 2007)
- 2.5 First Supplemental Indenture dated as of July 23, 2008 between Wilmington Trust Company and the Registrant (incorporated by reference to Exhibit 4.1 of the Report of Foreign Private Issuer on Form 6-K filed by Trina Solar Limited on July 23, 2008).
- 4.1\* Amended and Restated Share Incentive Plan
- 4.2 Form of Indemnification Agreement between the Registrant and its officers and directors (incorporated by reference to Exhibit 10.2 of our Registration Statement on Form F-1 (file No. 333-142970) filed with the Securities and Exchange Commission on May 15, 2007)
- 4.3 Form of Employment Agreement between the Registrant and a Senior Executive Officer of the Registrant (incorporated by reference to Exhibit 10.3 of our Registration Statement on Form F-1 (file No. 333-142970) filed with the Securities and Exchange Commission on May 15, 2007)
- 4.4 Polysilicon Supply Agreement between Jiangsu Zhongneng Polysilicon Technology Development Co., Ltd. and Trina China dated March 29, 2008 (incorporated by reference to Exhibit 4.19 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on June 26, 2008)
- 4.5 Supplemental Polysilicon Supply Agreement between Jiangsu Zhongneng Polysilicon Technology Development Co., Ltd. and Trina China dated August 19, 2008 (incorporated by reference to Exhibit 4.20 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on April 30, 2009)
- 4.6 ADS Lending Agreement, dated July 17, 2008, among Credit Suisse Securities (Europe) Limited, Credit Suisse, London Branch, and the Registrant (incorporated by reference to Exhibit 99.1 of the Report of Foreign Private Issuer on Form 6-K filed by Trina Solar Limited on July 23, 2008).
- 4.7 Supplemental Polysilicon Supply Agreement II between Jiangsu Zhongneng Polysilicon Technology Development Co., Ltd. and Trina China dated August 24, 2009 (incorporated by reference to Exhibit 4.23 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on March 17, 2010)
- 4.8 Syndicated Loan Agreement among Trina China, Agricultural Bank of China and various parties mentioned therein dated September 28, 2009 (incorporated by reference to Exhibit 4.24 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on March 17, 2010)
- 4.9 Maximum Amount Property Mortgage Contract between Trina China and Agricultural Bank of China dated September 28, 2009 (incorporated by reference to Exhibit 4.25 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on March 17, 2010)
- 4.10† Supplementary Agreement No. 4 to Polysilicon Supply Agreement between Jiangsu Zhongneng Polysilicon Technology Development Co., Ltd. and Trina China dated March 29, 2010 (incorporated by reference to Exhibit 4.10 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on March 29, 2012)



4.11†	Supplementary Agreement No. 10 to Polysilicon Supply Agreement between Trina China and Changzhou GCL Photovoltaic Technology Co., Ltd. dated January 11, 2011 (incorporated by reference to Exhibit 4.11 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on March 29, 2012)
4.12†	Supplementary Agreement No. 15 to Polysilicon Supply Agreement between Trina China and Changzhou GCL Photovoltaic Technology Co., Ltd. dated March 22, 2012 (incorporated by reference to Exhibit 4.12 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on March 29, 2012)
4.13*††	Supplementary Agreement No. 17 to Polysilicon Supply Agreement between Trina China, Changzhou GCL Photovoltaic Technology Co., Ltd. and other parties named therein dated October 26, 2012
4.14*††	Supplementary Agreement No. 19 to Polysilicon Supply Agreement between Trina China, Changzhou GCL Photovoltaic Technology Co., Ltd. and other parties named therein dated March 8, 2013
4.15*††	Supplementary Agreement No. 20 to Polysilicon Supply Agreement between Trina China and Jiangsu Zhongneng Polysilicon Technology Development Co., Ltd. dated March 8, 2013
4.16*	Letter dated April 2, 2013 from Deloitte Touche Tohmatsu Certified Public Accountants LLP
8.1*	Subsidiaries of the Registrant
11.1	Code of Business Conduct and Ethics of the Registrant
12.1*	CEO Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
12.2*	CFO Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
13.1**	CEO Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
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15.1*	Consent of Deloitte Touche Tohmatsu Certified Public Accountants LLP
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101*	Financial information from registrant for the year ended December 31, 2012 formatted in eXtensible Business Reporting Language (XBRL):  (i) Consolidated Balance Sheets as of December 31, 2011 and 2012; (ii) Consolidated Statements of Operations for the Years Ended December 31, 2010, 2011 and 2012; (iii) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2010, 2011 and 2012; (iv) Consolidated Statements of Changes in Equity for the Years Ended December 31, 2010, 2011 and 2012; (v) Consolidated Statements of Cash Flows for the Years Ended December 31, 2010, 2011 and 2012; (vi) Notes to the Consolidated Financial Statements; and (vii) Additional Information—Financial Statement Schedule I

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\* Filed with this annual report on Form 20-F

\*\* Furnished with this annual report on Form 20-F

- † Confidential has been granted with respect to portions of this exhibit and such confidential treatment portions have been deleted and replaced with “\*\*\*\*” and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 under the Securities Exchange Act of 1934.
- †† Confidential treatment is being requested with respect to portions of this exhibit and such confidential treatment portions have been deleted and replaced with “\*\*\*\*” and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 under the Securities Exchange Act of 1934.

## SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

Trina Solar Limited

By: /s/ Jifan Gao

Name: Jifan Gao

Title: Chairman and Chief Executive Officer

Date: April 2, 2013

[Signature Page to 20-F]

## EXHIBIT INDEX

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4.11†	Supplementary Agreement No. 10 to Polysilicon Supply Agreement between Trina China and Changzhou GCL Photovoltaic Technology Co., Ltd. dated January 11, 2011 (incorporated by reference to Exhibit 4.11 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on March 29, 2012)
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15.2*	Consent of KPMG
101*	Financial information from registrant for the year ended December 31, 2012 formatted in eXtensible Business Reporting Language (XBRL):



(i) Consolidated Balance Sheets as of December 31, 2011 and 2012; (ii) Consolidated Statements of Operations for the Years Ended December 31, 2010, 2011 and 2012; (iii) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2010, 2011 and 2012; (iv) Consolidated Statements of Changes in Equity for the Years Ended December 31, 2010, 2011 and 2012; (v) Consolidated Statements of Cash Flows for the Years Ended December 31, 2010, 2011 and 2012; (vi) Notes to the Consolidated Financial Statements; and (vii) Additional Information—Financial Statement Schedule I

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\* Filed with this annual report on Form 20-F

\*\* Furnished with this annual report on Form 20-F

† Confidential has been granted with respect to portions of this exhibit and such confidential treatment portions have been deleted and replaced with “\*\*\*\*\*” and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 under the Securities Exchange Act of 1934.

†† Confidential treatment is being requested with respect to portions of this exhibit and such confidential treatment portions have been deleted and replaced with “\*\*\*\*\*” and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 under the Securities Exchange Act of 1934.

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Copies of the exhibits are available over the internet at the SEC’s website at [www.sec.gov](http://www.sec.gov).  
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TRINA SOLAR LIMITED

**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

<a href="#"><u>Reports of Independent Registered Public Accounting Firms</u></a>	F-2
<a href="#"><u>Consolidated Balance Sheets as of December 31, 2011 and 2012</u></a>	F-5
<a href="#"><u>Consolidated Statements of Operations for the Years Ended December 31, 2010, 2011 and 2012</u></a>	F-7
<a href="#"><u>Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2010, 2011 and 2012</u></a>	F-8
<a href="#"><u>Consolidated Statements of Changes in Equity for the Years Ended December 31, 2010, 2011 and 2012</u></a>	F-9
<a href="#"><u>Consolidated Statements of Cash Flows for the Years Ended December 31, 2010, 2011 and 2012</u></a>	F-10
<a href="#"><u>Notes to Consolidated Financial Statements</u></a>	F-12
<a href="#"><u>Additional Information — Financial Statement Schedule I</u></a>	F-51

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## Report of Independent Registered Public Accounting Firm

### The Board of Directors and Shareholders Trina Solar Limited:

We have audited the accompanying consolidated balance sheet of Trina Solar Limited and subsidiaries as of December 31, 2012, and the related consolidated statements of operations, comprehensive income, changes in equity, and cash flows for the year then ended. In connection with our audit of the consolidated financial statements, we also have audited financial statement schedule I. These consolidated financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and financial statement schedule based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Trina Solar Limited and subsidiaries as of December 31, 2012, and the results of their operations and their cash flows for the year then ended, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Trina Solar Limited's internal control over financial reporting as of December 31, 2012, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated April 2, 2013, expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG

Hong Kong, China

April 2, 2013

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## Report of Independent Registered Public Accounting Firm

### The Board of Directors and Shareholders Trina Solar Limited:

We have audited Trina Solar Limited's internal control over financial reporting as of December 31, 2012, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Trina Solar Limited's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Trina Solar Limited maintained, in all material respects, effective internal control over financial reporting as of December 31, 2012, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of Trina Solar Limited and subsidiaries as of December 31, 2012, and the related consolidated statements of operations, comprehensive income, changes in equity, and cash flows for the year then ended, and our report dated April 2, 2013 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG

Hong Kong, China

April 2, 2013

TRINA SOLAR LIMITED

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of

Trina Solar Limited

We have audited the accompanying consolidated balance sheet of Trina Solar Limited and subsidiaries (the “Company”) as of December 31, 2011, and the related consolidated statements of operations, comprehensive income, changes in equity, and cash flows for each of the two years in the period ended December 31, 2011 and the related financial statement schedule included in Schedule I. These financial statements and financial statement schedule are the responsibility of the Company’s management. Our responsibility is to express an opinion on the financial statements and financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Trina Solar Limited and subsidiaries as of December 31, 2011, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2011, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

/s/ DELOITTE TOUCHE TOHMATSU CPA LTD.

Shanghai, China

March 29, 2012

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TRINA SOLAR LIMITED AND SUBSIDIARIES

**CONSOLIDATED BALANCE SHEETS**  
(Amounts in U.S. dollars, except share data)

	As of December 31,	
	2011	2012
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	816,779,973	807,275,992
Restricted cash	79,602,299	110,920,029
Inventories	249,778,729	318,503,459
Project assets, current portion	8,860,635	7,960,441
Accounts receivable, net of allowance for doubtful accounts of \$45,438,767 and \$106,825,173 as of December 31, 2011 and 2012, respectively	466,537,084	390,157,310
Current portion of advances to suppliers, net	63,492,494	57,846,194
Deferred income tax assets, net	10,466,825	12,716,521
Prepaid expenses and other current assets	73,203,526	60,107,295
Total current assets	1,768,721,565	1,765,487,241
Advances to suppliers, net of current portion	120,144,449	86,992,874
Property, plant and equipment, net	919,726,634	893,340,005
Prepaid land use rights, net	42,848,081	41,961,273
Project assets, net of current portion	2,902,034	23,397,997
Deferred income tax assets, net	19,038,544	41,047,764
Investment in equity affiliates	4,066,872	10,960,391
Other noncurrent assets	—	1,669,354
<b>TOTAL ASSETS</b>	<b>2,877,448,179</b>	<b>2,864,856,899</b>

*See accompanying notes to consolidated financial statements*



TRINA SOLAR LIMITED AND SUBSIDIARIES

**CONSOLIDATED BALANCE SHEETS – (continued)**  
(Amounts in U.S. dollars, except share data)

	As of December 31,	
	2011	2012
<b>LIABILITIES AND EQUITY</b>		
Current liabilities:		
Short-term borrowings and current portion of long-term borrowings	389,472,291	875,820,790
Convertible senior notes	—	83,582,000
Accounts payable	472,091,736	423,985,165
Amount due to related parties	6,748,353	4,861,497
Income taxes payable	4,502,285	936,803
Accrued expenses and other current liabilities	134,620,653	89,968,617
Total current liabilities	1,007,435,318	1,479,154,872
Long-term borrowings, excluding current portion	520,150,533	415,150,385
Convertible senior notes	127,756,000	—
Accrued warranty costs	58,810,186	65,780,019
Other noncurrent liabilities	17,970,893	22,986,914
Total liabilities	1,732,122,930	1,983,072,190
Equity:		
Ordinary shares (\$0.00001 par value; 73,000,000,000 shares authorized, 3,982,271,362 and 3,993,306,819 shares issued and outstanding as of December 31, 2011 and 2012, respectively)	39,823	39,933
Additional paid-in capital	650,944,164	656,943,591
Retained earnings	481,950,538	215,395,146
Accumulated other comprehensive income	12,190,872	9,206,322
Total Trina Solar Limited shareholders' equity	1,145,125,397	881,584,992
Non-controlling interest	199,852	199,717
Total equity	1,145,325,249	881,784,709
Commitments and contingencies (Note 17)		
<b>TOTAL LIABILITIES AND EQUITY</b>	<b>2,877,448,179</b>	<b>2,864,856,899</b>

*See accompanying notes to consolidated financial statements*

TRINA SOLAR LIMITED AND SUBSIDIARIES

**CONSOLIDATED STATEMENTS OF OPERATIONS**  
(Amount in U.S. dollars, except share data)

	Year ended December 31,		
	2010	2011	2012
Net sales	1,857,689,274	2,047,901,576	1,296,654,938
Cost of goods sold	1,273,328,214	1,715,259,698	1,239,411,615
Gross profit	584,361,060	332,641,878	57,243,323
Selling expenses	75,677,623	100,427,110	118,885,352
General and administrative expenses	72,710,154	157,128,736	176,719,139
Research and development expenses	18,624,846	44,120,473	26,510,457
Income (loss) from operations	417,348,437	30,965,559	(264,871,625)
Other income (expenses):			
Interest income	2,590,210	3,056,185	8,551,539
Interest expense	(33,952,126)	(35,020,940)	(51,886,930)
Foreign exchange (loss) gain	(36,155,829)	(27,434,515)	907,500
Derivatives gain (loss)	9,475,794	(11,393,346)	8,541,721
Other income, net	215,692	9,316,434	6,797,196
Income (loss) before income taxes	359,522,178	(30,510,623)	(291,960,599)
Income tax (expense) benefit	(48,069,198)	(7,309,619)	25,405,072
Net income (loss)	311,452,980	(37,820,242)	(266,555,527)
Net loss attributable to the noncontrolling interest	—	149	135
Net income (loss) attributable to Trina Solar Limited shareholders	311,452,980	(37,820,093)	(266,555,392)
Earnings (loss) per ordinary share			
Basic	0.09	(0.01)	(0.08)
Diluted	0.08	(0.01)	(0.08)
Weighted average ordinary shares outstanding			
Basic	3,402,701,503	3,521,182,416	3,534,829,694
Diluted	3,833,713,796	3,521,182,416	3,534,829,694

*See accompanying notes to consolidated financial statements*

TRINA SOLAR LIMITED AND SUBSIDIARIES

**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME**  
(Amount in U.S. dollars)

	Year ended December 31,		
	2010	2011	2012
Net income (loss)	311,452,980	(37,820,242)	(266,555,527)
Other comprehensive (loss) income:			
Foreign currency translation adjustments, net of nil tax	(433,227)	1,183,743	(2,984,550)
Comprehensive income (loss)	311,019,753	(36,636,499)	(269,540,077)
Less: net loss attributable to non-controlling interest	—	(149)	(135)
Comprehensive income (loss) attributable to Trina Solar Limited	<u>311,019,753</u>	<u>(36,636,350)</u>	<u>(269,539,942)</u>

*See accompanying notes to consolidated financial statements*

TRINA SOLAR LIMITED AND SUBSIDIARIES

**CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY**  
(Amounts in U.S. dollars, except share data)

	Ordinary shares		Additional paid-in capital	Retained earnings	Accumulated other comprehensive income (loss)	Noncontrolling interest	Total shareholders' equity
	Shares	Amount					
Balance at January 1, 2010	3,486,901,296	34,869	459,519,178	208,317,651	11,440,356	—	679,312,054
Share-based compensation	—	—	5,955,047	—	—	—	5,955,047
Issuance of restricted shares to employees	27,528,391	275	—	—	—	—	275
Issuance of ordinary shares pursuant to share option plan	4,503,300	45	1,088,931	—	—	—	1,088,976
Repurchase of restricted shares	(9,097,633)	(91)	—	—	—	—	(91)
Issuance of ordinary shares, net of issue costs	454,250,000	4,543	176,266,535	—	—	—	176,271,078
Net income	—	—	—	311,452,980	—	—	311,452,980
Foreign currency translation adjustments, net of nil tax	—	—	—	—	(433,227)	—	(433,227)
Balance at December 31, 2010	3,964,085,354	39,641	642,829,691	519,770,631	11,007,129	—	1,173,647,092
Share-based compensation	—	—	7,958,434	—	—	—	7,958,434
Vesting of restricted shares to employees	17,320,908	173	—	—	—	—	173
Issuance of ordinary shares pursuant to share option plan	865,100	9	156,039	—	—	—	156,048
Net loss	—	—	—	(37,820,093)	—	(149)	(37,820,242)
Acquisition of subsidiaries	—	—	—	—	—	200,001	200,001
Foreign currency translation adjustments, net of nil tax	—	—	—	—	1,183,743	—	1,183,743
Balance at December 31, 2011	3,982,271,362	39,823	650,944,164	481,950,538	12,190,872	199,852	1,145,325,249
Share-based compensation	—	—	5,999,427	—	—	—	5,999,427
Vesting of restricted shares to employees	11,035,457	110	—	—	—	—	110
Net loss	—	—	—	(266,555,392)	—	(135)	(266,555,527)
Foreign currency translation adjustments, net of nil tax	—	—	—	—	(2,984,550)	—	(2,984,550)
Balance at December 31, 2012	<u>3,993,306,819</u>	<u>39,933</u>	<u>656,943,591</u>	<u>215,395,146</u>	<u>9,206,322</u>	<u>199,717</u>	<u>881,784,709</u>

See accompanying notes to consolidated financial statements

TRINA SOLAR LIMITED AND SUBSIDIARIES

**CONSOLIDATED STATEMENTS OF CASH FLOWS**

(Amounts in U.S. dollars)

	Year ended December 31,		
	2010	2011	2012
Operating activities:			
Net income (loss)	311,452,980	(37,820,242)	(266,555,527)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	52,279,855	69,837,152	111,108,445
Loss on change in fair value of investment in securities	812,929	295,715	—
(Gain) loss on change in fair value of derivatives	(9,475,794)	(9,495,084)	182,335
Loss (gain) on disposal of property, plant and equipment	1,772,161	3,586,877	(308,739)
Allowance made for accounts receivable, net of recoveries	5,435,656	26,556,358	61,387,013
Provision for losses of advances to suppliers	163,445	9,456,713	2,750,340
Inventory write-down	10,195,272	22,242,087	39,555,386
Deferred income tax benefit	(9,456,451)	(4,579,609)	(24,258,916)
Share-based compensation	5,955,047	7,958,434	5,999,427
Amortization of convertible senior notes issuance costs	3,899,771	2,101,948	—
Gain on repurchasing convertible senior notes	—	(2,341,290)	(5,091,424)
Changes in operating assets and liabilities:			
Investment in securities	2,925,652	—	—
Accounts receivable	(94,803,019)	(115,775,917)	14,992,761
Inventories	(8,167,579)	(192,894,750)	(64,494,897)
Project assets	(33,040,511)	23,216,361	(29,239,605)
Advances to suppliers	(28,151,054)	(18,614,756)	(7,737,684)
Prepaid expenses and other current assets	(3,393,307)	(37,275,621)	12,914,006
Other noncurrent assets	—	—	(1,669,354)
Accounts payable	(2,406,437)	221,770,071	15,223,823
Amount due to related parties	—	6,079,370	(1,886,856)
Income taxes payable	21,282,640	(29,654,334)	(3,565,482)
Accrued expenses and other current liabilities	33,764,877	67,008,197	(44,652,036)
Accrued warranty costs	17,687,493	20,099,312	6,969,833
Other noncurrent liabilities	(5,179,337)	(4,029,184)	178,265
Prepaid land use rights	(9,625,161)	(5,800,534)	—
Net cash provided by (used in) operating activities	263,929,128	21,927,274	(178,198,886)
Investing activities:			
Purchases of property, plant and equipment	(144,124,272)	(360,886,231)	(141,108,975)
Proceeds from sale of property, plant and equipment	3,622	1,523,598	3,896,148
Subsidies received from government for purchases of property, plant and equipment	7,454,208	2,315,542	4,837,756
Investments in affiliates	(155,888)	(3,910,984)	(6,893,519)
Decrease (increase) in restricted cash	33,970,278	(41,567,128)	(31,317,730)
Net cash used in investing activities	(102,852,052)	(402,525,203)	(170,586,320)

See accompanying notes to consolidated financial statements

TRINA SOLAR LIMITED AND SUBSIDIARIES

**CONSOLIDATED STATEMENTS OF CASH FLOWS – (continued)**  
(Amounts in U.S. dollars)

	Year ended December 31,		
	2010	2011	2012
Financing activities:			
Proceeds from exercise of share options	1,088,976	156,048	—
Proceeds from issuance of ordinary shares, net of issuance costs	176,271,078	—	—
Payment for repurchase of convertible senior notes	—	(7,582,710)	(39,082,576)
Redemption of convertible senior notes	—	(320,000)	—
Proceeds from short-term bank borrowings	375,979,373	617,992,242	1,044,195,782
Repayment of short-term bank borrowings	(484,754,971)	(465,921,421)	(635,681,819)
Proceeds from long-term bank borrowings	117,461,375	298,922,413	82,107,781
Repayment of long-term bank borrowings	—	—	(109,273,393)
Contribution from non-controlling interest holders	—	200,001	—
Net cash provided by financing activities	<u>186,045,831</u>	<u>443,446,573</u>	<u>342,265,775</u>
Effect of exchange rate changes	<u>(433,227)</u>	<u>1,183,743</u>	<u>(2,984,550)</u>
Net change in cash and cash equivalents	346,689,680	64,032,387	(9,503,981)
Cash and cash equivalents at the beginning of the year	<u>406,057,906</u>	<u>752,747,586</u>	<u>816,779,973</u>
Cash and cash equivalents at the end of the year	<u><u>752,747,586</u></u>	<u><u>816,779,973</u></u>	<u><u>807,275,992</u></u>
Supplemental disclosure of cash flow information:			
Interest paid, net of amounts capitalized	29,825,019	31,182,570	48,716,224
Income taxes paid	33,410,763	52,731,568	3,024,638
Supplemental schedule of non-cash investing activities:			
Purchases of property, plant and equipment included in accounts payable	46,603,004	108,993,805	45,663,411

*See accompanying notes to consolidated financial statements*



TRINA SOLAR LIMITED AND SUBSIDIARIES

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS  
FOR THE YEARS ENDED DECEMBER 31, 2010, 2011 AND 2012  
(Amounts in U.S. dollars, except share data)**

1. PRINCIPAL ACTIVITIES AND ORGANIZATION

Trina Solar Limited (“Trina”) was incorporated under the laws of the Cayman Islands on March 14, 2006. Trina Solar Limited and its subsidiaries (collectively the “Company”) are principally engaged in the manufacturing and selling of solar modules in the People’s Republic of China (the “PRC”) and overseas markets including Europe, the United States and other Asia Pacific regions.

2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES

**(a) Basis of presentation**

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (“U.S. GAAP”).

The accompanying consolidated financial statements contemplate the realization of assets and the satisfaction of liabilities in the normal course of business. The realization of assets and the satisfaction of liabilities in the normal course of business are dependent on, among other things, the Company’s ability to operate profitably, to generate cash flows from operations, and the Company’s ability to pursue financing arrangements, including the renewal or rollover of its bank borrowings, to support its working capital requirements.

During the year December 31, 2012, cash used in operating activities was \$178,198,886 primarily as a result of the net loss incurred by the Company. As of December 31, 2012, the Company had cash and cash equivalents of \$807,275,992 and short-term bank borrowings, including current portion of long-term bank borrowings and convertible senior notes due in 2013, of \$959,402,790. The liquidity of the Company is primarily depending on its ability to maintain adequate cash flows from operations, to renew its short-term bank loans and to obtain adequate external financing to support its working capital and meet its obligations and commitments when they become due.

The Company has carried out a review of its cash flow forecast for the twelve months ending December 31, 2013. Based on such forecast, management believes that adequate sources of liquidity exist to fund the Company’s working capital and capital expenditures requirements, and to meet its short term debt obligations and other liabilities and commitments as they become due. In preparing the cash flow forecast, management has considered historical cash requirements of the Company, as well as other key factors, including its ability to renew its short-term bank borrowings during 2013. Historically, the Company has renewed or rolled over all its short-term bank loans upon the maturity date of the loans. From January 1, 2013 to April 1, 2013, the Company renewed short-term bank borrowings of \$289.0 million that matured during this period. Management believes the assumptions used in the cash forecast are reasonable.

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## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

#### **(b) Use of estimates**

The preparation of the consolidated financial statements in conformity with US GAAP requires the Company to make estimates and assumptions that affect reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements as well as the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant accounting estimates reflected in the Company's consolidated financial statements include the allowance made for doubtful accounts receivable, provision for losses on advances to suppliers, inventory write-down, the estimated useful lives of long-lived assets, the impairment of long-lived assets, fair value of foreign currency derivatives, accrued loss on firm purchase commitment, the accrual for uncertain tax positions and valuation allowance of deferred income tax assets, accrued warranty expenses, the grant-date fair value of share-based compensation awards and related forfeiture rates. Changes in facts and circumstances may result in revised estimates. The current economic environment has increased the degree of uncertainty inherent in those estimates and assumptions.

#### **(c) Cash and cash equivalents**

Cash and cash equivalents consist of cash on hand and demand deposits, which are unrestricted as to withdrawal or use, and which have maturities of three months or less when purchased.

#### **(d) Restricted cash**

Restricted cash is comprised of bank deposits held as collateral for letters of credit, commercial paper, bank drafts and bank borrowings as well as amounts held by counterparties under forward contracts. These deposits carry fixed interest rates and will be released when the bank borrowings are repaid or the related letters of credit, commercial paper and bank drafts are settled by the Company. The Company considers the restricted cash balances as equivalent to an investment whose return of principal requires the satisfaction of conditions (i.e., repayment of bank borrowings or settlement of letters of credit, commercial paper and bank drafts). Therefore, deposits and withdrawals of principal balances in restricted cash accounts represent the creation or return of investment and, accordingly, the Company has presented such deposits and withdrawals as investing activities in the consolidated statements of cash flows.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

**(e) Fair value of financial instruments**

The Company estimates fair value of financial assets and liabilities as the price that would be received from the sale of an asset or paid to transfer a liability (an exit price) on the measurement date in an orderly transaction between market participants. The fair value measurement guidance establishes a three-level fair value hierarchy that prioritizes the inputs into the valuation techniques used to measure fair value.

- Level 1 — Valuation techniques in which all significant inputs are unadjusted quoted prices from active markets for assets or liabilities that are identical to the assets or liabilities being measured.
- Level 2 — Valuation techniques in which significant inputs include quoted prices from active markets for assets or liabilities that are similar to the assets or liabilities being measured and/or quoted prices for assets or liabilities that are identical or similar to the assets or liabilities being measured from markets that are not active. Also, model-derived valuations in which all significant inputs and significant value drivers are observable in active markets are Level 2 valuation techniques.
- Level 3 — Valuation techniques in which one or more significant inputs or significant value drivers are unobservable. Unobservable inputs are valuation technique inputs that reflect the Company's own assumptions about the assumptions that market participants would use to price an asset or liability.

When available, the Company uses quoted market prices to determine the fair value of an asset or liability. If quoted market prices are not available, the Company measures fair value using valuation techniques that use, when possible, current market-based or independently-sourced market parameters, such as interest rates and currency rates.

## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

#### **(f) Investment in securities**

Investment in securities represents marketable securities acquired principally for the purpose of sale in the near term and, as a result, is classified as a trading security. The investment is reported at fair value, with gains or losses resulting from changes in fair value recognized in earnings.

#### **(g) Investment in equity affiliates**

Affiliated companies are entities over which the Company has significant influence, but which it does not control. The Company generally considers an ownership interest of 20% or higher to represent significant influence. Investments in equity affiliates are accounted for by the equity method of accounting. Under this method, the Company's share of the profits or losses of affiliated companies is recognized in other income and its shares of movements in other comprehensive income are recognized in other comprehensive income. Unrealized gains on transactions between the Company and its affiliated companies are eliminated to the extent of the Company's interest in the affiliated companies; unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. When the Company's share of losses in an affiliated company equals or exceeds its interest in the affiliated company, the Company does not recognize further losses, unless the Company has incurred obligations or made payments on behalf of the affiliated company. An impairment loss is recorded when there has been a loss in value of the investment that is other-than-temporary. As of December 31, 2011 and 2012, the Company has equity investment in affiliates with a carrying amount of \$4,066,872 and \$10,960,391, respectively. No impairments were recorded for the years ended December 31, 2010, 2011 and 2012.

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## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

#### **(h) Receivables and Allowance for Doubtful Accounts**

The Company maintains allowances for doubtful accounts for uncollectible accounts receivable. Estimated anticipated losses from doubtful accounts are based on aging, historical collection history, and other factors. The Company does not have any off-balance-sheet credit exposure related to its customers.

#### **(i) Inventories**

The Company reports inventories at the lower of cost or market. The Company determines cost on a weighted-average basis. These costs include direct material, direct labor, tolling manufacturing costs, and fixed and variable indirect manufacturing costs, including depreciation and amortization.

The Company regularly reviews the cost of inventory and records a lower of cost or market write-down if any inventories have a cost in excess of market value. In addition, the Company regularly evaluates the quantity and value of its inventory in light of current market conditions and market trends and record write-down for any quantities in excess of demand and for any product obsolescence. This evaluation considers historic usage, expected demand, market price, new product development schedules, the effect new products might have on the sale of existing products, product obsolescence, customer concentrations, product merchantability and other factors. The Company also writes off silicon materials that may not meet its required specifications for inclusion in its manufacturing process. These materials are periodically sold for scrap or nominal amount.

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TRINA SOLAR LIMITED AND SUBSIDIARIES

2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

(j) **Project assets**

Project assets consist primarily of costs relating to solar power projects in various stages of development that are capitalized prior to the sale of the solar power project. These costs include modules, installation and other development costs, such as legal, consulting and permitting. While the project assets are not constructed for a specific customer, the Company intends to sell the project assets upon their completion.

Project assets consisted of the following at December 31, 2011 and 2012:

	December 31, 2011	December 31, 2012
	\$	\$
Project assets — Module cost	3,337,837	9,524,845
Project assets — Development	5,140,345	8,344,913
Project assets — Others	3,284,487	13,488,680
Total project assets	<u>11,762,669</u>	<u>31,358,438</u>
Current portion	8,860,635	7,960,441
Noncurrent portion	2,902,034	23,397,997

The Company reviews project assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The Company considers a project commercially viable if it is anticipated to be sold for a profit once it is either fully developed or fully constructed. The Company also considers a partially developed or partially constructed project commercially viable if the anticipated selling price is higher than the carrying value of the related project assets plus the estimated cost to completion. The Company considers a number of factors, including changes in environmental, ecological, permitting, or regulatory conditions that affect the project. Such changes may cause the cost of the project to increase or the selling price of the project to decrease.

Due to the development, construction, and sale timeframe of the Company's solar projects, it classifies project assets which are not expected to be sold within the next 12 months as "Project assets, net of current portion" or noncurrent portion on the Consolidated Balance Sheets. Once specific milestones have been achieved, the Company determines if the sale of the project assets will occur within the next 12 months from a given balance sheet date and, if so, it then reclassifies the project assets as current.



TRINA SOLAR LIMITED AND SUBSIDIARIES

2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

**(k) Property, plant and equipment, net**

The Company reports its property, plant and equipment at cost, less accumulated depreciation. Cost includes the prices paid to acquire or construct the assets, interest capitalized during the construction period and any expenditure that substantially extends the useful life of an existing asset. The Company expenses repair and maintenance costs when they are incurred. A summary of interest costs incurred is as follows:

	Year ended December 31,		
	2010	2011	2012
	\$	\$	\$
Total interest incurred	35,754,067	37,459,515	51,886,930
Less: Interest capitalized	1,801,941	2,438,575	—
Interest expenses	<u>33,952,126</u>	<u>35,020,940</u>	<u>51,886,930</u>

The Company computes depreciation expense using the straight-line method over the estimated useful lives of the assets presented below.

	Years
Buildings	10–20
Plant and machinery	5–10
Motor vehicles	3–5
Electronic equipment, furniture and fixtures	3–5

**(l) Prepaid land use rights**

The Company's prepaid land use rights are reported at cost and are charged to expense on a straight-line basis over the 50-year period of the rights granted in the PRC.

## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

#### **(m) Impairment of long-lived assets**

The Company's long-lived assets include property, plant and equipment, project assets and other intangible assets with finite lives. The Company evaluated the long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. These events include but are not limited to significant current period operating or cash flow losses associated with the use of a long-lived asset or group of assets combined with a history of such losses, significant changes in the manner of use of assets and significant negative industry or economic trends. If circumstances require a long-lived asset or asset group be tested for possible impairment, the Company first compares undiscounted cash flows expected to be generated by that asset or asset group to its carrying amount. If the carrying amount of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, an impairment is recognized to the extent that the carrying amount exceeds its fair value. No impairments were recorded during the years ended December 31, 2010, 2011 and 2012.

#### **(n) Contingencies**

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, and penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. If a potential material loss contingency is not probable but is reasonably possible, or is probable but cannot be estimated, then the nature of the contingent liability, together with an estimate of the range of possible loss if determinable and material, is disclosed. Legal costs incurred in connection with loss contingencies are expensed as incurred.

#### **(o) Income taxes**

The Company accounts for income taxes using the asset and liability method whereby the Company calculates the deferred tax assets or liabilities at the balance sheet date using enacted tax laws and rates expected to apply in the periods in which the deferred tax assets or liabilities are expected to be realized or settled. The Company establishes valuation allowances to reduce deferred tax assets to the extent it is more likely than not that such deferred tax assets will not be realized. The Company does not provide deferred tax liabilities for investments in foreign subsidiaries to the extent such amounts relate to permanently reinvested earnings and profits of such foreign subsidiaries.

Income tax expense includes (i) deferred tax expense, which generally represents the net change in the deferred tax assets and liabilities during the year plus any change in valuation allowances and (ii) current tax expense, which represents the amounts of tax currently payable to or receivable from the taxing authorities. The Company only recognizes tax benefits related to uncertain tax positions when such positions are more likely than not of being sustained upon examination. For such positions, the amount of tax benefit that the Company recognizes is the largest amount of tax benefit that is more than fifty percent likely of being sustained upon the ultimate settlement of such uncertain tax position. The Company records interest and penalties related to an uncertain tax position, if and when required, as part of income tax expense in the consolidated statements of operations.

## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

#### **(p) Revenue recognition**

The Company recognizes revenue for product sales when persuasive evidence of an arrangement exists, delivery of the product has occurred and title and risk of loss has passed to the customer, the sales price is fixed or determinable and the collectability of the resulting receivable is reasonably assured. The Company's sales agreements typically contain customary product warranties but normally do not contain post-shipment obligations nor return or credit provisions.

The Company recognizes sales of its solar modules based on the terms of the specific sales. Generally, it recognizes sales when the modules have been delivered to the customers' designated point of shipment, which may include commercial docks or commercial shipping vessels. The Company normally provides credit terms to customers with good creditworthiness as determined by the Company's credit assessment. For limited sales transactions with customers whose creditworthiness is doubtful, the Company requests cash payment before delivery and records such receipts as advances from customers. For customers to whom credit terms are extended, the Company only recognizes revenue when collectability is reasonably assured. The Company assesses collectability based on a number of factors, including past customer transaction history and customer credit analysis.

Revenue recognition for a given solar power project is dependent on the structure of the agreement and the Company's intention on holding the project asset. For all the existing project assets the Company has, the Company has gained control of land or land use rights. If the Company holds the project asset with the intention of developing it for sale, it accounts for the project following the provisions of real estate accounting. Under the provisions of real estate accounting, the Company recognizes revenue and the corresponding costs once the sale is consummated, the buyer's initial and any continuing investments are adequate, the resulting receivables are not subject to subordination and the Company has transferred the customary risk and rewards of ownership to the buyer. In general, the sale is consummated upon the execution of an agreement documenting the terms of the sale and a minimum initial payment by the buyer to substantiate the transfer of risk to the buyer. As a result, depending on the value of the initial and continuing payment commitment by the buyer, the Company generally aligns the revenue recognition and release of project assets to cost of sale with the receipt of payment from the buyer. If the Company holds the project developed for use, the project asset is deemed as an operating asset, and the revenue from connection to the grid, as well as any other revenue generated by the solar power project prior to its sale, would be classified as operating revenue for the Company. If the operating asset is eventually sold, the proceeds from the sale of the solar power project would be classified as gain/loss on sale of asset.

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## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

#### **(q) Shipping and handling costs**

Shipping and handling costs charged to customers are recorded in net sales. Shipping and handling costs relating to solar module sales of \$39,159,748, \$45,498,328 and \$54,675,873 are included in selling expenses for the years ended December 31, 2010, 2011 and 2012, respectively. Shipping and handling costs relating to inventory purchases of \$810,783, \$469,416 and \$869,814 are included as a component of cost of goods sold for the years ended December 31, 2010, 2011 and 2012, respectively.

#### **(r) Research and development**

Research and development costs are incurred during the period the Company is developing new products or significantly improving existing products or technologies. Its research and development costs consist primarily of compensation and related costs for personnel, material, supplies, equipment depreciation and laboratory testing costs. These costs are expensed as incurred.

#### **(s) Government grants**

The Company qualifies for grants from the PRC government for achieving certain research and development milestones. It records these grants as an offset to its research and development expenses in the periods in which the Company earns them. Grants that it receives prior to when the Company achieves the specified milestone are reported as a liability. The Company recorded \$699,288, \$411,970 and \$342,974 of earned grants as reductions of research and development expenses for the years ended December 31, 2010, 2011 and 2012, respectively. Government grants related to assets are recorded as deferred liabilities and are recognized as an offset to depreciation expense on a straight-line basis over the useful life of the associated asset. The Company received government grants for assets of \$7,454,208, \$2,315,542 and \$4,837,756 during the years ended December 31, 2010, 2011 and 2012, respectively, and recognized \$4,480,108, \$4,833,562 and \$2,460,843 as an offset to depreciation expense for the years ended December 31, 2010, 2011 and 2012, respectively. The Company records unrestricted cash government subsidies in other income in the consolidated statements of operations. Unrestricted cash government subsidies received were \$321,519, \$8,045,834 and \$1,002,024 during the years ended December 31, 2010, 2011 and 2012, respectively.

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## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

#### **(t) Product warranties**

Historically the Company has provided a limited warranty to the original purchasers of its solar modules for two or five years, in relation to defects in materials and workmanship, and 25 years in relation to minimum power output. Since June 2011, the Company extended the warranty period in relation to defects in materials and workmanship from five years to ten years. Additionally, the Company has replaced its two-step performance warranty with a linear performance warranty that guarantees module power output will not decrease by more than approximately 0.7% per year after the initial year of service. The Company accrues warranty costs when recognizing revenue and recognizes such costs as a component of selling expense. Warranty costs primarily consist of replacement costs for parts and materials and labor costs for maintenance personnel. Due to its limited solar module manufacturing history, the Company does not have a significant history of warranty claims. Based on its best estimates of both future costs and the probability of incurring warranty claims, the Company accrues for product warranties at 1% of solar module sales. The Company derives its estimates from a number of factors, including (1) an analysis of actual historical costs incurred in connection with its warranty claims, (2) an assessment of competitors' accrual and claim history and (3) results from academic research, including industry-standard accelerated testing, and other assumptions that the Company believes to be reasonable under the circumstances. The Company's revision to its warranty policy in June 2011 did not have a material effect on its warranty accrual rate. The Company acknowledges that such estimates are subjective and will continue to analyze its claim history and the performance of its products compared to its competitors and academic research results to determine whether the accrual is adequate. Should the Company begin to experience warranty claims different from its accrual rate, the Company will prospectively revise the warranty accrual rate.

#### **(u) Foreign currency translation and foreign currency risk**

The United States dollar ("US dollar"), the currency in which a substantial portion of the Company's transactions are denominated, is used as the functional and reporting currency of the Company. Monetary assets and liabilities denominated in currencies other than the US dollar are translated into US dollar at the rates of exchange ruling at the balance sheet date. Transactions in currencies other than the US dollar during the year are converted into the US dollar at the applicable rates of exchange prevailing at the beginning of the month the transactions occurred. Transaction gains and losses are recognized in the consolidated statements of operations.

The financial records of the Company's subsidiaries outside of the US are maintained in local currencies other than US dollar, such as RMB and Euro, which are their functional currencies. Assets and liabilities are translated at the exchange rates at the balance sheet date, equity accounts are translated at historical exchange rates and revenues, expenses, gains and losses are translated using the average rate for the year. Translation adjustments are reported as cumulative translation adjustments and are shown as a separate component of accumulated other comprehensive income in the statement of comprehensive income.

TRINA SOLAR LIMITED AND SUBSIDIARIES

2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

(u) Foreign currency translation and foreign currency risk — continued

The RMB is not a freely convertible currency. The PRC State Administration for Foreign Exchange, under the authority of the PRC government, controls the conversion of RMB to foreign currencies. The value of the RMB is subject to changes of central government policies and international economic and political developments affecting supply and demand in the China foreign exchange trading system market. The Company's cash and cash equivalents and restricted cash denominated in RMB amounted to \$208,427,732 and \$145,036,568 as of December 31, 2011 and 2012, respectively. As of December 31, 2012, 97% of the Company's cash and cash equivalents and restricted cash were held in major financial institutions located in PRC, European, USA and Asian Pacific financial institutions that amounted to \$892,130,031 in total and were denominated in the following currencies:

	USD (million)	EUR (million)	RMB (million)	AUD (million)
In PRC	498	96	911	10
In European Union	1	40	1	—
In USA	43	—	—	—
In Asian Pacific	6	—	—	9
Total in original currency	548	136	912	19
US\$ equivalent	548	179	145	20

(v) Concentrations of credit risk

Financial instruments that potentially expose the Company to concentrations of credit risk consist principally of accounts receivable and advances to suppliers. Before conducting business with customers, the Company conducts credit evaluations of these customers and requires certain customers to post letters of credit to secure payment or to make significant down payments. The Company generally has not required collateral or other security interests from its suppliers but it performs ongoing credit evaluations and communication with these suppliers of their financial condition and capability for goods delivery. The Company raises an allowance for doubtful accounts primarily based on the specific evaluation of individual account's collectability risk and recoverability risk, previous loss history and the counterparties' current ability to fulfill its obligation.

The assessment of customer creditworthiness is primarily based on historical collection records, validation of the project specifications with the customers and their financing banks, customer onsite visits by senior management and information provided by third party credit rating agency, such as Dun & Bradstreet, and the insurance company that ultimately insures the Company against customer credit default. Using this information, the Company further evaluates the potential effect of a delay in financing on the customers' liquidity and financial position, their ability to draw down financing as well as their ability and intention to pay should it not obtain the related financing. Based on this analysis, the Company determines what credit terms, if any, to offer to each customer individually. If the assessment indicates a likelihood of collection risk, the Company will not sell the products or sell on a cash or prepayment basis. Therefore, based on the strict credit assessment, the Company conducts business with those customers having the ability and intent to pay.



## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

#### **(w) Share-based compensation**

The Company's share-based payment transactions with employees, such as restricted shares and share options, are measured based on the grant-date fair value of the equity instrument issued. The fair value of the award is recognized as compensation expense, net of estimated forfeitures, over the period during which an employee is required to provide service in exchange for the award, which is generally the vesting period.

#### **(x) Derivative financial instruments**

The Company's primary objective for holding derivative financial instruments is to manage currency risk. The Company records derivative instruments as assets or liabilities, measured at fair value. The recognition of gains or losses resulting from changes in fair values of those derivative instruments is based on the use of each derivative instrument and whether it qualifies for hedge accounting.

The Company entered into certain forward foreign exchange contracts to protect against volatility of future cash flows caused by the changes in foreign exchange rates associated with outstanding accounts receivable. The foreign exchange hedge contracts do not qualify for hedge accounting and, as a result, the changes in fair value of the foreign currency hedge contracts are recognized in the consolidated statements of operations. During the years ended December 31, 2010, 2011 and 2012, the Company recorded change in fair value of forward foreign currency exchange contracts of \$9,475,794, \$(11,393,346) and \$8,541,721, respectively, which has been recorded in "Derivative gain (loss)" in the consolidated statements of operations.

#### **(y) Earnings (loss) per share**

Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted average number of ordinary shares outstanding during the period. Diluted earnings (loss) per ordinary share reflects the potential dilution that could occur if securities or other contracts to issue ordinary shares were exercised or converted into ordinary shares. Ordinary share equivalents are excluded from the computation in loss periods as their effects would be anti-dilutive.

The following table sets forth the computation of the basic and diluted income (loss) from operations per share for the periods indicated:

TRINA SOLAR LIMITED AND SUBSIDIARIES

2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

(y) Earnings (loss) per share — continued

	Year ended December 31,		
	2010	2011	2012
	\$	\$	\$
Net income (loss) attributable to Trina Solar Limited shareholders — basic	311,452,980	(37,820,093)	(266,555,392)
Finance charge related to convertible notes	9,419,771	—	—
Net income (loss) attributable to Trina Solar Limited shareholders — diluted	<u>320,872,751</u>	<u>(37,820,093)</u>	<u>(266,555,392)</u>
Weighted average number of ordinary shares outstanding — basic	3,402,701,503	3,521,182,416	3,534,829,694
Nonvested restricted shares	16,977,041	—	—
Share options	6,715,832	—	—
Convertible senior notes	<u>407,319,420</u>	<u>—</u>	<u>—</u>
Weighted average number of ordinary shares outstanding — diluted	<u>3,833,713,796</u>	<u>3,521,182,416</u>	<u>3,534,829,694</u>
Earnings (loss) per ordinary share from operations — basic	<u>0.09</u>	<u>(0.01)</u>	<u>(0.08)</u>
Earnings (loss) per ordinary share from operations — diluted	<u>0.08</u>	<u>(0.01)</u>	<u>(0.08)</u>

For the years ended December 31, 2010, 2011 and 2012, the following securities were excluded from the computation of diluted gain (loss) per share as inclusion would have been anti-dilutive.

	Year ended December 31,		
	2010	2011	2012
Non-vested restricted shares	47,581,632	47,183,592	40,464,927
Share options	27,113,457	57,839,459	99,161,181
Convertible senior notes	<u>—</u>	<u>377,083,332</u>	<u>246,700,118</u>
Total	<u>74,695,089</u>	<u>482,106,383</u>	<u>386,326,226</u>

The call option on the Loaned Shares (see Note 11) has been excluded in the computation of basic EPS as the Company has concluded that the Loaned Shares are not considered issued for accounting purposes as existing shareholders are not expected to be affected by the issuance due to (a) the existence of the collateral arrangement and (b) the requirement that the holders of the Loaned Shares return any dividends received. The call option on the Loaned Shares has been considered in the computation of diluted EPS using the treasury stock method with the fair value of the collateral representing the assumed proceeds for the issuance of the underlying shares. For the year ended December 31, 2010, 2011 and 2012, there were no incremental shares included in the diluted EPS computation in regard to the Loaned Shares.

## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES — continued

#### (z) Recently issued accounting pronouncements

In May 2011, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2011-04, Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs (“ASU 2011-04”), which amended accounting guidance related to fair value measurements and disclosures with the purpose of converging the fair value measurement and disclosure guidance issued by the FASB and the International Accounting Standards Board (“IASB”). The guidance is effective for reporting periods beginning after December 15, 2011. The guidance includes amendments that clarify the intent of the application of existing fair value measurement requirements along with amendments that change a particular principle or requirement for fair value measurements and disclosures. The Company adopted the new guidance on January 1, 2012. The adoption did not have a material impact on its Consolidated Financial Statements or related disclosures.

In June 2011, the FASB issued ASU 2011-05, Presentation of Comprehensive Income (“ASU 2011-05”), which amended accounting guidance related to presentation of comprehensive income. The standards update is intended to help financial statement users better understand the causes of an entity’s change in financial position and results of operation. The amendment eliminates the option to present components of other comprehensive income as part of the statement of changes in stockholders’ equity. The amendment requires that all non-owner changes in stockholders’ equity be presented either in a single continuous statement of comprehensive income or in two separate but consecutive statements. The guidance also requires that reclassification adjustments for items that are reclassified from other comprehensive income to net income be presented on the face of the financial statement where the components of net income and other comprehensive income are presented. In December 2011, the FASB issued ASU 2011-12, Deferral of the Effective Date for Amendments to the Presentation of Items Out of Accumulated Other Comprehensive Income in Accounting Standards Update No. 2011-05 (“ASU 2011-12”), which defers only those changes in ASU 2011-05 that relate to the presentation of reclassification adjustments out of accumulated other comprehensive income. ASU 2011-05 and ASU 2011-12 are effective for reporting periods beginning after December 15, 2011. The Company adopted the new guidance on January 1, 2012.

In February 2013, the FASB issued ASU 2013-02, Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income (“ASU 2013-02”). The standard requires that companies present either in a single note or parenthetically on the face of the financial statements, the effect of significant amounts reclassified from each component of accumulated other comprehensive income based on its source (e.g., the release due to cash flow hedges from interest rate contracts) and the income statement line items affected by the reclassification (e.g., interest income or interest expense). If a component is not required to be reclassified to net income in its entirety (e.g., the net periodic pension cost), companies would instead cross reference to the related footnote for additional information (e.g., the pension footnote). ASU 2013-02 is effective for interim and annual reporting periods beginning after December 15, 2012. The Company will adopt the provisions of the new guidance on January 1, 2013. The adoption will not have a material impact on its consolidated financial statements or related disclosures.

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TRINA SOLAR LIMITED AND SUBSIDIARIES

3. ALLOWANCE FOR DOUBTFUL ACCOUNTS RECEIVABLES AND PROVISION FOR LOSSES OF ADVANCES TO SUPPLIERS

Accounts receivable are recorded at the amount due from customers for the sales of products sold and service rendered. An allowance for doubtful accounts is provided based on the Company's best estimate of the amount of probable credit losses in the Company's existing accounts receivable. The Company assess the collectability of accounts receivable by analyzing specific customer accounts that have known or potential doubt as to collectability. In addition to the specific allowance applied on the balance of individual customers, the Company groups the remaining receivables without specific allowance based on overdue aging. An estimated loss percentage is then applied to each overdue aging group based on historical collection experiences, previous loss history and current credit conditions. The following table presents the movement of the allowance for doubtful accounts:

	At December 31,		
	2010	2011	2012
	\$	\$	\$
Balance, beginning of the year	13,859,407	19,295,063	45,438,767
Allowance made during the year	5,435,656	26,556,358	61,387,013
Amount written-off against allowance	—	(412,654)	(607)
Balance, end of the year	<u>19,295,063</u>	<u>45,438,767</u>	<u>106,825,173</u>

In order to secure a stable supply of silicon and wafer, the Company makes advances to certain suppliers. Advances to suppliers which the Company expects to take delivery of the inventory after the next twelve months are classified as non-current assets in the Company's consolidated balance sheets. The Company monitors suppliers to ensure the timely delivery of goods in accordance with agreed schedules, and assesses the recoverability of advances to suppliers by analyzing specific supplier accounts that have known or potential settlement issues. The Company made provision for losses of advances to suppliers totaling \$0.2 million, \$9.5 million and \$2.8 million during the years ended December 31, 2010, 2011 and 2012, respectively.

TRINA SOLAR LIMITED AND SUBSIDIARIES

4. INVENTORIES

Inventories consisted of the following:

	At December 31,	
	2011	2012
	\$	\$
Raw materials	27,629,870	69,340,896
Work in progress	16,294,428	41,547,820
Finished goods	205,854,431	207,614,743
Total	249,778,729	318,503,459

In 2010, 2011 and 2012, inventory was written down by \$10,195,272, \$22,242,087 and \$39,555,386, respectively, to reflect the lower of cost or market.

5. PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment, net consisted of the following:

	At December 31,	
	2011	2012
	\$	\$
Buildings	112,360,504	169,769,630
Plant and machinery	708,782,109	886,430,211
Motor vehicles	2,530,905	3,414,460
Electronic equipment, furniture and fixtures	79,305,774	94,749,383
	902,979,292	1,154,363,684
Less: Accumulated depreciation	(185,542,927)	(294,156,922)
	717,436,365	860,206,762
Construction in progress	202,290,269	33,133,243
Property, plant and equipment, net	919,726,634	893,340,005

Depreciation of property, plant and equipment was \$52,279,855, \$69,837,152 and \$110,221,637 for the years ended December 31, 2010, 2011 and 2012, respectively.

Construction in progress primarily represents the construction of new plants that include several new production lines and the machinery under installation.

As of December 31, 2011 and 2012, the Company has pledged property, plant and equipment with a total carrying amount of \$360,873,347 and \$564,244,909, respectively, to secure bank borrowings (see Note 10).

# TRINA SOLAR LIMITED AND SUBSIDIARIES

## 6. PREPAID LAND USE RIGHTS

Prepaid land use rights represent fees paid to obtain the land use rights for the Company's business operations. Amounts of amortization recognized in profit and loss related to the prepaid land use rights were \$632,698, \$783,214 and \$886,808 for the years ended December 31, 2010, 2011 and 2012, respectively.

As of December 31, 2011 and 2012, land use rights of \$17,185,095 and \$16,620,946, respectively, were pledged as collateral to secure bank borrowings (see Note 10).

## 7. ACCRUED EXPENSES AND CURRENT LIABILITIES

Accrued expenses and current liabilities consisted of the following:

	At December 31,	
	2011	2012
	\$	\$
Payroll and welfare payables	26,067,216	22,155,642
Advance from customers	57,252,788	20,146,923
Derivatives	1,271,592	182,963
Accrued expenses	28,545,383	24,410,724
Other payables	21,483,674	23,072,365
Total	<u>134,620,653</u>	<u>89,968,617</u>



TRINA SOLAR LIMITED AND SUBSIDIARIES

8. DERIVATIVE FINANCIAL INSTRUMENTS

The following tables present the fair values of derivative instruments included in the Company's consolidated balance sheets as of December 31, 2011 and 2012:

		<u>December 31, 2011</u>	
		<u>Other Assets - Current</u>	<u>Other Current Liabilities</u>
		\$	\$
<b>Derivatives not designated as hedging instruments:</b>			
Foreign exchange forward contracts		<u>2,910,301</u>	<u>1,271,592</u>
		<u>December 31, 2012</u>	
		<u>Other Assets - Current</u>	<u>Other Current Liabilities</u>
		\$	\$
<b>Derivatives not designated as hedging instruments:</b>			
Foreign exchange forward contracts		<u>1,639,337</u>	<u>182,963</u>

See Note 9, "Fair Value Measurement," to the Company's consolidated financial statements for information about the techniques the Company uses to measure the fair value of its derivative instruments.

The following table present the amounts related to derivative instruments affecting the Company's consolidated statements of operations for the years ended December 31, 2010, 2011 and 2012:

<u>Derivative Type</u>	<u>Amount of Gain (loss) on Derivatives Recognized in Income Year Ended December 31</u>			<u>Location of Gain (loss) Recognized in Income on Derivatives</u>
	<u>2010</u>	<u>2011</u>	<u>2012</u>	
	\$	\$	\$	
<b>Derivatives not designated as hedging instruments:</b>				
Foreign exchange forward contracts	9,475,794	(11,393,346)	8,541,721	Derivatives gain (loss)

TRINA SOLAR LIMITED AND SUBSIDIARIES

9. FAIR VALUE MEASUREMENT

The Company does not have any assets or liabilities measured at fair value on a non-recurring basis for the years ended December 31, 2011 and 2012.

As of December 31, 2011 and 2012, information about inputs into the fair value measurements of the Company's assets and liabilities that are measured at fair value on a recurring basis in periods subsequent to their initial recognition is as follows:

	Fair Value Measurements at December 31, 2011			
	Using			
	Total Fair Value and Carrying Value on the Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	\$	\$	\$	\$
Assets:				
Foreign exchange forward contracts	2,910,301	—	2,910,301	—
Liabilities:				
Foreign exchange forward contracts	(1,271,592)	—	(1,271,592)	—
Net assets	<u>1,638,709</u>	<u>—</u>	<u>1,638,709</u>	<u>—</u>

TRINA SOLAR LIMITED AND SUBSIDIARIES

9. FAIR VALUE MEASUREMENT — continued

	Fair Value Measurements at December 31, 2012			
	Using			
	Total Fair Value and Carrying Value on the Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	\$	\$	\$	\$
<b>Assets:</b>				
Foreign exchange forward contracts	1,639,337	—	1,639,337	—
<b>Liabilities:</b>				
Foreign exchange forward contracts	(182,963)	—	(182,963)	—
Net assets	1,456,374	—	1,456,374	—

A summary of changes in Level 3 foreign exchange forward contracts for the years ended December 31, 2010, 2011 and 2012 is as follows:

	As of December 31,		
	2010	2011	2012
	\$	\$	\$
Beginning balance	596,251	(13,478,691)	—
Total gain or losses (realized/unrealized)			
Included in earnings	(13,478,691)	—	—
Settlements	(596,251)	13,478,691	—
Ending balance	(13,478,691)	—	—
The amount of total gains (losses) for the year included in earnings attributable to the change in unrealized gains (losses) relating to assets and liabilities still held at the reporting date	(13,478,691)	—	—

Following is a description of the valuation techniques that the Company uses to measure assets and liabilities at fair value on a recurring basis under the fair value measurement guidance as well as the basis for classification of such instruments pursuant to the valuation hierarchy established under the guidance:

## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 9. FAIR VALUE MEASUREMENT — continued

- Investment in trading securities — Investment in trading securities consist of marketable equity shares that are measured using the closing stock prices from the exchange market on which they are traded. Such investments are classified as Level 1 in the hierarchy.
  - Derivative assets and liabilities — The Company's derivative assets and liabilities relate to foreign exchange contracts involving major currencies. Since its derivative assets and liabilities are not traded on an exchange, the Company values them using valuation models. The valuation of certain foreign currency contracts used interest rate yield curves and foreign exchange rates as the significant inputs in the valuation models. These inputs are observable in active markets over the terms of the instruments the Company holds, and accordingly, such contracts are classified as Level 2 in the hierarchy. The fair value of the remaining foreign currency contracts are computed using the Monte Carlo pricing method based on assumptions supported by quoted market prices or rates, adjusted for the specific features of these instruments. Such contracts are classified as Level 3 in the hierarchy. The Company considers the effect of its own credit standing and that of its counterparties in valuations of its derivative financial instruments.
  - Short-term financial instruments (cash equivalents, restricted cash, accounts receivable and payable, short-term borrowings, and accrued liabilities) — cost approximates fair value because of the short maturity period.
  - Long-term borrowings — fair value is based on the amount of future cash flows associated with each debt instrument discounted at the Company's current borrowing rate for similar debt instruments of comparable terms. The carrying values of the long-term borrowings approximate their fair values as all the long-term debt carry variable interest rates which approximate rates currently offered by the Company's bankers for similar debt instruments of comparable maturities.
  - Convertible senior notes — the estimated fair value was \$ 75,223,800 as of December 31, 2012 based on the quoted market price in an active market.
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TRINA SOLAR LIMITED AND SUBSIDIARIES

10. BANK BORROWINGS

The Company's bank borrowings consisted of the following:

	At December 31,	
	2011	2012
	\$	\$
Bank borrowings		
Short-term	303,259,524	711,773,487
Long-term, current portion	86,212,767	164,047,303
Total current	389,472,291	875,820,790
Long-term, non-current portion	520,150,533	415,150,385
Total	909,622,824	1,290,971,175

**Short-term borrowings**

The Company's short-term bank borrowings consisted of the following:

	At December 31,	
	2011	2012
	\$	\$
Short-term borrowings guaranteed by Trina	59,609,524	151,136,743
Short-term borrowings secured by plants and machinery of Changzhou Trina Solar Energy Co., Ltd. ("Trina China")	43,650,000	56,136,744
Unsecured short-term borrowings	200,000,000	504,500,000
Total	303,259,524	711,773,487

The average interest rate on short term borrowings was 3.65% and 3.88% per annum for the years ended December 31, 2011 and 2012, respectively. The funds borrowed under the above short-term arrangements are repayable within one year. As of December 31, 2012, two short term loans are secured by the plant and machinery of Trina China with carrying value of \$133,353,290.

As of December 31, 2012, the Company has short-term bank facilities of \$882,668,078 with various banks, of which \$711,773,487 had been drawn down, and \$170,894,591 was available.

## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 10. BANK BORROWINGS — continued

#### **Long term borrowings**

On September 8, 2009, Trina China entered into a five-year credit facility with a syndicate of banks including both Renminbi (“RMB”) facility and US dollar facility (the “Facility”) amounting to RMB1,524.6 million (\$241,965,434) and \$80.0 million respectively, of which RMB1,292.0 million (\$205,050,072) and \$80.0 million are designated solely for the expansion of the Company’s production capacity, and the remaining amount to be used to supplement working capital requirements once the capacity expansion is completed. The facility can be drawn down either in RMB or US dollar. As of December 31, 2011 and 2012, the Company had fully drawn down the capacity expansion portion under the Facility and had a loan balance of \$254,003,581 and \$184,573,440 respectively. The remaining RMB Facility of RMB232.6 million (\$36,915,362) can only be drawn down on or after completion of capacity expansion. The weighted-average interest rate for borrowings under the Facility is 6.50% and 6.43% for the years ended December 31, 2011 and 2012 respectively. Interest is payable quarterly or biannually in arrears for loans denominated in RMB and US dollars, respectively. The interest rate on RMB-denominated borrowings is 110% of the prevailing base lending rate pronounced by People’s Bank of China (“PBOC”) for loans of similar duration. The interest rate on US dollar-denominated borrowings is the prevailing six-month US London Interbank Offered Rate (“LIBOR”) plus 300 basis points. As of December 31, 2012, the Facility is guaranteed by Trina as well as by the property, plant and equipment with carrying value of \$283,420,944 and the related land use rights of \$14,279,056. For purposes of the expansion, the Company is required to match Facility draw-down with an equal amount of cash from sources other than the Facility. The Facility contains certain financial covenants which require that specified debt to total assets ratio, net profit ratio and income to interest ratio be maintained. As of December 31, 2011, Trina China violated the net profit ratio and income to interest ratio covenants. Trina China obtained a waiver letter from the Agriculture Bank of China, the leading bank in the syndicated loan, on February 8, 2012 to waive the covenants for the whole Facility period.

On January 11, 2010, Trina Solar (Luxembourg) S.A.R.L (“Trina Luxembourg”) entered into a fifteen-year facility with China Development Bank (“CDB”) (the “TLB CDB Facility”) amounting to Euro 100.0 million, which is designated solely for the construction of certain planned PV projects. Trina Luxembourg had drawn down Euro 50.0 million and the remaining Euro 50.0 million had expired on March 14, 2011. The TLB CDB Facility is guaranteed by Trina China and the Company is required to match the TLB CDB Facility draw-down with the construction of those specified PV projects. Trina Luxembourg had a loan balance outstanding as of December 31, 2011 and 2012 of Euro 41.3 million (\$53.4 million) and Euro 13.1 million (\$17.3 million) respectively. The weighted-average interest rate for the borrowings was 4.66% and 4.26% for the years ended December 31, 2011 and 2012 respectively, and is computed as the prevailing six-month EUR LIBOR plus 300 basis points. There are no loan covenants with respect to this facility.

On May 17, 2011, Trina China entered into a three year credit facility with the Export-Import Bank of China (the “Ex-Imp Facility”) amounting to \$40.0 million, which is designated solely for capital expenditure purposes. As of December 31, 2012, the Company had drawn down \$14.0 million and the remaining \$26.0 million had expired due to the completion of the underlying capital project. Trina China had a loan balance outstanding as of December 31, 2011 and 2012 of 14.0 million and 10.5 million, respectively. The interest rate is the prevailing six-month US LIBOR plus 380 basis points, which is 4.59% and 4.47% in 2011 and 2012, respectively. As of December 31, 2012, the Ex-Imp Facility is guaranteed by Trina as well as by the property, plant and equipment with carrying value of \$30,684,048. The facility contains a debt payment coverage ratio covenant. Trina China was in compliance with the covenant as of December 31, 2012.

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## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 10. BANK BORROWINGS — continued

On June 29, 2011, Trina China entered into a three-year credit facility with CDB (the “TCZ CDB Facility”) amounting to \$180.0 million, which is designated for the working capital. As of December 31, 2011 and 2012, the Company had fully drawn down the TCZ CDB Facility. Trina China had a loan balance outstanding of \$180.0 million as of December 31, 2011 and 2012 respectively. The interest rate is the prevailing three-month US LIBOR plus 300 basis points, which is 3.25% and 3.47% in 2011 and 2012, respectively. The TCZ CDB Facility contains certain financial covenants which require that specified current ratio, quick ratio, debt to asset ratio, debt repayment coverage ratio, interest coverage ratio, contingent liability ratio, current assets turnover and accounts receivable turnover be maintained. As of December 31, 2012, Trina China violated the required threshold of relevant covenants of debt to asset ratio, current assets turnover and accounts receivable turnover. Trina China obtained a written letter from CDB stating that the bank waives Trina China’s covenants breach by revising those relevant covenants. As of December 31, 2012, Trina China was in compliance with the revised covenants. Management have evaluated Trina China’s compliance with those revised covenants through the calendar year of 2013 and determined that it is not probable that Trina China will violate those revised covenants for a period of one year from December 31, 2012.

On December 7, 2011, Trina Solar (Changzhou) Science and Technology Co., Ltd. (“TST”) entered into a three-year structured term loan facility with Standard Chartered Bank (Hong Kong) Limited (the “SC Facility”) amounting to \$100.0 million, which can be drawn down in single or multiple tranches within the first 12 months either in HKD or USD. Each tranche is for a term of up to 36 months from the initial drawdown date, and may be extended for up to another two years at TST’s discretion. The SC Facility is designated solely for the Company’s East Campus construction, which is expected to add approximately 500 MW of cell and module capacity to facilitate the Company’s high-efficiency Honey cell technology. As of December 31, 2011 and 2012, the Company had fully drawn down the SC Facility. TST had a loan balance outstanding of \$100.0 million as of December 31, 2011 and 2012 respectively. The interest rate is the Hong Kong Interbank Offered Rate plus 2.25%, which is 2.61% and 2.63% in 2011 and 2012 respectively. The SC Facility is guaranteed by Trina as well as by the property, plant and equipment for which this borrowing is used to construct. The carrying value of property, plant and equipment was \$116,786,627 as of December 31, 2012. The SC Facility contains certain financial covenants which require that specified gearing, net tangible assets value and EBITDA-to-interest ratio be maintained. TST was in compliance with the covenants as of December 31, 2012.

On December 23, 2011, Trina China entered into a three-year credit facility with Agriculture Bank of China (the “ABC Facility”) amounting to RMB 30.0 million (\$4.8 million) at an interest rate of 6.65% per year, which is designed solely for the “MW Square Crystal Silicon Heterojunction Solar Battery Research, Development and Industrialization Project”. As of December 31, 2011 and 2012, the Company had fully drawn down the facility. Trina China had a loan balance outstanding of \$4.8 million as of December 31, 2011 and 2012 respectively. As of December 31, 2012, the ABC Facility is secured by the land use rights with carrying value of \$2,341,890. There are no covenants with respect to this facility.

On December 31, 2012, Trina Solar (Luxembourg) Holdings S.A.R.L. (“TLH”) entered into a three-year credit facility with CDB (the “TLH CDB Facility”) amounting to \$80.0 million which is designated for working capital. As of December 31, 2012, the Company had fully drawn down the facility. TLH had a loan balance outstanding of \$80.0 million as of December 31, 2012. The interest rate is the prevailing six-month US LIBOR plus 370 basis points which is 4.21% in 2012. The TLH CDB Facility is guaranteed by Trina. The facility contains financial covenants and TLH was in compliance with the covenants as of December 31, 2012.

Future principal payments under the above long-term borrowings as of December 31, 2012 are as follows:

Fiscal Years Ending December 31,	\$
2013	164,047,303
2014	333,559,422
2015	81,590,963
Thereafter	—
Total	579,197,688

## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 11. CONVERTIBLE SENIOR NOTES

On July 23, 2008, the Company issued \$138 million of 4% Convertible Senior Notes (the “Notes”). The Notes mature on July 15, 2013 and bear interest at a rate of 4.00% per annum, payable in arrears semi-annually on January 15 and July 15, beginning January 15, 2009.

**Conversion.** The initial conversion rate is 59.0318 ADSs per \$1,000 initial principal amount, which represents an initial conversion price of approximately \$16.94 per American Depositary Share (“ADS”). The Notes are convertible at any time prior to maturity. The conversion rate is subject to change for certain anti-dilution events and upon a change in control (“a Fundamental Change”). If the holders elect to convert the Notes upon a Fundamental Change, the conversion rate will increase by a number of additional shares as determined by reference to an adjustment schedule based on the date on which the change in control becomes effective and the price paid per ADS in the transaction (referred to as the “Fundamental Change Make-Whole Premium”). However, the conversion rate, including any additional ADSs added to the conversion rate in connection with a Fundamental Change, will not exceed 71.4286 ADSs (which is equal to a conversion price of \$14.00 per ADS).

**Redemption.** The holders may require the Company to repurchase all or portion of the Notes for cash on July 15, 2011, or upon a Fundamental Change, at a repurchase price equal to 100% of the principal amount, plus accrued and unpaid interest. In the event of default, as defined in the agreement, the holders of 25% or more of the Notes may immediately require the Company to redeem the Notes and associated interest. In August 2011, Notes with an aggregate principal amount of \$320,000 were redeemed and the July 15, 2011 redemption right of the remaining Notes expired.

Proceeds to the Company were \$132,392,740, net of issuance costs of \$5,607,260, which were amortized over the period from July 23, 2008, the date of issuance, to July 15, 2011, the earliest redemption date, using the effective interest method. Amortization expense for the years ended December 31, 2010, 2011 and 2012 was \$3,899,771, \$2,101,948 and \$nil, respectively.

**Share Lending Agreement.** Concurrent with the offering of the Notes, the Company issued 8,146,388 ADSs at a price equal to par, or \$0.0005 per ADS (the “Loaned Shares”), to one of the underwriters of the Notes (“Underwriter”). The purpose of the Loaned Shares is facilitating privately negotiated transactions in which the ultimate holder of the Notes (the “ADS Borrower”) may elect to hedge their investment in the Notes.

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## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 11. CONVERTIBLE SENIOR NOTES — continued

The Loaned Shares must be returned to the Company by the earliest of (a) the maturity date of the Notes, July 15, 2013, (b) upon the Company's election to terminate the Share Lending Agreement at any time after the later of (x) the date on which the entire principal amount of the Notes ceases to be outstanding, and (y) the date on which the entire principal amount of any additional convertible securities that the Company has in writing consented to permit the ADS Borrower to hedge under the Share Lending Agreement ceases to be outstanding, in each case, whether as a result of conversion, redemption, repurchase, cancellation or otherwise; and (c) the termination of the Share Lending Agreement. The Company is not required to make any payment to the Underwriter or ADS Borrower upon the return of the Loaned Shares.

The Underwriter has agreed to post collateral, either in cash or other assets, having a market value equal to at least 100% of the market value of the Loaned Shares during the term of the Share Lending Agreement. The Company may notify the Underwriter if the fair value of such collateral is lower than the fair value of the Loaned Shares by more than \$100,000. The Company has no right to sell or re-pledge the collateral. If the Underwriter is unable to return the Loaned Shares when required by the terms of the Share Lending Agreement, the Company may take delivery of the collateral equal to the fair value of the Loaned Shares.

The Underwriter is required to remit to the Company any dividends paid to the holders of the Loaned Shares. The Underwriter has agreed not to vote the Loaned Shares to the extent it is the shareholder of record. An ADS Borrower has the ability to vote without restriction.

The Company has accounted for the Share Lending Agreement at fair value and recognized it as an issuance cost associated with the convertible debt offering. As a result, additional debt issuance costs of \$4.1 million were recorded on the issuance date with a corresponding increase to additional paid-in capital. The debt issuance costs are amortized over the life of the Notes using the effective interest method.

Although legally issued, the Company has not considered the Loaned Shares issued for accounting purposes. As a result, any cash collateral, to the extent posted by the ADS Borrower, is not considered attributable to the issuance of shares. To the extent cash collateral is posted, the Company will record the cash as an asset on its balance sheet with an offsetting liability recorded to reflect the collateral receipt as the proceeds of a borrowing. To the extent the ADS Borrower is in default under the Share Lending Agreement, non-cash collateral would likewise be recorded on the Company's consolidated balance sheet. As of December 31, 2011, the ADS Borrower has posted non-cash collateral and the ADS Borrower is not in default.

As of December 31, 2011 and 2012, the fair value of the outstanding loaned shares was \$54,417,872 and \$35,355,324, respectively.

Pursuant to the terms of the supplemental indenture, the Notes should be purchased by the Company on July 15, 2011 (the "Option Purchase Date"), at a purchase price, payable in cash, equal to one hundred percent (100%) of the principal amount of the Notes to be so purchased, plus accrued and unpaid interest, including any additional interest. Notes with an aggregate principal amount of \$320,000 were redeemed prior to the expiration of the Option. Subsequent to the purchase, \$137,680,000 principal amount of the Notes remain outstanding.

In 2011 and 2012, the Company repurchased \$9,924,000 and \$44,174,000 aggregate principle amount of the Notes in the open market for a total cash consideration of \$7,582,710 and \$39,082,576 respectively. Gain of \$ 2,341,290 and \$5,091,424 on the repurchase was recorded in other income in 2011 and 2012 respectively. As of December 31, 2012, \$83,582,000 principal amount of the Notes remains outstanding.

TRINA SOLAR LIMITED AND SUBSIDIARIES

12. ACCRUED WARRANTY COSTS

The movement of the Company's accrued warranty costs is summarized below:

	For the year ended December 31,		
	2010	2011	2012
	\$	\$	\$
Beginning balance	21,023,381	38,710,874	58,810,186
Warranty provision	17,895,942	21,939,223	12,467,698
Warranty costs incurred	(208,449)	(1,839,911)	(5,497,865)
Ending balance	38,710,874	58,810,186	65,780,019

13. SHARE-BASED COMPENSATION

The Company measures share-based compensation cost on the grant date at the fair value of the award and recognizes this cost as an expense on straight-line basis over the grant recipients' requisite service period.

The following table presents the Company's share-based compensation expense by type of award:

	2010	2011	2012
	\$	\$	\$
Share options	1,882,511	2,167,209	2,163,693
Restricted shares	4,072,536	5,791,225	3,835,734
Total share-based compensation expense	5,955,047	7,958,434	5,999,427

Restricted Shares

In July 2006, the Company adopted the Share Incentive Plan (the "Share Incentive Plan") upon which the Compensation Committee (the "Committee") of the Board of Directors can authorize to make awards of Restricted Shares to any participant selected by the Committee in such amounts under terms and conditions as determined by the Committee. Restricted Shares shall be subject to restrictions on transferability and other restrictions as the Committee may impose (including, without limitation, limitations on the right to vote Restricted Shares or the right to receive dividends on the Restricted Share). These restrictions may lapse separately or in combination at such times, pursuant to such circumstances, in such installments, or otherwise, as the Committee determines at the time of the grant of the Award or thereafter.

TRINA SOLAR LIMITED AND SUBSIDIARIES

13. SHARE-BASED COMPENSATION — continued

Restricted Shares — continued

The following is a summary of activities under the Plan:

	Number of shares	Weighted average grant date fair value
Non-vested at January 1, 2012	47,183,592	\$ 0.42
Granted	15,317,200	\$ 0.07
Vested	(11,035,457)	\$ 0.40
Forfeited	(11,000,408)	\$ 0.44
Non-vested at December 31, 2012	<u>40,464,927</u>	<u>\$ 0.29</u>

The fair value of the restricted shares was based on the market price on the date of grant.

As of December 31, 2012 there was \$9,295,016 of total unrecognized compensation cost related to the compensation cost of unvested restricted shares, which is expected to be recognized over a weighted-average period of 3.01 years. The total fair value of shares vested during the years ended December 31, 2010, 2011, and 2012 was \$13,032,862, \$7,551,432 and \$1,449,353, respectively.

Share Options

In May 2008, the Company revised the Share Incentive Plan and introduced stock options as a compensation instrument to its employees. Under the terms of the revised Share Incentive Plan, share options are granted to employees at exercise prices equal to the Company's share price on the grant date. The Company's stock options expire five years from their grant date and generally vest one third per annum on the anniversary of the grant date.

During 2010, 2011 and 2012, the Company granted 21,630,267, 26,428,314 and 51,785,550 share options, respectively, to its board of directors and employees. Those share options will vest one third per annum on the anniversary of the grant date.

A summary of the option activity is as follows:

	Number of Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value
Options outstanding at January 1, 2012	57,839,459	\$ 0.44		
Granted	51,785,550	\$ 0.08		
Exercised	—	\$ —		
Forfeited	(10,463,828)	\$ 0.45		
Options outstanding at December 31, 2012	99,161,181	\$ 0.25	3.70	414,284
Options vested or expected to vest at December 31, 2012	78,856,463	\$ 0.28	3.44	270,832
Options exercisable at December 31, 2012	28,995,206	\$ 0.38	1.96	—

## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 13. SHARE-BASED COMPENSATION — continued

#### Share Options — continued

Total intrinsic value of options exercised for the years ended December 31, 2010 and 2011 were \$1,020,370 and \$ 263,779, respectively. There were no share options exercised in 2012. The weighted-average grant date fair value of options granted during the years ended December 31, 2010, 2011 and 2012 was \$0.17, \$0.25 and \$0.02, respectively, computed using the Black-Scholes-Merton closed-form option valuation model and using the following weighted average assumptions:

	2010	2011	2012
Risk free rate of return	1.26%	0.96%	0.32%
Expected term	3.50	3.50	3.50
Volatility ratio	81.80%	74.04%	74.78%
Dividend yield	—	—	—

The Company estimated the expected term, which represents its best estimate of the period of time from the grant date that it expects the stock options to remain outstanding, using the simplified method. Under this method, the Company estimates the expected term of its stock options as the mid-point between their time to vest and their contractual term. The Company applied the simplified method because it does not have sufficient historical exercise data to provide a reasonable basis upon which to estimate expected term due to the limited period of time that has elapsed since its first option grant.

The Company estimated the expected volatility upon historical volatility of its own stock price. The Company used U.S. Treasury rates in effect at the time of the grants for the risk-free rates.

As of December 31, 2012, the Company had \$2,825,282 of unrecognized share-based compensation cost related to unvested share options, which it expects to recognize over a weighted-average period of 1.44 years.

### 14. INCOME TAXES

#### **Cayman Islands**

Under the current laws of the Cayman Islands, the Company is not subject to tax on income or capital gain.

#### **Hong Kong**

The Company's fully-owned subsidiary, Trina Solar (Hong Kong) Enterprise Limited ("THK") was subject to Hong Kong profit tax at a rate of 16.5% in 2010, 2011 and 2012. No Hong Kong profit tax has been provided as THK has not had assessable profit that was earned in or derived from Hong Kong during the years presented.

#### **Singapore**

The Company's fully-owned subsidiary, Trina Solar Singapore Pte. Ltd. ("TSI") and Trina Solar Energy Development Pte. Ltd. ("TED") were subject to Singapore profit tax at a rate of 17% in 2010 and 2011, respectively. In 2012, TSI is subject to Singapore profit tax at a rate of 17% and TED is subject to a preferential Singapore profit tax at an effective rate of 5%, respectively. No Singapore profit tax has been provided as TSI and TED did not have assessable profit that was earned in or derived from Singapore during the year presented.



## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 14. INCOME TAXES — continued

#### **Switzerland**

The statutory tax rate in Switzerland is 27.8%. The Company's fully owned subsidiary, Trina Solar (Schweiz) AG ("TSW") was subject to a preferential Switzerland profit tax at an effective rate of 10.12% in 2010, 7.65% in 2011 and 2012, respectively, pursuant to approved tax ruling.

#### **Luxembourg**

The statutory tax rate in Luxembourg is 28.8%. The Company's fully owned subsidiary, Trina Solar (Luxembourg) S.A.R.L. ("TLB") has filed all necessary documents to obtain the ruling of participation exemption on the gain in Luxembourg. Subject to the participation exemption ruling agreed by the tax bureau, the capital gains tax rate derived from the disposal of projects is 0%.

#### **United States**

The Company's fully owned subsidiaries, Trina Solar (U.S.) Holding Inc. ("TUH"), Trina Solar (U.S.) Inc. ("TUS"), Trina Solar (U.S.) Development LLC ("TUP") and TP-CA-SOUTH LLC ("TP-CA") were subject to United States income tax at a combined federal and state tax rate of 40% in 2010, 2011 and 2012, respectively.

#### **Japan**

The Company's fully owned subsidiary, Trina Solar (Japan) Limited ("TJP") was subject to Japan profit tax at a rate of 40% in 2010, 2011 and 2012, respectively.

#### **Germany**

The Company's fully owned subsidiary, Trina Solar (Germany) GmbH ("TGM") was subject to Germany profit tax at a rate of 32.9% in 2010, 2011 and 2012, respectively.

#### **Italy**

The Company's fully owned subsidiary, Trina Solar (Italy) S.R.L. ("TIL") was subject to Italian profit tax at a rate of 31.4% in 2010, 2011 and 2012, respectively.

#### **Spain**

The Company's fully owned subsidiary, Trina Solar (Spain) S.L.U. ("TSP") was subject to Spanish profit tax at a rate of 30.0% in 2010, 2011 and 2012, respectively.

#### **PRC**

Under PRC's Enterprise Income Tax Law ("EIT Law"), the statutory income tax rate is 25%, and the EIT rate shall be reduced to 15% for state-encouraged High and New Technology Enterprises ("HNTE"). The Company's PRC subsidiaries are subject to income tax at 25%, unless otherwise specified. Trina China obtained a HNTE certificate in 2008 and was therefore entitled to a reduced EIT rate of 15% from 2008 to 2010. In 2011, Trina China renewed the HNTE certificate and therefore is subject to income tax rate at 15% from 2011 to 2013. TST obtained a HNTE certificate in 2011 and is therefore entitled to a reduced EIT rate of 15% from 2011 to 2013. Management is of the view that TST will continue its HNTE status upon renewal for another three years from 2014 to 2016.

TRINA SOLAR LIMITED AND SUBSIDIARIES

14. INCOME TAXES — continued

According to the PRC Tax Administration and Collection Law, the statute of limitations is three years if the underpayment of income taxes is due to computational errors made by the taxpayer. The statute of limitations will be extended to five years under special circumstances, which are not clearly defined, but an underpayment of income tax liability exceeding RMB100,000 (\$15,900) is specifically listed as a special circumstance. In the case of a transfer pricing related adjustment, the statute of limitations is ten years. There is no statute of limitations in the case of tax evasion. The Company's PRC subsidiaries are therefore subject to examination by the PRC tax authorities from 2007 through 2012 on non-transfer pricing matters, and from 2002 through 2012 on transfer pricing matters.

As of January 1, 2012 and for the year ended December 31, 2012, the Company has no unrecognized tax benefits relating to uncertain tax positions. Also, the Company does not expect that the amount of unrecognized tax benefits will increase significantly within the next 12 months.

The operating results before income tax and the provision for income taxes by tax jurisdictions for the years ended December 31, 2010, 2011 and 2012 is as follows:

	Years ended December 31,		
	2010	2011	2012
	\$	\$	\$
Income (loss) before income taxes:			
PRC	181,458,007	(3,556,550)	(185,318,162)
Switzerland	200,309,460	(5,581,319)	(51,593,606)
United States	7,704,044	1,023,440	(36,911,818)
Other jurisdictions	(29,949,333)	(22,396,194)	(18,137,013)
Total income (loss) before income taxes	<u>359,522,178</u>	<u>(30,510,623)</u>	<u>(291,960,599)</u>
Current tax expense:			
PRC	32,166,137	7,416,997	1,946,775
Switzerland	21,802,460	—	(4,327,859)
United States	3,457,769	3,249,978	876,505
Other jurisdictions	99,283	1,222,253	358,423
Total current tax expense	<u>57,525,649</u>	<u>11,889,228</u>	<u>(1,146,156)</u>
Deferred tax (benefit) expense:			
PRC	(9,011,416)	(1,742,264)	(27,888,483)
Switzerland	(68,883)	534,770	762,913
United States	(376,152)	(2,834,865)	3,211,018
Other jurisdictions	—	(537,250)	(344,364)
Total deferred tax benefit	<u>(9,456,451)</u>	<u>(4,579,609)</u>	<u>(24,258,916)</u>
Total income taxes expense (benefit)	<u>48,069,198</u>	<u>7,309,619</u>	<u>(25,405,072)</u>

TRINA SOLAR LIMITED AND SUBSIDIARIES

14. INCOME TAXES — continued

A reconciliation between the PRC statutory income tax rate of 25% and the effective income tax rate computed by income tax expense (benefit) and income (loss) before income taxes reported in the consolidated statements of operations is as follows:

	Years ended December 31,		
	2010	2011	2012
PRC statutory enterprise income tax rate	25.0%	25.0%	25.0%
Tax rate differential for entities in non-PRC jurisdictions	(5.5)%	(18.2)%	(1.5)%
Tax rate differential for preferential rate	(2.4)%	(21.9)%	(0.4)%
Change in tax rate	(5.2)%	(2.8)%	—
Transfer pricing settlement in 2011	—	(6.2)%	—
Tax effect of permanent differences	0.0%	(0.4)%	0.3%
Change in valuation allowance	0.8%	0.5%	(15.5)%
Unrecognized tax benefits	0.7%	—	—
Others	—	—	0.8%
	<u>13.4%</u>	<u>(24.0)%</u>	<u>8.7%</u>

TRINA SOLAR LIMITED AND SUBSIDIARIES

14. INCOME TAXES — continued

The principal components of deferred income tax assets are as follows:

	Years ended December 31,	
	2011	2012
	\$	\$
Deferred tax assets:		
Bad debts provision	5,371,073	18,584,579
Accrued expenses	8,475,330	7,242,862
Government subsidy	4,263,756	5,120,021
Inventory write-down	2,550,720	12,634,284
Advance to suppliers provision	2,494,574	3,222,258
Warranty provision	14,442,248	15,655,062
Net operating loss carryforwards	2,448,583	44,525,527
Others	3,449	2,482,504
Total gross deferred tax assets	40,049,733	109,467,097
Valuation allowance on deferred tax assets	(10,544,364)	(55,702,812)
Net deferred tax assets	29,505,369	53,764,285
Analysis as:		
Current	10,466,825	12,716,521
Noncurrent	19,038,544	41,047,764
Total	29,505,369	53,764,285

The increase in the valuation allowance for the years ended December 31, 2010, 2011 and 2012 were \$2,934,446, \$201,569 and \$45,158,448, respectively. In assessing the realizability of deferred income tax assets, management considers whether it is more likely than not that some portion or all of the deferred income tax assets will not be realized. As of December 31, 2012, the valuation allowance of \$55,702,812 was related to the deferred income tax assets of Trina China, TST and certain subsidiaries in Europe and United States. The ultimate realization of deferred income tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible or utilized. Management considers the scheduled reversal of deferred income tax liability, projected future taxable income and tax planning strategies in making this assessment.

Based upon the level of historical taxable income and projections for future taxable income over the periods in which the deferred income tax assets are deductible or can be utilized, management believes it is more likely than not that the deferred tax asset, net of the valuation allowance as of December 31, 2012, will be realized. In order to fully utilize the net deferred income tax asset as of December 31, 2012, the Company will need to generate future taxable income of approximately \$226,815,580. However, the amount of the deferred tax assets considered realizable could be reduced in the near term if estimates of future taxable income during the carryforward period are reduced.

The net operating losses carryforwards of the Company's PRC subsidiaries amounted to \$159,425,266 as of December 31, 2012, which will expire if unused by December 31, 2017. The net operating losses carryforwards of the Company's subsidiary in Switzerland amounted to \$ 32,677,106 as of December 31, 2012, which will expire if unused by December 31, 2019.

The EIT law and its relevant regulations impose a withholding tax at 10%, unless reduced by a tax treaty or agreement, for dividends distributed by a PRC-resident enterprise to its non-PRC-resident corporate investor for earnings generated beginning on January 1, 2008. Undistributed earnings generated prior to January 1, 2008 are exempt from such withholding tax. The Company has not recognized a deferred tax liability of \$25.5 million for the undistributed earnings resides in its PRC-resident enterprise of approximately \$255.3 million as of December 31, 2012, as the Company plans to reinvest these earnings indefinitely in the PRC.

## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 15. DISTRIBUTION OF PROFIT

Pursuant to the law of the PRC on enterprises with Wholly Owned Foreign Investment, the Company's subsidiaries in the PRC are required to allocate at least 10% of their after tax profits, after making good of accumulated losses as reported in their PRC statutory financial statements, to the general reserve fund and have the right to discontinue allocations to the general reserve fund if the balance of such reserve has reached 50% of their registered capital. The general reserves are not available for distribution to the shareholders (except in liquidation) and may not be transferred in the form of loans, advances, or cash dividend.

The amount of such non-distributable general reserve fund was \$41,359,798 and \$49,302,006 as of December 31, 2011 and 2012, respectively.

The amount that is not subject to restrictions, and which may be transferred from the Company's subsidiaries in the PRC in the form of dividends, loans or advances, is \$339,549,604 and \$145,432,288 as of December 31, 2011 and 2012, respectively.

As a result of these PRC laws and regulations, the Company's subsidiary in the PRC is restricted in its ability to transfer the registered capital and general reserve fund to Trina in the form of dividends, loans or advances and the restricted portion amounted to \$611,359,798 and \$675,745,182 as of December 31, 2011 and 2012, respectively.

### 16. RELATED PARTY TRANSACTIONS AND BALANCES

#### Related party balances

The amounts due to related parties is \$6,748,353 and \$4,861,497 as of December 31, 2011 and 2012, respectively, which include payable to Changzhou Youze S&T Co., Ltd and Changzhou Junhe Mechanical Co., Ltd., entities controlled by Mr. Weizhong Wu and Mr. Weifeng Wu, respectively, who are the brothers of Ms. Chunyan Wu, (Mr. Gao's wife), for Trina China's purchase of wafers.

#### Related party transactions

In 2010, 2011 and 2012, Trina China purchased wafers for a total price of RMB69,890,654(\$10,553,196), RMB167,159,850(\$26,529,520) and RMB230,705,934(\$36,704,468), respectively, from Changzhou Youze S&T Co., Ltd., a company controlled by Mr. Weizhong Wu, the brother of Ms. Chunyan Wu. The transactions were approved by the audit committee.

In 2011 and 2012, Trina China sold ingots for a total price of RMB4,168,760(\$642,881) and RMB6,560,951(\$1,036,067), respectively, to Changzhou Youze S&T Co., Ltd., a company controlled by Mr. Weizhong Wu, the brother of Ms. Chunyan Wu. The transactions were approved by the audit committee.

In 2010, 2011 and 2012, Trina China purchased goods and equipment maintenance services for a total price of RMB10,811,133(\$1,611,704), RMB12,634,837(\$2,005,243) and RMB9,481,118(\$1,508,411), respectively, from Changzhou Junhe Mechanical Co., Ltd., a company controlled by Mr. Weifeng Wu, the brother of Ms. Chunyan Wu. The transactions were approved by the audit committee.

In 2010, Trina China provided PV technical consulting services for a total price of \$452,987 to Shanghai Zhenhe New Energy S&T Development Co., Ltd., a company in which Trina China holds a 20% interest. The transactions were approved by the audit committee. In 2011, the Company obtained a dividend of \$137,511 from Shanghai Zhenhe New Energy S&T Development Co., Ltd.

TRINA SOLAR LIMITED AND SUBSIDIARIES

17. COMMITMENTS AND CONTINGENCIES

**a) Capital commitments**

As of December 31, 2012, the Company's commitments to purchase property, plant and equipment is approximately \$30.2 million associated with the expansion of the Company's solar module business.

**b) Materials purchase commitments**

In order to better manage the Company's unit costs and to secure adequate and timely supply of polysilicon and wafer materials, the Company entered into a number of multi-year supply agreements with periods from 2008 through 2020 for quantities that are expected to meet the Company's anticipated production needs. Pursuant to the original terms of these agreements, the Company was required to purchase fixed or minimum quantities of polysilicon and wafer at fixed prices. During 2012, the Company renegotiated and revised the pricing terms of the supply agreements with certain suppliers. Under the terms of the revised supply agreements, the Company commits and is obligated to purchase the minimum quantities at the prevailing market prices at the time of the purchase during 2013 to 2020 as follows:

Year ending December 31	Wafer (Piece in Million)	Polysilicon (Metric Ton)
2013	150	2,900
2014	500	3,830
2015	625	3,960
2016	625	2,650
2017	625	2,650
Thereafter	1,875	7,950
Total	4,400	23,940

The Company also renegotiated with a supplier during 2012 on the pricing terms of take-or-pay contracts applicable to the remaining procurement periods from 2013 to 2018. Pursuant to the revised contract terms, the Company is obligated to purchase fixed quantities of polysilicon materials at a range of price subject to negotiation. To the extent that the Company fails to take delivery of the polysilicon materials based on the revised term for three consecutive months, the revised pricing terms are nullified, and the take-or-pay contracts will then be subject to the original fixed price terms. As of December 31, 2012, the amount of the fixed and determinable portion of the obligation with respect to these contracts based on the minimum price of the range is as follows:

Year ending December 31	\$million
2013	43.6
2014	42.0
2015	41.0
2016	34.4
2017	32.8
2018	32.0
Total	225.8

The Company's total purchase under the above take-or-pay contracts was \$35.8 million in 2012.



## TRINA SOLAR LIMITED AND SUBSIDIARIES

### 17. COMMITMENTS AND CONTINGENCIES — continued

The Company has made advances to suppliers where the Company has committed to purchase minimum quantities under some of the supply agreements. The Company does not require collateral or other security against its advances to related or third party suppliers. As a result, the Company's claims for such prepayments would rank only as an unsecured claim, which exposes the Company to the credit risks of the suppliers. Also, the Company may not be able to recover all unutilized advances to suppliers if the Company does not purchase the minimum quantities or is unable to negotiate or renegotiate acceptable quantities, prices and delivery terms with these suppliers.

#### c) Operating lease commitments

The Company had operating lease agreements principally for its office properties in the PRC, Europe and the US. The Company's lease expense was \$1,988,081, \$5,048,984 and \$4,935,635 for the years ended December 31, 2010, 2011 and 2012, respectively.

Future minimum lease payments are as follows:

Year ending December 31	\$
2013	2,448,274
2014	1,257,598
2015	249,486
2016	—
2017	—
Thereafter	—
Total	<u>3,955,358</u>

#### d) Contingencies

On October 11, 2012, the trustee of Solyndra LLC, a manufacturer of solar panels based in California, filed a lawsuit against us, including our subsidiary Trina Solar (U.S.), Inc., and other Chinese manufacturers of photovoltaic solar panels in the U.S. District Court in California. The plaintiff has asserted antitrust and related state-law claims against the defendants in this lawsuit. The plaintiff's complaint alleges that defendants have violated Section 1 of the Sherman Antitrust Act by conspiring among each other and with additional co-conspirators to fix prices of solar panels by dumping products in the United States and to destroy fair competition in the U.S. market. The plaintiff similarly alleges conspiracy to fix prices and predatory pricing under California's Cartwright Act and Unfair Practices Act. In addition, the plaintiff has brought state-law claims of tortious interference with existing agreements and tortious interference with prospective economic advantage, alleging that the defendants interfered with Solyndra's existing agreements with its customers by selling their products to Solyndra's customers at below-cost prices. The defendants have not yet filed an answer or responsive pleading. At this early stage, the Company is not able to assess the exposure in connection with the lawsuit.

In October 2011, a trade action was filed with U.S. governmental agencies in Washington, DC, alleging that imports of crystalline silicon photovoltaic cells and modules from China were sold at less than fair value and unfairly subsidized in violation of U.S. antidumping and countervailing duty laws. The Company was identified as one of several Chinese exporters of these products to the U.S. market and its U.S. affiliate as one of the U.S. importers. Violations of these laws can result in the retroactive imposition of significant additional duties on imports of these products from China, for which the Company has recorded an accrual of \$3.3 million as of December 31, 2011. On October 10, 2012, the Department of Commerce announced its final affirmative determination regarding antidumping and countervailing duties applicable to the importation of crystalline silicon PV cells, whether or not assembled into modules, from China. The Company received a combined effective net rate of 23.75%, comprised of antidumping duties of 18.32% and countervailing duties of 15.97%, of which an export subsidy of 10.54% is subtracted from the antidumping duties calculation to avoid double application. On November 7, 2012, the U.S. International Trade Commission ("USITC") announced its affirmative determination that imports of crystalline silicon PV cells into the U.S. from China cause "material injury" to the U.S. domestic industry, nevertheless also made negative findings with regard to critical circumstances, such that no retroactive duties would be imposed on the Company. Accordingly, the relevant accrual on the duties was reversed in the year ended December 31, 2012.

# TRINA SOLAR LIMITED AND SUBSIDIARIES

## 18. SEGMENT INFORMATION

The Company operates in a single reportable business segment which is comprised of the production of mono- and multi-crystalline silicon ingots, wafers, cells and related products and the subsequent assembly and marketing of solar modules, which are panels packed with interconnected solar cells that convert sunlight into electricity. The Company's chief operating decision maker is the chief executive officer of the Company. The basis for attributing revenue from external customers to individual countries is the customers' country of incorporation.

The following table summarizes the Company's net sales generated from different geographic locations:

	Years ended December 31,		
	2010	2011	2012
	\$	\$	\$
Europe:			
- Germany	447,315,689	756,574,856	428,964,360
- Spain	404,130,517	271,071,071	16,743,839
- Italy	409,560,784	262,491,774	79,532,883
- Belgium	87,327,868	40,716,601	6,566,457
- Others	87,786,895	66,679,873	91,100,905
Europe Total	1,436,121,753	1,397,534,175	622,908,444
China	70,782,741	144,739,344	167,953,230
United States	262,300,116	440,298,709	331,212,387
Others	88,484,664	65,329,348	174,580,877
Total net sales	<u>1,857,689,274</u>	<u>2,047,901,576</u>	<u>1,296,654,938</u>

The identifiable long-lived assets of the Company are substantially located in the PRC.

TRINA SOLAR LIMITED AND SUBSIDIARIES

19. MAJOR CUSTOMERS AND SUPPLIERS

There is no customer that contributed more than 10% of net sales or accounts receivable.

The following table summarizes suppliers which contributed more than 10% of total advances to suppliers:

	Advance to suppliers	
	December 31,	
	2011	2012
	\$	\$
Company I	36,383,712	28,328,982
Company II	41,982,828	39,536,806
Company III	45,924,240	36,887,990
Company IV	19,780,216	15,518,098

## Schedule

### TRINA SOLAR LIMITED AND SUBSIDIARIES

#### **Additional Information — Financial Statement Schedule I**

**These financial statements have been prepared in conformity with Accounting Principles Generally Accepted in the United States**

#### TRINA SOLAR LIMITED

#### NOTES TO SCHEDULE I

Schedule I has been provided pursuant to the requirements of Rule 12-04(a) and 4-08(e)(3) of Regulation S-X, which require condensed financial information as to financial position, changes in financial position and results of operations of a parent company as of the same dates and for the same periods for which audited consolidated financial statements have been presented as the restricted net assets of Trina's consolidated subsidiaries not available for distribution to Trina as of December 31, 2011 and 2012 of \$ 611,359,798 and \$675,745,182, respectively, exceeded the 25% threshold. The condensed financial information has been prepared using the same accounting policies as set out in the accompanying consolidated financial statements except that the equity method has been used to account for investments in its subsidiaries.

#### **Guarantee**

Trina Solar Limited ("TSL") was the guarantor for several of its subsidiaries' bank borrowings or facilities, which amounted to \$527 million as of December 31, 2012 (see Note 10).

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TRINA SOLAR LIMITED AND SUBSIDIARIES

**BALANCE SHEETS**  
(Amount in U.S. dollars)

	As of December 31,	
	2011	2012
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	43,204,022	5,739,486
Other current assets	12,817	19,532
Total current assets	43,216,839	5,759,018
Amount due from group companies	119,927,513	112,531,676
Investment in subsidiaries	1,117,941,053	853,607,661
Other non-current assets	209,574	209,574
<b>TOTAL ASSETS</b>	<b>1,281,294,979</b>	<b>972,107,929</b>
<b>LIABILITIES AND EQUITY</b>		
Current liabilities:		
Accrued expenses and other current liabilities	8,413,582	6,940,937
Convertible senior notes	—	83,582,000
Total current liabilities	8,413,582	90,522,937
Convertible senior notes	127,756,000	—
Total liabilities	136,169,582	90,522,937
Equity:		
Ordinary shares (\$0.00001 par value; 73,000,000,000 shares authorized, 3,982,271,362 and 3,993,306,819 shares issued and outstanding as of December 31, 2011 and 2012, respectively)	39,823	39,933
Additional paid-in capital	650,944,164	656,943,591
Retained earnings	481,950,538	215,395,146
Accumulated other comprehensive income	12,190,872	9,206,322
Total equity	1,145,125,397	881,584,992
<b>TOTAL LIABILITIES AND EQUITY</b>	<b>1,281,294,979</b>	<b>972,107,929</b>

TRINA SOLAR LIMITED AND SUBSIDIARIES

**STATEMENTS OF OPERATIONS**  
(Amount in U.S. dollars)

	Year ended December 31,		
	2010	2011	2012
Net sales	331,563	—	—
<b>Operating expenses</b>			
Selling expenses	1,957,545	948,195	910,494
General and administrative expenses	10,760,015	11,108,266	6,885,314
Research and development expenses	438,181	573,646	302,249
Total operating expenses	13,155,741	12,630,107	8,098,057
Loss from operations	(12,824,178)	(12,630,107)	(8,098,057)
Interest expense	(9,419,771)	(7,606,120)	(4,213,686)
Interest income	291,006	264,533	1,604,065
Equity in earnings (loss) of subsidiaries	331,756,996	(20,189,689)	(261,348,842)
Other income, net	1,650,607	2,341,290	5,501,128
Income (loss) before income taxes	311,454,660	(37,820,093)	(266,555,392)
Income tax expense	(1,680)	—	—
Net income (loss)	311,452,980	(37,820,093)	(266,555,392)

**STATEMENTS OF COMPREHENSIVE INCOME**  
(Amount in U.S. dollars)

	Year ended December 31,		
	2010	2011	2012
Net income (loss)	311,452,980	(37,820,093)	(266,555,392)
Other comprehensive (loss) income:			
Foreign currency translation adjustments, net of nil tax	(433,227)	1,183,743	(2,984,550)
Comprehensive income (loss)	311,019,753	(36,636,350)	(269,539,942)



TRINA SOLAR LIMITED AND SUBSIDIARIES

**STATEMENTS OF CASH FLOWS**  
(Amount in U.S. dollars)

	Year ended December 31,		
	2010	2011	2012
Operating activities:			
Net income (loss)	311,452,980	(37,820,093)	(266,555,392)
Adjustments to reconcile net income (loss) to net cash used in operating activities:			
Equity in (earnings) loss of subsidiaries	(331,756,996)	20,189,689	261,348,842
Gain on repurchasing convertible senior notes	—	(2,341,290)	(5,091,424)
Loss on change in fair value of investment in securities	—	295,715	—
Share-based compensation	5,955,047	7,958,434	5,999,427
Amortization of convertible senior notes issuance costs	3,899,771	2,101,948	—
Changes in operating assets and liabilities:			
Other current assets	235,920	227,435	(6,605)
Other noncurrent assets	—	(80,317)	—
Accrued expenses and other current liabilities	(3,828,410)	3,383,014	(1,472,645)
Net cash used in operating activities	(14,041,688)	(6,085,465)	(5,777,797)
Investing activities:			
Investment in subsidiaries, net of cash acquired	(67,856,355)	(83,000,000)	—
Amounts due from group companies	(97,014,578)	40,752,493	7,395,837
Net cash (used in) provided by investing activities	(164,870,933)	(42,247,507)	7,395,837
Financing activities:			
Proceeds from exercise of share options	1,088,976	156,048	—
Proceeds from issuance of ordinary shares, net of issuance costs	176,271,078	—	—
Payments for repurchase of convertible senior notes	—	(7,582,710)	(39,082,576)
Redemption of convertible senior notes	—	(320,000)	—
Net cash provided by (used in) financing activities	177,360,054	(7,746,662)	(39,082,576)
Net change in cash and cash equivalents	(1,552,567)	(56,079,634)	(37,464,536)
Cash and cash equivalents at the beginning of the year	100,836,223	99,283,656	43,204,022
Cash and cash equivalents at the end of the year	99,283,656	43,204,022	5,739,486

\* \* \* \* \*





## CHINA

### Changzhou

#### Corporate Headquarters

No. 2 Tianhe Road,  
Trina PV Industrial Park  
New District, Changzhou  
Jiangsu 213031

**T** + 86 519 8548 2008

**F** + 86 519 8517 6021

**E** sales@trinasolar.com

### Shanghai

333 North Caoxi Road  
CCIG International Plaza  
Building B, Offices 1704-1706  
Shanghai 200030

**T** + 86 519 8548 2008

**F** + 86 021 6057 5333

**E** sales@trinasolar.com

### Beijing

48 Dongzhimenwai Street  
Oriental Kenzo Office Building  
X-17KI, Dongcheng District  
Beijing 100027

**T** + 86 10 5817 4080

**F** + 86 10 5817 4020

**E** sales\_china@trinasolar.com

## APMEA

### Singapore

#### Regional Headquarters

Trina Solar (Singapore) Pte Ltd  
Three Temasek Avenue  
#16-03 Centennial Tower  
Singapore 039190

**T** + 65 6808 1111

**F** + 65 6835 7225

### Korea

Trina Solar Korea Ltd  
B1-140, Daewoo Dovile 117  
Hap-Dong Seodaemun-Gu  
120-030 Seoul

**T** 02 392 1588

**F** 02 362 8820

**E** korea@trinasolar.com

### Japan

Trina Solar (Japan) Limited  
World Trade Center Building  
33Rd Floor, 4-1 2-Chome  
Hamamatsu-Cho Minato-Ku  
Tokyo 105-6133

**T** + 81 3 3437 7000

**F** + 81 3 3437 7001

**E** japan@trinasolar.com

### Malaysia

Trina Solar (Malaysia) Sdn. Bhd.  
Plot 201, Lebuhraya Kampung Jawa  
Bayan Lepas Ftz, Phase 3  
11900 Pulau Pinang

**T** + 60 4685 2008

**F** + 60 4685 2080

**E** malaysia@trinasolar.com

### Australia

Trina Solar (Australia) Pty Ltd  
Level 35, 60 Margaret Street  
Sydney NSW 2000

**T** + 61 2 8667 3088

**E** australia@trinasolar.com

### United Arab Emirates

Trina Solar Middle East Ltd  
Office #306, Injazat Building  
Mohamed Bin Zayed City  
Abu Dhabi  
P.O Box 135084

**T** + 971 562047969

**E** uae@trinasolar.com

## EUROPE

### Switzerland

#### Regional Headquarters

Trina Solar (Schweiz) AG  
Richtistraße 11  
8304 Wallisellen Schweiz

**T** + 41 43 299 6800

**F** + 41 43 299 68 10

**E** europe@trinasolar.com

### Germany

Trina Solar (Germany) GmbH  
Einsteinring 26  
D-85609 Aschheim/München

**T** + 49 89 122 8492 50

**F** + 49 89 122 8492 51

**E** germany@trinasolar.com

### Italy

Trina Solar (Italy) Srl  
Via Santa Maria Valle 3  
20123 Milan

**T** + 39 02 0068 1521

**F** + 39 02 0068 1400

**E** italy@trinasolar.com

### Spain

Trina Solar (Spain) Slu  
Avenida de Burgos 17  
8th Floor, 28036 Madrid

**T** + 34 91 572 6576

**F** + 34 91 572 6621

**E** spain@trinasolar.com

### United Kingdom

Trina Solar (Uk) Ltd  
Regus East Midlands Airport  
Pegasus Business Park  
Herald Way, Castle Donington  
Leicestershire DE74 2TZ

**T** + 44 1332 638 700

**F** + 44 1332 638 160

## NORTH AMERICA

### United States

#### Regional Headquarters

Trina Solar (U.S.) Inc  
100 Century Center, Suite 340  
San Jose, CA 95112

USA

**T** + 1 800 696 7114

**F** + 1 800 696 0166

**E** usa@trinasolar.com

[www.trinasolar.com](http://www.trinasolar.com)

APMEA refers to Asia Pacific, Middle East and Africa