



# Key Messages – Decisive Arguments on Why Trina Solar is the Panel of Choice

---

## Non-Product Values

1. One of the Largest Module Supplier in the World with Strong European & UK Footprint
2. Reliable Partner with Strong Financials (Q4 2014 Company Financials, M&A, Barclays Capital Report)
3. Sustainable & Responsible Company (SVTC, PV Cycle, WEEE Directive Compliance)

## Product Values

4. Superior Product Quality (Manufacturing, Quality testing down to component level, International Certifications)
5. Industry Leading Warranty
6. Product Liability Insurance
7. Superior Performance
8. High Quality Components – Connectors & J Box
9. Innovation Excellence – R&D, Cell Technology (Honey & IBC), Trinamsart
10. Proven Experience - Reference projects

# Reason 1: One of the Largest Module Suppliers in the World with Strong European Footprint

1

## One of the Largest Module Supplier with Strong European Footprint

### Description

Trina Solar is ranked as one of the largest module suppliers in the world (Solar Buzz Report 2013) with 4 regional HQs and 22 service offices

Trina Solar continues to maintain strong operations in Europe with a 65+ team

### Added Value

- Dedicated local contact person for customers (key account principle)
- Strong after sales support n your language



# Trina Solar's Strong European & UK Footprint

---

## Company Snapshot

- Operating in Europe since 2005
- Office locations
  - Administrative head office in Wallisellen (Zurich)
  - Regional head offices in Munich, Milan, Madrid, Castle Donnington
- Trina Solar dominated UK solar PV module supply in 2013

## Top-3 Module Suppliers to UK Solar PV Market for CY'2013 by Capacity Shipped

| UK 2013 Rank | Module Supplier     | Global 2013 Rank |
|--------------|---------------------|------------------|
| 1            | Trina Solar         | 2                |
| 2            | ReneSola            | 6                |
| 3            | Yingli Green Energy | 1                |

# Reason 2: Reliable Partner with Strong Financials

## 2 Reliable Partner with Strong Financials

### Description

Trina Solar is one of the top global companies in the solar industry both in terms of production volume and financial turnover. Founded in 1997 and stock market listed since 2006, we are one of the oldest, most experienced and best managed solar companies.

**Our long history and proven track record make us a strong and reliable partner in a consolidating market.**

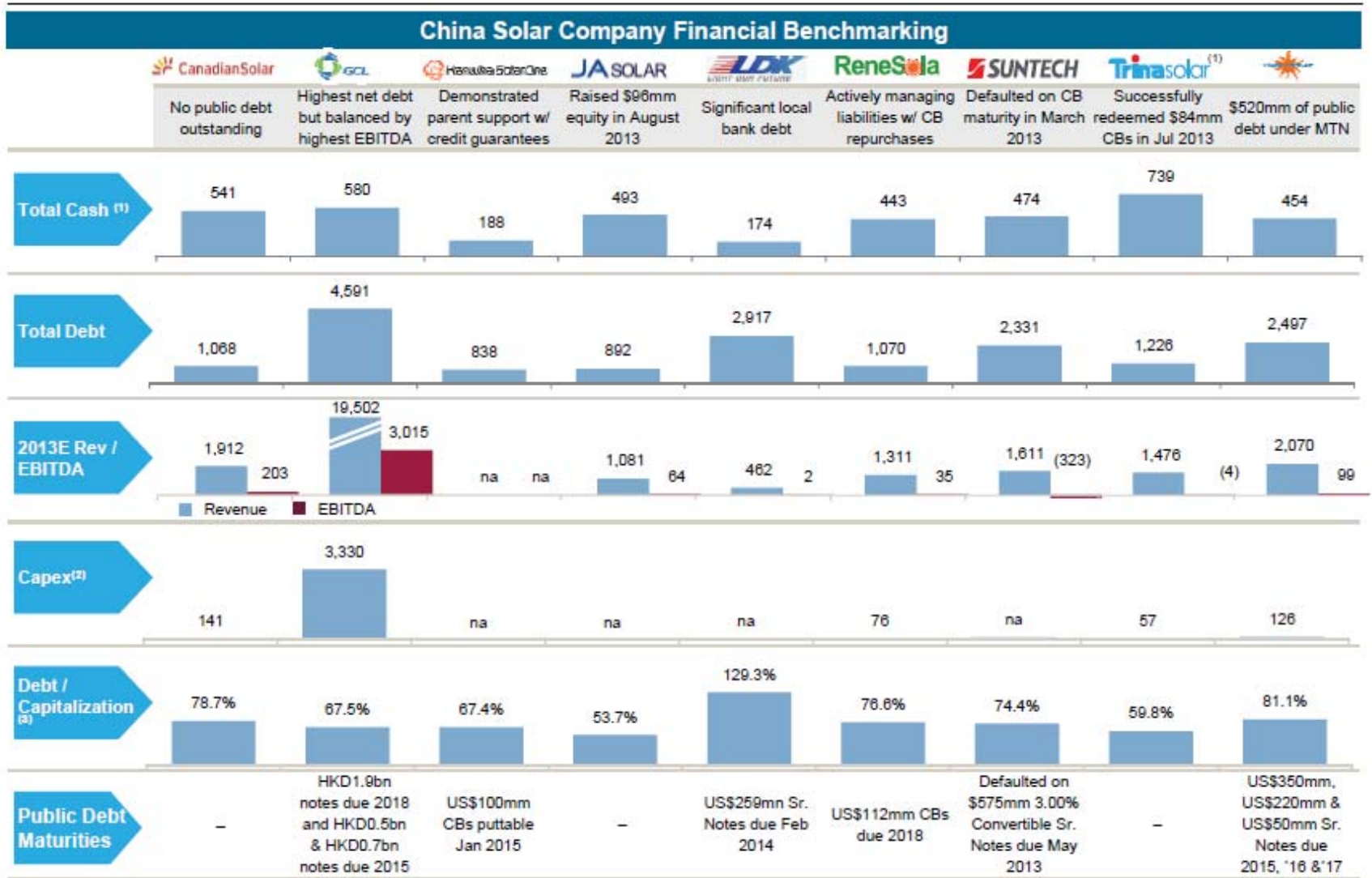
### Added Value

- Large, solid and strong company
- Globally recognized and respected
- Highly transparent
  - NYSE listed
  - Analyst coverage
- Consolidation survivor



# Barclay's Ranked Trina Solar as the Most Financially Solid Company

## China Solar Competitor Benchmarking – Financials



# Barclay's Ranked Trina Solar as the Most Bankable Companies to Survive Consolidation

## Which of China's Leaders Will be Left Standing?

| Evaluation of Chinese Solar Competitors |   |   |   |   |   |   |  |   |   |
|---|---|---|---|---|---|---|--|---|---|
|   | CanadianSolar                                     | GCL                                       | Hanwha SolarOne                         | JA SOLAR  | LDK<br>Leading Solar Future                             | ReneSola                                    | SUNTECH                                  | Trinasolar  | Yanlord Solar                                 |
| <b>Scale (Capacity) Advantage</b>       | Leading module producer                           | Largest poly / wafer globally             | Capacity expansion plans delayed        | Largest cell capacity                             | Large capacity but low utilization                      | Trails GCL and LDK in wafers                | Leading module producer                  | Leading module producer                           | Leading module producer                       |
| <b>Cost Advantage</b>                   | Currently lowest cost module producer             | Cost leader in poly / wafer               | High module costs of \$0.92/W           | Need to reduce wafer/module costs                 | Highest costs, in-house poly a burden on cost structure | Lowest wafer processing cost                | High wafer contracts historically        | Among the lowest cost producers of modules        | Low cost but In-house poly struggles          |
| <b>Capital Structure</b>                | \$527mm net debt; no upcoming maturities          | \$4,011mm net debt; \$150mm maturity 2015 | \$650mm net debt; \$100mm put Jan 2015  | \$399mm net debt; redeemed \$200mm CB in May 2013 | \$2,743mm net debt; \$260mm maturity Feb 2014           | \$627mm net debt; \$100mm maturity Mar 2018 | Defaulted on CB in March 2013            | \$487mm net debt; redeemed \$84mm CB in July 2013 | \$2,042mm net debt; \$238mm maturity May 2017 |
| <b>Manufacturing Integration</b>        | Ltd. in-house wafer, partnership with GCL         | Integrated poly / wafer, no cell/module   | Wtd to module w/ hedge in cell/wafer    | Wtd to cell w/ hedge in wafer/module              | Heavily weighted to poly/wafer                          | Heavily wtd to wafer w/ some poly hedge     | Wtd to cell module w/ strong wafer hedge | Wtd to cell/module w/ strong wafer hedge          | Full vertical integration from poly to module |
| <b>Downstream Access / Bankability</b>  | Partnership with SkyPower in N.A.                 | Partnership with Solar Reserve in US      | Building brand, Hanwha D/S efforts      | Dedicated team                                    | 0.5GW of project but B/S limits expansion               | Limited brand and D/S presence              | Global leading brand                     | Strong brand, building D/S in China               | Among the early leaders in local mkt          |
| <b>Clear Strategy</b>                   | Downstream + "Virtual" vertical integration model | "Barbell" model                           | Virtually vertical integrated w/ Hanwha | Focus on cell w/ wafer/module hedge               | Path to vert. int. has not been smooth                  | Large scale wafer player or vert. int.?     | Restructuring post bankruptcy            | Focus on brand                                    | Poly strategy uncertain                       |
| <b>Survivor?</b>                        |   |   |   |   |   |   |  |   |   |

# Reason 3: Sustainable & Responsible Company

## 3 Sustainable & Responsible Company

### Description

Trina Solar is committed to sustainable growth. We care for our planet, our people and communities.

This means we avoid or minimize environmental burden, provide a safe and healthy work environment to our employees and support communities in need.

### Added Value

- Green products from a green company
- Doing business with a company that cares and assumes responsibility





# Full PV Cycle Membership & WEEE Compliant



## Trina Solar products are fully WEEE Compliant

- WEEE regulates the **appropriate treatment of end-of-life products** and requires that Producers (e.g. manufacturers and importers) of electronic and electrical equipment comply with **national waste management obligations**, including the related financing and administration.
- 14 February, 2014**: deadline for transposition in all EU countries' legislation.



# Top Environmental Rating

No. 1 company in Silicon Valley Toxics Coalition Solar Scorecard.

*“The Scorecard is a resource for consumers, institutional purchasers, investors, installers, and anyone who wants to purchase PV modules from responsible product stewards. The Scorecard reveals how companies perform on SVTC’s sustainability and social justice benchmarks to ensure that PV manufacturers protect workers, communities, and the environment.”*

|                      | EPR       | Emissions Transparency | Chemical Reduction Plan | Worker Rights, Health, Safety | Supply Chains | Conflict Minerals | Module Toxicity | C2C Recycling | Prison Labor | Biodiversity | Water    | Energy & GHGs | Overall Score |
|----------------------|-----------|------------------------|-------------------------|-------------------------------|---------------|-------------------|-----------------|---------------|--------------|--------------|----------|---------------|---------------|
| <b>MAXIMUM SCORE</b> | <b>20</b> | <b>10</b>              | <b>5</b>                | <b>15</b>                     | <b>10</b>     | <b>5</b>          | <b>10</b>       | <b>5</b>      | <b>5</b>     | <b>5</b>     | <b>5</b> | <b>100</b>    |               |
| Trina                | 14        | 5                      | 5                       | 15                            | 7             | 3                 | 10              | 4             | 5            | 2            | 3        | 4             | 77            |
| Yingli               | 9         | 4                      | 5                       | 14                            | 8             | 3                 | 10              | 4             | 5            | 5            | 3        | 5             | 75            |
| SunPower             | 7         | 6                      | 5                       | 14                            | 7             | 3                 | 10              | 4             | 5            | 3            | 2        | 4             | 69            |
| Upsolar              | 14        | 4                      | 0                       | 13                            | 8             | 3                 | 10              | 2             | 3            | 5            | 0        | 4             | 66            |
| SolarWorld           | 9         | 10                     | 5                       | 8                             | 7             | 0                 | 0               | 3             | 5            | 0            | 5        | 5             | 64            |
| REC                  | 10        | 10                     | 5                       | 8                             | 7             | 0                 | 0               | 1             | 4            | 5            | 3        | 4             | 57            |
| First Solar          | 12        | 6                      | 0                       | 13                            | 7             | 3                 | 0               | 4             | 3            | 0            | 2        | 5             | 55            |
| Axitec               | 4         | 0                      | 0                       | 10                            | 8             | 3                 | 10              | 4             | 3            | 5            | 0        | 0             | 47            |
| Suntech              | 9         | 2                      | 5                       | 10                            | 7             | 3                 | 0               | 0             | 4            | 5            | 0        | 2             | 47            |
| Mitsubishi           | 0         | 4                      | 5                       | 4                             | 7             | 0                 | 10              | 0             | 0            | 5            | 5        | 5             | 45            |
| Aleo                 | 10        | 0                      | 0                       | 11                            | 7             | 0                 | 0               | 4             | 3            | 5            | 0        | 3             | 43            |
| Renesola             | 2         | 0                      | 0                       | 12                            | 7             | 0                 | 10              | 1             | 3            | 5            | 0        | 1             | 41            |
| LDK                  | 4         | 0                      | 0                       | 12                            | 0             | 3                 | 10              | 3             | 3            | 5            | 0        | 0             | 40            |
| Avancis              | 9         | 0                      | 0                       | 8                             | 7             | 3                 | 0               | 0             | 4            | 5            | 0        | 0             | 36            |
| Solon                | 9         | 0                      | 0                       | 8                             | 7             | 0                 | 0               | 0             | 4            | 5            | 0        | 0             | 33            |
| Panasonic            | 0         | 7                      | 5                       | 0                             | 0             | 3                 | 0               | 0             | 0            | 5            | 5        | 5             | 30            |
| Astronergy           | 4         | 6                      | 5                       | 2                             | 0             | 0                 | 0               | 0             | 0            | 5            | 4        | 3             | 29            |
| Samsung              | 0         | 4                      | 5                       | 0                             | 0             | 0                 | 0               | 0             | 0            | 5            | 5        | 5             | 24            |
| Calyxo               | 5         | 0                      | 0                       | 2                             | 7             | 0                 | 0               | 0             | 3            | 5            | 0        | 0             | 22            |
| Motech               | 4         | 0                      | 0                       | 0                             | 7             | 0                 | 0               | 0             | 3            | 5            | 0        | 3             | 22            |
| Sharp                | 0         | 3                      | 5                       | 0                             | 0             | 0                 | 0               | 0             | 0            | 5            | 3        | 5             | 21            |
| Solopower            | 5         | 0                      | 0                       | 4                             | 0             | 3                 | 0               | 0             | 3            | 5            | 0        | 0             | 20            |
| Kyocera              | 4         | 4                      | 5                       | 0                             | 0             | 0                 | 0               | 0             | 0            | 5            | 2        | 0             | 20            |
| Eurener              | 9         | 0                      | 0                       | 0                             | 0             | 0                 | 0               | 0             | 3            | 5            | 0        | 0             | 17            |
| Solar Frontier       | 0         | 0                      | 0                       | 0                             | 0             | 0                 | 10              | 0             | 0            | 5            | 0        | 0             | 15            |
| Hareon Solar         | 4         | 0                      | 0                       | 0                             | 0             | 0                 | 0               | 0             | 0            | 5            | 0        | 0             | 9             |
| Hyundai              | 4         | 0                      | 0                       | 0                             | 0             | 0                 | 0               | 0             | 0            | 5            | 0        | 0             | 9             |
| Jinko                | 4         | 0                      | 0                       | 0                             | 0             | 0                 | 0               | 0             | 0            | 5            | 0        | 0             | 9             |
| Hanwha SolarOne      | 4         | 0                      | 0                       | 0                             | 0             | 0                 | 0               | 0             | 0            | 5            | 0        | 0             | 9             |
| Fluitecnik           | 0         | 0                      | 0                       | 0                             | 0             | 0                 | 0               | 0             | 3            | 5            | 0        | 0             | 8             |
| JA Solar             | 0         | 0                      | 0                       | 0                             | 0             | 0                 | 0               | 0             | 3            | 5            | 0        | 0             | 8             |
| Canadian             | 2         | 0                      | 0                       | 0                             | 0             | 0                 | 0               | 0             | 0            | 5            | 0        | 0             | 7             |
| Miasole              | 2         | 0                      | 0                       | 0                             | 0             | 0                 | 0               | 0             | 0            | 5            | 0        | 0             | 7             |



Source: SVTC Scorecard 2013

# Reason 4: Superior Product Quality

---

## Description

We believe that our customers should get the best quality modules available in the market. That's why we have one of the most comprehensive and rigorous quality control programs in the industry.

We test before, during and at the end of production. In addition we test externally.

## Added Value

- Maximum product reliability & security
  - Internationally recognized certifications
  - Going beyond international standards
  - 36 internal quality checks in three categories



# Vertically integrated Manufacturing Process



- Quality control and insurance throughout the whole process
- Complete cost control and improvement throughout the whole process
- Quick action in response to occurring problems

# World-class Manufacturing Facilities



Changzhou HQ



Cell production line



Wafer slicing machine



Casting machine



Showroom



Cell cleaning line



Warehouse

# Best in Class R&D

## Advanced R&D Center & Vertical Mfg

- Material research
- Ingot crystallization
- Wafering
- Solar Cells
- Modules
- Systems
- Reliability testing



PV Park



State Key Lab


## International collaborations with leading research institutions



SERIS  
Solar Energy Research  
Institute of Singapore
















## Best-in-class R&D investment leads to a strong track record in efficiency increase

- **Cell efficiency records:** Achieved 19.6% efficiency for multi-crystalline cells<sup>1</sup> and 20.3% efficiency for mono-crystalline cells<sup>2</sup>
- Over **380 solar photovoltaic patents** filed
- **The first and only** PV firm to receive **Client Test Data Program (CTDP) Certification** from 

# Trina Certification Details

## Global and regional certifications:

| IEC 61215 & 61730 (1000V)   | UL 1703 (USA – TW cells)   |
|---|--|
|  TÜV (global)       |  UL 1000V & 600V (USA) |
|  ICIM (Italy)       |  ETL (Mounting)        |
|  MCS (UK)           |  CSA (US & CAN)        |
|  CEC (Australia)    |  CEC (US-CA)           |
|  JPEC & JET (Japan) |  FSEC (US-FL)          |
|  CGC (China)        |  AAE (PR)              |
|  KEMCO (Korea)     |  |

### Additional Certifications:

- PID Free
- Sand Blast
- Salt Mist
- Ammonia

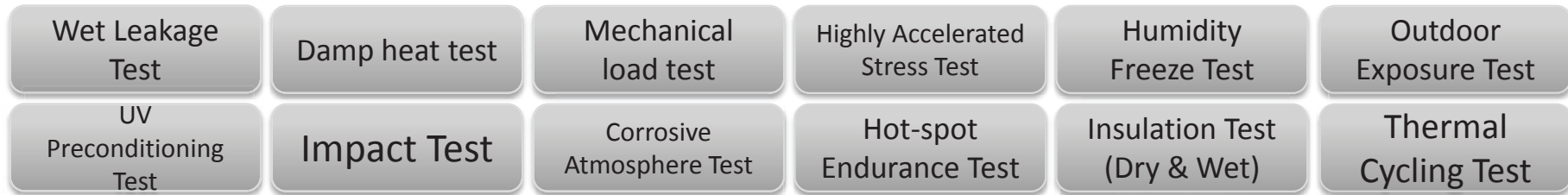
# Quality is tested throughout the process

---

## Environmental Reliability Testing

Modules are tested under extreme environmental conditions – **Confidence in 25 years warranty**

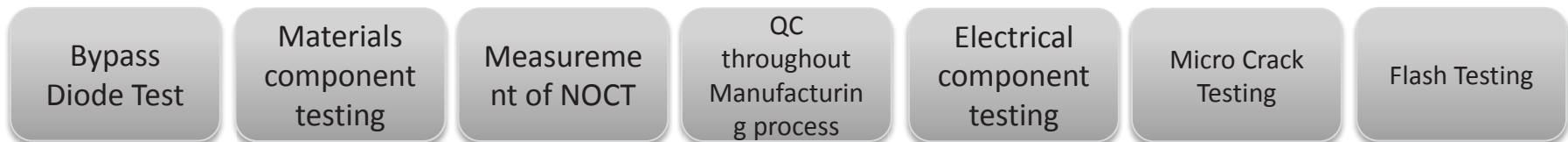
All tests are performed in Trina Solar's official State Lab "Center of Excellence".



---

## Component Testing

Each module component individually and together are tested – **maximize electrical output and minimize degradation.**





# Trina quality is above and beyond global requirements

## Silicon Quality

- Purity testing
- Electrical properties

## Wafer Quality

- Material properties
- Electrical properties
- Geometry test

## Cell Quality

- Visual Inspection
- Electrical Parameter Test
- Peeling Test
- EL Test

## System Guarantees



## Module Quality

### Requirements

| Test            | Trina <sup>1</sup> | IEC        | UL         |
|-----------------|--------------------|------------|------------|
| Mechanical Load | <b>5,400Pa</b>     | 2,400Pa    | 1,436Pa    |
| UV              | <b>60kWh</b>       | 15kWh      | N/A        |
| Thermal cycling | <b>300 cycles</b>  | 200 cycles | 200 cycles |
| Humidity/freeze | <b>15 cycles</b>   | 10 cycles  | 10 cycles  |
| Damp heat       | <b>1,500 hrs.</b>  | 1,000 hrs. | N/A        |
| Reverse current | <b>200%</b>        | 135%       | 135%       |
| HAST            | <b>Yes</b>         | No         | No         |

# Reason 5: Industry Leading Warranty

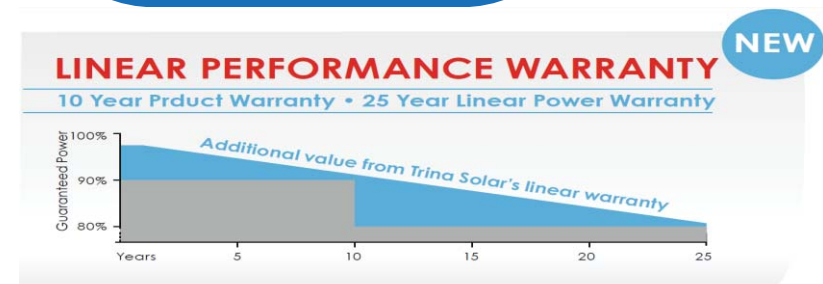
## Description

We believe that our customers should get the very best warranty conditions. For materials, workmanship and power output.

Our warranty goes beyond industry standard. It combines reduced risk with lower cost of finance and superior power output.

## Added Value

- 10-year product warranty (instead of 5 years industry standard)
- 25-year linear power warranty (instead of stepped warranty)
  - Justifies 5% price premium



# Reason 6: Trina Solar's Product Reliability Insurance



| CERTIFICATE OF LIABILITY INSURANCE  |   |   |   | DATE (MM/DD/YY)<br>March 14, 2013 |  |
|---|---|---|---|-----------------------------------|--|
| <b>PRODUCER</b><br>Aon-COFCO Insurance Brokers Co., Ltd. (Shanghai Branch)<br>Room 4104 Jin Mao Tower 88 Century Boulevard, Shanghai, P.R.C. 200121   |   | THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. |   |                                   |  |
| <b>INSURED</b><br>1) Changzhou Trina Solar Energy Co., Ltd./常州天合太阳能有限公司<br>2) 天合光伏(常州)科技有限公司<br>3) 常州天合光伏科技有限公司<br>4) No. 2 Tian He Road, Duanmiao Park, New District, Jiangsu, China 213011<br>5) 江苏省常州市新北区天合光伏产业园天合路2号<br>6) 江苏省盐城经济技术开发区跃进路18号   |   | <b>COMPANY</b><br>Hantai Property & Casualty Insurance Co., Ltd.  |   |                                   |  |
| <b>COVERAGE</b><br>THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOW MAY HAVE BEEN REDUCED BY PAID CLAIMS. |   |   |   |                                   |  |
| CO. LTR.  | TYPE OF INSURANCE   | POLICY NUMBER   | POLICY EFFECTIVE DATE (MM/DD/YY)  | POLICY EXPIRATION DATE (MM/DD/YY) | LIMITS IN THOUSANDS  |
| A   | GENERAL LIABILITY<br><input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY<br><input type="checkbox"/> PRODUCTS LIABILITY<br><input type="checkbox"/> CLAIM MADE<br><input type="checkbox"/> OCCURRENCE<br><input type="checkbox"/> OWNER'S & CONTRACTOR'S PROFIT<br><input type="checkbox"/> BROAD FORM VENDORS<br><input type="checkbox"/> | 1230025 (23) 1000000  | 01/01 of January 01, 2013   | 24/01 of December 31, 2013        | GENERAL AGGREGATE: US\$20,000,000<br>PRODUCTS AGGREGATE: US\$20,000,000<br>FIRE DAMAGE (ANY ONE FIRE): US\$5,000,000<br>PERSONAL & ADV INJURY: Not Covered<br>EACH OCCURRENCE: US\$20,000,000<br>MED EXPLANY (ONE PERSON): Not Covered<br>COMBINED SINGLE LIMIT: \$<br>BODILY INJURY (Per person): \$<br>BODILY INJURY (Per accident): \$<br>PROPERTY DAMAGE: \$<br>AUTO ONLY-EA ACCIDENT<br>OTHER THAN AUTO ONLY<br>EACH ACCIDENT: \$<br>AGGREGATE: \$<br>EACH OCCURRENCE: \$<br>AGGREGATE: \$<br>EL EACH ACCIDENT: \$<br>EL DISEASE - POLICY LIMIT: \$<br>EL DISEASE - EA EMPLOYEE: \$ |
|   | AUTOMOBILE LIABILITY<br><input type="checkbox"/> ANY AUTO<br><input type="checkbox"/> ALL OWNED AUTOS<br><input type="checkbox"/> SCHEDULED AUTOS<br><input type="checkbox"/> HIRED AUTOS<br><input type="checkbox"/> NON-OWNED AUTO<br><input type="checkbox"/>  |   |   |                                   | COMBINED SINGLE LIMIT: \$<br>BODILY INJURY (Per person): \$<br>BODILY INJURY (Per accident): \$<br>PROPERTY DAMAGE: \$<br>AUTO ONLY-EA ACCIDENT<br>OTHER THAN AUTO ONLY<br>EACH ACCIDENT: \$<br>AGGREGATE: \$<br>EACH OCCURRENCE: \$<br>AGGREGATE: \$<br>EL EACH ACCIDENT: \$<br>EL DISEASE - POLICY LIMIT: \$<br>EL DISEASE - EA EMPLOYEE: \$   |
|   | GARAGE LIABILITY<br><input type="checkbox"/> ANY AUTO<br><input type="checkbox"/>   |   |   |                                   | AUTO ONLY-EA ACCIDENT<br>OTHER THAN AUTO ONLY<br>EACH ACCIDENT: \$<br>AGGREGATE: \$<br>EACH OCCURRENCE: \$<br>AGGREGATE: \$<br>EL EACH ACCIDENT: \$<br>EL DISEASE - POLICY LIMIT: \$<br>EL DISEASE - EA EMPLOYEE: \$   |
|   | EXCESS LIABILITY<br><input type="checkbox"/> UMBRELLA FORM<br><input type="checkbox"/> OTHER THAN UMBRELLA FORM   |   |   |                                   | EL EACH ACCIDENT: \$<br>EL DISEASE - POLICY LIMIT: \$<br>EL DISEASE - EA EMPLOYEE: \$  |
|   | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>THE POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:<br>POLICY NUMBER: CHINA<br>OPERATING AREA: CHINA  |   |   |                                   | EL EACH ACCIDENT: \$<br>EL DISEASE - POLICY LIMIT: \$<br>EL DISEASE - EA EMPLOYEE: \$  |
| <b>DESCRIPTION OF OPERATIONS, LOCATIONS, VEHICLES/SPECIAL ITEMS:</b><br>PRODUCTS COVERED: Solar Module, which are manufactured by the named insured in China declared under the policy.<br>Jurisdiction/Territory: Worldwide including USA/Canada   |   |   |   |                                   |  |
| <b>CERTIFICATE HOLDER</b><br>Royal UK Limited<br>Registered Office: 26 Floor, Maple House, Mutton Lane, Palace Bus, Hertfordshire, United Kingdom, EN9 5NS  |   |   | <b>CANCELLATION</b><br>SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL endeavor to MAIL-BY-MAIL WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT. BUT FAILURE TO MAKE SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVE. 30 DAYS WRITTEN NOTICE WILL BE GIVEN FOR NON-PAYMENT OF PREMIUM. |                                   |  |
| <b>CERT. No.: 02</b>  |   |   | AUTHORIZED REPRESENTATIVE: [Signature]<br>Hantai Property & Casualty Insurance Co., Ltd. Business Department  |                                   |  |

**Description**

All Trina Solar products come with a full worldwide insurance coverage which covers all of the modules which are manufactured by Trina Solar in China

# Reason 7: Superior Performance

---

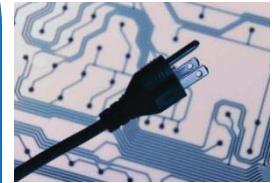
## Description

We believe that our modules should deliver superior performance over time – even under the hardest circumstances.

Compared to other modules and independently tested.

## Added Value

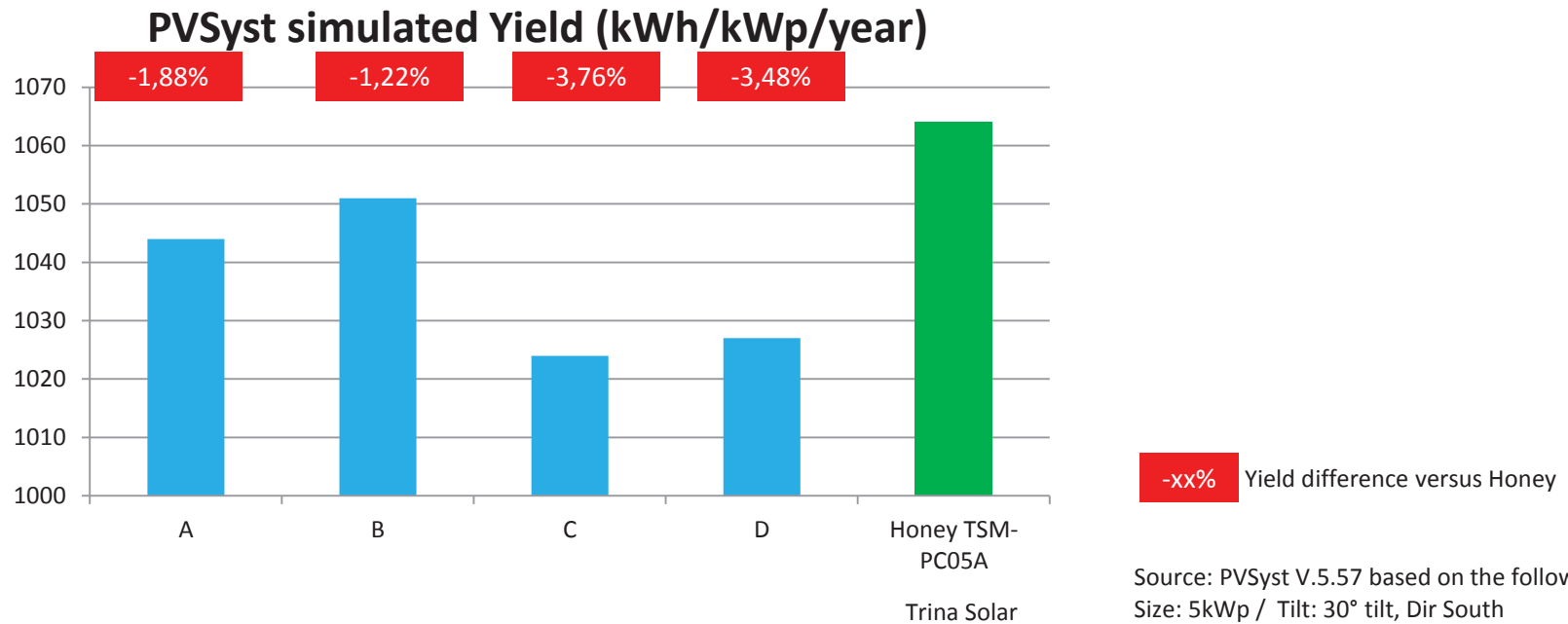
- High power output reliability
- Trina Solar modules suited for extreme conditions like in deserts



# Comparative simulated Yield results – Honey PC05A

(60 cells high efficiency poly, 250W)

Higher yield confirmed in PVSyst simulation: Better projected ROI



Source: PVSyst V.5.57 based on the following installation  
Size: 5kWp / Tilt: 30° tilt, Dir South  
Location: Munich, Germany  
Layout: 10 modules in series, 2 strings  
Inverter: SMA Sunny Central 5kW

Trina Solar Honey TSM-PC05A gives higher projected yield in PVSyst than equivalent module from selected PV manufacturers.

# Performance of Trina Solar Honey modules at low light conditions

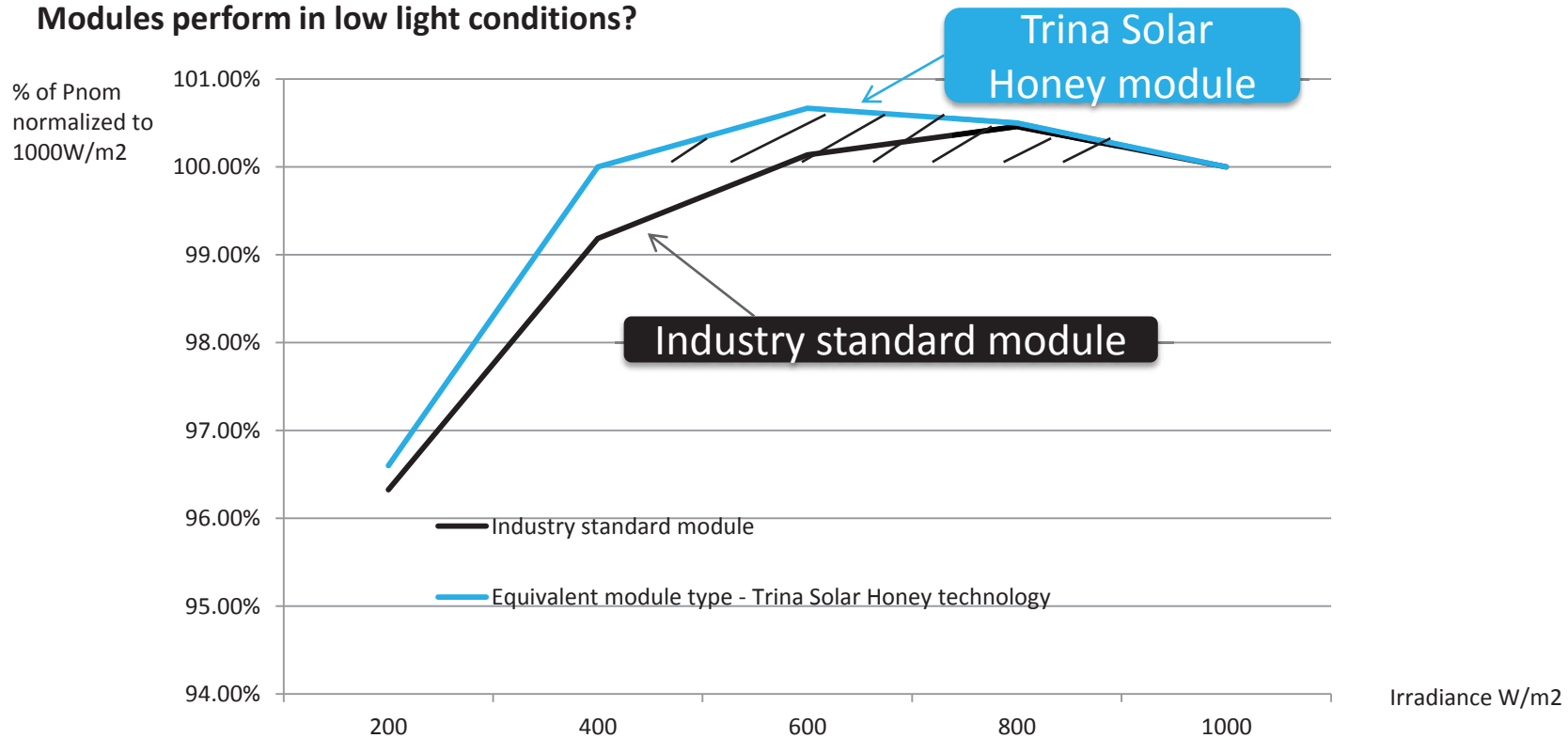


High performance under low light conditions  
Cloudy days, mornings and evenings

Nominal values of all PV modules are measured at STC (Standard Test Conditions):

- 1000W/m<sup>2</sup>
- Cell temperature of 25°C
- Air Mass (AM) of 1.5 = distance through Atmosphere/shortest distance

**But in real world conditions, module operate at a lower irradiance level, especially in cloudy regions. How do Trina Solar Modules perform in low light conditions?**



At lower irradiance levels, Trina Solar Honey modules perform better than industry average, And giving higher P<sub>nom</sub> than at 1000W/m<sup>2</sup> between 400to 1000W/m<sup>2</sup>

# Reason 8: High Quality Components - Quality Connectors

---

## Description

We believe that the power produced by our modules should be transmitted without any loss.

This is why we use the most reliable connectors available in the market.

## Added Value

- Highly reliable power transmission
- Full warranty from Multi Contact secured connection.



# Trina Solar compared with other Main Players

| Warranty       | Trina | LDK                          | Suntech     | CSI                   | Yingli      | LG   |
|----------------|-------|------------------------------|-------------|-----------------------|-------------|------|
| Connector type | MC4   | MC4 or compatible connectors | Radox Solar | MC4 or MC4 compatible | Amphenol H4 | Tyco |



## Original MC4 connectors from Multi Contact / Staubli AG group

- Plug and play weatherproofed connectors, designed to reduce installation time
- Connector MC4 comes with locking system and safety clip that requires a tool to unlock (because many PV systems installed operate at high DC voltages, lockable connectors are being used on panels in accessible locations to prevent untrained persons from "unplugging" the panels)

.....  
**Source:**  
 Benchmarking  
 survey of Trina  
 Solar Product  
 Management  
 Department  
 .....



# Reason 9: Innovation Excellence

## Cell Technology



Honey

World record for  
multicrystalline  
power output two  
years in a row

Confirmed by TUV Rheinland with a 156x156mm 60-cell  
module reaching **284.7 W peak**<sup>1</sup> in May 2012 and 60-cell  
module reaching 274 W peak in September 2011

## Cell Technology

IBC Cell - Most  
Efficient Solar Cell To  
Date with 24.4% Cell  
Efficiency

Joint Development between Trina Solar and Australian  
National University

# Innovation Excellence - Trinasmart

Trinasmart modules incorporate **innovative power electronics** from Tigo Energy to achieve **module-level diagnostics**, **maximum energy harvest** through module level DC power optimization, and **reduction of arc, fire and safety hazards**.

• Available on Trina Solar's new module family

Honey<sup>M</sup>

- DC05A.08 -> DC05A.28 (black/white)
- DC05A.05 -> DC05A.25 (black/black)

Trina<sup>smart</sup>



# The Benefits of TrinaSMART



## Safer Solar

- Panel-level disconnect to remotely deactivate modules
- Arc, fire and safety hazard mitigation



## More Efficient O&M

- Panel-level monitoring to pinpoint problems
- Detailed real-time alerts and analytics



## Highest Power Density

- Install more modules on any roof
- Uneven string length enables design flexibility



## Maximized Energy Harvest

- Impedance matching technology eliminates mismatch losses
- More power from each module bin



## Lower BOS Costs thanks to Smart Curve Technology

- 30% lower max open circuit voltage , 30% longer strings
- Fewer combiners, fuses and copper wiring required



## Fully Module Integrated

- Compatible with any inverter
- No additional boxes to mount to a module

TrinaSMART



Optimized by  
**Tigo**  
energy