



**COMPANY PROFILE  
NORTH AMERICA**





**Dr. Shawn Qu**  
Chairman, President &  
CEO (Director)



**Yan Zhuang**  
SVP, Chief  
Commercial Officer,  
Acting CEO



**Thomas Koerner**  
Corporate Vice President,  
Global Sales



**Vincent Ambrose**  
Senior Director and  
General Manager Sales,  
North America

## A WORLD-CLASS POWER SOLUTIONS COMPANY

Chairman and Chief Executive Officer Dr. Shawn Qu founded Canadian Solar in 2001 with a bold vision: to foster sustainable development and to make lives better by bringing electricity powered by the sun to millions of people worldwide. The more than 13,000 dedicated employees of Canadian Solar (NASDAQ: CSIQ) strive each day to make this vision a reality.

The company's two main lines of business are: (i) PV components; and (ii) the development, construction and sale of solar PV projects, working with both build-to-sell and build to-hold business models. Over 38 GW of our solar modules have been shipped, enough to provide clean, green power to a city the size of Chicago.

Our products are in operation in more than 165 countries, giving us a truly global reach. These achievements put us at the forefront of making solar power competitive and mainstream.

Customers choose Canadian Solar because we deliver the best possible value. Our ingots, wafers, cells, and modules combine superior quality with market-leading cost structures. And our solar projects consistently achieve the highest production values and returns on investment. We currently have more than 9 GW of such projects in our pipeline worldwide and are uniquely positioned to provide complete turnkey solar solutions. By bundling services for the entire project life cycle—feasibility study, permitting, engineering, procurement, construction, operations, and maintenance—we can significantly reduce complexity and cost for commercial and industrial customers.

# COMPANY OVERVIEW



FOUNDED 2001  
IN ONTARIO



OVER  
13,000 EMPLOYEES



38 GW OF SOLAR  
MODULES SHIPPED



9 GW PROJECT PIPELINE  
NO. 2 GLOBAL PV DEVELOPER IN 2017



2018 REVENUE  
\$3.74 BILLION

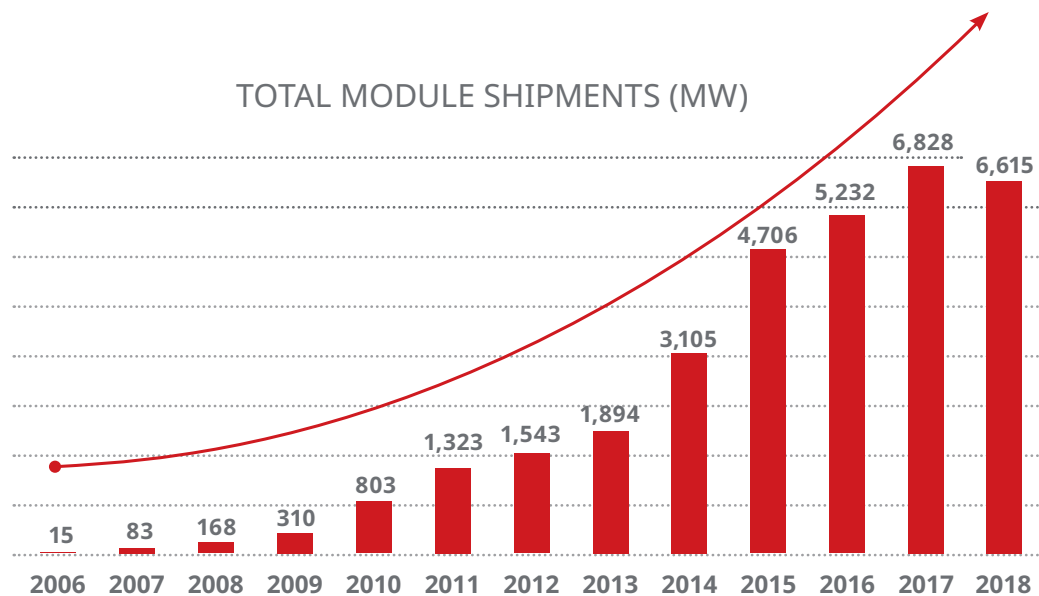


MOST RECOMMENDED  
SOLAR COMPANY

# COMPANY FACTS

**CANADIAN SOLAR  
EXISTS TO MAKE  
THE DIFFERENCE.**

**CANADIAN SOLAR HAS BEEN MAKING THE DIFFERENCE FOR  
18 YEARS BY BRINGING A TOTAL OF MORE THAN 38 GW OF  
SOLAR CAPACITY TO OUR CUSTOMERS WORLDWIDE.**



We shipped 6.6 GW of PV modules in 2018. Enough to cover over 4,500 football fields and replace three nuclear power stations.

# BUSINESS MODEL OVERVIEW

CANADIAN SOLAR'S CORE BUSINESS



## Silicon Production

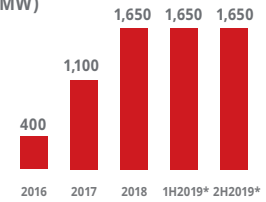


## Ingots

### Mono- & Polycrystalline

Ingot casting will be centralized in Batou, China by year end 2018.

MANUFACTURING CAPACITY (MW)



\*Estimated

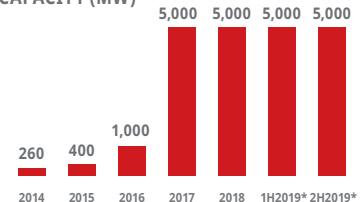


## Wafers

### Mono- & Polycrystalline

Wafer manufacturing capability will quadruple from year end 2016 to year end 2017. Diamond wire saw and Onyx black silicon technology reduce manufacturing costs.

MANUFACTURING CAPACITY (MW)



\*Estimated

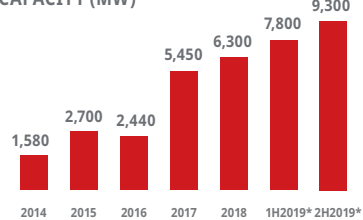


## PV Cells

### Mono- & Polycrystalline

Cell manufacturing has been restored at the Funing factory, which was damaged by a tornado in June 2016. With additional cell manufacturing coming online in Thailand, cell manufacturing capacity nearly doubles to 6.35 GWp.

MANUFACTURING CAPACITY (MW)



\*Estimated



## PV Modules

### Mono- & Polycrystalline

Module manufacturing capacity at the end of 2018 will reach 9.81 GWp in China, Thailand, and other locations.

MANUFACTURING CAPACITY (MW)



\*Estimated



## Systems and Solutions

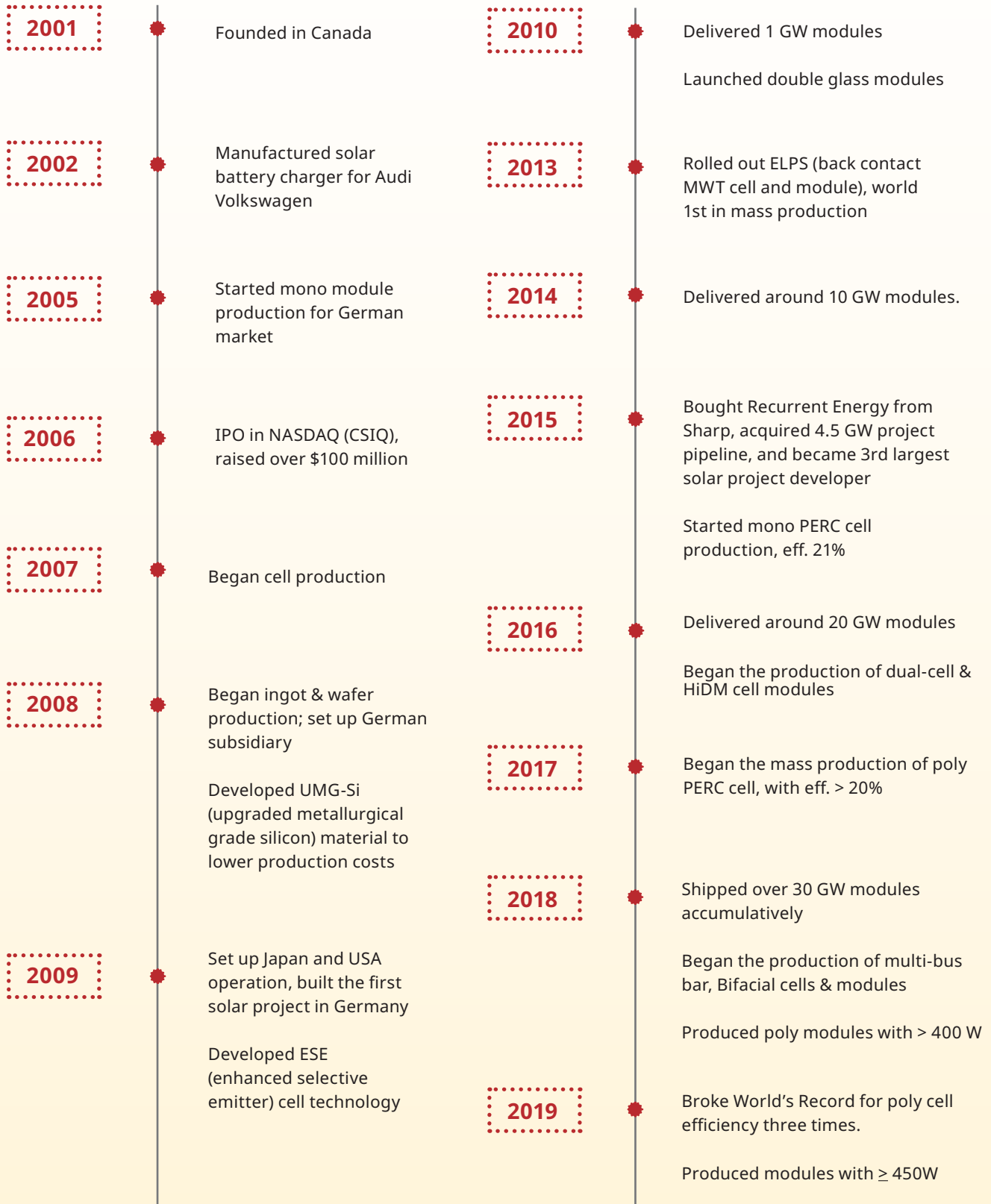
We offer Turnkey Solutions, String Inverters, MV Stations, Connectors and PV System Components, Energy Storage Systems, Off-grid Products, Micro-grids, Distributed Generation Solutions, Asset Management, and Operations and Maintenance Services.



## Global Energy Group

With a strong global team, the total projects pipeline has reached 9.0 GWp in 2018, with 4.0 GWp of late stage pipeline. 871 MWp of projects are currently in operation.

# 18 YEARS' ACHIEVEMENTS



# GLOBAL OPERATIONS IN 20 COUNTRIES



**17** Factories worldwide

Modules to more than **165** countries

## WINNING THIRD PARTY AWARDS

No. 1 Module Supplier for Quality and Performance/ Price Ratio in IHS Module Customer Insight Survey



No.1 Renewable Energy Leader of Thomson Reuters



No.1 silicon module solar plant developer by Greentech Media Research



The Best PV Module Manufacturer Award in Brazil by SmartEnergy



Tier 1 Solar Company by Bloomberg New Energy Finance (BNEF)



The ELPS module is nominated for the Intersolar Award 2012 in photovoltaics category.



Leading company in PV Triathlon of PHOTON



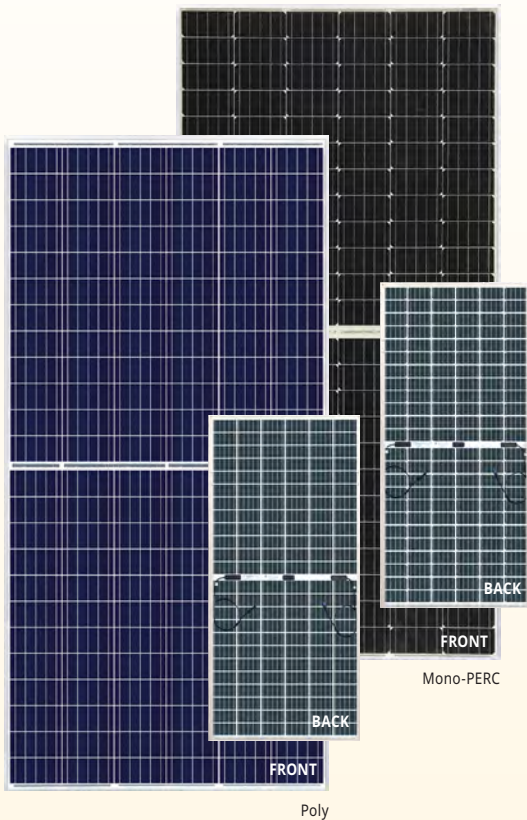
Best Structured Project Bond Award by Environmental Finance and J. Money



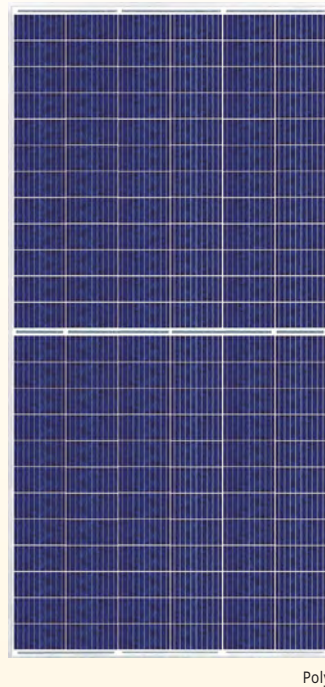
# PHOTOVOLTAIC MODULES

## DUAL-CELL, BIFACIAL, SHINGLED AND ENHANCED WAFER MODULES FOR ALL SOLAR APPLICATIONS

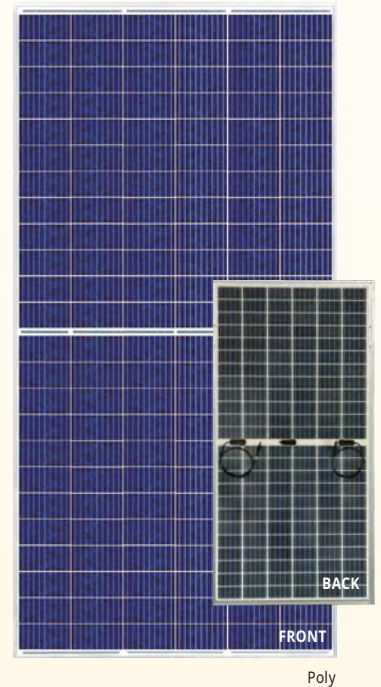
### BiKu



### HiKu



### BiHiKu



#### CS3U-PB-AG\* / CS3U-MB-AG\*

**Highlight:** Bifacial modules generate power on both sides to increase system power generation and reduce LCOE costs

**Cells:** dual-cell Poly and Mono-PERC

**Poly:** up to 365W

**Mono-PERC:** up to 385W

**Voltage:** 1500 V



30 Years Linear Power Output Warranty

\*Also available as frameless

#### CS3W-P

**Highlight:** Enhanced wafer technology for higher power classes, exceeding 400 W

**Cells:** dual-cell Poly, up to 415 W

**Voltage:** 1000 & 1500 V

#### CS3W-PB-AG\*

**Highlight:** Bifacial module with enhanced wafer technology exceeding 400 W on the front side, plus extra on the back side

**Cells:** dual-cell Poly, up to 410 W

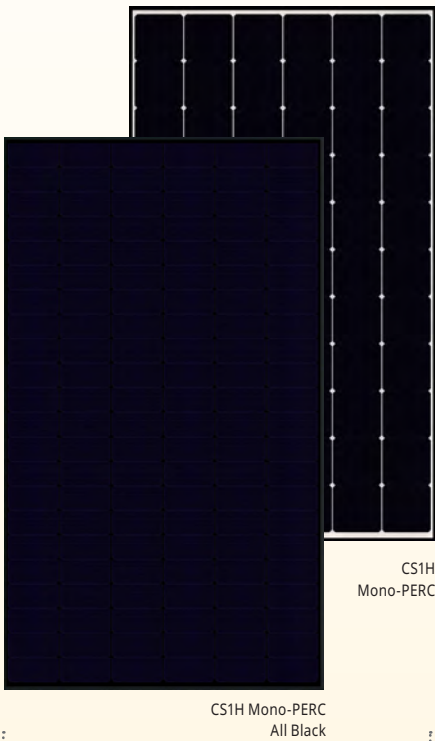
**Voltage:** 1000 & 1500 V



30 Years Linear Power Output Warranty

\*Also available as frameless

## HiDM



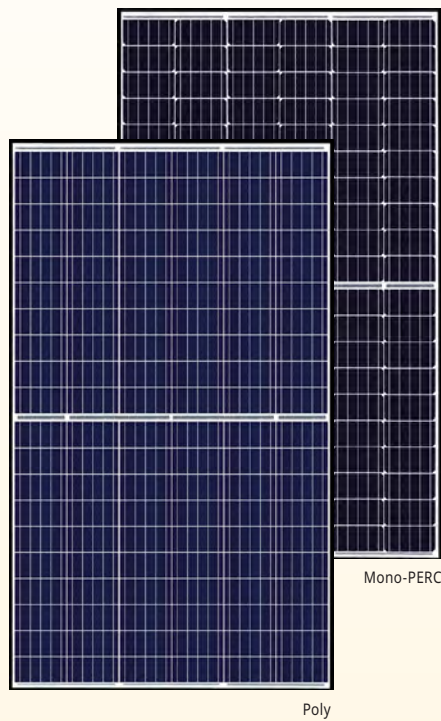
### CS1H-MS

**Highlight:** High power shingled modules with enhanced aesthetics for residential applications

**Cells:** Mono-PERC, up to 335 W

**Voltage:** 1000 V

## KuPower



### CS3K-P / CS3K-MS

**Highlight:** Higher power classes combined with high versatility

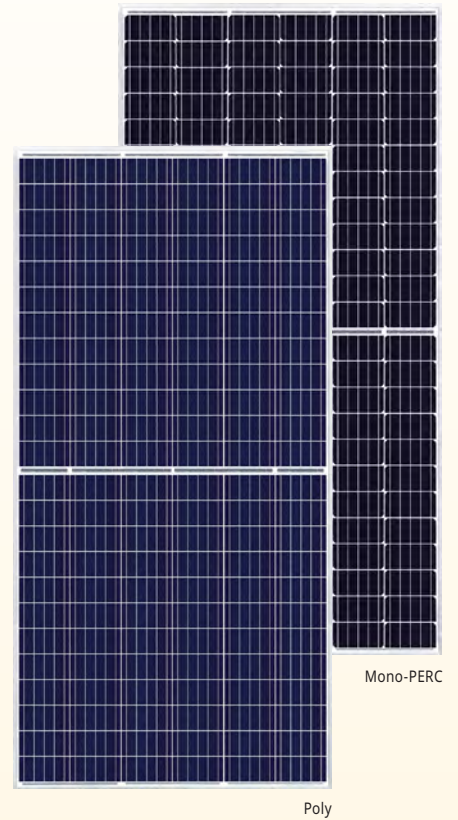
**Cells:** dual-cell Poly and Mono-PERC

**Poly:** up to 310W

**Mono-PERC:** up to 330 W

**Voltage:** 1000 V

## KuMax



### CS3U-P / CS3U-MS

**Highlight:** Higher power classes for commercial and utility-scale solar systems

**Cells:** dual-cell Poly and Mono-PERC

**Poly:** up to 370 W

**Mono-PERC:** up to 395 W

**Voltage:** 1000 & 1500 V

# INVERTERS

## THREE-PHASE STRING INVERTERS FOR POWER CONVERSION

Canadian Solar's grid-tied, transformer-less string inverters help to accelerate the use of three-phase string architecture for commercial rooftop and small ground-mount applications. An NRTL approved, cost-effective alternative to central inverters, these inverters are modular design building blocks that provide high yield and enable significant BoS cost savings. Fanless and fan-assisted models are available. Canadian Solar inverters come with a 10 year warranty, extendible up to 20 years.

**1500 V**

**125 kW**



**1000 V**

**50-66 kW**



**25-40 kW**



### CS-125 KTL-GS-E

For utility and commercial applications

- Advanced thermal design with variable speed fans
- Maximum efficiency of 98.8%, CEC efficiency of 98.5%
- Transformerless design
- PID mitigation capability
- Single MPPT for higher conversion efficiency

### KTL-GS SERIES (UL) 50-66KW

For commercial applications

- Maximum efficiency of 98.8%, CEC efficiency of 98.4%
- Advance thermal design with fan-assisted cooling
- 4 MPPT Channels (Maximum Power Point Tracking) to achieve higher system efficiency
- High switching frequency with ultra fast MPPT

### KTL-GS SERIES (UL) 25-40KW

For commercial applications

- Maximum efficiency of 98.8%, CEC efficiency of 98.3%
- Advance thermal design

# CONNECTORS

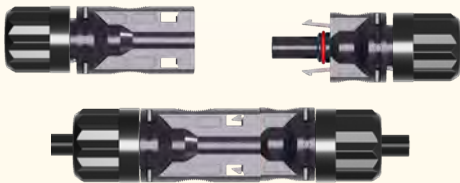
## EVERYTHING YOU NEED TO CONNECT UP YOUR CANADIAN SOLAR PV SYSTEM.

Canadian Solar's subsidiary TLIAN manufactures a full range of high-quality PV connectors which enable rapid, robust installation of Canadian Solar modules in a wide variety of solar PV applications.

### T4 PV CONNECTOR

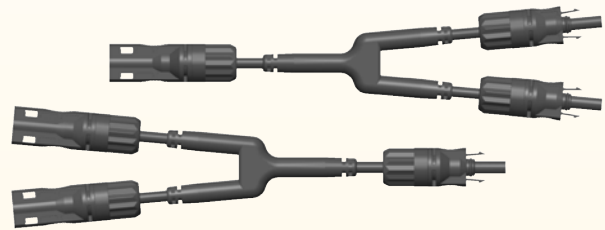
The Canadian Solar T4 PV Connector is a high-quality field-installable PV connector. Robust and reliable, lower contact resistance and higher current transfer capability make the product more efficient. With an IP68 water-proof rating and a wide operating temperature rating, the T4 PV Connector is suitable for use in the harshest environments.

- For 12 AWG and 10 AWG cable
- Standard connector on all Canadian Solar modules



### T4 Y-BRANCH CONNECTOR

T4 Y-branch connectors use high quality materials that guarantee long-term reliability. Lower contact resistance and higher current transfer capability ensure high product efficiency. T4 Y-branch connectors have IP68 water-proof rating and can be used in a wide operating temperature range from -40 °C to 90 °C.



### JUMPER CABLE

Jumper cables are used to join the Canadian Solar module connector T4 to other type of connectors (H4 or MC4) in the PV system. The jumper cables have different connectors in each end (male + female) to convert to different connector types, and the length is 300 mm. Typically, one pair of jumper cables are needed for every string of modules.



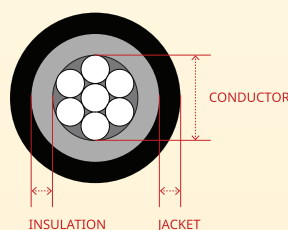
### T4 IN-LINE FUSE CONNECTOR

T4 in-line fuse connectors use high quality materials that guarantee long-term reliability. Lower contact resistance and higher current transfer capability ensure high product efficiency. T4 in-line fuse connectors have IP68 water-proof rating and can be used in a wide operating temperature range from -40 °C to 90 °C.



### PHOTOVOLTAIC CABLES

Our durable PV cables are built with the highest quality materials to withstand the most extreme conditions. Regardless of high temperatures or UV radiation, these cables will serve your PV system for the long-term.



# SERVICES

CANADIAN SOLAR DOESN'T JUST MAKE GREAT SOLAR PRODUCTS. AS A COMPLETE SYSTEM SOLUTIONS PROVIDER, WE OFFER A FULL RANGE OF SERVICES.

At Canadian Solar, we can design, engineer, procure, construct, manage, operate, and maintain utility-scale solar power plants. Our solutions are flexible and customized to each partner's needs.

## TURNKEY SOLUTIONS

Canadian Solar's Turnkey Solutions team helps customers deliver the best solar projects possible. Whether as a financial backstop, engineering assistance, or a full-scale engineering, procurement and construction (EPC) partner, Canadian Solar has the knowledge base and the institutional strength to deliver what you need. We bring our experience developing over 4.6 GW of solar systems to every project we undertake.



### EPC WRAP

Canadian Solar provides single contract, which allows IPPs or sub-EPCs to qualify for project financing



### ENGINEERED HARDWARE PACKAGE

Canadian Solar supplies modules, systems equipment and optimization services to the IPP or EPC



### EPC MANAGEMENT

Canadian Solar acts as owner's representative during RFP, contract negotiation and construction phases of project



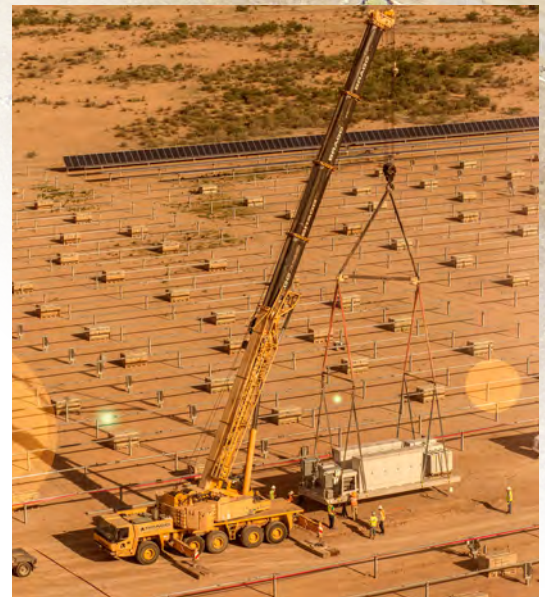
### JOINT VENTURES

Canadian Solar partners with EPC companies to successfully deliver projects



### TECHNICAL SERVICES

Canadian Solar designs the optimal solar system to maximize project production—and your profits



## O&M SERVICES

Canadian Solar offers Operations and Maintenance Services for large commercial and utility-scale solar power plants. Customized packaged solutions can include monitoring, reporting, preventive maintenance, corrective maintenance, engineering services, warranty management, and spare parts management. With over 2.0 GW of solar projects contracted and under operations worldwide, Canadian Solar is expert in solar O&M.

- CSEye: 24/7/365 remote monitoring, diagnostics and troubleshooting
- Daily, monthly and annual reporting
- Availability and performance guarantees available
- NERC Registration



## ASSET MANAGEMENT SERVICES

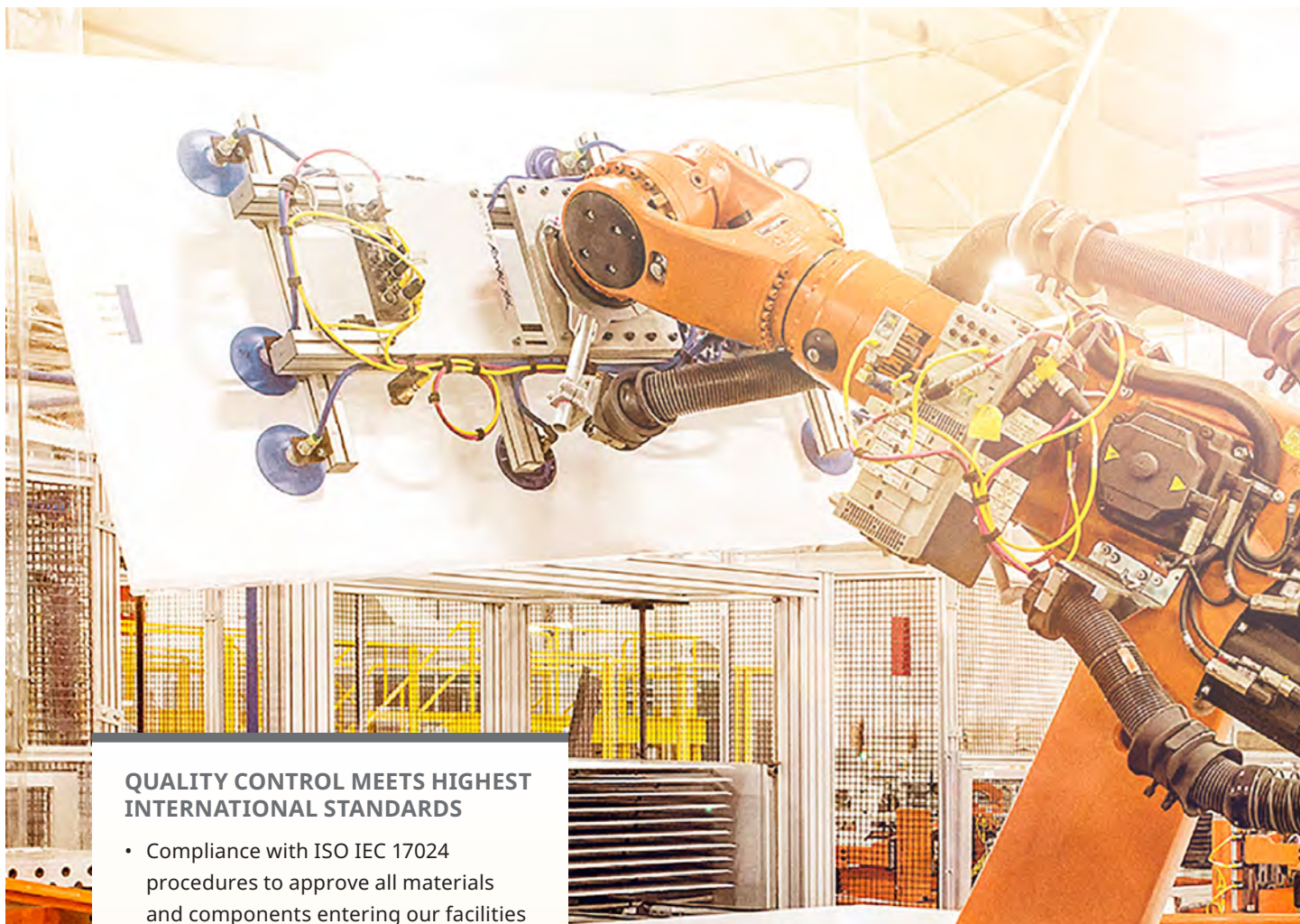
Our dedicated team has managed more than 1.7 GW of commercial and utility solar power plants in the Americas, representing hundreds of millions of dollars in annual power purchase agreement revenues, so we understand the owner's perspective and treat your assets as our own. Whether you're looking for a full-service solar asset management partner or need support in a few critical areas, we have the experience, expertise and capabilities to help navigate the complexities of a rapidly changing market.

- Representing 60 + projects since 2009, including 1.2 GW of assets transitioned to operations in 2016
- Experienced with wide variety of offtake mechanisms, financing structures, jurisdictions, energy markets, and PV equipment sets
- Proven track record of asset optimization, issue resolution, compliance, and risk mitigation



# QUALITY AND SERVICE

## ROBUST CONSTRUCTION IN ACCORDANCE WITH THE HIGHEST QUALITY STANDARDS GIVES OUR SOLAR PANELS OUTSTANDING LONGEVITY



### QUALITY CONTROL MEETS HIGHEST INTERNATIONAL STANDARDS

- Compliance with ISO IEC 17024 procedures to approve all materials and components entering our facilities
- Confirmation through IEC 61215 and IEC 61730 tests to ensure product safety and reliability
- Adaption of the stringent quality-management system of the automotive industry to PV manufacturing
- Compliance with international quality and environmental-management standards ISO 9001, QC080000, ISO 14001 and OHSAS 18001

Solar projects typically have a designed operating lifetime of 25 years. Our products have the longevity to meet these demands. We conduct rigorous in-house testing in our own laboratories to ensure durability and regularly submit our products to the world's leading independent testing institutes, including the Fraunhofer Society and TÜV Labs. We've adapted the stringent quality-management systems of the automotive industry to PV manufacturing and check every one of our products at 369 different points along the manufacturing process to ensure their quality. And we comply with a wide range of internationally recognized standards for quality and environmental management.

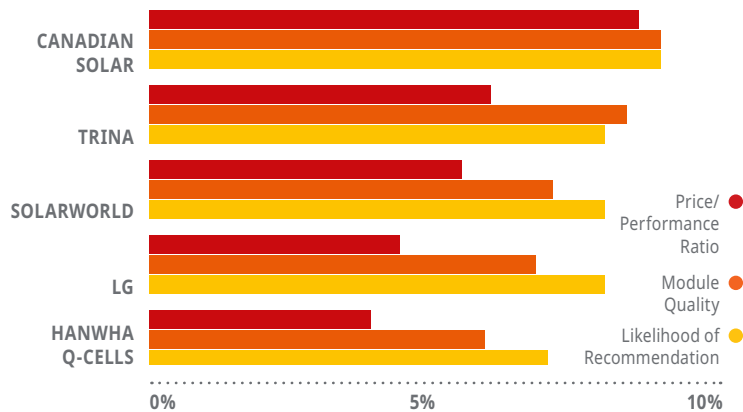
**IN-HOUSE TESTING  
BACKED BY LEADING  
INDEPENDENT  
TESTING INSTITUTES**

*"We are very impressed by Canadian Solar's fast and efficient service, and the quality of the product is also exceptional."*

JACO BOTHA  
MANAGING DIRECTOR, SOLAREFF 

**BRAND FOR PRICE/PERFORMANCE RATIO, HIGHEST MODULE QUALITY VERIFIED BY IHS**

Brand for price/performance ratio, Highest module quality verified by IHS. Canadian Solar was confirmed as the module brand with the best price/performance ratio, the highest module quality and the highest likelihood of being recommended.



 IHS Markit *Source: IHS PV Module Customer Insight Survey 2016*

# CANADIAN SOLAR SALES AND SUPPORT FOOTPRINT

Our team of sales, sales support, technical, customer service, logistics, credit, finance, and other professionals in North America is dedicated to your success. Contact Canadian Solar today to see how we can “Make the Difference” for your solar business.



## **CANADA** (GLOBAL HEADQUARTERS)

Canadian Solar Inc.  
545 Speedvale Avenue West  
Guelph, Ontario, Canada N1K 1E6  
TEL +1 519 837 1881  
FAX +1 519 837 2550  
E-MAIL sales.ca@canadiansolar.com

## **UNITED STATES** (NORTH AMERICA HEADQUARTERS)

Canadian Solar Inc.  
3000 Oak Road, Suite 400  
Walnut Creek, California, USA 94597  
TEL +1 888 998 7739  
FAX +1 925 866 2704  
E-MAIL sales.us@canadiansolar.com