

CANADIAN SOLAR & SOLARTODAY

March 2020



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



Yan Zhuang
*Acting CEO, SVP,
Chief Commercial
Officer, President
Module & System
Solutions Business*



Susanne Pflug
*General Manager
& President MSS,
EMEA*

OUR VISION

To foster sustainable development and to make lives better by bringing electricity powered by the sun to millions of people worldwide. The nearly 12,000 dedicated employees of Canadian Solar (NASDAQ: CSIQ) strive each day to make this vision a reality.

COMPANY OVERVIEW



FOUNDED 2001
IN ONTARIO



> 34 GW OF SOLAR
MODULES SHIPPED



OVER
12,000 EMPLOYEES



12 GW
PROJECT PIPELINE



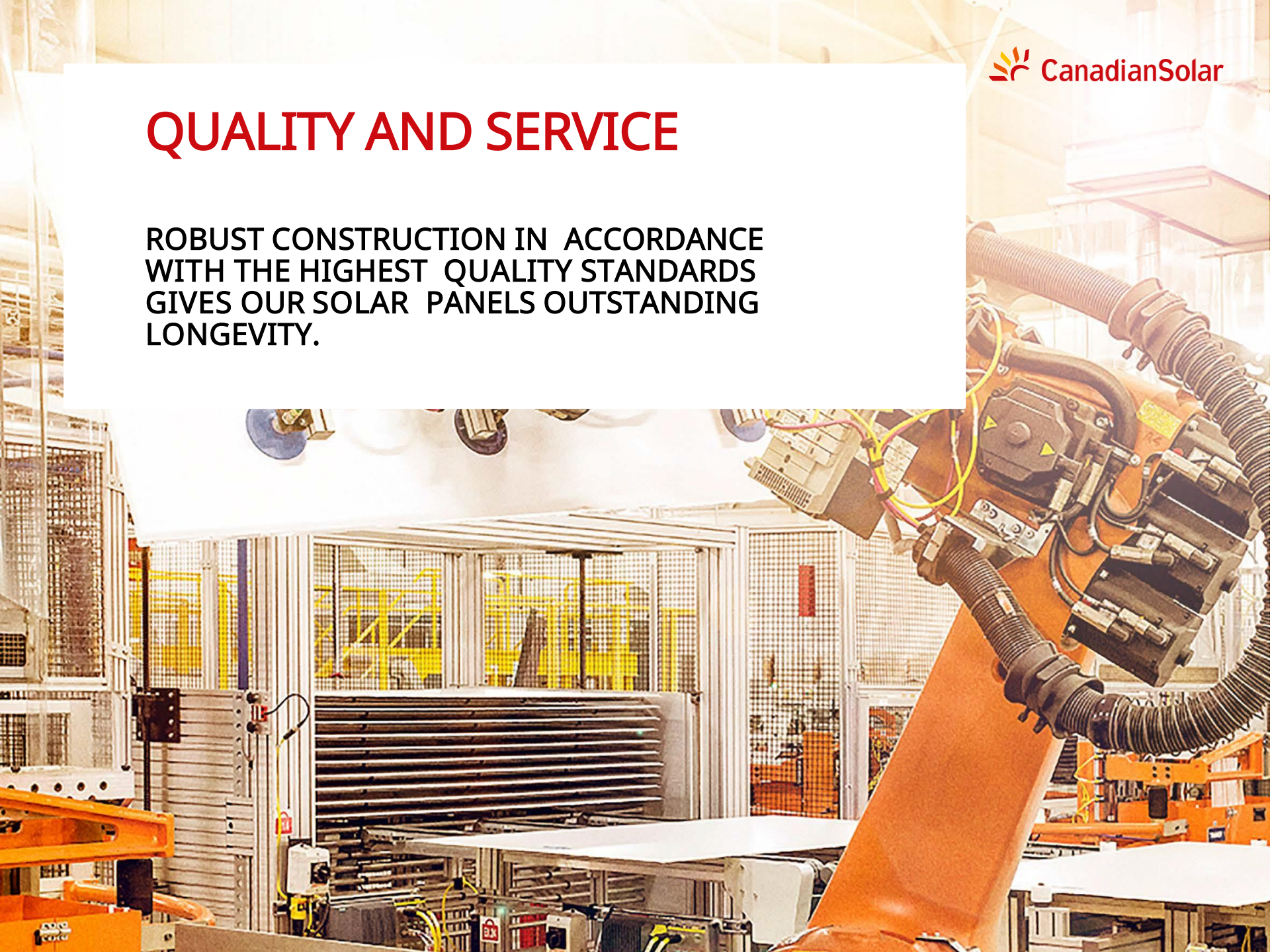
A GLOBAL TOP 3 SOLAR
COMPANY BY REVENUE AND
NET INCOME IN 2018



2018 REVENUE
~ \$3.74
BILLION

QUALITY AND SERVICE

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



FINANCIAL STRENGTH

ONE OF THE MOST BANKABLE SOLAR
COMPANIES WORLDWIDE
CONTINUOUSLY LISTED ON BLOOMBERG
TIER 1 MANUFACTURER LIST.



EMEA OVERVIEW



EMEA HQ IN
MUNICH



5 OFFICES
6 WAREHOUSES IN EMEA



OVER 100 EMPLOYEES
30 NATIONALITIES



NO. 1 MODULE SUPPLIER IN EMEA
NO. 2 MODULE SUPPLIER IN EUROPE
NO. 2 MODULE SUPPLIER IN MEA



ONE TEAM SERVING FOUR
REGIONS



EXTENSIVE EXPERIENCE AND EXPERTISE ACROSS
ALL FUNCTIONS

CSI production outlook 2020

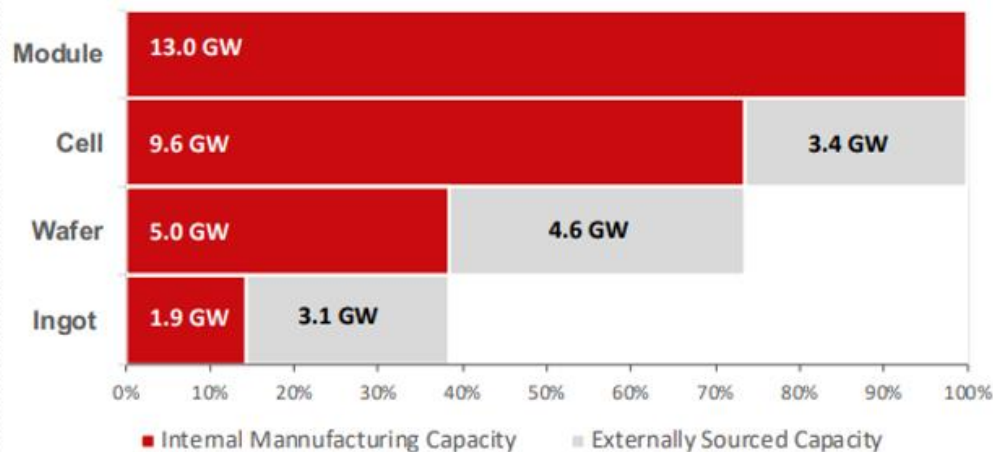
Global Market 2020 expected to grow to 130-140GW.

High level 2020 quarterly output plan is

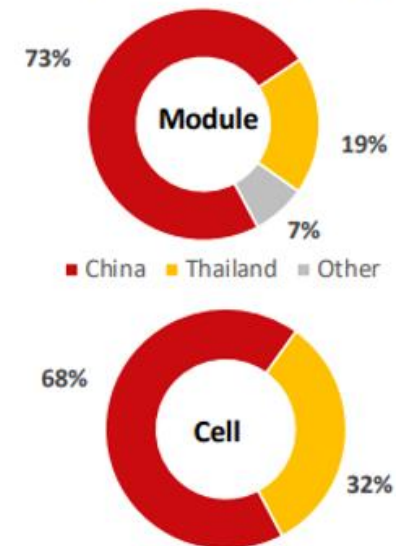
- **Q1-2.73 GWp**
- **Q2-3.41 GWp**
- **Q3-3.80 GWp**
- **Q4-4.05 GWp**

CANADIAN SOLAR – Capacity Overview

Manufacturing Capacity – 2019 Year End



Capacity by Geography



Note: Other include Vietnam, Taiwan, Brazil, Canada

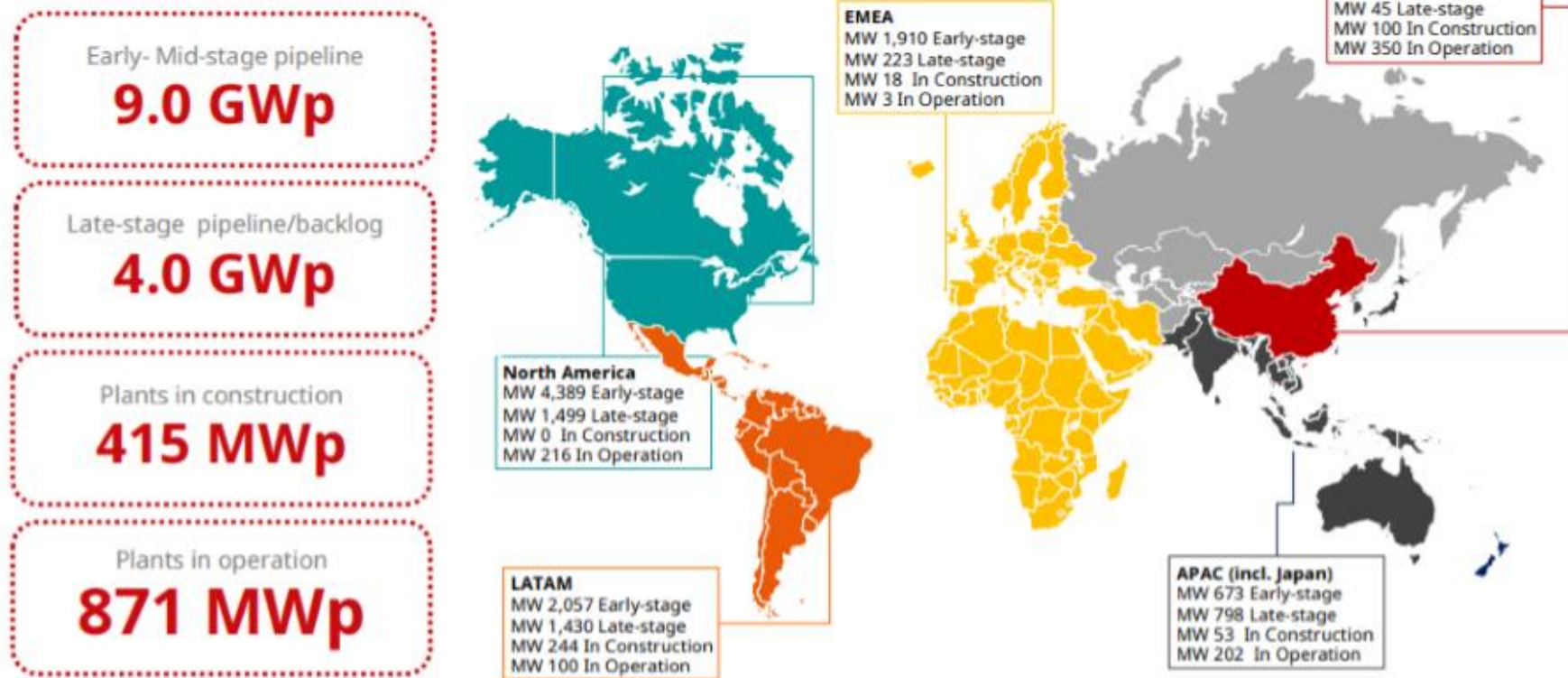


WE BUILD TRUST

CANADIAN SOLAR – BANKABILITY

2017-2019YTD <i>Average</i>	 CanadianSolar				
	CSIQ ⁽¹⁾	Tier 1 top 5		Tier 1 top 20	
Inventory Days	46	89	92	58	72
Receivable Days	54	101	133	74	41
Payable Days	120	174	214	30	72
Cash Conversion Cycle	(20)	16	11	102	40

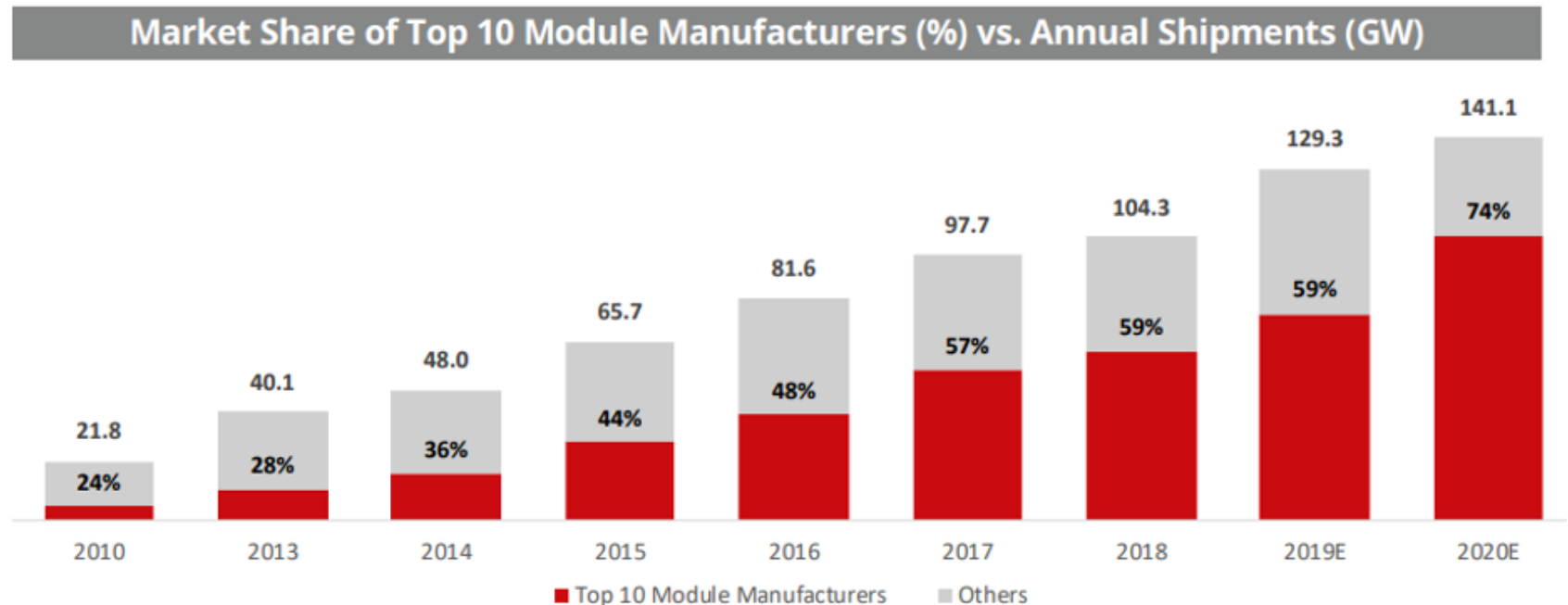
Globally diversified project pipeline with strong competitive position in key energy markets



Canadian Solar total pipeline exceeds 13 GWp, providing visibility into demand over the next several years.

- ❖ Late-stage pipeline include projects that have passed the Cliff Risk Date and are expected to be built in the next 1 to 4 years. Cliff Risk Date depends on the country and is defined as the date in which the project passes the last of the high-risk stages (usually: Environmental approval, Interconnection agreement, Power Purchase Agreement). All late stage projects have secured or are reasonably assured to secure a PPA, or FIT. Some late-stage projects may not reach completion due to failure to secure other permits or changes in market conditions among other risk factors. Investors are advised to review a more detailed discussion of the risks factors contained in the company's annual report on Form-20F.
- ❖ Early stage pipeline includes only those projects that have been approved by our internal Investment Committee or projects that are expected to be brought to the Investment Committee in the next two quarters.

SOLAR INDUSTRY GLOBAL – CONSOLIDATION AHEAD



CSI strives to remain among top 3-5 suppliers



PORTFOLIO CANADIAN SOLAR

NEWEST TECHNOLOGY

DUAL-CELL, BIFACIAL & SHINGLED & ENHANCED WAFER MODULES



KuPower

KuBlack

KuMax

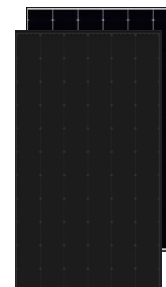
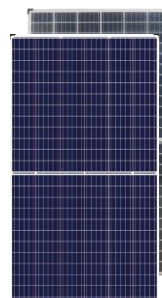
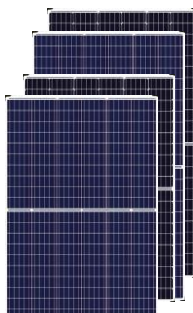
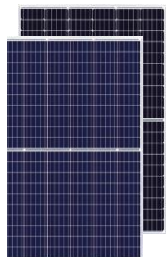
KuDymond

BiKU

HiDM

HiKU

BiHiKU



CS3K-P / CS3K-MS

CS3K-MS-AB

CS3U-P / CS3U-MS

CS3K-P-AG / CS3K-MS-AG /
CS3U-P-AG / CS3U-MS-AG

CS3K-PB-AG / CS3U-PB-FG /
CS3K-MB-AG / CS3U-MB-AG

CS1H-MS / CS1U-MS
CS1H-MS All-Black

CS3L-P / CS3W-P

CS3W-PB-AG
CS3W-MB-AG

Highlight: Higher power classes combined with high versatility
Cells: dual-cell poly and mono-PERC
Poly: up to 330 W
Mono-PERC: up to 335 W
Voltage: 1000 & 1500 V

Highlight: High power modules with enhanced aesthetics appearance
Cells: dual-cell mono-PERC
Power classes: up to 315 W
Voltage: 1000 & 1500 V

Highlight: Higher power classes for commercial and utility-scale solar systems
Cells: dual-cell Poly and mono-PERC
Poly: up to 395 W
Mono-PERC: up to 400 W
Voltage: 1000 & 1500 V

Highlight: Framed glass-glass modules with higher power classes for large utility scale system
Cells: dual-cell poly and mono-PERC
Poly: up to 395 W
Mono-PERC: up to 400 W
Voltage: 1000 & 1500 V

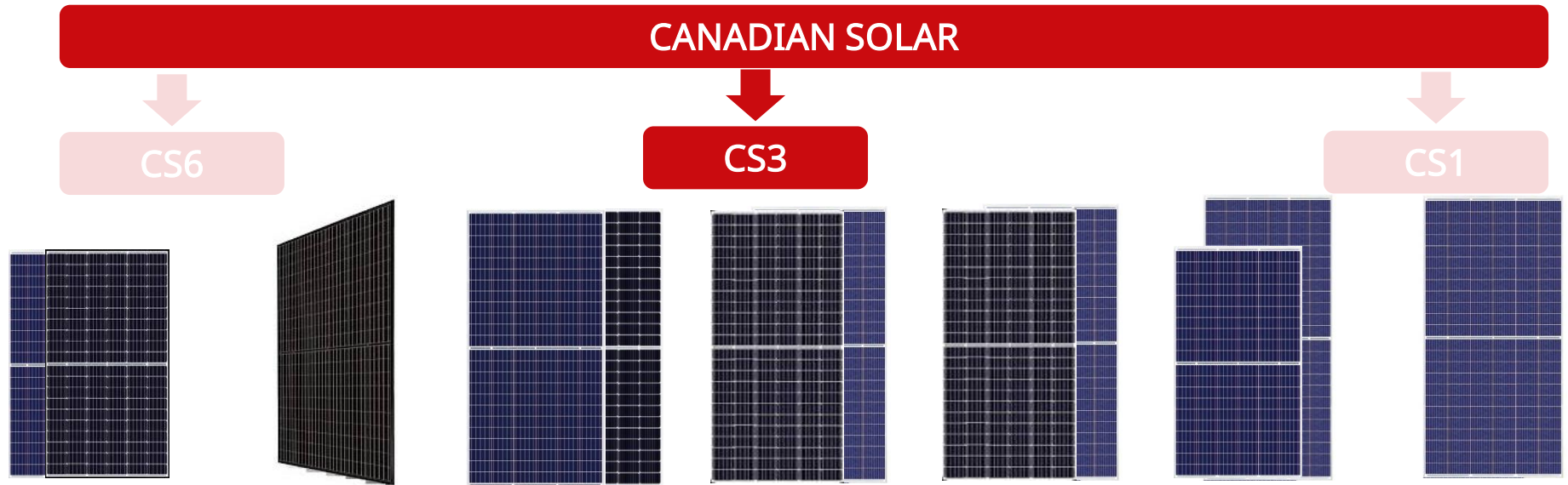
Highlight: Bifacial modules increase system power generation and reduce LCOE costs
Cells: bifacial dual-cell poly and mono-PERC
Poly: up to 385 W
Mono-PERC: up to 400 W
Voltage: 1000 & 1500 V
*Also available frameless

Highlight: High power modules with enhanced aesthetics appearance
Cells: mono-PERC shingled
Power classes: up to 420 W
Voltage: 1000 & 1500 V

Highlight: Enhanced wafer technology for higher power Classes
Cells: dual-cell PERC
Power range: up to 450 W
Voltage: 1000 & 1500 V

Highlight: Bifacial module with enhanced wafer technology for optimal LCOE at utility scale level
Cells: bifacial dual-cell PERC
Power range: up to 445 W
Voltage: 1000 & 1500 V

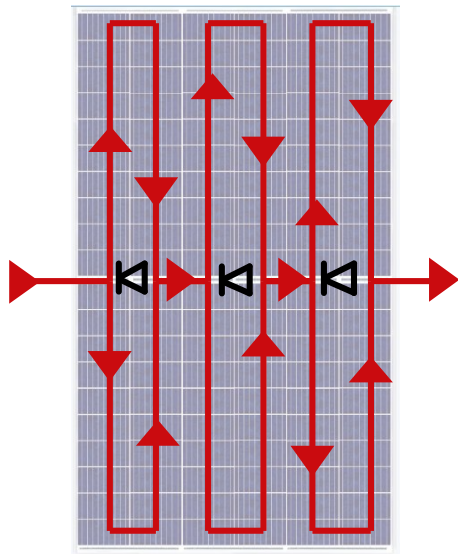
Modules – the Family Tree



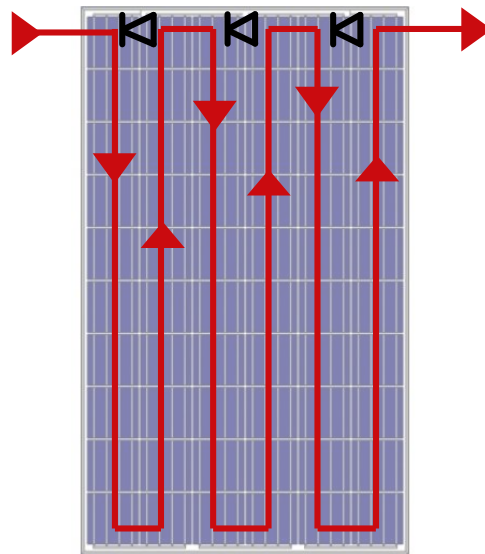
KuPower	KuBlack	KuMax	KuDymond	BiKu	HiKu	BiHiKu
CS3K-P	CS3K-MS-AB	CS3U-P	CS3K-P-AG	CS3K-PB-AG	CS3L-P	CS3W-PB-AG
[290-330]	[300-315]	[355-395]	[290-330]	[290-310]	[330-365]	[390-435]
CS3K-MS		CS3U-MS	CS3U-P-AG	CS3U-PB-AG	CS3W-P	CS3W-MB-AG
[315-335]		[380-400]	[355-390]	[350-385]	[400-435]	[420-445]
			CS3K-MS-AG	CS3K-MB-AG	CS3W-MS	
			[315-330]	[310-335]	[425-450]	
			CS3U-MS-AG	CS3U-MB-AG	CS3L-MS	
			[380-400]	[375-400]	[350-375]	

Module – Internal interconnection

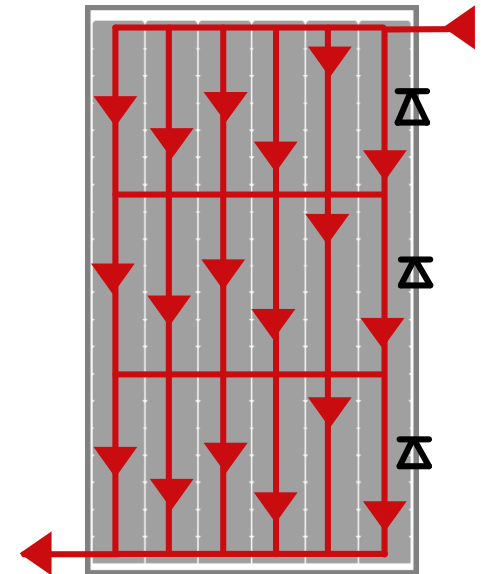
KU – CS3



Full Cell – CS6



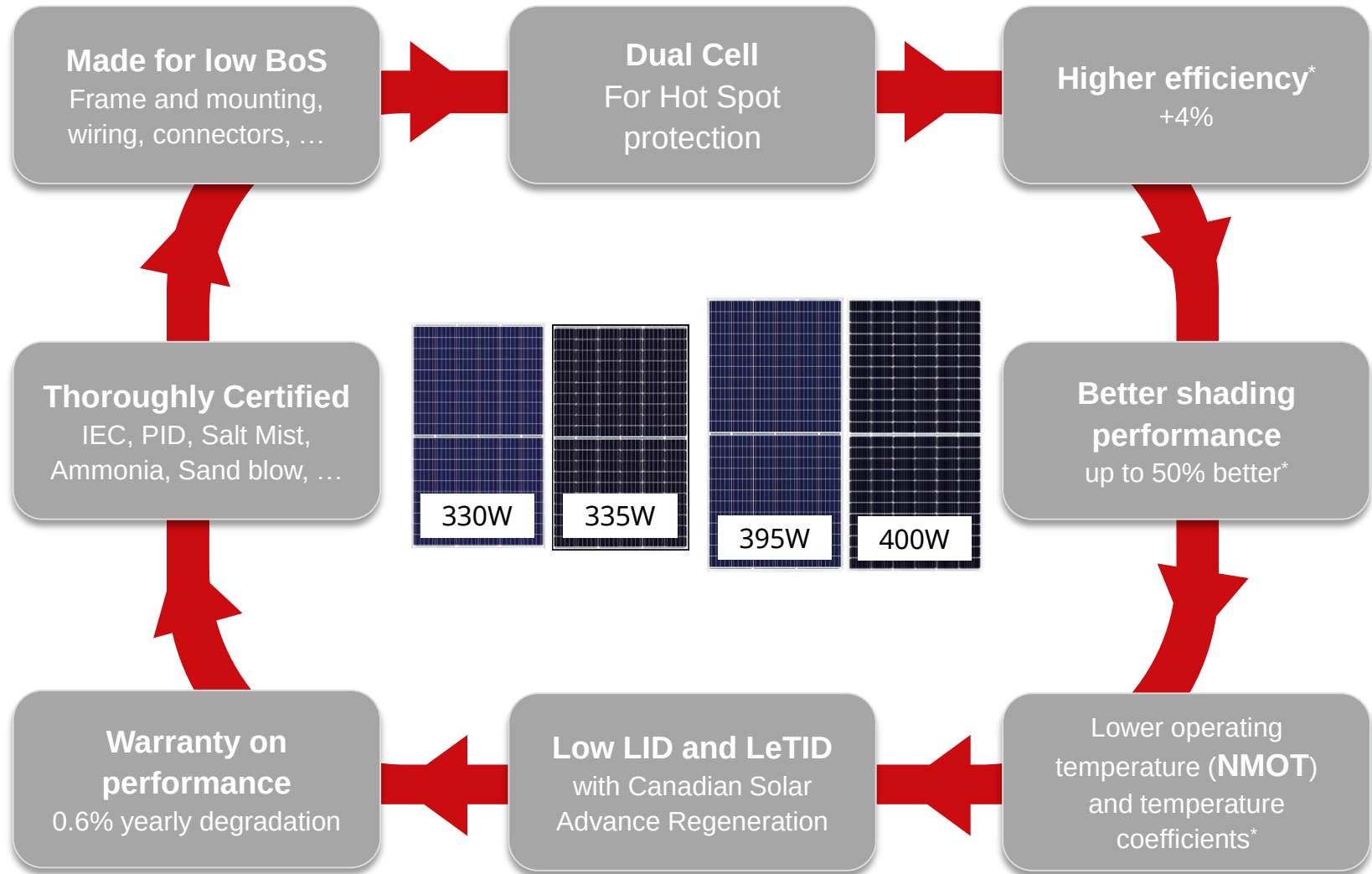
HiDM – CS1



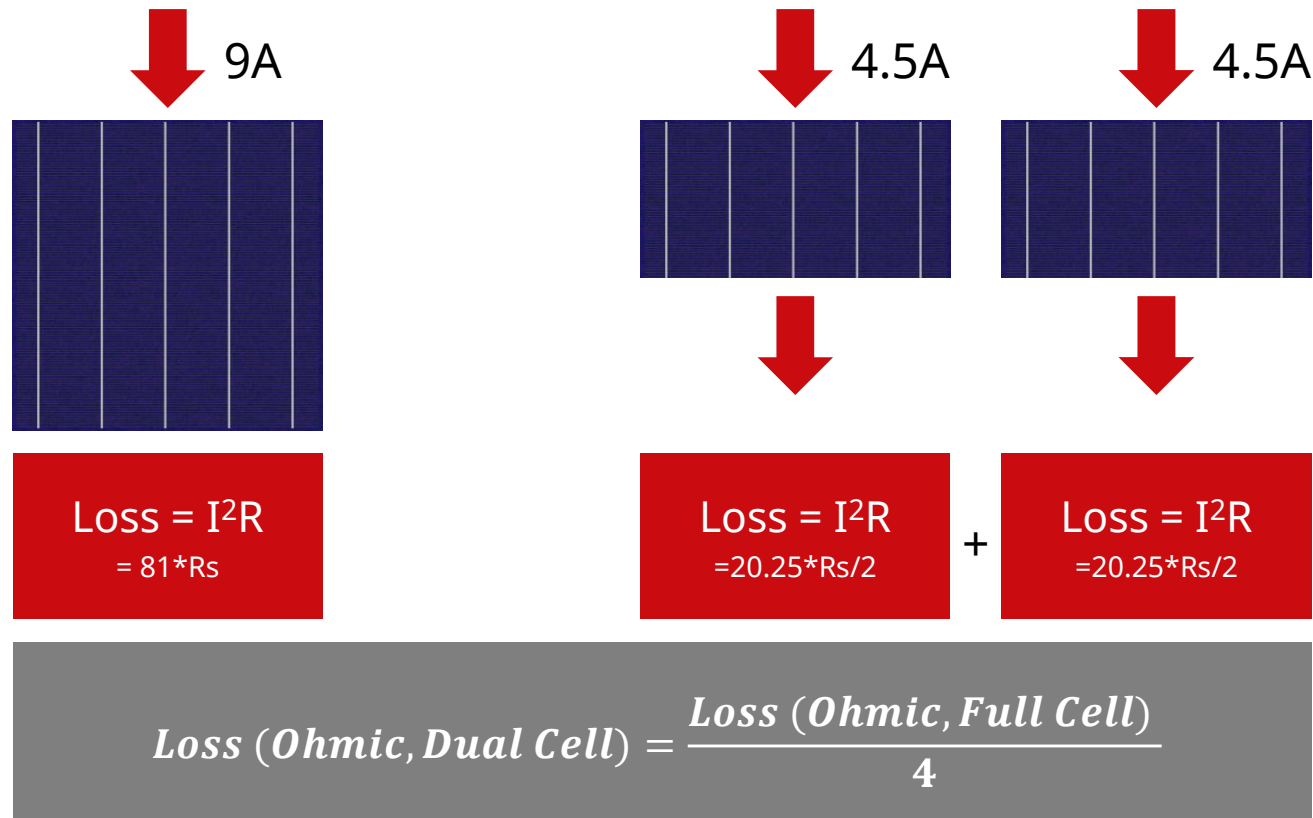
Electrical current

Bypass Diode

KuPower / KuMax : the best value for money



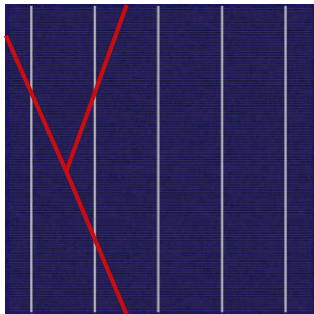
Dual Cell technology for higher efficiency



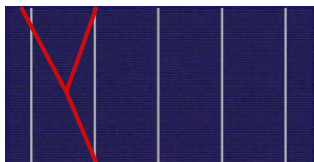
- At nominal conditions, Dual Cell improves the output power by about 10 Watt in state-of-the-art modules

Lower Microcrack Degradation and Ageing

Microcrack Degradation



The damage from a microcrack depends on its extension.



Dual Cell cracks end at the edge of the smaller cell

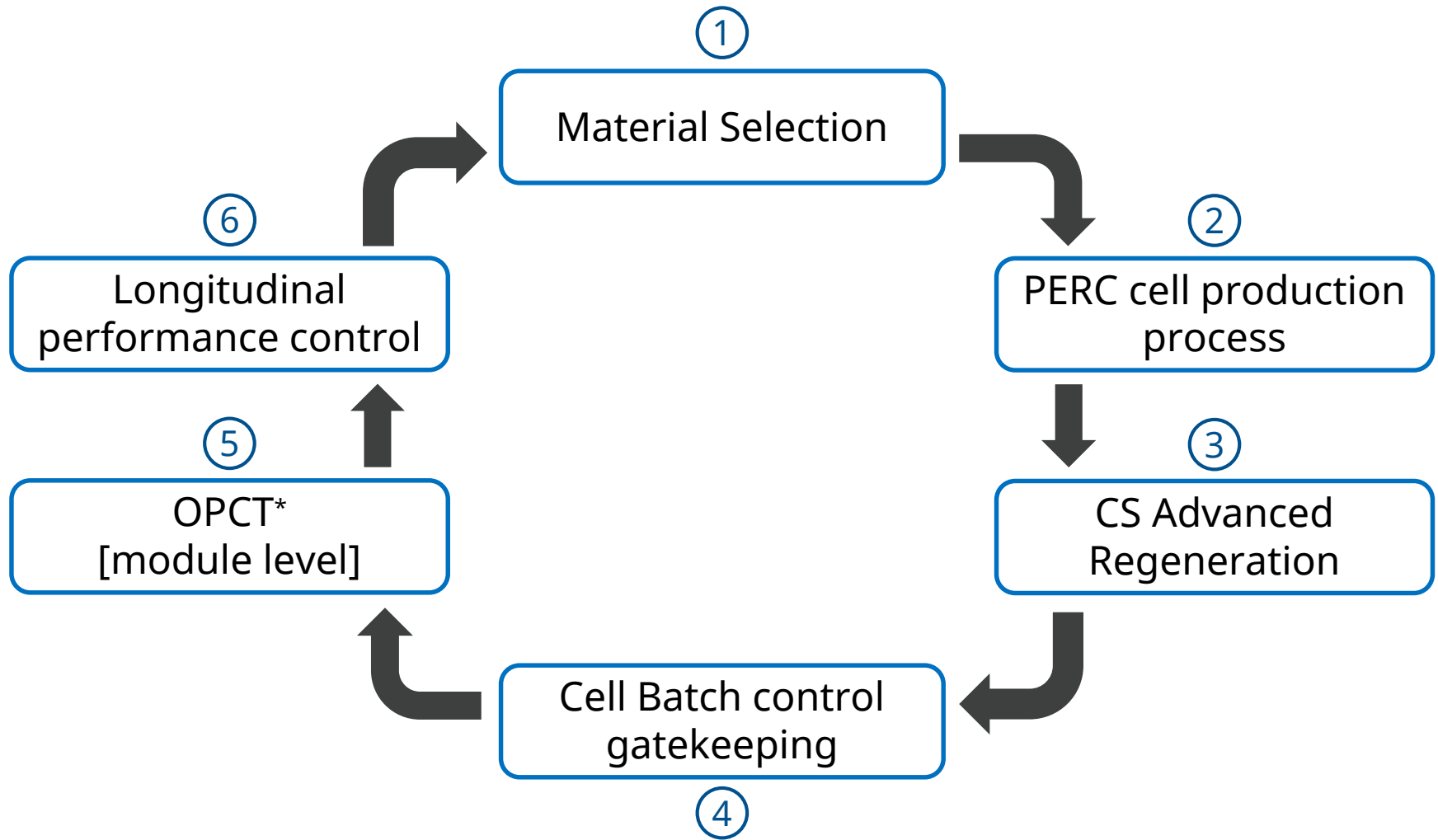
Ageing at Ribbons

Mechanical/thermal stress

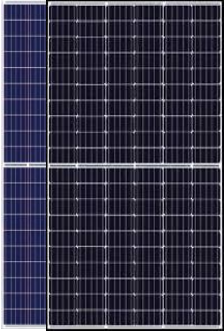


Lower Mechanical/thermal stress

LeTID Mitigation Control: The CSI method



Modules – KuPower/KuMax summary

	KuPower		KuMax
	CS3K-P		CS3U-P
	[290-330]		[355-395]
	CS3K-MS		CS3U-MS
	[315-335]		[380-400]

- Dual Cell technology for low hot-spot risk
- Very high efficiency for Poly and Mono
- PERC with Canadian Solar Advanced Regeneration
- Industry-leading temperature coefficient
- Enhanced shading performance

Canadian Solar is the world's leading manufacturer of Dual Cell modules. This technology achieves the best possible reliability and the KuPower product line is the most flexible choice for roof and ground-mounted photovoltaic systems.

Certified for IEC 1000V and 1500V, with PID 85/85 certification, Salt-mist and ammonia corrosion certificates

35mm frame and mounting with holes or clamping up to corner clamping.

KuPower is available with black frame too and options with different cable lengths and connector types are offered for maximum optimization of the system design.

Industry-leading warranty with 0.6% yearly degradation*

Modules – HiKu Concept

156 mm



166 mm

K = 1675 x 992 mm



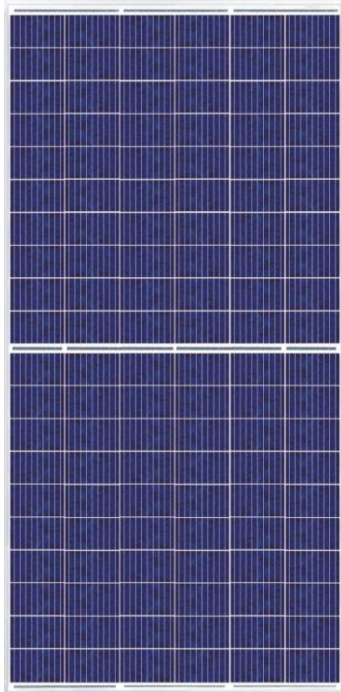
L = 1765 x 1048 mm

U = 2000 x 992 mm



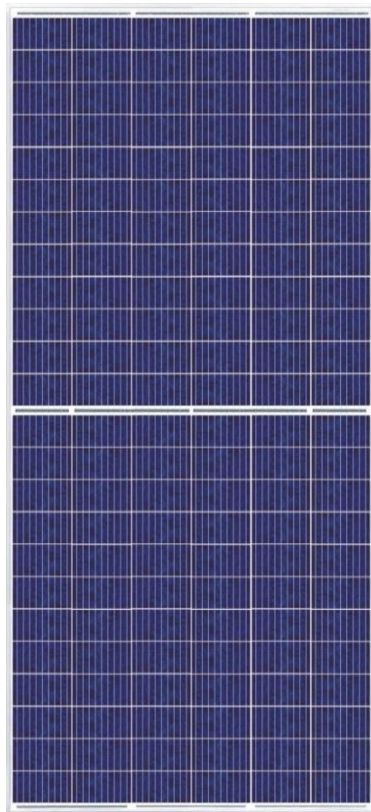
W = 2108 x 1048 mm

HIKU Poly



120 format

CS3L-P: 330-365W



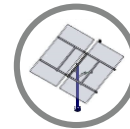
144 format

CS3W-P: 400-435W

MORE POWER



More power output thanks to low NMOT $43 \pm 2^\circ\text{C}$ and better temperature coeff.

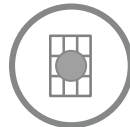


Better shading tolerance



Further reduce system cost and LCOE

MORE RELIABLE

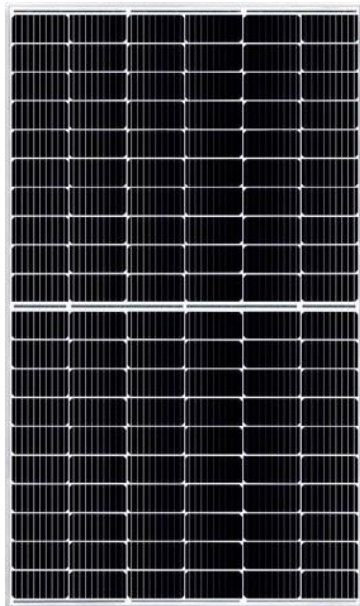


Low hot-spot risk and lower operation temperature



Minimize the micro-crack risk with half cut and multi bus bar module architecture

HiKu Mono PERC (MS)



120 format
CS3L-MS: 350-375W



144 format
CS3W-MS: 425-450W

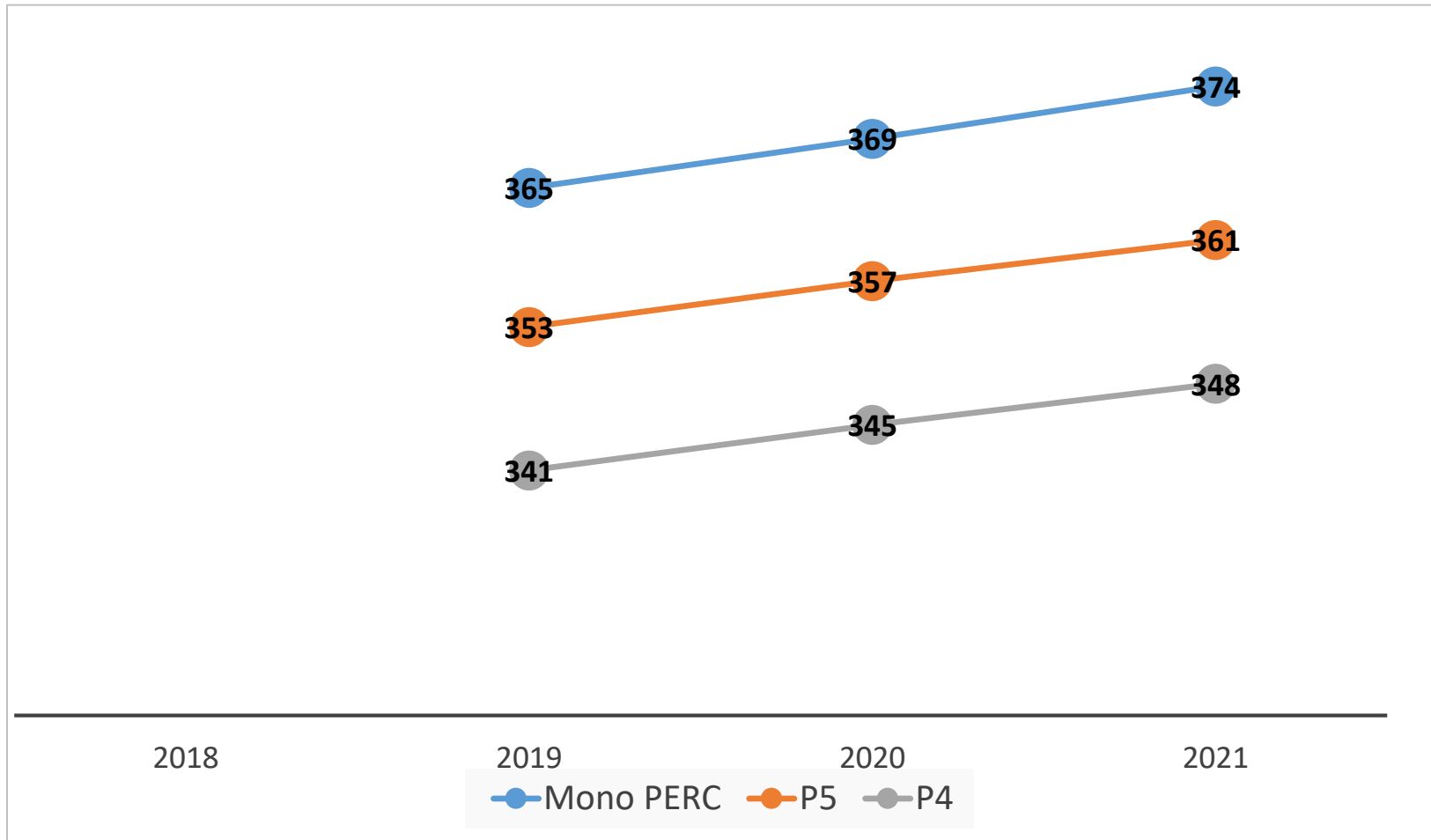
More Power & More Reliable

- ✓ Highest power up to 450W for utility applications
- ✓ More power output due to low NMOT $42 \pm 3^\circ\text{C}$
- ✓ Low hot-spot risk due to Ku design

Lower System Cost and LCOE

- ✓ 2.1c\$/W lower system cost due to savings on labor and mounting structure and DC cabling
- ✓ 2.91% LCOE reduction because of higher energy yield and lower system cost

Module Power Output Roadmap 120 Format (166mm)

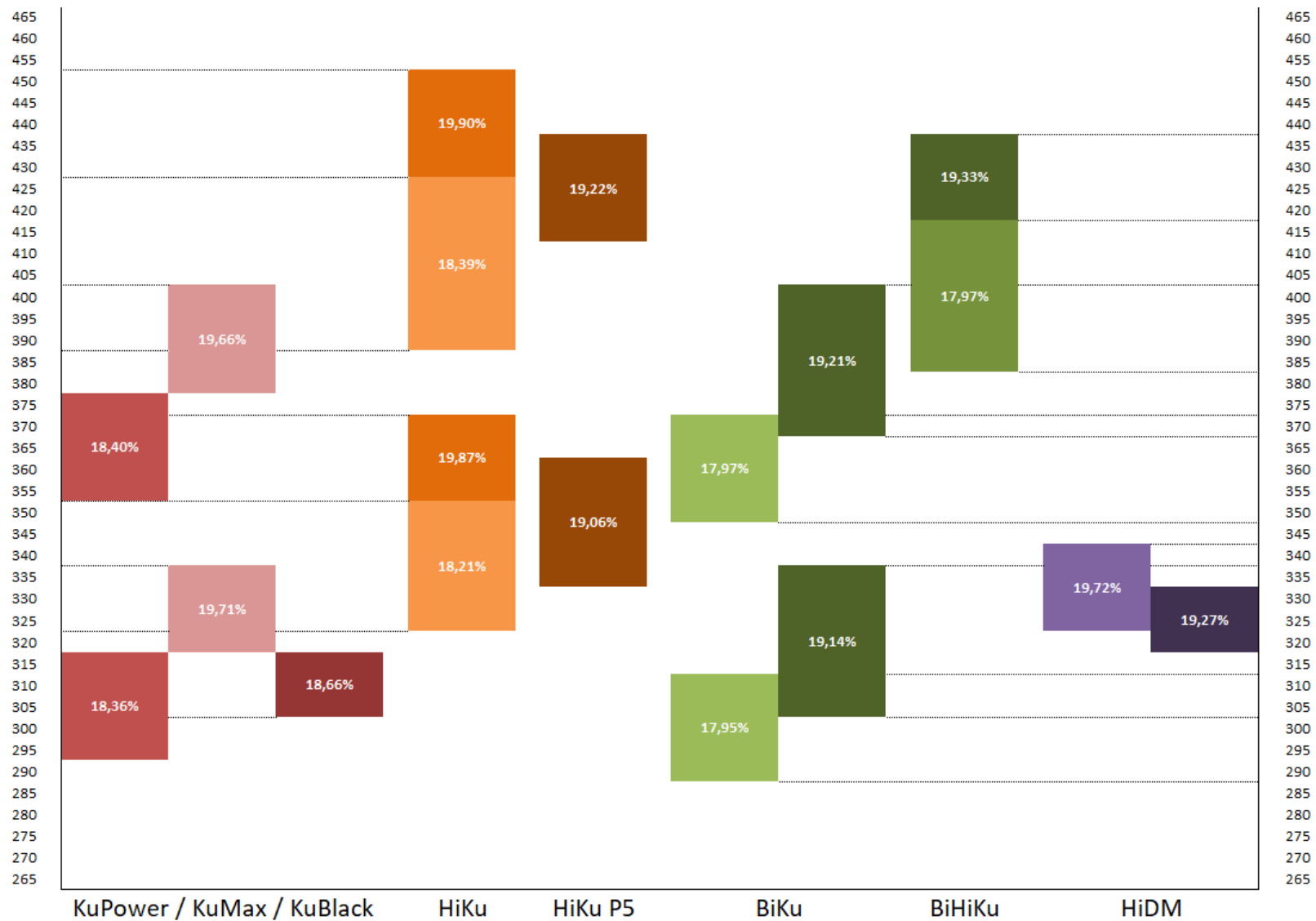


Approved mounting systmes for HiKU



- ✓ Short side inlay systems
- ✓ Landscape clamping flat roof systems with limited loads
 - ✓ Please ask you supplier for specific loads

Power Classes 2019-2020



THANK YOU!

Canadian Solar EMEA