



# Investor Presentation

Fourth Quarter 2018 Update

March 2019

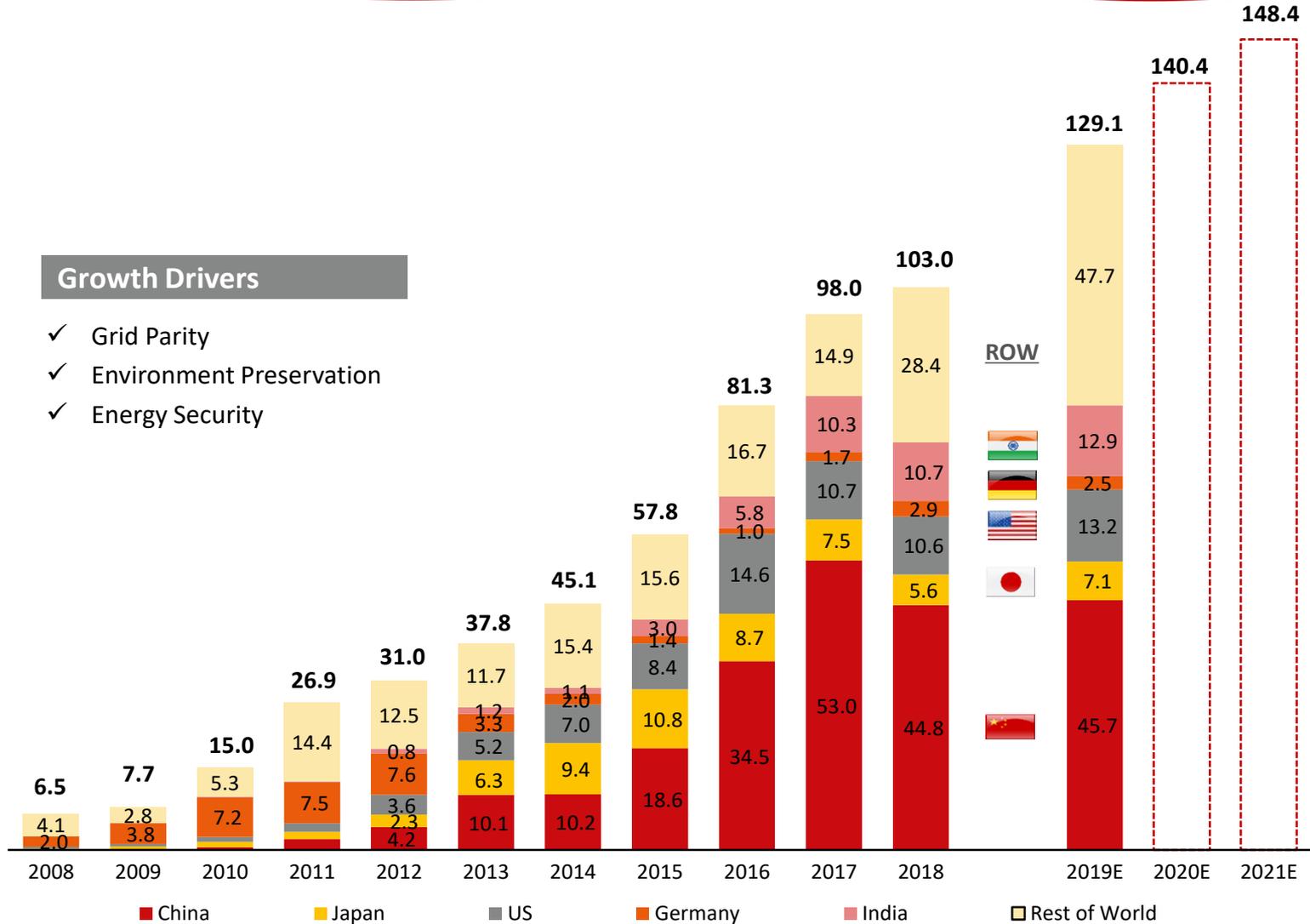
CSIQ NASDAQ Listed

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# Global PV Installation Continue to Grow

← CAGR: 31.8% → ← CAGR: 7.1% →

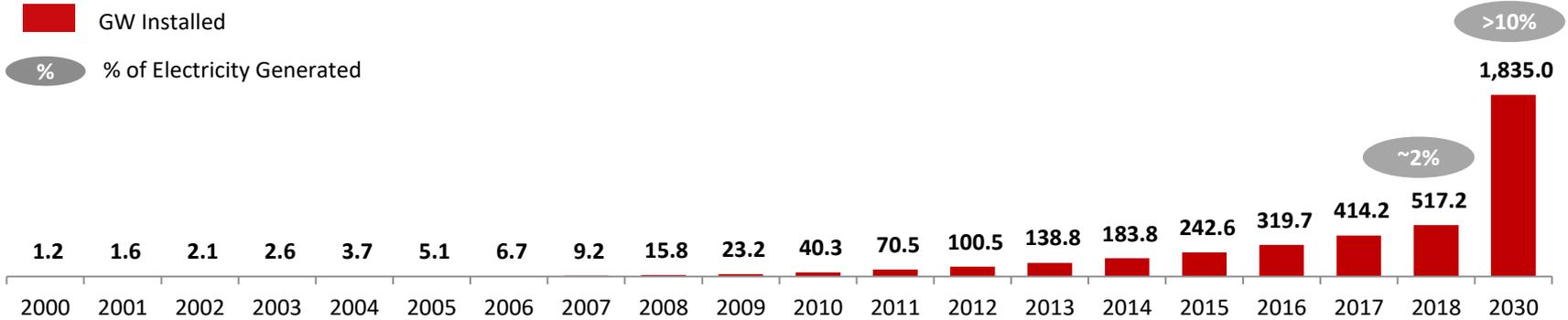


Source: Global PV module demand assumptions from IHS

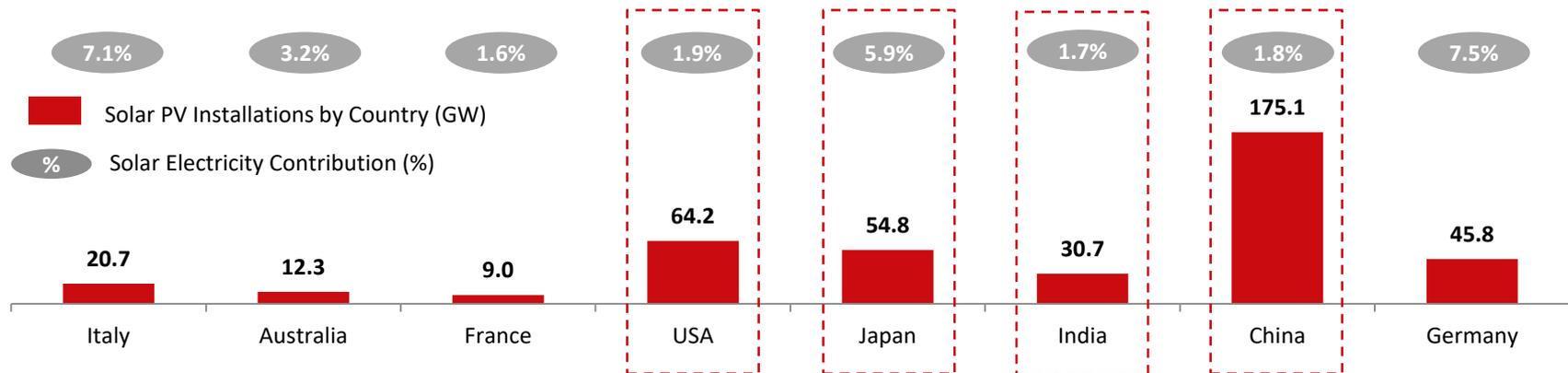
# We Are at the Very Early Stages of Solar Adoption

Solar energy will grow from ~2% of global electricity generation today to >10% by 2030

## Global Cumulative Solar PV Installations (GW)



Canadian Solar's key markets such as China, U.S. India and Japan are significantly under-penetrated



Source: IHS, EIA and Canadian Solar Estimates; Cumulative Installations as of the year 2018.

Solar PV installed capacity is forecast to grow to over 1,835 GW in 2030.

# Company Overview

- 🌞 Founded in Ontario, 2001
- 🌞 Listed on NASDAQ (CSIQ) in 2006
- 🌞 Over 12,000 employees globally
- 🌞 Presence in 20 countries / territories
- 🌞 > 32 GW of solar modules shipped cumulatively
- 🌞 > 4.6 GWp<sup>(1)</sup> solar power plants built and connected (incl. Recurrent)
- 🌞 **A global Top 3 solar company by revenue and net income in 2018**

## Highlights

- 🌞 2018 Shipment: **6.6 GW**
- 🌞 2018 Revenue: **\$3.74 billion**
- 🌞 2019 Shipment Guidance: **7.4 GW to 7.8 GW**
- 🌞 2019 Revenue Guidance: **\$3.5 billion to \$3.8 billion**

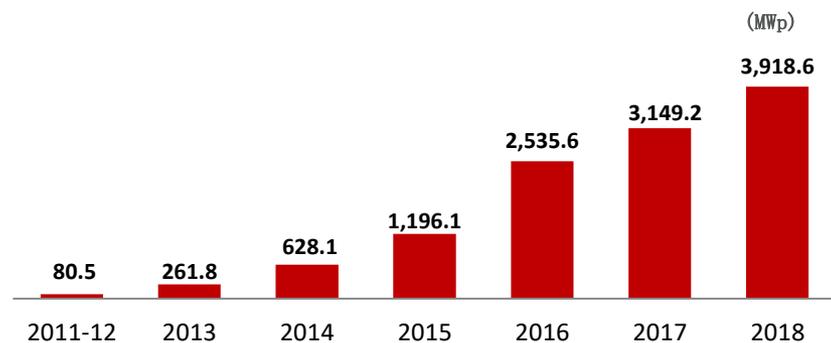
Source: Company information as of March 21, 2019.

1. Includes solar power projects built and connected by Recurrent Energy before acquisition by Canadian Solar in 2015

## Global Footprint and Brand



## Solar Power Plants Built and Connected



# Energy Business: Globally Diversified Project Pipeline

## Priority Markets for Utility-scale Project Development

**12 GWp**

Total project development pipeline

**9.1 GWp**

Early to mid-stage development pipeline <sup>(2)</sup>

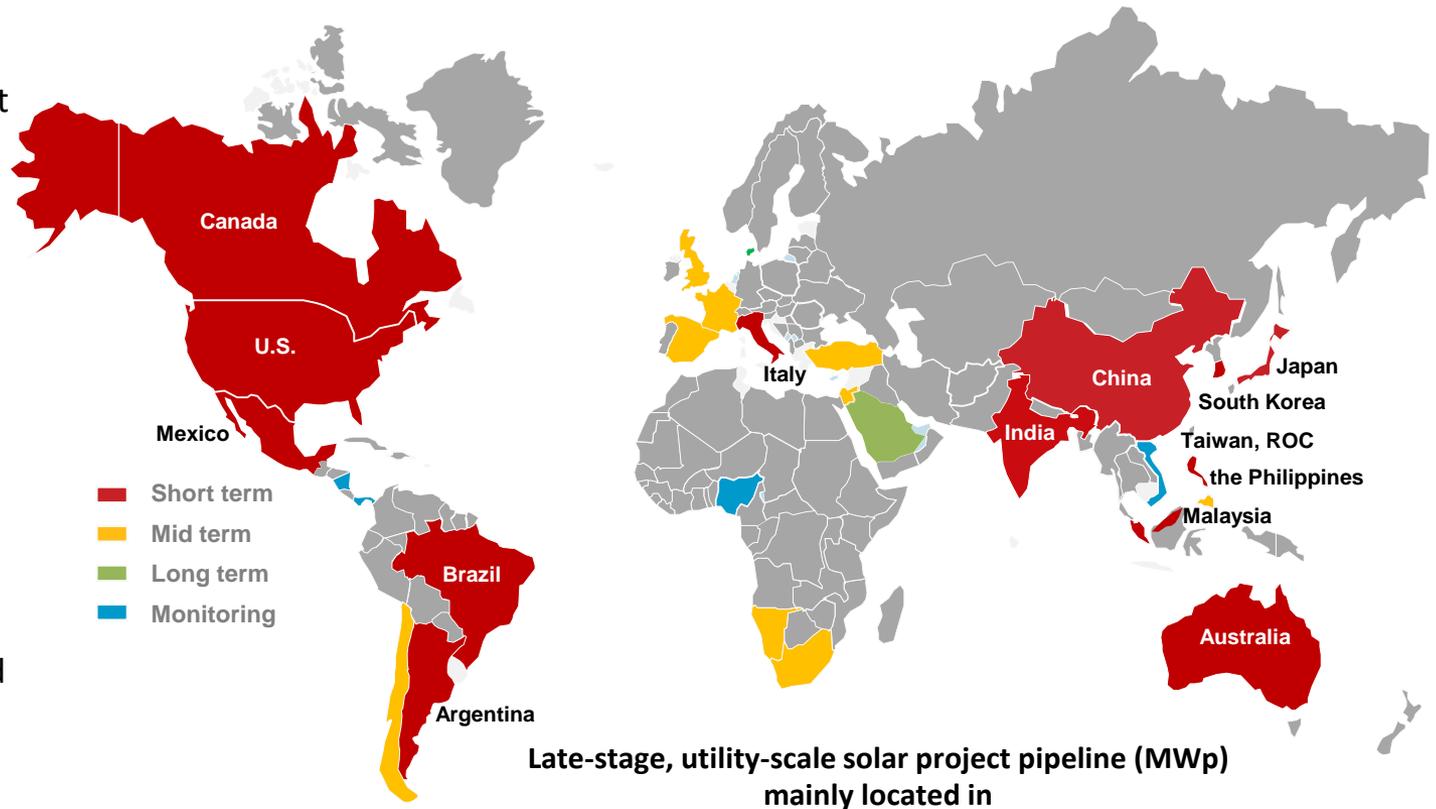
**~2.9 GWp**

Total late-stage project pipeline <sup>(1)</sup>

**986 MWp**

Solar power plants owned and operated, with an estimated resale value of

**\$1.2 billion**

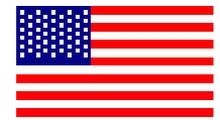


Source: Company information as of March 21, 2019

Note: (1) Late-stage project pipeline, nearly all projects have an energy off-take agreement and are expected to be built within the next 2-4 years. Some projects may not reach completion due to failure to secure permits or grid connection, among other risk factors.

(2) Early to mid-stage of development: 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 near term.

# U.S. Utility-scale Solar Project Pipeline



Market Leader in the U.S.

**3.8 GWp**

Early to mid-stage pipeline

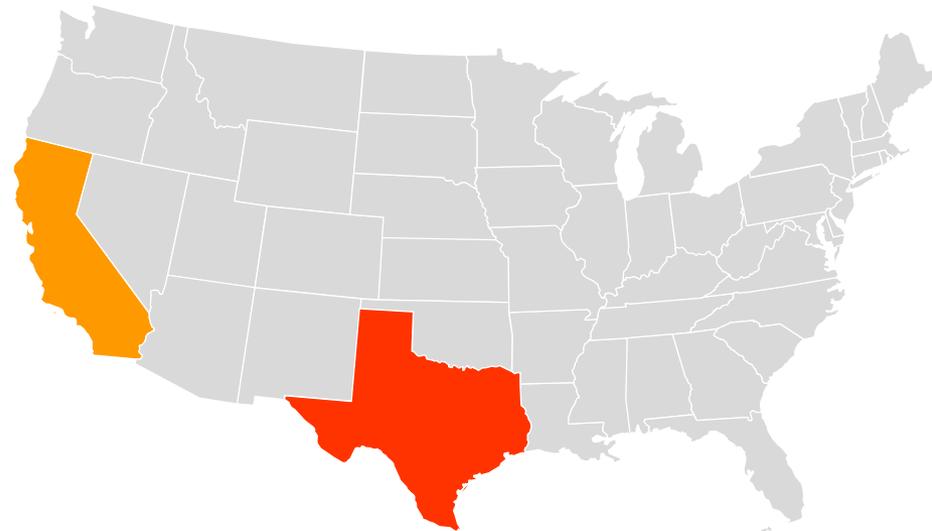
**1,210 MWp**

Late-stage pipeline

**340.1 MWp**

Owned and operated<sup>1</sup>

U.S. Late-stage Project Development Footprint



Projects in Operation<sup>1</sup>

NC 102

Mustang

Roserock

102  
MWp

134  
MWp

104  
MWp

Commercial  
Operation  
since Q3 2018

Commercial  
Operation  
since Q3 2016

Commercial  
Operation  
since Q4 2016

Late-stage Project Pipeline

Gaskell West 2

Pflugerville

Texas Project

Texas Project 2

Slate

Stanford Solar  
Generating Station#2

147  
MWp

185  
MWp

280  
MWp

310  
MWp

200  
MWp

88  
MWp

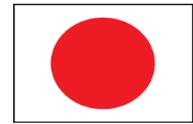
Under development; COD expected in 2020

Under Development; COD  
expected in 2021

Source: Company information as of March 21, 2019

1. It represents the MWp owned by Canadian Solar

# Japan Utility-scale Solar Project Pipeline



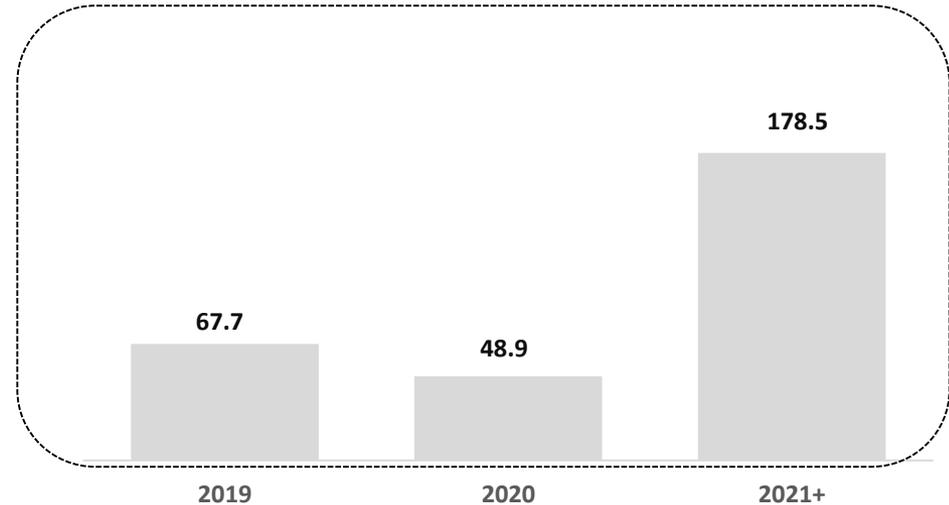
## Total Solutions Business – Japan

**295.1 MW<sub>p</sub>**  
Late-stage pipeline

**89.4 MW<sub>p</sub>**  
Owned and operated



## Utility-scale COD Schedule<sup>1</sup> - MWp



Note: (1) Expected COD are tentative estimates subject to change, due to delays in securing all the necessary permits among other risk factors.

- **295.1 MW<sub>p</sub>** late-stage projects have secured interconnection agreement and FIT, including **97.7 MW<sub>p</sub>** in construction and **197.4 MW<sub>p</sub>** under development

# Market Leader in Brazil and Mexico



| Late-stage projects         | Gross MWp    | Location     | Status      | Expected COD |
|-----------------------------|--------------|--------------|-------------|--------------|
| Francisco Sa <sup>(1)</sup> | 122.2        | Minas Gerais | Development | 2021         |
| Jaiba <sup>(1)</sup>        | 97.3         | Minas Gerais | Development | 2021         |
| Lavras <sup>(3)</sup>       | 144.7        | Ceara        | Development | 2021         |
| Salgueiro <sup>(2)</sup>    | 112          | Pernambuco   | Development | 2020         |
| <b>Total</b>                | <b>476.2</b> |              |             |              |

**68 MW<sub>p</sub>**

Owned and operated in Mexico

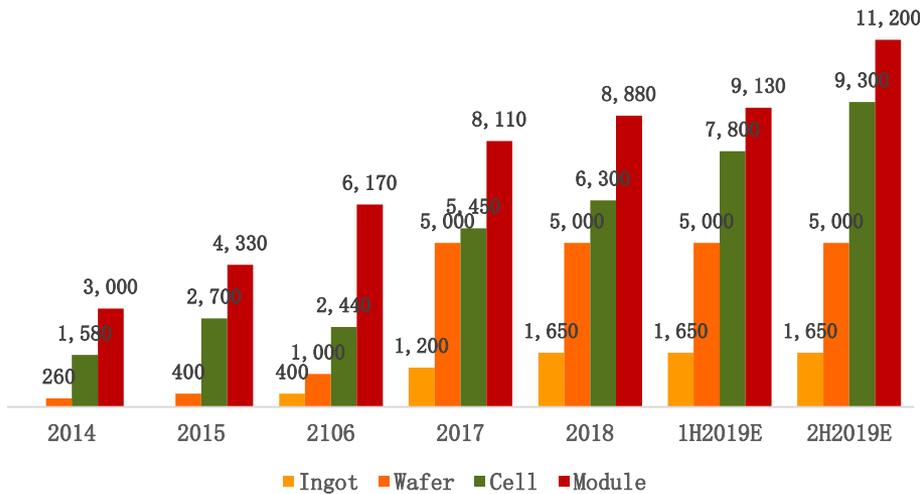


| Late-stage projects     | Gross MWp  | Location       | Status      | Expected COD |
|-------------------------|------------|----------------|-------------|--------------|
| EL Mayo <sup>(1)</sup>  | 124        | Sonora         | Development | 2021         |
| Tastiota <sup>(1)</sup> | 125        | Sonora         | Development | 2020         |
| Horus <sup>(2)</sup>    | 119        | Aguascalientes | Development | 2020         |
| <b>Total</b>            | <b>368</b> |                |             |              |

Source: Company information as of March 21, 2019

# Expected Capacity with New Technology and Cost Reduction

## Manufacturing Capacity - MW



### Technology upgrade - New products, new process, new design

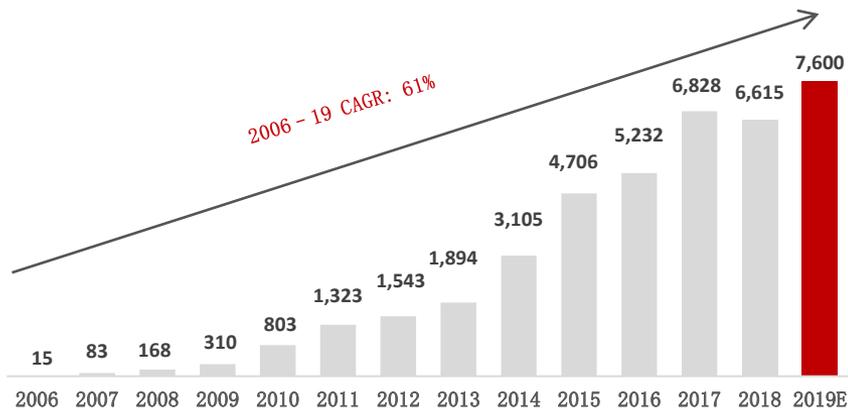
- ✓ Diamond wire-saw wafer
- ✓ Black silicon
- ✓ Mono PERC
- ✓ Black silicon + Poly PERC
- ✓ Casted Mono
- ✓ Black silicon + Poly PERC + Bifacial

### Global Manufacturing Footprint

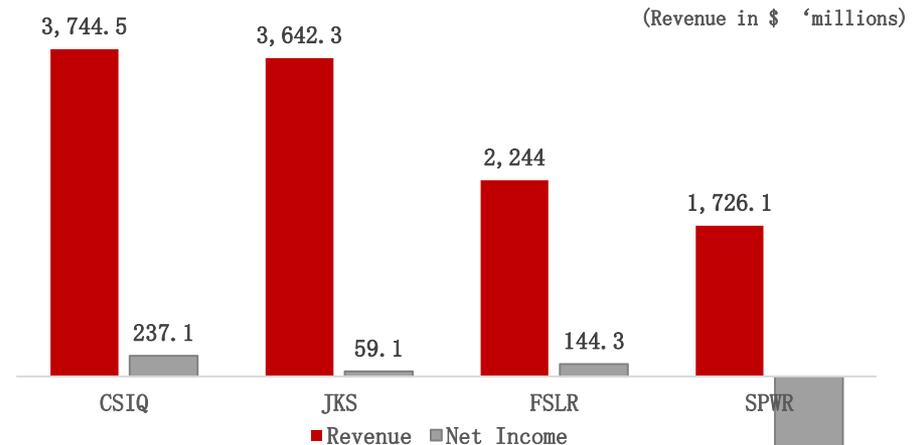
- ✓ Brazil
- ✓ Canada
- ✓ China
- ✓ South East Asia, including Thailand, Vietnam and Indonesia
- ✓ Taiwan

Operation efficiency improvements: Shorter cycle time and lower inventory

## Total Module Shipments - MW



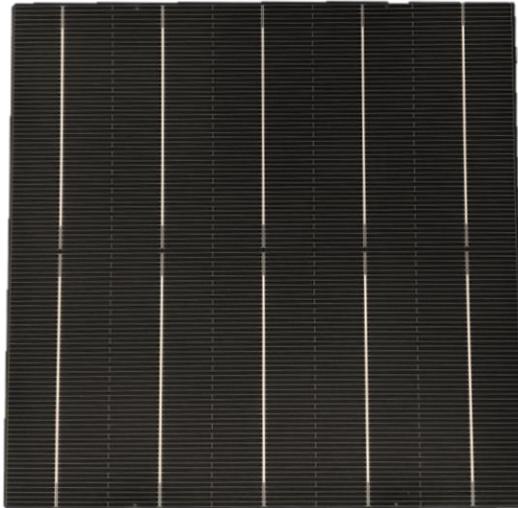
## A Global Leading Solar Company by Revenue and Net Income in 2018



Source: Company information as of March 21, 2019 and public filings

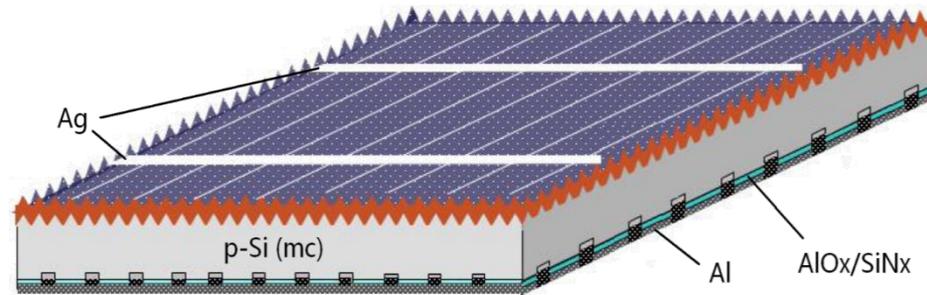
# Competitive Pipeline of Homegrown Technologies

## P4



- ☀️ 1% cell efficiency and 12 watts module power gain on 60-cell module design over baseline; cell efficiency reached over 20.5% in mass production
- ☀️ Over 5 years in-house R&D, **self-owned IPs**
- ☀️ ~4GW in-house multi cell production used this technology at the end of Q4 2018
- ☀️ Pleasing aesthetics

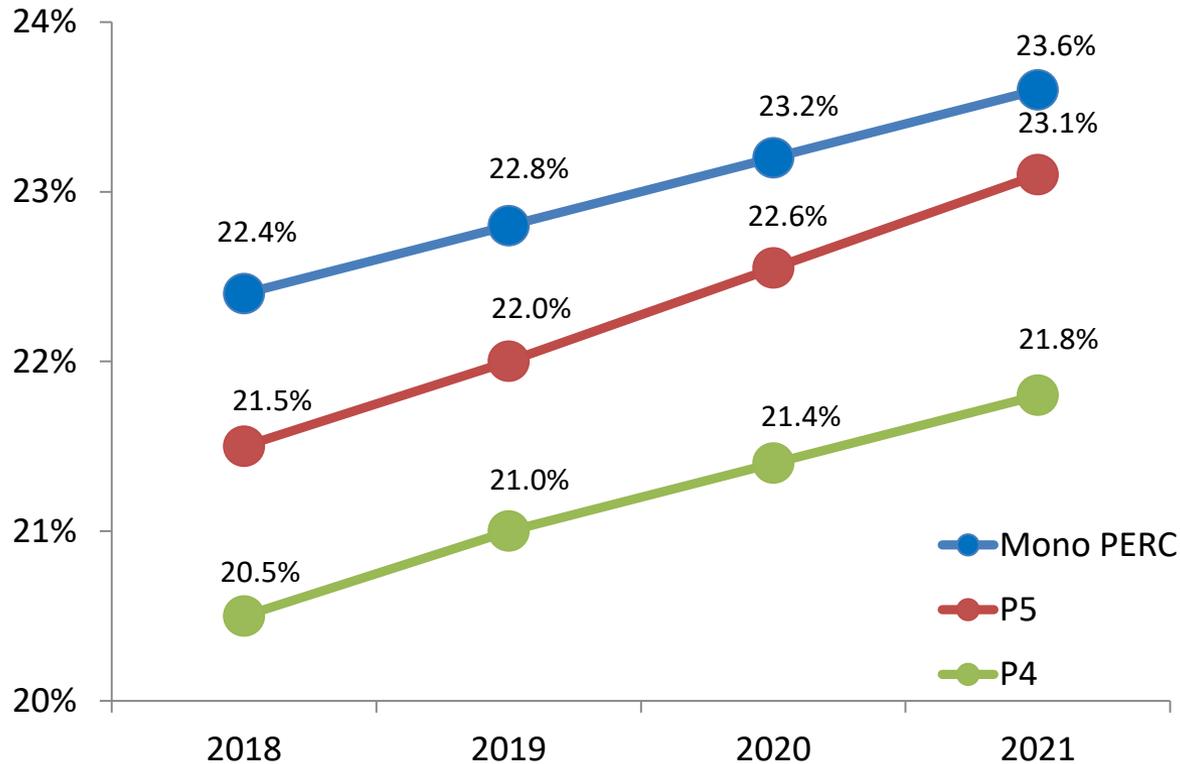
## Mono PERC



- ☀️ Mono PERC enhances back side passivation and increased cell efficiency to over 22%
- ☀️ Low Light Induced Degradation (LID), and Potential Induced Degradation (PID) resistant
- ☀️ Premium product: 60-cell module power reached over 320 Watt
- ☀️ 100% mono cell production was upgraded to mono PERC at the end of 2017

# Cell Efficiency Roadmap

## Cell Efficiency



## Highlights

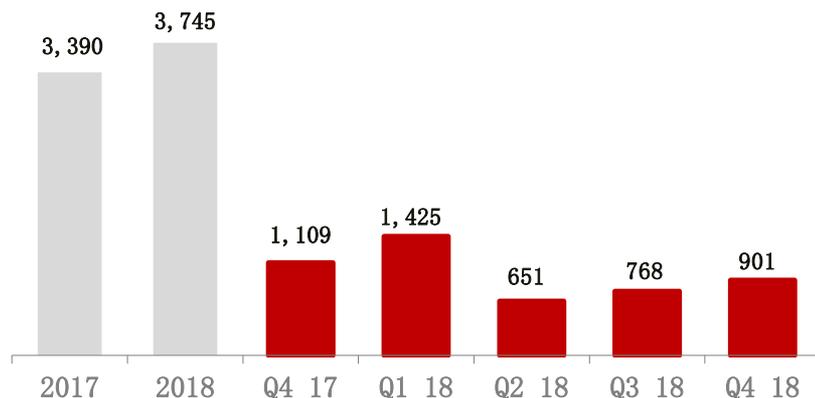
- 🌅 P4 (black silicon + poly PERC) will improve the multi-crystalline cell efficiency to 22% in 2021
- 🌅 P5 (casted mono) has close to mono efficiency while at multi cost; Optimization is being continued during production ramp-up.
- 🌅 Mono PERC cell efficiency can reach above 23% in mass production by 2020
- 🌅 Non-PERC cell technologies will phase out in 2019

# Experienced Board & Senior Management

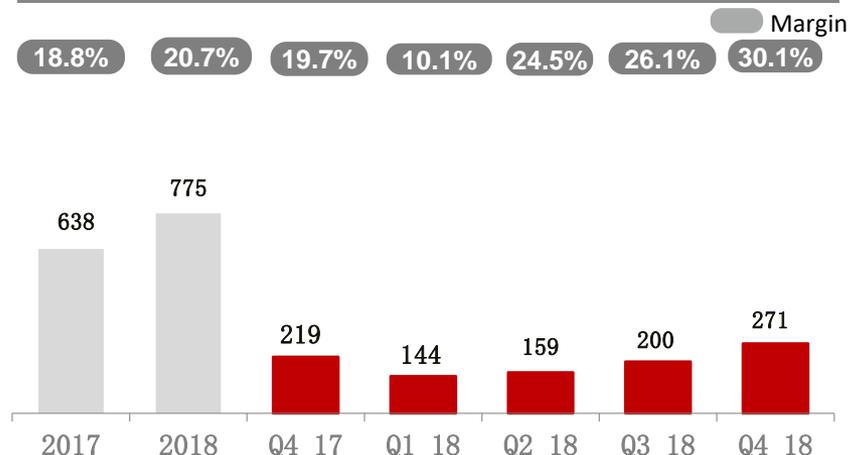
|  | Name / Title  | Work Experience  |
|--|---|--|
|  | <b>Dr. Shawn Qu</b><br><i>Chairman, President &amp; CEO (Director)</i>  | <ul style="list-style-type: none"> <li>■ Founded Canadian Solar in 2001, and has since then, firmly established the company as a global leader of the solar industry</li> <li>■ Director &amp; VP at Photowatt International S.A.</li> <li>■ Research scientist at Ontario Hydro (Ontario Power Generation Corp.)</li> </ul>   |
|  | <b>Dr. Huifeng Chang</b><br><i>SVP and Chief Financial Officer</i>  | <ul style="list-style-type: none"> <li>■ Co-Head of Sales &amp; Trading at CICC US in New York</li> <li>■ CEO of CSOP Asset Management in Hong Kong</li> <li>■ Vice President of Citigroup Equity Proprietary Investment in New York</li> </ul>  |
|  | <b>Yan Zhuang</b><br><i>SVP and Chief Commercial Officer</i>  | <ul style="list-style-type: none"> <li>■ Head of Asia of Hands-on Mobile, Inc.</li> <li>■ Asia Pacific regional director of marketing planning and consumer insight at Motorola Inc.</li> </ul>  |
|  | <b>Guangchun Zhang</b><br><i>SVP and Chief Operating Officer</i>  | <ul style="list-style-type: none"> <li>■ Vice President for R&amp;D and Industrialization of Manufacturing Technology at Suntech Power Holdings</li> <li>■ Centre for Photovoltaic Engineering at the University of New South Wales and Pacific Solar Pty. Limited.</li> </ul>   |
|  | <b>Arthur Chien</b><br><i>SVP and Chief Strategic Officer</i>   | <ul style="list-style-type: none"> <li>■ CEO at Talesun Solar Co., CFO at Canadian Solar Inc.</li> <li>■ Managing director of Beijing Yinke Investment Consulting Co. Ltd.</li> <li>■ Chief financial officer of China Grand Enterprises Inc.</li> </ul>   |
|  | <b>Jianyi Zhang</b><br><i>SVP and Chief Compliance Officer</i>  | <ul style="list-style-type: none"> <li>■ Senior advisor to several Chinese law firms</li> <li>■ Senior assistant general counsel at Walmart Stores, Inc.</li> <li>■ Managing Partner at Troutman Sanders LLP</li> </ul>  |
|  | <b>Dr. Guoqiang Xing</b><br><i>SVP and Chief Technology Officer</i>   | <ul style="list-style-type: none"> <li>■ Chief Technology Officer of Hareon Solar</li> <li>■ R&amp;D Director of JA Solar</li> <li>■ R&amp;D Director at several semiconductor companies</li> </ul>  |
| <b>Experienced<br/>Independent<br/>Directors</b>                                 | <b>Robert McDermott</b><br><i>Chairperson of the Corporate Governance ,<br/>Nominating and Compensation Committees</i>  | <ul style="list-style-type: none"> <li>■ Partner with McMillan LLP, a business and commercial law firm</li> <li>■ Director and senior officer of Boliden Ltd.</li> </ul>   |
|  | <b>Lars-Eric Johansson</b><br><i>Chair of the Audit and member of Governance, and<br/>Compensation Committees</i>       | <ul style="list-style-type: none"> <li>■ CEO of Ivanhoe Nickel &amp; Platinum Ltd.</li> <li>■ Chairperson of the Audit Committee of Harry Winston Diamond</li> </ul>   |
|  | <b>Dr. Harry E. Ruda</b><br><i>Chair of Technology and member of the Audit,<br/>Governance, Compensation Committees</i> | <ul style="list-style-type: none"> <li>■ Director of the Centre for Advanced Nanotechnology, Stanley Meek Chair in Nanotechnology and Prof. of Applied Science and Engineering at the University of Toronto, Canada</li> </ul>   |
|  | <b>Andrew Wong</b><br><i>Member of the Audit, Corporate Governance,<br/>Compensation Committees</i>                     | <ul style="list-style-type: none"> <li>■ Senior Advisor to Board of Directors of Henderson Land Development Co.</li> <li>■ Director of Ace Life Insurance Co. Ltd., China CITIC Bank Corp., Intime Retail (Group) Co. Ltd. And Shenzhen Yantian Port (Group) Co. Ltd.</li> </ul>   |
|  | <b>Arthur Wong</b><br><i>Member of the Audit, Corporate Governance,<br/>Compensation Committees</i>                     | <ul style="list-style-type: none"> <li>■ Independent director and chair of the audit committee of China Automotive Systems, Inc., Daqo New Energy Corp., and China Maple Leaf Educational Systems Limited</li> <li>■ Various positions with Deloitte Touche Tohmatsu (Deloitte) in Hong Kong, San Jose and Beijing</li> <li>■ Chief Financial Officer at a variety of companies</li> </ul> |

# Income Statement

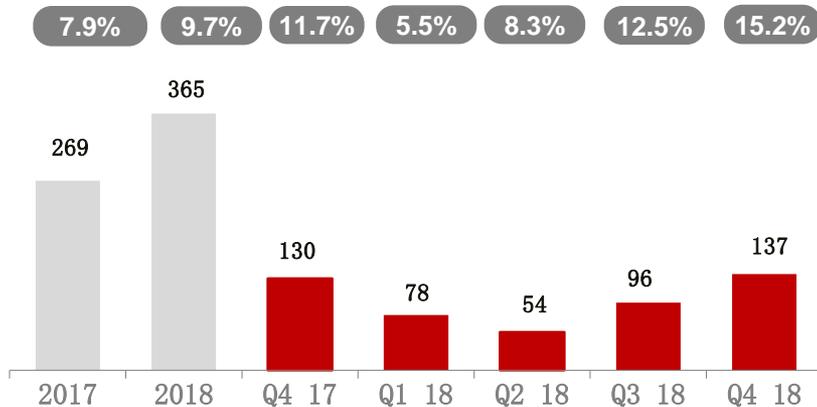
Revenue – US\$ million



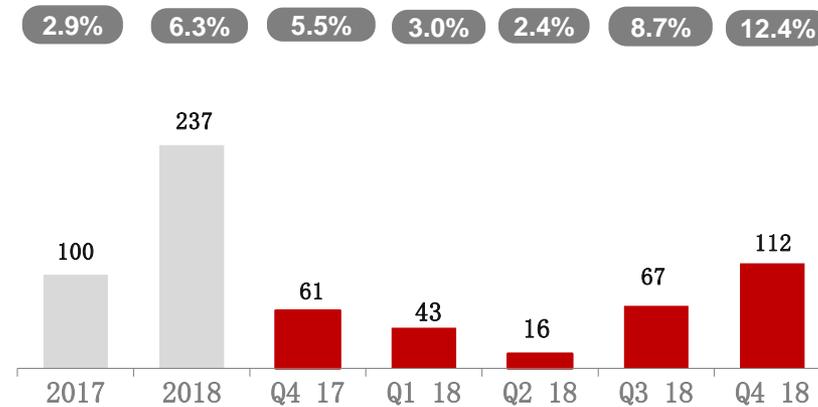
Gross Profit – US\$ million



Operating Income – US\$ million



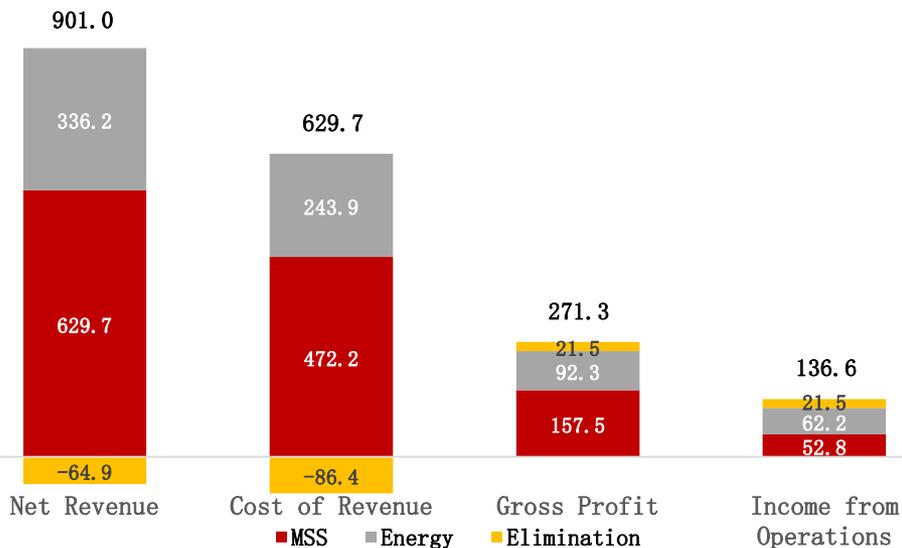
Net Income – US\$ million



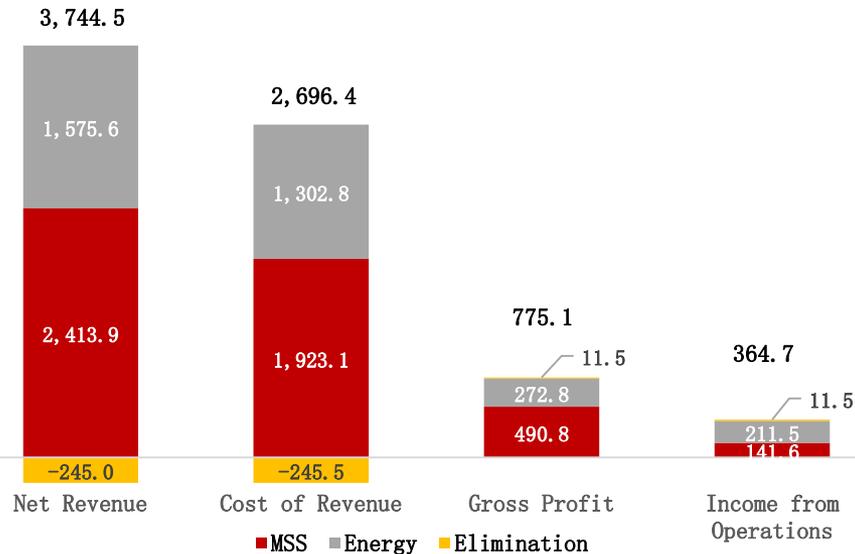
Source: Company filings

# MSS Business and Energy Business – Revenue and Profitability

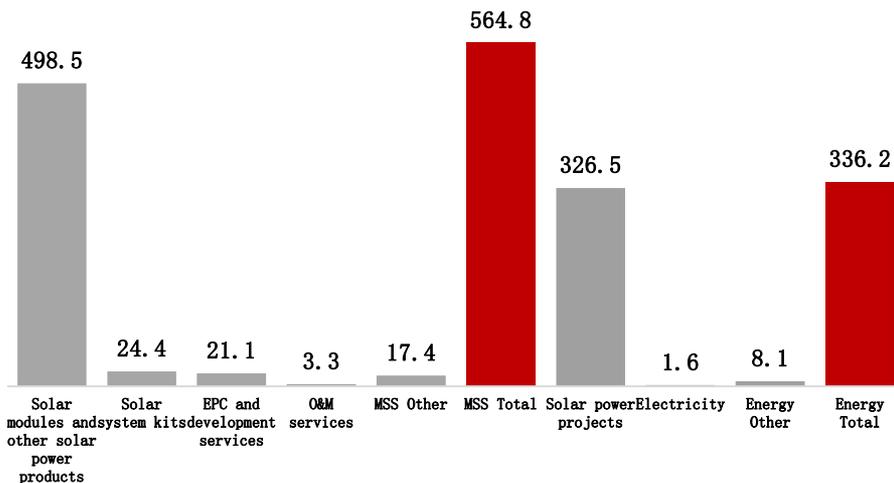
Three Months Ended December 31, 2018 – US\$ million



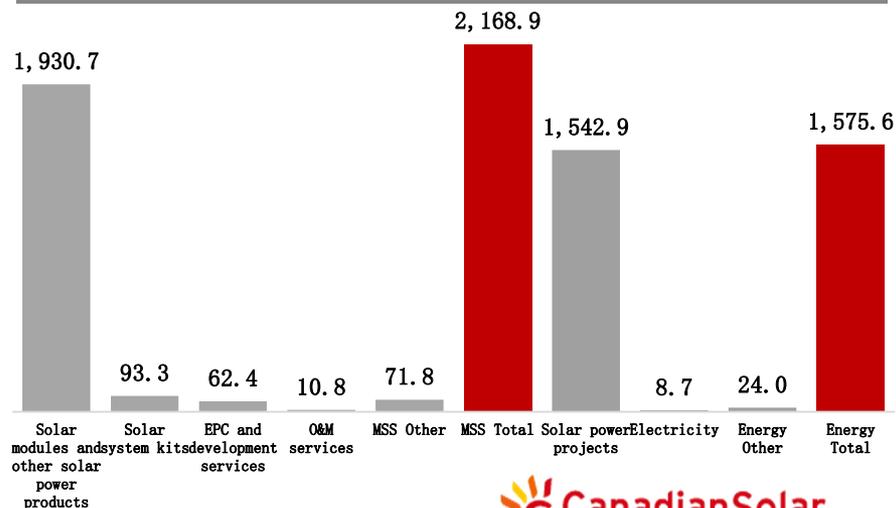
Twelve Months Ended December 31, 2018 – US\$ million



Revenue - Three Months Ended December 31, 2018 – US\$ million



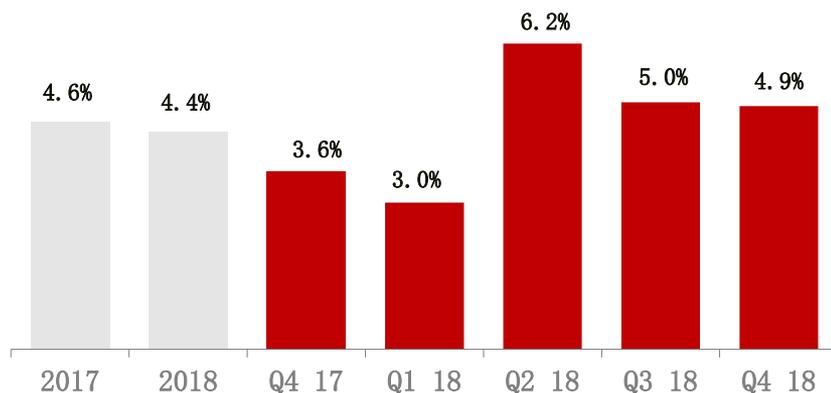
Revenue – Twelve Months Ended December 31, 2018 – US\$ million



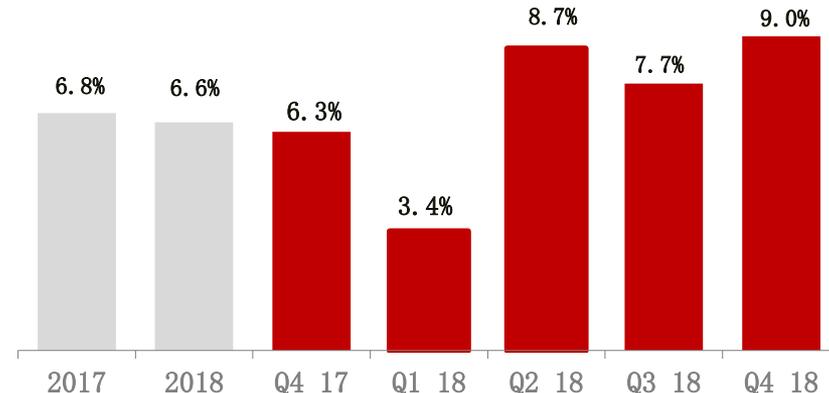
Source: Company filings

# Operating Expenses as % of Net Revenue

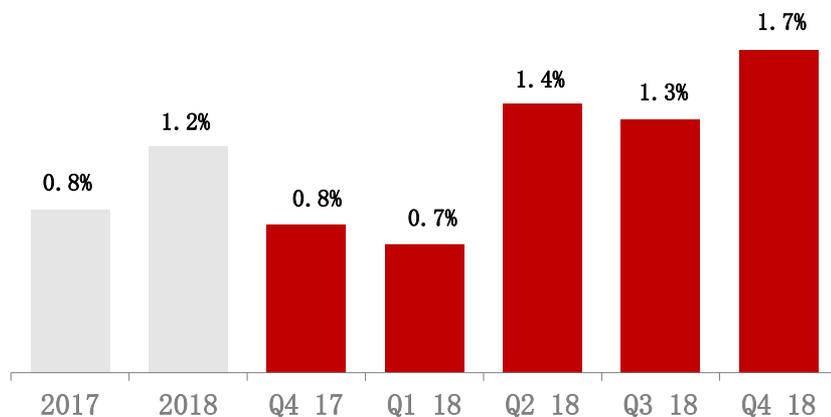
## Selling Expenses



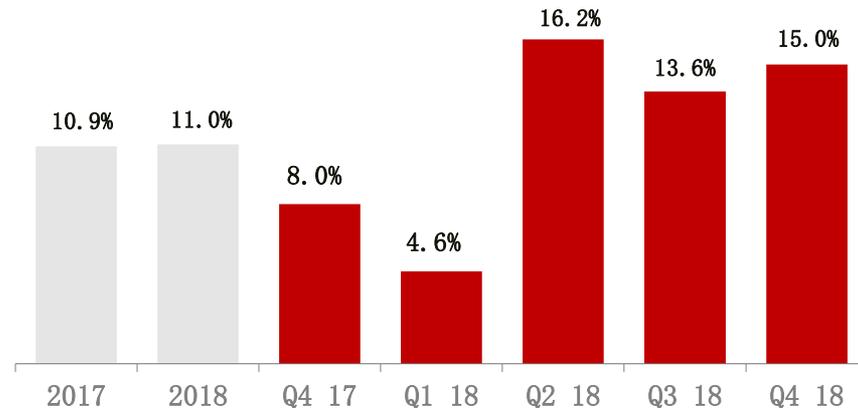
## General & Administrative Expenses



## Research & Development Expenses



## Total Operating Expenses



Source: Company filings

Note: Percentages are of the total net revenue in the corresponding period.

## Guidance as of March 21, 2019

|                         | Q4 2018              | Q1 2019                   |
|-------------------------|----------------------|---------------------------|
| <b>Module Shipments</b> | 1,951 MW             | 1.3 GW to 1.4 GW          |
| <b>Revenue</b>          | \$901 mn             | \$450 mn to \$480 mn      |
| <b>Gross Margin</b>     | 30.1% <sup>(1)</sup> | 16% to 18% <sup>(1)</sup> |

|                         | FY2018    | FY2019               | YoY Δ% |
|-------------------------|-----------|----------------------|--------|
| <b>Module Shipments</b> | 6,615 MW  | 7.4 GW to 7.8 GW     | +17.9% |
| <b>Revenue</b>          | \$3.74 bn | \$3.5 bn to \$3.8 bn | +1.6%  |
| <b>Gross Margin</b>     | NA        | NA                   | NA     |

1-Includes MSS business and Energy business

**THANK YOU**

March 2019