

# Stock Index

## Solar Energy

Q4 2017



### Q4 2017

- Overall Solar Index increased 24.3% from last quarter
- Wafers / Ingots Index increased 33.3% from last quarter
- Systems Components Index increased 12.1% from last quarter
- Vertically Integrated Index increased 31.7% from last quarter
- EPC Integrators / Developers Index increased 17.3% from last quarter

### About the Solar Energy Stock Index

Similar to the S&P 500 Index, the Solar Stock Index<sup>(1)</sup> is a market cap weighted composite index. The index is prepared by first selecting a base period, in this case, Q1 2009, and totaling the market caps of the companies in each sector in this period. This period and total market cap is set to a base index, in this

case, 1000. Next, for each sector, the current period's total market cap is calculated, divided by the base period's total market cap and then multiplied by the base index (1000). The result is the index value used for plotting in the graph on the following page.

### Solar Energy Index Outperforms S&P in Q4 2017

#### Winner's Circle

		Sector
Daqo New Energy Corp.	105%	W
SolarEdge Technologies, Inc.	32%	S
First Solar, Inc.	47%	I
China Singyes Solar Technologies	30%	D

#### Worst Performers

		Sector
Sino-American Silicon Products	21%	W
Neo Solar Power Corporation	(9%)	S
JinkoSolar Holding Co. Ltd.	(4%)	I
Azure Power Global Limited	(11%)	D

Based on quarter-over-quarter share price performance

#### EBITDA Margins

Wafers / Ingots	26%
Systems Components	7%
Vertically Integrated	8%
EPC Integrators / Developers	65%

#### 3 Year Revenue CAGR

Wafers / Ingots	5%
Systems Components	(2%)
Vertically Integrated	10%
EPC Integrators / Developers	48%

Source: Capital IQ as of December 31, 2017

Note: Average for each sector; CAGR stands for compound annual growth rate

#### Solar Energy Sector Guide

Wafers/Ingots Producers (W)

Systems Components (S)

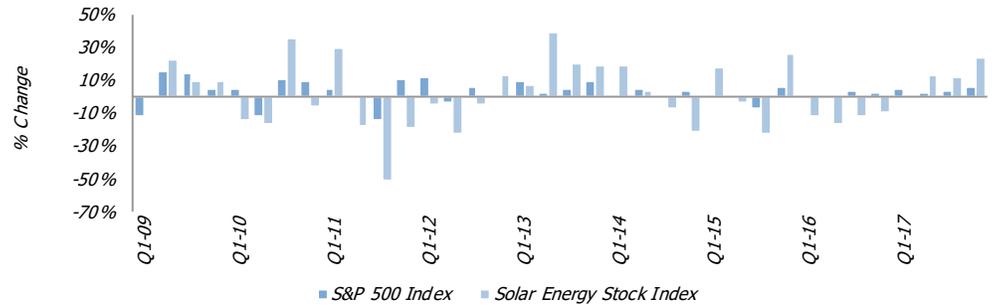
Vertically Integrated Companies (I)

Engineering, Procurement and Construction ("EPC") Integrators / Developers (D)

(1) As of Q4 2017, the Solar Stock Index was reevaluated to depict a more accurate representation of the contemporary solar energy environment

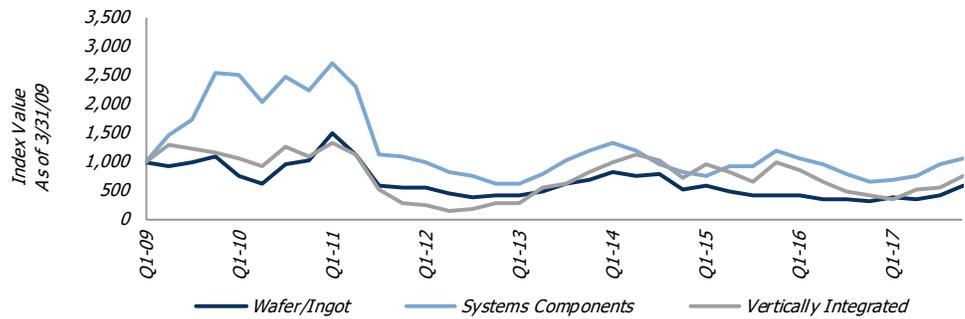
### S&P Index vs. Solar Energy Stock Index

Quarter / Quarter Change



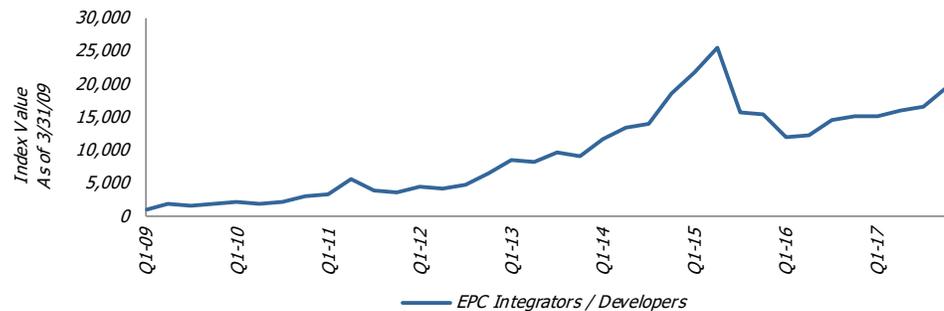
### Solar Energy Stock Index by Sector

Wafers / Ingots, Systems Components and Vertically Integrated



### Solar Energy Stock Index by Sector<sup>(1)</sup>

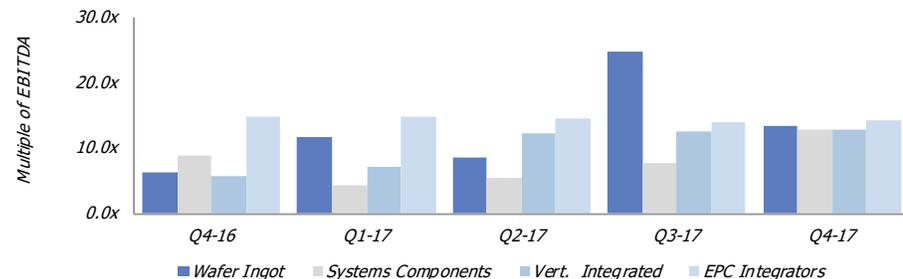
EPC Integrators / Developers



(1) EPC Integrator / Developers sector performance shown separately due to rapidly changing dynamics within this sector

### Enterprise Value<sup>(2)</sup> / EBITDA

Quarter / Quarter Change



(2) Enterprise Value is calculated as market cap as of the end of each quarter plus debt, preferred equity and minority interest less cash

## EMS Stock Index Data

Company	Exchange	Stock Price	LTM Sales (\$ in mm)	Diluted EPS	Current Ratio	EV/ EBITDA	EV/ Sales	Market Cap (\$ in mm)	Net Debt (\$ in mm)
<b>Wafers / Ingots</b>									
Daqo New Energy Corp.	New York	\$59.44	\$295	\$6.01	0.6	6.0x	2.7x	\$625	\$176
GCL-Poly Energy Holdings Ltd.	Hong Kong	0.18	3,098	0.01	0.8	8.7x	3.0x	3,331	5,633
REC Silicon	Oslo	0.17	275	(0.07)	0.8	NM	1.9x	429	100
Sino-American Silicon Products Inc.	Taiwan	2.57	1,751	(0.02)	1.5	NM	1.3x	1,478	201
Average Wafers / Ingots			\$1,355		0.9	7.4x	2.2x	\$1,466	\$1,527
<b>Systems Components</b>									
Gintech Energy Corporation	Taiwan	\$0.60	\$441.68	\$(0.10)	2.8	27.9	0.6x	\$313	\$(61)
JA Solar Holdings Co., Ltd.	New York	7.46	524	(0.11)	2.5	NM	1.8x	350	616
Motech Industries, Inc.	Taiwan	0.76	736	(0.20)	1.1	NM	0.7x	408	75
Neo Solar Power Corporation	Taiwan	0.46	329	(0.23)	1.1	NM	2.6x	472	349
SMA Solar Technology AG	Frankfurt	43.22	981	0.60	2.4	11.2	1.0x	1,500	(518)
SolarEdge Technologies, Inc.	New York	37.55	519	1.40	4.6	18.6	2.7x	1,615	(231)
Average Systems Components			\$589		2.4	12.9x	1.6x	\$776	\$38
<b>Vertically Integrated</b>									
Canadian Solar Inc.	New York	\$16.86	\$2,950	\$0.36	1.0	16.3x	1.0x	\$978	\$1,970
First Solar, Inc.	New York	67.52	2,980	(4.09)	6.9	8.4x	1.6x	7,051	(2,264)
JinkoSolar Holding Co., Ltd.	New York	24.05	3,794	5.26	1.0	14.0x	0.7x	783	1,830
SunPower Corporation	New York	8.43	2,239	(4.01)	1.4	NM	1.5x	1,177	1,844
Average Vertically Integrated			\$2,991		2.6	12.9x	1.2x	\$2,487	\$845
<b>EPC Integrators / Developers</b>									
8point3 Energy Partners LP	New York	\$15.21	\$69	\$0.17	3.3	19.0x	25.2x	\$427	\$701
Azure Power Global Limited	New York	14.20	91	(1.09)	3.4	14.3x	10.2x	369	540
BCPG Public Company Limited	Bangkok	0.73	100	0.02	2.0	21.2x	19.2x	1,455	454
Capital Stage AG	Frankfurt	7.70	253	0.31	2.0	14.0x	10.2x	987	1,550
China Singyes Solar Technologies	Hong Kong	0.43	800	0.04	1.6	7.7x	1.1x	362	523
Scatec Solar ASA	Oslo	6.11	141	0.53	2.4	10.7x	8.2x	630	487
SPCG Public Company Limited	Bangkok	0.67	166	0.08	1.2	8.3x	6.0x	621	325
Sunrun Inc.	New York	5.90	504	0.88	0.7	NM	4.4x	633	1,064
TerraForm Power, Inc.	New York	11.96	610	(1.54)	0.8	17.6x	10.6x	1,773	3,119
Average EPC Integrators / Developers			\$304		1.9	14.1x	10.6x	\$806	\$974
Average Solar Energy Index			\$1,309		2.0	13.4x	3.9x	\$1,109	\$846

Source: Capital IQ as of December 31, 2017; stock price adjusted for dividends and splits

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