

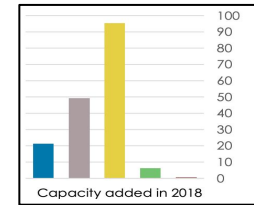
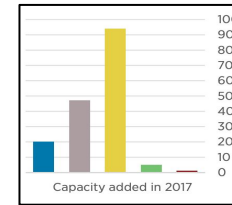
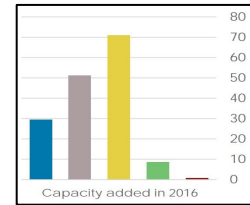
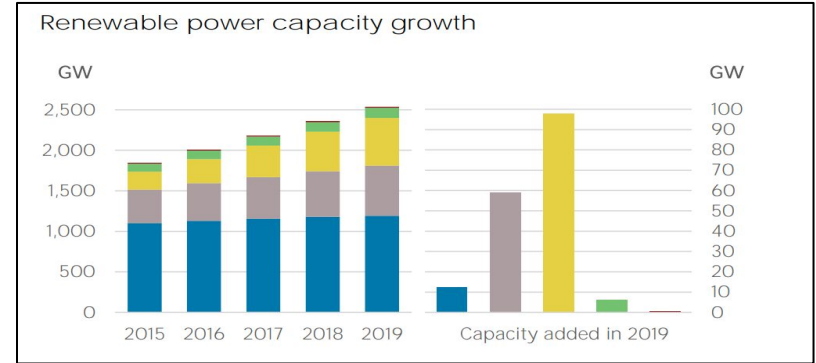
First Solar (FSLR)

Current Share Price: \$78.89

Recommendation: Buy

Industry Overview

- 7.4% growth in renewable capacity during 2019
- Cost of utility-scale solar energy <\$0.10/kWh vs. fossil fuels cost \$0.05-\$0.17/kWh
- While hydro and wind energy are cost-comparable...
 - Hydro creates geopolitical issues, harms water quality, is limited by resources
 - Wind is noisy, has large installation costs



■ Hydropower ■ Wind ■ Solar ■ Bioenergy ■ Geothermal

Industry Overview

2019 vs. 2023E Levelized Cost of Energy (China)

2019 LCOE (USD/kwh)

Solar-utility - 0.055

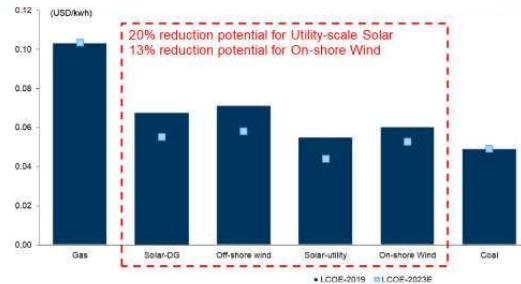
Coal - 0.049

2023E LCOE (USD/kwh)

Solar-utility - 0.044

Coal - 0.049

2019 LCOE	Gas	Solar-DG	Off-shore wind	Solar-utility	On-shore Wind	Coal	Nuclear	Hydro
Capex/W (Rmb)	3,000	4,200	12,000	3,900	1,200	3,900	18,500	8,000
Capex/W (USD)	738	818	1,765	874	1,066	915	2,206	1,176
Lifetime (Yrs)	20	20	20	20	20	30	30	30
Utilization hours	3,000	1,100	2,800	1,250	2,000	4,600	7,000	3,900
Equity financing %	25%	25%	25%	25%	25%	25%	25%	25%
Debt financing %	75%	75%	75%	75%	75%	75%	75%	75%
Equity required return	8%	8%	8%	8%	8%	8%	8%	8%
Debt required return	6%	6%	6%	6%	6%	6%	6%	6%
LCOE/(Rmb/kwh)	0.70	0.46	0.49	0.37	0.41	0.33	0.32	0.28
LCOE/(USD/kwh)	0.167	0.107	0.122	0.092	0.100	0.08	0.077	0.073
2023E LCOE	Gas	Solar-DG	Off-shore wind	Solar-utility	On-shore Wind	Coal	Nuclear	Hydro
Capex/W (Rmb)	3,000	3,700	11,600	3,250	7,150	3,900	18,500	8,000
Capex/W (USD)	738	844	1,618	478	1,051	915	2,206	1,176
Lifetime (Yrs)	20	20	20	20	20	30	30	30
Utilization hours	3,000	1,180	3,151	1,300	2,281	4,900	7,000	3,900
Equity financing %	25%	25%	25%	25%	25%	25%	25%	25%
Debt financing %	75%	75%	75%	75%	75%	75%	75%	75%
Equity required return	8%	8%	8%	8%	8%	8%	8%	8%
Debt required return	6%	6%	6%	6%	6%	6%	6%	6%
LCOE/(Rmb/kwh)	0.70	0.37	0.39	0.30	0.35	0.33	0.32	0.28
LCOE/(USD/kwh)	0.160	0.088	0.088	0.074	0.083	0.08	0.08	0.078

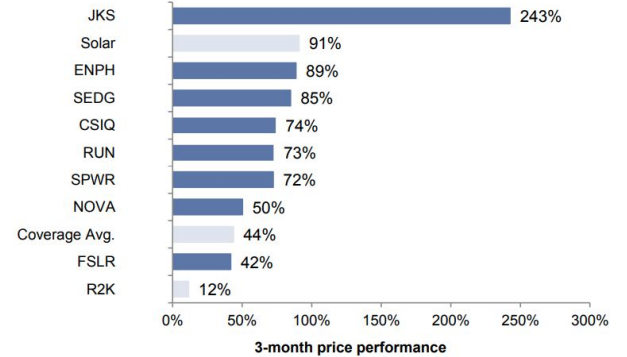


Graphic

LCOE-2019 (dark blue bars)

LCOE-2023E (light blue squares)

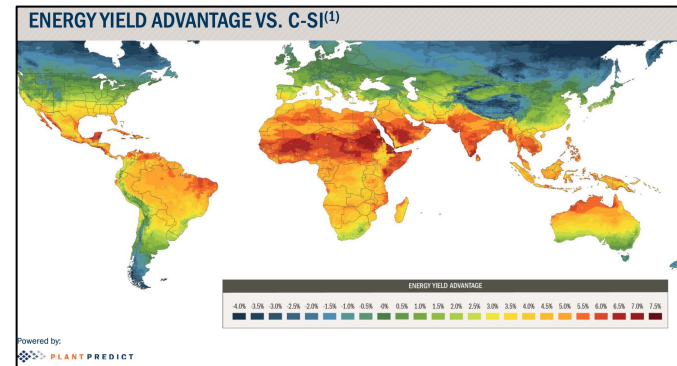
Stock performance over the past three months, prices as of 10/14/20



Solar Module Type Comparison

Technology	Units	Single crystalline silicon (sc-Si)	Polycrystalline silicon (pc-Si)	Cadmium Telluride solar cells (CdTe)
Best research solar cell efficiency at AM1.5*	%	24.7		16.5
Confirmed solar cell efficiency at AM1.5	%	20-24	14-18	8-10
Commercial PV Module efficiency at AM1.5	%	15-19	13-15	8-11
Confirmed maximum PV Module efficiency	%	23	16	11.2
Current PV module cost	USD/W	< 1.4	< 1.4	- 0.9
Market share in 2009	%	83	3	
Market share in 2010	%	87	2	
Maximum PV module output power	W		320	120
PV module size	m ²	2.0	1.4-2.5	0.72
Area needed per kW	m ²	7	8	11
State of commercialisation		Mature with large-scale production	Mature with large-scale production	Early deployment phase, small-scale production

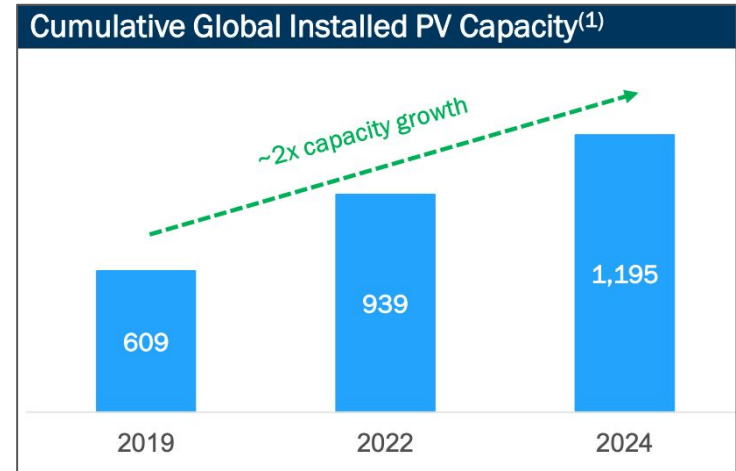
- First Solar's CdTe thin film modules deliver up to 8% more usable energy per watt than crystalline silicon
- superior temperature coefficient
- superior spectral response in humid environments



Company Overview

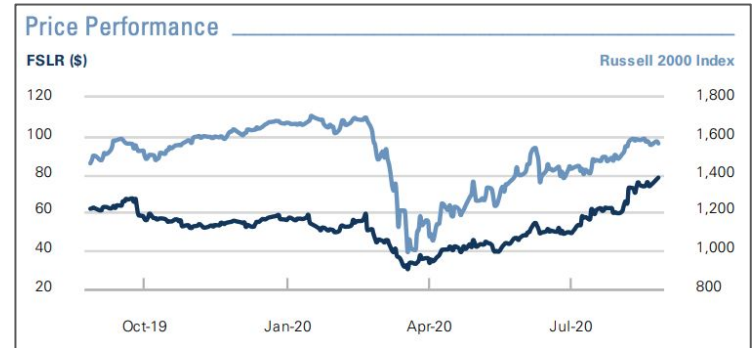


- Only alternative to C-Si solar panels in top 10 solar module manufacturers globally
- Manufacturing footprint in the US, Vietnam and Malaysia
- Direct module sales presence in the all 6 continents
- Series 4 → Series 6
 - 10/14: EPEAT silver rating
 - Sustainability benefits verified by Green Electrics Council
 - World record for CdTe cell efficiency at 18.7%
- Markus Gloeckler appointed Co-Chief Technology Officer, many others (CMOO Mike Koralewski, CEMO Kuntal Verma, CQRO Pat Buehler) to join executive leadership team following COO Tymen deJong's retirement (April 2021)



Past/Present Performance

- Main focus: continued development of Series 6 Module
- Strong Past Quarter
 - revenues grew 10%/20% yoy/qoq
 - Module margins showed qoq improvement as it reached 21% in 2Q20 vs. 17% in 1Q20
- Manufacturing: capacity utilization was over 100% from May-July

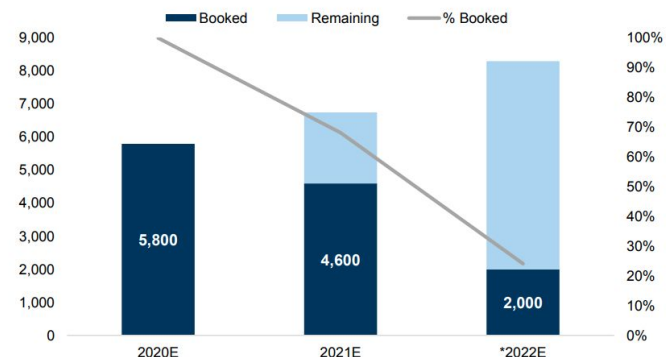


Investment Thesis/Future Predictions

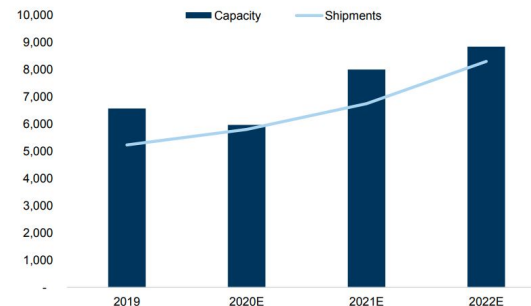
1. Unprecedented volume visibility

- 12GW of bookings scheduled to ship through 2022
- 100% sold out in 2020, 70% sold out in 2021 (projected), 2GW of bookings extending into 2022 (projected)
- Peers JKS and CSIQ noted in recent conference calls that they are ~55%/~75% booked in 2020

FSLR bookings vs. GS forecasted sales, 2020E-2022E, MW



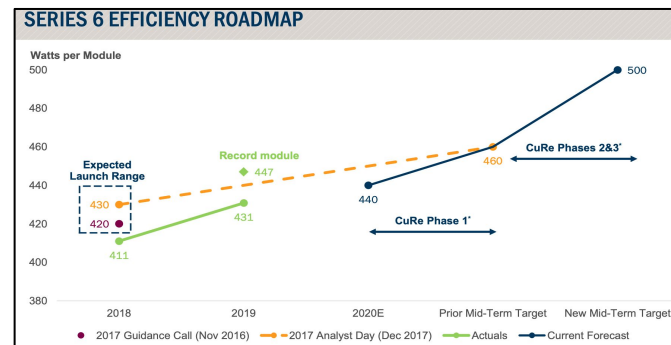
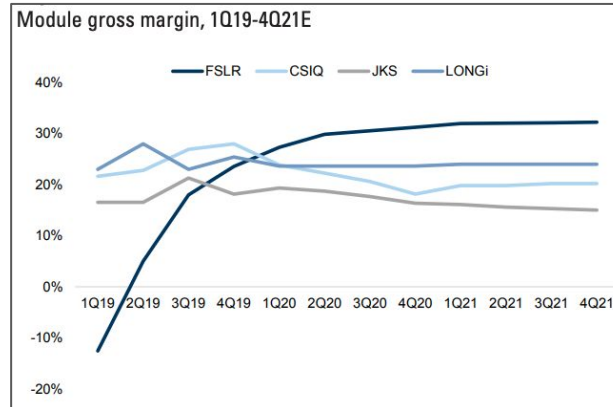
FSLR capacity and shipments, 2019-2022E, MW



Investment Thesis

2. Gross Margin Expansion Potential

- Gross margin for Series 6 is well into the mid-20%'s at this point, path toward 30% gross margin
- 4Q19 call: long term target of reducing Series 6 cost per watt by 40% over Series 4 levels
 - R&D efforts driving up watts per module from 440W → 500W

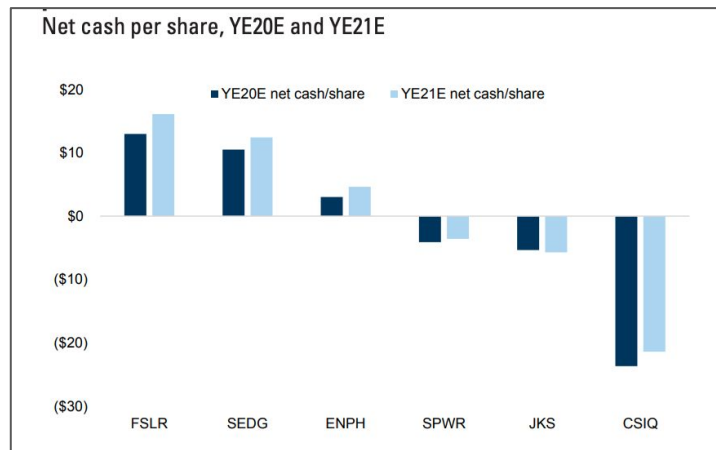
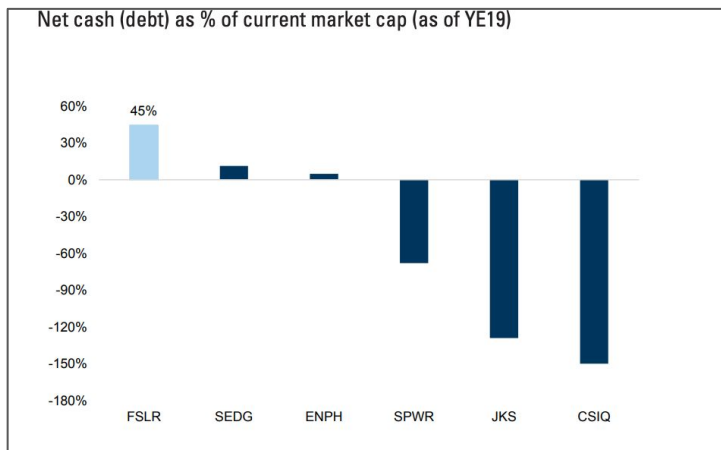


500W/mod = 20.8% cell eff.

Investment Thesis

3. Strong balance sheet (cash)

- In a position to absorb an extended period of economic downturn
- Cash position represents ~45% of its current market cap
- Net cash/share of ~\$13/~\$16 for 20/21 vs. avg of ~(\$2)/~(\$4) across peers (projected)



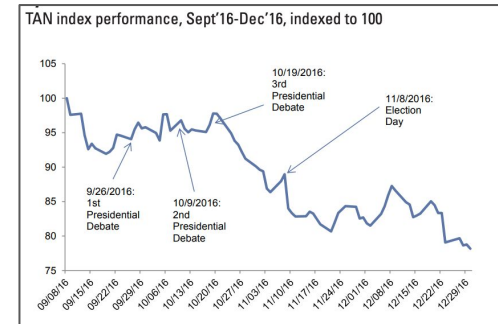
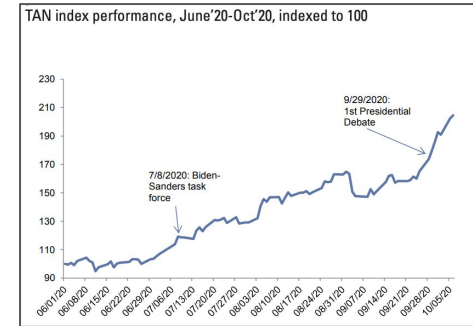
Catalysts/Risk Factors

2020 Presidential Election

- Trump administration approved tariffs on imported solar panels and components and increased them Oct. 13
- Biden Sanders Task Force: target 500mn solar panels in next 5 yrs -> 30GW/year (comp. to historical peak of 15GW and 2020 projections of ~14GW)

COVID-19

- Geographical diversity of its sites → organic resilience against severe supply-related COVID-19 impacts



Summary/Recommendation

- Recommendation: Buy (Target Price: ~\$99, Investment Horizon: 3 years)
- Summary
 - Renewable energy industry demonstrates consistent growth, solar is leading energy form
 - Various solar panel types carry unique sets of advs. and disadvs.
 - First Solar overcomes disadvs. associated w/ CdTe thin-film technology
 - Investment Thesis: volume visibility, margin expansion potential, balance sheet strength
 - CCA shows attractive valuation
 - Risks/Catalysts: upcoming election, COVID-19