

First Solar, Inc.

A tale of price shifts amidst trade challenges: why we reiterate Buy.

Reiterate Rating: BUY | PO: 179.00 USD | Price: 145.46 USD

We hold our Buy as we reflect the latest solar panel prints

We see risk of an oversupplied Chinese solar market flooding the US market leading to price pressure for US-oriented solar manufacturer FirstSolar (FSLR) and peers. Recent datapoints suggest mid-20¢/watt have already transacted within the US (well below recent prices around \$0.30¢/W), signifying that a deluge of Chinese module imports continue to enter the US markets – even after accounting for the 10% IRA domestic content adder, shipping, and Section 201 tariffs. FSLR has reached a module backlog of >80GW and sold all its allocated US capacity through 2026. While these orders give near-term support, there is a risk of sustainability going forward and that it pays developers to switch to source cheaper product. The key upside ignored by many remains the use of cash (\$15 bn cash on balance sheet by 2030) and progress on ‘tandem panel’ technology development: mgmt. has been more outspoken in recent months in driving resolution. Muted 4Q results risk from delays given what appears to be an over-commitment on panels, derisking sector-wide concerns of pushout anew. Reit. Buy as we see continued attractiveness implied by an 26% potential return coupled with the amassing cash on FSLR’s balance sheet.

Watching trade policy is absolutely essential here

Critically investors underestimate the trade ‘upside’ case still. Bigger questions on ‘24 import demand from the US are the broadening of UFLPA enforcement to new players and whether there is strict enforcement on non-Chinese polysilicon. The risk of a return to AD/CVD or 201 tariffs remains elevated and newfound threats of 60% tariffs on Chinese goods under any prospective Republican Administration will keep the US demand (& premium intact) for some time.

Prices down, but credits are the real story

Investors fail to appreciate just how much of the value is derived from 45x manufacturing tax credits, which at \$84/share roughly represents half of the value embedded within our updated PO and more than half of the value implied in the current stock price. FSLR still has an attractive embedded upside potential even at our new very modest 3.6x EBITDA on core (ex-credits) 2026, a 0.5x premium to Chinese peers. We reduce our core EBITDA estimates modestly from 2027 onward and cut our PO to \$179 from \$272 previously. This sharp pivot reflects not just a roll to 2026 valuation but a cut to forward estimates as we flow through import related ASP deflation. See 4Q results as potentially positive vs Street on sustained elevated ASPs albeit on lower volumes.

Estimates (Dec) (US\$)	2021A	2022A	2023E	2024E	2025E
EPS	3.28	(0.43)	8.04	13.20	21.79
GAAP EPS	9.74	(0.34)	8.04	13.09	21.63
EPS Change (YoY)	-13.2%	NM	NM	64.2%	65.1%
Consensus EPS (Bloomberg)			7.70	13.12	20.46
DPS	0	0	0	0	0
Valuation (Dec)					
P/E	43.0x	NM	17.6x	10.7x	6.5x
GAAP P/E	14.5x	NM	17.6x	10.8x	6.5x
EV / EBITDA*	18.8x	65.6x	13.7x	8.5x	5.2x
Free Cash Flow Yield*	-2.0%	-0.2%	-7.9%	-1.8%	-0.3%

* For full definitions of *IQmethod*SM measures, see page 17.

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12656988

Timestamp: 08 February 2024 06:35AM EST

08 February 2024

Equity

Key Changes

(US\$)	Previous	Current
Price Obj.	272.00	179.00

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Stock Data

Price	145.46 USD
Price Objective	179.00 USD
Date Established	8-Feb-2024
Investment Opinion	C-1-9
52-Week Range	129.22 USD - 232.00 USD
Mkt Val (mn) / Shares Out (mn)	15,464 USD / 106.3
Free Float	94.4%
Average Daily Value (mn)	258.86 USD
BofA Ticker / Exchange	FSLR / NAS
Bloomberg / Reuters	FSLR US / FSLR.QQ
ROE (2023E)	13.8%
Net Dbt to Eqty (Dec-2022A)	-22.2%
ESGMeter TM	High

ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company. For full details, refer to "BofA ESGMeter Methodology".

IRA: Inflation Reduction Act

ASP: Average selling price

UFLPA: Uyghur Forced Labor Prevention Act

iQprofileSM First Solar, Inc.

iQmethodSM – Bus Performance*

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Return on Capital Employed	7.6%	0%	10.7%	14.4%	19.9%
Return on Equity	6.1%	-0.8%	13.8%	19.2%	25.3%
Operating Margin	20.1%	-10.7%	4.5%	9.2%	16.5%
Free Cash Flow	(303)	(30)	(1,192)	(263)	(51)

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Cash Realization Ratio	0.7x	NM	0.5x	1.0x	0.8x
Asset Replacement Ratio	2.1x	3.4x	5.5x	4.0x	3.2x
Tax Rate	18.1%	632.9%	6.9%	6.9%	8.6%
Net Debt-to-Equity Ratio	-20.4%	-22.2%	-12.2%	-15.6%	-21.6%
Interest Cover	44.8x	-2.2x	NM	NM	NM

Income Statement Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Sales	2,923	2,619	3,430	4,385	5,670
% Change	7.8%	-10.4%	31.0%	27.8%	29.3%
Gross Profit	730	70	615	869	1,411
% Change	7.2%	-90.5%	784.4%	41.1%	62.5%
EBITDA	847	242	1,161	1,863	3,039
% Change	53.8%	-71.4%	379.4%	60.4%	63.1%
Net Interest & Other Income	(15)	36	71	83	82
Net Income (Adjusted)	351	(46)	863	1,419	2,342
% Change	-13.0%	NM	NM	64.4%	65.1%

Free Cash Flow Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Net Income from Cont Operations (GAAP)	1,041	(36)	863	1,408	2,325
Depreciation & Amortization	260	270	305	435	577
Change in Working Capital	(337)	999	187	685	447
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	(726)	(359)	(880)	(1,040)	(1,550)
Capital Expenditure	(540)	(904)	(1,666)	(1,750)	(1,850)
Free Cash Flow	-303	-30	-1,192	-263	-51
% Change	20.2%	90.0%	NM	78.0%	80.7%
Share / Issue Repurchase	0	0	0	0	0
Cost of Dividends Paid	0	0	0	0	0
Change in Debt	57	321	307	(400)	0

Balance Sheet Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Cash & Equivalents	1,456	1,481	1,312	1,363	2,354
Trade Receivables	455	355	766	788	788
Other Current Assets	1,281	1,955	2,300	2,438	2,963
Property, Plant & Equipment	2,650	3,537	4,613	5,928	7,201
Other Non-Current Assets	1,573	923	1,104	1,104	1,104
Total Assets	7,414	8,251	10,094	11,621	14,410
Short-Term Debt	4	0	35	35	1
Other Current Liabilities	723	1,038	1,222	1,429	1,476
Long-Term Debt	236	184	464	64	98
Other Non-Current Liabilities	491	1,193	1,690	1,990	2,390
Total Liabilities	1,454	2,415	3,411	3,518	3,965
Total Equity	5,960	5,836	6,683	8,102	10,445
Total Equity & Liabilities	7,414	8,251	10,094	11,621	14,410

* For full definitions of iQmethodSM measures, see page 17.

Company Sector

Alternative Energy

Company Description

First Solar is the largest vertically integrated solar manufacturer in the United States. The company uses a specialized cadmium telluride (thin film) based panel, which is different from most other panels which are silicon based. First Solar engages in manufacturing and has planned 6 gigawatts of capacity by 2020, with revenues increasingly coming from module sales. FSLR also develops/sells downstream solar projects and has created some of the largest solar installations in the country.

Investment Rationale

We rate First Solar (FSLR) Buy given the above-average, de-risked earnings growth trajectory and significant cash build projected for later in the decade. FSLR's leading US solar manufacturing footprint supports its status as greatest beneficiary of IRA. With billions in cash flow expected to accrue to FSLR through 2030+, we see strong ability for FSLR to diversify and maintain its US competitive advantage.

Stock Data

Average Daily Volume 1,779,573

Quarterly Earnings Estimates

	2022	2023
Q1	-0.42A	0.40A
Q2	0.52A	1.59A
Q3	-0.46A	2.50E
Q4	-0.07A	3.54E

Pricing continues to trend lower...

We see FSLR as recently under pressure as a function of lower price points on utility-scale panels. Yes, we agree with outsized backlog through the next 3-year period (and beyond), but the question remains what they are competing with 3-years out - and just if their prices could be undermined still by lower priced product particularly for FSLR's SE Asia imported product (not qualifying for additional 10% adder). Pricing expectations are increasingly at the core of the debate for many investors, but having reflected the latest backdrop through our own assumptions our concerns are assuaged on the margin. Between the contracted backlog and credits, we see sizable derisking of estimates.

In a nutshell pricing is under pressure from the threat of Chinese Poly-Si

China is simply building a massive amount of manufacturing capacity that could see muted utilization (see [Solar Glow #5: Selective in the race to the bottom](#)). As a result, US utility scale module pricing continues to trend yet lower to the mid-20c/W range and we perceive distributed markets to be (well) below 20c/W on spot liquidations even in the US. This drop in pricing has materialized just in 4Q as initial shipments into the US from Chinese Poly have dampened expectations for a sustained meaningful premium (watch Astronergy, but also other names in the space whose pending imports are key to proving out this premium).

Suppliers & Inventories: yes, that's a pressure point.

This sharp decline can *also* be pinned on 1) suppliers struggling to get rid of modules before new tariff rules come in; 2) easing inventory with delays & new supply in SE Asia actually enabling a newfound confidence on volumes. In fact, globally, the oversupply situation has escalated, with reports of spot module prices outside of the US as low as \$0.113c/W in mid-January (down -7% from the then record-low module price). Tariffs and other trade-barriers matter a lot to keep the US well above global prices.

So what pricing are we reflecting in our estimates?

Based on our conversations with First Solar management, we estimate First Solar's TTM ASPs in Q4 was at least \$0.31. This assumes a market average price of modules of \$0.25c/W adjusted for the \$0.065c domestic adder (at 10%, this equates to 13c, where they retain half the value). We argue that this is backward looking and counterintuitive to the trends we're see globally. The question then becomes what the impact to future contracts that are booked out are what remaining levers there are to pull as the domestic contents bonus that has benefitted FSLR, gets competed away.

Exhibit 1: ASP Pricing Assumptions and Impact to EBITDA: our latest baseline expectations for ASPs in the future....

ASP declines in earnest after 2026; steady deterioration thereafter in core EBITDA

Pricing Assumptions	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
ASP											
Module	0.289	0.282	0.30	0.30	0.29	0.24	0.23	0.24	0.24	0.23	0.23
YoY %	6.1%	-2.5%	4.9%	7.8%	-4.1%	-15.8%	-4.2%	3.8%	-1.8%	-1.8%	-1.8%
QoQ %											
(1) Baseline ASP for ex-India	0.27	0.27	0.29	0.31	0.30	0.25	0.24	0.23	0.22	0.22	0.21
YoY %	-3.0%	-1.0%	6%	8.0%	-3.0%	-3.0%	-3.0%	-3.0%	-3.0%	-3.0%	-3.0%
SE ASIA					22,100	22,100	22,100	22,100	22,100	22,100	22,100
Domestically Made					34%	34%	34%	34%	34%	34%	34%
Market Price for China Equiv P-Type		0.25	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.21
Deflation Factor in Market Price			-2%	-2%	-2%	-2%	-2%	-2%	-2%	-2%	-2%
Price Discount vs Chinese Equivalent					-10%	-10%	-10%	-10%	-10%	-10%	-10%
FSLR Equiv Price for Non-Domestic					0.21	0.21	0.20	0.20	0.20	0.19	0.19
Domestically Made 'Adder' for ITC					0.06	0.06	0.05	0.04	0.04	0.04	0.04
Equivalent US Panel Price for FSLR					0.27	0.27	0.25	0.24	0.24	0.23	0.23



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Pricing Assumptions	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
ASP					0.25	0.25	0.24	0.23	0.22	0.22	0.21
EBITDA - inc IRA	1,161.1	1,863.0	3,039.4	4,097.0	4,457.7	4,071.3	3,929.8	3,536.4	2,878.4	2,279.8	1,629.1
Consensus - EBITDA - Visible Alpha	1,138	1,943	2,942	3,989	4,282	4,337	4,334	3,845	2,132	1,856	-
Core EBITDA - exc IRA (Year-over-year)	461.0	823.4	1,489.5	2,050.9	2,138.8	1,744.1	1,602.7	1,791.0	1,714.8	1,698.0	1,629.1
					4%	-18%	-8%	12%	-4%	-1%	-4%

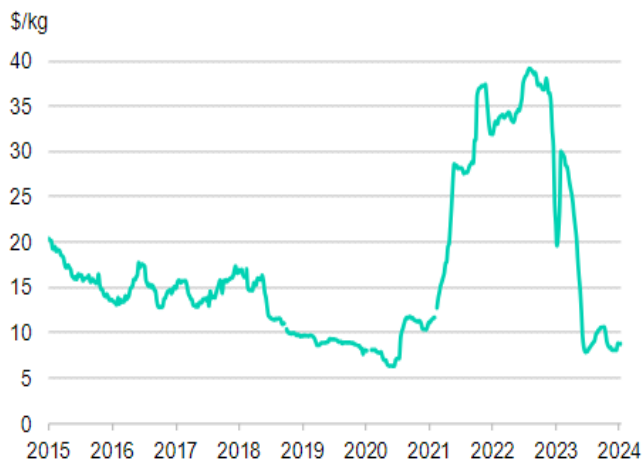
Source: BofA Global Research estimates, Company filings, Bloomberg, Visible Alpha

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We appreciate that investors are worried anew about just where incremental ASP for backlog will be booked this quarter? We stress with such low expectations on volumetric additions, we're not overly worried. Rather than seeing today's low spot prices as being some headline grabbing disappointment, we see the latest drop in prices as likely only affirming the trend identified on 3Q, where muted new backlog will be added. With the outlook thru '26 locked in and sizable ambiguity on just where US policy will be in '27+ we wouldn't expect much to be booked. To the extent there are additions this quarter, we still expect incremental ASP to be at 30c/W+ largely derived from its US plants rather than Southeast Asia. Rather, the more relevant question will be the progression of ASP thru '24 as new bookings are added in light of the deflationary backdrop on panels and the risk that Chinese poly, will at least be partially available in some scale for utility-scale deployments. Look for commentary overtime on how to accelerate technology roadmap for its Southeast Asian manufactured product in this pricing environment.

Exhibit 2: Price of solar-grade polysilicon have collapsed

Spot price of solar-grade polysilicon (to the end of the week of January 22, 2024)

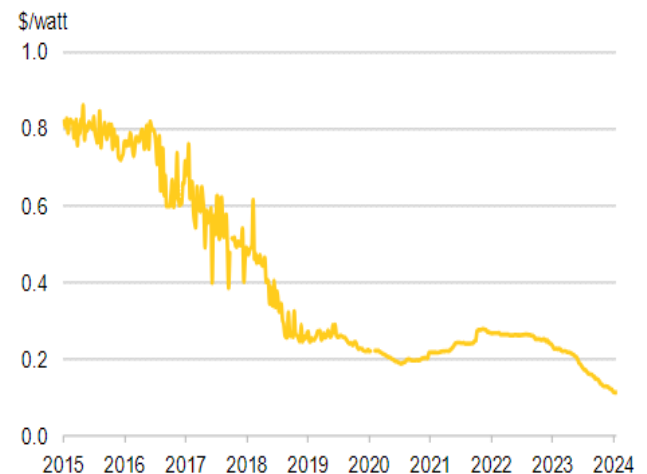


Source: BloombergNEF PV spot price index. Note: Dates represent the first day of the week for which the price has been averaged.

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Exhibit 3: Prices of crystalline silicon modules trading at record lows

Spot price of crystalline silicon modules (to the end of the week of January 22, 2024)



Source: BloombergNEF PV spot price index. Note: Dates represent the first day of the week for which the price has been averaged.

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Growing inventory adds to pricing pressure

Supplier diversification and releases of module detentions from CBP have resulted in notable increases in solar module imports in 2023. As inventory channels have cleared, installations have ramped up, with average quarterly volumes in Q1-Q3 nearly double that of 2022.

Eventually there will be new domestic content-qualifying panels.. but that is still a few years out where cell is made here.

BNEF estimates that roughly 30GW of new US module assembly capacity will come online this year – this module capacity doesn't concern us. FSLR product will still be just about the only product available that can qualify for the full 10% ITC adder for domestic contents. The bigger debate will be in ~2025 and really ~2026 where a domestically made Silicon panel from various manufacturers will ramp, likely qualifying for the 10% ITC adder as best we can tell. The key value attribute for margins on panels is likely attributable today to FSLR's ability to retain the 'majority' of this 10% adder value (we estimate ~2/3rds). As new cell ramps we're likely to see this premium eroded on new backlog. This, in addition to lower overall prices is what we've reflected in our new set of moderating assumptions.

What does this mean for the backlog?

On the 3Q earnings call, management reiterated that customers are willing to commit to a supply agreement because they value the security. But getting to 2027-2029 is testing that behavior where they are seeing a slowing of bookings: mgmt. was clear in setting expectations. According to our channel checks, some of First Solar's largest customers have suggested that they are specifically delaying orders and investing in warehouse space in an environment where they are challenged with permitting constraints, interconnection issues and module pricing uncertainty.

While we have not seen evidence of this as yet, there is a risk that the pricing differential could entice customers to consider a switch to cheaper manufactures as US utility scale module pricing on average continues to trend yet lower to the mid-20c/W range. We are specifically focused on FSLR's roughly ~1/3rd capacity tied to Southeast Asia. We anticipate growing focus on how these panels remain competitive through the medium term and would expect this to be the geography with the fastest pivot towards novel technologies in order to ensure it remains competitive (eg: implementation of the 'tandem' or 'two-layered' panel technology).

If we assume customers pay 10-30% deposit rate (over the first three years to First Solar, the price to switch to an alternate manufacturer would need be less than First Solar's ~\$0.29/W pricing to at least \$23c/W (cost of manufacturing) on our analysis. Bear in mid the 29c/W already included the 10% domestic adder. \$0.23c/W is roughly equivalent to prevailing market price and there is no margin left at this point, making this an unviable option. In addition, if the IRA is repealed, either resulting in a 'shorter time window' to capture 45X credits, or nullifying them altogether, this would result the ultimate bear case scenario – unlikely in our view.

The bull case argument (we have verified) remains that buyers are willing to lock up capacity all the way out to 2028 and pay 10-15% more for that capacity vs reported prices today as they consider the potential for future trade related issues, look to preserve brand and reputation, and financing considerations. The ability to close financing in the last quarter on FSLR panels reflecting a full domestic contents adder is another key milestone of late. The opacity of the trade-related outlook today not only assures that customers will preserve their contracts despite fears that spot prices would suggest liquidation but also the future uncertainty on long-dated orders also enables a pricing and delivery premium.



...We think the real answer lies in technology upgrades

A large part of FSLR's cost competitiveness is based on their thin film semiconductor technology, module wattage (or conversion efficiency). An efficiency rate of 19.7% for their Series 7 module falls short of n-type TOPCon panels on the market offering 23-25% efficiency rates (Longi & JinkoSolar). This differential becomes important when considering increased installation capacity and overall savings on brackets, inverters, cables, land, and AC side equipment per watt. Ultimately, increased energy profile drives higher ASPs. We estimate these crystalline silicon panels also sell at a 20% premium (\$0.05c/W) to PERC. Recall, in 3Q earnings management, mentioned they have approx. 40.3GW of contracted volume with technology adjusters, which could potentially result in additional \$0.01 per watt, majority of which we recognize between 2025 and 2027.

At the FSLR's analyst day in September, management reiterated that they were committed to innovation and investing in CadTel bifacial modules and tandem devices. Testament to this, earlier last year, FSLR acquired Evolar AB, a European firm engaged in perovskite technology for \$38m. Evolar holds the current world record for CIGS research solar cells with an efficiency of 23.6%. We look for further evidence of execution (at scale). We anticipate further technology acquisitions to enable a tandem cell technology as critical to redesign and rethink its Southeast Asian capacity. We expect continued investment to support technological upgrades, assuming annual non-facility capex of \$1.2Bn from 2026 to 2032.

Uncertainty around UFPLA enforcement and tariffs

Bigger questions on '24 import demand from the US are the broadening of UFLPA enforcement to new players and whether CBP continues to enforce its hardline stance on non-Chinese polysilicon as a precursor for entry.

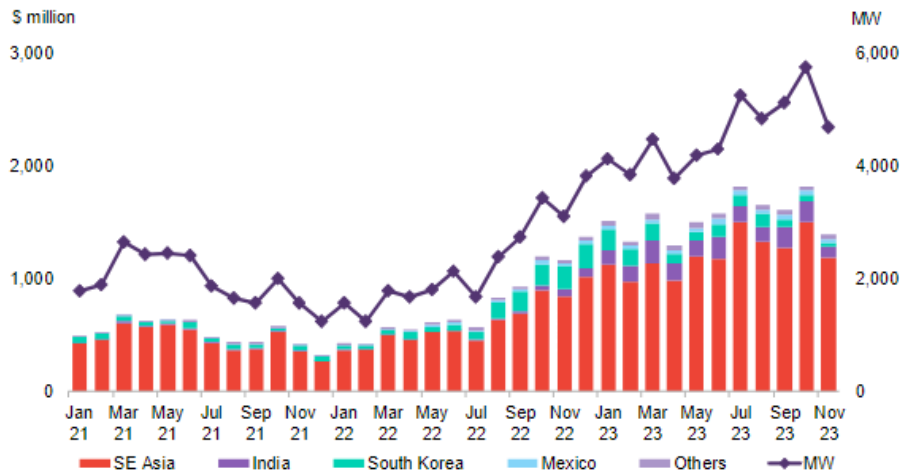
Recent channel checks indicate a rise in detained solar modules being released by Customs into the market, potentially easing the path for solar modules incorporating non-Xinjiang China polysilicon to enter the U.S. The question today remains just *how much volume* can be expected to clear – but we anticipate this to increasingly shift to just whether this will be the new policy?.

But it's not just downside; greater enforcement is a clear upside angle too.

Some of the developers we've recently spoken to mentioned that gray market products lacking qualification have found their way into the US market. To bypass trade barriers, some of the Chinese PV makers started exporting components to Southeast Asia (SEA) before shipping final products to the US. We note Indian products are being sold into the US in the ~28c/W context. This is a relatively dramatic decline from what was the mid-30c/W context just a year ago. The risk is whether Indian companies will be subject to UFPLA enforcement and whether the US government further tightens SEA PV cell/module imports containing components from China. Ultimately, this scenario may bode well for FSLR as more stringent regulations would put upward pressure on prices as Chinese companies are forced to buy non-Chinese inputs (Non-Chinese polysilicon \$40/kg, assuming 3-4x more than expensive). This would support modules prices returning to north of \$0.30c.

Exhibit 4: US imports from SEA (and India) are trending higher

US imports of PV modules, by month and origin



Source: BloombergNEF, US International Trade Commission Data Web.

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Another risk: (AD/CVD) tariffs on solar imports

As the June expiration of the waiver on AD/CVD duties for Southeast Asian solar products with Chinese wafers approaches, the U.S. solar market faces uncertainty. If Auxin's legal challenge prevails, retroactive tariffs on imported modules could lead to significant costs and prolonged uncertainties. The industry also grapples with strategies to bypass AD/CVD duties, including manufacturing in Southeast Asia with non-Chinese wafers or producing modules in a third country using Southeast Asian cells with Chinese wafers. That being said, Trump confirmed that he would impose tariffs of 60% or higher on Chinese goods were he to win a second term in office, which could change these production (and pricing) dynamics.

Near-term estimates unchanged; far-dated ASPs a concern

We have updated our model to reflect the potential longer-term impact of pricing pressure to FSLR's operating model. Our estimates from 2023E to 2026E remain essentially unchanged. We treat module pricing and contracted margins through 2026 to be essentially "locked-in", therefore viewing estimates over the next three years to be largely de-risked. Although there are modest deviations between our estimates and consensus from year to year, our revenue and EBITDA (including IRA) estimates through 2026 are within plus or minus 3% of consensus. Since our last update after 3Q23 earnings ([note attached here](#)), consensus estimates remain largely unchanged.

Exhibit 5: FSLR Estimate Updates

No change to 2023-2026 estimates; ASP deterioration begins 2027 and onward

FSLR Estimates	2021A	2022A	2023E	2024E	2025E	2026E
Revenue	2,923	2,619	3,430	4,385	5,670	6,743
Previous Revenue	2,923	2,619	3,430	4,385	5,670	6,743
Consensus Revenue	2,923.4	2,619.3	3,474.8	4,539.1	5,633.7	6,710.8
Guidance (GAAP)	2,850-3,000	2,600-2,700	3,400-3,600			
Module Gross Margin (%) (exc. PTC)	20%	4%	18%	20%	25%	27%
Consensus GM% (Inc. PTC)	20%	6%	24%	31%	36%	39%
Guidance (Credit Upside)			14-19%	20-22%	25-27%	28-30%
EBITDA (inc. IRA)	847	242	1,161	1,863	3,039	4,097
Previous EBITDA (inc. IRA)	847	242	1,161	1,863	3,012	3,999
Core EBITDA	847	242	461	823	1,490	2,051
Previous Core EBITDA	847	242	461	823	1,462	1,953
Consensus EBITDA - inc. IRA	847	243	1,143	1,952	2,987	3,933
IRA 45X Production Tax Credits			714	993	1,684	1,954
EPS	3.28	(0.43)	8.04	13.20	21.79	29.74
Tax Credit EPS			6.54	9.53	14.21	18.77
% Tax Credit EPS			81%	72%	65%	63%
Previous EPS	3.28	(0.43)	8.04	13.20	21.79	29.74
Consensus EPS		(0.41)	7.65	13.36	20.81	29.69
% Change to BofA Estimate	0%	0%	0%	0%	0%	0%
Guidance (GAAP)	4.05-4.75	(0.65) - (0.35)	7.2-8			

Source: BofA Global Research, Company filings, Bloomberg, Visible Alpha

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In Exhibit 1 we demonstrate our assumptions for ASP following the roll-off of contracted performance from 2023 to 2026. Using a starting point of 25c/W in 2024, we step down market price -2% each year to account for pricing deflation over time. However, this impact does not materialize until 2027 given our assumption for contracted backlog conversion through 2026. We determine First Solar's equivalent price for non-domestic modules to represent a 10% price discount relative to their Chinese counterparts, resulting in a pre-domestic adder price of 21c/W in 2027 that steps down to 19c/W in 2033. For the 66% of domestically made modules, we adjust upward for the ITC adder that steps down to 4c/W in 2033. Altogether, this results in a blended baseline ASP for ex-India modules of 30c/W in 2027 that steps down to 23c/W by 2030 and 21c/W by 2033. As a result, we estimate core EBITDA excluding the IRA benefit declines steadily from a peak of \$2.1Bn in 2026 down to \$1.5Bn in 2033, or approximately -5% annual deterioration following 2028.

We stress a clear downside bias to these assumptions should others prove successful in importing sizable quantities of Chinese Poly-Silicon derived panels into the US: this is the singular most important debate in the sector to watch on pricing still. Expect some resolution ahead within weeks from CBP and as such reinvigorated volatility ahead for shares of FSLR.

Valuation: PO to \$179 vs \$272 prior

We have reduced our PO to \$179, reflecting a significant reduction in the EV/EBITDA multiple applied to FSLR's 2026 EBITDA. We now apply a peer-based EV/EBITDA multiple of 3.6x to FSLR's core EV/EBITDA versus our prior application of a 8.0x multiple, as sector EV/EBTIDA multiples have stabilized below our prior estimates. Our new valuation is more subject to MtM of Chinese and other international panel manufacturers against whom FSLR competes. Given our peaking core EBITDA in 2027, use of 2026 EBITDA projections to value FSLR supports a lower applied EV/EBITDA multiple than prior assessments, reflecting our expectation for progressively lower EBITDA associated with pricing deterioration in 2027 and from 2029 onward. However, we still assert FSLR should be valued at a slight premium to Chinese peers, which currently trade at a 3.1x EV/2026 EBITDA multiple. This reflects the fact that, as a domestic supplier, FSLR's access to the United States and other markets does not bear significant risk from heightened trade protectionism.



Exhibit 6: Peer Group EV/EBITDA Analysis

Peer multiples - but is FSLR really a great peer comp to Chinese solar stocks? Not exactly but it's the closest & and most conservative approach we've got (looking elsewhere would be sizably more bullish actually).

Upstream Panel Comps	Ticker	EV/EBITDA				
		2022	2023	2024	2025	2026
JinkoSolar	JKS	23.9x	5.6x	6.5x	5.6x	3.2x
Longi	601012	7.6x	7.2x	6.9x	5.4x	2.7x
Trina Solar	688599	12.7x	8.0x	7.2x	5.4x	4.0x
Tongwei	600438	3.1x	4.3x	6.0x	5.0x	2.5x
Risen Energy	300118	11.3x	7.9x	5.9x	4.9x	
JA Solar	2459	8.8x	5.5x	5.1x	4.2x	3.1x
Module Comps Average		11.2x	6.6x	6.3x	5.1x	3.1x
FirstSolar (BofA exc. IRA credit)	FSLR	57.3x	30.1x	16.8x	9.3x	6.8x
FirstSolar (BofA inc. IRA credit)	FSLR	57.3x	11.9x	7.4x	4.6x	3.4x
FirstSolar	FSLR	72.6x	12.1x	7.2x	4.7x	3.4x

Source: BofA Global Research, Company filings, Bloomberg

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While more than a 50% downward revision to our multiple appears harsh, our valuation attempts to account for significant downside implied by potentially deteriorating economics as a result of lost pricing power. Even with a heavy reduction to the multiple, we point to the continued attractiveness implied by an 26% potential return using our updated PO of \$179. Coupled with the amassing cash on FSLR's balance sheet (despite the pressures to ASP from 2027 onward), we project FSLR to accumulate approximately \$15Bn of cash by 2030 versus just \$1.5Bn exiting 2022. This provides flexibility for FSLR to invest internally to develop superior technologies that could present upside to our estimates, or pursue other inorganic strategies to shore up growth or integrate other portions of the supply chain. The optionality provided by steadily rising cash is a significant reason we reiterate our Buy rating on FSLR; there is ample net cash generation anticipated from the business even if pricing conditions were to meaningfully worsen.

Exhibit 7: First Solar Valuation: PO to \$179

Updated PO reflects revision to EV/EBITDA multiple to account for future pricing pressure

First Solar

Base Year	2026
Modules (External)	22,397
Revenues	2026
Modules	\$6,743
Gross Margin	
Modules	\$2,265
Total Gross Margin	\$2,264.6
Opex	(\$409.6)
Ex Start up Costs (non-capitalized)	\$0
D&A	\$685.8
Core EBITDA (incl. Systems)	\$2,540.8
EV/EBITDA - 0.5x premium to Solar Mfg Peer Group	3.6x
Total EV on Core Biz (ex Credits)	\$9,072
YE23 Net (Debt) Cash Position - exc. PTC Cash Flow	1,142
PV solar power systems, net (YE19)	-
Project assets (YE19)	-
Total	\$95.00
Implied '25 P/E (excluding Net Cash)	6.6x
FSLR Share Price	\$141.82
Average Valuation - exc. IRA value	\$95.00
BofAe IRA credit value	\$84
Average Valuation - inc. IRA value	\$179.00
Price Return	26%

Source: BofA Global Research estimates, Company filings, Bloomberg

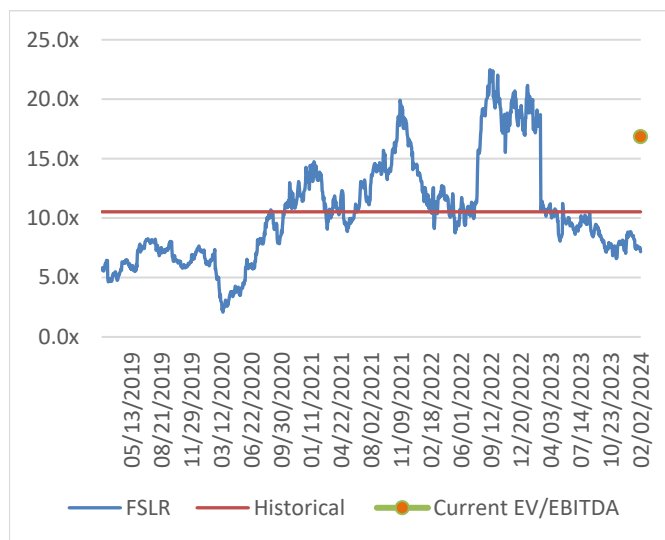
BofA GLOBAL RESEARCH



Solar module EV/EBITDA multiples converged in early 2023 and have remained relatively tightly banded throughout much of 2023 and through early 2024. FSLR's current EV/FY2 multiple of 7.2x on consensus estimates and 7.4x our FY24 EBITDA estimate has declined significantly from a prolonged period of near or above 10x since late 2020. Over the past two years, FSLR's multiple (using consensus FY2 EBITDA) has generally led the group, though its gap to peers has closed significantly, with Longi's valuation having occasionally eclipsed that of its US-based peer from time-to-time.

Exhibit 8: FSLR: 2yr fwd EV/EBITDA trend vs Historical vs Current EV/EBITDA

Multiple trending toward pre-pandemic levels

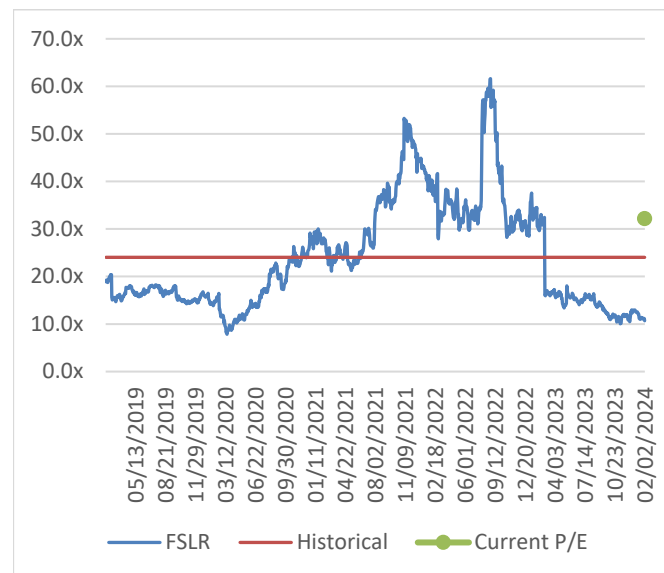


Source: BofA Global Research, Factset

BofA GLOBAL RESEARCH

Exhibit 9: FSLR: 2yr fwd P/E trend vs Historical vs Current P/E

P/E normalized through much of 2023

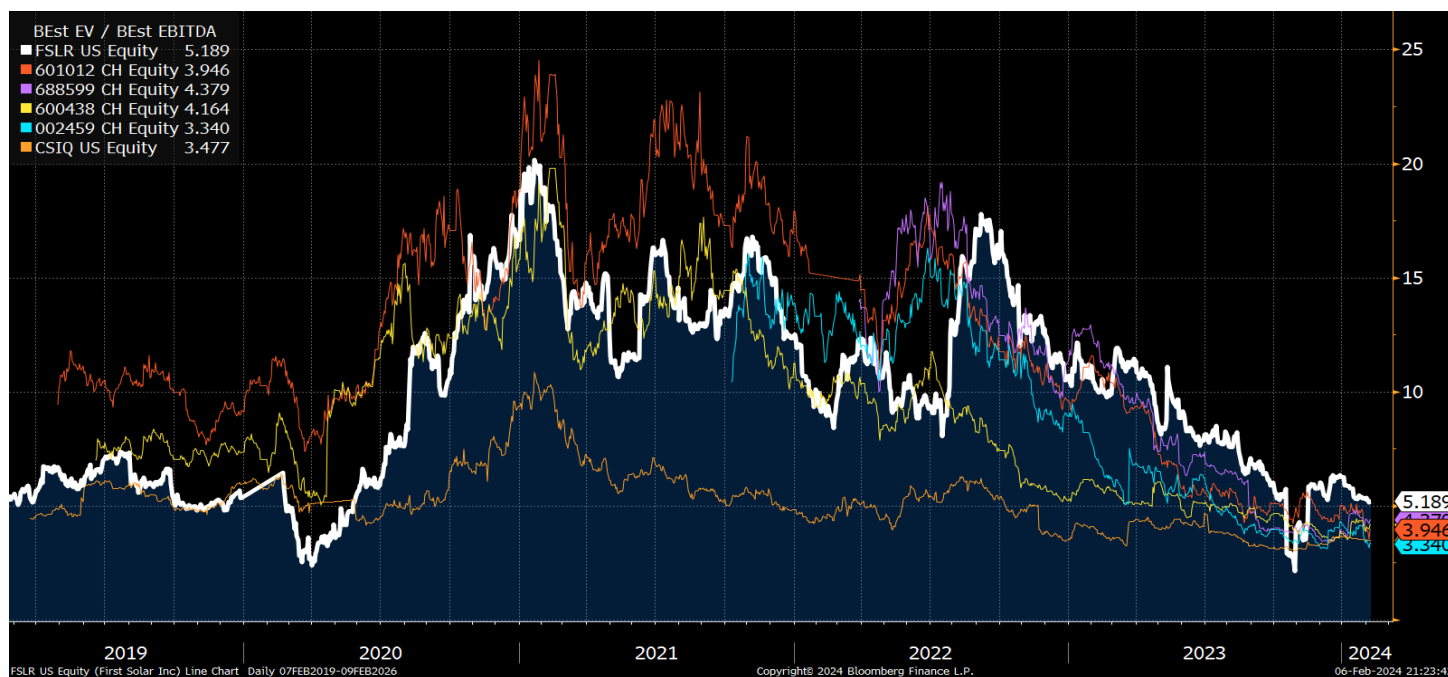


Source: BofA Global Research, Factset

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Exhibit 10: FSLR EV/EBITDA vs. solar module peers

Mostly China-based competitors; FSLR showing durable premium to peers since 2H 2022



Source: Bloomberg

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We also provide a detailed assessment of how we configure value attributable to tax credits associated with the IRA, which at \$84/share roughly represents half of the value embedded within our updated PO and more than half of the value implied in the current stock price. While we highlight risk in deterioration of ASPs and their potential impact to the future value of FSLR's cash flows, we acknowledge a significant buoying of value at current levels provided by the IRA tax credit benefits. While certainly not a novel assessment, we do point to the inherent risk that could manifest from the results of the 2024 election if factions promoting IRA repeal gain sufficient political power, and expect this discussion to linger through early November as an overhang to the underlying business fundamentals. This is reflected in our slightly higher discount rate of 12% for cash attributable to tax credits, which reduces our PO by \$7/sh versus application of the 10% discount rate we had used prior.

Exhibit 11: IRA Valuation

NPV of \$84/sh using 12% discount rate (versus 10% prior, reflecting heightened IRA repeal risk)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
FSLR Capacity - Total	13,500	19,950									
FSLR US Made US Sales	4,118	6,115	9,117	12,036	13,836	13,885	13,885	13,885	13,885	13,885	13,885
Cell Production Incentive (4c/W)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Cell (\$/W)	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04
FSLR Capacity (MW) - Scenario 1	2,800	4,118	6,115	9,117	12,036	13,836	13,885	13,885	13,885	13,885	13,885
Total Cell Credit (\$Mn)	\$165	\$245	\$365	\$481	\$553	\$555	\$555	\$417	\$278	\$139	\$0
Module Production Incentive (7c/W)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Module (\$/W)	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07
FSLR Capacity (MW)	2,800	4,118	6,115	9,117	12,036	13,836	13,885	13,885	13,885	13,885	13,885
Total Module Credit (\$Mn)	\$288	\$428	\$638	\$843	\$969	\$972	\$972	\$729	\$486	\$243	\$0
Total Cell + Module Credit	0	\$453	\$673	\$1,003	\$1,324	\$1,522	\$1,527	\$1,527	\$1,146	\$764	\$382
Implied Cent per Watt	\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.11	\$0.11
NPV - Module and Cell	\$5,914.44										
Wafer Production Incentive (\$12/square meter)											
Wafer (\$/square meter)	12	12	12	12	12	12	12	12	12	12	12
Square Meter per Module	2	2	2	2	2	2	2	2	2	2	2
Wafer Credit \$/Module	29	29	29	29	29	29	29	29	29	29	29

Exhibit 11: IRA Valuation

NPV of \$84/sh using 12% discount rate (versus 10% prior, reflecting heightened IRA repeal risk)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Watt per Module	475	500	500	500	500	500	500	500	500	500	500
FSLR Capacity (Module)	8,668,731	12,230,050	18,234,500	24,071,625	27,672,000	27,770,000	27,770,000	27,770,000	27,770,000	27,770,000	27,770,000
Wafer Credit \$/Module	29	29	29	29	29	29	29	29	29	29	29
Total Wafer Credit (\$Mn)	0	\$250	\$352	\$525	\$693	\$797	\$800	\$800	\$600	\$400	\$200
Implied Cent per Watt	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06	\$0.04	\$0.03	\$0.01
NPV - Wafer	\$3,097										
Discount Rate	12%										
Total Production Credit Value (\$Mn)	\$703	\$1,025	\$1,528	\$2,017	\$2,319	\$2,327	\$2,327	\$1,745	\$1,164	\$582	\$0
Phase Down	100%	100%	100%	100%	100%	100%	100%	75%	50%	25%	0%
Risk Adjusted	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
NPV - Total	\$9,011										
NPV/Share	\$84										

Source: BofA Global Research estimates, Company filings, Bloomberg

BofA GLOBAL RESEARCH

Contrasting valuation methods, we show our updated DCF analysis, which uses discounted core-operating cash flows discounted 10% and tax credits discounted at 12%. We focus our DCF through calculation of core EBITDA and walking to an operating free cash flow figure by netting out expected capex. Our lagged credit value, discounted at a 12% rate, is then added to aggregate to an implied equity value of \$152/sh. Admittedly, our DCF value of \$152/sh implies much more muted upside than a peer EV/EBITDA methodology. While instructive of the value implied by operating cash flows, we believe this methodology ultimately fails to capture the significant net cash piling onto the balance sheet year-by-year, which in turn can be redeployed to improve existing offerings relative to peers.

Exhibit 12: FSLR DCF Valuation

Implies modest upside; core free cash flow discounted at 10%; tax credit cash flow discounted at 12%

	2024	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	Terminal
Module Revenues	4,385	5,670	6,743	6,994	5,900	5,654	5,868	5,764	5,663	5,563	
Gross Profit	869	1,411	1,804	1,916	1,478	1,299	1,453	1,345	1,299	1,225	
Opex	(465)	(477)	(410)	(540)	(538)	(538)	(537)	(537)	(536)	(536)	
D&A	435	577	686	763	804	841	875	907	935	940	
Normalized Core EBITDA (incl. Systems)	838	1,511	2,080	2,139	1,744	1,603	1,791	1,715	1,698	1,629	1,629
Capex	(1,750)	(1,850)	(1,783)	(1,233)	(1,233)	(1,233)	(1,233)	(1,233)	(1,233)	(600)	(600)
Free Cash Flow	(912)	(339)	296	905	511	369	558	481	465	1,029	12,349
NPV Exc. Tax Credits	5,691										
Credit Value - Assume 1Yr Lag	1,025	1,528	2,017	2,319	2,327	2,327	1,745	1,164	582		
NPV Tax Credits	9,011										
Net Cash	1,586										
Total NPV	10,598										
Equity Value per Share Post-Credits	\$152										

Shares Outstanding 107

Source: BofA Global Research estimates, Company filings, Bloomberg

BofA GLOBAL RESEARCH

Lastly, we show our cash flow statement for FSLR from 2025 through 2033. We assume over \$6Bn in technology-related capex from 2026 to 2032, calculated as 20c/W of aggregate capex using management's 25GW capacity target in 2026 and spread over 6 years. The difference in \$1.8Bn of capex in 2026 and \$1.2Bn of capex in 2027 reflects stepdown in expansion capex as production capacity is scaled. Once the IRA tax benefits roll off in 2033, we project go-forward annual capex of \$600Mn, or approximately half of that of the annual capex from the prior decade.



Exhibit 13: FSLR Cash Flow Statement 2025-2033

Cash scales more than 10x from \$1.5Bn in 2022 to \$20Bn in 2033 - even with a sizable ongoing capex to retool reflected into future too...

Cash flow	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
OPERATING ACTIVITIES									
Net Income (loss)	2,325.4	3,174.9	3,456.0	3,124.5	2,985.0	2,523.5	1,858.0	1,241.0	601.6
Adjustments:									
Depreciation and amortization	577.3	685.8	763.0	803.9	841.3	875.4	906.6	935.0	939.9
Other	-	-	-	-	-	-	-	-	-
Non-cash recognition of IRA tax credits	(1,549.9)	(2,046.1)	(2,318.9)	(2,327.1)	(2,327.1)	(1,745.3)	(1,163.6)	(581.8)	-
Changes in WC	446.5	53.3	(8.0)	58.6	(8.0)	5.0	0.4	13.2	16.2
Accounts receivable	-	-	-	-	-	-	-	-	-
Inventories	-	-	-	-	-	-	-	-	-
Accounts payable	46.5	53.3	(8.0)	58.6	(8.0)	5.0	0.4	13.2	16.2
Deferred Revenue	400.0	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
NET CASH FROM OPERATING ACTIVITIES	1,799.4	1,867.9	1,892.1	1,659.9	1,491.1	1,658.6	1,601.4	1,607.4	1,557.7
INVESTING ACTIVITIES									
Acquisition of property and equipment	(1,850.0)	(1,783.3)	(1,233.3)	(1,233.3)	(1,233.3)	(1,233.3)	(1,233.3)	(1,233.3)	(600.0)
Retooling									
Proceeds from sales of equity method investments									
Other									
NET CASH FROM INVESTING ACTIVITIES	(1,850.0)	(1,783.3)	(1,233.3)	(1,233.3)	(1,233.3)	(1,233.3)	(1,233.3)	(1,233.3)	(600.0)
FINANCING ACTIVITIES									
Change in debt	-	-	-	-	-	-	-	-	-
Proceeds from issuance of shares	-	-	-	-	-	-	-	-	-
Dividends paid	-	-	-	-	-	-	-	-	-
IRA Credits Paid (Draw on Government Grants Receivable)	1,024.9	1,528.1	2,017.2	2,318.9	2,327.1	2,327.1	1,745.3	1,163.6	581.8
Other									
NET CASH FROM FINANCING ACTIVITIES	1,024.9	1,528.1	2,017.2	2,318.9	2,327.1	2,327.1	1,745.3	1,163.6	581.8
Effect of foreign exchange rate change	-	-	-	-	-	-	-	-	-
INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	974.2	1,612.7	2,676.0	2,745.5	2,584.9	2,752.4	2,113.4	1,537.6	1,539.5
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	1,363.0	2,354.3	3,966.9	6,642.9	9,388.4	11,973.3	14,725.7	16,839.1	18,376.7
CASH AND CASH EQUIVALENTS, END OF PERIOD	2,354.3	3,966.9	6,642.9	9,388.4	11,973.3	14,725.7	16,839.1	18,376.7	19,916.2

Source: BofA Global Research estimates, Company filings, Bloomberg

BofA GLOBAL RESEARCH

Price objective basis & risk

First Solar, Inc. (FSLR)

Our price objective is \$179/share, based on an EV/EBITDA method. We apply a 3.1x multiple from a group of Chinese and other international solar comp group/module peers, and add a 0.5x premium for FSLR's lower risk to protectionist trade policies. We value FSLR's core EBITDA at a lower than historical multiple given significant pressure to 2027+ pricing from Chinese oversupply. We also add net cash balance and \$84/share net present value to account for production tax credits stipulated in Inflation Reduction Act.

Downside risks: 1) worse/declining price environment, 2) declining margins or worse-than-expected cost structure, 3) unfavorable trade policy dynamics, 5) worse Chinese/global demand environment, 6) worse execution on systems business, and 7) technology fails to live up to expectations 8) FSLR capture of production tax credits fall short of expectations

Analyst Certification

I, Julien Dumoulin-Smith, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

North America - Utilities and Alt Energy Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Alliant Energy Corporation	LNT	LNT US	Julien Dumoulin-Smith
	Array Technologies	ARRY	ARRY US	Julien Dumoulin-Smith
	Atlantica Sustainable Infrastructure	AY	AY US	Julien Dumoulin-Smith
	Atmos Energy Corporation	ATO	ATO US	Julien Dumoulin-Smith
	CenterPoint Energy	CNP	CNP US	Julien Dumoulin-Smith
	Cheniere Energy Inc	LNG	LNG US	Julien Dumoulin-Smith
	Clearway Energy	CWENA	CWEN/A US	Julien Dumoulin-Smith
	Clearway Energy	CWEN	CWEN US	Julien Dumoulin-Smith
	CMS Energy	CMS	CMS US	Julien Dumoulin-Smith
	Consolidated Edison	ED	ED US	Julien Dumoulin-Smith
	DTE Energy	DTE	DTE US	Julien Dumoulin-Smith
	Duke Energy	DUK	DUK US	Julien Dumoulin-Smith
	Enlight Renewable Energy Ltd	ENLT	ENLT US	Julien Dumoulin-Smith
	Enlight Renewable Energy Ltd	XENLF	ENLT IT	Julien Dumoulin-Smith
	Entergy	ETR	ETR US	Paul Zimbardo
	First Solar, Inc.	FSLR	FSLR US	Julien Dumoulin-Smith
	Fluence Energy	FLNC	FLNC US	Julien Dumoulin-Smith
	Hannon Armstrong	HASI	HASI US	Julien Dumoulin-Smith
	Hydro One	YH	H CN	Julien Dumoulin-Smith
	MDU Resources Group, Inc.	MDU	MDU US	Julien Dumoulin-Smith
	Nexttracker Inc	NXT	NXT US	Julien Dumoulin-Smith
	NiSource Inc	NI	NI US	Julien Dumoulin-Smith
	NorthWestern Energy Group	NWE	NWE US	Julien Dumoulin-Smith
	NRG Energy	NRG	NRG US	Julien Dumoulin-Smith
	PG&E Corporation	PCG	PCG US	Julien Dumoulin-Smith
	PNM Resources Inc.	PNM	PNM US	Julien Dumoulin-Smith
	PPL Corporation	PPL	PPL US	Paul Zimbardo
	Public Service Enterprise Group	PEG	PEG US	Julien Dumoulin-Smith
	Sempra	SRE	SRE US	Julien Dumoulin-Smith
	Sunnova Energy	NOVA	NOVA US	Julien Dumoulin-Smith
	SunRun	RUN	RUN US	Julien Dumoulin-Smith
	TPI Composites	TPIC	TPIC US	Julien Dumoulin-Smith
	Vistra Corp	VST	VST US	Julien Dumoulin-Smith



North America - Utilities and Alt Energy Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Xcel Energy Inc	XEL	XEL US	Julien Dumoulin-Smith
NEUTRAL				
	AES	AES	AES US	Julien Dumoulin-Smith
	Algonquin Power & Utilities Corp	YAQN	AQN CN	Paul Zimbardo
	Algonquin Power & Utilities Corp	AQN	AQN US	Paul Zimbardo
	AltaGas	YALA	ALA CN	Cameron Lochridge
	Ameren Corporation	AEE	AEE US	Julien Dumoulin-Smith
	Ameresco	AMRC	AMRC US	Julien Dumoulin-Smith
	American Electric Power	AEP	AEP US	Julien Dumoulin-Smith
	ChargePoint Holdings	CHPT	CHPT US	Cameron Lochridge
	Constellation Energy Corp	CEG	CEG US	Paul Zimbardo
	Emera Inc	YEMA	EMA CN	Julien Dumoulin-Smith
	Essential Utilities	WTRG	WTRG US	Julien Dumoulin-Smith
	Evergy, Inc	EVRG	EVRG US	Julien Dumoulin-Smith
	Exelon	EXC	EXC US	Paul Zimbardo
	Generac Holdings Inc.	GNRC	GNRC US	Julien Dumoulin-Smith
	Idacorp	IDA	IDA US	Paul Zimbardo
	Maxon Solar Technologies	MAXN	MAXN US	Julien Dumoulin-Smith
	New Fortress Energy	NFE	NFE US	Cameron Lochridge
	NextEra Energy	NEE	NEE US	Julien Dumoulin-Smith
	NextEra Energy Partners	NEP	NEP US	Julien Dumoulin-Smith
	OGE Energy Corp	OGE	OGE US	Julien Dumoulin-Smith
	Ormat Technologies	ORA	ORA US	Julien Dumoulin-Smith
	Pinnacle West	PNW	PNW US	Julien Dumoulin-Smith
	Portland General Electric Company	POR	POR US	Julien Dumoulin-Smith
	Southern Company	SO	SO US	Julien Dumoulin-Smith
	Southwest Gas Holdings	SWX	SWX US	Julien Dumoulin-Smith
	TransAlta Corp	TAC	TAC US	Julien Dumoulin-Smith
	TransAlta Corporation	YTA	TA CN	Julien Dumoulin-Smith
UNDERPERFORM				
	Allete Inc	ALE	ALE US	Julien Dumoulin-Smith
	American Water Works	AWK	AWK US	Julien Dumoulin-Smith
	Avangrid	AGR	AGR US	Paul Zimbardo
	Avista	AVA	AVA US	Julien Dumoulin-Smith
	Black Hills Corporation	BKH	BKH US	Julien Dumoulin-Smith
	Bloom Energy	BE	BE US	Julien Dumoulin-Smith
	Dominion Energy	D	D US	Paul Zimbardo
	Edison International	EIX	EIX US	Paul Zimbardo
	Enphase Energy	ENPH	ENPH US	Julien Dumoulin-Smith
	Eversource Energy	ES	ES US	Paul Zimbardo
	FirstEnergy	FE	FE US	Julien Dumoulin-Smith
	Fortis	YFTS	FTS CN	Julien Dumoulin-Smith
	Fortis Inc	FTS	FTS US	Julien Dumoulin-Smith
	FREYR Battery	FREY	FREY US	Julien Dumoulin-Smith
	FTC Solar	FTCI	FTCI US	Julien Dumoulin-Smith
	Hawaiian Electric Industries	HE	HE US	Julien Dumoulin-Smith
	MGE Energy	MGEE	MGEE US	Julien Dumoulin-Smith
	New Jersey Resources Corp	NJR	NJR US	Julien Dumoulin-Smith
	ONE Gas, Inc.	OGS	OGS US	Julien Dumoulin-Smith
	SolarEdge Technologies	SEDG	SEDG US	Julien Dumoulin-Smith
	Spire	SR	SR US	Julien Dumoulin-Smith
	Stem, Inc.	STEM	STEM US	Julien Dumoulin-Smith
	SunPower Corp.	SPWR	SPWR US	Julien Dumoulin-Smith
	UGI Corp.	UGI	UGI US	Julien Dumoulin-Smith
	WEC Energy Group Inc	WEC	WEC US	Julien Dumoulin-Smith

iQmethodSM Measures Definitions

Business Performance

Return On Capital Employed

Return On Equity

Operating Margin

Earnings Growth

Free Cash Flow

Quality of Earnings

Cash Realization Ratio

Asset Replacement Ratio

Tax Rate

Net Debt-To-Equity Ratio

Interest Cover

Valuation Toolkit

Price / Earnings Ratio

Price / Book Value

Dividend Yield

Free Cash Flow Yield

Enterprise Value / Sales

EV / EBITDA

Numerator

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income

Operating Profit

Expected 5 Year CAGR From Latest Actual

Cash Flow From Operations – Total Capex

Numerator

Cash Flow From Operations

Capex

Tax Charge

Net Debt = Total Debt – Cash & Equivalents

EBIT

Numerator

Current Share Price

Current Share Price

Annualised Declared Cash Dividend

Cash Flow From Operations – Total Capex

EV = Current Share Price × Current Shares + Minority Equity + Net Debt +

Other LT Liabilities

Enterprise Value

Denominator

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill

Amortization

Shareholders' Equity

Sales

N/A

N/A

Denominator

Net Income

Depreciation

Pre-Tax Income

Total Equity

Interest Expense

Denominator

Diluted Earnings Per Share (Basis As Specified)

Shareholders' Equity / Current Basic Shares

Current Share Price

Market Cap = Current Share Price × Current Basic Shares

Sales

Basic EBIT + Depreciation + Amortization

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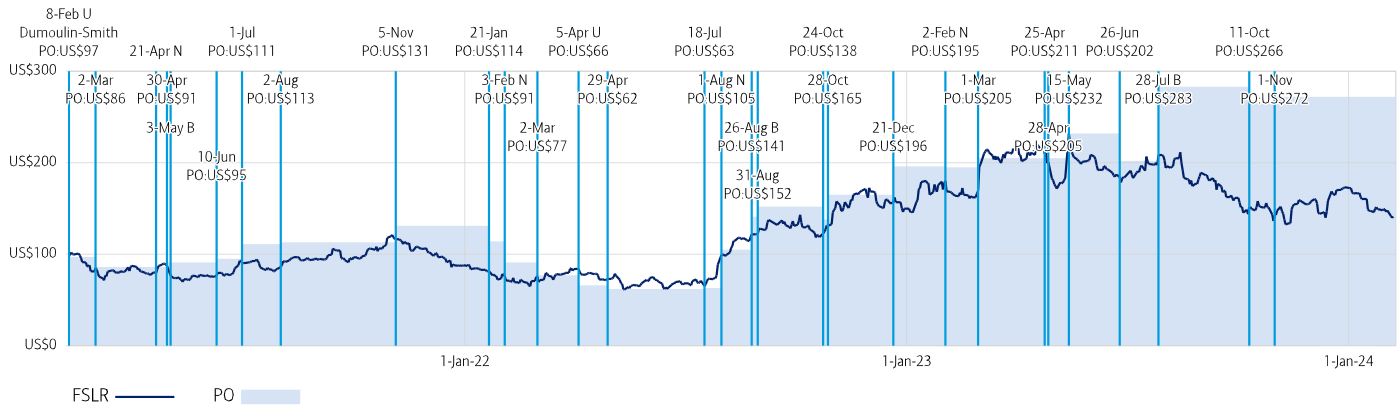
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Equity Investment Rating Distribution: Alternative Energy Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	8	47.06%	Buy	8	100.00%
Hold	5	29.41%	Hold	3	60.00%
Sell	4	23.53%	Sell	1	25.00%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
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Sell	807	22.84%	Sell	383	47.46%

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
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Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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