First Solar

UTM Capital – Power, Utilities and Infrastructure

Closing Ceremony Presentation

Prepared by:
Fedor Khottchenkov
Saba Abbasi
Ahmed Khemira
Nuray Kabdullina

NASDAQ: FSLR-US

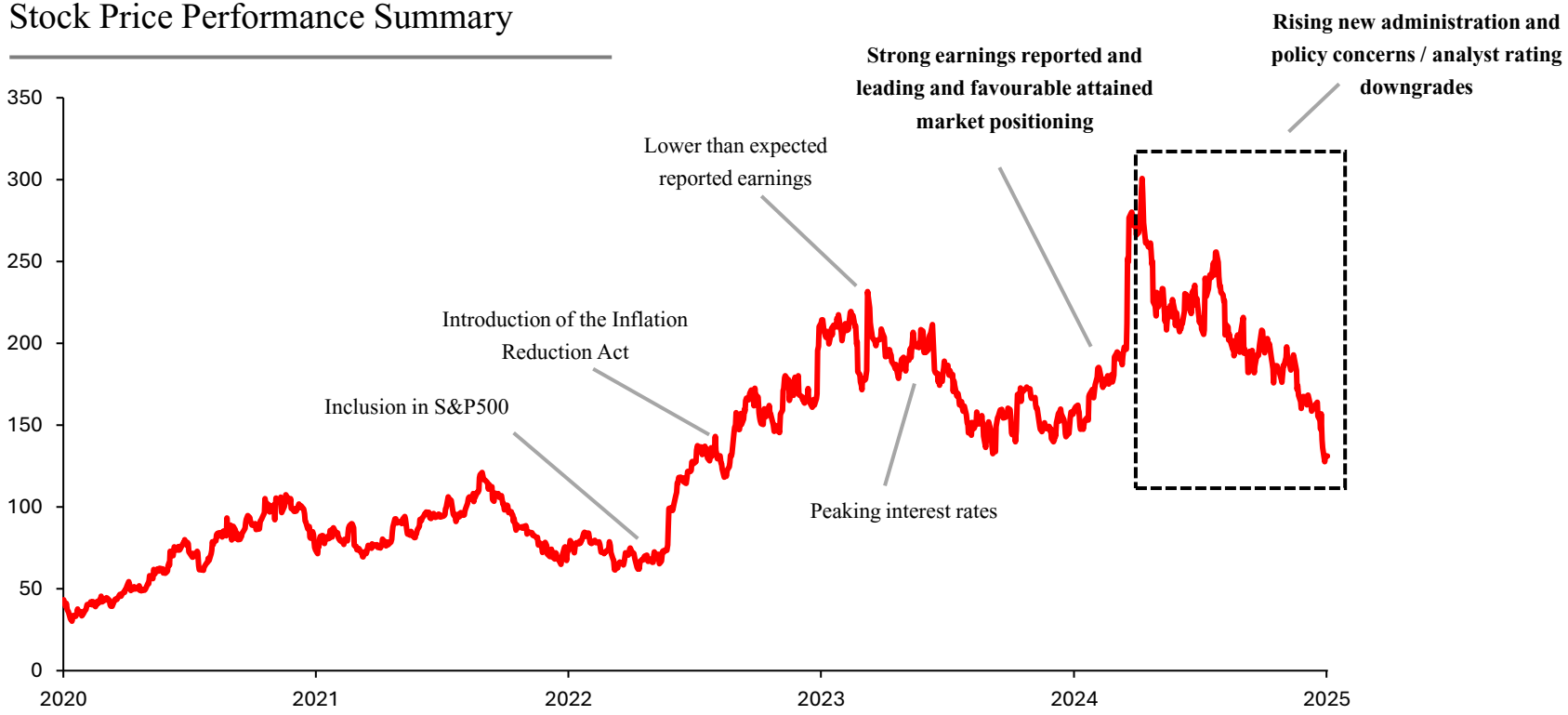
First Solar Company Overview

Introduction to First Solar

Founded in 1999 and is headquartered in Tempe, AZ First Solar is the largest PV Solar Panel manufacturer in the Western Hemisphere. FSLR aims to differ itself from the competition by focusing on the innovative and domestic production.
First Solar is the largest solar module producer in the US. It is also the only scalable thin-film module producer globally, and the only non-Chinese module maker in the global top 10. In 2024, 93% of revenues were generated from the US market.

Current Price: $126.0
Target Price: $248.8
Upside: 97.5%
Recommendation: BUY

Stock Price Performance Summary



Sources: FactSet, 10-K

Trading Performance Summary

52-week range	$124.96 - $306.77 $306.77
Market Cap	$17.39 Bln
Price to Earnings	14.67x
Earnings Per Share Share	12.02x
EV/EBITDA	9.37x
EV/EBIT	12.01x
Average YoY growth growth	24.8%
Avg Analyst Rating Rating	BUY

First Solar Company Overview: Executive Board

First Solar's Board Overview

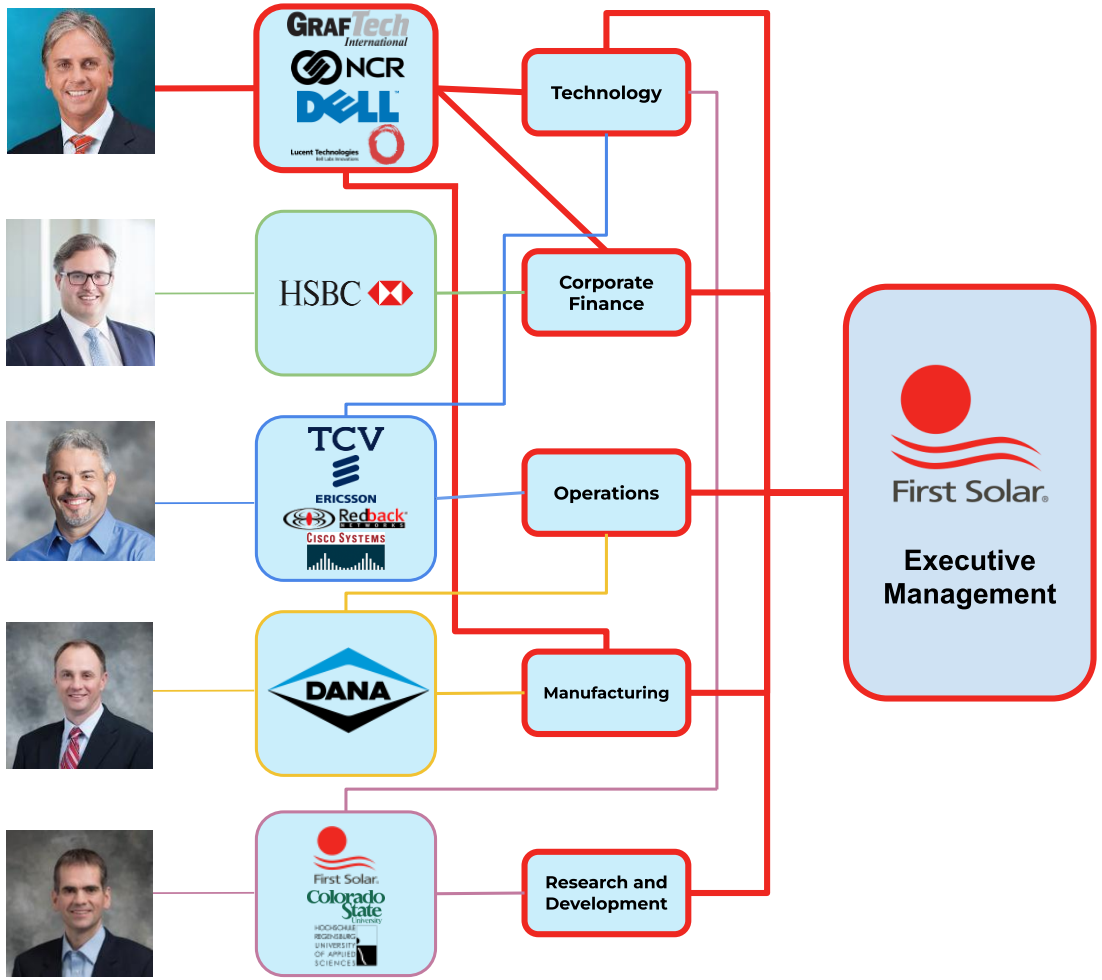
Mark R. Widmar has been a **CEO** of First Solar since 2016. He has over three decades of experience in corporate finance and leadership across the technology and manufacturing sectors. **Before joining First Solar in 2011** as CFO, he served as CFO of GrafTech International and held **senior financial roles** at NCR, Dell, and Lucent Technologies.

Alexander R. Bradley is the **CFO** of First Solar since 2016. He has extensive experience in corporate finance, treasury, and project financing within the energy sector. **Since joining First Solar in 2008**, he has played a key role in structuring and financing over $10 billion in solar projects. Before First Solar, he worked in **investment banking and leveraged finance** at HSBC in London and New York.

Georges Antoun is the **Chief Commercial Officer** of First Solar since 2016. With over 30 years of experience in operations and technology, he first joined First Solar as **Chief Operating Officer in 2012** before becoming President, U.S., in 2015. Prior to First Solar, he was a Venture Partner at Technology Crossover Ventures and held **leadership roles** at Ericsson, Redback Networks, and Cisco Systems. He began his career at Nynex (now Verizon) in its Science and Technology Division.

Michael Koralewski is the **Chief Supply Chain Officer** of First Solar 2022. With over 25 years of global operational experience, he has been a key figure in the company's manufacturing expansion and supply chain development. Since **joining First Solar in 2006**, he has held senior roles in **operations and quality management**, including Chief Manufacturing Operations Officer and Senior Vice President of Global Manufacturing.

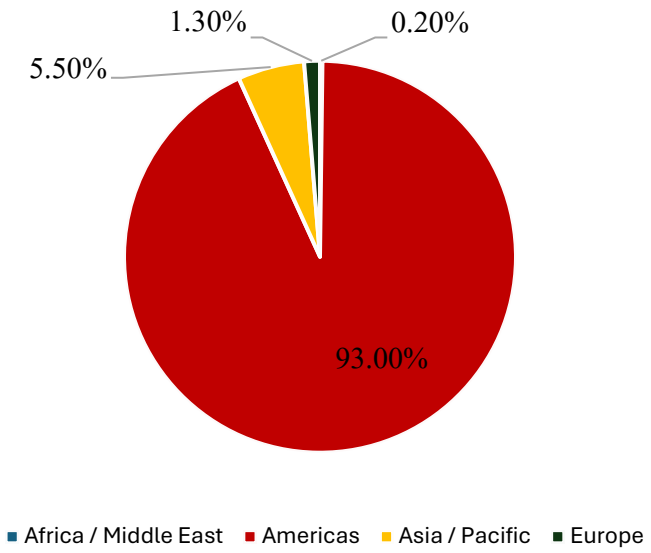
Markus Gloeckler is the **Chief Technology Officer** of First Solar, a position he has held since November 2020, after serving as Co-Chief Technology Officer starting in **July 2020**. With extensive experience in research and development, he has been **instrumental in advancing First Solar's thin film PV module technology**. He previously served as Vice President and Chief Scientist, and later Senior Vice President of Module Research and Development. Gloeckler played a key role in achieving world records for CdTe solar cell efficiency and led the transfer of thin film technology from General Electric to First Solar in 2013.



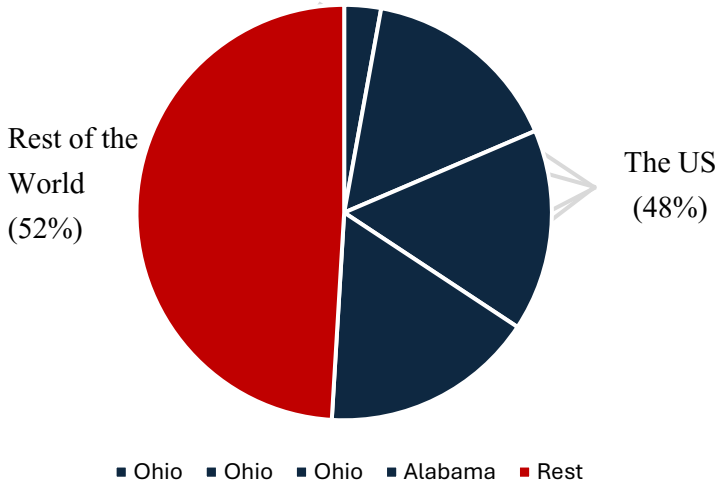
Sources: 10-K

First Solar Operations Overview: Operations Demographics

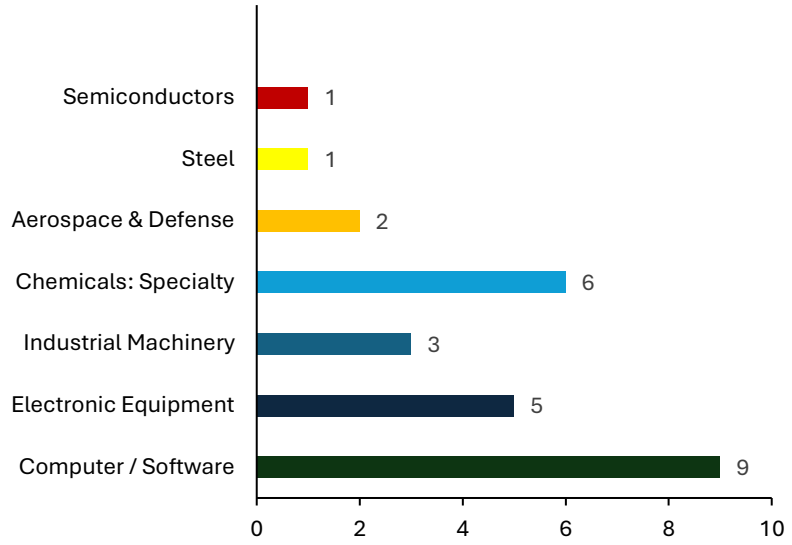
Geographic Revenue Breakdown



Manufacturing Sites Location



Top Suppliers Industry Distribution (all US-based)



Summary and Additional Notes

Revenue Streams: FSLR sources 93% of its revenue in the domestic market with about 5% earned in from the Indian market. The company expects to maintain such revenue distribution due to substantial tax credit benefits, market outlook, local reputation, and bookings (filled up to 2027).

Raw Material Sourcing: First Solar emphasizes sourcing materials domestically to enhance supply chain transparency and sustainability. For its Series 6 products, the company sources the majority of the bill of materials from U.S. suppliers. Notably, the Series 7 modules utilize 100% American glass and steel, with materials sourced from states like Ohio, Alabama, and Pennsylvania.

Manufacturing Operations: Contrary to the previously discussed trends, FSLR production sites follow a more even geographic distribution with slightly less than a half of the operations hosed in the US, compared to the 52% of operations being located outside. The biggest international plants are situated in Malaysia and Vietnam, with a newly added plant in India (2023).

Sources: FactSet, 10-K, Annual Report, Corporate Website

First Solar Operations Overview: Product and Supply Chain

Technology Overview

CdTe is a recognized solar cell material due to material advantages and easier methods of thin film deposition to prepare polycrystalline CdTe layers.

- **The maximum theoretical efficiency of the CdTe solar cell is about 28%–30%.**
- CdTe has a high absorption coefficient and approximately 99% of the incident light is absorbed by a layer thickness of about 1 μm.
- CdTe has **vital advantages as a material for solar cells because of its ability to maintain good electronic properties under thin film form**.
- Over the last 50 years, much effort has been put into developing high efficiency, low-cost thin film polycrystalline CdS/CdTe solar cell devices. CdTe cell production is associated with polycrystalline materials and glass, which are potentially much cheaper than silicon.

Manufacturing chain walkthrough

- *Stage 1: Deposition Stage*

Transparent oxide-coated glass is cleaned, heated, and coated with **semiconductor materials** (CdTe) using vapor transport deposition technology

The coated glass is rapidly cooled to strengthen the structure

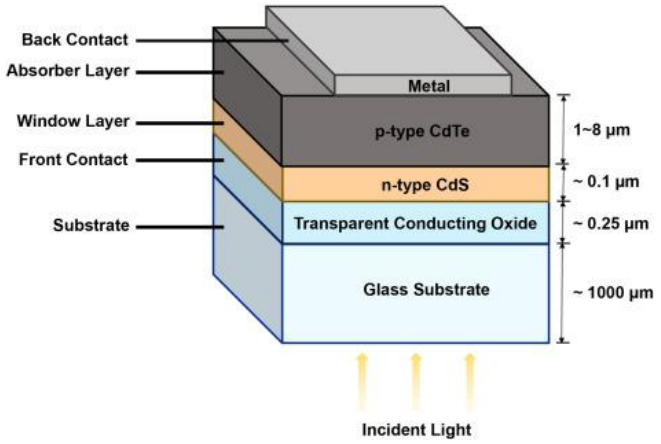
- *Stage 2: Cell Definition & Treatment*

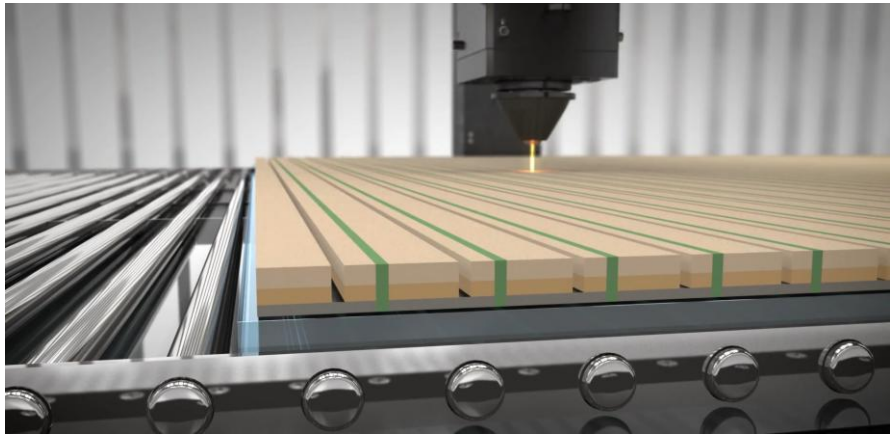
High-speed **lasers create interconnected solar cells** from the semiconductor layers

Chemical treatments are applied to enhance efficiency, followed by the application of a **back contact** for electrical conductivity

- *Stage 3: Assembly & Testing*

Components such as **busbars, encapsulation layers, rear glass covers, and anti-reflective coatings** are applied and tested for electrical leakage tests and solar simulation power measurement



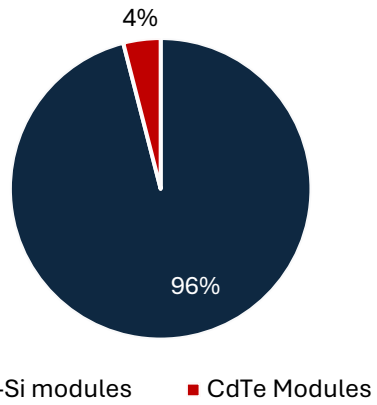


Sources: FactSet, 10-K

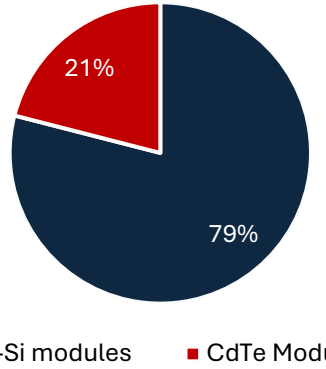
First Solar Operations Overview: Why Cadmium Telluride?

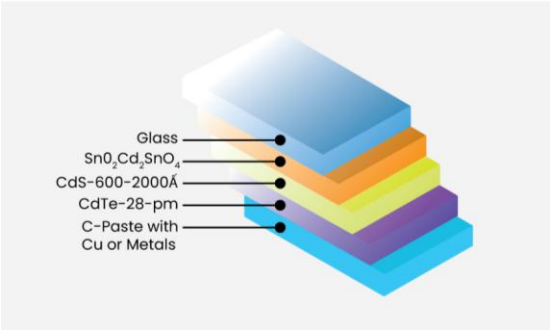
CdTe vs C-Si technology comparison

Market share split (World)



Market share split (US)





This CdTe thin-film solar technology provides a **strategic edge** through superior **real-world efficiency, durability, and cost-effectiveness**. It positions the company ahead of competitors by **lowering energy costs, increasing reliability, and offering a more sustainable alternative** to traditional crystalline silicon modules.

Competitive Advantage and Future Outlook

Cadmium Telluride (CdTe) **thin-film solar technology**, used by First Solar, which provides several advantages over traditional **crystalline silicon (c-Si)** modules:

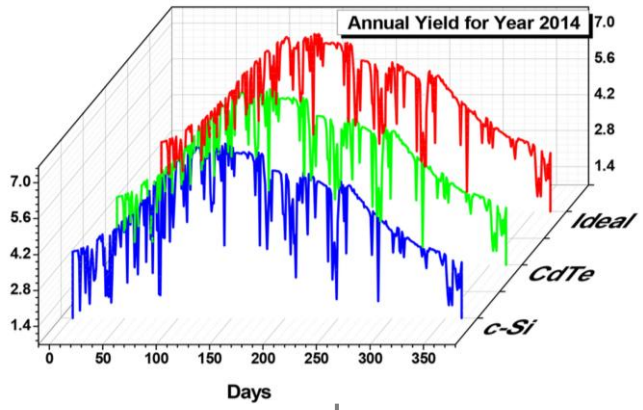
- **Energy Yield Superiority**: The company's modules produce more annual energy - than c-Si alternatives due to their *higher spectral response and heat resistance*, reducing the Levelized Cost of Electricity (LCOE).
- **Manufacturing Scalability**: The fully *automated, high-throughput process* enables rapid expansion and cost reductions, minimizing dependence on polysilicon supply chains.
- **Sustainability as a Differentiator**: With *90%+ recyclability*, these modules align with corporate ESG commitments, making them attractive for buyers with sustainability goals.
- **Higher efficiency in real-world conditions**: CdTe technology has a superior *temperature coefficient*, meaning it performs better in high-heat environments. Traditional silicon modules experience efficiency losses at high temperatures, while CdTe maintains stronger performance.
- **Durability and reliability**: CdTe modules are resistant to cell cracking, a common issue with c-Si panels, reducing maintenance costs and improving long-term performance.

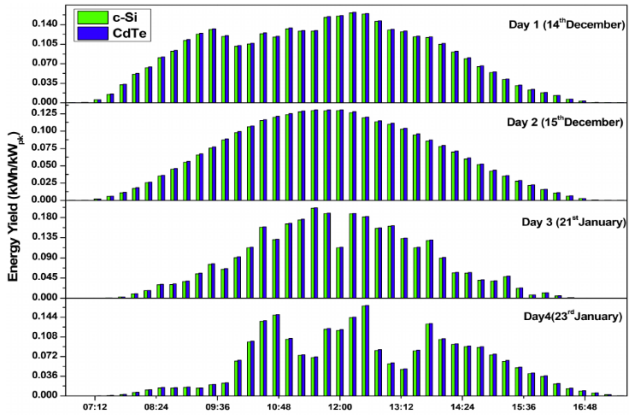
Sources: FactSet, 10-K, Sciencedirect

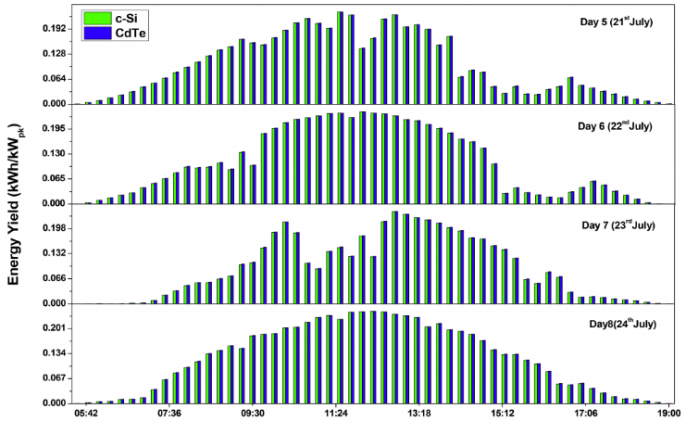
First Solar Operations Overview: Competitive Edge Summary

Comparative performance of CdTe and c-Si modules

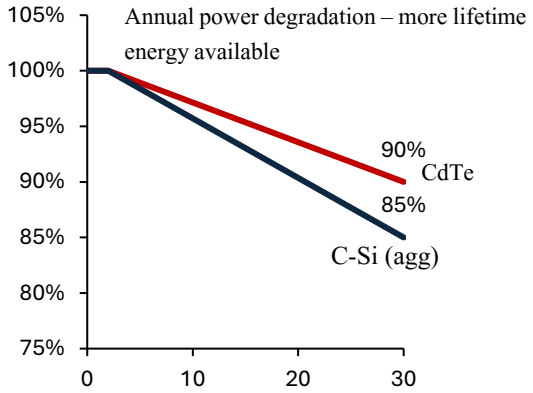
Key takeaway – output wise, the technologies are quite similar in nature. However, while c-Si takes up 95% of the market, CdTe is better in terms of a range of factors.







CdTe thin modules outperform c-Si in terms of annual power degradation, manufacturing time, inputs used and fulfilment of ESG targets.



Independence from c-Si supply chain risks!

- **End-to-end manufacturing in 4.5 hours vs. up to three days for c-Si**
- 98% less semiconductor material than c-Si

- 2.5X lower carbon footprint
- 3X lower water footprint
- 2X faster energy payback time than c-Si panels made in China
- 90%+ recovery of module materials for reuse

- CdTe modules are believed to provide 4% more energy than peers
- Better adaptability: lower temperature coefficient (0.2-0.3 vs 0.3-0.5)
- Bifacial energy provision – higher output in different environments
- Resistance to cell-cracking and more durable (thin modules)

- **Future R&D focus – perovskite**
- A tandem structure, which combines a perovskite cell on top of a traditional cell (either silicon or thin film) can easily reach 30% cell efficiency and above.

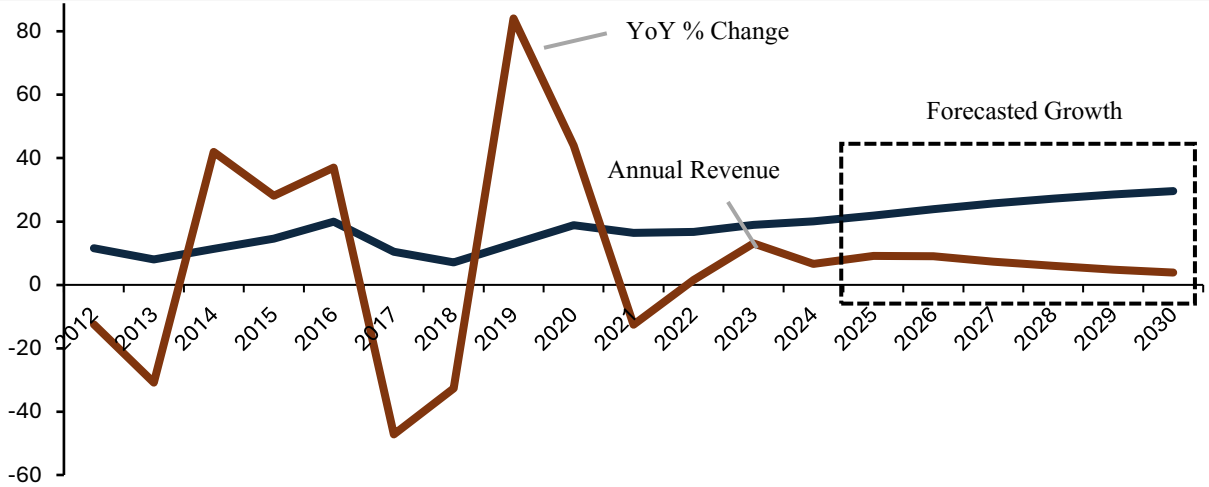
Sources: FactSet, 10-K, Annual Report, HSBC, Wood Mackenzie

Industry Performance Overview

US Solar Panel Manufacturing Industry Performance Summary

5-year CAGR – 3.2%	2025-2030 Forecasted CAGR of	Strategic importance
9.1% in 2025	**CAGR of 6-10%**	Favourable legislation legislation Tariff protection

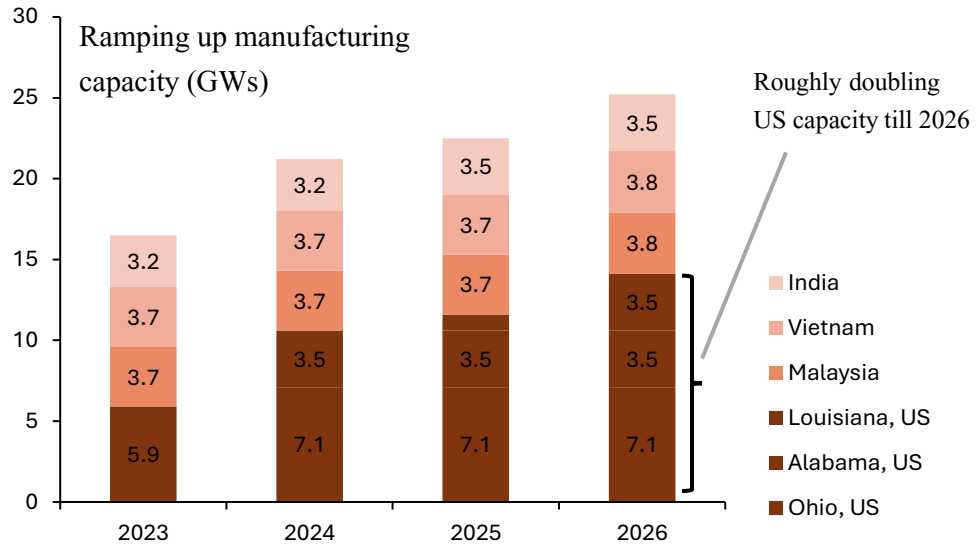
Strong forecasted performance strengthened by persistent tailwinds and legislation tailwinds and legislation



Solar panel market growth has been quite volatile over the past decade. Multiple factors to be mentioned here:

- Chinese players' impact – aggressive pricing and expansion strategies, government subsidies, dumping
- Unstable macroeconomic environment despite extensive ESG trends
- Bad track history of ESG investments in the recent past

First Solar's prospective on the competitive environment



Key Takeaways

- The solar energy industry has experienced significant growth over the past decade, driven by technological advancements, decreasing costs, and a global shift towards renewable energy sources.
- In 2024, wind and solar power combined accounted for 17% of the United States' energy mix, surpassing coal's 15% share for the first time.
- The environment is favourable for long-term expansion strategies – First Solar is riding this wave with ramping up the production and benefits from Tax Credits.

Sources: FactSet, 10-K, IBIS World, HSBC

Peer Group Overview

How should we identify the peer group?

Company Name	Domestic sales (%)	MCAP ($mln)	Company Business Key Facts Summary	Headquarters	Revenue Segmentaion
First Solar	92.83	17565.9	First Solar, Inc. is a solar technology company, which engages in the provision of **solar modules**. It is involved in the design, It is involved in the design, manufacture, and sale of **cadmium telluride (CdTe) solar modules**, which convert sunlight into which convert sunlight into electricity.	Tempe, AZ, US	 Modules – 100% Systems – 0%
Canadian Solar Solar	22. 9	1366.1	Canadian Solar, Inc. engages in the manufacture of **solar photovoltaic modules, provision of solar energy and battery storage solar energy and battery storage solutions**, and development of utility-scale solar and battery storage products. storage products.	Guelph, Canada	 CSI Solar – 93.6% Recurrent Energy – 6.4% 6.4%
Enphase Energy Energy	70.3	8729.9	Enphase Energy, Inc. is a global energy technology company, which engages in the business of **designing, developing, designing, developing, manufacturing, and selling home energy solutions** that manage energy generation, energy storage, energy generation, energy storage, control, and communications on one intelligent platform.	Fremont, CA, US	 Microinverters – 71.2% 71.2% Storage – 23.9% EV Chargers – 4.5%
NextEra Energy Energy	-	147329.2	NextEra Energy, Inc. engages in the provision of renewable energy. It conducts **generation, transmission, distribution, and sale transmission, distribution, and sale of electric energy** in Florida, and produces electricity from clean and renewable sources, renewable sources, including wind and solar.	Juno Beach, FL, US	 Power & Light – 68.8% Energy Resources – 30.5% Corporate & Other – 0.8%
Nextracker	68.1	4900.5	Nextracker, Inc. engages in the provision of **integrated solar tracker and software solutions used in utility-scale and ground-mounted distributed generation solar projects**. Its products enable solar panels in utility-scale power plants to follow the sun's movement across the sky and optimize plant performance.	Fremont, CA, US	No Info
SunRun	100	2028.7	Sunrun, Inc. engages in the design, development, installation, sale, ownership, and maintenance of residential solar energy systems. It sells solar service offerings and installs solar energy systems for homeowners.	San Francisco, CA, US	 Services – 72.0% Solar Energy Systems – 28%
LONGi Green Energy Technology	62.5	128758.1	LONGi Green Energy Technology Co., Ltd. engages in the **research and development, manufacture and sale of monocrystalline silicon rods and wafers**. Its products include silicon, solar cells, modules, electronic components, semiconductor materials, and equipment, photovoltaic systems and power stations.	Xi'an, China	 Solar modules – 76.6% Wafer – 18.9% Other – 4.5%
Jinko Solar	-	-	Jinko Solar Co., Ltd. engages in the **research and development, production and sale of photovoltaic products**. It offers photovoltaic modules, cells, and silicon wafers.	Shanghai, China.	 Solar modules – 95.9% Power sales – 1.0% Other – 3.1%
JA Solar Technology	45.5	30144.4	JA Solar Technology Co., Ltd. engages **in the research, development, production, and sale of silicon wafers, solar cells, and solar cell modules**. It is also involved in the development, construction and operation of solar photovoltaic power plants.	Beijing, China.	No Info

Sources: FactSet, 10-K

Industry Analysis (SWOT) (1/2)

Strengths and Opportunities

Strengths

- **Strong sector growth:**

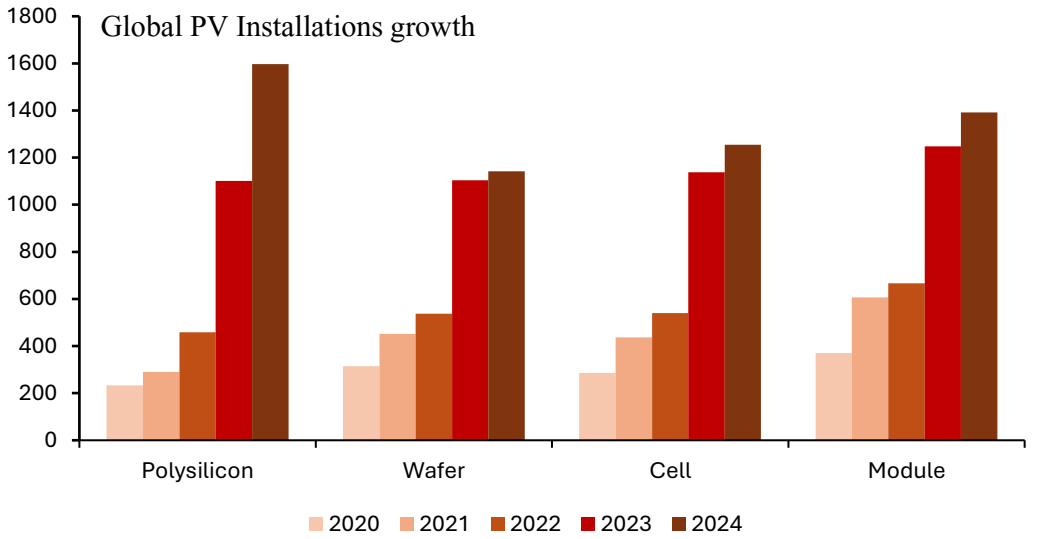
Utility-scale solar and wind capacity additions were the largest across all primary generation sources, accounting for close to *90% of all new builds and expansions in the first nine months of 2024*, versus 57% of capacity added for the same period in 2023. Solar PV installations were up 35% year-on-year.

- **Extremely strong legislative support and high barriers to entry:**

A variety of policies are persistent in the market that provide a strong assistance to the domestic manufacturers operating in the renewable energy sector. A very substantial part of revenues in the industry come from the *Inflation Reduction Act and tax credits attributable.*

- **Sustainability targets introduction and updates:**

Many states have introduced renewable energy targets, explicitly focusing on implementing solar power and bolstering the need for solar panels nationwide. This has been a major catalyst for revenue as manufacturers are helping states meet the swelling demand for solar panels. *Many companies are expanding their operations and capacity to keep pace.*



Opportunities

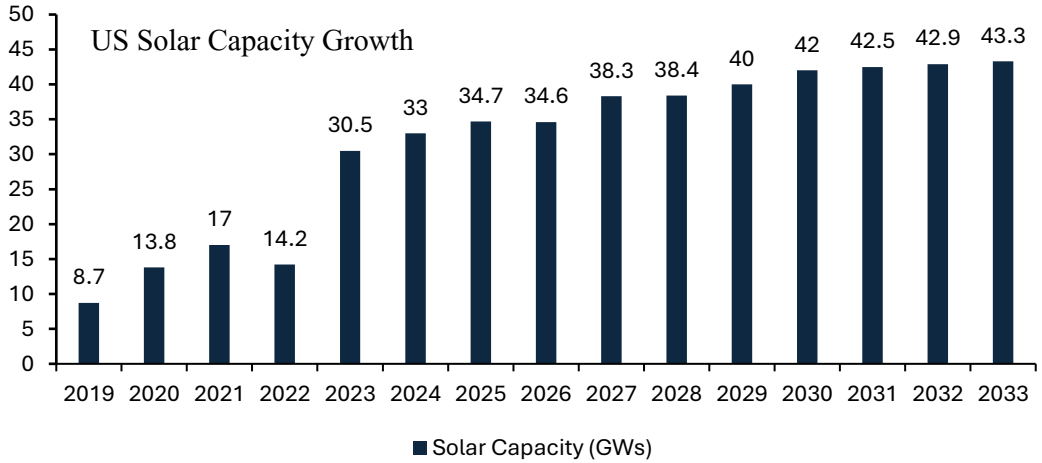
- **Domestication of production:**

The US has built and expanded factories in Alabama, Florida, Georgia, Ohio and Texas, all of which benefited from the Inflation Reduction Act, which provided tax credits to new facilities. According to the SEIA, the country added 9.3 GW of new solar module production capacity in Q3 2024.

Companies have also reshored some of their overseas production back to the US to take advantage of federal policies and private investments in renewable energy.

- **Lifted import duties for selected countries:**

In June 2022, the Biden Administration announced the waiver of tariffs on solar panel imports from *Malaysia, Vietnam, Cambodia and Thailand, effective until June 2024.*



Sources: Deloitte, JP Morgan, Bloomberg, BMO Capital Markets, Scotiabank

Evaluating SWOT Strengths: US Solar Policies' Key Beneficiary

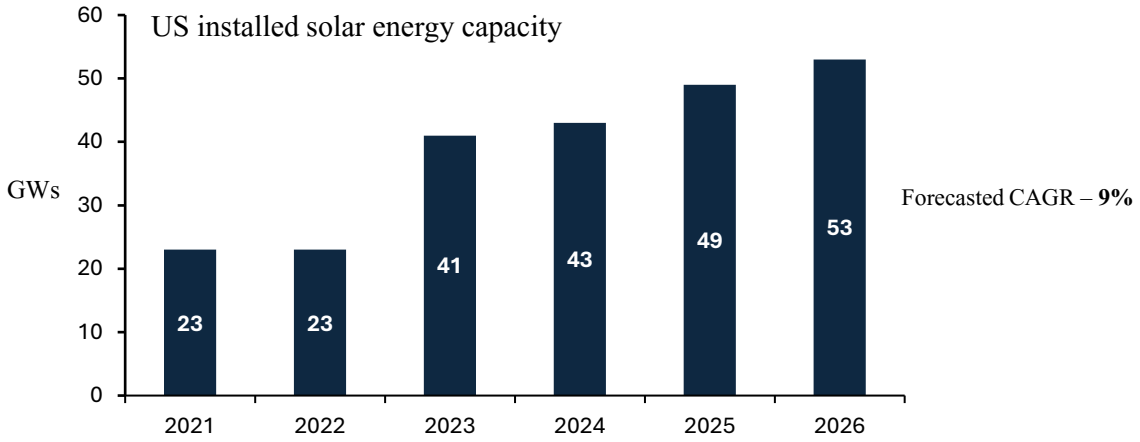
Breakdown of pivotal legislation applicable to the US solar energy market

Name	Policy	Effect
IRA tax credits	Among other things, the IRA (i) reinstates the **30% investment tax credit** for qualifying solar projects, (ii) extends the production tax credit ("PTC") to include energy generated from solar projects, (iii) provides **incremental investment and production tax credits for solar projects** that meet certain domestic requirements, and (iv) **offers tax credits for solar modules and components manufactured in the United States** and sold to third parties.	Amount for Projects less than 1MWAC (Cumulative) : **ITC: +10% PTC: +0.3¢/kWh** Amount for Projects greater than or equal to 1MWAC (Cumulative): **ITC: +10% PTC: +0.3¢/kWh**
45x Tax Credits	The **45X credit subsidizes the production** of five types of goods including solar energy components. Goods used to produce, transmit, or store energy receive credits proportional to their output, transmission, or energy storage capacities.	First Solar's US-made thin-film solar modules receive Section **45X tax credits of USD 0.17/w. Expected annual credits gains for FSLR are valued USD1,028m, USD1,542m and USD2,035m in 2024-26e respectively**, making it the largest beneficiary of the program.
FEOC	The regulations also classify businesses as Foreign Entities of Concerns if 25% or more of their "board seats, voting rights, or equity interest" are cumulatively held by a covered foreign nation's national government.	Currently imposed on imported critical minerals used for EV vehicles batteries. The existing concern is that FEOC legislation takes effect in solar panel market, namely concerning crystalline silicone (c-Si)
AD/CVD	Antidumping and Countervailing Duties (AD/CVD) are trade measures imposed by the United States to protect domestic industries from unfair foreign competition. Countervailing duties, on the other hand, counteract subsidies provided by foreign governments that give their solar manufacturers an unfair advantage.	The expectation is that **without Section 45X production tax credits, solar cell/module production plant is not economically viable in the US**, even for the most efficient Chinese companies. Based on BNEF and our estimates, the production cost of silicon-based cell/modules nowadays in the US would be close to USD0.30/w, which is similar to the selling price in the market.

Sources: FactSet, 10-K, Annual Report, HSBC, CRS Reports, Wood Mackenzie

Evaluating SWOT Strengths: Solar Energy Market Expansion

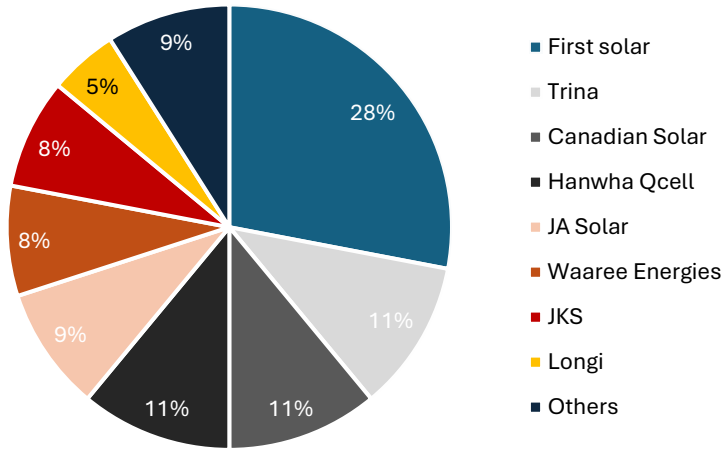
Electricity demand spike



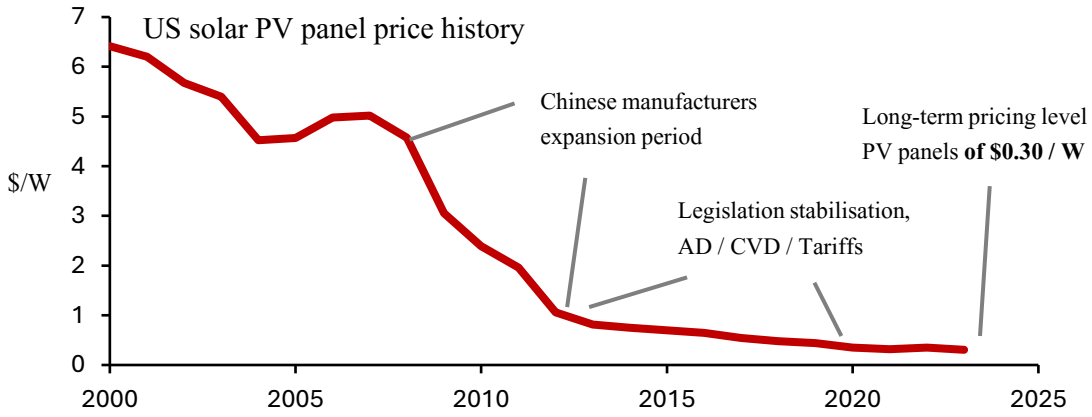
Forecasted CAGR – **9%**

Opportunity to build up market share

Market share split – Solar Energy market (2023)



PV Panel price concerns

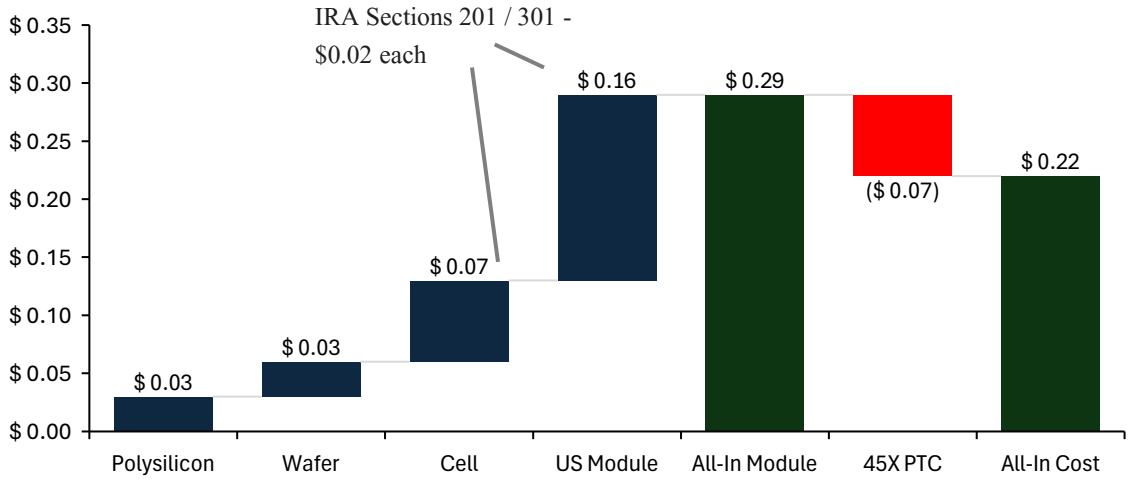


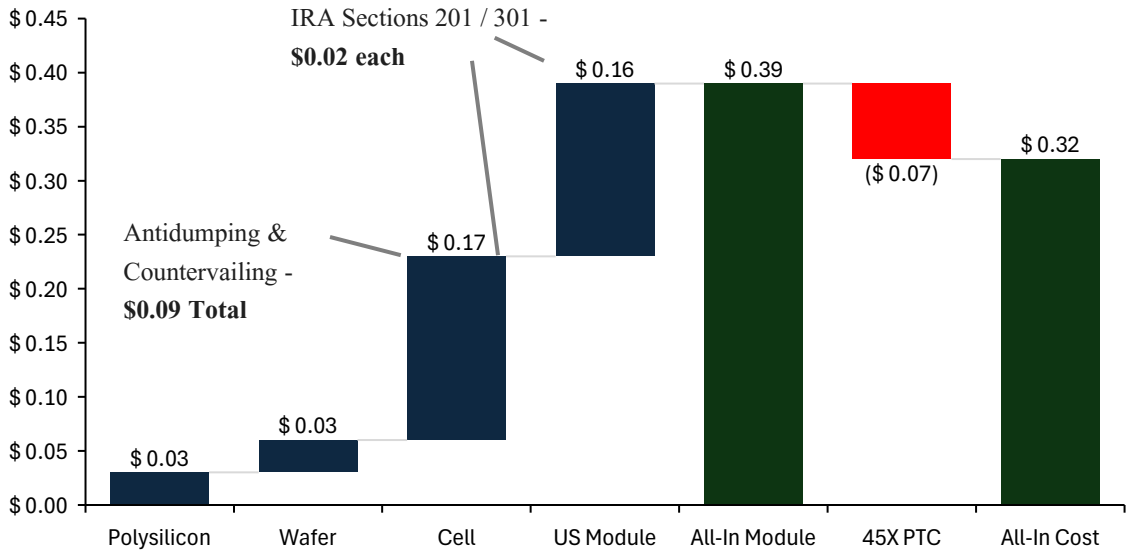
Evaluation

- First Solar is already dominating the industry selling to more than a quarter of the total market, more than doubling the manufacturing capacity over the recent years. We don't see why the trend wouldn't persist in the future, with the Ohio site going live in 2025, adding 3.5 GW of capacity.
- With only 3 out of 9 largest players in the solar energy market not being subjects to FEOC / AD / CVD, the market may become much less saturated in the span of the upcoming years given the legislation is persistent circling back to the viability of operations concern raised prior.
- There has been justified concerns over the feasible pricing for photovoltaic panels in the market due to substantial declines in recent years, initiated predominantly by aggressive expansion and supply growth by Chinese manufacturers. US legislative protection has left prices competitive for manufacturers with the price drops of less than half of those incurred in the foreign markets (namely European and Asian)

Sources: Our World in Data, 10-K, Annual Report, HSBC

Industry Analysis (SWOT) (2/2)





Sources: Deloitte, JP Morgan, Bloomberg, BMO Capital Markets

Weaknesses and Threats

Weaknesses

- **Policy overdependence:**

A range of government-enforced policies have an overwhelmingly crucial effect on the operating performance of the industry members. *Abolishment of these policies is likely to collapse the sector* due to a variety of threats discuss in detail below.

Possible policy changes are thus closely monitored by the market: the US renewable sector has underperformed since President Trump's election victory in early November, with the TAN solar index *down ~15% while the SP500 is up 5% in the post-election time frame*.

- **R&D and Supply-Demand relationships**

One of the key requirements necessary to penetrate the industry is a strong *focus on Research and Development* in order to keep up with the most up-to-date technological solutions available in the market. On top of that, the demand concern has always been persistent in the industry with alternative lower-cost energy options being consistently popular among consumers regardless ESG trends.

Threats

- **Substantial threat of competitors and new entrants:**

Lower-cost market-dominating Chinese solar panel producers have a track record of executing extremely *aggressive market expansion plays* with the support of the Chinese government. They benefit from lower manufacturing costs and expand rapidly given the environment to grow. This has happened especially widely across European and Asian markets.

- **Inconsistent policy expectations from the new administration:**

Although the outlook on the Republican administration is mainly base / bullish, implying no retaliation of the existing policy, there is a lot of *speculation around this topic*, which poses a significant threat to any manufacturer in solar panel industry.

Evaluating SWOT Threats: New Administration

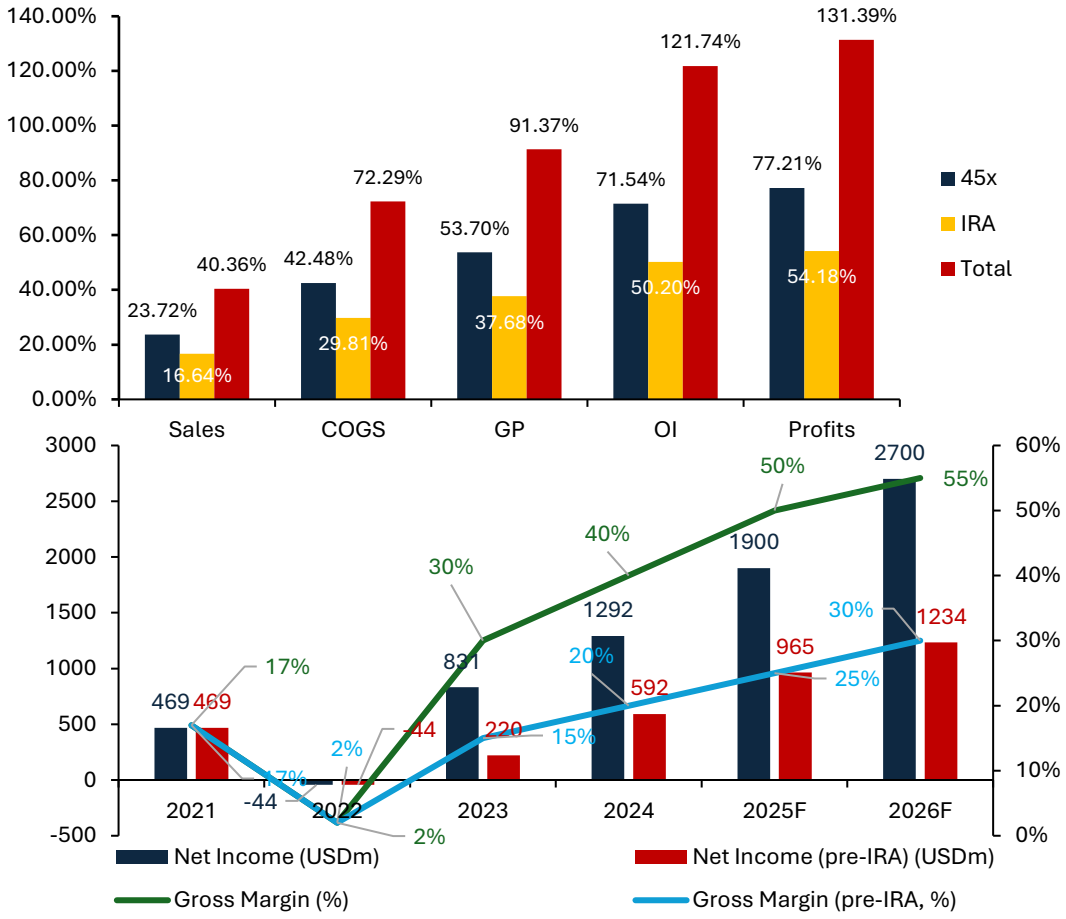
Evaluation of likely effects of the US administration change

All of the policy shifts under the new administration are assessed to pose the highest level of risk on First Solar's performance

Scenario	Outcome	Sensitivity
Enforcement of existing legislation, no extra support	First Solar is not reliant upon the imposition of extra protective measures. Current operational and financial performance is considered to be strong and no foreseeable constraints could be understated in relation to that.	
Cancellation of ITC credits (partial 45x) withdrawal	Cancellation of ITC credits is one of the relatively critical policy withdrawals that can occur. According to the consensus around the street, such measure would induce about a 30 - 40% decline in the valuation for First Solar.	
Withdrawal of IRA credits	Similarly to the ITC credits, Inflation Reduction Act is crucial to FSLR's operations. Being the second tax credit pipeline by volume, it is likely to undermine the company's profitability and largely (>30%) contract the valuation.	
Reduced ESG credits support	ESG support is much less pivotal for First Solar's performance. Generally, any measures related additional support and subsidies, is, although important, but serving more as a premium rather than status quo. Valuation is likely to be largely unchanged (<5%).	

How significant are these effects for First Solar?

45x / IRA tax credit margins with respect to operating measures



! As mentioned before, presence of tax credits is incremental for First Solar's business model and overall market survival, but it exhibits solid performance excluding this factor regardless.

Sources: FactSet, 10-K, Annual Report, Corporate Website, Bloomberg

Other Key Risks: Market-Specific

Elimination of the trade restrictions
Will lead to a fierce and aggressive competition

- **Many c-Si modules that are manufactured in Southeast Asia and China are priced lower** due to the regional cost advantage in labour, land, equipment and so on.
- If a complete lift / more relaxed trade policy on module imports takes place, First Solar will suffer from market share loss due to intensified competition on low-priced modules.

Weak demand
Higher pricing of thin modules / decline in ESG trends

- **The solar industry may experience periods of structural imbalance** between global PV module supply and demand that result in periods of pricing volatility.
- End users could easily opt for alternate electricity sources if the solar installation cost is too high or the price of electricity generated by traditional power sources (coal, gas, etc.) is significantly lower.
- If the power demand growth, led by the development of AI and data centres, is lower than we expect, the weaker US solar demand would be **a drag on shipment/revenue growth.**
- General failure of the ESG investments over the recent years also acts as a threat in the market

Concerns regarding the capacity ramp-up
It is unclear if there is a lot of room to fill new

- Given that the company has been fully booked through 2027, **the ramp-up in US manufacturing capacity is key to fulfilling the shipment requirements on schedule.**
- A delay in the ramp-up process may lead to failed shipment deliveries, which would incur extra penalty costs and potentially drag down earnings.
- However, it is unclear if First Solar has a lot of spare capacity to incorporate fulfilling additional bookings in their manufacturing schedule

General performance concerns

- Unexpected turns in the competition with crystalline module manufacturers
- Loss of large customers / withdrawal of bookings
- Failure of the R&D developments, undiscovered flaws in CdTe technology
- Other undiscussed concerns regarding new administration or market saturation, legislative environment, macroeconomic downturns

Sources: FactSet, 10-K, Bloomberg

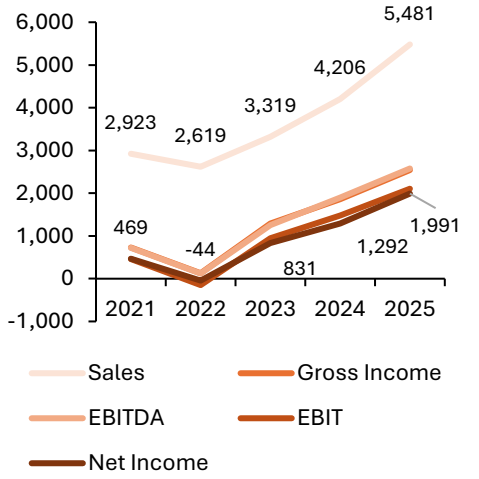
Financials Overview: Operational & Financial Stability

Key operating performances metrices summary

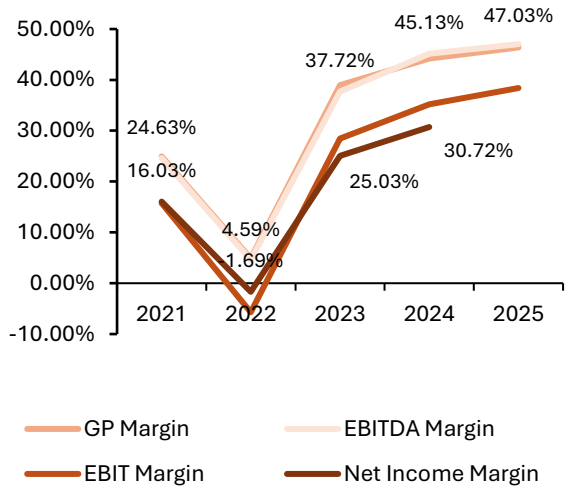
Strong margins and robust Income Statement Items Growth	Minimal Long-Term Debt low debt-to-equity ratio	Solid ROA and ROE Current and forecasted growth

First Solar exhibits strong both past and forecasted financial performance. It does not bear risky amounts of debt, provides solid returns to its capital holders and persistent high-margin growth. It seems to endure periods of cyclical downturn well and is expected to do so in the future.

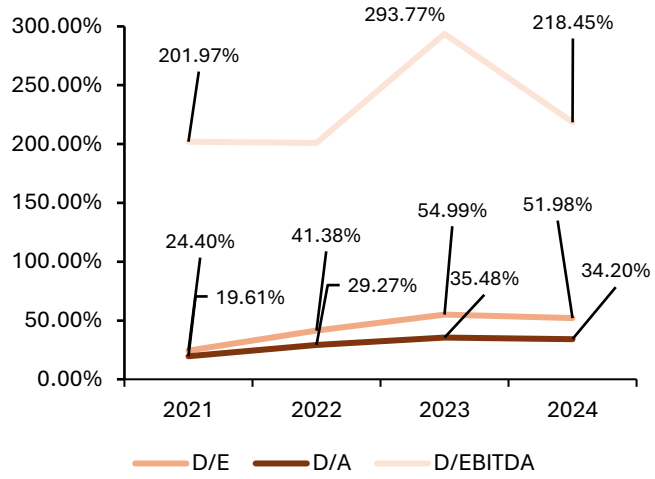
Key Income Statement Items Growth



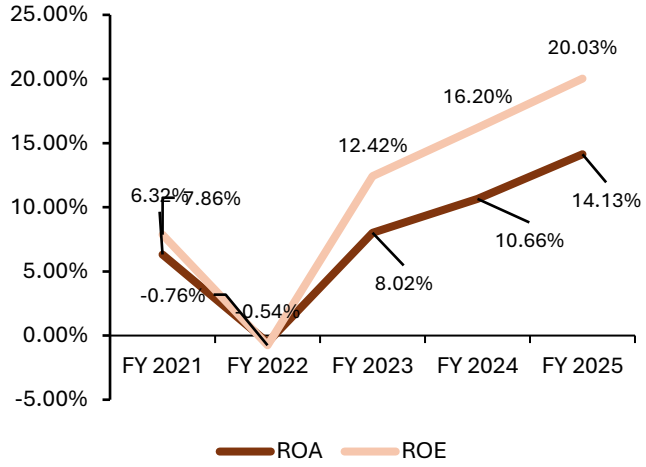
Key Margins Growth



Debt Coverage



DuPont Analysis



Discrepancies & Notes

- Lower-than-expected ROE forecasts: Analysts initially projected ROE to stay above 20%, but reinvestment in new facilities led to a decline to ~16.9% by FY2028.
- Poor 2022 performance is due to peak competition with Chinese manufacturers, ramp-up costs for newly built factories (expansion in the US and India), and transitioning to the next generation (Series 7 Module Production)
- Margins are expected to expand further at about 5% YoY long-term margin growth up until 2030.

Sources: FactSet

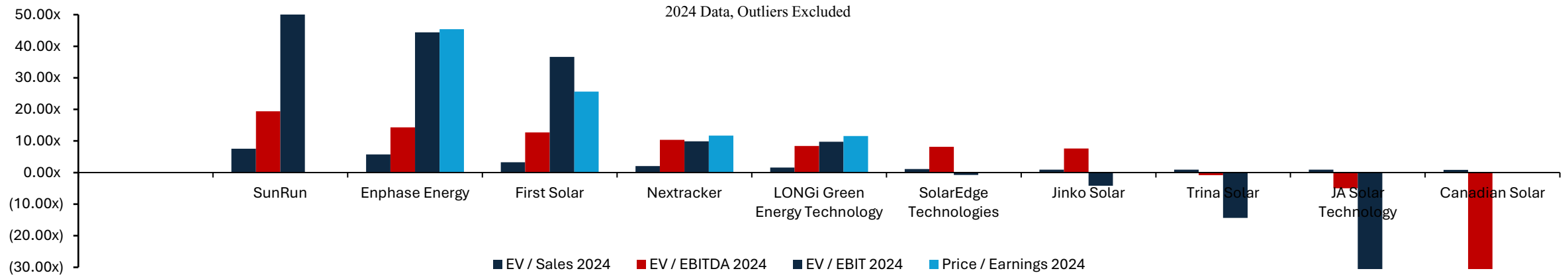
Financials Overview: Comparable Companies' Analysis

Peer group comparable valuation

EV/x	EV / Sales 2024	EV / Sales 2025	EV / EBITDA 2024	EV / EBITDA 2025	EV / EBIT 2024	EV / EBIT 2025	Price / Earnings 2024	Price / Earnings 2025
SunRun	7.52x	6.87x	19.4x	14.51x	99.2x	32.59x	3333.6x	8.69x
Enphase Energy	5.77x	5.00x	14.3x	9.53x	44.4x	20.73x	45.4x	21.28x
First Solar	3.28x	2.50x	12.7x	6.53x	36.6x	22.83x	25.7x	17.79x
Nextracker	2.07x	1.87x	10.4x	8.58x	9.9x	6.55x	11.7x	11.89x
LONGi Green Energy Technology	1.56x	1.23x	8.4x	6.58x	9.8x	9.21x	11.6x	7.60x
SolarEdge Technologies	1.09x	0.89x	8.2x	7.87x	(0.8x)	(3.75x)	#N/A	#N/A
Jinko Solar	0.92x	0.81x	7.6x	5.30x	(4.1x)	(30.14x)	#N/A	#N/A
Trina Solar	0.89x	0.72x	(0.8x)	(5.94x)	(14.3x)	45.77x	#N/A	#N/A
JA Solar Technology	0.89x	0.74x	(5.0x)	82.05x	(55.6x)	27.06x	#N/A	#N/A
Canadian Solar	0.85x	0.68x	(35.6x)	15.80x	(951.9x)	16.27x	#N/A	#N/A
Mean	2.48x	2.13x	3.97x	15.08x	(82.69x)	14.71x	685.58x	18.46x
Median	1.33x	1.06x	8.30x	8.23x	4.49x	18.50x	25.67x	16.67x

Takeaway

First Solar is trading within the reasonable range in comparison to peers.
The trend is also positive in terms of valuation



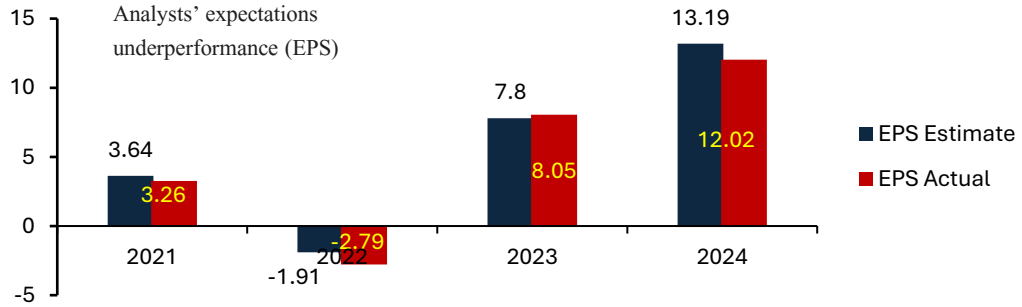
Sources: FactSet

Financials Overview: First Solar (FSLR) vs. Analyst Forecasts

Trading multiples has been worsening for First Solar at the end of Q4 2024, partially due to an underperformance in regard to some of the analysts' expectations. However, with the operational performance remaining strong, sites going live, and strong margin growth expectations, we are not scared off by higher multiples valuation.

Forward-looking FSLR Forecasted estimates (consensus)

Valuation Consensus FSLR-US	Forecasted Year				
Year	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
P/Sales	3.2x	2.6x	2.2x	2.0x	2.0x
EV/Sales	4.2x	2.4x	2.0x	1.8x	1.8x
EV/EBITDA	9.8x	5.1x	3.6x	3.3x	3.2x
EV/EBIT	12.8x	6.3x	4.4x	3.7x	3.2x
P/E	10.5x	7.2x	5.1x	4.5x	4.3x
Gross Margin	*44.2%*	*46.4%*	*52.7%*	*56.9%*	*63.8%*
Total Capital Return	*16.2%*	*19.4%*	*21.8%*	*21.3%*	*20.9%*
ROE	*16.1%*	*19.9%*	*22.1%*	*19.8%*	*16.9%*
EV/FCFF	24.0x	3 693.3x	6.9x	4.9x	4.0x



Sources: FactSet, 10-K, Wall Street Journal

Takeaways

Valuation Multiples Are Declining ⟶ More Attractive Entry Point
First Solar is becoming cheaper relative to sales and profits, possibly due to market skepticism or anticipated margin expansion already being priced in.

- P/Sales declines ⟶ Market expects continued revenue growth.
- EV/Sales falls ⟶ Enterprise value is growing slower than sales, signaling a more attractive valuation over time.
- EV/EBITDA and EV/EBIT both trend downward, indicating increasing profitability at a more reasonable valuation.

Massive Gross Margin Expansion ⟶ Competitive Moat
First Solar's cost advantage is widening, likely due to IRA subsidies, improved manufacturing processes, and technology differentiation (thin-film solar).

- Gross Margin improves ⟶ Strong pricing power & cost advantages.
- This suggests substantial efficiency gains, cost reductions, or higher ASPs (average selling prices) for solar modules.

Strong Return on Equity (ROE) and Total Capital Return ⟶ Attractive for Investors
First Solar generates high returns on equity, suggesting strong reinvestment opportunities or efficient capital allocation.

- Total Capital Return remains above 19% until 2028, showing consistent shareholder value creation.
- The decline in later years may indicate higher reinvestment in growth or capital expenditures.

Free Cash Flow Valuation (EV/FCFF) Stabilizing ⟶ Predictable Future Cash Flows
First Solar is investing heavily now, but cash flow generation will normalize, supporting long-term valuation.

Competitive Advantage Outlook: Summary

First Solar balances strong financial performance in secure market with providing innovative products

#1 Beneficiary of US legislation

- ✓ Extremely favourable legislative environment and tax credits
- ✓ Exodus of low-cost producers
- ✓ Lower exposure to macroeconomic volatility
- ✓ Support for long-term expansion targets

- Benefitting from key solar module market legislation, such as FEOC, IRA, and 45x Tax credits, AD/CVD
- Without Section 45X production tax credits, solar cell/module production plant is not economically viable in the US, even for the most efficient Chinese companies
- Limited spending and expansion by rivals

Right Place at the Right time

On the edge of technological advantage

- ✓ CdTe is the world record holding most production-efficient technology available
- ✓ Independence from c-Si supply chain

Matching the market's bullish outlook

- ✓ Turnaround of the market growth unrealized by investors
- ✓ Growing demand across various sectors
- ✓ FSLR's strong individual performance and ramping up the production in time
- ✓ Opportunity to acquire market share

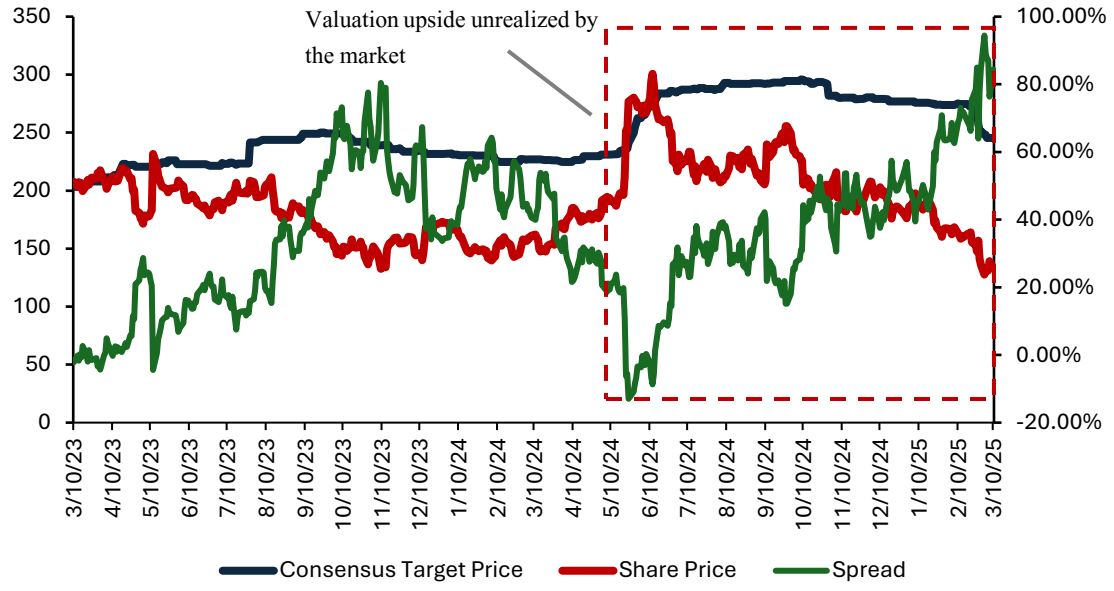
- The US power demand has been stagnating in recent decades, but this is set to change thanks to further electrification, industrial reshoring and AI development.
- By segment, the residential market is shrinking in 2024 due to high interest rates and a change of tariff framework in California, but this could start to recover gradually from 2025. Utility solar, on the other hand, remains the main engine for growth in the US.
- FSLR has strong booking base and there has been an uptrend in pricing for the new bookings

Sources: FactSet, 10-K, Annual Report, HSBC

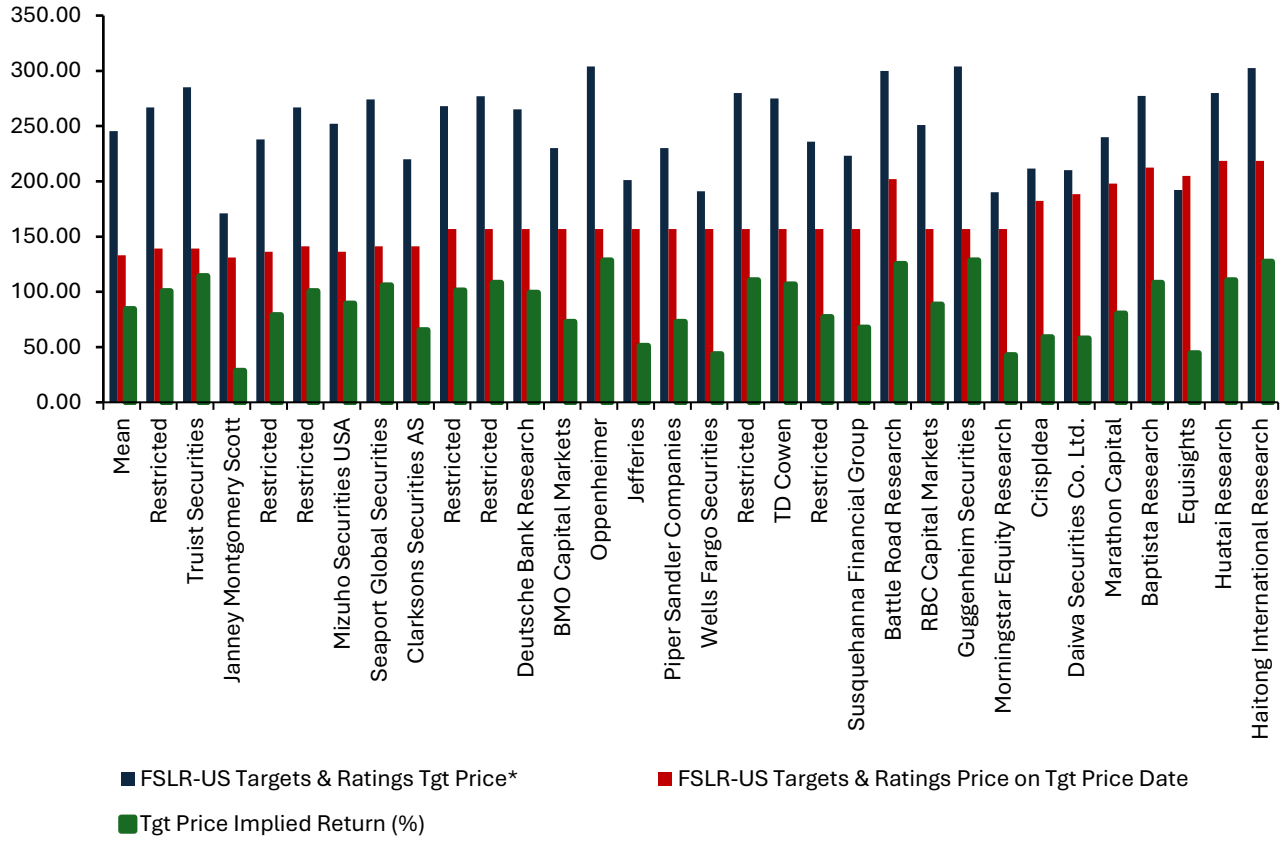
Investment Thesis: Underappreciated Pricing

We believe that First Solar's share price has been heavily undervalued by the markets given the conditions of substantial macroeconomic volatility, strengthened by sector-specific issues, contrary to the company having excellent market and cash flow growth perspectives.

Street consensus target price history



Current street target price recommendation



- First Solar has a track history of being an undervalued stock. However, prior to 2025, the company was operating in a highly competitive and risky environment, while a lot of these risks seem to smooth out because of the variety of factors. Financial performance also seems stronger than what pricing implies.
- However, although this could be seen in analysts' recommendations, such change does not seem to have been reflected in the pricing of the stock. **This is our play for First Solar.**

Sources: FactSet

Valuation: Summary

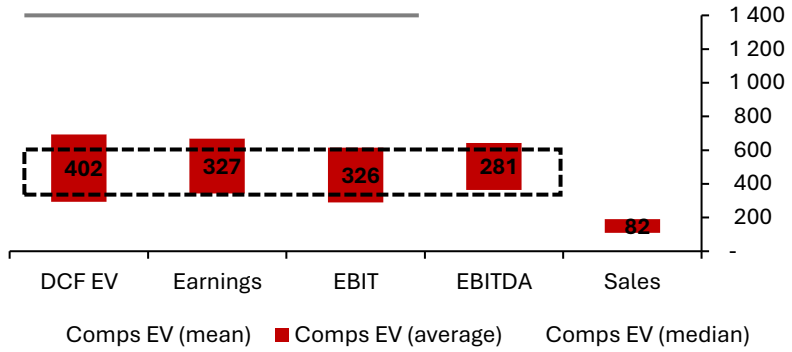
Target Price Recommendation Summary

Target Price	**248.8**
DCF Weight	50%
Consensus DCF Weight	15%
Residual Income	15%
Comps Weight	10%

Sensitivity Analysis

Target Share price		WACC				
		7.20%	8.10%	9.00%	9.90%	10.80%
Terminal Growth Rate	2.40%	280.3	242.3	214.3	192.7	175.5
	2.70%	296.4	253.7	222.8	199.3	180.8
	3.00%	314.8	266.4	232.1	206.5	186.5
	3.30%	336.0	280.7	242.5	214.3	192.6
	3.60%	360.7	296.9	253.9	222.9	199.3

Comparables Valuation (Football Field)



DCF Valuation Summary

Discount Rate (WACC)	9.00%
Terminal Value	20 799
NPV of FCFF	4 780
Target EV	25 579
Shares Outstanding	107
DCF Target Share Price	**232**
Current Share Price	126
Implied Upside/Downside	**83.7%**
Consensus DCF Share Price	**254**

Sources: FactSet, Own Valuation

Consensus DCF Exhibit

Discounted Cash Flow Analysis - First Solar, Inc. (FSLR-US) — All figures in millions of except per share items.

Year	AY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Total Revenue	4 206.3	5 480.5	6 571.8	7 185.9	7 161.2	7 669.6	7 809.2
yoy growth (%)	*26.7%*	*30.3%*	*19.9%*	*9.3%*	*-0.3%*	*7.1%*	*1.8%*
EBITDA	1 898.2	2 577.7	3 645.9	4 070.4	4 126.5	4 350.0	3 782.0
EBITDA Margin	*45.1%*	*47.0%*	*55.5%*	*56.6%*	*57.6%*	*56.7%*	*48.4%*
Less: D&A	-417.7	-489.2	-526.2	-463.2	-381.0	-381.0	-381.0
EBIT	1 480.6	2 088.5	3 119.7	3 607.1	3 745.5	3 969.0	3 401.0
Tax rate	*8.1%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*
NOPAT	1 360.2	1 462.0	2 183.8	2 525.0	2 621.9	2 778.3	2 380.7
Add: D&A	417.7	489.2	526.2	463.2	381.0	381.0	381.0
% of revenue	*9.9%*	*8.9%*	*8.0%*	*6.4%*	*5.3%*	*5.0%*	*4.9%*
Less: Capex	-1 526.1	-1 362.0	-1 001.5	-721.3	-659.5	-810.0	-824.0
% of revenue	*36.3%*	*24.9%*	*15.2%*	*10.0%*	*9.2%*	*10.6%*	*10.6%*
NWC adjustment	483.1	-548.1	-657.2	-718.6	-716.1	-767.0	-780.9
% of revenue	*-11.5%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
FCFF	735.0	41.1	1 051.3	1 548.3	1 627.3	1 582.3	1 156.8
yoy growth (%)	*225.0%*	*-94.4%*	*2624.4%*	*147.4%*	*105.2%*	*97.3%*	*73.2%*
FCFF (Broker consensus)	-308.0	3.6	1 923.6	2 692.9	3 324.4	3 416.5	3 273.0

Appendix

First Solar
NASDAQ: FSLR-US

UTM Capital – Power, Utilities and Infrastructure

Financials Overview

Balance sheet highlights:

- **Total Assets:** As of December 31, 2024, First Solar reported total assets of approximately $12.13 billion, reflecting a significant increase from $10.37 billion in the previous year.
- **Cash and Short-Term Investments:** The company's cash and short-term investments stood at $2.11 billion, providing substantial liquidity for operations and growth initiatives.
- **Total Liabilities:** Total liabilities were reported at $4.15 billion, up from $3.68 billion in the prior year, indicating an increase in obligations.
- **Total Shareholders' Equity:** Shareholders' equity reached $7.98 billion, an increase from $6.69 billion, showcasing robust financial health and retained earnings.

Beating Expectations:

- Q4 2024 Revenue of $1.51B exceeded analyst forecasts of $1.38B (+9.4% surprise).
- FY2025 Guidance of $5.3B–$5.8B suggests revenue growth stronger than most initial analyst estimates.
- Stock valuation multiples declining faster than expected: Analysts previously forecasted higher P/E ratios, but improving earnings & market conditions may be driving down valuation multiples faster than anticipated.

Q4 2024 Net Income of $393M was above expectations due to:

- Lower-than-expected manufacturing costs.
- Higher efficiency in solar panel production.
- Margins & Cash Flow Performing Well:
- Gross margin expected to be 63.8% by FY2028 vs. analyst estimates closer to 55-60%.

EPS: *The actual EPS fell short of analyst expectations, primarily due to a $56 million warranty charge and challenges in the European market.*

Revenue: *Revenue surpassed forecasts, driven by robust demand and favorable market conditions.*

Recent Financial Performance:

- **Revenue:** In the fourth quarter, First Solar reported revenues of $1.51 billion, surpassing analysts' expectations.
- **Net Income:** The company achieved a net income of $393 million in the same quarter, marking a 13% increase compared to the previous year.

Forward-Looking Statements:

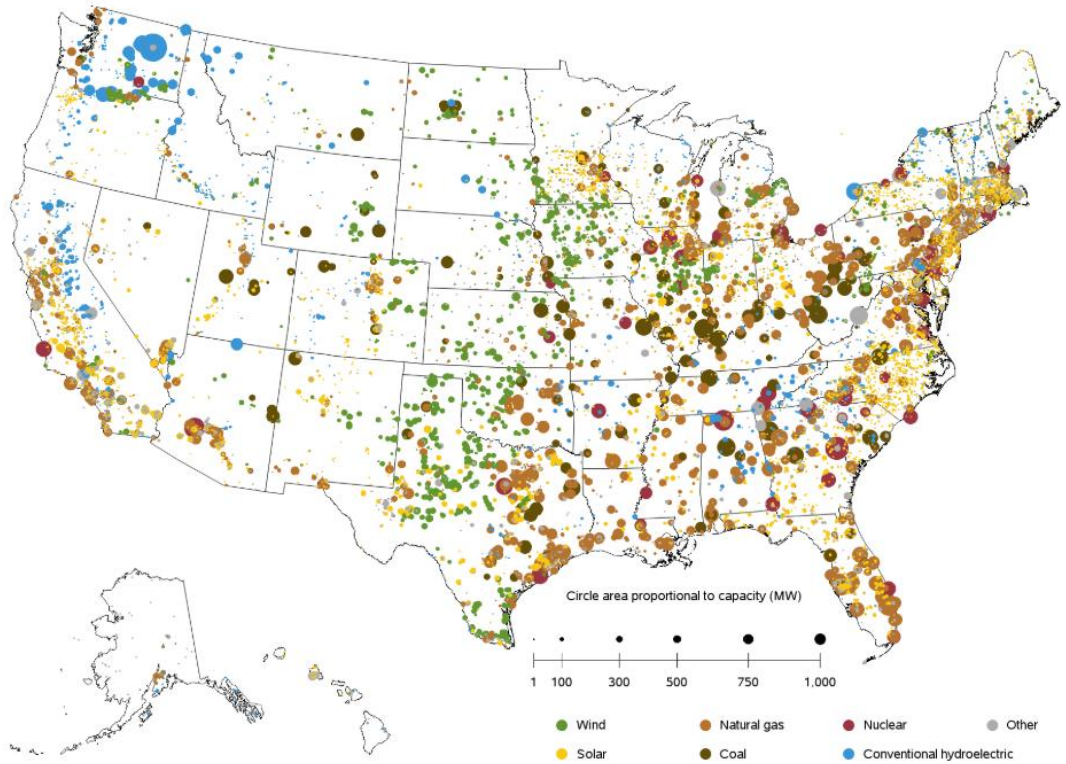
- **Sales Forecast:** First Solar projects sales between $5.3 billion and $5.8 billion for the current year, representing approximately a 32% increase from the previous year and exceeding Wall Street estimates.
- **Earnings Per Share (EPS):** The company anticipates an EPS range of $17 to $20 for 2025, implying a 50% annual earnings growth, though slightly below some analysts' expectations.

Strategic Developments:

- **Sales Forecast:** First Solar projects sales between $5.3 billion and $5.8 billion for the current year, representing approximately a 32% increase from the previous year and exceeding Wall Street estimates.
- **Earnings Per Share (EPS):** The company anticipates an EPS range of $17 to $20 for 2025, implying a 50% annual earnings growth, though slightly below some analysts' expectations.

Sources: FactSet, 10-K, Wall Street Journal

Operable utility-scale electric generating units, as of January 2025



Sources: FactSet, 10-K, Annual Report, HSBC