



## The Art of the (Solar) Deal: Soaking Up Tariff-Driven Gains from the Trump Era

### **First Solar, Inc.** **NASDAQ: FSLR**

**Current Price: \$192.57**

**Target Price: \$232.07**

**Implied Upside: 20.5%**

**Recommendation: LONG**

**Investment Horizon: 1½ Years**

**Team:** Infrastructure

**Members:** Tyler Edwards | Peter Colbourne | Charles Johnson | Kayla Ho | Jeremy Sasson

**Date:** December 5<sup>th</sup>, 2024



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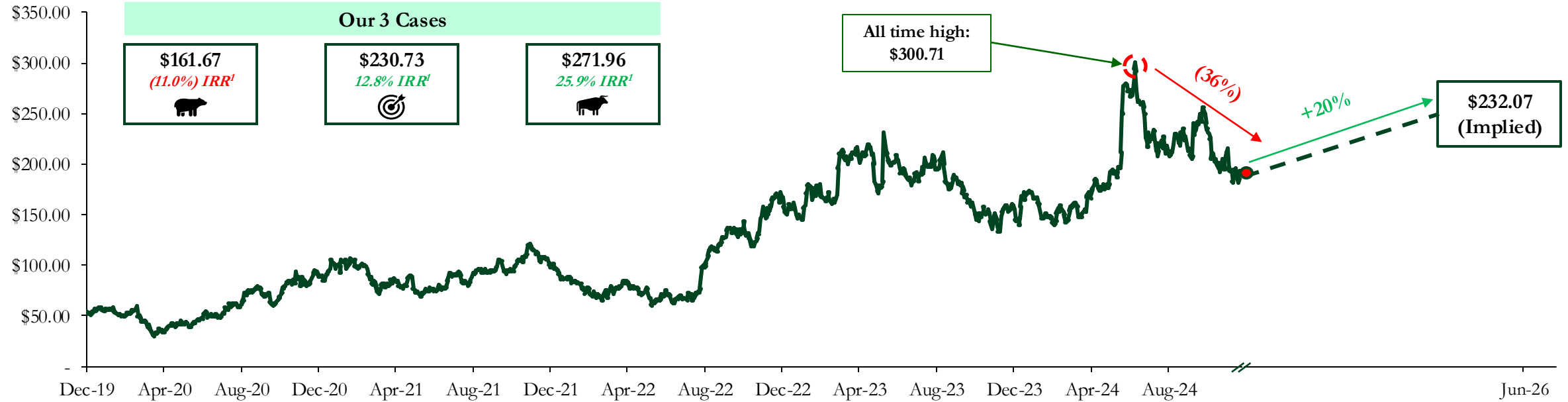
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# Executive Summary



Based off our 3 Scenario DCF, we expect First Solar's share price to rise 20.5%, to \$232.07, over the coming 18 months benefitting from the Trump Era



## Our Investment Theses

Domestic Policy Tailwinds Supporting Trump-Driven Catalysts

Cutting-edge, one-of-a-kind products that secure stable cash flows

## Commentary

- First Solar's supply chain is non-China focused, and its business operations are almost exclusively in the USA
- Whilst Trump may rollback IRA policies of the Biden Administration (albeit fairly unlikely), the tariffs will benefit US solar manufacturers – of which First Solar is the leader in

- First Solar has superior solar panels to its rivals, in particular with its Series 6 and 7 line
- Its focus with the utility-scale market allows it to develop contracted revenue therefore ensuring predictable and stable cashflows; this is something that other solar panel manufacturers struggle to have

# Business Overview



First Solar, Inc. is a leading vertically integrated American solar technology company founded in 1999, specialising in the manufacture of advanced thin-film photovoltaic (PV) solar modules and providing comprehensive utility-scale solar power solutions, including project development, engineering and operations

## Business Overview



- First Solar operates an **end-to-end business model** creating a **fully integrated, continuous process** with 100% QA/QC traceability



- Its **proprietary thin-film cadmium telluride (CdTe) technology** outperforms industry-standard silicon-based modules in hot and humid climates, offering superior energy yields with lower carbon and water footprints, providing it with a **leading environmental profile for utility-scale projects**
- The Company supports a **circular economy** by manufacturing eco-efficient PV technology from mining byproducts, using minimal resources, and enabling high-value recycling to **recover over 90% of module materials** for reuse in new solar panels and other products
- First Solar is unique among the world's ten largest solar manufacturers for being the only **US-headquartered** company and not manufacturing in China

## Products Overview

- First Solar produces high-quality advanced **thin film cadmium telluride (CdTe) PV modules**

Series 6	Series 7
 <p>Power Output: 430 – 460W</p> <p>Efficiency: Up to 18.6%</p>	 <p>Power Output: 525 – 550W</p> <p>Efficiency: Up to 19.7%</p>

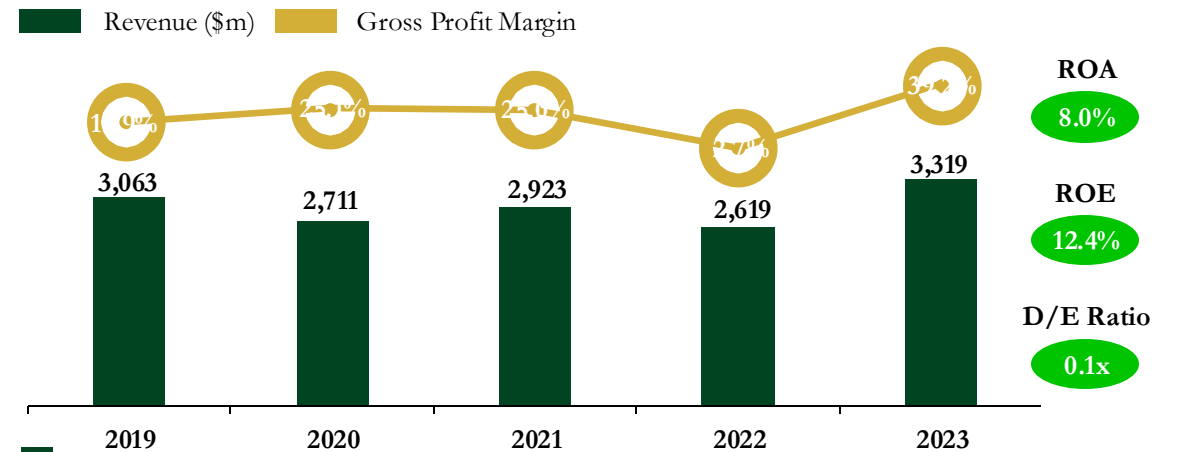
### Key Features:

- ✓ Under-mount frame with SpeedSlots for faster installation
- ✓ Dual junction box design

### Key Features:

- ✓ Back rail mounting system for faster, cost-efficient installations
- ✓ Larger form factor for utility-scale projects

## Financial Overview



## Key Management



**Mark Widmar (CEO)**  
Appointed in July 2016

- Has over a decade of financial leadership within the Company, having previously served as CFO & CAO
- Led the launch of 8point3 Energy Partners, highlighting expertise in renewable energy financing and operations



**Alex Bradley (CFO)**  
Appointed in October 2016

- Joined the company in 2008, previously serving as Vice President of both Treasury and Project Finance
- Oversaw the structuring, sale & financing of >\$10bn and ~2.7GWDC of the Company's global development assets



**Georges Antoun (CCO)**  
Appointed in July 2016

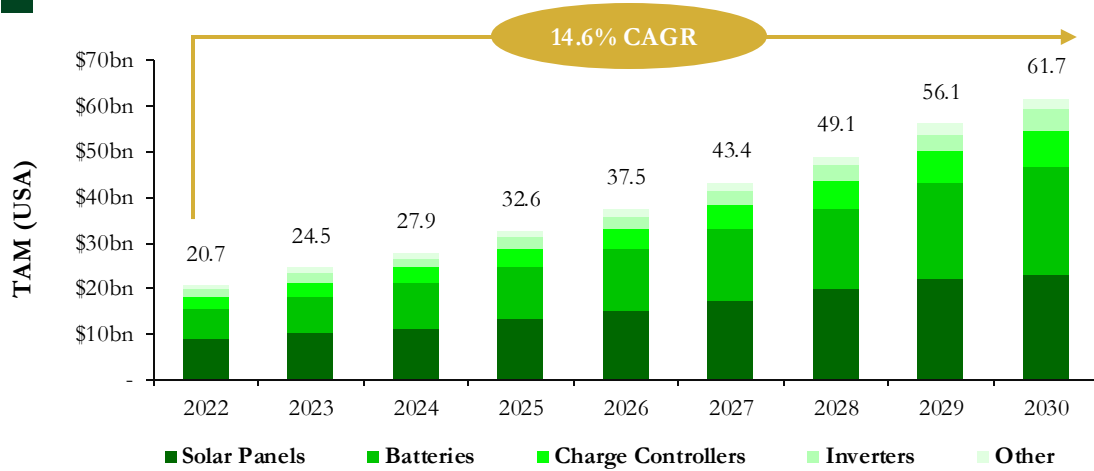
- Joined First Solar in 2012 as COO
- Has 30+ years of operational and technical expertise, having held senior leadership roles at global technology companies like Ericsson, Cisco and Redback Networks

# Industry Overview



A dynamic sector filled with challenges, with First Solar leading the charge in innovation and growth to address these issues.

## U.S. Solar Market Forecast



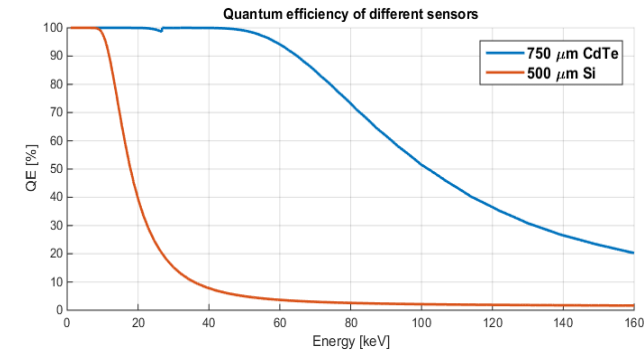
## Key revenue drivers

- 1 Demand for Solar Panel Increases:** Solar is forecasted to account for 58% of new electricity generation capacity installed in the U.S. in 2024.
- 2 Utility-scale projects:** These generate substantial revenue for the solar panel industry, with installations often exceeding 50 MW in capacity, contributing to an estimated \$148 billion global market for utility-scale solar in 2023.
- 3 Power Purchase Agreements (PPAs):** PPAs, accounting for 60-70% of utility-scale solar deals, provide predictable revenue streams with contract terms often spanning 15-25 years, underpinned by stable electricity pricing and demand growth in renewable energy sectors.
- 4 Operations & Maintenance (O&M) Services:** This sector is expected to grow to over \$20 billion by 2026, offering recurring revenue through service contracts averaging \$10-\$15/kW annually for tasks like performance monitoring, repair, and panel cleaning.

## Key challenges are faced by the solar panel industry...

- **Efficiency Improvements:** Developing technologies to enhance the conversion of sunlight into usable electricity.
- **Material Scarcity:** Addressing shortages of critical materials like polysilicon and rare earth elements.
- **Environmental Impact:** Mitigating the lifecycle environmental effects, including emissions during manufacturing and waste disposal.

## ...which are tackled by First Solar



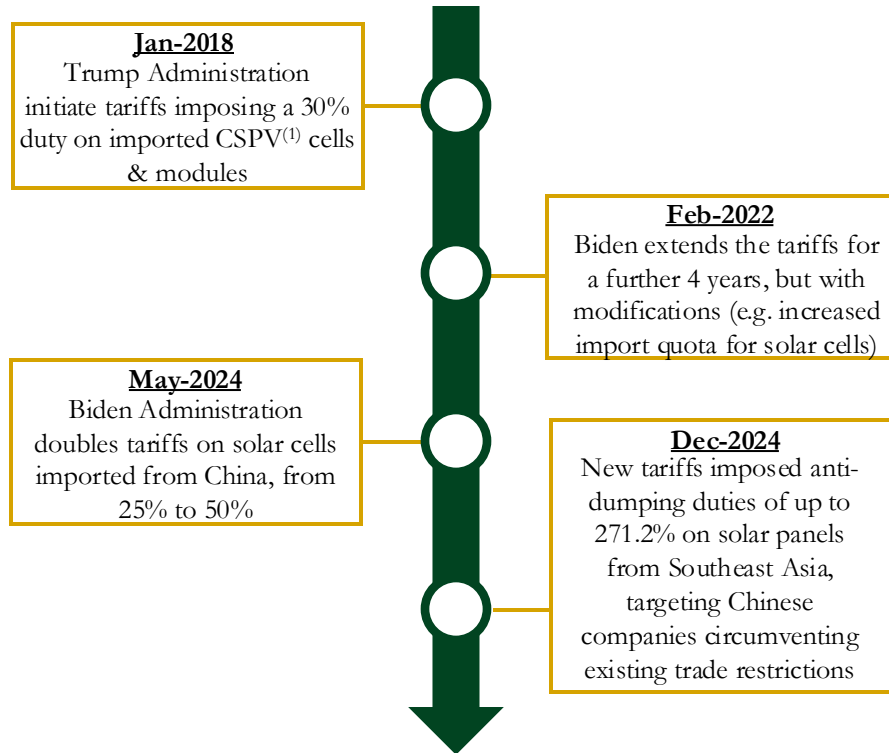
**CdTe technology** offers superior photoelectric absorption, particularly in the visible light spectrum.

# Thesis #1: Domestic Policy Tailwinds Supporting Trump-Driven Catalysts



Even with President Trump's election victory and the potential rollback of the IRA, First Solar's strategic focus on US-based manufacturing, energy security, and a non-China supply chain aligns with core Republican priorities, positioning the company to maintain strong tailwinds for growth and profitability

## Continuation of Section 201 Solar Tariffs



## Supply Chain & Energy Independence

The US relies heavily on foreign sources for its solar photovoltaic (PV) supply chain.

~89% of **solar panel shipments** in the US were **imported** in 2020, predominantly from Southeast Asian factories owned by Chinese companies

95% of global **solar-grade polysilicon production**, a critical material for most solar panels, is projected to be accounted for by **China by 2025**

>80% of the market for **wafer production** is captured by China, indicating a significant concentration in this critical stage of the supply chain

- First Solar's investment in American manufacturing has led to it sourcing the majority of the bill of materials for its Series 6 products from **US suppliers**, and 100% American glass and steel for its Series 7 modules.
- These investments in sourcing glass and steel from Ohio, Alabama, and Pennsylvania have resulted in supplier investments in capacity expansion to support First Solar's demand. These suppliers, in turn, are supported by supplementary supply chains – for instance, the glass produced in Ohio uses sand mined in Michigan and soda ash from Wyoming.

- An “America-first” approach and a renewed emphasis on energy independence under the Trump Administration **strongly aligns** with First Solar's commitment to domestic sourcing.
- By relying entirely on US-based manufacturing and materials, First Solar minimises supply chain vulnerabilities and positions itself as **a critical partner in achieving national energy security goals**, reducing reliance on foreign imports.



With **higher costs for foreign made panels**, domestic producers like First Solar gain a **competitive advantage** allowing them to establish themselves in the market and capture a larger market share



First Solar can **improve profit margins** by maintaining **pricing power** as traditionally lower cost imports are no longer able to compete as effectively

# Thesis #2: Cutting-edge, one-of-a-kind products that secure stable cash flows



First Solar sheds dead weight, prioritising continuous innovation of their product to increase their already strong market share

## Commitment to innovation throughout supply chain

- First Solar invests **more resources in R&D across its entire supply chain than nearly all of its competitors** and continually makes product and process innovations to stay ahead of the competition which they **heavily** protect

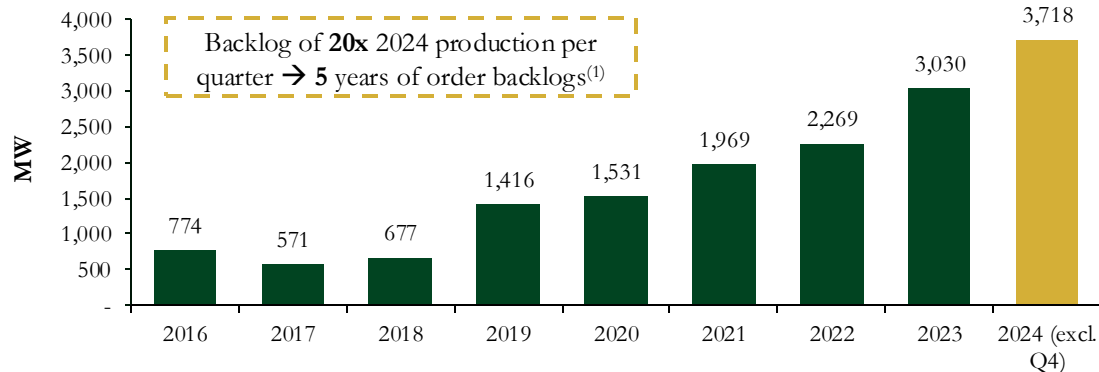
- Acquisition** of Swedish PV thin-film R&D firm increases **geographic diversification** and demonstrates a commitment to accelerate tandem PV development



## High demand and stable cashflows allow for safer spending

- Targeting **utility-scale market** segment where superior performance in low light conditions and **slower module degradation** rates create significant **value**
- The firm's forward contracting strategy, guaranteeing **consistent revenues** in an inherently cyclical industry allows them to make big investments that competitors can't. Huge order backlog of 74.6 GW as of Jun-24, demand that would extend into 2029 representing \$17.7bn in future revenues

Average quarterly module production



## Tailored products that outperform low-cost alternatives

- First Solar's thin-film PV products **outperform competitors**, protecting developer value and focusing on sustainability while US tariffs and subsidies offer protection from low-cost Chinese market.
- First Solar's manufacturing process uses 2-3% of the semiconductor material required for traditional c-Si panels, resulting in one of the **lowest module costs per watt**.

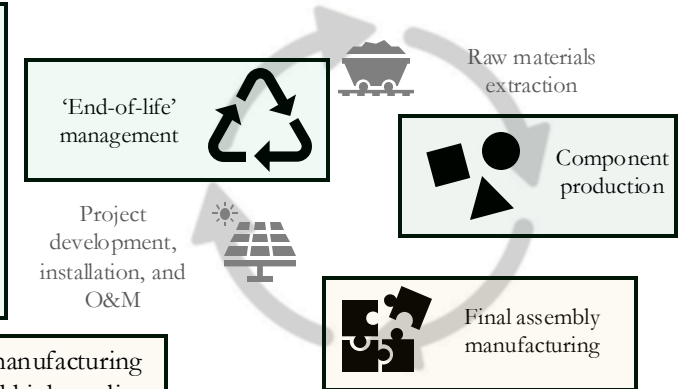
- 90%+ recovery of module materials for reuse
- IEA place major importance on innovation and development of PV recycling. First Solar's in-house recycling process puts them ahead of the curve and increases their supply chain versatility

**Fully automated**, continuous module manufacturing environment results in reduced costs and high-quality control standards.

- Tailored solutions** targeted at different consumers across different geographies decrease softens demand risk:
- Series 7 modules**: With optimised models for the utility-scale market in the US and India
- Series 6 modules**: less costly alternative targeted at the more variable distributed generation market



**Increased supply chain specialisation:** Discontinuation of their installation and O&M services, instead focusing on manufacturing where they generate the most value through R&D.



# Trading Comparable Analysis



The Trading Comparable Analysis shows a 16.9% upside for First Solar

Company	Ticker	Share Price	LTM									
			Revenue	EPS	Gross Margin	Op. Margin	EBITDA	EBITDA Margin	EV / Revenue	EV / EBITDA	Price / Sales	Price / Earnings
<b>First Solar</b>	<b>NAS: FSLR</b>	<b>\$187.36</b>	<b>3,850,811</b>	<b>9.12</b>	<b>46.5%</b>	<b>34.5%</b>	<b>1,306,062</b>	<b>43.2%</b>	<b>5.0x</b>	<b>22.1x</b>	<b>5.4x</b>	<b>31.9x</b>
Solaredge Technologies	NAS: SEDG	\$10.47	825,918	(6.89)	(76.0%)	(132.9%)	368,326	(149.7%)	1.2x	NM	1.4x	NM
Canadian Solar	NAS: CSIQ	\$11.06	5,172,844	0.67	16.2%	2.7%	161,414	2.7%	0.7x	8.0x	0.2x	3.8x
Enphase Energy	NAS: ENPH	\$63.38	1,250,240	1.55	46.2%	2.5%	337,194	5.9%	11.1x	19.1x	11.6x	51.0x
Array Technologies	NAS: ARRY	\$6.37	982,190	0.91	30.9%	11.0%	374,926	13.5%	1.9x	12.0x	1.4x	15.0x
Suzlon Energy	BOM: 532667	₹65.15	934,980	0.01	34.8%	13.9%	156,125	15.4%	9.0x	49.5x	8.0x	157.7x
NextEra Energy Partners	NYS: NEP	\$16.64	1,167,000	2.51	55.5%	2.4%	1,033,000	75.2%	15.0x	20.8x	1.7x	10.5x
Beijing Energy International	HKG: 00686	H 1.30	871,371	0.00	96.6%	41.5%	668,895	74.3%	11.3x	13.9x	0.7x	13.6x
Nextracker	NAS: NXT	\$38.68	2,802,433	3.02	36.1%	24.4%	712,368	26.7%	2.6x	19.9x	3.7x	26.1x
<b>Mean</b>			1,750,872	0.22	30.0%	(4.3%)	384,450	8.0%	6.6x	19.6x	3.6x	36.2x
<b>Median</b>			1,074,595	0.79	35.5%	6.9%	356,060	14.5%	5.8x	16.5x	1.5x	14.3x



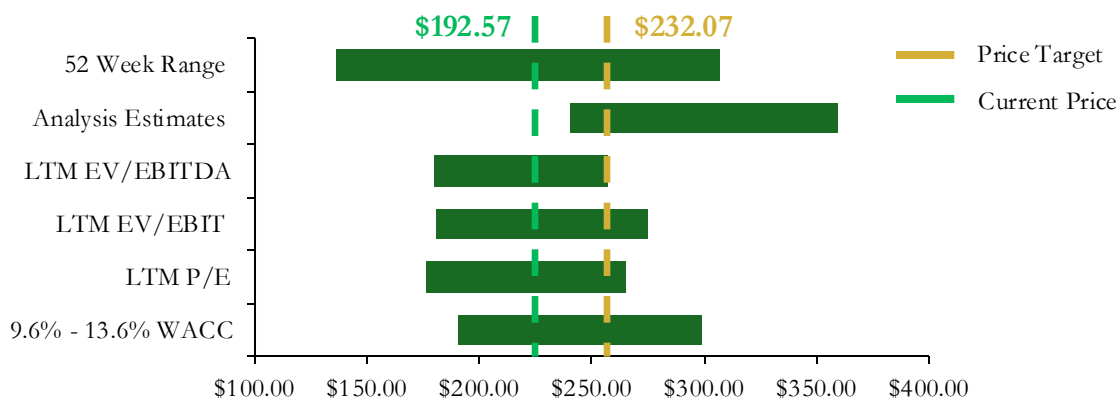
# Valuation – Scenario Analysis & Football Field



First Solar are the most dominant US solar panel manufacturing firm in the US giving them a strong platform to benefit from the rapidly growing Solar energy sector benefitted by US trade policies and protected by tariffs

Scenarios	Commentary	Target Price	Implied Price
<b>Bull</b> 	<ul style="list-style-type: none"> <li>US place tariffs on Southeast, preventing “dumping” into the US markets. Tariffs ~ 91%-286%</li> <li>Higher tariffs increase the price of PV Panels within US, increasing First Solar revenue</li> </ul>	<b>\$271.96</b> <i>20% Probability</i>	<div style="border: 2px dashed orange; padding: 10px;"> <p><b>Our Weighted Price</b></p> <p><b>\$232.07</b></p> <p>20.5% Upside</p> <p>13.3% IRR<sup>(1)</sup></p> </div>
<b>Base</b> 	<ul style="list-style-type: none"> <li>First Solar's show strong financials with growing revenue, reducing margins and strong demand visibility</li> <li>Favourable macro conditions - falling CPI and IR makes financing renewable projects more favourable</li> </ul>	<b>\$230.73</b> <i>70% Probability</i>	
<b>Bear</b> 	<ul style="list-style-type: none"> <li>Republicans have declared opposition to renewable energy subsidies and the IRA</li> <li>Future unspent IRA 45x Credits which First Solar's is a big beneficiary of are rescinded</li> </ul>	<b>\$161.67</b> <i>10% Probability</i>	

## Football Field



## Why an Opportunity exists

- US solar installation projected to increase by 50% by 2028 driven by growing demand for electricity led by the rapid development of high electricity usage data centres and continuing declining in costs for solar energy.
- First Solar's aims to expand manufacturing capacity by 6.2 GW by FY2025, leveraging industry growth to sustain strong market share.
- Due to tariffs restricting flow of solar panels, the US is one of the most lucrative markets with US buyers paying some of the world's highest prices for PV.

# Event Path & Mitigating Risks



First Solar's share price will face mixed drivers: rate cuts and European growth could boost it, whilst IRA uncertainty and inflation risks weigh it down

## Risks & Mitigants

### Policy Reversals on Renewable Energy Incentives

- Potential rollback of the Inflation Reduction Act (IRA) subsidies, including Section 45X credits, could significantly impact First Solar's EBITDA and profitability
- A shift in U.S. political leadership could bring regulatory uncertainty, affecting long-term investment planning

### Supply Chain Vulnerabilities

- Whilst First Solar benefits from a U.S.-focused supply chain, any domestic material shortages or disruptions could hinder its manufacturing expansion plans (saw this during COVID-19)
- Global shortages of critical materials (e.g., polysilicon, rare earth elements) could lead to increased costs and production delays

### Interest Rate Volatility (due to Tariff-induced inflation)

- Continued high interest rates may dampen demand for utility-scale solar projects as financing costs for developers rise
- A slower-than-expected decline in CPI or Federal Reserve inaction could exacerbate these pressures

### Competitive and Market Dynamics

- Increased competition from Asian manufacturers, even with tariffs in place, could pressure pricing and margins
- Market softness in the U.S. due to credit availability challenges might offset growth opportunities in Europe

## Event Path

### Q1 2025: Federal Reserve Signals Rate Cuts

Further rate cuts improves access to financing for utility-scale solar projects, boosting demand for First Solar's products.

### Mid-2025: Delays in Manufacturing Capacity Expansion

Any setbacks in ramping up the planned 6.2 GW capacity by FY2025 could create supply bottlenecks, limiting revenue growth.

### Late-2025: Strengthening Domestic Tariff Protections

Continuation or increase of Section 201 tariffs against foreign imports would further solidify First Solar's competitive edge in the U.S. market.

### Q2 2025: Political Uncertainty

Republican majority in the House and Senate could result in opposition to the Inflation Reduction Act (IRA); rescinding Section 45X credits or could depress investor sentiment

### Mid-2025: European Market Expansion

Increased focus on energy independence and green legislation in Europe accelerates demand for First Solar's Series 6 and 7 modules

### Early 2026: Persistent Inflation in Energy Transition Costs

Sustained high costs for raw materials could compress margins despite stable demand; developers might delay or downscale projects



A strong ESG performance based on third-party ratings, ranking in the top 24% of the industry

## Rated performance distribution of Industry

### Governance – 78/100

- 1<sup>st</sup> PV products in the EPEAT registry for sustainable electronics
- 1<sup>st</sup> of the top 10 largest PV solar manufacturers to join the responsible business allowance
- 10+ years publishing transparent annual sustainability performance reports & CDP climate change questionnaires

**LSEG ESG Rating:  
73/100**



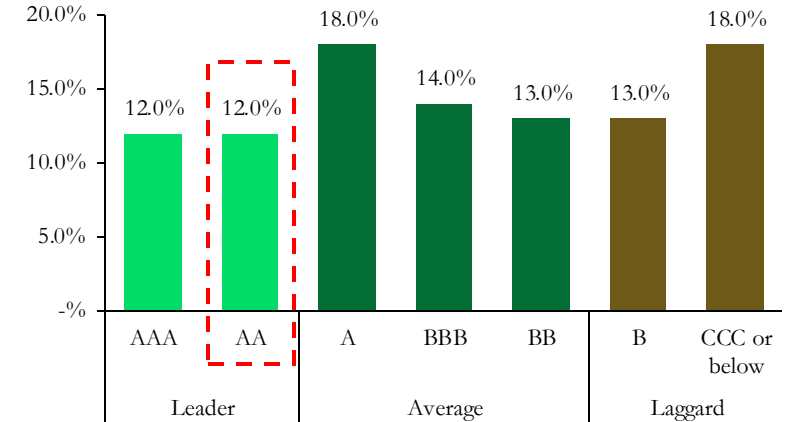
### Social – 82/100

- ~5x lower injury rate than the glass product manufacturing industry average
- 25+ diversity and veteran-focused recruitment sites used to find new talent
- 33% diverse Board of Directors
- \$11m. invested in efforts to bridge racial gaps in health, wealth, and opportunity in the US
- \$2.5m.+ donated since 2017 to promote education, reduce inequalities, provide access to clean energy and water, and mitigate the impacts of COVID-19
- Consistent global specifications for material components, comprehensive supply chain management
- Zero module components sources from Zinjiang, China

### Environment – 63/100

- Compared to c-Si modules from China, First Solar's' CdTe PV modules offer up to:
  - 4x lower carbon footprint
  - 4x lower water footprint
  - 5x faster energy payback time
- Only solar manufacturer with global in-house PV recycling capabilities
- 90%+ recovery of module materials for reuse
- ~25GW Expected global annual nameplate capacity by 2026

## Rating Breakdown (LSEG Rating)



**MSCI Rating: AA**

## Sustainable Development Goals (SDGs)



# Appendix #1 – Discounted Cash Flow Analysis Output



Based upon our Base Case Scenario (Upside 20.5%).

Fiscal Year End	Historical					Projected							
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
<b>Revenue</b>	<b>3,063</b>	<b>2,711</b>	<b>2,923</b>	<b>2,619</b>	<b>3,319</b>	<b>4,165</b>	<b>5,768</b>	<b>6,760</b>	<b>7,923</b>	<b>9,286</b>	<b>10,883</b>	<b>12,755</b>	<b>14,949</b>
<i>% Growth</i>	<i>36.5%</i>	<i>-11.5%</i>	<i>7.8%</i>	<i>-10.4%</i>	<i>26.7%</i>	<i>25.5%</i>	<i>38.5%</i>	<i>17.2%</i>	<i>17.2%</i>	<i>17.2%</i>	<i>17.2%</i>	<i>17.2%</i>	<i>17.2%</i>
<b>Gross Profit</b>	<b>549</b>	<b>698</b>	<b>730</b>	<b>128</b>	<b>1,301</b>	<b>927</b>	<b>1,535</b>	<b>1,949</b>	<b>2,284</b>	<b>2,677</b>	<b>3,138</b>	<b>3,677</b>	<b>4,310</b>
IRA 45X Benefit	-	-	-	-	659	1,046	1,274	1,510	1,649	1,794	1,944	2,099	2,260
R&D	(97)	(94)	(99)	(113)	(152)	(157)	(218)	(255)	(299)	(351)	(411)	(482)	(565)
SG&A	(205)	(223)	(170)	(165)	(198)	(186)	(186)	(198)	(232)	(272)	(319)	(374)	(438)
<b>EBITDA</b>	<b>247</b>	<b>381</b>	<b>461</b>	<b>(150)</b>	<b>1,610</b>	<b>1,630</b>	<b>2,405</b>	<b>3,006</b>	<b>3,402</b>	<b>3,848</b>	<b>4,352</b>	<b>4,922</b>	<b>5,568</b>
<b>EBIT</b>	<b>42</b>	<b>148</b>	<b>201</b>	<b>(420)</b>	<b>1,302</b>	<b>1,218</b>	<b>1,906</b>	<b>2,466</b>	<b>2,881</b>	<b>3,285</b>	<b>3,744</b>	<b>4,265</b>	<b>4,858</b>
Taxes	(1)	(47)	(47)	99	(89)	(93)	(190)	(265)	(309)	(353)	(402)	(458)	(522)
<b>Unlevered Net Income</b>	<b>41</b>	<b>102</b>	<b>153</b>	<b>(320)</b>	<b>1,213</b>	<b>1,125</b>	<b>1,716</b>	<b>2,201</b>	<b>2,571</b>	<b>2,932</b>	<b>3,342</b>	<b>3,807</b>	<b>4,336</b>
+ D&A	205	233	260	270	308	412	499	540	521	563	608	657	710
- Capex	669	417	540	904	1,387	965	855	915	1,072	1,158	1,251	1,352	1,460
- Change in NWC	162	(216)	264	(316)	1,423	(181)	(602)	293	240	326	382	448	525
<b>FCF</b>	<b>(585)</b>	<b>134</b>	<b>(391)</b>	<b>(638)</b>	<b>(1,289)</b>	<b>753</b>	<b>1,962</b>	<b>1,533</b>	<b>1,780</b>	<b>2,011</b>	<b>2,316</b>	<b>2,664</b>	<b>3,061</b>

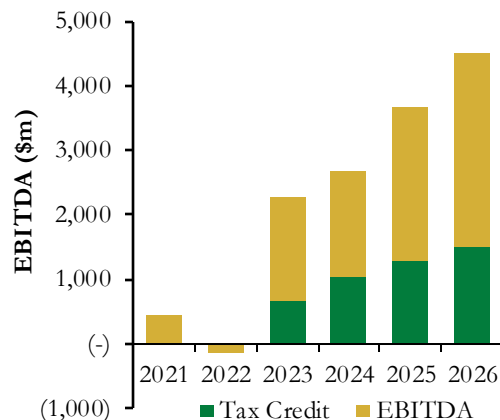
## Appendix #2 – DCF Drivers & Sensitivity Analysis



The Sensitivity Analysis highlights how even the most unfavorable WACC and Exit Multiple yield a share price with minimal downside.

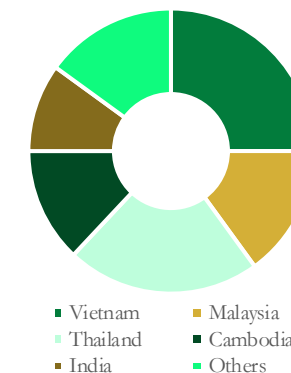
### Bear Case

- Section 45X Credits are part of the US Inflation Reduction Act (IRA), designed to incentivise the domestic production of clean energy technologies
- Section 45X currently contributed largely to First Solar's EBITDA
- Trump announced he would rescind any "unspent" funds under the IRA
- Reduced 45X Credits will affect First Solar's bottom line.



### Bull Case

- Roughly 85% of solar panels installed in the US are imported
- Majority of these imports originate from Southeast Asia (75% of total imports)
- June 2024, US International Trade Commission determined there is reasonable indication that the US PV manufacturing market is being injured by the dumping of PV imports from these 4 countries
- Antidumping duty tariffs ~ 91%-286%
- Increase of price of imports will raise the price of PV, increasing First Solar's market share and revenue



### Bear and Bull Forecast

Case	Year	Projected					
		FY2024	FY2025	FY2026	FY2027	FY2028	FY2029
IRA 45X (\$m/GW)	Base	104.6	106.1	107.9	109.9	112.1	114.4
	Bear	105.0	106.0	107.9	55.0	56.1	57.2
Revenue Growth (%)	Base	25.5%	38.5%	17.2%	17.2%	17.2%	17.2%
	Bull	31.5%	44.5%	23.2%	23.2%	23.2%	23.2%

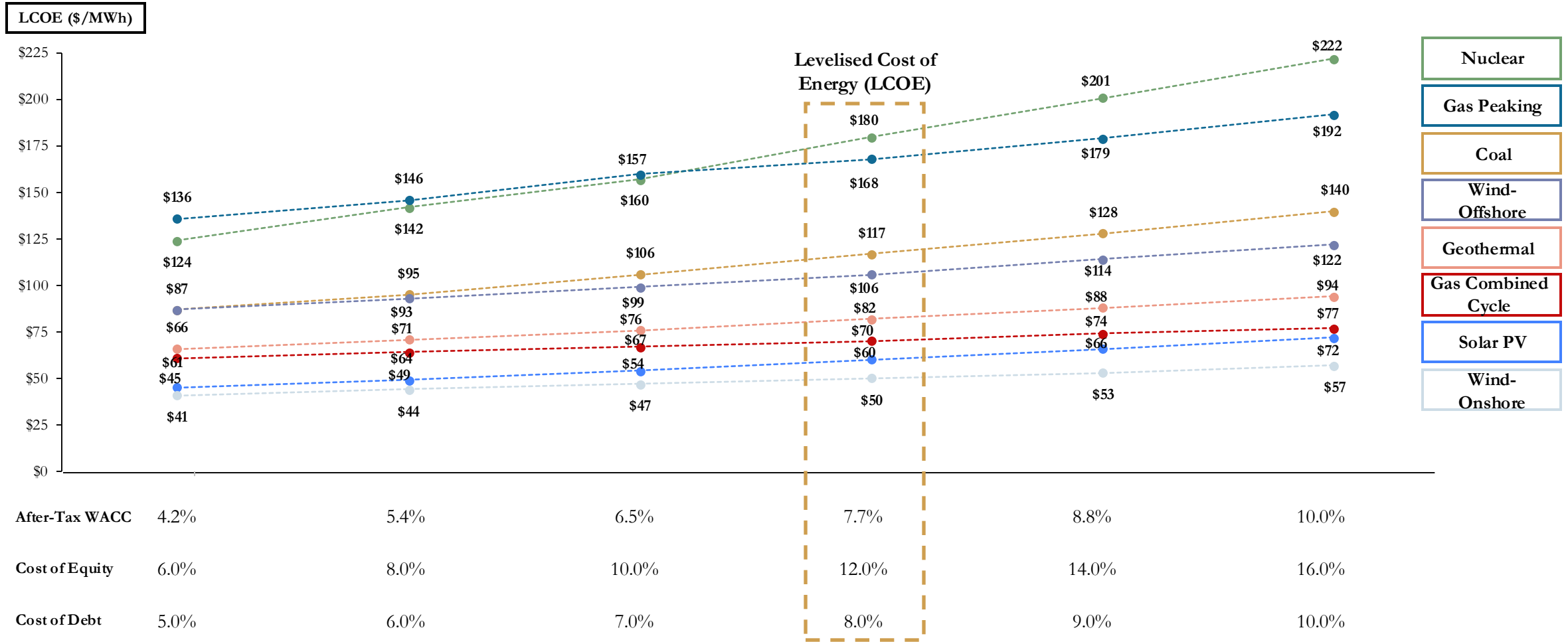
### Sensitivity Analysis – WACC vs Growth Rate

WACC	Growth Rate							
	1.0%	1.5%	2.0%	2.5%	3.0%	3.5%	4.0%	
8.6%	\$277.85	\$292.09	\$308.49	\$327.58	\$350.08	\$376.98	\$409.74	
9.6%	\$246.52	\$257.15	\$269.17	\$282.89	\$298.69	\$317.08	\$338.75	
10.6%	\$221.77	\$229.94	\$239.05	\$249.29	\$260.88	\$274.10	\$289.32	
11.6%	\$201.74	\$208.16	\$215.25	\$223.12	<b>\$231.91</b>	\$241.78	\$252.95	
12.6%	\$185.20	\$190.35	\$195.98	\$202.18	\$209.01	\$216.60	\$225.07	
13.6%	\$171.32	\$175.51	\$180.07	\$185.04	\$190.47	\$196.44	\$203.04	
14.6%	\$159.51	\$162.97	\$166.71	\$170.76	\$175.15	\$179.94	\$185.19	

# Appendix #3 – PPAs help to alleviate the impact of rising LCOE caused by higher rates



Solar energy and renewables, while particularly sensitive to changes in capital costs<sup>(1)</sup>, continue to be the most cost-effective energy sources



## Appendix #4 – Capex and Revenue Projection



First Solar's heavy investment over the prior three years, is projected to have a meaningful impact on its topline

