

SOLAR MANUFACTURING: *BY THE NUMBERS*

Global Market Domination

- **20 Years:** In less than two decades, Chinese-owned companies expanded their production of solar cells from less than 2% globally in 2004 to over 80% in 2024, achieving near-total market dominance in every component of a solar panel (source: The Eco Experts, 2024).
- **\$50 Billion Subsidies:** Between 2011 and 2023, Chinese solar manufacturers received over \$50 billion in subsidies, reducing manufacturing costs by up to 30% and providing a significant competitive edge (source: Wood Mackenzie, 2023).
- **80 Percent Control:** China controls over 80% of the global manufacturing capacity for polysilicon, wafers, cells, and modules. Chinese companies produce over 95% of solar wafers, posing risks to global supply chains due to potential geopolitical tensions or health crises (source: The Eco Experts, 2024).
- **Tariff Evasion:** In 2023, S&P Global reported that Chinese solar panel exports through Vietnam, Malaysia, and Thailand accounted for **75% of U.S. imports**, indicating widespread tariff evasion strategies (source: S&P Global, 2023).

U.S. Market Challenges

- **670 AD/CVD Active Cases:** Over 670 antidumping and countervailing duty cases exist across industries, including solar. Chinese companies often route products through countries like Vietnam and Cambodia to avoid tariffs (source: U.S. Department of Commerce, 2024).
- **Surging Imports:** Solar module shipments from Vietnam, Malaysia, Thailand, and Cambodia **increased by 68%** between 2021 and 2023 (source: S&P Global, 2023).
- **Oversupply Risks:** Projections for 2024 indicate solar imports will be **2.4 times the demand**. Even with tariffs, stockpiles are expected to reach 91,600 MW against a demand of 38,700 MW (source: Quarterly Solar Industry Update, 2024).

Pricing Trends

- **50% Price Drop:** Solar panel prices decreased by over 50% in Q1 2024, driven by artificially low pricing strategies from Chinese manufacturers (source: Wood Mackenzie, 2024).
- **16.5 cents/watt:** Standard solar module prices hit an all-time low of 16.5 cents per watt in August 2023 (source: BloombergNEF, 2023).



- **10 cents/watt:** Chinese spot markets report solar PV module prices as low as 10 cents per watt (source: PV Insights, 2023).

U.S. Growth and Potential

- **32.4 GW Installed:** A record 32.4 GW of solar energy was installed in the U.S. in 2023, marking a 51% increase from 2022 (source: U.S. Department of Energy, 2023).
- **100 Million Homes:** By 2034, U.S. solar capacity is expected to grow to 673 GW, sufficient to power over 100 million homes (source: Solar Energy Industries Association, 2024).
- **900,000 Jobs:** Sourcing 55% of solar manufacturing domestically could create 900,000 jobs by 2035, compared to the current 34,000 jobs (source: Dartmouth University, Princeton University, and BlueGreen Alliance, 2023).
- **115,000 Middle-Class Jobs:** Companies like Convalt Energy and First Solar plan to add tens of thousands of high-paying jobs in the coming years (source: S&P Global, 2024).
- **Solar accounts for 7.1% of U.S. electrical generation:** New solar generating capacity in November 2024 in the United States has reached the second-highest monthly total ever reported (Greentech Lead, 2025).

Environmental Impact

- **30% Reduction in Pollution:** Onshoring U.S. solar manufacturing could cut climate pollution by 30% and reduce energy use by 13% due to a cleaner U.S. grid (source: Cornell University, 2023).
- **Carbon Footprint:** *Chinese solar panels have a 30-40% higher carbon footprint* compared to those manufactured in the U.S. or Europe (source: Wood Mackenzie, 2023).

Financial Metrics

- **\$12.5 Billion in Imports:** Solar imports from Chinese companies via Cambodia, Malaysia, Thailand, and Vietnam totaled \$12.5 billion as of 2023 (source: International Trade Administration, 2023).

