



ENERGY TECHNOLOGY DATA BRIEFING

Why Solar Power Is Now Cheaper Than Anyone Predicted

Six data points on how solar got this cheap, in three different kinds of evidence, and the part of the story that doesn't fit neatly into "it just keeps getting better."

Cross-referencing Our World in Data's price series, NREL's Annual Technology Baseline, IEA reporting, Lazard's cost-of-energy benchmark, and current manufacturing and trade data.



What's inside the full report

The complete report runs several pages and draws on eleven primary sources. Here's the structure, plus the summary table it opens with.

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The clearest case, and why
The 46-year, 99.6% collapse in solar module prices, and the learning-curve economics that explain it.
- 2

How we picked these six
What "the curve," "the miss," and "the ledger" actually mean.
- 3

The complete six-case list
The 2023 to 2024 price floor, NREL's and the IEA's own forecasting misses, and today's price, sourced and dated.
- 4

Also worth watching
Battery storage costs are following a similar curve, and why that matters for solar's biggest weakness.
- 5

The caveat that matters most
Why the record-low prices don't include storage, and the manufacturing price war behind part of the recent drop.

NO.	CONTEXT	TIER	WHY IT'S ON THE LIST
1	The 46-year collapse in solar's price	The curve	From \$106.09 per watt in 1976 to \$0.377 per watt in 2019, a 99.6% decline.
2	The 2023 to 2024 price floor	The curve	Modules down more than half in 2023 and another 25% in 2024.
3	NREL's own about-face	The miss	Its 2050 solar forecast was cut 77% between 2015 and 2024.
4	The IEA's repeated undershoot	The miss	A cost target set for 2030 was reached in 2012, eighteen years early.
5	What solar costs today, unsubsidized	The ledger	3.8 to 7.8 cents per kilowatt-hour, cheaper than a new gas peaker plant.
6	The losses behind the cheap price	The ledger	Manufacturing overcapacity and steep losses across China's top producers.

The full report also includes an interactive dashboard version of this table, filterable case by case and grounded in the same sources.

EXCERPT FROM THE FULL REPORT

The clearest case: a curve that kept surprising everyone

The core fact is almost absurdly simple. Compiled data going back to 1976, maintained by Our World in Data from research by Gregory Nemet and others, shows the price of a solar module falling from \$106.09 per watt that year to \$0.377 per watt by 2019, a decline of 99.6%. Measured against cumulative global production rather than against the calendar, the pattern is even cleaner: roughly a 20% price reduction for every doubling of total solar capacity ever installed, a relationship known as Swanson's Law that has held, with only minor variation, since the 1970s.

Very few technologies behave this way. Bicycles, refrigerators, and coal-fired power plants do not get reliably cheaper as more of them are built; solar panels, computer chips, and batteries do. Economists describe this as following Wright's Law, where scaling up production itself, not just the passage of time, is what drives the cost down: more factories teach manufacturers how to use less material, waste less, and run faster lines, which lowers the price, which increases demand, which funds more factories.

It is a virtuous cycle that happens to comparatively few products, and solar has been riding it for longer than almost anything else. The rest of this report is about what that curve did to the people trying to forecast it, what the price looks like today as a result

Continues in the full report, alongside the 2023 to 2024 price floor, NREL's and the IEA's forecasting misses, and today's real-world prices

GET THE FULL REPORT

This is a short taste of the complete briefing.

The full report covers all six cases in depth, the complete methodology, eleven cited sources, and comes with a live interactive dashboard you can embed or share. Get in touch and we'll send it over, or talk to us about custom technology or market research for your own team.

THE FULL PACKAGE INCLUDES

- The complete written report (Word and PDF)
- The interactive solar-cost dashboard, filterable by case
- Full source list with 11 primary citations
- Custom research or refresh schedule, on request

CALL OR WHATSAPP

077 794 0449

EMAIL

info@dtlinux.com

WEBSITE

www.dtlinux.com

INTERNATIONAL

+94 77 794 0449

This preview reflects published research available as of September 2026. It draws on national labs, international energy agencies, industry research firms, and trade law filings, which use different methods and reporting years, and treats each figure as one estimate rather than a universal fact. Full citations are in the complete report.