

THE U.S. CARBON ADVANTAGE IN SOLAR: KEY TAKEAWAYS

- Worldwide solar capacity has increased over two thousand-fold in the last 20 years to more than 700 gigawatts, putting solar power at the center of the clean energy transition. But although solar energy generation is emission-free, the manufacturing process for solar panels is energy intensive.
- Although the U.S. is a relatively small player in global solar manufacturing, it holds a distinct carbon-efficiency advantage in this sector.
- China currently dominates the solar market, with stark consequences for the environment. It now produces more than 80% of all solar-grade polysilicon produced worldwide — and does so with more than twice the emissions of manufacturers in the U.S.
- The U.S. carbon advantage is even more evident with its leadership in next-generation solar technology. Thin film solar panels, which make up 16% of the U.S. solar market, generate 90% fewer emissions than the silicon-based conventional modules that China specializes in.
- Leveraging this carbon advantage can reward U.S. solar producers for their cleaner production, support faster decarbonization, and position the U.S. to become a dominant player in next-generation solar.
- Incentivizing lower-carbon solar manufacturing would also reduce our existing overreliance on Chinese-supplied panels, diversifying and securing our supply chain for this critical decarbonization technology.