Solar | U.S. Manufacturing

Made in America: Onshoring Solar Manufacturing

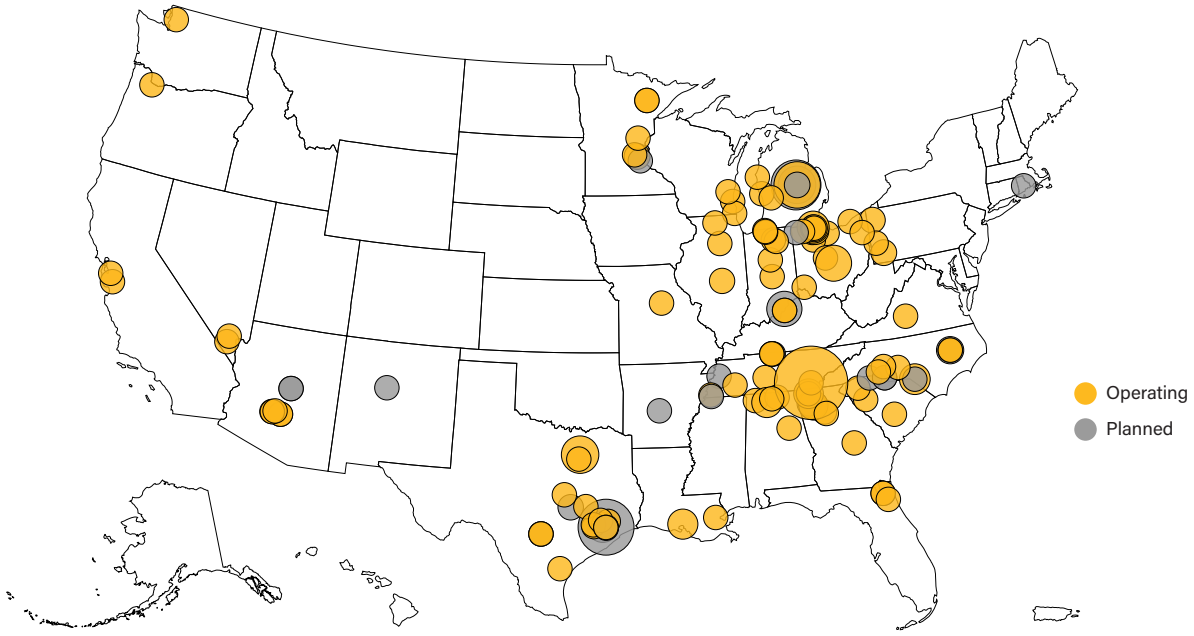
Solar manufacturers are building and expanding production facilities across the U.S., with **more than 140 facilities now operating nationwide,supporting over 75,000 American workers, and strengthening the domestic supply chain for critical infrastructure** needed to meet the nation's growing electricity demand.

Key Takeaways

1. **Expanding Domestic Manufacturing:** Solar manufacturers are reshoring production, with more than 140 solar manufacturing facilities operating nationwide, with the majority located in the Southeast, Midwest, and Texas.
2. **Spurring American Jobs & Economic Growth:** Solar manufacturing supports 75,000+ American jobs and contributes >$11.5 billion annually to U.S. GDP, strengthening regional economies across the country and reinvesting in local communities.
3. **Bolstering Domestic Industry:** Clean power manufacturing is creating commercial demand drivers for longstanding American industries including steel, glass, and electrical equipment manufacturing.
4. **Securing Domestic Supply Chains:** Domestic production is strongest in finished products like solar modules and balance-of-system components, with new investment expanding upstream manufacturing capacity.

Solar Manufacturing Across America

Current Operating and Planned Solar Manufacturing Facilities by Capital Investment ($)



Source: American Clean Power: CleanPower IQ Database | March 2026

Access America Builds Power:The State of Clean Energy Manufacturing for more information

Photo credit: Illuminate USA

Background

In an era of rapidly rising electricity demand, solar manufacturers are investing in local production across the United States. These facilities employ tens of thousands of American workers, direct investment into regional economies, and anchor demand for domestic industries including steel, glass, and electrical equipment.

As solar deployment expands nationwide, domestic manufacturing capacity is scaling alongside it—strengthening supply chains and bolstering the industry's capacity to deliver reliable, affordable energy to residential and commercial customers.

Solar Manufacturing Is Creating Jobs and Driving Economic Growth Nationwide

As of Q1 2026, more than 140 solar manufacturing facilities are operating across the United States, forming a growing industrial network that supports over 75,000 American manufacturing jobs and contributes >$11.5 billion annually to U.S. GDP. These jobs include machinists, electricians, engineers, technicians, and production workers employed in industrial facilities across the country.

The U.S. solar manufacturing pipeline remains robust. As of Q1 2026, over 30 additional manufacturing projects are under construction and nearly 20 more have been announced, further expanding domestic capacity and strengthening supply chains across multiple sectors.

From legacy industrial hubs in the Midwest to a rapidly expanding manufacturing base across the Sun Belt, U.S. solar facilities are located across both established industrial regions and emerging manufacturing corridors—bringing sustained investment and long-term jobs to communities nationwide.

A strong domestic manufacturing base plays a central role in supplying the infrastructure needed to meet rising U.S. electricity demand. Producing key components at home—from steel tracker systems and aluminum mounting structures to copper wiring and electrical equipment—reduces supply chain disruptions, improves project delivery timelines, and strengthens energy reliability.

Top Regions by Primary Component Solar Manufacturing Facilities

Midwest

45+ Operating Solar Manufacturing Facilities

Led by Ohio (18), Indiana (10), and Michigan (6)

Modules: 15 operating, 3 announced
Structures: 26 operaitng, 1 announced
Glass: 2 operating, 1 announced

Texas & Southwest

25+ Operating Solar Manufacturing Facilities

Led by Texas (16), Arizona (6), and California (3)

Modules: 9 operating, 17 announced
Structures: 7 operaitng, 4 announced
Glass: 2 operating, 3 announced

Southeast

35+ Operating Solar Manufacturing Facilities

Led by Georgia (7), Alabama (6), and North Carolina (6)

Modules: 13 operating, 5 announced
Structures: 18 operaitng, 1 announced
Glass: 2 operating, 6 announced

A Nationwide Industrial Supply Chain

Solar manufacturing draws on, and strengthens, a wide network of core American industries. Supporting robust deployments of grid-scale clean power and domestic manufacturing creates crucial private, commercial opportunities for domestic processors of key minerals like copper, indium, and tellurium.

Domestic solar production drives demand for:

Critical minerals:

- Polysilicon (refined silicon)
- Tellurium
- Copper
- Silver
- Indium

Structural and industrial materials:

- Glass
- Steel
- Aluminum
- Advanced polymers and encapsulants

Each new manufacturing facility creates sustained demand for American-produced industrial inputs, supporting jobs across multiple sectors.

Rebuilding the Full Manufacturing Value Chain

Solar manufacturing is a sophisticated industrial process that transforms common raw materials into durable electricity-generating infrastructure used in projects nationwide.

Key manufacturing stages include:

1 → 2 → 3 → 4

1 Polysilicon

Silicon is refined into ultra-high-purity material used in solar and semiconductor applications.

Did You Know?
The polysilicon produced in the U.S. also supplies the semiconductor industry and is used in microelectronics and chips.

2 Ingots and Wafers

Molten silicon is crystallized into solid ingots, which are then sliced into ultra-thin wafers that form the foundation of solar cells.

Did You Know?
The first new U.S. ingot and wafer manufacturing facility in more than 15 years came online last year in Michigan.

3 Cells

Wafers are treated with semiconductor layers and fitted with metal contacts so they can generate electricity when exposed to sunlight.

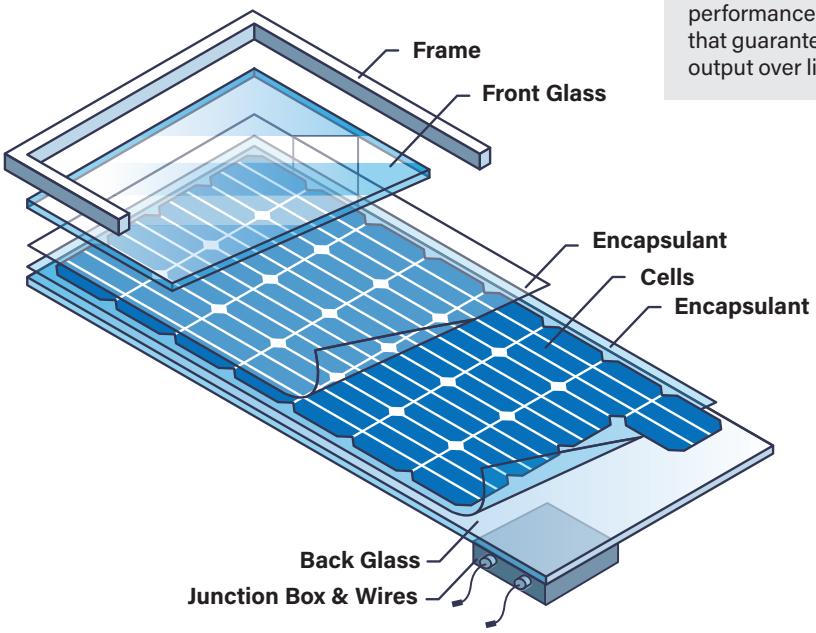
Did You Know?
Cell fabrication is an advanced semiconductor process requiring the use of clean rooms.

4 Module Manufacturing

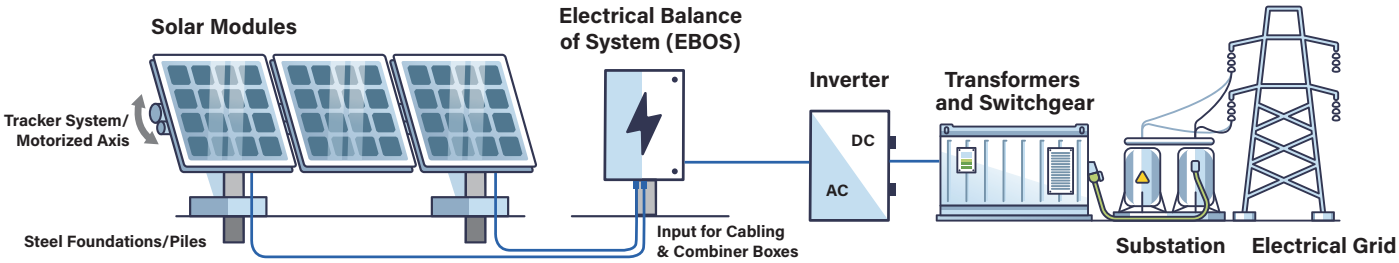
Over one hundred solar cells are encapsulated between layers of polymer and glass, framed in aluminum, sealed, and wired into durable solar panels designed to operate reliably for decades.

Did You Know? Most modern solar modules are engineered for 30+ years of service, with performance warranties that guarantee power output over lifetime.

Solar Module Technologies:
While crystalline silicon solar modules are more commonly deployed, the largest domestic manufacturer of solar modules uses a distinct, continuous thin film manufacturing process.



Beyond Solar Modules – Balance of Systems: Solar panels are only one component of a complete energy system. Additional components—including trackers, mounting structures, inverters, and electrical systems—are manufactured and integrated to enable solar modules to operate and connect to the grid reliably and at scale.

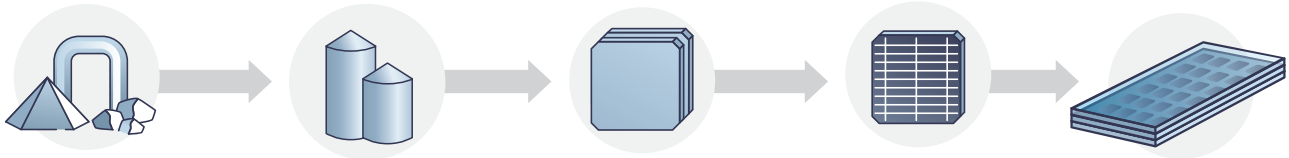


Crystalline Silicon vs. Thin-Film Solar: Key Differences

Solar manufacturing includes multiple advanced technologies. Today's market is led by two technologies: crystalline silicon (c-Si) and thin-film (primarily cadmium telluride, or CdTe). The difference in the manufacturing process between the two technologies results in distinct capital investment requirements, job needs, and timelines for bringing new facilities to market. Domestic solar production drives demand for:

Crystalline Silicon (c-Si)

Most solar panels use crystalline silicon as the semiconductor. Manufacturing involves multiple steps (polysilicon → ingots → wafers → cells → modules) across a network of specialized suppliers, creating a globally distributed production ecosystem.



Thin-Film (CdTe)

Thin-film panels typically use cadmium telluride as the semiconductor, deposited directly onto specialty glass, allowing all manufacturing steps to occur within a vertically integrated process completed at a single facility.