



SOLAR PANEL MANUFACTURING

CURRENT TRENDS

- The U.S. solar industry had a record year in 2020 despite the COVID-19 pandemic.
- Recovery values for solar panels may be impacted by Section 201 tariffs, which are set to remain in place through February 6, 2022.
- Key federal tax credits bolstering the industry's favorable economics that were set to expire at the end of 2020 have been extended through 2023.

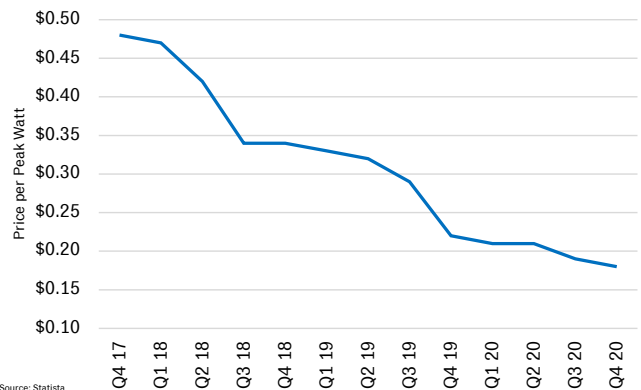
APPROXIMATE NET RECOVERY ON COST

50%-80%
PV modules

40%-70%
Inverters

20%-40%
Accessories

PHOTOVOLTAIC MODULE PRICE (U.S. \$ PER WATT)



Source: Statista

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STRONG PERFORMANCE IN WAKE OF PANDEMIC SHUTDOWNS: U.S. solar installations reached a record high in 2020, as favorable economics, supportive policies and strong demand in the second half of the year offset the impact of the COVID-19 pandemic. Installations grew 43% year over year, reaching a record 19.2 gigawatts of new capacity. In the fourth quarter alone, the U.S. added just over 8 gigawatts of capacity — a quarterly record. One gigawatt is enough to power roughly 190,000 homes.

Residential solar additions saw a record-setting sales pipeline in the second half of 2020 following a slowdown in the second quarter, as the pandemic ground operations to a halt. Solar sales were boosted by customers interested in home improvements.

Utility solar annual capacity additions jumped 65% in 2020 from 2019. Overall, the U.S. solar market is expected to quadruple from current levels by the end of the decade.

TAX CREDIT EXTENSION CONTINUED: In late December 2020, Congress passed a two-year extension of the solar Investment Tax Credit (ITC) that was set to expire at the end of 2020. A tax credit is a dollar-for-dollar reduction in the income taxes that a person or company would otherwise pay the federal government.

The ITC is based on the amount of investment in solar property. Eligibility for the ITC is based on a “commence construction” standard. The IRS issued guidance that explains the requirements taxpayers must meet to establish that construction of a solar facility has begun for purposes of claiming the ITC. This guidance applies to residential and commercial solar projects differently.

Both the residential and commercial ITC are equal to 26% of the basis that is invested in eligible solar property. The ITC then steps down according to the following schedule:

- 26% for projects that begin construction in 2021 and 2022
- 22% for projects that begin construction in 2023
- After 2023, the residential credit drops to zero while the commercial credit drops to a permanent 10%.

PRICING CONTINUES DOWNWARD TREND: The price of solar photovoltaic modules in the United States has seen a consistent decrease over the last five years. In the third quarter of 2020, module prices fell below \$0.18 per watt, in comparison to \$0.63 per watt in early 2016, although shortages of polysilicon and solar glass resulted in upward price adjustments of 10% or more in the third quarter of 2020 – a trend that is expected to continue through the second quarter of 2021.

Solar system pricing has fallen in all markets, including residential, non-residential, and utility markets.

The decline is largely due to declining hardware costs, primarily from lower module prices, driven by decreasing demand from China.

BRAND DOESN'T IMPACT VALUE, WATTAGE DOES: Solar modules from top-tier manufacturers are largely of a generic nature, with the specific manufacturer not necessarily being of importance. Solar module cost and pricing is typically referred to in terms of panel wattage. Due to their generic nature, a difference of a few pennies per watt can often alter purchasing decisions.

Current photovoltaic modules range from about 325 to 500 watts. Older photovoltaic modules with lower wattages are salable at liquidation, but at a lower value.

TARIFF MAY LOWER INVENTORY VALUES: Tariffs were initially instituted in 2018 under Section 201 of the Trade Act of 1974 on imports of certain crystalline silicon photovoltaic cells. These measures were to be in place for a four-year period beginning in February 2018 starting at a rate of 30%, then declining by 5% each year until reaching a rate of 15% for the last year. The 15% rate for 2021 was increased to 18% in October 2020 through a presidential proclamation.

The Section 201 tariffs on solar panels are currently set to expire on February 6, 2022. When lending against imported solar modules, potential tariffs need to be considered on product from foreign manufacturers.

SOLAR PANELS AND INVERTERS CARRY MAJORITY OF INVENTORY

COST AND VALUE: Most solar panels are constructed using specially processed silicon, which when exposed to sunlight results in the generation of direct current. Inverters are used in solar installations to convert electricity from direct current into alternating current and tie into the public utility grid.

Solar panels and inverters are utilized in both residential and commercial/utility applications. These two product categories typically carry the majority of the inventory cost as well as value, since the same type of solar panels and inverters are used by, and are salable to, a wide variety of residential and commercial/utility installation companies.

The Expert: Paul Smith



Paul Smith specializes in the appraisal of high technology machinery and equipment and inventory for Gordon Brothers. His experience includes the valuation of assets of manufacturers and resellers of computer memory, server and network equipment and solar power equipment, among others. Read his full bio [here](#).



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