

Executive Summary

This issue brief for ACORE members provides an overview and analysis of the key issues and potential repercussions of the Suniva trade case before the U.S. International Trade Commission (the ITC). Brought under the “global safeguard” provision, Section 201 of the Trade Act of 1974, the case began affecting development in the U.S. solar sector even before the ITC made the critical threshold ruling on the existence of injury to domestic manufacturing in late September. Now that the ITC has found that imports are a “substantial cause of serious injury” or present a “threat of serious injury,” the next step is the development of non-binding ITC recommendations for remedies for consideration by the President, who has broad discretion to impose tariffs or take other measures. As explained below, these steps will unfold over the coming weeks and months.

The case is focused on foreign-manufactured crystalline silicon photovoltaic (CSPV) solar cells and modules, and remedies such as tariffs would not apply to other photovoltaics (PV) technologies, including for example thin-film PV. Nor would remedies apply to any modules that are made from U.S.-made CSPV cells, no matter where the modules containing these cells are assembled. This fact has caused some analysts to theorize that the tariffs could create sufficient incentive for companies to invest in U.S. production to avoid the tariffs. While this might be possible in a few instances, it is unlikely that facilities could be sited, built and procure the necessary production equipment at the scale required to preserve growth in the solar sector. This is especially true given the schedule of the federal investment tax credit phase-down.

We are already seeing an impact on the U.S. solar market. Several companies have indicated that solar deal flow is slowing and that some projects, especially larger projects that are the most sensitive to module pricing, have been delayed and may be canceled, depending on the outcome of the case.

This complex case involves interwoven issues concerning international trade practices, the appropriate amount of government support for domestic manufacturing, and solar manufacturing specifically, and government solar policies. ACORE has begun outreach in this area, and will actively engage with the White House, the ITC, and Congress on these issues.

Background

On April 26, 2017, Georgia-based solar manufacturer Suniva filed a petition with the ITC seeking tariffs on foreign-made CSPV solar cells and minimum prices for solar modules made with foreign CSPV cells. Suniva’s petition, which has since been joined by SolarWorld Americas (SolarWorld), was brought pursuant to Section 201 of the Trade Act of 1974. This law allows for temporary import relief (such as tariffs, minimum prices and quotas) in situations where increased imports of “fairly traded” specific products are causing “serious injury” to an American industry. The intent of this law was to provide

temporary relief to industries as they adjust to freer international trade and competition¹ and is authorized by Article XIX of the Global Agreement on Trade and Tariffs (GATT) treaty of 1994.² Notably, safeguard actions do not require a finding of unfair trade practices as is required in anti-dumping cases.

In response to Suniva's petition, the ITC determined that there has been a serious injury to the U.S. CSPV manufacturing industry from the import of foreign-made CSPV cells (whether or not these are partially or fully assembled into other products) and modules. On August 15, 2017, the ITC held a hearing on this issue, which was followed by the formal finding of injury on September 22.

Actions in response to the Suniva petition by the ITC and, potentially, the White House over the next few months could have a profound impact on the growing U.S. solar market. The imposition of tariffs could increase the pricing for CSPV cells and modules at a time of exceptionally low power prices from competing sources of power generation, especially natural gas and wind – the other two largest sources of new power generation in the U.S.³ Tariffs would also be expected to hamper progress towards the fundamental objective of reaching grid parity in electricity markets, which has long been embraced by solar manufacturers, developers, and installers. Independent analysis indicates that even modest increases in pricing could reduce competitiveness in some markets.⁴

It is important to note, however, that increasing U.S. manufacturing and defending manufacturing industries through international trade law have long been important U.S. policy objectives. The PV cell was invented in the U.S., and domestic manufacturing of CSPV solar cells and modules has increased as the market has grown. As of year-end 2016, annual U.S. manufacturing capacity stood at 776 megawatts (MW) for silicon cells and 1,109 MW for silicon-based modules.⁵ Notably, in 2016, U.S. module manufacturing capacity increased 29 percent from 2015 and supplied 12 percent of domestic deployment, even as the U.S. comprises just 1.5 percent of global module manufacturing.⁶ However, the biggest production increase by far has been in China, Taiwan and Southeast Asian countries, which have emerged as the primary manufacturers serving the U.S. and global markets.

Like many newer and growing industry sectors, solar manufacturing has seen a great deal of consolidation. Several U.S. solar manufacturers, making everything from ingots, wafers and cells to modules, have closed in recent years. These companies include 1SolTech, Evergreen Solar, Helios USA, and Solar Power Industries.⁷ The bulk of these closures (both in the U.S. and around the world) occurred in 2012 and 2013.⁸ Industry observers note a range of reasons for this consolidation. Some

¹ Senate Finance Committee. (1974). *Report on the Trade Reform Act of 1974*. Page 119. Retrieved from <https://www.finance.senate.gov/imo/media/doc/trade10.pdf>

² World Trade Organization. (2017). *Technical Information on Safeguard Measures*. Retrieved from https://www.wto.org/english/tratop_e/safeg_e/safeg_info_e.htm.

³ Bloomberg New Energy Finance and The Business Council for Sustainable Energy. (2017). *Sustainable Energy in America Factbook*. Page 20. Retrieved from <http://www.bcse.org/sustainableenergyfactbook/#>.

⁴ IHS Markit. (2017). *Special Report: Suniva Petition Puts United States PV Demand at Risk and Shakes Up Global Supply Chain*. Retrieved from <https://technology.ihs.com/592016/suniva-petition-puts-united-states-pv-demand-at-risk-and-shakes-up-global-supply-chain>.

⁵ Department of Energy SunShot Initiative. (2017). *Q4 2016/Q1 2017 Solar Industry Update*. Page 61. Retrieved from <https://www.nrel.gov/docs/fy17osti/68425.pdf>.

⁶ *Ibid.*

⁷ Congressional Research Service. (2015). *U.S. Solar Photovoltaic Manufacturing: Industry Trends, Global Competition, Federal Support*. Page 11. Retrieved from <https://fas.org/sgp/crs/misc/R42509.pdf>.

⁸ Wesoff, Eric. (2015, December 1). Greentech Media. *The Mercifully Short List of Fallen Solar Companies: 2015 Edition*. Retrieved

argue that it is the result of unfair trading practices. Others suggest the consolidation reflects the result of varying, sometimes uncompetitive, business strategies typical of a rapidly growing and evolving industry.

Industry analyses of the potential impact of the tariffs sought by Suniva generally agrees that any increase in solar module pricing resulting from tariffs would be expected to reduce U.S. solar investment and development, and therefore also reduce solar employment in the U.S.⁹ While there will be a direct correlation between tariffs and employment in the solar development and deployment sectors, there is uncertainty whether tariffs would lead to any meaningful increase in employment in the domestic manufacturing sector (including specifically whether Suniva would remain in business).

An analysis by Bloomberg New Energy Finance (BNEF), concludes that the tariffs could lead to increased foreign investment in the U.S. CSPV cell manufacturing facilities because any module comprising U.S.-made cells would not be subject to tariffs or minimum prices.¹⁰ BNEF says that at least two foreign manufacturers have been exploring opportunities to locate facilities in the U.S. and that they would be more likely to do so if tariffs are imposed. However, some manufacturers have expressed significant doubt that the tariffs themselves would lead to such an expansion due to the relatively short lifespan of the tariffs and uncertainty regarding whether the U.S. political environment would remain committed to them.

This trade proceeding has created significant concern and uncertainty among solar developers, customers, and financiers. **While there is a strong desire to support domestic manufacturing and associated jobs, an increase in prices due to tariffs would likely slow deployment and cause a loss of jobs in the development and installation sectors of the solar industry, and similar impacts on manufacturers of other solar components such as inverters and racking systems.** Adding to the concern and uncertainty is the fact that this proceeding involves a somewhat obscure and complex statutory provision, which may not be fully understood, and which was filed during the first few months of a new presidential term, with an administration that has not fully populated its political appointees but is committed to examining trade imbalances across many important domestic industries. The pages that follow provide an overview of Suniva's trade petition; a timeline for the ITC's investigation; an outline of the statutory requirements and permissible remedies; and perspectives on the implications of the case for the U.S. solar market and domestic manufacturing.

The Petition

Suniva is a Georgia-based solar manufacturer that maintained production facilities in Georgia and Michigan. Suniva is seeking tariffs on foreign-made CSPV cells and minimum prices for solar modules made with foreign CSPV cells. SolarWorld, a subsidiary of a German manufacturer with U.S. headquarters located in Oregon, is a co-petitioner. Excluded from Suniva's petition are CSPV modules and panels produced in a third country with cells produced in the U.S.¹¹

from <https://www.greentechmedia.com/articles/read/the-mercifully-short-list-of-fallen-solar-companies-2015-edition>.

⁹ Honeyman, Cory. (2017, June 26). GTM Research. *Suniva and Solar World Trade Dispute Could Halt Two-Thirds of U.S. Solar Installations Through 2022*. Retrieved from <https://www.greentechmedia.com/articles/read/suniva-dispute-could-halt-two-thirds-of-us-solar-installations>.

¹⁰ Bloomberg New Energy Finance. (2017, July 25). *Chinese PV, New U.S. Tariffs, and the Potential Workarounds*. Retrieved from <https://www.bnef.com/core/insights/16685/view> (subscription required).

¹¹ Petition of Suniva, Inc. for Global Safeguard Relief. (2017) Retrieved from <https://edis.usitc.gov>; U.S. International Trade

Suniva claims that overproduction of CSPV cells and modules in response to foreign government stimulus programs, especially in China and Taiwan, has driven a steep decline in cell and module prices against which U.S. manufacturers cannot compete. They also point out that CSPV imports have continued to increase despite anti-dumping duties imposed on imports from China and Taiwan, as production has shifted to other countries. Suniva is asking the ITC to impose tariffs on foreign-made modules and minimum prices on modules made with foreign cells. Without this support, Suniva claims, the U.S. solar manufacturing sector will be unable to compete, resulting in a further loss of U.S. manufacturing.¹²

International Trade Commission Process and Timeline

1. **Petition Filing:** On April 26, 2017, Suniva filed a petition under Section 201 of the Trade Act of 1974 (the Trade Act)¹³ for global safeguard relief from the import of foreign manufactured CSPV cells and modules. SolarWorld joined as a co-petitioner on May 25, 2017. The Trade Act requires the ITC to promptly investigate the issues in the petition, specifically, whether foreign-made CSPV cells and modules are being imported in such increased quantities as to be a substantial cause or threat of serious injury to the domestic CSPV manufacturing industry.
2. **Start of Investigation:** On May 17, 2017, the ITC announced that it was commencing its investigation in response to the petition and published the announcement in the Federal Register on June 1, 2017.¹⁴ Ordinarily, the ITC has 120 days to conduct its investigation unless it determines the matter is “extraordinarily complicated,” in which case the ITC can take up to an additional 30 days.
3. **Injury Phase:** The ITC found that this investigation is “extraordinarily complicated” and announced that it would make its injury determination by September 22, 2017 (128 days after the petition filing). The agency held a hearing on the injury phase of the investigation on August 15, 2017, and made a determination of damages on September 22, 2017.
4. **Remedy Phase Hearing:** The ITC held a hearing on remedies on October 3, 2017.
5. **Report to the President:** At the end of proceedings, the ITC must submit its report to the President. The report must include the ITC’s determination on injury and the recommendations for remedies. It is important to note that the report may also include any dissenting views from commissioners. **The ITC announced that it will submit its report to the President by November 13, 2017.**

Commission. (2017). *Prehearing Report, Investigation No. TA-201-75*. Page I-11. Retrieved from <https://edis.usitc.gov>.

¹² Petition of Suniva, Inc. for Global Safeguard Relief. (2017) Retrieved from <https://edis.usitc.gov>.

¹³ The relevant portion of the Trade Act of 1974 is codified at 19 U.S.C. § 2251, *et. seq.*

¹⁴ International Trade Commission; Crystalline Silicon Photovoltaic Cells’ (Whether or Not Partially of Fully Assembled into Other Products); Institution and Scheduling of Safeguard Investigation and Determination That the Investigation is Extraordinarily Complicated, 82 Fed. Reg. 25,331 (June, 1, 2017). Retrieved from https://www.usitc.gov/trade_remedy/731_ad_701_cvd/investigations/2017/Solar%20Panels/Safeguard/cspv_-_institution.pdf.

6. **Presidential Action:** After receiving a report with an affirmative finding of injury and recommended remedies, the Trade Act requires the President to act within 60 days. The President may also request additional information from the ITC within 15 days of receiving the report, and the ITC has 30 days to respond to any such request. On the day the President acts, the Trade Act requires him to submit a report to Congress describing his actions and the reasons for taking them.
7. **Implementation of Presidential Action:** Any duties, tariffs or import restrictions ordered by the President will take effect within 15 days from the President's decision unless he also announces his intent to negotiate an agreement with exporting countries, in which case they will take effect no later than 90 days from his decision.
8. **Time Limitation on Remedies:** The duration of any remedial actions cannot exceed an initial period of four years but can be extended up to an aggregate of eight years, if certain conditions are met. Any tariffs or duties lasting more than one year must be phased down at regular intervals.
9. **Monitoring of Remedies:** If the President orders remedial actions, the ITC will periodically report on developments within the industry during the period of relief. Upon request, the ITC advises the President of the probable economic effect on the industry of the reduction, modification, or termination of the relief, and the President may then modify the relief.

Factors Applied by the ITC in Making a Determination of Injury

On September 22, 2017, the ITC determined that foreign-made CSPV cells and modules are being imported in such increased quantities as to be a **substantial cause of serious injury or the threat of serious injury** to the U.S. solar manufacturing industry. It is important to note that this determination is not country specific and involves imports from all sources. However, the report must make separate findings for any countries with which the U.S. has free trade agreements (such as NAFTA countries, South Korea, and Singapore).

The ITC used the following factors, set forth in Section 202 of the Trade Act (19 U.S.C. § 2252(c)) in their determination:

- Significant idling of productive facilities in the domestic industry;
- Inability of a significant number of firms to carry out domestic production operations at a reasonable level of profit; and
- Significant unemployment or underemployment within the domestic industry.

To determine whether increased imports impose a **threat of serious injury**, the ITC was required to consider the following factors:

- A decline in sales or market share;
- Growing inventory;
- Downward trends in profits, wages, productivity or employment;
- An inability to generate adequate capital to modernize equipment and plants; and
- Restraints on U.S. companies' ability to export products to other markets.

In making its determination, the ITC was also asked to consider **the condition of the domestic industry over the course of the relevant business cycle and examine factors other than imports that may be a cause of serious injury, or threat of serious injury, to the domestic industry.**¹⁵ As noted above, U.S. solar manufacturing capacity has been increasing since 2012, while many U.S. solar companies have gone bankrupt over the same period.

Process for Determining Remedies

Having made an affirmative injury finding, the ITC must now recommend remedies to the President. Section 203 of the Trade Act (19 U.S.C. § 2253) directs the President to take all appropriate and feasible actions to make a positive adjustment¹⁶ to import competition and provide greater economic and social benefits than costs. Section 203 of the Trade Act instructs the President to take the following factors into account when determining a remedy:

- The extent to which workers in the industry are benefiting from adjustment assistance programs and worker retraining efforts;
- Efforts being made or implemented by the U.S. industry to make a positive adjustment to import competition;
- The probable effectiveness of any remedy;
- The short- and long-term economic and social costs of the actions relative to short- and long-term economic and social benefits;
- The economic and social costs that would be incurred by tax payers, communities, and workers, if import relief is not granted;
- The effect of the remedies on consumers and on domestic competition;
- The extent to which there is a diversion of foreign exports to the U.S. market due to foreign restraints;
- The potential for circumvention of any remedy;
- The national security interests of the U.S.; and
- The recommendations of the ITC.

Permissible Remedies Under the Trade Act

Specific remedial actions authorized by the Trade Act (19 U.S.C. § 2253) that the President may take are as follows:

- Proclaim an increase in or impose any duty on the imported article;
- Proclaim a tariff-rate quota;
- Proclaim a modification or imposition of any quantitative restriction on the importation of the article;
- Implement one or more appropriate trade assistance programs for affected workers;
- Negotiate, conclude, and carry out agreements with foreign countries limiting the export from foreign countries and the import into the U.S.;
- Proclaim procedures necessary to allocate among importers by the auction of import licenses quantities of the article permitted to be imported;

¹⁵ 19 U.S.C § 2252(c)(2).

¹⁶ A “positive adjustment” to import competition occurs when the domestic industry is able to compete successfully with imports after an authorized Presidential action or the domestic industry experiences an orderly transfer of resources to other productive pursuits, and dislocated workers in the industry experience an orderly transition to productive pursuits. See 18 U.S.C. § 2251(b).

- Initiate international negotiations to address the underlying cause of the increase in exports;
- Submit to Congress legislative proposals to facilitate the efforts of the domestic industry to make a positive adjustment to import competition; or
- Take any other action which may be taken by the President under the authority of law and which the President considers appropriate and feasible.

The President may impose any combination of these authorized actions, subject to the limitations in the next section.

Limitations on Remedies

The Trade Act does place some limits on remedies ordered by the President:

- Remedies are limited to a maximum of four years but can be extended if the ITC determines that the continued remedy is necessary to prevent injury and the domestic industry is making a positive adjustment to import competition. The act limits the effective period for any remedy, including extensions, to an aggregate of eight years.
- Any duties, tariff-rate quotas or quantitative restrictions cannot exceed the amount necessary to prevent or remedy the serious injury.
- Any increase in duties cannot exceed 50 percent *ad valorem* above the existing duty.
- Any quantitative restriction must permit the importation of a quantity or value of the article which is not less than the average quantity or value imported during the preceding three years.
- And, any remedy must be authorized by law, feasible and appropriate.

Analysis of Suniva's Claims

Suniva asserts that the growth in manufacturing outside of the U.S. was unforeseen and unanticipated, especially noting that production capacity has increased faster than demand, and has seriously injured Suniva and other U.S. manufacturers. Suniva also asserts that production shifted out of China and Taiwan after the imposition of anti-dumping duties in 2012, and therefore, global relief from import competition is needed as production shifts to yet more countries.¹⁷

The U.S. was a net exporter of solar modules until 2011 but, due to the growth in the U.S. solar market, manufacturing was unable to satisfy domestic demand, which grew by over 650 percent from 2011 to 2016.¹⁸ U.S. manufacturing fell precipitously in 2012, producing only 0.5 gigawatts (GW) of modules (despite a production capacity of nearly 2 GW).¹⁹ This drop was mainly due to the fact that in 2008 a shortage of polysilicon pushed prices to extremely high levels (with spot market prices over \$400 per kilogram). The high margins for manufacturers enticed existing manufacturers and new entrants to build new or expand existing plants. As these new plants came on line, they pushed silicon prices to record low levels by 2011, below many manufacturers' cost of production.²⁰

¹⁷ Petition of Suniva, Inc. for Global Safeguard Relief. (2017) Retrieved from <https://edis.usitc.gov>.

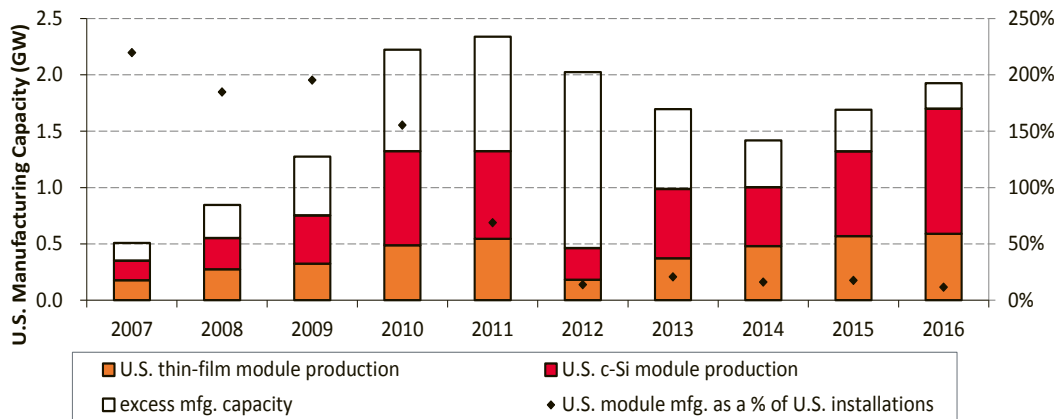
¹⁸ Solar Energy Industries Association. (2017). *Solar Market Insight Report 2016 Year in Review*. Retrieved from <http://www.seia.org/research-resources/solar-market-insight-report-2016-year-review>.

¹⁹ Department of Energy SunShot Initiative. (2017). *Q4 2016/Q1 2017 Solar Industry Update*. Page 62. Retrieved from <https://www.nrel.gov/docs/fy17osti/68425.pdf>.

²⁰ GTM Research. (2012). *Polysilicon Prices Hit Record Lows in 2011 and Will Head Even Lower*. Retrieved from <https://www.greentechmedia.com/articles/read/polysilicon-prices-hit-record-lows-in-2011-will-head-even-lower-enabling-0>.

In other words, one of the reasons for the falling costs of solar panels was the market's rational response to demand. This response created more supply thereby reducing market prices. This process rewarded manufacturers who made investments to maximize production at the lowest costs but also harmed manufacturers with higher production costs. In addition, a number of countries, including the U.S., implemented programs to provide incentives to solar manufacturers and to encourage deployment, a phenomenon which also played a role in the market oversupply. **U.S. manufacturing was heavily affected by the falling market costs as U.S. production capacity fell from 2011 until 2014. U.S. production capacity has increased since 2014 to approximately 1.9**

U.S. Module Manufacturing vs. U.S. Deployment



Source: SunShot

GW. Moreover, actual production is increasing along with growth in production capacity, which suggests that U.S. manufacturers added capacity as demand for their products increased.²¹

Following the rapid increase in global production that began around 2009, SolarWorld petitioned the ITC in 2011 for relief and the imposition of anti-dumping tariffs and countervailing duties on Chinese-made CSPV cells and modules. The ITC determined that these products were likely being sold into the U.S. market below their fair-market value²² and imposed anti-dumping tariffs and countervailing duties on Chinese-made CSPV cells and modules of 14.78 to 15.97 percent.²³

However, the ITC's ruling did not cover Chinese modules made with non-Chinese CSPV cells, which allowed imports to avoid tariffs by using non-Chinese cells (which, it is claimed, caused the relocation of cell manufacturing facilities to Taiwan). SolarWorld filed a second petition with the ITC in 2014 which expanded the anti-dumping tariffs and countervailing duties to include modules made from

²¹ Department of Energy SunShot Initiative. (2017). *Q4 2016/Q1 2017 Solar Industry Update*. Page 62. Retrieved from <https://www.nrel.gov/docs/fy17osti/68425.pdf>.

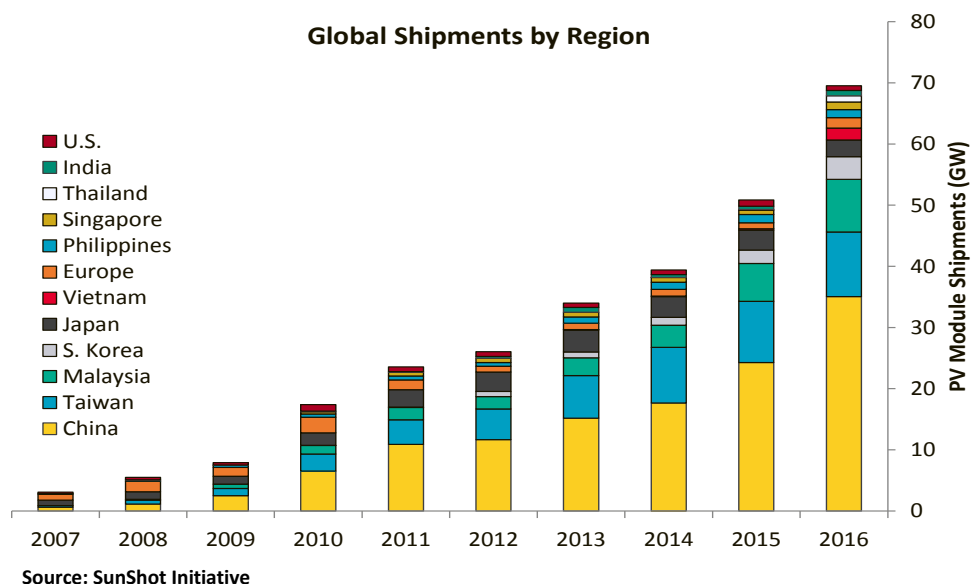
²² International Trade Administration. (2012). *Crystalline Silicon Photovoltaic Cells, Whether or Not Assembled into Modules, from the Peoples Republic of China, Final Determination of Sales at Less than Fair Value, Affirmative Final Determination of Critical Circumstances, in Part*. 77 Fed. Reg. 63791. Retrieved from <https://www.gpo.gov/fdsys/pkg/FR-2012-20-17/pdf/2012-25580.pdf>.

²³ International Trade Administration. (2012). *Crystalline Silicon Photovoltaic Cells, Whether or Not Assembled into Modules, from the Peoples Republic of China, Final Determination of Sales at Less than Fair Value, Final Affirmative Countervailing Duty Determination and Final Affirmative Critical Circumstances Determination*. 77 Fed. Reg. 63791. Retrieved from <https://www.gpo.gov/fdsys/pkg/FR-2012-10-17/pdf/2012-25564.pdf>.

Taiwanese CSPV cells.²⁴ While products made with Chinese and Taiwanese cells are covered by these two proceedings, products made with cells manufactured in other countries are not. Suniva asserts that, as a result, cell manufacturing relocated to other Southeast Asian countries. These claims appear to be borne out by the rise of manufacturing in Malaysia, Vietnam and other countries with new facilities built by Trina Solar,²⁵ JA Solar²⁶ and others.

Malaysia is now the largest source country for panels imported into the U.S. and comprises 30 percent of all imported panels. China is the second largest source of imported panels (21 percent), followed by South Korea (15 percent), Vietnam and Thailand (both 7 percent).²⁷

Global Shipments by Region



But Suniva's claim does not account for the growth in U.S. solar manufacturing since 2012 in the face of the alleged relocations to avoid tariffs, especially new and expanded U.S. manufacturing facilities currently under construction. The construction of these facilities suggests that some U.S. manufacturers are able to compete with imported panels.

Suniva's Suggested Remedies

Suniva is seeking new tariffs on foreign-made CSPV cells and floor prices per module as follows:

- Year 1 - \$0.40/watt per CSPV cell, with a minimum floor price of \$0.78/watt per module
- Year 2 - \$0.37/watt per CSPV cell, with a minimum floor price of \$0.72/watt per module
- Year 3 - \$0.34/watt per CSPV cell, with a minimum floor price of \$0.69/watt per module
- Year 4 - \$0.33/watt per CSPV cell, with a minimum floor price of \$0.68/watt per module

²⁴ International Trade Administration. (2012). *Certain Crystalline Silicon Photovoltaic Products from Taiwan: Final Determination of Sales at Less Than Fair Value*. Retrieved from <https://www.gpo.gov/fdsys/pkg/FR-2014-12-23/pdf/2014-30107.pdf>.

²⁵ Taiyang News. (2017, January 10). *Trina Solar's New 800 MW Facility Touted as Largest PV Cell and Module Factor in Vietnam*. Retrieved from <http://taiyangnews.info/business/trina-solar-starts-vietnam-factory/>.

²⁶ Clover, Ian. PV Magazine. (2015, October 21). *JA Solar Completes \$70m Malaysian Fab*. Retrieved from https://www.pv-magazine.com/2015/10/21/ja-solar-completes-70m-malaysian-fab_100021631/.

²⁷ U.S. Energy Information Administration. (2017, July 28). *Solar Photovoltaic Cell/Module Shipments Report*. Retrieved from https://www.eia.gov/renewable/annual/solar_photo/pdf/table7.pdf.

Industry analyses of Suniva’s proposed remedies show that they would have a profound effect on the pricing of foreign-produced CSPV cells and modules.

According to the Department of Energy, late 2016 prices for CSPV cells were near \$0.25/watt.²⁸ Thus, Suniva’s proposed first-year remedy of a \$0.40/watt tariff per CSPV cell would increase foreign-made CSPV cell prices by 160 percent from current prices. The same report found that 2016 prices for CSPV modules ranged between \$0.35/watt and \$0.50/watt, and modules for delivery in 2017 were being quoted “well below” \$0.40/watt.²⁹ Suniva’s proposed minimum floor price for CSPV modules would, therefore, increase CSPV module prices by 56 to 122 percent.

Notably, SolarWorld recently indicated that it was planning to propose its own remedies to the ITC that would be more modest and not involve tariffs or minimum floor prices.³⁰

Impacts on the U.S. Solar Market and Manufacturing

The petition filed by Suniva and the ITC decision to begin the investigation in May 2017 has already affected the U.S. market. Reports suggest that new utility-scale solar power purchase agreements (PPAs) have already slowed as a result of the pricing uncertainty created by the trade case, and some developers are reportedly stockpiling solar modules.³¹ There is good reason to anticipate fewer solar PPA deals in the second half of 2017 as market players assess pricing and supply risks and await signals on the potential outcome of the case.

While the ITC is obligated to recommend proposed remedies to the President if they find injury, the President is not bound to any particular recommendation, and may propose his own remedies. At this stage of the proceeding, forecasting is highly speculative. However, the trade law does provide some guidance on the boundaries of potential remedies. Any remedy must be limited initially to four years in duration (but can be extended up to four years more by the ITC), and any tariffs would be limited to no more than 50 percent of current duties and must be ramped down during the four-year period.

In this context, we start with the approach Suniva has proposed to the ITC. As set forth above, Suniva’s proposed tariff schedule would increase CSPV module pricing by 56 to 122 percent, depending on the price of modules in today’s market. Worst-case-scenario projections find that Suniva’s proposed tariffs could result in a 36.1 to 47 GW reduction in forecast solar deployment from 2018 through 2021.^{32, 33}

²⁸ Department of Energy SunShot Initiative. (2016). *Q3/Q4 2016 Solar Industry Update*. Page 32. Retrieved from <https://www.nrel.gov/docs/fy17osti/67639.pdf>.

²⁹ Department of Energy SunShot Initiative. (2016). *Q3/Q4 2016 Solar Industry Update*. Page 2. Retrieved from <https://www.nrel.gov/docs/fy17osti/67639.pdf>.

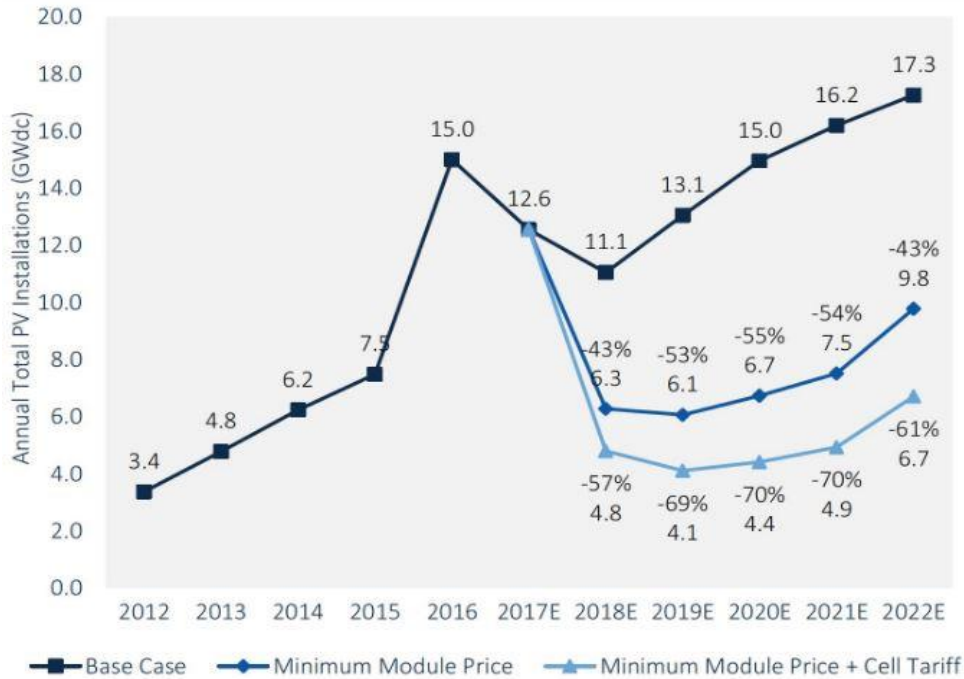
³⁰ Whieldon, Esther. Politico. (2017, August 28). *SolarWorld to Propose More Moderate Solar Import Remedies*. Retrieved from <https://www.politicopro.com/energy/whiteboard/2017/08/solarworld-to-propose-more-moderate-solar-import-remedies-092167>.

³¹ Groom, Nichola. Reuters. (2017, July 25) *Prospect of Trump Tariff Casts Pall Over U.S. Solar Industry*. Retrieved from <https://www.reuters.com/article/us-usa-trade-solar-insight-idUSKBN1AA0BI>.

³² Honeyman, Cory. GTM Research. (2017, June 26). *U.S. Solar Outlook Under Section 201: The Trade Case’s Impact on U.S. Solar Demand*. Retrieved from <https://www.greentechmedia.com/articles/read/suniva-dispute-could-halt-two-thirds-of-us-solar-installations>.

³³ Bromley, H. and Wang, X. Bloomberg New Energy Finance. (2017, August 8). *Will the Suniva Trade Case Kill the U.S. PV Market*.

Solar Installation Forecasts, With Tariff Impacts



Source: GTM Research

These impacts would not be distributed equally among the three major sectors of the solar industry. The utility-scale sector would face the greatest impact due to the number of panels procured and the price sensitivity of the sector as it competes with natural gas and other renewable generation. Experts suggest that most non-solar-specific renewable portfolio standard (RPS) development would be canceled under this scenario because developers will be unable to absorb higher costs imposed by tariffs.³⁴ The impact on the commercial and industrial (C&I) and residential solar sectors are not expected to be as severe as developers may be able to accept lower margins and absorb some of the cost of the tariffs.³⁵

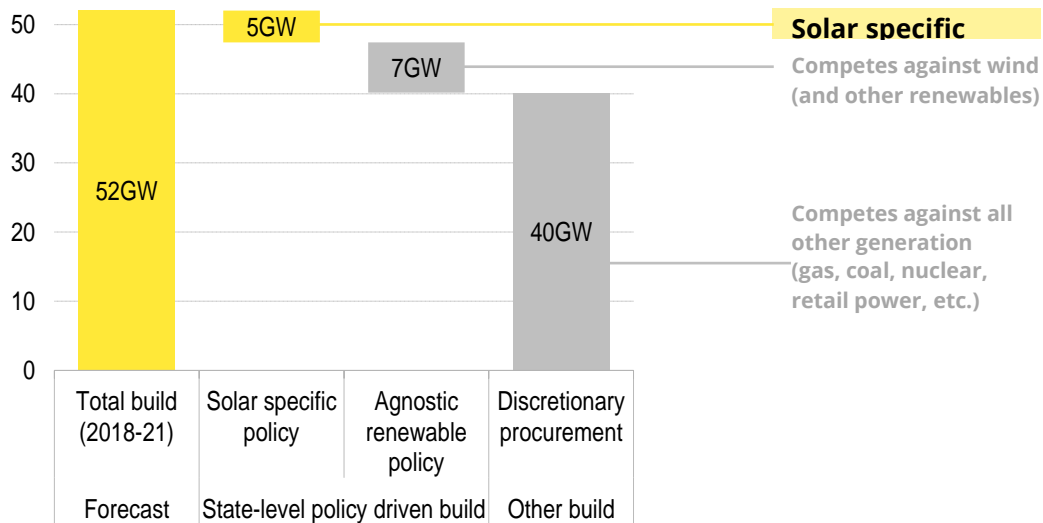
Retrieved from <https://www.bnef.com/core/insights/16727>.

³⁴ Bromley, H. and Wang, X. Bloomberg New Energy Finance. (2017, August 8). *Will the Suniva Trade Case Kill the U.S. PV Market*. Page 22. Retrieved from <https://www.bnef.com/core/insights/16727>.

³⁵ Bromley, H. and Wang, X. Bloomberg New Energy Finance. (2017, August 8). *Will the Suniva Trade Case Kill the U.S. PV Market*. Page 23. Retrieved from <https://www.bnef.com/core/insights/16727>.

Four-year (2018-21) U.S. PV build by driver

Gigawatts



Source: Bloomberg New Energy Finance

Suniva’s proposed remedies would also significantly impact U.S. solar employment, especially the over 171,000 jobs in development and installation. There could also be negative impacts in the U.S. solar manufacturing sector, which includes a significant production of inverters, racking systems and other related products. Demand for these products may be expected to fall.³⁶ Some estimates are that up to 88,000 jobs could be lost in the solar sector, which now totals over 260,000 jobs.³⁷

While efforts to mitigate the impact of tariffs would likely involve several measures, it is likely these would be insufficient to maintain the current level of market deployment, resulting in a significant reduction in market growth. One such mitigating action would be the stockpiling of panels by developers before any tariff is implemented. Though this approach would not be risk free given the possible exposure to retroactive tariffs (although these are unlikely and Suniva has not alleged the existence of “critical circumstances” which is usually necessary for such relief)³⁸ or other adjustments if tariffs or other approaches are ultimately implemented. Stockpiling of panels would protect a certain portion of U.S. deployment, but it is unlikely that enough panels could be stockpiled to avoid significant impacts to the market.

U.S. tax policy may also somewhat mitigate the overall impact of a tariff. **Analysis from BNEF and others found that the impact of any tariffs would be partially cushioned by U.S. tax and depreciation policies. Since the higher costs of imported panels would result in higher capital expenditures on projects, the value of the investment tax credit, which is 30 percent of a**

³⁶ The Solar Foundation. (2017). *National Solar Jobs Census*. Retrieved from <http://www.thesolarfoundation.org/national/>.

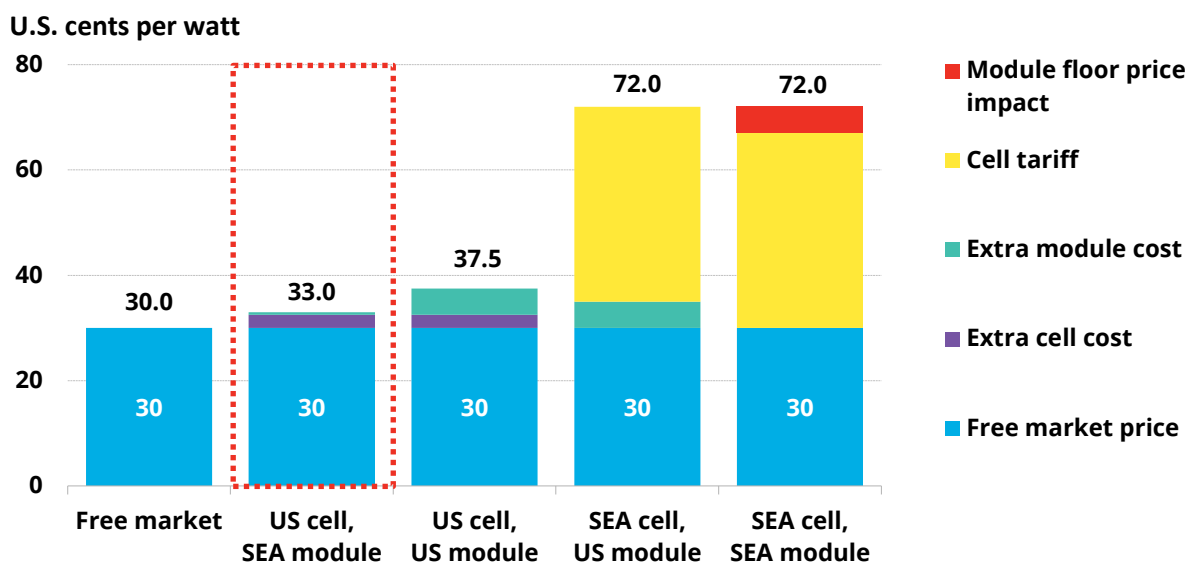
³⁷ Solar Energy Industries Association. (2017, June 20). *Suniva Trade Case Fact Sheet*. Retrieved from http://www.seia.org/sites/default/files/Suniva-Trade-Case-Factsheet_SEIA_6-8-2017-final.pdf.

³⁸ It is important to note that the general rule is that for a tariff remedy to apply prior to presidential action, the petitioner needs to make a case for “critical circumstances” that require an even more expedited hearing. Suniva has not made any such application to the ITC, making retroactive tariffs unlikely. See 19 C.F.R. § 351.206.

project's capital expenditure, would increase as would the value of accelerated depreciation benefits, thereby cutting the overall impact of the tariffs by half.³⁹ Assuming available tax equity capital, this could ease pressure on project margins and support deployment levels above what is assumed under the worst-case scenarios.

Another potential workaround is the development of U.S. CSPV cell manufacturing. The Suniva petition explicitly excludes the import of modules comprised of U.S.-made cells, whether or not those modules are assembled in the U.S.⁴⁰ Therefore, **manufacturers could establish cell manufacturing facilities in the U.S. and export the cells to third countries for assembly into tariff-exempt modules.** This approach would likely yield a net additional cost as low as \$0.03 per watt (if cell makers also build GW-scale factories to supply additional module assembly facilities in low-cost locations like Asia and Mexico), which represents a premium of 10 percent compared to prices expected outside the U.S.⁴¹

Module price scenarios in 2019 assuming Suniva's requested tariffs are imposed



Source: Bloomberg New Energy Finance | Note: SEA = Southeast Asia; 72 cents is the proposed 2019 module price

This increase in pricing would effectively be absorbed, with half of this cost offset by the available investment tax credit and depreciation schedules. The rest of the increase would squeeze margins across the supply chain, potentially making some projects uneconomic.

However, it is highly unlikely that foreign solar companies would invest in sufficient U.S. manufacturing capacity at the scale or within the time frame needed to avoid substantial disruption in the market. BNEF suggests that foreign manufacturers would need to site, permit, construct and

³⁹ Wang, Xiaoting. Bloomberg New Energy Finance. (2017, July 25). *Chinese PV, New U.S. Tariffs, and the Potential Workarounds*. Retrieved from <https://www.bnef.com/core/insights/16685/view>.

⁴⁰ Petition of Suniva, Inc. for Global Safeguard Relief. (2017) Retrieved from <https://edis.usitc.gov>; U.S. International Trade Commission. (2017). *Prehearing Report, Investigation No. TA-201-75*. Page I-11. Retrieved from <https://edis.usitc.gov>.

⁴¹ Wang, Xiaoting. Bloomberg New Energy Finance. (2017, July 25). *Chinese PV, New U.S. Tariffs, and the Potential Workarounds*. Retrieved from <https://www.bnef.com/core/insights/16685/view>.

produce 8 GW of CSPV cells to meet the anticipated shortfall (assuming a market size of 11 GW with U.S. manufacturers producing 3 GW). This scenario would entail a 930 percent increase in existing U.S. cell manufacturing capacity. The analysis assumes that a 1 GW facility would take only eight months. Even then, there would still be significant near and medium-term market disruption, because it would take at least a couple of years to site and bring on line 8 GW of cell production to meet market demand. Such a scenario seems unlikely. Manufacturers have expressed significant doubt that the tariffs themselves would lead to such an expansion due to the relatively short lifespan of the tariffs and uncertainty regarding the commitment to the tariffs in the U.S. political environment.⁴² It is unclear whether either Suniva or SolarWorld could survive under any tariff scenario.

International Repercussions of a New Tariff

There is reason to anticipate that a U.S. decision to adopt tariffs would lead to retaliation against U.S. exports. Such measures were in fact taken by China in response to the anti-dumping tariffs imposed by the ITC in 2011 and arguably played an important role in the decline of U.S. exports of CSPV cells in the years that followed. China, in particular, has responded aggressively against trade restrictions imposed by the U.S. and other countries.⁴³

There is also the very real potential of a challenge at the World Trade Organization (WTO). Countries that produce CSPV cells affected by Section 201 tariffs would almost certainly challenge the U.S. measures before the WTO dispute settlement body.⁴⁴ Historically, the U.S. has not fared well before the WTO in challenges to Section 201 relief which, by definition, is not targeted to unfair trade practices. **If successfully challenged at the WTO, the U.S. could be forced to either revoke the trade relief or face WTO-authorized trade measures imposed against U.S. exports.**

The ITC and the President Should Pursue a Non-Tariff Remedy

Given the potentially substantial negative impacts of a tariff on employment and investment in the U.S. solar industry, especially with regards to the critically important and highly competitive utility-scale solar sector, the most constructive and effective responses to Suniva's petition should focus on non-tariff approaches to enhance U.S. manufacturing competitiveness. Such measures would avoid the potential for destructive retaliatory trade sanctions and would reduce the potential for an adverse ruling at the WTO. Most importantly, they would not interfere with the fundamental economics and cost competitiveness of solar power and could work to promote investment, job creation, and U.S. competitiveness in one of the nation's fastest growing and most important economic sectors. ACORE and its members look forward to undertaking an in-depth analysis of such options and working with administration officials as they consider these important issues.

⁴² *Ibid.*

⁴³ Bloomberg News. (2016, November 18). *When the U.S. Moves on Trade, China Hits Back Fast*. Retrieved from <https://www.bloomberg.com/news/articles/2016-11-17/china-hits-back-fast-on-perceived-u-s-trade-slights-past-shows>.

⁴⁴ WTO rules allow for such temporary tariffs (Section 201 is based on the criteria of Article XIX of the General Agreement on Trade and Tariffs), but these tariffs can be challenged by other countries.