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Making Sense of the Solar Supply Chain Issues

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As current supply chain issues continue to threaten the U.S. photovoltaic solar industry, solar module suppliers, manufacturers, renewable energy developers and utilities alike face great uncertainty surrounding the immediate future of the solar module supply market. The bottom-line is that supply chain issues are increasing shipping and equipment costs for solar cells and panels, however, there are several independent factors that are working together to drive this surge in pricing and constrained market. These factors include the following:

1. The Antidumping and Countervailing Duties (AD/CVD) Anti-Circumvention Petition filed by Auxin Solar
2. Section 201 Tariffs
3. The Uyghur Forced Labor Prevention Act and Forced Labor WROs
4. General Global Supply Chain Issues (likely resulting from COVID-19)

This article takes a closer look at each of the factors listed above in an effort to explain the current landscape of the supply chain issues threatening the solar module supply market.

Antidumping and Countervailing Duties (AD/CVD) Anti-Circumvention Petition filed by Auxin Solar

On February 8, 2022, California based Auxin Solar filed a petition with the Department of Commerce asking federal trade officials to investigate whether to impose tariffs on crystalline silicon photovoltaic ("CSPV") cells and modules that are assembled in Malaysia, Thailand, Vietnam and Cambodia using parts and components from China[1] (the "Petition"). The Petition argues that Chinese manufacturers have shifted production of CSPV cells and modules to affiliated companies in Malaysia, Thailand, Vietnam and Cambodia in order to circumvent U.S. anti-dumping (AD) laws and countervailing duties (CVD), which were implemented ten years ago after the U.S. International Trade Commission found that dumped and subsidized imports of Chinese CSPV cells and modules caused material injury to the U.S. CSPV industry.[2] Further, the Petition argues that while the end of the production process has been shifted to Malaysia, Thailand, Vietnam and Cambodia in order to serve the U.S. market, nearly all of the R&D, raw materials and capital investment is still coming from Chinese manufacturers.

The Petition is similar to the one rejected by the Department of Commerce just four short months ago, but with three notable differences:

1. The Petitioner has identified itself. Auxin Solar is a domestic manufacturer of modules based in San Jose, California, which affirmatively asserts standing as a producer of like products to those for which it is requesting the investigation.

2. The prior petition requested review of a limited number of Chinese companies while the current Petition requests review of all imports coming from Malaysia, Thailand, Vietnam and Cambodia that use Chinese components.

3. While Malaysia, Thailand and Vietnam were named in the prior petition, Cambodia has been added to the current Petition. A list of the major manufacturers alleged to be engaged in the circumvention is as follows:

    - Malaysia: Jinko Solar Technology Sdn. Bhd.; LONGi (Kuching) Sdn. Bhd. and its affiliate Vina Cell Technology Company Limited and Vina Solar Technology Company Limited; JA Solar (Malaysia) Co., Ltd. or JA Solar Malaysia Sdn. Bhd.

    - Thailand: Canadian Solar Manufacturing (Thailand) Co., Ltd.; Trina Solar Science & Technology (Thailand) Co., Ltd.; Talesun Solar Technologies Thailand or Talesun Technologies (Thailand) Co., Ltd.; Astroenergy Solar Thailand Co., Ltd.

    - Vietnam: Trina Solar (Vietnam) Science & Technology Co., Ltd.; Canadian Solar Manufacturing (Vietnam) Co., Ltd.; China Sunergy Co., Ltd. in Vietnam; Boviet Solar Technology (Vietnam) Co., Ltd. or Boviet Solar Technology Co., Ltd.; GCL System Integration Technology (Vietnam) Co. Ltd.; Vina Cell Technology Company Limited and Vina Solar Technology Company Limited; LONGi Green Energy Technology Co., Ltd.; JinkoSolar (Vietnam) Co., Ltd.

    - Cambodia: New East Solar Cambodia, EnAlex, Shenglong PV-Tech (Cambodia) Co., Ltd., Jintek Photovoltaic Technology Co., Ltd.[3]

Since the prior petitions rejection was based on the Petitioner not identifying themselves and the Department of Commerce’s resulting uncertainty of their standing to bring the petition, the first difference listed above may prove considerable this time around. In the event that the Department of Commerce does decide to investigate whether CSPV cells and modules should be subject to U.S. anti-dumping laws and countervailing duties, the Department of Commerce will determine and asses whether:

1. The process of assembly or completion in the foreign county is “minor or insignificant”;

2. The value of merchandise produced in the county subject to the antidumping or countervailing duties order is a significant portion of the merchandise exported to the United States; and

3. The action is appropriate to prevent evasion of such order or finding.[4][5]

Based on the current timeline, the Department of Commerce has until March 25, 2022 to accept Petition's request and initiate an investigation or reject the Petition. A decision could come sooner than that deadline, or the Department of Commerce could effectively extend that timeline by requesting more information from the Petitioner. Once the Department of Commerce does come to a decision on whether to initiate an investigation, if it (a) rejects the Petition, thus not initiating an investigation, the case will end or (b) accepts the Petition, thus initiating an investigation, the timeline for clarity can be as long as one year with significant costs imposed during that year. The timeline for such an investigation is 150 days from the Department of Commerce's acceptance for a preliminary determination, and 300 days for a final determination.[6]

If the result of the investigation is that the government finds that circumvention has occurred, it may impose duties (i.e., import taxes) on subject modules that could range from a few percentage points up to or exceeding 90%. These duties can be applied to imports from the initiation of the case. Further, while the investigation is pending (so as early as March 25, 2022), the U.S. Government can impose a "cash deposit" requirement which would require an importer to post a cash deposit as security for the potential duties. These cash deposits would impose a significant cost burden on the importation of subject modules.

The impact of the Auxin Solar Petition remains to be seen. If the Department of Commerce initiates an investigation, it could take some time for closure on the matter (in the range of a year) and, during that time, significant cost could be imposed on subject modules (in the form of cash deposits). More information should be known in the coming weeks.

Section 201 Tariffs

On February 4, 2022, the Biden administration extended Trump-era tariffs (known as Section 201 tariffs) on imported crystalline silicon photovoltaic cells ("CSPV") for an additional four years.[7] In addition to extending the tariffs on monofacial solar cells and modules, the Biden administration also made several modifications to existing provisions including (i) increasing the capacity of monofacial solar cells that can initially be imported each year free of safeguard tariffs from 2.5 gigawatts to 5 gigawatts and (ii) excluding bifacial solar cells and modules from the tariff.[8] Imports of CSPV cells that exceed the 5 gigawatt tariff-rate quota, and all imports of covered CSPV modules will be subject to the following tariffs:

- Year 5 (February 7, 2022 – February 6, 2023) – 14.75%
- Year 6 (February 7, 2023 – February 6, 2024) – 14.5%
- Year 7 (February 7, 2024 – February 6, 2025) – 14.25%
- Year 8 (February 7, 2025 – February 6, 2026) – 14%[9]

While seeking to remedy injury to domestic manufacturing and create jobs in the U.S. solar section, the Section 201 tariffs have solicited mixed reactions from solar industry stakeholders. Industry trade groups have argued that the extension of the tariffs threaten President Biden's goal to decarbonize the U.S. electricity sector by 2035[10] as solar companies have relied on cheap imports to compete with energy produced from fossil fuels. The Solar Energy Industries Association, which represents various companies throughout the solar value chain (including manufacturers, installers, and project developers), outwardly opposed the original tariff noting that “the U.S. will continue to import 80% to 90% of our solar cells and modules at a higher cost due to the tariff, potentially putting solar out of reach for many homeowners, making some utility-scale projects uneconomical, and driving up prices for ratepayers”[11]. Although the modifications made by the Biden administration have eased various aspects of the tariff, it continues as a contributing factor to the increasing shipping and equipment costs for solar cells and panels.

The Uyghur Forced Labor Prevention Act and Forced Labor WROs

On December 23, 2021, President Biden signed the Uyghur Forced Labor Prevention Act (“UFLPA”) intending to reinforce the existing prohibitions against the importation of goods made with forced labor. UFLPA effectively creates a rebuttable presumption that all goods manufactured wholly or in part in the Xinjiang Uyghur Autonomous Region are the product of forced labor, and are therefore banned from importation into the United States.[12] The rebuttable presumption will apply unless an importer is able to demonstrate that it:

1. Fully compiled with new importer guidance and any regulations issued to implement that guidance;

2. Completely and substantively responded to all inquires for information submitted by the Commissioner of Customs and Border Protection to ascertain whether forced labor was used; and

3. Provided clear and convincing evidence, that the good, ware, article or merchandise was not mined, produced or manufactured wholly or in part by forced labor.[13]

UFLPA’s rebuttable presumption is set to take effect 180 days after its enactment, on June 21, 2022. During this time, the Forced Labor Enforcement Task Force is soliciting comments and devising its strategy of implementation of the rules and regulations of UFLPA. Although there is a great deal of uncertainty that remains, the enforcement of the UFLPA could have a chilling effect on the solar module supply market in the near future, lasting through 2024, and potentially into 2025. The evidentiary requirements to overcome the rebuttable presumption detailed above will be significant and will most likely involve traceability across the entire supply chain. Manufacturers and related companies with supply chain exposure to the Xinjiang Uyghur Autonomous Region should (i) prepare for an increasingly complex regulatory landscape in the near future, (ii) begin to carefully review the Forced Labor Enforcement Task Force’s upcoming guidance on how to conduct due diligence on supply chain issues while assessing their supply chain risks, and (iii) consider engaging with the Forced Labor Enforcement Task Force through the public comment period to inform the implementation of the UFLPA in a manner that is consistent with their practices.

General Global Supply Chain Issues (likely resulting from COVID-19)

Like numerous other supply chains, the solar module supply chain has felt significant pressure as a result of the COVID-19 pandemic. Specifically, the fallout from COVID-19 has resulted in (i) a shortage of the shipping containers that ship cargo, (ii) a spike in demand for steel (iii) too few ships and dock workers, (iv) a shortage of truck drivers, (v) an increase in gasoline prices, and (vi) an increase in key solar panel components such as polysilicon, all of which have caused an increase in shipping cost as well as significant shipping delays. Additionally, city-wide shutdowns in Asian export hubs have halted the manufacturing of various components and raw materials all together for months on end.

The Shanghai Freight Index, which tracks the cost of shipping a freight container from Shanghai to numerous ports around the world, has increased roughly six-fold from the pre-pandemic baseline.[14] This has proven especially problematic for the U.S. solar energy sector as most CSPV cells and modules are manufactured in China and Southeast Asia.

Summary – How Have These Factors Affected the Solar Energy Sector?

While any of the contributing factors detailed above would singularly threaten the solar module supply chain, each of these factors working together has caused a chilling effect in the U.S. solar energy sector. Many solar developers have adopted the "wait and see" approach, postponing utility-scale solar projects planned for 2022. The level of uncertainty surrounding supply chain issues (specifically the Antidumping and Countervailing Duties (AD/CVD) Petition filed by Auxin Solar) has also caused developers to become increasingly cautious about holding risks associated with increasing costs. This has led to cost allocation and schedule provisions being heavily negotiated in recent utility scale contracts.

With several factors impacting the solar supply chain, it is not clear when there will be clarity in the market. In the near term, stakeholders should anticipate an uncertain and constrained market. Also during this time, we should expect to see the allocation of cost, schedule and risk amongst stakeholders to be steadily and significantly evolving and changing.

FOOTNOTES

[1] Circumvention Petition Filed 2.8.22.pdf (seia.org)

[2] *Id*.

[3] *Id*.

[4] Prevention of Circumvention of Antidumping and Countervailing Duty Orders, 19 U.S.C. § 1677j (2012).

[5] In determining whether the process of assembly or completion is "minor or insignificant", the Department of Commerce will take into account the following factors: (i) the level of investment in the foreign county, (ii) the level of research and development in the foreign county, (iii) the nature of the production process in the foreign county, (iv) the extent of production facilities in the foreign county, and (v) whether the value of the processing performed in the foreign county represents a small portion of the value of merchandise imported into the United States.

[6] Circumvention Inquiries, 19 C.F.R. § 351.226.

[7] A Proclamation to Continue Facilitating Positive Adjustment to Competition From Imports of Certain Crystalline Silicon Photovoltaic Cells (Whether or Not Partially or Fully Assembled Into Other Products) | The White House

[8] *Id*.

[9] QB 22-507 Solar Cells and Modules 2022 | U.S. Customs and Border Protection (cbp.gov)

[10] Biden admin eases Trump-era solar tariffs but doesn't end them | Reuters

[11] Section 201 Solar Tariffs | SEIA

[12] Act of Dec. 23, 2021, Pub. L. No. 117–78, § 3(a), 135 Stat. 1529.

[13] *Id.* at § 3(b).

[14] How are supply chain issues impacting solar power projects? | World Economic Forum (weforum.org).

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