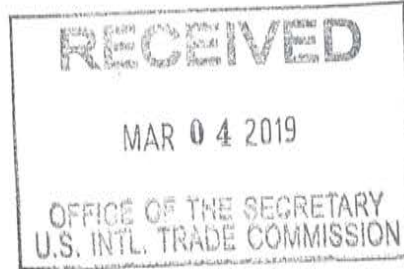


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VIA HAND DELIVERY

The Honorable Lisa R. Barton
Secretary to the Commission
U.S. INTERNATIONAL TRADE COMMISSION
500 E Street SW, Room 112
Washington, DC 20436

March 4, 2019

Re: *Certain Photovoltaic Cells and Products Containing Same;*
Inv. No. 337-TA-___

Dear Secretary Barton:

Enclosed for filing, please find documents in support of a request by Hanwha Q CELLS USA Inc. and Hanwha Q CELLS & Advanced Materials Corporation (collectively, "Complainants") that the U.S. International Trade Commission institute an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, concerning certain photovoltaic cells ("solar cells") and products containing same. Complainants' submission includes the following documents:

1. One (1) original and eight (8) paper copies of the Complainants' Verified Complaint pursuant to Commission Rule 210.8(a)(1)(i). There is no confidential version of the Verified Complaint.
2. One (1) electronic copy of the public exhibits to Complainants' Verified Complaint on CD, pursuant to Commission Rule 210.8(a)(1)(i) including:
 - a. One (1) certified copy of U.S. Patent No. 9,893,215 (the "'215 patent") as Exhibit 1 to the Verified Complaint pursuant to Commission Rule 210.12(a)(9)(i); and
 - b. One (1) certified copy of the assignment record and additional assignment documents related to the '215 patent as Exhibit 2 to the Verified Complaint pursuant to Commission Rule 210.12(a)(9)(ii).
3. One (1) electronic copy of confidential exhibits to the Complainants' Verified Complaint on CD pursuant to Commission Rule 210.8(a)(1)(ii), which are clearly labeled "confidential business information" pursuant to Commission Rule 201.6(c).



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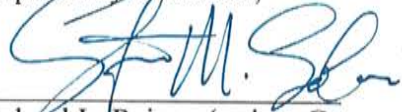
The Honorable Lisa R. Barton
Secretary to the Commission
March 4, 2019
Page 2

4. Seventeen (17) additional paper copies of the Complainants' Verified Complaint and accompanying electronic copies of the public exhibits thereto, for service upon Proposed Respondents, pursuant to Commission Rules 210.8(a)(1)(iii).
5. Seventeen (17) additional electronic copies of the confidential exhibits to Complainants' Verified Complaint for service upon Proposed Respondents' counsel after they have subscribed to the protective order, with one copy for each Proposed Respondent pursuant to Commission Rule 210.8(a)(1)(iii), the confidential exhibits being clearly labeled "confidential business information" pursuant to Commission Rule 201.6(c).
6. Six (6) additional paper copies of Complainants' Verified Complaint, pursuant to Commission Rule 210.8(a)(1)(iv), for service upon the Embassies of the Cayman Islands, People's Republic of China, Hong Kong Special Administrative Region, Malaysia, Kingdom of Norway, and Republic of Singapore pursuant to Commission Rule 210.11(a)(1)(ii).
7. One (1) original certified electronic copy and three (3) additional electronic copies of the respective certified prosecution history for the '215 patent pursuant to Commission Rule 210.12(c)(1); and four (4) electronic copies of the patent and applicable pages of each technical reference mentioned in the prosecution history of the '215 patent pursuant to Commission Rule 210.12(c)(2).
8. A letter and certification requesting confidential treatment for the information contained in confidential exhibits 2L, 21-23, and 25-30 to the Verified Complaint pursuant to Commission Rules 201.6(b) and 210.5(d).
9. A Statement on the Public Interest regarding the remedial orders sought by Complainants in the Verified Complaint pursuant to Commission Rule 210.8(b).

Please contact me with any questions regarding this filing.

Dated: March 4, 2019

Respectfully submitted,



Richard L. Rainey (rrainey@cov.com)
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The Honorable Lisa R. Barton
Secretary to the Commission
March 4, 2019
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VIA HAND DELIVERY

March 4, 2019

The Honorable Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW., Room 112
Washington, DC 20436

Re: *In the Matter of Certain Photovoltaic Cells and Products Containing Same;*
Inv. No. 337-TA-


Dear Secretary Barton:

Pursuant to Commission Rule 201.6, Complainants Hanwha Q CELLS USA Inc. (“HQC-USA”) and Hanwha Q CELLS & Advanced Materials Corporation (“HQC-AMC”) respectfully request confidential treatment of certain confidential business information contained in exhibits 2L, 21–23 and 25–30 to the Verified Complaint.

The information in the exhibits for which HQC-USA and HQC-AMC seek confidential treatment consists of confidential terms of a patent assignment (Exhibit 2L), confidential personal identification and contact details relating to outside counsel (Exhibit 21), confidential identification of licensees and license terms (Exhibits 22–23), confidential description of the nature and significance of investments made by HQC-USA and HQC-AMC in the domestic industry (Exhibit 25), and confidential technical analyses and proprietary information (Exhibits 26–30). This information qualifies as confidential business information under Commission Rule 201.6 because substantially-identical information is not available to the public, because the disclosure of this information would cause substantial competitive harm to HQC-USA and HQC-AMC or harm to outside counsel, and because the disclosure of this information would likely impede the Commission’s efforts and ability to obtain similar information in the future.

Thank you for your attention. Please contact me with any questions regarding this request for confidential treatment.

Respectfully submitted,



Sturgis M. Sobin
Counsel for Complainants Hanwha Q
CELLS USA Inc. and Hanwha Q CELLS &
Advanced Materials Corporation

CERTIFICATION

I, Sturgis M. Sobin, counsel for Complainants Hanwha Q CELLS USA Inc. (“HQC-USA”) and Hanwha Q CELLS & Advanced Materials Corporation (“HQC-AMC”), declare:

1. I am duly authorized by HQC-USA and HQC-AMC to execute this certification.
2. I have reviewed the Complaint and Confidential Exhibits 2L, 21–23, and 25–30 for which confidential treatment has been requested.
3. To the best of my knowledge, information, and belief, founded after reasonable inquiry, substantially-identical information is not available to the public.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct, and that the statement made upon information and belief are believed by me to be true.

Executed this 4th day of March 2019, in Washington, DC.



Sturgis M. Sobin
Counsel for Complainants Hanwha Q CELLS USA
Inc. and Hanwha Q CELLS & Advanced Materials
Corporation

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

**In The Matter Of
CERTAIN PHOTOVOLTAIC CELLS AND
PRODUCTS CONTAINING SAME**

Investigation No. 337-TA-____

COMPLAINANTS' PUBLIC INTEREST STATEMENT

Hanwha Q CELLS USA Inc. (“HQC-USA”) and Hanwha Q CELLS & Advanced Materials Corporation (“HQC-AMC”) (collectively, “Complainants”) respectfully submit this public interest statement under 19 C.F.R. § 210.8(b). Complainants seek exclusion of certain photovoltaic cells (“solar cells”) and products containing same, including solar modules, that infringe U.S. Patent No. 9,893,215 (the “215 Patent”) (collectively, the “Accused Products”). Specifically, Complainants seek a limited exclusion order excluding from entry into the United States all Accused Products that are imported, sold for importation, and/or sold after importation by or on behalf of any of the Jinko Respondents, LONGi Respondents, or REC Respondents named in the Complaint (collectively, “Respondents”). Complainants also seek cease-and-desist orders halting the importation, sale, offer for sale, advertising, marketing, demonstrating, qualifying for use in the products of others, transfer, distribution, warehousing inventory for distribution, use, assembly, or testing of the Accused Products by Respondents.

For the reasons described below, the relief requested in this Investigation would have no meaningful impact on public health, safety, or welfare conditions in the U.S., competitive conditions in the U.S. economy, production of like or directly competitive articles in the U.S., or U.S. consumers. As such, this matter does not present an instance where the Commission, the parties, or the public should be required to undergo the time or expense of discovery and trial for a Recommended Determination by the Administrative Law Judge (“ALJ”) on the public interest.

I. How the articles potentially subject to the orders are used in the United States

The Accused Products in this Investigation are certain solar cells and products containing same, including solar modules, that use a passivation structure protected by the '215 Patent.

Solar cells are used to produce solar modules, and solar modules are connected to one another to make solar arrays. Solar arrays absorb sunlight as a source of energy to generate electricity. In the United States, solar arrays are used to power a commercial or residential building's electrical system or a utility grid.

II. There are no public health, safety, or welfare concerns in the United States relating to the requested remedial orders

The issuance of exclusion and cease-and-desist orders in this Investigation would have no adverse impact upon the public health, safety, or welfare in the United States. The Accused Products currently used in the United States do not have any unique health- or safety-related features. The Accused Products are not approved medical devices, drugs, vaccines, or products otherwise used to treat or cure a disease or injury. While the Accused Products are used to generate electricity in a manner resulting in less pollution than using traditional fossil fuels, exclusion of the Accused Products will not measurably affect efforts in the United States to use solar power as a renewable energy source. As further described below, there are many other non-accused manufacturers that can easily replace the volume of Respondents' Accused Products with like or directly competitive articles. Respondents' Accused Products accounted for only a small portion of the U.S. market in 2018, while the vast majority of the market was supplied by more than ten different firms in the solar industry that are not accused in this Investigation. The non-accused firms will be unaffected by the requested remedial orders directed to the products of named Respondents. Together with Complainants, these firms have capacity to meet U.S. demand in the event the Accused Products are excluded under the requested remedial orders.

III. Like or directly competitive articles that Complainants or third parties make which would replace the subject articles if they were excluded

As noted above, the Accused Products are certain solar cells and products containing same, including solar modules, that use the particular passivation structure protected by the '215 Patent. Articles that are like or directly competitive with the Accused Products encompass solar modules and solar cells intended for incorporation into solar modules typically used in ground-mounted solar power plants or in rooftop arrays on residential, commercial, or industrial buildings. Complainants and numerous other non-accused firms make like and directly competitive articles that are expected to replace Respondents' Accused Products if the Commission issues the requested relief. Complainants produce various types of solar modules, and solar cells intended for incorporation into solar modules, for sale in the U.S. market, as do notable non-accused third parties such as Trina Solar and Canadian Solar. These non-accused third parties and Complainants are among the world's top ten solar module manufacturers by production volume. Each has a market position and production capacity comparable to those of Respondents, and collectively they could increase production of solar modules and solar cells intended for incorporation into solar modules to replace the volume of Respondents' Accused Products in the U.S. market. In addition, there are several other non-accused manufacturers that could further offset any reduced supply from exclusion of Respondents' Accused Products. In sum, there are a sufficient number of manufacturers of solar modules and solar cells intended for incorporation into solar modules to maintain competitive conditions in the U.S. economy and to fill any void created by issuance of the requested remedial orders.

IV. Complainants and/or third parties have capacity to replace the volume of articles subject to the requested remedial orders in a commercially reasonable time

Given the number of manufacturers in the solar industry and their global production capacities, Complainants and other non-accused manufacturers are expected to replace the

volume of the Accused Products subject to the requested remedial orders in a commercially reasonable time. Industry sources estimated approximately 11 gigawatts of U.S. solar installation in 2018,¹ of which Respondents accounted for a limited portion. Meanwhile, an industry report estimated that Complainants and non-accused manufacturers in the industry collectively had an excess capacity of at least 17 gigawatts in 2018, when compared to production levels the year prior.² The report also showed that excess capacity has increased year after year between 2016 and 2018.³ After a detailed investigation, the Commission itself recently found there to be global overcapacity for the production of solar modules and solar cells intended for incorporation into solar modules, particularly noting the excess capacity existing from sources other than Respondents.⁴ The trend of global overcapacity indicates that others would be easily able to replace the volume of Respondents' Accused Products, should such products be excluded under the requested remedial orders.

V. The requested remedial orders will not adversely impact U.S. consumers

The requested exclusion and cease-and-desist orders would not adversely impact consumers, because adequate supply of non-accused solar modules and solar cells intended for incorporation into solar modules would continue to exist in the U.S. market. As discussed above, there will be no unfilled void resulting from the requested remedial orders because there are more than ten manufacturers, in addition to Complainants, producing solar modules and solar

¹ SEIA, "Solar Industry Research Data: U.S. Solar Market Through Q3 2018: Key Takeaways" <https://www.seia.org/solar-industry-research-data> (last accessed Feb. 26, 2019).

² PV Magazine, "Top 10 crystalline PV module manufacturer ranking" (Jul. 20, 2018), <https://www.pv-magazine.com/2018/07/20/top-10-crystalline-pv-module-manufacturer-ranking/>.

³ *Id.*

⁴ *Crystalline Silicon Photovoltaic Cells (Whether or not Partially or Fully Assembled into Other Products)*, Inv. No. TA-201-75, USITC Pub. 4739 (Nov. 2017), at 93.

cells intended for incorporation into solar modules available in the U.S. market that could easily replace the volume of the excluded articles. Thus, U.S. consumers will not be deprived of products enabling the use of solar energy to power their buildings' electrical systems and utility grids, or other residential or commercial applications.

In conclusion, the relief requested in this Investigation will not meaningfully impact the public health, safety, or welfare conditions in the United States, competitive conditions in the U.S. economy, production of like or directly competitive articles in the United States, or U.S. consumers. Meanwhile, there is a strong public interest in protecting intellectual property rights in the United States. Exclusion of Respondents' Accused Products in this Investigation will serve the public interest by protecting significant intellectual property rights developed by Complainants. As this Investigation does not present special issues of public interest that affect the Commission's issuance of the requested relief, or that necessitate discovery and trial by the ALJ, the Commission should not direct the ALJ to take unnecessary public interest evidence.

Dated: March 4, 2019

Respectfully submitted,

COVINGTON & BURLING LLP



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*Counsel for Complainants
Hanwha Q CELLS USA Inc. and Hanwha Q
CELLS & Advanced Materials Corporation*

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

In The Matter Of

**CERTAIN PHOTOVOLTAIC CELLS
AND PRODUCTS CONTAINING SAME**

Investigation No. 337-TA-____

**COMPLAINT OF HANWHA Q CELLS USA INC. AND HANWHA
Q CELLS & ADVANCED MATERIALS CORPORATION UNDER
SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED**

COMPLAINANTS:

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LIST OF EXHIBITS

Exhibit No.	Document Description
1.	Certified U.S. Patent No. 9,893,215
2A–M.	Certified Assignment Record and Additional Assignment Documents Related to U.S. Patent No. 9,893,215 including CONFIDENTIAL Exhibit 2L
3.	Jinko 2017 Annual Report
4.	Jinko/NextEra 2018 Press Release
5.	Jinko/Techren 2018 Press Release
6.	LONGi 2017 Annual Report
7.	LONGi 2018 Press Release
8.	REC Contact Webpage
9.	REC About Webpage
10.	REC 2019 Press Release
11.	REC Installation Webpage 1
12.	REC Installation Webpage 2
13.	REC TwinPeak 2 Datasheet
14.	Exemplary Jinko Accused Products
15.	Exemplary LONGi Accused Products
16.	Exemplary REC Accused Products
17.	Jinko Datasheet relating to JKM295M-60B
18.	Declaration of Kimin Hong and Attached Exhibits A and B
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21.	CONFIDENTIAL Declaration of Jihyun Kim and Attached Exhibits A–C
22.	CONFIDENTIAL Identification of Licensees under U.S. Patent No. 9,893,215
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24.	Photographs relating to Domestic Industry Products
25.	CONFIDENTIAL Declaration of Ryan Back
26.	CONFIDENTIAL Declaration of Matthias Schütze, Ph.D. and Attached Exhibits A and B
27.	CONFIDENTIAL Claim Chart: Infringement of Claim 12 of U.S. Patent No. 9,893,215 by Jinko JKM295M-60B
28.	CONFIDENTIAL Claim Chart: Infringement of Claim 12 of U.S. Patent No. 9,893,215 by LONGi LR6-60PE-305M
29.	CONFIDENTIAL Claim Chart: Infringement of Claim 12 of U.S. Patent No. 9,893,215 by REC REC285TP2 BLK2

Exhibit No. Document Description

30. **CONFIDENTIAL** Claim Chart: Complainants' Practice of Claim 12 of U.S. Patent No. 9,893,215 by HQC-USA Q.PEAK DUO L-G5.2

LIST OF APPENDICES

Appendix No. Document Description

- A. Certified Prosecution History of U.S. Patent No. 9,893,215

- B. Copies of References Cited in the Prosecution History of U.S. Patent No. 9,893,215

I. INTRODUCTION

1. Hanwha Q CELLS USA Inc. (“HQC-USA”) and Hanwha Q CELLS & Advanced Materials Corporation (“HQC-AMC”) (collectively, “Complainants”) request that the United States International Trade Commission institute an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 (“Section 337”), to remedy the unlawful importation, sale for importation, and/or sale after importation of certain photovoltaic cells (“solar cells”) and products containing same, including solar modules, that infringe a valid and enforceable United States patent owned by HQC-AMC (collectively, the “Accused Products”).

2. The proposed Respondents are:

- a. JinkoSolar Holding Co., Ltd. and its subsidiaries JinkoSolar (U.S.) Inc., Jinko Solar (U.S.) Industries Inc., Jinko Solar Co., Ltd., Zhejiang Jinko Solar Co., Ltd., and Jinko Solar Technology Sdn. Bhd. (collectively, “Jinko”);
- b. LONGi Green Energy Technology Co., Ltd. and its subsidiaries LONGi Solar Technology Co., Ltd., LONGi (H.K.) Trading Ltd., LONGi (Kuching) Sdn. Bhd., Taizhou LONGi Solar Technology Ltd., Zhejiang LONGi Solar Technology Ltd., Hefei LONGi Solar Technology Ltd., and LONGi Solar Technology (U.S.) Inc. (collectively, “LONGi”); and
- c. REC Solar Holdings AS and its subsidiaries REC Solar Pte. Ltd. and REC Americas, LLC (collectively, “REC”).

3. On information and belief, Respondents have engaged in unfair acts in violation of Section 337 through and in connection with the unlicensed importation into the United States, sale for importation into the United States, and/or sale within the United States after importation

of the Accused Products that infringe one or more claims of United States Patent No. 9,893,215 (the “’215 Patent”).¹

4. Complainants assert that the Accused Products directly infringe at least claims 12–14 of the ’215 Patent, either literally or under the doctrine of equivalents.

5. HQC-AMC owns by assignment the entire right, title, and interest in and to the ’215 Patent.²

6. As required by Section 337(a)(2) and 337(a)(3), an industry exists in the United States relating to the ’215 Patent at least by virtue of Complainants’ significant investment in plant and equipment, significant employment of labor and capital, and/or substantial investment in the exploitation of the technologies covered by the ’215 Patent through activities including engineering and research and development. These investments are all related to the commercialization in the United States of HQC-AMC’s patented solar cells, which practice one or more claims of the ’215 Patent, by incorporating them into solar modules intended for end customers. HQC-USA has made these investments at a state-of-the-art module assembly plant that it recently constructed in Dalton, Georgia. Complainants’ domestic industry in commercializing HQC-AMC’s patented solar cells for use by power utilities, businesses, and individual consumers is further detailed in Section IX, *infra*, and the materials cited therein.

7. Complainants seek, as relief, a permanent limited exclusion order, pursuant to Section 337(d), excluding from entry into the United States all of the Accused Products which infringe at least claims 12–14 of the ’215 Patent. Complainants also seek a permanent cease and

¹ A certified copy of the ’215 Patent accompanies this Complaint as Exhibit 1.

² Exhibits 2A–F are certified copies of the recorded assignment documents related to the ’215 Patent. Exhibits 2G–M are additional assignment documents related to the ’215 Patent.

desist order, pursuant to Section 337(f), directing all Respondents to cease and desist from activities that include, but are not limited to offer for sale, sale, importation, transfer, distribution, warehousing inventory for distribution, use, assembly, advertising, marketing, demonstrating, qualifying for use in the products of others, testing, or installing the Accused Products or products containing the Accused Products that infringe at least claims 12–14 of the '215 Patent. Further, Complainants request that the Commission impose a bond during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(e)(1) and (f)(1) to prevent further injury to the domestic industry of HQC-AMC and HQC-USA relating to the '215 Patent.

II. COMPLAINANTS

8. Complainant Hanwha Q CELLS USA Inc. is a Delaware corporation with an address at 300 Nexus Drive, Dalton, Georgia, USA 30721.

9. Complainant Hanwha Q CELLS & Advanced Materials Corporation is a corporation organized under the laws of the Republic of Korea with an address at 86 Cheonggyecheon-ro, Jung-gu, Seoul, Republic of Korea 04541.

10. HQC-AMC is one of the largest photovoltaic solar cell and solar module manufacturers in the world. Through its research and development facility, HQC-AMC has pioneered applications of solar cell technology that achieves higher energy conversion efficiency than traditional solar cells. The HQC-AMC solar cells are marketed under the “Q.ANTUM” brand name. HQC-AMC had an annual solar cell production capacity of 3.9 gigawatts and a solar module production capacity of 3.9 gigawatts in 2018. HQC-AMC and HQC-USA are expected to have an annual solar cell production capacity of 4.2 gigawatts and a solar module production capacity of 5.8 gigawatts by the end of 2019.

11. HQC-USA has a manufacturing facility located at 300 Nexus Drive, Dalton, Whitfield County, Georgia and has recently commenced assembly at this facility of solar

modules using HQC-AMC's Q.ANTUM solar cells. Below is a photograph of the facility as of January 2019:



Photograph 1

III. PROPOSED RESPONDENTS

A. Jinko Respondents

12. JinkoSolar Holding Co., Ltd. ("Jinko Holding") is a Cayman Islands corporation that, upon information and belief, has a registration office at Conyers Trust Company (Cayman) Limited, P.O. 2681, Cricket Square, Hutchins Drive, George Town, Grand Cayman, Cayman Islands, and a place of business located at No. 1 Jingke Road, Shangrao Economic Development District, Jiangxi, 334100, China. Jinko Holding has operating subsidiaries in China, including Jinko Solar Co., Ltd. and Zhejiang Jinko Solar Co., Ltd., as well as numerous subsidiary and/or affiliate corporations located within and outside of China, including two in the United States,

identified below. Jinko Holding is traded on the New York Stock Exchange under the symbol “JKS.”

13. JinkoSolar (U.S.) Inc. (“Jinko US”) is a Delaware corporation that, upon information and belief, has an address at 595 Market Street, Suite 2200, San Francisco, CA 94105. Jinko US is a wholly-owned subsidiary of Jinko Holding. On information and belief, Jinko US has imported, or sold after importation, infringing solar cells and/or solar modules.

14. Jinko Solar (U.S.) Industries Inc. (“Jinko Industries”) is a Delaware corporation that, upon information and belief, has an address at 595 Market St., Suite 2200, San Francisco, CA 94105.³ Jinko Industries is, on information and belief, the owner and operator of a manufacturing facility that Jinko Holding has developed in Jacksonville, Florida at 4660 POW-MIA Memorial Parkway, and which is or will be importing a large number of infringing solar cells and/or modules into the United States. Jinko Industries is a wholly-owned subsidiary of Jinko Holding.

15. Jinko Solar Co., Ltd. (“Jiangxi Jinko”) is a Chinese corporation that, upon information and belief, has an address at No. 1, Jingke Road, Economic Development Zone, Jiangxi, 334100, China. Jiangxi Jinko is, on information and belief, the owner and operator of a manufacturing facility that Jinko Holding has developed in Jiangxi, China that manufactures and sells infringing solar modules for importation into the United States. Jiangxi Jinko is a wholly-owned subsidiary of Jinko Holding.

16. Zhejiang Jinko Solar Co., Ltd. (“Zhejiang Jinko”) is a Chinese corporation that, upon information and belief, has an address at No. 58 Yuanxi Road, Yuanhua Industrial Park,

³ Upon information and belief, Jinko Industries is also known as JinkoSolar (U.S.) Industrial Inc. See Exhibit 3 at 70 (“Jinko 2017 Annual Report”), available at <http://ir.jinkosolar.com/static-files/7d3cad69-3aae-407d-97a0-cebde951d6f4> (last visited February 8, 2019).

Yuanhua Town, Haining City, 314416, China. Zhejiang Jinko is, on information and belief, the owner and operator of a manufacturing facility that Jinko Holding has developed in Zhejiang, China, that manufactures and sells infringing solar cells and modules for importation into the United States. Zhejiang Jinko is a wholly-owned subsidiary of Jinko Holding.

17. Jinko Solar Technology Sdn. Bhd. (“Jinko Malaysia”) is a Malaysian corporation that, upon information and belief, has a registered address at 14A Jalan Tun Moh Fuad, Taman Tun Dr Ismail, Kuala Lumpur, Wilaya, Persekutuan, Malaysia, and with a place of business located at 2481, Tingkat Perusahaan 4A, Kawasan Perusahaan Bebas Perai, Perai, Penang Pulau Pinang, 13600, Malaysia. Jinko Malaysia is, on information and belief, the owner and operator of a manufacturing facility that Jinko Holding has developed in Malaysia that manufactures and sells infringing solar cells and solar modules for importation into the United States. Jinko Malaysia is a wholly-owned subsidiary of Jinko Holding.

18. Jinko Holding and its wholly-owned subsidiaries will hereinafter be referred to collectively as “Jinko.” Jinko is, upon information and belief, in the business of designing and manufacturing solar cells and modules both under its own brand and as a contract manufacturer for other companies. Jinko Holding states in its 2017 Annual Report that the company is “a global leader in the PV industry based in China” whose “principal product is solar modules.” Jinko 2017 Annual Report at 50, Ex. 3.

19. Upon information and belief, all of Jinko’s infringing solar cells and the majority of Jinko’s infringing solar modules are manufactured outside of the United States, and those solar modules are packaged and imported into the United States. Jinko has reported net revenue in the United States of about 4.1 billion RMB, 7.7 billion RMB, and 4.1 billion RMB in 2015, 2016, and 2017, respectively. *Id.* at 57. According to the Jinko 2017 Annual Report, Jinko’s

manufacturing capacity consists of over 931,000 square meters of industrial space in Jiangxi and Zhejiang provinces, in China, for the manufacture of silicon ingots, silicon wafers, solar cells, and solar modules. *Id.* at 53. Jinko also has approximately 20,000 square meters of industrial space in Penang, Malaysia. *See id.*

20. Upon information and belief, Jinko has entered into business agreements that depend on its importation of infringing solar cells and/or modules. Jinko has announced that it is opening a manufacturing facility in Jacksonville, Florida, which will have an annual production capacity of 400 megawatts of solar modules. Exhibit 4 (“Jinko/NextEra 2018 Press Release”).⁴ On information and belief, Jinko’s supply agreement with NextEra will require importation of Jinko solar cells manufactured outside the U.S. in order to be assembled into solar modules at the Florida facility. On further information and belief, Jinko’s supply agreement with NextEra either has required or will require importation of Jinko solar modules manufactured outside of the U.S. in Jinko’s facilities in China or in Malaysia in order to fulfill the supply obligations under the agreement.

21. Jinko announced on December 6, 2018 that it supplied 132-megawatt capacity of its 1,500-volt monocrystalline modules to Swinerton Renewable Energy for the construction of a solar energy project in Boulder City, Nevada. Exhibit 5 (“Jinko /Techren 2018 Press Release”).⁵ Jinko’s 1,500-volt monocrystalline modules are included in the Accused Products discussed in Section IV, *infra*. On information and belief, Jinko imported the accused Jinko solar modules

⁴ Available at https://jinkosolar.us/press_post/nextera-energy-and-jinkosolar-announce-deal-for-millions-of-solar-panels-jinkosolar-to-begin-manufacturing-solar-panels-in-florida/ (last visited February 19, 2019).

⁵ Available at http://jinkosolar.us/press_post/jinkosolar-supplies-132-mw-to-techren-solar-1-project-12-06-2018/ (last visited February 19, 2019).

manufactured outside the United States in order to supply Swinerton Renewable Energy's solar energy project in Boulder City, Nevada.

22. Upon information and belief, Jinko, or one of its affiliates or agents, either for itself or on a contract basis for others, designs, manufactures, sells for importation into the United States, imports into the United States, and/or sells in the United States after importation a variety of solar modules, and solar cells intended for incorporation into solar modules, that infringe at least claims 12–14 of the '215 Patent, including at least the Jinko JKM295M-60B solar module.

B. LONGi Respondents

23. LONGi Solar Technology Co., Ltd. ("LONGi Technology") is a Chinese corporation with a registered address at No. 8369 Shangyuan Road, Caotan Shengtai Industrial Park, Xi'an Economic and Technological Development Zone, China, and with a place of business located at Block B, Innovation Incubation Center, Xi'an Service Outsourcing Industrial Park, No. 8989 Shangji Road, Xi'an Economic and Technological Development Zone, 710018, China. LONGi Technology has subsidiary and/or affiliate corporations located in Weifang, China; Shenzhen, China; Beijing, China; Hong Kong; South Korea; Taiwan; and the United States.

24. LONGi Green Energy Technology Co., Ltd. ("LONGi Green Energy") is a Chinese corporation listed on the Shanghai stock exchange under ticker 601012 and with a registered address at 388 Hangtian Middle Road, Chang'An District, Xi'an, 710100, China, and a place of business at Block B, Innovation & Incubation Center, Xi'an Service Outsourcing Industrial Park, No. 8989 Shangji Road, Economic and Technological Development Zone, Xi'an, 710018, China. LONGi Green Energy is the parent corporation of LONGi Technology.

25. LONGi (H.K.) Trading Ltd. (“LONGi Trading”) is a Hong Kong corporation with a registered address at 11/F, Capital Centre, 151 Gloucester Road, Wanchai, Hong Kong. LONGi Trading, on information and belief, imports infringing solar modules into the U.S. LONGi Trading is a wholly-owned subsidiary of LONGi Green Energy.

26. LONGi (Kuching) Sdn. Bhd. (“LONGi Malaysia”) is a Malaysian corporation with a registered address at Lot 2118 Jalan Usaha Jaya, Sama Jaya Free Industrial Zone, Kuching, Sarawak, 93350, Malaysia. LONGi Malaysia is a “production base engaged in manufacturing and sales of mono ingots, wafers, cells, and modules.” Exhibit 6 at 28–29 (“LONGi 2017 Annual Report”).⁶ On information and belief, LONGi Malaysia imports infringing solar cells and modules into the U.S. or sells infringing solar cells and modules for importation into the United States. LONGi Malaysia is a wholly-owned subsidiary of LONGi Green Energy.

27. Taizhou LONGi Solar Technology Ltd. (“Taizhou LONGi”) is a Chinese corporation with a registered address at No. 268 Xingtai South Road, Taizhou, Jiangsu, 225300, China. Taizhou LONGi is engaged in “manufacturing and sales of cells and modules” and, on information and belief, manufactures and sells infringing solar cells and modules for importation into the U.S. *Id.* at 28. Taizhou LONGi is a wholly-owned subsidiary of LONGi Green Energy.⁷

28. Zhejiang LONGi Solar Technology Ltd. (“Zhejiang LONGi”) is a Chinese corporation with a registered address at No. 2 Bailing Middle Road, Donggang Industrial

⁶ Available at <https://en.longigroup.com/uploadfile/3/2018/0621/20180621044809307.pdf> (last visited February 5, 2019).

⁷ Upon information and belief, Taizhou LONGi was also known as Taizhou LERRI Solar Technology Ltd. *See id.* at 4.

Function Area, Economic Development Zone, Quzhou, Zhejiang, 324000, China. Zhejiang LONGi is engaged in “manufacturing and sales of modules” and, on information and belief, manufactures and sells infringing solar modules for importation into the U.S. *Id.* at 28. Zhejiang LONGi is a wholly-owned subsidiary of LONGi Green Energy.⁸

29. Hefei LONGi Solar Technology Ltd. (“Hefei LONGi”) is a Chinese corporation with a registered address at S1 Workshop, No. 888, Changning Avenue, High-Tech Zone, Hefei, Anhui, 230088, China. Hefei LONGi is engaged in “manufacturing and sales of cells” and, on information and belief, manufactures and sells infringing solar cells that are incorporated in solar modules for importation into the United States. *Id.* at 28. Hefei LONGi is a wholly-owned subsidiary of LONGi Green Energy.⁹

30. LONGi Solar Technology (U.S.) Inc. (“LONGi US”) is a Delaware corporation that is a wholly-owned subsidiary of LONGi Green Energy.¹⁰ Upon information and belief, LONGi US has an address at 2603 Camino Ramon, Suite 423, San Ramon, CA 94583. Upon information and belief, LONGi US imports infringing solar modules into the U.S. and/or sells infringing solar modules after importation into the United States.

31. LONGi Green Energy and its subsidiaries and/or affiliates will hereinafter be referred to collectively as “LONGi.” LONGi is, upon information and belief, in the business of designing and manufacturing solar cells and modules both under the LONGi brand and as a contract manufacturer for other companies. LONGi Green Energy states that the company

⁸ Upon information and belief, Zhejiang LONGi was also known as Zhejiang LERRI Solar Technology Ltd. *See id.* at 4.

⁹ Upon information and belief, Hefei LONGi was also known as Hefei LERRI Solar Technology Ltd. *See id.* at 4.

¹⁰ Upon information and belief, LONGi US was also known as LERRI Solar Technology (U.S.) Inc. *See id.* at 5.

“mainly engages in the R&D, production, and sales of mono ingots, wafers, cells and modules, as well as development, construction and operation of PV power systems” and that “[in 2017] 252MW of mono cells were for external sales.” LONGi 2017 Annual Report at 12, 16, Ex. 6.

32. LONGi Green Energy states that it manufactures monocrystalline solar cells in its facilities that are located either in “Taizhou (in Jiangsu Province), Quzhou (in Zhejiang Province), Hefei (in Anhui Province), and Kuching (in Malaysia). *Id.* at 12. LONGi Green Energy does not state whether it has any manufacturing facilities for solar cells or modules within the United States. Upon information and belief, LONGi Technology manages the business outside of China including in the United States.

33. Upon information and belief, LONGi directly or through its intermediaries (including subsidiaries, affiliates, distributors, and others) imports LONGi solar modules into the United States. Upon information and belief, LONGi’s net revenue in the America region was about 946 million RMB in 2017. *See Id.* at 19.

34. Upon information and belief, LONGi has entered into a number of business agreements that depend on its importation of infringing solar cells and/or modules. LONGi announced that it signed an agreement to sell \$600 million of high-efficiency monocrystalline modules in the United States to an undisclosed American company. Exhibit 7.¹¹ On information and belief, LONGi’s \$600 million agreement will require importation of the accused and infringing LONGi solar modules manufactured outside of the United States in facilities, located in China or Malaysia, owned by LONGi Green Energy or its subsidiaries in order to fulfill the supply obligations under the agreement.

¹¹ Available at http://en.longi-solar.com/home/events/press_detail/id/67.html (last visited February 19, 2019).

35. Upon information and belief, LONGi, or one of its affiliates or agents, either for itself or on a contract basis for others, designs, manufactures, sells for importation into the United States, imports into the United States, and/or sells in the United States after importation a variety of solar modules, and solar cells intended for incorporation into solar modules, that infringe at least claims 12–14 of the '215 Patent, including at least the LONGi LR6-60PE-305M solar module.

C. REC Respondents

36. REC Solar Holdings AS (“REC Holdings”) is a Norwegian corporation with a place of business located at Drammensveien 169, Oslo, 0277, Norway. REC Holdings has subsidiary and/or affiliate corporations in locations including Singapore, Germany, Japan, India, and the United States.

37. REC Solar Pte. Ltd. (“REC Pte”) is a Singaporean corporation with an address at 20 Tuas South Ave. 14, 637312, Singapore. Upon information and belief, REC Pte is one of REC Holdings’ subsidiaries and/or affiliates.

38. REC Americas LLC (“REC Americas”) is a Delaware corporation that is, upon information and belief, one of REC Holdings’ subsidiaries and/or affiliates. Upon information and belief, REC Americas has an address at 1820 Gateway Drive, Suite 170, San Mateo, CA, 94404. REC Holdings states on its website that REC Americas is its “North America regional hub” for REC. Exhibit 8.¹²

39. REC Holdings and its subsidiaries and/or affiliates will be hereinafter referred to collectively as “REC.” REC is, upon information and belief, in the business of designing and manufacturing solar cells and modules under the REC brand. REC’s website states that it is “a

¹² Available at <https://www.recgroup.com/en/contact> (last visited February 19, 2019).

leading vertically integrated solar energy company” that is “the largest European brand of solar panels” and whose activities include “integrated manufacturing from silicon to wafers, cells, high-quality panels and extending to solar solutions.” Exhibit 9.¹³ Upon information and belief, REC has entered into business agreements that depend on its importation of infringing solar cells and/or modules. REC has installed over 2.2 gigawatts of its solar modules, with the “U.S. represent[ing] roughly forty percent of REC Group’s global solar panel shipments in 2018.” Exhibit 10.¹⁴ REC sold over 200 megawatts of its solar modules around December 2018 for installations and solar projects throughout the United States, including in San Rafael, California; Fresno, California; Kaua’i, Hawaii; Sandy, Utah; Sweetwater, Florida; Indianapolis, Indiana; Pacific Palisades, California; Tucson, Arizona; Madera, California; Morrisville, North Carolina, and Siler City, North Carolina. *See id.*; Exhibit 11.¹⁵ REC’s website lists a number of solar installations as its reference installations that use infringing solar modules. Ex. 11. These include a 116.6 kilowatt installation in San Rafael, California using the accused REC265TP solar modules. Exhibit 12.¹⁶

40. Upon information and belief, REC, or one of its affiliates or agents, either for itself or on a contract basis for others, designs, manufactures, sells for importation into the United States, imports into the United States, and/or sells in the United States after importation a variety of solar modules, and solar cells intended for incorporation into solar modules, that

¹³ Available at <https://www.recgroup.com/en/about-rec> (last visited February 19, 2019).

¹⁴ Available at <https://www.recgroup.com/en/rec-group-closes-2018-significant-200-mw-us-sales-brand-new-twinpeak-2s-mono-72-panels> (last visited February 19, 2019).

¹⁵ Available at https://www.recgroup.com/en/references?field_ref_application_tid=All&field_ref_product_family_tid=All&field_ref_region=76&=Apply (last visited February 19, 2019).

¹⁶ Available at https://www.recgroup.com/en/references?field_ref_application_tid=All&field_ref_product_family_tid=1&field_ref_region=76&=Apply (last visited February 27, 2019).

infringe at least claims 12–14 of the '215 Patent, including at least the REC TwinPeak line of solar modules having product codes REC265TP, REC270TP, REC275TP, REC280TP, REC285TP, and the REC TwinPeak 2 line of solar modules having product codes REC275TP2, REC280TP2, REC285TP2, REC290TP2, REC295TP2, and REC300TP2. Upon information and belief, the Accused Products are manufactured in REC's factory or factories including at least one operated by REC Solar Pte. According to the datasheet for REC TwinPeak 2 solar modules on REC's website, the REC TwinPeak 2 series are "premium solar panels 100% made in Singapore" that use solar cells manufactured by REC Pte. in Singapore. Exhibit 13.¹⁷

IV. THE ACCUSED PRODUCTS-AT-ISSUE

41. Pursuant to 19 C.F.R. § 210.12(a)(12), the category of the Accused Products may be plainly described as solar cells and solar modules (and products containing the same) made by or for Respondents. Section VI, *infra*, details specific instances of the unlawful importation, sale for importation and/or sale after importation of Respondents' Accused Products.

42. Jinko Accused Products include, but are not limited to, the solar modules listed in Exhibit 14.

43. LONGi Accused Products include, but are not limited to, the solar modules listed in Exhibit 15.

44. REC Accused Products include, but are not limited to, the solar modules listed in Exhibit 16.

45. This identification of exemplary models and types of products for each Respondent is intended purely for illustration and is not intended to limit the scope of the

¹⁷ Available at https://www.recgroup.com/sites/default/files/documents/ds_rec_twinpeak_2_series_ul_rev_f_eng.pdf (last visited February 5, 2019).

investigation. Any remedy should extend to all present and future infringing products of each Respondent, including products made by any named Respondent for third parties and sold under third party brand names, regardless of model number or type of product.

V. THE PATENT-AT-ISSUE

A. U.S. Patent No. 9,893,215

1. Identification of the Patent and Ownership by HQC-AMC

46. The '215 Patent is entitled "Method for Manufacturing a Solar Cell with a Surface-Passivating Dielectric Double Layer, and Corresponding Solar Cell." The '215 Patent issued from U.S. Patent Application Serial No. 12/742,818 (the "'818 Application"). The '818 Application is a national stage application of PCT/EP2008/065067, with a 35 U.S.C. § 371(c) date of July 2, 2010 and claims the benefit of German Patent Application Serial No. 10 2007 054 384.2, filed on November 14, 2007. The '215 Patent identifies Jan Schmidt and Bram Hoex as the inventors.

47. HQC-AMC is the sole owner by assignment of all right, title, and interest in the '215 Patent. Exhibits 2A–2M. The '215 Patent is valid, enforceable, and is currently in full force and effect.

48. As required by Rule 210.12(c), Appendix A to this Complaint includes a certified copy and three additional copies of the prosecution history of the '215 Patent and Appendix B to this Complaint includes four copies of each technical reference cited in the prosecution history of the '215 Patent.¹⁸

¹⁸ Appendix A includes a certified prosecution history of the '215 Patent.

2. Non-Technical Description of the Patented Invention

49. The technology claimed in the '215 Patent concerns solar cells, which are semiconductor devices that utilize the photovoltaic effect to convert sunlight (i.e., photons) into electricity. '215 Patent, col. 3:7–20, Ex. 1. The photovoltaic effect refers to the generation of energy-containing charge carriers when a material, such as silicon, is exposed to sunlight. Sunlight exposure creates negative and positive charge carriers within a silicon substrate. *See id.*, col. 1:16–22. The energy contained in these charge carriers must be extracted and utilized externally without the charge carriers recombining at the boundary surface of the silicon substrate and neutralize each other, a process known as recombination. *See id.*, col. 1:14–22.

50. The '215 Patent discloses a structure of solar cells with certain efficiency advantages versus other types of solar cells. *See* '215 Patent, col. 6:8–34, Ex. 1. A general description of the '215 Patent follows. This description is not intended to limit the scope of the claims. The solar cell structure of the '215 Patent includes a silicon substrate, a first dielectric layer comprising aluminum oxide on the silicon substrate, and a second dielectric layer on the first dielectric layer of different materials and with hydrogen embedded therein. *Id.*, col. 5:58–64.

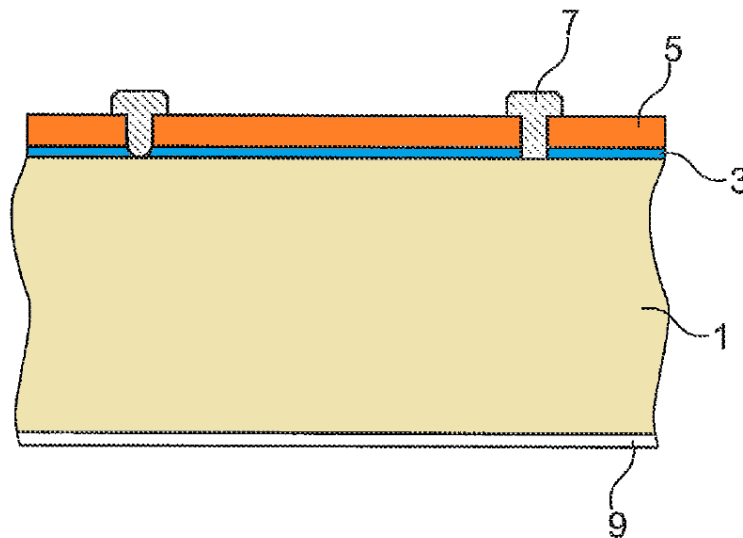


Figure 1

51. Figure 1 (above and colored) from the '215 Patent shows an exemplary illustration depicting the first and second dielectric layers on a silicon substrate (1). The first dielectric layer comprising aluminum oxide (3) is deposited on a surface of the silicon substrate, and the second dielectric layer (5) is deposited on top of the first dielectric layer. *Id.*, col. 7:30–35. The second dielectric layer has hydrogen embedded within the layer. *Id.*, col. 7:65–8:3.

52. The use of these surface-passivating dielectric layers reduces surface recombination of charge carriers, allowing greater extraction of energy-containing charge carriers for external utilization. *Id.*, col. 2:58–60, 3:1–4. The use of the surface-passivating dielectric layers may increase light absorption in the substrate, and increase the efficiency of light conversion into electricity. *Id.*, col. 3:7–20. Further, the solar cells with the disclosed structure maintain their stable passivation properties while withstanding the high temperatures used in today's industrial manufacturing processes. *Id.*, col. 3:4–7. As a result, the invention of the '215 Patent allows more energy to be extracted from the solar cell, while remaining durable through the manufacturing process. *Id.*, col. 3:4–27.

3. Foreign Counterparts to the '215 Patent

53. The following foreign patents and patent applications correspond to the '215 Patent:

Patent Application/Patent No.	Country
MY-152398-A	Malaysia
2008323025	Australia
CN 101952971 B	China

Patent Application/Patent No.	Country
EP 2 220 689	Europe ¹⁹

54. The patent application that issued as EP 2 220 689 was designated in the following countries, but the corresponding applications have since lapsed: Cyprus, Czech Republic, Denmark, Estonia, Finland, Ireland, Iceland, Lithuania, Luxembourg, Latvia, Monaco, Malta, Netherlands, Norway, Poland, Sweden, Slovenia, and Slovakia.

VI. UNLAWFUL AND UNFAIR ACTS – PATENT INFRINGEMENT

55. The Accused Products of each Respondent are infringing solar cells and infringing solar modules that incorporate a number of the solar cells. Each solar cell comprises a silicon substrate, and on the backside of the silicon substrate there is a first dielectric layer comprising aluminum oxide and having a thickness of less than 50 nanometers. A second dielectric layer is located directly on a surface of the first dielectric layer, and the materials of the first and the second dielectric layers differ. The second dielectric layer has hydrogen embedded therein. The first dielectric layer is interposed between the silicon substrate and the second dielectric layer. The Accused Products of each Respondent infringe at least claims 12–14 of the '215 Patent.

56. HQC-AMC directed an engineering analysis of a representative Accused Product for each of the Respondents. Declaration of Matthias Schütze, Ph.D (“Schütze Decl.”), Exhibit 26, ¶ 28. As detailed below, this analysis confirmed that Respondents’ representative Accused

¹⁹ EP 2 220 689 is designated in Austria, Belgium, Bulgaria, Croatia, France, Germany, Great Britain, Greece, Hungary, Italy, Portugal, Romania, Spain, Switzerland/Liechtenstein, and Turkey.

Products satisfied, literally or under the doctrine of equivalents, all claim limitations of one or more claims of the '215 patent.

A. Jinko Respondents

1. Representative Involved Article

57. An exemplary Jinko JKM295M-60B solar module, which includes solar cells that infringe the '215 Patent, is shown below in Figure 2 (Schütze Decl., Ex. 26, ¶¶ 30–31):



Figure 2

58. Exhibit 17 includes a Jinko datasheet relating to this exemplary article.

59. The Jinko JKM295M-60B solar module was purchased within the United States, and is comprised of sixty individual solar cells. Declaration of Kimin Hong in Support of Specific Instance of Unfair Importation and Sale (“Hong Decl.”), Exhibit 18, ¶ 4; Ex. 17 at 2.

60. A representative solar cell from the Jinko JKM295M-60B solar module is comprised of a silicon substrate and a stack of layers, including a first dielectric layer and a second dielectric layer. The materials of the first and the second dielectric layers differ.

Specifically, the first dielectric layer comprises aluminum oxide, and the second dielectric layer includes the elements silicon and nitrogen. The first dielectric layer is less than 50 nanometers thick. The second dielectric layer contains hydrogen. The first dielectric layer is interposed between the second dielectric layer and the surface of the silicon substrate.

61. Complainants believe that the exemplary Jinko JKM295M-60B solar module is representative of many other infringing Jinko products designed, manufactured, sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of Jinko, and that include the same or substantially similar features as the exemplary Jinko JKM295M-60B solar module. These products include, but are not limited to, the solar modules listed in Exhibit 14. Accordingly, on information and belief, Complainants allege that numerous Jinko products including the exemplary Jinko JKM295M-60B infringe at least claims 12–14 of the '215 Patent, and have been and are being designed, manufactured, sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of Jinko. Complainants anticipate that discovery will further confirm the full scope of infringing Jinko products imported into or sold for importation into the United States.

2. Infringement of the '215 Patent

62. Complainants directed an engineering analysis of a Jinko JKM295M-60B solar module. *See* Schütze Decl., Ex. 26, ¶¶ 28–37. Upon information and belief, Jinko designs, manufactures, sells for importation into the United States, imports into the United States, and/or sells within the United States after importation the accused Jinko JKM295M-60B solar module, of which it is the owner, importer, or consignee. The JKM295M-60B infringes, literally or under the doctrine of equivalents, all claim limitations of at least claims 12–14 of the '215 Patent.

63. A claim chart that applies independent claim 12 of the '215 Patent to the exemplary and representative accused Jinko JKM295M-60B solar module referenced above is attached to the Complaint as Exhibit 27. Upon information and belief, the claim chart attached to the Complaint as Exhibit 27 is representative of many other infringing Jinko products, including, but not limited to, the solar modules listed in Exhibit 14, that are designed, manufactured, sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of Jinko, and that include the same or substantially similar features as the exemplary Jinko JKM295M-60B solar module.

64. Jinko has had knowledge of the '215 Patent since before this Complaint was filed, or at a minimum will receive notice of the '215 Patent upon filing of the Complaint.

3. Specific Instance of Sale and Importation

65. Jinko states that it manufactures its solar cells in factories in Zhejiang province, China or in Penang, Malaysia. Jinko 2017 Annual Report at 50, 53, Ex. 3. Upon information and belief, those solar cells are then incorporated into Jinko-branded solar modules at one of Jinko's factories in Jiangxi or Zhejiang provinces, China, or in Penang, Malaysia. *Id.* Jinko also manufactures Jinko-branded solar modules at its factories in China or Malaysia. *Id.* Jinko has stated it is currently building a solar module assembly facility in Jacksonville, Florida, which will, on information and belief, assemble infringing Jinko solar cells into finished infringing Jinko solar modules.

66. Accordingly, on information and belief, all Jinko products either are manufactured outside of the United States, or are manufactured within the United States by Jinko after importation of the solar cells to be incorporated within the solar modules. The representative Jinko JKM295M-60B solar modules are, on information and belief, manufactured outside of the United States and imported for sale to customers in the United States.

67. Prior to filing this Complaint, Complainants purchased, within the United States, two imported Jinko JKM295M-60B solar modules. The date of purchase was December 21, 2018. The labels on the modules show that the modules were manufactured in Penang, Malaysia. Schütze Decl., Ex. 26, ¶¶ 30–31; Hong Decl., Ex. 18, ¶¶ 5–6.

68. Upon receipt, Complainants directed an engineering analysis of the purchased Jinko JKM295M-60B solar modules, as discussed in Section VI.A.2, *supra*. Schütze Decl., Ex. 26, ¶¶ 28–37.

B. LONGi Respondents

1. Representative Involved Article

69. An exemplary LONGi LR6-60PE-305M solar module, which includes solar cells that infringe the '215 Patent, is shown below in Figure 3 (Schütze Decl., Ex. 26, ¶¶ 39–40):

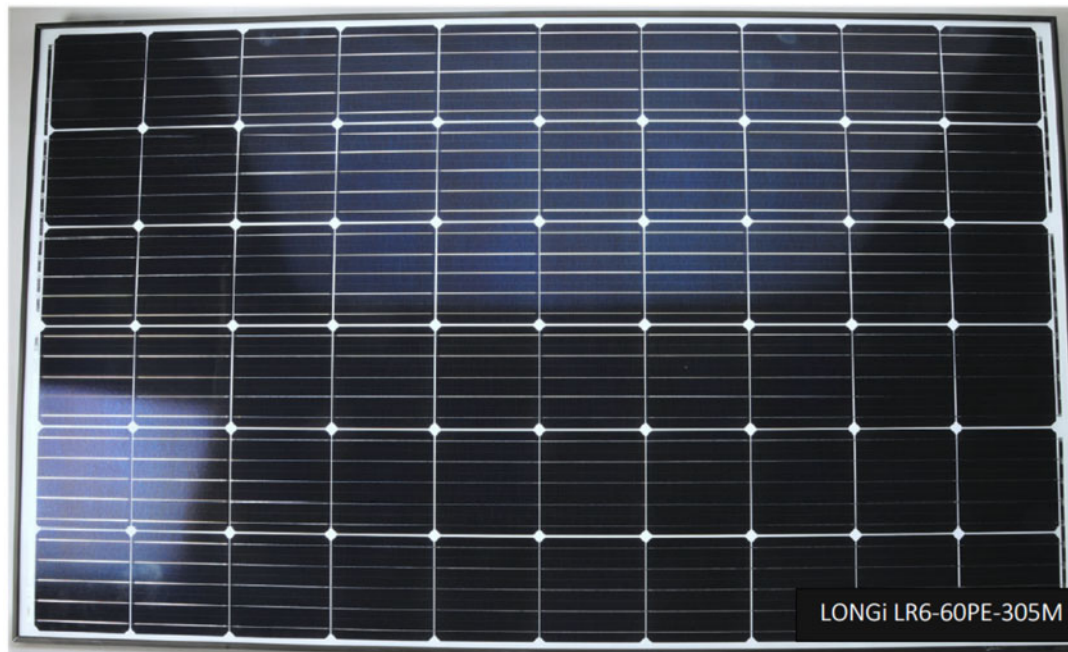


Figure 3

70. Exhibit 19 includes a LONGi datasheet relating to this exemplary article.

71. The LONGi LR6-60PE-305M solar module was purchased within the United States, and is comprised of sixty individual solar cells. Hong Decl., Ex. 18, ¶ 7; Ex. 19 at 2.

72. A representative solar cell from the LONGi LR6-60PE-305M solar module is comprised of a silicon substrate and a stack of layers, including a first dielectric layer and a second dielectric layer. The materials of the first and the second dielectric layers differ. Specifically, the first dielectric layer comprises aluminum oxide, and the second dielectric layer includes the elements silicon and nitrogen. The first dielectric layer is less than 50 nanometers thick. The second dielectric layer contains hydrogen. The first dielectric layer is interposed between the second dielectric layer and the surface of the silicon substrate.

73. Complainants believe that the exemplary LONGi LR6-60PE-305M solar module is representative of many other infringing LONGi products designed, manufactured, sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of LONGi, and that include the same or substantially similar features as the exemplary LONGi LR6-60PE-305M solar module. These products include, but are not limited to, the solar modules listed in Exhibit 15. Accordingly, on information and belief, Complainants allege that numerous LONGi products including the exemplary LONGi LR6-60PE-305M infringe at least claims 12–14 of the '215 Patent and have been and are being designed, manufactured, sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of LONGi. Complainants anticipate that discovery will further confirm the full scope of infringing LONGi products imported into or sold for importation into the United States.

2. Infringement of the '215 Patent

74. Complainants directed an engineering analysis of a LONGi LR6-60PE-305M solar module. *See* Schütze Decl., Ex. 26, ¶¶ 28, 38–46. Upon information and belief, LONGi designs, manufactures, sells for importation into the United States, imports into the United States, and/or sells within the United States after importation the accused LONGi LR6-60PE-

305M solar module, of which it is the owner, importer, or consignee. The LONGi LR6-60PE-305M infringes, literally or under the doctrine of equivalents, all claim limitations of at least claims 12–14 of the '215 Patent.

75. A claim chart that applies independent claim 12 of the '215 Patent to the exemplary and representative accused LONGi LR6-60PE-305M solar module referenced above is attached to the Complaint as Exhibit 28. Upon information and belief, the claim chart attached to the Complaint as Exhibit 28 is representative of many other infringing LONGi products, including, but not limited to, the solar modules listed in Exhibit 15, that are designed, manufactured, sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of LONGi, and that include the same or substantially similar features as the exemplary LONGi LR6-60PE-305M solar module.

76. LONGi has had knowledge of the '215 Patent since before this Complaint was filed, or at a minimum will receive notice of the '215 Patent upon filing of the Complaint.

3. Specific Instance of Sale and Importation

77. LONGi states that it manufactures its infringing solar cells that are included in its solar modules in factories in Zhejiang, Jiangsu, and Anhui provinces in China or in Kuching, Malaysia. LONGi 2017 Annual Report at 12, Ex. 6. Upon information and belief, those solar cells are then incorporated into LONGi-branded solar modules at one of LONGi's factories in China or Malaysia. *Id.* LONGi also manufactures LONGi-branded solar modules at its factories in China or Malaysia. *Id.*

78. Accordingly, on information and belief, all LONGi products are manufactured outside of the United States. The representative LONGi LR6-60PE-305M solar modules are, on information and belief, manufactured outside of the United States and imported for sale to customers in the United States.

79. Prior to filing this Complaint, Complainants purchased, within the United States, two LONGi LR6-60PE-305M solar modules. The date of purchase was December 21, 2018. The labels on the modules show that the modules were manufactured in Malaysia. Schütze Decl., Ex. 26, ¶¶ 39-40; Hong Decl., Ex. 18, ¶¶ 8-9.

80. Upon receipt, Complainants directed an engineering analysis of the purchased LR6-60PE-305M solar modules, as discussed in Section VI.B.2, *supra*. Schütze Decl., Ex. 26, ¶¶ 28, 38-46.

C. REC Respondents

1. Representative Involved Article

81. An exemplary REC REC285TP2 BLK2 solar module, which includes solar cells that infringe the '215 Patent, is shown below in Figure 4 (Schütze Decl., Ex. 26, ¶¶ 47-55):

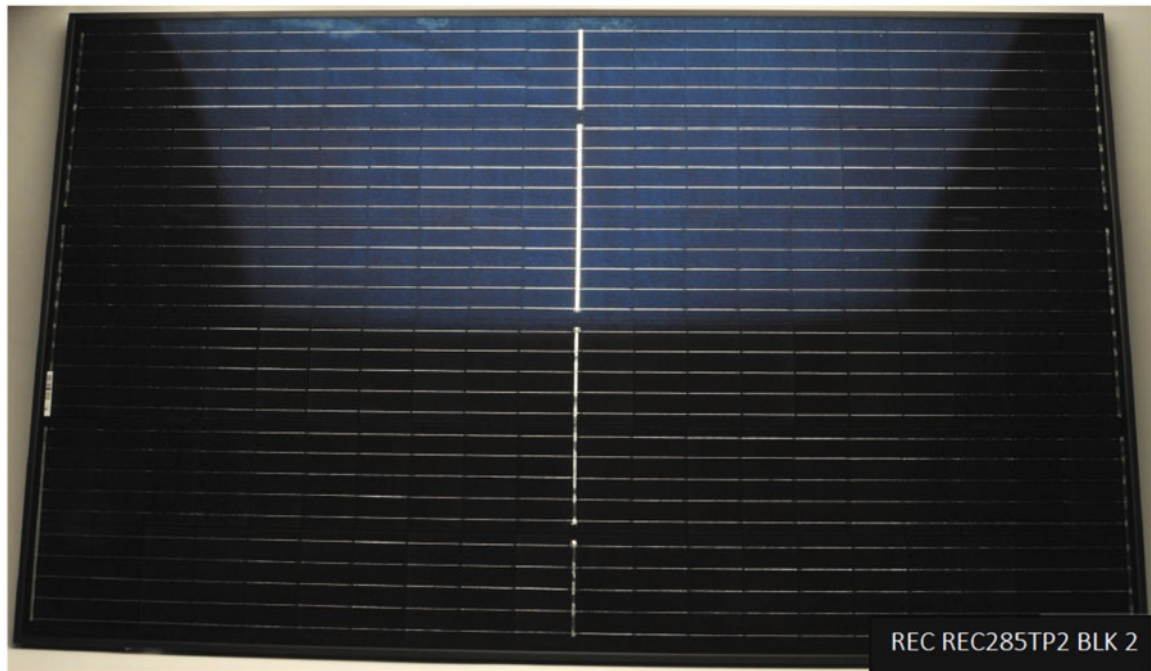


Figure 4

82. Exhibit 20 includes an REC datasheet relating to this exemplary article.

83. The REC REC285TP2 BLK2 solar module was purchased within the United States, and is comprised of one hundred twenty individual solar cells. Declaration of Jihyun Kim in Support of Specific Instance of Unfair Importation and Sale (“Kim Decl.”), Exhibit 21, ¶¶ 8–9; Ex. 20 at 2.

84. A representative solar cell from the REC REC285TP2 BLK2 solar module is comprised of a silicon substrate and a stack of layers, including a first dielectric layer and a second dielectric layer. The materials of the first and the second dielectric layers differ. Specifically, the first dielectric layer comprises aluminum oxide, and the second dielectric layer includes the elements silicon and nitrogen. The first dielectric layer is less than 50 nanometers thick. The second dielectric layer contains hydrogen. The first dielectric layer is interposed between the second dielectric layer and the surface of the silicon substrate.

85. Complainants believe that the exemplary REC REC285TP2 BLK2 solar module is representative of many other infringing REC products designed, manufactured, sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of REC, and that include the same or substantially similar features as the exemplary REC REC285TP2 BLK2 solar module. These products include, but are not limited to, the solar modules listed in Exhibit 16. Accordingly, on information and belief, Complainants allege that numerous REC products including the exemplary REC REC285TP2 BLK2 solar module infringe at least claims 12–14 of the ’215 Patent and have been and are being designed, manufactured, sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of REC. Complainants anticipate that discovery will further confirm the full scope of infringing REC products imported into or sold for importation into the United States.

2. Infringement of the '215 Patent

86. Complainants directed an engineering analysis of a REC REC285TP2 BLK2 solar module. *See* Schütze Decl., Ex. 26, ¶¶ 28, 47–55. Upon information and belief, REC designs, manufactures, sells for importation into the United States, imports into the United States, and/or sells within the United States after importation the accused REC REC285TP2 BLK2 solar module, of which it is the owner, importer, or consignee. The REC285TP2 BLK2 infringes, literally or under the doctrine of equivalents, all claim limitations of at least claims 12–14 of the '215 Patent.

87. A claim chart that applies independent claim 12, of the '215 Patent to the exemplary and representative accused REC REC285TP2 BLK2 solar module referenced above is attached to the Complaint as Exhibit 29. Upon information and belief, the claim chart attached to the Complaint as Exhibit 29 is representative of many other infringing REC products, including, but not limited to, the solar modules listed in Exhibit 16, that are designed, manufactured, sold for importation into the United States, imported into the United States, and/or sold within the United States after importation, by or on behalf of REC, and that include the same or substantially similar features as the exemplary REC REC285TP2 BLK2 solar module.

88. REC has had knowledge of the '215 Patent since before this Complaint was filed, or at a minimum will receive notice of the '215 Patent upon filing of the Complaint.

3. Specific Instance of Sale and Importation

89. Upon information and belief, REC manufactures its infringing solar cells in Singapore.

90. Accordingly, on information and belief, all REC products are manufactured outside of the United States. The representative REC REC285TP2 BLK2 solar modules are, on

information and belief, manufactured outside of the United States and imported for sale to customers in the United States.

91. Prior to filing this Complaint, Complainants directed the purchase, within the United States, of one REC REC285TP2 BLK2 solar module. The date of purchase was November 29, 2018. Kim Decl., Ex. 21, ¶ 8. The label on the module shows that the module was manufactured in Singapore. Schütze Decl., Ex. 26, ¶¶ 48–49.

92. Upon receipt, Complainants directed an engineering analysis of the purchased REC REC285TP2 BLK2 solar module, as discussed in Section VI.C.2, *supra*. Schütze Decl., Ex. 26, ¶¶ 28, 47–55.

VII. CLASSIFICATION OF THE INFRINGING PRODUCTS UNDER THE HARMONIZED TARIFF SCHEDULE

93. The Accused Products are believed to fall within at least the following classifications of the Harmonized Tariff Schedule of the United States: HTSUS codes 8541.40.6015 (solar modules) and 8541.40.6025 (solar cells intended for incorporation into solar modules). These classifications are intended for illustration only and are not intended to be restrictive of the Accused Products.

VIII. LICENSEES

94. Attached as Exhibit 22 is the identification of licensees to the '215 Patent. Attached as Exhibit 23 is a license relating to the '215 Patent granted by HQC-AMC.

IX. COMPLAINANTS SATISFY THE DOMESTIC INDUSTRY REQUIREMENT

A. The Technical Prong of the Domestic Industry Requirement is Satisfied

95. As required by Section 337(a)(2) and defined by Section 337(a)(3), an industry in the United States exists in connection with the '215 Patent. A claim chart and explanatory

information for an example of Complainants' solar cells that currently practice at least exemplary claim 12 of the '215 Patent, is attached to this Complaint as Exhibit 30.

96. The claim chart in Exhibit 30 discloses how the HQC-USA Q.PEAK DUO L-G5.2 solar module produced at HQC-USA's Dalton, GA facility practices at least claim 12 of the '215 Patent. For purposes of the '215 Patent, this product is representative of other HQC-USA solar module products that incorporate Q.ANTUM solar cells, and which HQC-USA either assembles or expects to assemble at its Dalton, GA facility. The HQC-USA Q.PEAK DUO L-G5.2 solar module and the other HQC-USA solar modules, for which the HQC-USA Q.PEAK DUO L-G5.2 solar module is representative, practice at least claims 12–14 of the '215 Patent.

97. Complainants' Korean-made solar cells are not saleable to consumers as imported. Schütze Decl., Ex. 26, ¶ 19. A single solar cell, which measures only around 6 inches × 6 inches, has limited output voltage and power that is too low for commercial use. It also lacks electrical leads for connection to some other device and lacks other protective features that would make it suitable for exposure to the environment. Further, the electrical contacts of a solar cell include numerous areas that are designed for connection with the electrical infrastructure in a solar module. Without the supporting infrastructure of a solar module, electrically connecting these numerous areas would require an extensive amount of time. *Id.* Accordingly, virtually any desired output power necessitates that solar cells be further assembled into solar modules (solar panels), which in turn are aggregated into solar arrays and so forth. The main application of these larger units of solar cells is to develop power stations, ranging from small rooftop systems to huge field installments, to provide alternative sources of energy. *Id.*

98. HQC-USA's extensive assembly operations in Georgia take solar cells imported from Korea and turn them into solar modules ("Domestic Industry Products"). It is these solar

modules that are HQC-USA's commercially saleable finished goods. Schütze Decl., Ex. 26, ¶¶ 22–24. A solar module or solar panel ultimately contains many solar cells mounted in a support frame and wired together to form one unit that is electrically connected internally. A module can be easily handled by installation workers and quickly installed along with additional modules to cover a building or field. A large array of modules can be wired together in a solar park to provide a renewable and sustainable source of power. *Id.*, ¶ 20.

99. By design, solar modules are placed outdoors in locations where they can be fully exposed to the sun during daylight hours. Therefore, a solar module, in addition to the layer of solar cells, includes a number of other layers, which provide a number of functions, including protecting the fragile and lightweight solar cells in often harsh outdoor environments. The front side of the module can have a glass plate that stabilizes the solar cells and protects them from environmental stress. A film of ethylene vinyl acetate can be applied on both sides of the solar cells to provide an airtight encapsulation. At the rear of the layer of solar cells, a backsheet of plastic foil or glass can be placed to also protect the solar cells. All these layers can then be encased in a frame that provides additional mechanical stability and allows for mounting. Together, these components of a solar module allow the module to function out in the field. Schütze Decl., Ex. 26, ¶ 21.

100. The exemplary Q.PEAK DUO L-G5.2 solar module manufactured by HQC-USA at its Dalton, Georgia facility is comprised of 144 individual half-cell solar cells mounted in an aluminum frame. The front surface of the module is covered with glass and the back surface with plastic foil. On the rear side of the module, junction boxes, and wire cabling are mounted, which allows multiple solar modules to be connected into an array. The Q.PEAK DUO L-G5.2 solar

module has an output voltage of about 40 volts, which is roughly the combined voltage of all the constituent solar cells. Schütze Decl., Ex. 26, ¶¶ 22–23.

101. Photographs relating to Complainants’ Domestic Industry Products including incorporated solar cells are attached to this Complaint as Exhibit 24.

B. The Economic Prong of the Domestic Industry Requirement is Satisfied

102. As required by Section 337(a)(3)(a)–(c), a domestic industry exists by virtue of the Complainants’ activities in the United States with respect to the Domestic Industry Products. Specifically, HQC-USA’s significant investment in plant and equipment, its significant employment of labor and capital, and its substantial exploitation of the ’215 Patent’s technology related to the domestic assembly of commercial solar modules using solar cells which practice the ’215 Patent all satisfy the economic prong.

103. While HQC-AMC’s Korean facility produces Q.ANTUM solar cells practicing the ’215 Patent outside the United States, HQC-USA has made, and is continuing to make, significant and substantial investments in the United States directly tied to the Domestic Industry Products. As detailed below, those investments are directed to commercializing solar cells in the United States, by building from the ground-up a cutting-edge facility in Dalton, Georgia. At that facility, which contains a significant investment in the latest advanced manufacturing equipment, HQC-USA converts HQC-AMC’s solar cells into saleable solar modules suitable for use by end-users. HQC-USA has further invested in hiring and training a large pool of American manufacturing workers to run that facility 24 hours a day, 7 days a week.

104. Specifically, HQC-USA imports Q.ANTUM solar cells into the United States, and uses them to produce at its Georgia facility the HQC-USA Q.PEAK DUO L-G5.2 solar module practicing the ’215 Patent. As noted above, a Q.ANTUM solar cell is not saleable to an end user until multiple solar cells are connected together to obtain a desired output power in the

form of a solar module, which permits the configuration of solar cells in commercial applications. Schütze Decl., Ex. 26, ¶ 19. The Dalton, Georgia facility is thus indispensable to commercializing the solar cells which practice the '215 Patent.

105. After it receives Q.ANTUM solar cells, HQC-USA's Georgia facility undertakes all production steps necessary to incorporate Q.ANTUM solar cells into a commercial solar module suitable for sale to an end user. These technical manufacturing steps are detailed in the accompanying confidential domestic industry declaration. Declaration of Ryan Back ("Back Decl."), Exhibit 25, ¶ 17. After the modules are assembled, HQC-USA also carries out quality testing and packaging activities in the Georgia facility, prior to shipping Domestic Industry Products to customers. *Id.*, ¶ 18.

106. The sole purpose of HQC-USA's Georgia facility is to produce, test, and package solar modules incorporating the Q.ANTUM solar cells that practice the '215 Patent. The Georgia facility does not make any other products. Back Decl., Ex. 25, ¶ 10. Consequently, 100% of HQC-USA's investment and employment activities in connection with the Georgia facility constitute domestic activities that may establish the existence of a domestic industry with respect to the '215 Patent. The details of such investment and employment activities are described below.

1. Significant Investment in Plant and Equipment

107. HQC-USA has significant investments in plant and equipment in the United States with respect to the Domestic Industry Products practicing the '215 Patent. As the investments described below meet the requirements of Section 337(a)(3)(A), a domestic industry exists in the United States relating to the '215 Patent.

108. HQC-USA's Georgia facility is located at 300 Nexus Drive in Dalton, Georgia. Prior to HQC-USA's arrival in June 2018, the address was nothing more than a 30-acre lot of dirt

and grass. HQC-USA invested more than \$160 million in order to transform the bare lot into a full-fledged solar module manufacturing plant, with row upon row of large advanced equipment in the 300,000 square feet space. Back Decl., Ex. 25, ¶¶ 9–14.

109. Despite having broken ground less than a year ago, operations have already begun at the plant. HQC-USA began sample production in December 2018 and entered into commercial production on February 1, 2019. All three assembly lines are currently operational, and the plant expects to reach its full production capacity by July 2019. Once full commercial production volumes are achieved, the facility will have a solar module manufacturing capacity of 1.7 gigawatts-worth of Q CELLS Modules per year. Back Decl., Ex. 25, ¶¶ 10, 15–16.

2. Significant Employment of Labor or Capital

110. In addition, HQC-USA meets the requirements of Section 337(a)(3)(B), demonstrating that a domestic industry also exists by virtue of HQC-USA’s significant employment of labor or capital in the United States with respect to the Domestic Industry Products practicing the ’215 Patent.

111. HQC-USA employed significant labor and capital from the initial stages of its U.S. investment, when it began constructing the Georgia facility in June 2018. HQC-USA worked with many local contractors and suppliers on the plant construction, and also engaged several U.S. companies for inspections, environmental permits, fencing, and furnishing. Back Decl., Ex. 25, ¶ 20.

112. HQC-USA expects to have approximately 570 employees working at the Georgia facility by the time full production capacity is reached. A significant portion has already been hired. Most of the employees are (or soon will be) engaged in the technical aspects of module production, and others will be engaged in supporting functions such as finance, IT, and human resources. Back Decl., Ex. 25, ¶¶ 21–24.

113. HQC-USA has already invested (and will continue to invest) a significant amount of capital and hours in training the new employees. Back Decl., Ex. 25, ¶ 27. The region of Dalton, Georgia and the Tennessee Valley had been known for its carpeting industry, which suffered from a decrease in construction activities after the 2009 recession. As textile plants shuttered, many workers in the region lost their jobs. *Id.*, ¶ 25. The training provided by HQC-USA will help the local workers transition out of manual textiles work or unemployment, and equip them with the skills necessary to maintain high-paying advanced manufacturing jobs throughout their careers.

114. HQC-USA has incurred and expects to incur a significant amount of operating costs as it ramps up commercial production in 2019. Operating costs have included and will include payroll and benefits for the employees at the Georgia facility, purchasing various inputs for the solar modules, and maintaining equipment and utilities. Back Decl., Ex. 25, ¶¶ 26, 28.

115. Based on the foregoing, there exists a domestic industry with respect to articles protected by the '215 Patent, by reason of HQC-USA's significant investment in plant and equipment, as well as its significant employment of labor and capital, in connection with the assembly, production, testing, and packaging of solar modules practicing the '215 Patent.

X. RELATED LITIGATION

116. To Complainants' knowledge, the '215 Patent is not and has not been the subject of any current or prior court or agency litigation.

117. By March 5, 2019, Complainants expect to file complaints in the United States District Court for the District of Delaware, alleging infringement of one or more claims of the '215 Patent, the same patent that has been asserted in this Complaint. The named defendants in those actions will be:

- a. JinkoSolar Holding Co., Ltd. and its subsidiaries JinkoSolar (U.S.) Inc., Jinko Solar (U.S.) Industries Inc., Jinko Solar Co., Ltd., Zhejiang Jinko Solar Co., Ltd., and Jinko Solar Technology Sdn. Bhd.;
- b. LONGi Green Energy Technology Co., Ltd. and its subsidiaries LONGi Solar Technology Co., Ltd., LONGi (H.K.) Trading Ltd., LONGi (Kuching) Sdn. Bhd., Taizhou LONGi Solar Technology Ltd., Zhejiang LONGi Solar Technology Ltd., Hefei LONGi Solar Technology Ltd., and LONGi Solar Technology (U.S.) Inc.;
and
- c. REC Solar Holdings AS and its subsidiaries REC Solar Pte. Ltd. and REC Americas, LLC.

XI. REQUESTED RELIEF

118. WHEREFORE, by reason of the foregoing, Complainants request that the United States International Trade Commission:

(a) institute an immediate investigation, pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, with respect to Respondents' violations of Section 337 based on the unlawful importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of articles that infringe one or more claims of United States Patent No. 9,893,215, as well as the unlawful importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of products containing the same made by or for Respondents;

(b) schedule and conduct a hearing on the unlawful acts and, following the hearing, determine whether there has been a violation of Section 337;

(c) issue a permanent limited exclusion order, pursuant to Section 337(d) of the Tariff Act of 1930, as amended, excluding from entry into the United States all of Respondents' solar

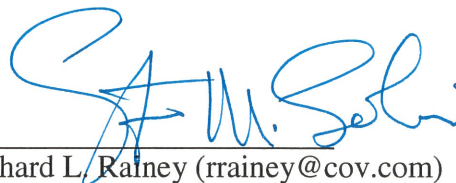
cells and products containing same, including solar modules, that infringe one or more claims of United States Patent No. 9,893,215;

(d) issue a permanent cease and desist order, pursuant to Section 337(f) of the Tariff Act of 1930, as amended, prohibiting Respondents and related companies from at least offering for sale, selling for importation, importing, selling after importation, transferring, distributing, warehousing inventory for distribution, using, assembling, advertising, marketing, demonstrating, qualifying for use in the products of others, testing or installing solar cells and products containing same, including solar modules, that infringe one or more claims of United States Patent No. 9,893,215;

(e) impose a bond during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(e)(1) and (f)(1) to prevent further injury to HQC-AMC and HQC-USA's domestic industry relating to United States Patent No. 9,893,215; and

(f) grant such other and further relief as the Commission deems just and proper based on the facts determined by the investigation and the authority of the Commission.

Dated: March 4, 2019



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VERIFICATION

I, Noonshil Chung, hereby declare and state, in accordance with 19 C.F.R. §§ 210.4 and 210.12(a) and under penalty of perjury, that the following statements are true:

1. I am the Deputy General Counsel at Hanwha Q CELLS & Advanced Materials Corporation, and I am duly authorized to verify this Complaint of Hanwha Q CELLS USA Inc. and its parent Hanwha Q CELLS & Advanced Materials Corporation under Section 337 of the Tariff Act of 1930, as Amended (“the Complaint”);

2. I have read the Complaint and I am aware of its contents;

3. To the best of my knowledge, information, and belief, formed after an inquiry reasonable under the circumstances, (a) the claims and other legal contentions in the Complaint are warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law, and (b) the allegations and other factual contentions in the Complaint have evidentiary support or, if specifically so identified, are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery; and

4. The Complaint is not being presented for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of the investigation or related proceeding.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct, and that the statement made upon information and belief are believed by me to be true.

Executed on March 3, 2019 in Seoul, Republic of Korea.



Noonshil Chung