

UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, DC

Before the Honorable David P. Shaw
Administrative Law Judge

In the Matter of

CERTAIN SILICON PHOTOVOLTAIC
CELLS AND MODULES WITH
NANOSTRUCTURES, AND PRODUCTS
CONTAINING THE SAME

Inv. No. 337-TA-1271

RESPONDENTS CANADIAN SOLAR INC.; CANADIAN SOLAR INTERNATIONAL LIMITED; CANADIAN SOLAR MANUFACTURING (CHANGSHU) CO. INC.; CANADIAN SOLAR MANUFACTURING (LUOYANG) INC.; CANADIAN SOLAR MANUFACTURING (THAILAND) CO. LTD.; CANADIAN SOLAR MANUFACTURING VIETNAM CO. LTD.; CANADIAN SOLAR SOLUTIONS, INC.; CANADIAN SOLAR CONSTRUCTION (USA) LLC; CANADIAN SOLAR (USA) INC.; RECURRENT ENERGY GROUP, INC.; RECURRENT ENERGY, LLC; AND RECURRENT ENERGY SH PROCO LLC (COLLECTIVELY, “CANADIAN SOLAR”) RESPONSE TO COMPLAINANT ADVANCED SILICON GROUP TECHNOLOGIES, LLC’S COMPLAINT UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED, AND RESPONSE TO NOTICE OF INVESTIGATION

Respondents Canadian Solar Inc., Canadian Solar International Limited, Canadian Solar Manufacturing (Luoyang) Inc., Canadian Solar Manufacturing (Thailand) Co. Ltd., Canadian Solar Manufacturing Vietnam Co. Ltd., Canadian Solar Solutions, Inc., Canadian Solar Construction (USA) Inc., Recurrent Energy Group, Inc., Recurrent Energy, LLC, and Recurrent Energy SH Proco LLC (collectively, “Canadian Solar”) submit this Response to the Complaint of Advanced Silicon Group Technologies, LLC (“ASGT” or “Complainant”), filed on June 11, 2021, and to the Notice of Investigation issued on July 14, 2021.

Canadian Solar denies that it has engaged in unfair competition or violated Section 337 of the Tariff Act of 1930, as amended. Canadian Solar has not imported, sold for importation, or sold within the United States after importation any device that infringes any asserted claim, when properly construed. Canadian Solar further denies that any patent claim at issue in this investigation is valid and enforceable.

Canadian Solar reserves the right to amend or supplement its response based on additional facts or developments that become available or that arise after the filing of this Response. In this light, Canadian Solar responds to the Complaint by admitting only those facts expressly admitted below and denying all others averred in the Complaint, and states as follows:

I. INTRODUCTION¹

1. Responding to the allegations of paragraph 1, Canadian Solar admits that Complainant has requested that the Commission commence an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 (“Section 337”). Canadian Solar denies that it has violated Section 337, and specifically denies it has engaged in any unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation. While ASGT’s Complaint purports to define “Accused Products” as “certain silicon photovoltaic cells and modules with nanostructures and products containing the same that infringe valid and enforceable claims of United States patents ASGT owns,” Canadian Solar objects to this definition and denies that its products infringe any valid and enforceable asserted patent owned by ASGT. For purposes of this Response, Canadian Solar addresses the “Accused Products” allegations with substantive responses as to the purportedly representative specific Accused Products identified by ASGT in paragraph 37 of the Complaint.

2. Responding to the allegations of paragraph 2, Canadian Solar admits that Complainant has named the identified entities as proposed Respondents in its Complaint. Except as admitted, Canadian Solar denies the remaining allegations of paragraph 2.

3. Responding to the allegations of paragraph 3, Canadian Solar admits that the Complaint purports to assert that the “Accused Products” (to the extent that term is defined) infringe one or more claims of United States Patent Nos. 8,450,599 (“599 Patent”); 8,852,981

¹ Canadian Solar repeats the headings set forth in the Complaint in order to simplify comparison of the Complaint and this Response. By doing so, Canadian Solar makes no admissions regarding the substance of the heading or any other allegations of the Complaint and, in fact, unless otherwise stated, to the extent that a particular heading can be construed as an allegation, Canadian Solar specifically denies all such allegations.

(“’981 Patent”); 9,601,640 (“’640 Patent”); 9,768,331 (“’331 Patent”); 10,269,995 (“’995 Patent”); and 10,692,971 (“’971 Patent”) (collectively, the “Asserted Patents”). Canadian Solar further admits that what purports to be a certified copy of U.S. Patent Nos. 8,450,599, 8,852,981, 9,601,640, 9,768,331, 10,269,995, and 10,692,971 are attached as Exhibits 1, 3, 5, 7, 9, and 11, respectively. Canadian Solar denies that it engaged in unlawful acts in violation of Section 337 by importing, selling for importation, and/or selling within the United States after importation any Accused Products. Canadian Solar further denies that it infringes any valid enforceable claim of the Asserted Patents. Except as admitted, Canadian Solar denies the remaining allegations of paragraph 3 as to Canadian Solar. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 3 as to other respondents’ products and on that basis denies them.

4. Responding to the allegations of paragraph 4, Canadian Solar admits that Complainant has made an allegation that the “Accused Products” (to the extent that term is defined) directly infringe at least claims 15, 17, 23, 24, 25, and 27 of the ’599 Patent; claims 1, 2, 4, 13, 18, 23, 26, and 27 of the ’981 Patent; claims 1, 4, 11, 12, 13, 14, 16, 17, and 18 of the ’640 Patent; claims 1, 2, and 10 of the ’331 Patent; claims 1, 2, 7, 8, 9, 10, and 11 of the ’995 Patent; and claims 1, 7, 8, 10, and 15 of the ’971 Patent, either literally or under the doctrine of equivalents. Canadian Solar denies that any of Canadian Solar’s products infringe any valid and enforceable claim of the ’599, ’981, ’640, ’331, ’995, and ’971 Patents. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 4 as to other respondents’ products and on that basis denies them.

5. Responding to the allegations of paragraph 5, Canadian Solar admits that what purport to be copies of assignment records related to the ’599 Patent, the ’981 Patent, the ’640 Patent, the ’331 Patent, the ’995 Patent, and the ’971 Patent are attached as Exhibits 2A-2D, 4A-4D, 6A-6D, 8A-8E, 10A-10E, and 12A-12D, respectively. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 5 and on that basis denies them.

6. Responding to the allegations of paragraph 6, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that an industry as required by Section 337(a)(2) and 337(a)(3) exists in the United States related to the Asserted Patents. Canadian Solar denies that Complainant's purported domestic investments in plant and equipment, employment of labor and capital, and the exploitation of the Asserted Patents through activities including engineering and research and development are significant or substantial. Canadian Solar is without sufficient knowledge or information to form a believe as to the truth of the remaining allegations of paragraph 6 and on that basis denies them.

7. Responding to the allegations of paragraph 7, Canadian Solar admits that Complainant seeks relief from the Commission ("ITC") in the form of a permanent limited exclusion order, permanent cease and desist order, and bond during Presidential review, but denies that Complainant is entitled to any relief, including without limitation the relief requested in paragraph 7. Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the Asserted Patents. Except as admitted, Canadian Solar denies the remaining allegations of paragraph 7.

II. COMPLAINANT

8. Responding to the allegations of paragraph 8, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 8 and on that basis denies them.

III. PROPOSED RESPONDENTS

A. Canadian Solar

9. Responding to the allegations of paragraph 9, Canadian Solar admits that it has a principal place of business in Ontario, Canada. Canadian Solar Inc. is currently organized under the laws of British Columbia. Canadian Solar admits that Exhibit 13 of the Complaint purports to contain address information for Canadian Solar Inc. Canadian Solar denies that it has violated Section 337, and specifically denies it has engaged in any unlawful or unauthorized importation

into the United States, sale for importation, or sale within the United States after importation. Canadian Solar denies any remaining allegations of paragraph 9.

10. Responding to the allegations of paragraph 10, Canadian Solar admits that Canadian Solar International Limited is a majority-owned indirect subsidiary of Canadian Solar, and admits that Canadian Solar International Limited has offices located at Unit 1520, 15/F, Tower 2, Grand Century Place, 193 Prince Edward Road West, MongKok, Kowloon, Hong Kong, People's Republic of China and is a corporation existing under the laws of Hong Kong, People's Republic of China. Canadian Solar denies the remaining allegations of paragraph 10 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation.

11. Responding to the allegations of paragraph 11, Canadian Solar admits that Canadian Solar Manufacturing (Changshu) Co. Inc. is a majority-owned indirect subsidiary of Canadian Solar, and admits that Canadian Solar Manufacturing (Changshu) Co. Inc. has offices located at No. 2 Changsheng Road, YangYuan, Xinzhuang Town, Changshu, Jiangsu 215562, People's Republic of China and is a corporation existing under the laws of the People's Republic of China. Canadian Solar denies the remaining allegations of paragraph 11 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation.

12. Responding to the allegations of paragraph 12, Canadian Solar admits that Canadian Solar Manufacturing (Luoyang) Inc. is a majority-owned indirect subsidiary of Canadian Solar, and admits that Canadian Solar Manufacturing (Luoyang) Inc. has offices located at 2 Yingzhou Road, Luolong Science Park, Luoyang, Henan Province, People's Republic of China and is a corporation existing under the laws of the People's Republic of China. Canadian Solar denies the remaining allegations of paragraph 12 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation.

13. Responding to the allegations of paragraph 13, Canadian Solar admits that Canadian Solar Manufacturing (Thailand) Co. Ltd. is a majority-owned indirect subsidiary of Canadian Solar, and admits that Canadian Solar Manufacturing (Thailand) Co. Ltd. has offices located at 168/2 Moo 4, Tambol Bowin, Amphoe Sriracha, Chonburi 20230, Kingdom of Thailand and is a corporation existing under the laws of the Kingdom of Thailand. Canadian Solar denies the remaining allegations of paragraph 13 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation.

14. Responding to the allegations of paragraph 14, Canadian Solar admits that Canadian Solar Manufacturing Vietnam Co. Ltd. is a majority-owned indirect subsidiary of Canadian Solar, and admits that Canadian Solar Manufacturing Vietnam Co. Ltd. has offices located at D11, No. 5, Dong Tay Road, VSIP Hai Phong Urban, Industrial and Service Park, Duong Quan Commune, Thuy Nguyen District, Hai Phong City, Socialist Republic of Vietnam and is a corporation existing under the laws of the Socialist Republic of Vietnam. Canadian Solar denies the remaining allegations of paragraph 14 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation.

15. Responding to the allegations of paragraph 15, Canadian Solar admits that Canadian Solar Solutions, Inc. is a wholly-owned direct subsidiary of Canadian Solar, and admits that Canadian Solar Solutions, Inc. has offices located at 545 Speedvale Avenue, Guelph, Ontario, Canada and is a corporation existing under the federal laws of Canada. Canadian Solar denies the remaining allegations of paragraph 15 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation.

16. Responding to the allegations of paragraph 16, Canadian Solar admits that Canadian Solar Construction (USA) LLC is a majority-owned indirect subsidiary of Canadian Solar, and admits that Canadian Solar Construction (USA) LLC has offices located at 3000 Oak

Road, Suite 400, Walnut Creek, California 94597 and is a limited liability company existing under the laws of the State of Delaware. Canadian Solar denies the remaining allegations of paragraph 16 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation

17. Responding to the allegations of paragraph 17, Canadian Solar admits that Canadian Solar (USA) Inc. is a majority-owned indirect subsidiary of Canadian Solar, and admits that Canadian Solar (USA) Inc. has offices located at 3000 Oak Road, Suite 400, Walnut Creek, California 94597 and is incorporated under the laws of the State of Delaware. Canadian Solar admits that Canadian Solar (USA) Inc. is registered with the Secretary of State of California to conduct business in California. Canadian Solar denies the remaining allegations of paragraph 17 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation.

18. Responding to the allegations of paragraph 18, Canadian Solar admits that Recurrent Energy Group Inc. is a wholly-owned indirect subsidiary of Canadian Solar, and admits that Recurrent Energy Group Inc. has offices located at 123 Mission Street, Floor 18, San Francisco, California 94105 and 3000 Oak Road, Suite 300, Walnut Creek, California 94597, and is a corporation existing under the laws of the State of Delaware. Canadian Solar admits that Recurrent Energy Group Inc. is registered with the Secretary of State of California to conduct business in California. Canadian Solar denies the remaining allegations of paragraph 18 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation

19. Responding to the allegations of paragraph 19, Canadian Solar admits that Recurrent Energy, LLC is a wholly-owned indirect subsidiary of Canadian Solar, and admits that Recurrent Energy, LLC has offices located at 3000 Oak Road, Suite 300, Walnut Creek, California 94597 and is a limited liability company existing under the laws of the State of Delaware. Canadian Solar admits that Recurrent Energy, LLC is registered with the Secretary of State of California to conduct business in California. Canadian Solar denies the remaining allegations of paragraph 19

and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation

20. Responding to the allegations of paragraph 20, Canadian Solar admits that Recurrent Energy SH Proco LLC has offices located at 3000 Oak Road, Suite 300, Walnut Creek, California 94597 and is a limited liability company existing under the laws of the State of Delaware. Canadian Solar denies the remaining allegations of paragraph 20 and specifically denies any allegations of unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation

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21. Responding to the allegations of paragraph 21, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 21 and on that basis denies them.

22. Responding to the allegations of paragraph 22, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 22 and on that basis denies them.

23. Responding to the allegations of paragraph 23, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 23 and on that basis denies them.

24. Responding to the allegations of paragraph 24, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 24 and on that basis denies them.

25. Responding to the allegations of paragraph 25, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 25 and on that basis denies them.

26. Responding to the allegations of paragraph 26, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 26 and on that basis denies them.

27. Responding to the allegations of paragraph 27, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 27 and on that basis denies them.

28. Responding to the allegations of paragraph 28, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 28 and on that basis denies them.

29. Responding to the allegations of paragraph 29, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 29 and on that basis denies them.

30. Responding to the allegations of paragraph 30, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 30 and on that basis denies them.

31. Responding to the allegations of paragraph 31, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 31 and on that basis denies them.

32. Responding to the allegations of paragraph 32, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 32 and on that basis denies them.

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33. Responding to the allegations of paragraph 33, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 33 and on that basis denies them.

34. Responding to the allegations of paragraph 34, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 34 and on that basis denies them.

35. Responding to the allegations of paragraph 35, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 35 and on that basis denies them.

IV. THE ACCUSED PRODUCTS

36. Responding to the allegations of paragraph 36, Canadian Solar admits that the Complaint describes “the category of the Accused Products” as “silicon photovoltaic cells and modules containing such cells—made by or for Respondents—in which at least one surface of the silicon photovoltaic cell has nanostructures.” Canadian Solar denies the allegations of paragraph 36 as to Canadian Solar and specifically denies that its products, if any, imported into the United States, sold for importation into the United States or sold after importation into the United States infringe the Asserted Patents. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 36 as to other respondents’ products and on that basis denies them.

37. Responding to the allegations of paragraph 37, Canadian Solar admits that Exhibits 16 and 17 to the Complaint purport to list solar modules made by or for Canadian Solar. Canadian Solar denies the remaining allegations of paragraph 37.

38. Responding to the allegations of paragraph 38, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 38 and on that basis denies them.

39. Responding to the allegations of paragraph 39, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 39 and on that basis denies them.

40. Responding to the allegations of paragraph 40, to the extent paragraph 40 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies the allegations of paragraph 40 as to present or future Canadian Solar products. To the extent a response is required, Canadian Solar specifically denies that any of its products infringe a valid and enforceable claim of the Asserted Patents. To the extent a response is required, Canadian

Solar also specifically denies that any remedy should extend to any of Canadian Solar's products. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 40 as to other respondents' products and on that basis denies them.

V. THE PATENTS-AT-ISSUE

A. U.S. Patent No. 8,450,599

1. Identification of the patent and ownership by ASGT

41. Responding to the allegations of paragraph 41, Canadian Solar admits that the '599 Patent is titled "Nanostructured Devices." Canadian Solar further admits that based on the face of the patent, the '599 Patent was issued from U.S. Patent Application No. 12/619,092, which was filed on November 16, 2009. Canadian Solar admits that the face of the patent lists U.S. Provisional Application 61/114,896, filed November 14, 2008, U.S. Provisional Application No. 61/157,386, filed March 4, 2009, and U.S. Provisional Application No. 61/250,418, filed October 9, 2009. Canadian Solar admits that the face of the patent states that the term of the patent is extended or adjusted under 35 U.S.C. 154(b) by 388 days. Canadian Solar admits that the '599 Patent identifies Brent A. Buchine, Marcie R. Black, and Faris Modawar as the inventors. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 41 and on that basis denies them.

42. Responding to the allegations of paragraph 42, Canadian Solar admits that Appendix A is purported to include a copy of the prosecution history of the '599 Patent and that Appendix B is purported to include a copy of the pages of each technical reference mentioned in the prosecution history of the '599 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 42 and on that basis denies them.

43. Responding to the allegations of paragraph 43, to the extent paragraph 43 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that the '599 Patent is valid and enforceable. Canadian Solar is without sufficient

knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 43 and on that basis denies them.

2. Non-technical description of the invention of the '599 Patent

44. Responding to the allegations of paragraph 44, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar states that the '599 Patent speaks for itself and denies the allegations of paragraph 44 to the extent they purport to attribute to the '599 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '599 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 44 constitute a complete and accurate description of the '599 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 44 and on that basis denies them.

45. Responding to the allegations of paragraph 45, Canadian Solar states that the '599 Patent speaks for itself and denies the allegations of paragraph 45 to the extent they purport to attribute to the '599 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '599 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 45 constitute a complete and accurate description of the '599 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 45 and on that basis denies them.

46. Responding to the allegations of paragraph 46, Canadian Solar states that the '599 Patent speaks for itself and denies the allegations of paragraph 46 to the extent they purport to attribute to the '599 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '599 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 46 constitute a complete and accurate description of the '599 Patent and/or the state of the art. Canadian Solar is

without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 46 and on that basis denies them.

47. Responding to the allegations of paragraph 47, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar states that the '599 Patent speaks for itself and denies the allegations of paragraph 47 to the extent they purport to attribute to the '599 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '599 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 47 constitute a complete and accurate description of the '599 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 47 and on that basis denies them.

3. Foreign counterparts to the '599 Patent

48. Responding to the allegations of paragraph 48, Canadian Solar admits that paragraph 48 contains a table that is purported to be a list of foreign counterparts for the '599 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 48 and on that basis denies them.

B. U.S. Patent No. 8,852,981

1. Identification of the patent and ownership by ASGT

49. Responding to the allegations of paragraph 49, Canadian Solar admits that the '981 Patent is titled "Electrical Contacts to Nanostructured Areas." Canadian Solar further admits that based on the face of the patent, the '981 Patent was issued from U.S. Patent Application No. 13/622,864, which was filed on September 19, 2012. Canadian Solar admits that the face of the patent lists U.S. Provisional Application 61/536,243, filed on September 19, 2011. Canadian Solar admits that the face of the patent states that the term of the patent is extended or adjusted under 35 U.S.C. 154(b) by 140 days. Canadian Solar admits that the '981 Patent identifies Marcie R. Black, Joanne Forziati, Michael Jura, Jeff Miller, Brian Murphy, and Adam Standley as the inventors.

Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 49 and on that basis denies them.

50. Responding to the allegations of paragraph 50, Canadian Solar admits that Appendix C is purported to include a copy of the prosecution history of the '981 Patent and that Appendix D is purported to include a copy of the pages of each technical reference mentioned in the prosecution history of the '981 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 50 and on that basis denies them.

51. Responding to the allegations of paragraph 51, to the extent paragraph 51 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that the '981 Patent is valid and enforceable. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 51 and on that basis denies them.

2. Non-technical description of the invention of the '981 Patent

52. Responding to the allegations of paragraph 52, Canadian Solar states that the '981 Patent speaks for itself and denies the allegations of paragraph 52 to the extent they purport to attribute to the '981 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '981 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 52 constitute a complete and accurate description of the '981 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 52 and on that basis denies them.

53. Responding to the allegations of paragraph 53, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar states that the '981 Patent speaks for itself and denies the allegations of paragraph 53 to the extent they purport to attribute to the '981 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '981 Patent claims anything novel

or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 53 constitute a complete and accurate description of the '981 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 53 and on that basis denies them.

3. Foreign counterparts to the '981 Patent

54. Responding to the allegations of paragraph 54, Canadian Solar admits that paragraph 54 contains a table that is purported to be a list of foreign counterparts for the '981 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 54 and on that basis denies them.

C. U.S. Patent No. 9,601,640

1. Identification of the patent and ownership by ASGT

55. Responding to the allegations of paragraph 55, Canadian Solar admits that the '640 Patent is titled "Electrical Contacts to Nanostructured Areas." Canadian Solar further admits that based on the face of the patent, the '640 Patent was issued from U.S. Patent Application No. 14/468,219, which was filed on August 25, 2014. Canadian Solar admits that the face of the patent lists U.S. Provisional Application 61/536,243, filed on September 19, 2011 and U.S. Patent Application No. 13/622,864 filed September 18, 2012. Canadian Solar admits that the face of the patent states that the term of the patent is extended or adjusted under 35 U.S.C. 154(b) by 249 days. Canadian Solar admits that the '640 Patent identifies Marcie R. Black, Joanne Forziati, Michael Jura, Jeff Miller, Brian Murphy, and Adam Standley as the inventors. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 55 and on that basis denies them.

56. Responding to the allegations of paragraph 56, Canadian Solar admits that Appendix E is purported to include a copy of the prosecution history of the '640 Patent and that Appendix F is purported to include a copy of the pages of each technical reference mentioned in the prosecution history of the '640 Patent. Canadian Solar is without sufficient knowledge or

information to form a belief as to the truth of the remaining allegations of paragraph 56 and on that basis denies them.

57. Responding to the allegations of paragraph 57, to the extent paragraph 57 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that the '640 Patent is valid and enforceable. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 57 and on that basis denies them.

2. Non-technical description of the invention of the '640 Patent

58. Responding to the allegations of paragraph 58, Canadian Solar states that the '640 Patent speaks for itself and denies the allegations of paragraph 58 to the extent they purport to attribute to the '640 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '640 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 58 constitute a complete and accurate description of the '640 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 58 and on that basis denies them.

59. Responding to the allegations of paragraph 59, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar states that the '640 Patent speaks for itself and denies the allegations of paragraph 59 to the extent they purport to attribute to the '640 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '640 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 59 constitute a complete and accurate description of the '640 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 59 and on that basis denies them.

60. Responding to the allegations of paragraph 60, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required,

Canadian Solar states that the '640 Patent speaks for itself and denies the allegations of paragraph 60 to the extent they purport to attribute to the '640 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '640 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 60 constitute a complete and accurate description of the '640 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 60 and on that basis denies them.

3. Foreign counterparts to the '640 Patent

61. Responding to the allegations of paragraph 61, Canadian Solar admits that paragraph 61 contains a table that is purported to be a list of foreign counterparts for the '640 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 61 and on that basis denies them

D. U.S. Patent No. 9,768,331

1. Identification of the patent and ownership by ASGT

62. Responding to the allegations of paragraph 62, Canadian Solar admits that the '331 Patent is titled "Screen Printing Electrical Contact to Nanowire Areas." Canadian Solar further admits that based on the face of the patent, the '331 Patent was issued from U.S. Patent Application No. 14/338,752, which was filed on July 23, 2014. Canadian Solar admits that the face of the patent lists U.S. Provisional Application 61/598,717, filed on February 14, 2012 and International Application No. PCT/US2013/025958, filed September 13, 2013. Canadian Solar admits that the face of the patent states that the term of the patent is extended or adjusted under 35 U.S.C. 154(b) by 288 days. Canadian Solar admits that the '331 Patent identifies Michael Jura, Marcie R. Black, Jeffrey B. Miller, Joanne Yim, Joanne Forziati, Brian P. Murphy, and Richard Chleboski as the inventors. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 62 and on that basis denies them.

63. Responding to the allegations of paragraph 63, Canadian Solar admits that Appendix G is purported to include a copy of the prosecution history of the '331 Patent and that

Appendix H is purported to include a copy of the pages of each technical reference mentioned in the prosecution history of the '331 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 63 and on that basis denies them.

64. Responding to the allegations of paragraph 64, to the extent paragraph 64 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that the '331 Patent is valid and enforceable. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 64 and on that basis denies them.

2. Non-technical description of the invention of the '331 Patent

65. Responding to the allegations of paragraph 65, Canadian Solar states that the '331 Patent speaks for itself and denies the allegations of paragraph 65 to the extent they purport to attribute to the '331 Patent anything that is not stated therein. Canadian Solar denies that the '331 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 65 constitute a complete and accurate description of the '331 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 65 and on that basis denies them.

66. Responding to the allegations of paragraph 66, Canadian Solar states that the '331 Patent speaks for itself and denies the allegations of paragraph 66 to the extent they purport to attribute to the '331 Patent anything that is not stated therein. Canadian Solar denies that the '331 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 66 constitute a complete and accurate description of the '331 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 66 and on that basis denies them

67. Responding to the allegations of paragraph 67, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar states that the '331 Patent speaks for itself and denies the allegations of paragraph 67 to the extent they purport to attribute to the '331 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '331 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 67 constitute a complete and accurate description of the '331 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 67 and on that basis denies them.

3. Foreign counterparts to the '331 Patent

68. Responding to the allegations of paragraph 68, Canadian Solar admits that paragraph 68 contains a table that is purported to be a list of foreign counterparts for the '331 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 68 and on that basis denies them.

E. U.S. Patent No. 10,269,995

1. Identification of the patent and ownership by ASGT

69. Responding to the allegations of paragraph 69, Canadian Solar admits that the '995 Patent is titled "Screen Printing Electrical Contacts to Nanostructured Areas." Canadian Solar further admits that based on the face of the patent, the '995 Patent was issued from U.S. Patent Application No. 15/622,422, which was filed on June 14, 2017. Canadian Solar admits that the face of the patent lists U.S. Patent Application No. 14/338,752, filed on July 23, 2014, which is now U.S. Patent No. 9,768,331. Canadian Solar admits that the face of the patent lists International Application No. PCT/US2013/025958, filed February 13, 2013; U.S. Provisional Application No. 61/598,717, filed February 14, 2012; and application No. PCT/US2013/025958, filed on February 14, 2013. Canadian Solar admits that the face of the patent states that the term of the patent is extended or adjusted under 35 U.S.C. 154(b) by zero days and is subject to a terminal disclaimer. Canadian Solar admits that the '995 Patent identifies Michael Jura, Marcie R. Black, Jeffrey B.

Miller, Joanne Yim, Joanne Forziati, Brian P. Murphy, and Richard Chleboski as the inventors. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 69 and on that basis denies them.

70. Responding to the allegations of paragraph 70, Canadian Solar admits that Appendix I is purported to include a copy of the prosecution history of the '995 Patent and that Appendix J is purported to include a copy of the pages of each technical reference mentioned in the prosecution history of the '995 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 70 and on that basis denies them.

71. Responding to the allegations of paragraph 71, to the extent paragraph 71 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that the '995 Patent is valid and enforceable. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 71 and on that basis denies them.

2. Non-technical description of the invention of the '995 Patent

72. Responding to the allegations of paragraph 72, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar states that the '995 Patent speaks for itself and denies the allegations of paragraph 72 to the extent they purport to attribute to the '995 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '995 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 72 constitute a complete and accurate description of the '995 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 72 and on that basis denies them.

73. Responding to the allegations of paragraph 73, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar states that the '995 Patent speaks for itself and denies the allegations of paragraph

73 to the extent they purport to attribute to the '995 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '995 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 73 constitute a complete and accurate description of the '995 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 73 and on that basis denies them.

3. Foreign Counterparts to the '995 Patent

74. Responding to the allegations of paragraph 74, Canadian Solar admits that paragraph 74 contains a table that is purported to be a list of foreign counterparts for the '995 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 74 and on that basis denies them.

F. U.S. Patent No. 10,692, 971

1. Identification of the patent and ownership by ASGT

75. Responding to the allegations of paragraph 75, Canadian Solar admits that the '971 Patent is titled "Process for Fabricating Silicon Nanostructures." Canadian Solar further admits that based on the face of the patent, the '971 Patent issued from U.S. Patent Application No. 16/054,457, which was filed on August 3, 2018. Canadian Solar admits that the face of the patent lists U.S. Patent Application No. 15/826,005, filed on November 29, 2017 (now abandoned). Canadian Solar admits that the face of the patent lists U.S. Patent Application No. 14/924,273, filed on October 27, 2015 (now U.S. Patent No. 9,859,366); U.S. Patent Application No. 14/444,361, filed July 28, 2014 (now U.S. Patent No. 9,202,868); U.S. Patent Application No. 13/305,649, filed November 28, 2011 (now U.S. Patent No. 8,791,449); U.S. Patent Application No. 12/423,623, filed April 14, 2009 (now U.S. Patent No. 8,143,143); U.S. Provisional Application Nos. 61/114,082 (filed on December 29, 2008); and Provisional Application No. 61/044,573 (filed April 14, 2008). Canadian Solar admits that the face of the patent states that the term of the patent is extended or adjusted under 35 U.S.C. 154(b) by zero days. Canadian Solar admits that the '971 Patent identifies Brent A. Buchine, Marcie R. Black, and Faris Modawar as

the inventors. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 75 and on that basis denies them.

76. Responding to the allegations of paragraph 76, Canadian Solar admits that Appendix K is purported to include a copy of the prosecution history of the '971 Patent and that Appendix L is purported to include a copy of the pages of each technical reference mentioned in the prosecution history of the '971 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 76 and on that basis denies them.

77. Responding to the allegations of paragraph 77, to the extent paragraph 77 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that the '971 Patent is valid and enforceable. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 77 and on that basis denies them.

2. Non-technical description of the invention of the '971 Patent

78. Responding to the allegations of paragraph 78, Canadian Solar states that the '971 Patent speaks for itself and denies the allegations of paragraph 78 to the extent they purport to attribute to the '971 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '971 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 78 constitute a complete and accurate description of the '971 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 78 and on that basis denies them.

79. Responding to the allegations of paragraph 79, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar states that the '971 Patent speaks for itself and denies the allegations of paragraph 79 to the extent they purport to attribute to the '971 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '971 Patent claims anything novel

or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 79 constitute a complete and accurate description of the '971 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 79 and on that basis denies them.

80. Responding to the allegations of paragraph 80, Canadian Solar states that the '971 Patent speaks for itself and denies the allegations of paragraph 80 to the extent they purport to attribute to the '971 Patent anything that is not stated therein. Canadian Solar denies that the '971 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 80 constitute a complete and accurate description of the '971 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 80 and on that basis denies them.

81. Responding to the allegations of paragraph 81, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar states that the '971 Patent speaks for itself and denies the allegations of paragraph 81 to the extent they purport to attribute to the '971 Patent anything that is not stated therein. To the extent a response is required, Canadian Solar denies that the '971 Patent claims anything novel or inventive. To the extent a response is required, Canadian Solar denies that the allegations of paragraph 81 constitute a complete and accurate description of the '971 Patent and/or the state of the art. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 81 and on that basis denies them.

3. Foreign counterparts to the '971 Patent

82. Responding to the allegations of paragraph 82, Canadian Solar admits that paragraph 82 contains a table that is purported to be a list of foreign counterparts for the '971 Patent. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 82 and on that basis denies them.

VI. UNLAWFUL AND UNFAIR ACTS – PATENT INFRINGEMENT

A. Canadian Solar

1. Representative involved articles

83. Responding to the allegations of paragraph 83, Canadian Solar admits that paragraph 83 purports to show in Figure 1 an image of the CS3U-350PB-AG module. Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claims of the Asserted Patents. Canadian Solar denies the remaining allegations of paragraph 83.

84. Responding to the allegations of paragraph 84, Canadian Solar admits that paragraph 84 purports to show in Figure 2 an image of the CS3U-350PB-AG cell. Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claims of the Asserted Patents. Canadian Solar denies the remaining allegations of paragraph 84.

85. Responding to the allegations of paragraph 85, Canadian Solar admits that paragraph 85 purports to show in Figure 3 an image of the CS3W-410PB-AG module. Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claims of the Asserted Patents. Canadian Solar denies the remaining allegations of paragraph 85.

86. Responding to the allegations of paragraph 86, Canadian Solar admits that paragraph 86 purports to show in Figure 4 an image of the CS3W-410PB-AG cell. Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claims of the Asserted Patents. Canadian Solar denies the remaining allegations of paragraph 86.

87. Responding to the allegations of paragraph 87, this paragraph consists of legal conclusions and allegations to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claims of the Asserted Patents. To the extent a response is required, Canadian Solar denies it has engaged in any unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation. Canadian Solar lacks sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 87, and on that basis denies them.

2. Infringement of the Asserted Patents

88. Responding to paragraph 88, Canadian Solar admits that one or more of the entities within ASGT's definition of "Canadian Solar" manufactures the CS3U-350PB-AG and CS3W-410PB-AG modules. Canadian Solar denies it has engaged in any unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation. Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the Asserted Patents. Canadian Solar denies the remaining allegations of paragraph 88.

a. Testing Analysis

89. Responding to the allegations of paragraph 89, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 89 and on that basis denies them.

b. Infringement of the '599 Patent

90. Responding to paragraph 90, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '599 Patent. To the extent a response is required, Canadian Solar denies that the '599 Patent is valid and enforceable. To the extent a response is required, Canadian Solar admits that Exhibit 27 and Exhibit 28 of the Complaint purport to be claim charts applying claims 15, 17, 23, 24, 25, and 27 of the '599 Patent to the CS3U-350PB-AG and CS3W-410PB-AG modules. Canadian Solar denies the remaining allegations of paragraph 90.

91. Responding to paragraph 91, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '599 Patent. To the extent a response is required, Canadian Solar denies that the '599 Patent is valid and enforceable. To the extent a response is required, Canadian Solar denies it has engaged in any unlawful or unauthorized importation into the United States, sale for importation, or sale within the United

States after importation. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 91 and on that basis denies them.

c. Infringement of the '981 Patent

92. Responding to paragraph 92, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '981 Patent. To the extent a response is required, Canadian Solar denies that the '981 Patent is valid and enforceable. Canadian Solar admits that Exhibit 27 and Exhibit 28 of the Complaint purport to be claim charts applying claims 1, 2, 4, 13, 18, 23, 26, and 27 of the '981 Patent to the CS3U-350PB-AG and CS3W-410PB-AG modules. Canadian Solar denies the remaining allegations of paragraph 92.

93. Responding to paragraph 93, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '981 Patent. To the extent a response is required, Canadian Solar denies that the '981 Patent is valid and enforceable. To the extent a response is required, Canadian Solar denies it has engaged in any unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 93 and on that basis denies them.

d. Infringement of the '640 Patent

94. Responding to paragraph 94, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '640 Patent. To the extent a response is required, Canadian Solar denies that the '640 Patent is valid and enforceable. To the extent a response is required, Canadian Solar admits that Exhibit 27 and Exhibit 28 of the Complaint purport to be claim charts applying claims 1, 2, and 10 of the '640 Patent to the CS3U-350PB-AG and CS3W-410PB-AG modules. Canadian Solar denies the remaining allegations of paragraph 94.

95. Responding to paragraph 95, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '640 Patent. To the extent a response is required, Canadian Solar denies that the '640 Patent is valid and enforceable. To the extent a response is required, Canadian Solar denies it has engaged in any unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 95 and on that basis denies them.

e. Infringement of the '331 Patent

96. Responding to paragraph 96, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '331 Patent. To the extent a response is required, Canadian Solar denies that the '331 Patent is valid and enforceable. To the extent a response is required, Canadian Solar admits that Exhibit 27 and Exhibit 28 of the Complaint purport to be claim charts applying claims 1, 2, and 10 of the '331 Patent to the CS3U-350PB-AG and CS3W-410PB-AG modules. Canadian Solar denies the remaining allegations of paragraph 96.

97. Responding to paragraph 97, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '331 Patent. To the extent a response is required, Canadian Solar denies that the '331 Patent is valid and enforceable. To the extent a response is required, Canadian Solar denies it has engaged in any unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 97 and on that basis denies them.

f. Infringement of the '995 Patent

98. Responding to paragraph 98, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '331 Patent. To the extent a response is required, Canadian Solar denies that the '331 Patent is valid and enforceable. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '995 Patent. To the extent a response is required, Canadian Solar denies that the '995 Patent is valid and enforceable. Canadian Solar admits that Exhibit 27 and Exhibit 28 of the Complaint purport to be claim charts applying claims 1, 2, and 7-11 of the '995 Patent to the CS3U-350PB-AG and CS3W-410PB-AG modules. Canadian Solar denies the remaining allegations of paragraph 98.

99. Responding to paragraph 99, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '995 Patent. To the extent a response is required, Canadian Solar denies that the '995 Patent is valid and enforceable. To the extent a response is required, Canadian Solar denies it has engaged in any unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 99 and on that basis denies them.

g. Infringement of the '971 Patent

100. Responding to paragraph 100, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '971 Patent. To the extent a response is required, Canadian Solar denies that the '971 Patent is valid and enforceable. To the extent a response is required, Canadian Solar admits that Exhibit 27 and Exhibit 28 of the Complaint purport to be claim charts applying claims 1, 7, 8, 10, and 15 of the '971 Patent to the CS3U-350PB-AG and CS3W-410PB-AG modules. Canadian Solar denies the remaining allegations of paragraph 100.

101. Responding to paragraph 101, this paragraph consists of legal conclusions to which no response is required. To the extent a response is required, Canadian Solar denies that any of Canadian Solar's products infringe any valid and enforceable claim of the '971 Patent. To the extent a response is required, Canadian Solar denies that the '971 Patent is valid and enforceable. To the extent a response is required, Canadian Solar denies it has engaged in any unlawful or unauthorized importation into the United States, sale for importation, or sale within the United States after importation. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 101 and on that basis denies them.

3. Specific instance of importation, sale for importation, or sale after importation

102. Responding to paragraph 102, Canadian Solar admits that it manufactures silicon photovoltaic cells and modules. Canadian Solar admits that Exhibit 29 to the Complaint purports to show Canadian Solar's SEC Form 20-F, and purports to show that Canadian Solar has manufacturing facilities in Luoyang, Suzhou, Hai Phong City, and Thailand. Canadian Solar denies that any of its solar cells or solar modules infringe any valid and enforceable claim of the Asserted Patents.

103. Responding to paragraph 103, Canadian Solar admits that all CS3U-350PB-AG and CS3W-410PB-AG modules are presently manufactured outside of the United States. Canadian Solar denies the remaining allegations of paragraph 103.

104. Responding to the allegations of paragraph 104, Canadian Solar admits that Exhibits 31 and 33 to the Complaint purports to show labels for CS3U-350PB-AG and CS3W-410PB-AG modules that indicate, respectively, "[a]ssembled in Thailand with Thai cells" and "[m]ade in Thailand. Cell origin: Thailand". Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 104 and on that basis denies them.

B. Hanwha

1. Representative involved articles

105. Responding to the allegations of paragraph 105, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 105 and on that basis denies them.

106. Responding to the allegations of paragraph 106, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 106 and on that basis denies them.

107. Responding to the allegations of paragraph 107, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 107 and on that basis denies them.

108. Responding to the allegations of paragraph 108, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 108 and on that basis denies them.

109. Responding to the allegations of paragraph 109, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 109 and on that basis denies them.

110. Responding to the allegations of paragraph 110, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 110 and on that basis denies them.

2. Infringement of the Asserted Patents

111. Responding to the allegations of paragraph 111, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 111 and on that basis denies them.

a. Testing Analysis

112. Responding to the allegations of paragraph 112, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 112 and on that basis denies them.

b. Infringement of the '599 Patent

113. Responding to the allegations of paragraph 113, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 113 and on that basis denies them.

114. Responding to the allegations of paragraph 114, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 114 and on that basis denies them.

115. Responding to the allegations of paragraph 115, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 115 and on that basis denies them.

c. Infringement of the '981 Patent

116. Responding to the allegations of paragraph 116, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 116 and on that basis denies them.

117. Responding to the allegations of paragraph 117, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 117 and on that basis denies them.

d. Infringement of the '640 Patent

118. Responding to the allegations of paragraph 118, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 118 and on that basis denies them.

119. Responding to the allegations of paragraph 119, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 119 and on that basis denies them.

e. Infringement of the '331 Patent

120. Responding to the allegations of paragraph 120, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 120 and on that basis denies them.

121. Responding to the allegations of paragraph 121, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 121 and on that basis denies them.

f. Infringement of the '995 Patent

122. Responding to the allegations of paragraph 122, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 122 and on that basis denies them.

123. Responding to the allegations of paragraph 123, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 123 and on that basis denies them.

g. Infringement of the '971 Patent

124. Responding to the allegations of paragraph 124, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 124 and on that basis denies them.

125. Responding to the allegations of paragraph 111, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 125 and on that basis denies them.

3. Specific instance of importation, sale for importation, or sale after importation

126. Responding to the allegations of paragraph 126, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 126 and on that basis denies them.

127. Responding to the allegations of paragraph 127, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 127 and on that basis denies them.

128. Responding to the allegations of paragraph 128, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 128 and on that basis denies them.

129. Responding to the allegations of paragraph 129, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 129 and on that basis denies them.

C. Boviet

1. Representative involved articles

130. Responding to the allegations of paragraph 130, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 130 and on that basis denies them.

131. Responding to the allegations of paragraph 131, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 131 and on that basis denies them.

132. Responding to the allegations of paragraph 132, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 132 and on that basis denies them.

2. Infringement of the Asserted Patents

133. Responding to the allegations of paragraph 133, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 133 and on that basis denies them.

a. Testing Analysis

134. Responding to the allegations of paragraph 134, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 134 and on that basis denies them.

b. Infringement of the '599 Patent

135. Responding to the allegations of paragraph 135, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 135 and on that basis denies them.

136. Responding to the allegations of paragraph 136, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 136 and on that basis denies them.

c. Infringement of the '981 Patent

137. Responding to the allegations of paragraph 137, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 137 and on that basis denies them.

138. Responding to the allegations of paragraph 138, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 138 and on that basis denies them.

d. Infringement of the '640 Patent

139. Responding to the allegations of paragraph 139, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 139 and on that basis denies them.

140. Responding to the allegations of paragraph 140, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 140 and on that basis denies them.

e. Infringement of the '331 Patent

141. Responding to the allegations of paragraph 141, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 141 and on that basis denies them.

142. Responding to the allegations of paragraph 142, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 142 and on that basis denies them.

f. Infringement of the '995 Patent

143. Responding to the allegations of paragraph 143, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 143 and on that basis denies them.

144. Responding to the allegations of paragraph 144, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 144 and on that basis denies them.

g. Infringement of the '971 Patent

145. Responding to the allegations of paragraph 145, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 145 and on that basis denies them.

146. Responding to the allegations of paragraph 146, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 146 and on that basis denies them.

3. Specific instance of importation, sale for importation, or sale after importation

147. Responding to the allegations of paragraph 147, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 147 and on that basis denies them.

148. Responding to the allegations of paragraph 148, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 148 and on that basis denies them.

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

149. Responding to the allegations of paragraph 149, Canadian Solar admits that Canadian Solar's solar modules identified in the Complaint, CS3U-350PB-AG and CS3W-410PB-AG, may be classified under the following heading and subheading of the Harmonized Tariff

Schedule of the United States: 8541.40.6015 (solar modules). Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 149 and on that basis denies them.

VIII. LICENSEES

150. Responding to the allegations of paragraph 150, Canadian Solar admits that Exhibit 21 purported to be a list of licensees to the Asserted Patents. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 150 and on that basis denies them.

IX. DOMESTIC INDUSTRY

A. The Technical Prong Of The Domestic Industry Requirement Is Satisfied

151. Responding to the allegations of paragraph 151, to the extent paragraph 151 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that an industry in the United States, as required by Section 337(a)(2) and defined by Section 337(a)(3), exists in connection with the Asserted Patents. Canadian Solar admits that Exhibit 53 of the Complaint purports to contain a declaration of Marcie Black, PhD, the CEO of both ASGT and ASG Inc. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 151 and on that basis denies them.

152. Responding to the allegations of paragraph 152, to the extent paragraph 152 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 152 and on that basis denies them.

153. Responding to the allegations of paragraph 153, to the extent paragraph 153 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar admits that Exhibit 54 of the Complaint purports to be claim charts comparing a purported product to claims of the Asserted Patents. Canadian Solar is without sufficient

knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 153 and on that basis denies them.

B. The Economic Prong Of The Domestic Industry Requirement Is Satisfied

154. Responding to the allegations of paragraph 154, to the extent paragraph 154 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States for purposes of this Investigation. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 154 and on that basis denies them.

155. Responding to the allegations of paragraph 155, to the extent paragraph 155 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States for purposes of this Investigation. Canadian Solar admits that Exhibit 53 of the Complaint purports to be a Confidential Domestic Industry Declaration. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 155 and on that basis denies them.

1. Significant investment in plant and equipment – 337(a)(3)(A)

156. Responding to the allegations of paragraph 156, to the extent paragraph 156 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States relating to the Asserted Patents. Canadian Solar denies that the Complaint establishes that the alleged investment in plant and equipment in the United States is significant as to the alleged domestic industry products. To the extent a response is required, Canadian Solar admits that Exhibit 53 of the Complaint purports to be a Confidential Domestic Industry Declaration. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 156 and on that basis denies them.

157. Responding to the allegations of paragraph 157, to the extent paragraph 157 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States relating to the Asserted Patents. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 157 and on that basis denies them.

158. Responding to the allegations of paragraph 158, to the extent paragraph 158 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States relating to the Asserted Patents. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 158 and on that basis denies them.

159. Responding to the allegations of paragraph 159, to the extent paragraph 159 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States relating to the Asserted Patents. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 159 and on that basis denies them.

160. Responding to the allegations of paragraph 160, to the extent paragraph 160 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States relating to the Asserted Patents. To the extent a response is required, Canadian Solar admits that Exhibit 53 of the Complaint purports to set forth plant and equipment expenses incurred at ASG Inc.'s facilities. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 160 and on that basis denies them.

2. Significant employment of labor and capital – 337(a)(3)(B)

161. Responding to paragraph 161, to the extent paragraph 161 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States relating to the Asserted Patents. Canadian Solar denies that the Complaint establishes that the alleged employment of labor or capital in the United States is significant as to the alleged domestic industry products. To the extent a response is required, Canadian Solar admits that Exhibit 53 of the Complaint purports to be a Confidential Domestic Industry Declaration. Canadian Solar lacks sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 161, and on that basis denies them.

3. Substantial investments in research and development and engineering – 337(a)(3)(C)

162. Responding to paragraph 162, to the extent paragraph 162 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States relating to the Asserted Patents. Canadian Solar denies that the Complaint establishes that the alleged investments in research and development and engineering in the United States is significant as to the alleged domestic industry products. To the extent a response is required, Canadian Solar admits that Exhibit 53 of the Complaint purports to be a Confidential Domestic Industry Declaration. Canadian Solar lacks sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 162, and on that basis denies them.

4. A domestic industry is in the process of being established

163. Responding to paragraph 163, to the extent paragraph 163 contains conclusions of law, no response is necessary. To the extent a response is required, Canadian Solar denies that a domestic industry exists or is in the process of being established in the United States relating to the Asserted Patents. Canadian Solar denies that the Complaint establishes that the alleged activities and investments in plant, equipment, labor, and capital in the United States is substantial

or significant as to the alleged domestic industry products. To the extent a response is required, Canadian Solar admits that Exhibit 53 of the Complaint purports to be a Confidential Domestic Industry Declaration. Canadian Solar lacks sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 163, and on that basis denies them.

X. RELATED LITIGATION

164. Responding to the allegations of paragraph 164, Canadian Solar admits that on June 11, 2021, Advanced Silicon Group Technologies, LLC filed a complaint in the United States District Court for the Northern District of California alleging infringement of one or more claims of each of the Asserted Patents, and named as defendants Canadian Solar Inc.; Canadian Solar International Limited; Canadian Solar Manufacturing (Luoyang) Inc.; Canadian Solar Manufacturing (Thailand) Co. Ltd.; Canadian Solar Manufacturing Vietnam Co. Ltd.; Canadian Solar Solutions, Inc.; Canadian Solar Construction (USA) Inc.; Recurrent Energy Group, Inc.; Recurrent Energy, LLC; and Recurrent Energy SH Proco LLC. Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the remaining allegations of paragraph 164 and on that basis denies them.

165. Responding to the allegations of paragraph 165, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 165 and on that basis denies them.

166. Responding to the allegations of paragraph 166, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 166 and on that basis denies them.

167. Responding to the allegations of paragraph 167, Canadian Solar is without sufficient knowledge or information to form a belief as to the truth of the allegations of paragraph 167, and on that basis denies them.

XI. REQUESTED RELIEF

Responding to the allegations of this unnumbered paragraph, Canadian Solar denies that Complainant is entitled to any relief. Canadian Solar denies the statements in this paragraph and

subparts ((a)-(f)) thereof provide any factual or legal basis for the requested relief. Canadian Solar denies that any Canadian Solar products infringe any valid and enforceable claim of the Asserted Patents. Canadian Solar denies that it has engaged in any acts of unfair competition or violated Section 337 by importing, selling for importation, or selling within the United States after importation any articles that infringe any valid and enforceable intellectual property right at issue in this investigation. Canadian Solar denies that it has violated Section 337 in any other manner alleged in the Complaint. Canadian Solar denies the remaining allegations of this unnumbered paragraph.

RESPONSE TO THE NOTICE OF INVESTIGATION

Canadian Solar acknowledges that the Commission has instituted an investigation as set forth in the Commission's Notice of Investigation, dated July 14, 2021. Canadian Solar denies that there has been any violation of 19 U.S.C. § 1337 by Canadian Solar in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain silicon photovoltaic cells and modules with nanostructures and products containing the same. Canadian Solar further contends that the Asserted Claims of the Asserted Patents asserted by Complainant against Canadian Solar in this Investigation are invalid or unenforceable and cannot support any contention for alleged infringement. Canadian Solar denies that there exists a domestic industry as required under 19 U.S.C. § 1337(a)(2) and defined under 19 U.S.C. § 1337(a)(3) or that one is in the process of being established. Canadian Solar denies that Complainant is entitled to any relief as a result of this Investigation and avers that the public interest does not support such relief to Complainant based on the allegations set forth in the Complaint.

STATEMENT PURSUANT TO RULE 210.13(b)

See Confidential Exhibit A.

CANADIAN SOLAR'S ADDITIONAL AFFIRMATIVE DEFENSES

Canadian Solar asserts the following affirmative and other defenses. Canadian Solar's inclusion of these affirmative defenses is not a concession that Canadian Solar bears the burden of

proof with respect to any of them. Discovery has just begun at the time of this Response and, therefore, Canadian Solar has not yet had sufficient time and opportunity to collect and review all the information that may be relevant to the matters and issues raised herein. Canadian Solar, under 19 U.S.C. §§ 210.14(b) and 210.14(c), reserves the right to seek amendment of, modify, and/or expand these defenses and to take further positions as discovery proceeds in this Investigation. Furthermore, to the extent Complainant further amends the Complaint, Canadian Solar expressly reserves its right to amend this Response.

FIRST AFFIRMATIVE DEFENSE

(Non-Infringement)

1. Canadian Solar denies that it (i) infringes or has infringed, either literally or under the doctrine of equivalents, (ii) contributes or has contributed to infringement by others, and/or (iii) induces or has induced others to infringe any valid and enforceable claims of U.S. Patent Nos. 8,450,599 (“’599 Patent”); 8,852,981 (“’981 Patent”); 9,601,640 (“’640 Patent”); 9,768,331 (“’331 Patent”); 10,269,995 (“’995 Patent”); and 10,692,971 (“’971 Patent”) (collectively, the “Asserted Patents”) in this Investigation.

2. ASGT has not met its burden of proof to show infringement of the Asserted Patents in its Complaint at least because Complainant have not shown that the accused products sold by Canadian Solar meet every limitation of any of the Asserted Claims and the Asserted Claims are invalid or unenforceable. Furthermore, ASGT will be unable to meet its burden of proof to show infringement of the Asserted Patents. The Accused Products do not meet at least the following limitations of the Asserted Claims:

’599 patent: “wherein the p-n junction is located at least about 30 nm from the bottom of the nanowires”; “a plurality of n-doped nanowires in direct physical contact with the top n-doped region of the crystalline semiconductor substrate”; “wherein the nanowires are no more than about 200 nm in diameter”; “wherein the p-n junction is located at least about 300 nm from the bottom of the nanowires”; “wherein the p-n junction is located at least about 300 nm from the bottom of all the nanowires.”

'981 patent: “providing a substrate having a nanostructured material on a surface”; “removing the nanostructured material and electrically insulating material at least partially from a portion of the surface”; “depositing a conductor on the substrate in such a way that the conductor is in electrical contact with the substrate through the portion of the surface where the nanostructured material and insulating material has been at least partially removed”; “wherein the nanostructured material comprises nanowires”; “wherein the step of removing the nanostructured material and insulating material comprises heating or cooling”; “wherein the deposited conductor does not have electrical contact with the substrate in the portion of the surface where nanostructured material was not removed in step (b)”; “removing the nanostructured material from a portion of the surface”; “depositing an electrical contact in the portion of the surface from which the nanostructured material was removed.”

'640 patent: “a nanostructured area including nanostructures on the first surface of the substrate”; “the nanostructured area including a first segment in which the nanostructures are intact and a second segment in which the nanostructures are at least partially broken or removed”; “the second segment being laterally displaced from the first segment in a plane defined by the first surface of the substrate”; “an electrically insulating layer atop the first surface; and a conductor atop the electrically insulating layer over the second segment”; “wherein the conductor makes electrical contact to the substrate through the insulating layer over the second segment”; “wherein the nanostructures comprise silicon nanowires”; “a nanostructured area on the first surface of the substrate, the nanostructured area including nanostructures”; “a passivation layer atop the first surface; a first segment of the nanostructured area including a plurality of holes in the passivation layer; a second segment of the nanostructured area being free of holes in the passivation layer, the second segment being laterally displaced from the first segment in a plane defined by the first surface of the substrate; and a conductor atop the passivation layer over the first segment”; “wherein the nanostructures comprise silicon nanowires.”

'331 patent: “a non-nanostructured substrate; a nanostructured area disposed on and contacting a surface of the substrate; a passivating layer coating the nanostructured area, the passivating layer comprising one of aluminum oxide, silicon dioxide, or silicon nitride; one or more contacts comprising a comb-like pattern of metal directly contacting the nanostructured area; and a p-n junction below the nanostructured area”; “the one or more screen printed contacts comprise metal lines including glass frit.”

'995 patent: “a non-nanostructured substrate; a nanostructured area disposed on and contacting a surface of the substrate; a passivating layer coating the nanostructured area, the passivating layer comprising one of aluminum oxide, silicon dioxide, or silicon nitride; a first contact comprising a comb-like pattern of metal directly contacting the nanostructured area; a p-n junction below the nanostructured area”; “wherein nanostructures in the nanostructured areas are tapered such that bases of the nanostructures on average have larger diameters than tips of the nanostructures.”

'971 patent: “A process for etching a substrate comprising polycrystalline silicon to form polycrystalline silicon nanostructures”; “depositing metal on top of the substrate”; “contacting the metalized substrate with an etchant aqueous solution comprising about 2 to about 49 weight percent HF and an oxidizing agent”; “forming a photovoltaic cell including a polycrystalline silicon nanostructure produced by the process.”

SECOND AFFIRMATIVE DEFENSE

(Invalidity)

3. On information and belief, and without prejudice to further amendment upon information found during discovery, each Asserted Claim of the Asserted Patents is invalid for failure to meet the requirements set forth in Title 35 of the United States Code, including §§ 101, 102, 103, 112, 115, 116, or 256, or judicially created doctrines of invalidity including, but not limited to, obviousness-type double patenting.

4. On information and belief, and without prejudice to further amendment upon information found during discovery, each Asserted Claim of the Asserted Patents is invalid for

failure to comply with the requirements of 35 U.S.C. § 112 due to lack of written description, failure to particularly point out and distinctly claim the subject matter which is regarded as the alleged invention, and/or failure to set forth a written description sufficient to enable any person skilled in the art to make and use the alleged invention. For example and without limitation, at least the following limitations of the following Asserted Claims are invalid under Section 112 as lacking written description and/or enablement, and/or indefinite:

'599 patent: “wherein the p-n junction is located at least about 30 nm from the bottom of the nanowires”; “wherein the p-n junction is located at least about 300 nm from the bottom of the nanowires”; “wherein the p-n junction is located at least about 300 nm from the bottom of all the nanowires.”

'981 patent: “a substrate having a nanostructured material on a surface”; “removing the nanostructured material and electrically insulating material at least partially from a portion of the surface”; “the portion of the surface where the nanostructured material and insulating material has been at least partially removed”; “heating or cooling”; “removing the nanostructured material from a portion of the surface”; “the portion of the surface from which the nanostructured material was removed.”

'640 patent: “a nanostructured area including nanostructures on the first surface of the substrate”; “a first segment in which the nanostructures are intact and a second segment in which the nanostructures are at least partially broken or removed”; “a plane defined by the first surface of the substrate”; “a nanostructured area on the first surface of the substrate”; “a first segment of the nanostructured area including a plurality of holes in the passivation layer”; “a second segment of the nanostructured area being free of holes in the passivation layer.”

In addition, claim 14 of the '640 patent fails to require the removal of the nanowire array and therefore fails to claim what the inventor regards as the invention under 35 U.S.C. § 112.

'331 patent: “a non-nanostructured substrate; a nanostructured area disposed on and contacting a surface of the substrate”; “a p-n junction below the nanostructured area”; “the one or more screen printed contacts comprise metal lines including glass frit.”

'995 patent: “a non-nanostructured substrate; a nanostructured area disposed on and contacting a surface of the substrate”; “a p-n junction below the nanostructured area;” “wherein nanostructures in the nanostructured areas are tapered such that bases of the nanostructures on average have larger diameters than tips of the nanostructures.”

5. Furthermore, Canadian Solar is in the process of obtaining relevant prior art, including through discovery, which is in its early stages at this time. Canadian Solar will set forth further invalidity allegations upon obtaining additional prior art. Canadian Solar identifies that one or more of the prior art references listed in Exhibit B to this Response, taken alone or in combination, is prior art to the Asserted Patents and invalidates them pursuant to Section 102 and/or 103 of the Patent Act. Canadian Solar reserves the right to rely on additional prior art references not listed in Exhibit B.

THIRD AFFIRMATIVE DEFENSE

(Prosecution History Estoppel and Prosecution Disclaimer)

6. On information and belief, by reason of the proceedings in the U.S. Patent and Trademark Office (“USPTO”) during the prosecution of the applications resulting in the issuance of the asserted patents, namely, the admissions, representations, and amendments made on behalf of the applicants for those patents, Complainant is estopped from extending the coverage of the Asserted Claims of the Asserted Patents, including under the doctrine of equivalents to cover any allegedly infringing Canadian Solar products.

FOURTH AFFIRMATIVE DEFENSE

(Lack of Unfair Act)

7. Canadian Solar has not committed any unfair acts defined within 19 U.S.C. § 1337(a)(1) and has not manufactured, imported, sold for importation, or sold within the United

States after importation any product that is covered by any valid and enforceable claim of the Asserted Patents in this Investigation.

FIFTH AFFIRMATIVE DEFENSE

(Lack of Domestic Industry)

8. Complainant has not adequately alleged and cannot prove: (1) that a domestic industry exists; and/or (2) that such domestic industry is in the process of being established, as is required under § 1337(a)(2) and defined under § 1337(a)(3), in connection with the Asserted Patents.

SIXTH AFFIRMATIVE DEFENSE

(License / Exhaustion / Implied License)

9. On information and belief, Complainant is barred from obtaining any relief sought in the Complaint to the extent the Asserted Patents are subject to one or more license. In addition, Complainant is barred from obtaining relief sought in the Complaint to the extent that the Asserted Patents are subject to the doctrines of patent exhaustion or implied license.

SEVENTH AFFIRMATIVE DEFENSE

(Unenforceability)

10. Complainant has made claims that are barred in whole or in part by the doctrines of acquiescence, estoppel, waiver, patent exhaustion, unclean hands and/or other equitable doctrines.

EIGHTH AFFIRMATIVE DEFENSE

(Defenses of Inequitable Conduct at the United States Patent Office and Unclean Hands to '331 and '995 patents)

I. Individuals Substantively Involved in Prosecution

11. On information and belief, the following persons were substantively involved in the prosecution of the '640 patent: John N. Anastasi, Gregory K. Gerstenzang, Alexandra Gerard, Marcus E. Browne, Matthew H. Grady, and Flavio M. Rose.

12. According to the Patent Office submissions, Mr. Anastasi, Mr. Gerstenzang, Mr. Browne, and Mr. Grady were attorneys and/or patent agents at Lando & Anastasi, LLP and worked in the same office. On information and belief, Mr. Rose was in-house counsel for the applicant.

13. On information and belief, the following persons were substantively involved in the prosecution of the '331 patent: John N. Anastasi, Gregory K. Gerstenzang, Alexandra Gerard, and Flavio M. Rose.

14. On information and belief, the following persons were substantively involved in the prosecution of the '995 patent: John N. Anastasi, Gregory K. Gerstenzang, and Alexandra Gerard.

15. The substantive involvement of these individuals is shown by them filing, signing, or being listed on the signature blocks of, submissions to the Patent Office during prosecution.

16. At least John Anastasi and Gregory Gerstenzang were involved with prosecuting all three patents (the '331, the '640, and the '995). Flavio Rose was also involved in prosecuting at least the '331 and '640 patents. On information and belief, Marcus Browne and Matthew Grady were also substantively involved in prosecuting the '331 patent, in addition to the '640 patent. For example, Mr. Brown and Mr. Grady worked in the same law firm office as John Anastasi and Gregory Gerstenzang, and the patents were all being prosecuted on behalf of the same client. On information and belief, Mr. Browne worked at Lando & Anastasi, LLP between at least January 2013 and April 2016, and Mr. Grady worked there from at least 2005 to January 2016. During this timeframe, both the '640 and the '331 patents were pending, and Oh WO was identified in a September 2015 IDS signed by Mr. Browne in connection with the '640 patent.

17. The following persons are named inventors on all of the '331, '640, and '995 patents: Marcie R. Black, Joanne Forziati, Michael Jura, Jeffrey B. Miller, and Brian P. Murphy.

18. Joanne Yim and Richard Chleboski are additional named inventors on the '331 and '995 patents.

19. Adam Standley is an additional named inventor on the '640 patent.

20. The named inventors signed oaths that were submitted with their respective applications attesting to being the inventors of the alleged invention(s) claimed in the applications.

21. A power of attorney was submitted in connection with the prosecution of each of the '331, '640, and '995 patents. On information and belief based on the face of the document, it was signed by named inventor Marcie Black on June 2, 2015, and states that she was CEO of assignee Advanced Silicon Group, Inc. and had authority to sign on their behalf. On information and belief, Ms. Black was also substantively involved in prosecution.

II. The Applicant and Its Counsel Knew of Oh But Did Not Disclose It to the PTO

22. Oh WO (International Publication No. WO 2012/121706) is prior art. It has an effective filing date at least as early as March 8, 2011. The '331 and '995 patents on their face purport to claim an earliest priority date of February 14, 2012, through a provisional application. Thus, even if the provisional priority claim were entirely valid (which Canadian Solar does not concede), Oh WO would be prior art to the '331 and '995 patents.

23. Oh WO was cited in a September 25, 2015 information disclosure statement ("IDS") in connection with prosecution of the '640 patent. The IDS was submitted by the Lando & Anistasi, LLP firm, signed by Marcus Browne.

24. The '331 patent was still being prosecuted when the September 2015 IDS was submitted. It was filed on July 23, 2014 and issued on September 19, 2017. After the IDS was submitted in the '640 patent prosecution, the applicant submitted multiple office action responses in the '331 patent prosecution, but did not disclose Oh WO.

25. The '995 patent was not filed until after the September 2015 IDS was submitted, and on information and belief, Oh WO was known to the applicant and its attorneys/patent agents at Lando & Anistasi, LLP during the entirety of the '995 patent's prosecution. The '995 patent was filed on June 14, 2017 and issued on April 23, 2019.

26. The '640 patent had a different primary examiner in a different art unit from the '331 and '995 patents. The primary examiner for the '640 patent was Long Tran in art unit 2829. The primary examiner for the '331 and '995 patents was Bach Dinh in art unit 1756.

27. On information and belief, the applicant and its attorneys/patent agents, including John N. Anastasi, Marcus Browne, Matthew Grady, and/or Gregory K. Gerstenzang, were aware that the patents were being reviewed by separate examiners, and that a disclosure of Oh WO in an IDS to the examiner of the '640 patent would not disclose Oh WO to the '331 and '995 patent examiner.

III. Oh Was Material Prior Art

28. Oh WO was material prior art to the '331 and '995 patents.

29. For example, Oh WO was cited by the European Patent Office (“EPO”) in a supplementary European search report dated March 25, 2015. The search report describes Oh WO as among the “documents considered to be relevant” and classified it as an “X” reference, meaning that it is “particularly relevant if taken alone.” This search report was cited in the September 2015 IDS where Oh WO was disclosed to the Patent Office in connection with the '640 patent. The IDS described the European patent application as “corresponding” to the '640 patent, thus reflecting that Oh WO would be “particularly relevant” to the '640 patent’s validity as well. Marcie Black was a named inventor on the EPO application as well as the '331, '640, and '995 patents.

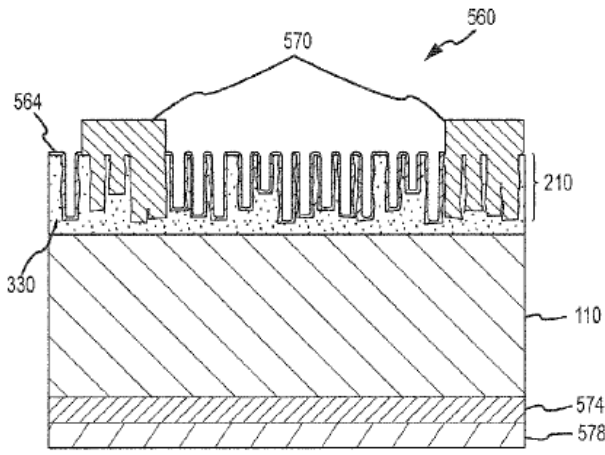
30. The EPO’s corresponding search opinion concluded, among other things, that Oh WO “is prejudicial to the novelty of the subject-matter of independent claim 11 of the present application.” The EPO application was subsequently deemed to be withdrawn.

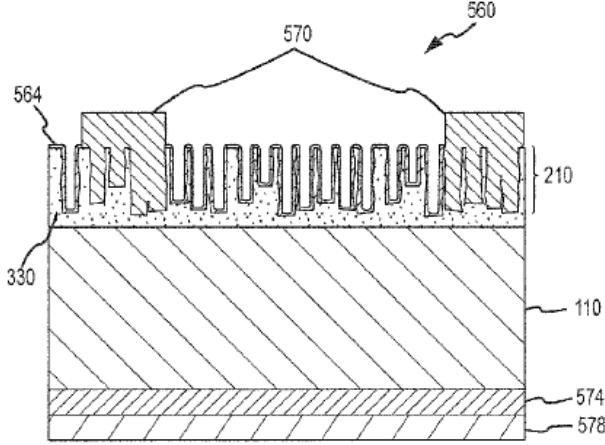
31. On information and belief, the EPO’s search opinion provided further knowledge that Oh WO was material to the patentability of the '331 and '995 patents to the applicant and its attorneys/patent agents, including Marcie Black, John N. Anastasi, Marcus Browne, Gregory K. Gerstenzang, and/or Matthew Grady.

32. On information and belief, the applicant and its attorneys involved in prosecution, including at least Marcie Black, John N. Anastasi, Gregory K. Gerstenzang, Marcus E. Browne, and/or Matthew Grady, were aware of the EPO’s search opinion as evidenced by identification of the report in an IDS submitted in connection with the '640 patent prosecution.

33. The '640 patent also has similarities in subject matter with the '331 and '995 patents. For example, both patents have independent claims involving a “substrate,” a “nanostructured area,” a “passivating layer” or “electrically insulating layer,” “contacts” or a “conductor,” and various requirements as to how these features are arranged relative to one another. See '640 patent cl. 1, 14; '331 patent cl. 1; '995 patent cl. 1, 11.

34. Below is a table illustrating how the EPO’s analysis in its search report would have informed the recipient of the materiality of Oh WO to the '331 and '995 patents. For purposes of materiality, Canadian Solar interprets the claims as ASGT appears to for its infringement allegations. Nothing in this table or elsewhere should be taken as admissions or contentions by Canadian Solar as to how the claims should be properly construed:

'331 Patent	Oh WO and EPO Search Opinion
<p>1. A silicon nanostructured device comprising:</p>	<p>The EPO’s search opinion states: “This earlier application shows an optoelectronic device (see abstract and Fig. 5) comprising (a) a substrate (see Fig. 5, reference 110), (b) a nanostructured area on a first surface of the substrate (see Fig. 5 and line 3 of paragraph 37)”</p> <p>Oh WO’s Abstract states: “A photovoltaic (PV) device with improved blue response. . . . Anti-reflection in the PV device is provided solely by a nanostructured or black silicon surface on the light-receiving surface, through which the emitter is formed by diffusion.”</p>  <p style="text-align: center;">FIG.5</p>

<p>[1-a] a non-nanostructured substrate;</p>	<p>The EPO’s search opinion states: “This earlier application shows an optoelectronic device (see abstract and Fig. 5) comprising (a) a substrate (see Fig. 5, reference 110), (b) a nanostructured area on a first surface of the substrate (see Fig. 5 and line 3 of paragraph 37)”</p> <p>As ASGT appears to interpret the claims for infringement, “substrate” 110 is a non-nanostructured substrate.</p>  <p style="text-align: center;">FIG.5</p>
<p>[1-b] a nanostructured area disposed on and contacting a surface of the substrate;</p>	<p>The EPO’s search opinion states: “This earlier application shows an optoelectronic device (see abstract and Fig. 5) comprising (a) a substrate (see Fig. 5, reference 110), (b) a nanostructured area on a first surface of the substrate (see Fig. 5 and line 3 of paragraph 37)”</p> <p>As ASGT appears to interpret the claims for infringement, “substrate” 110 is a non-nanostructured substrate.</p>

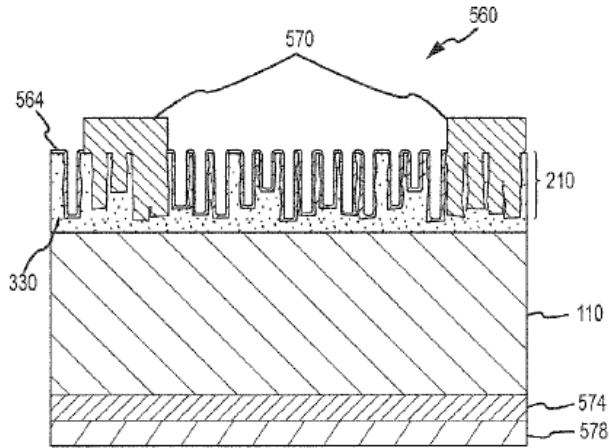


FIG.5

[1-c] a passivating layer coating the nanostructured area,

The EPO's search opinion states: "This earlier application shows an optoelectronic device (see abstract and Fig. 5) comprising (a) a substrate (see Fig. 5, reference 110), (b) a nanostructured area on a first surface of the substrate (see Fig. 5 and line 3 of paragraph 37), (c) an insulating layer atop the first surface (see Fig. 5, reference 564 and lines 2-4 of paragraph 54)"

As ASGT appears to interpret the claims for infringement, "passivation layer or coating 564" is a passivating layer coating a nanostructured area.

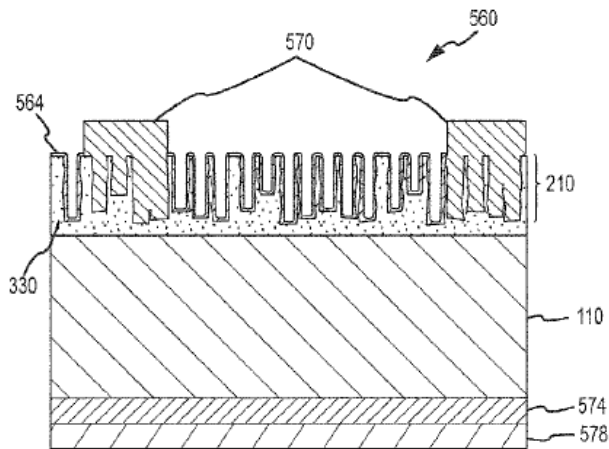


FIG.5

[0054] "Figure 5 illustrates a PV device 560 in the form of a solar cell that has been fabricated with the wafer/substrate device 450 of Figure 4. As

	<p>shown, a passivation layer or coating 564 has been formed over the black silicon layer 210, and this layer 564 may be a thermal oxide layer as noted above.”</p>
<p>[1-d] the passivating layer comprising one of aluminum oxide, silicon dioxide, or silicon nitride,</p>	<p>See element [1-c].</p> <p>Oh WO further states:</p> <p>[0052] “In other cases, another form of passivation is provided on the surfaces of the black silicon layer 210 for example with Al₂O₃ (e.g., deposited by atomic layer deposition) or hydrogenated amorphous silicon or silicon nitride or with organic molecules that reduce surface recombination velocity.”</p> <p>[0063] “At step 670, the method 600 continues with passivating the black silicon surface (or the light- receiving surface of the PV device). This may involve thermally growing at a higher temperature (e.g., at about 850 °C) a thin layer of silicon dioxide (SiO₂) to passivate the black silicon.”</p>
<p>[1-e] one or more contacts comprising a comb-like pattern of metal directly contacting the nanostructure d area; and</p>	<p>The EPO’s search opinion states: “This earlier application shows an optoelectronic device (see abstract and Fig. 5) comprising (a) a substrate (see Fig. 5, reference 110), (b) a nanostructured area on a first surface of the substrate (see Fig. 5 and line 3 of paragraph 37), (c) an insulating layer atop the first surface (see Fig. 5, reference 564 and lines 2-4 of paragraph 54), (d) a segment of the nanostructured area where the nanostructures are at least partially broken or removed (see Fig. 3-4 and page 12, paragraph 42 and particularly the statement <i>“The processing has also caused the removal of the silicon separating some tunnels/pores 212, which enlarges the tunnels/pores and increases 002’</i>: it can be clearly seen from Fig. 4 that a segment of the nanostructured area (at the left-part of the wafer) has been removed), (f) a conductor atop the insulating layer and optional covering layer (see page 17, paragraph 54 and particularly the statement <i>“These contacts 570 may also be made by screen printing a meta/containing paste that can penetrate the oxide or other passivating layer 564 to contact the emitter layer 330.”</i>”</p> <p>As ASGT appears to interpret the claims for infringement, the front contact grid 570 constitutes one or more contacts comprising a comb-like pattern of metal directly contacting a nanostructured area.</p>

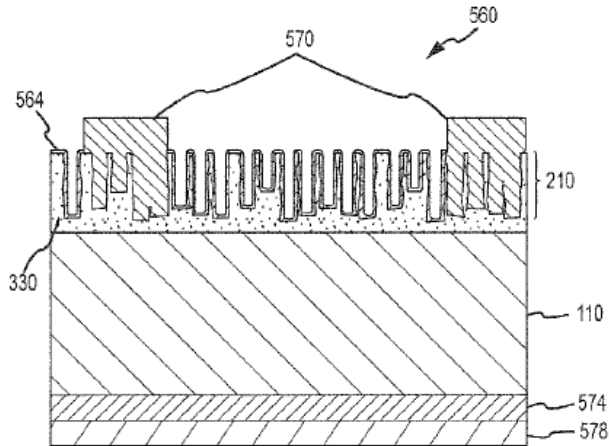


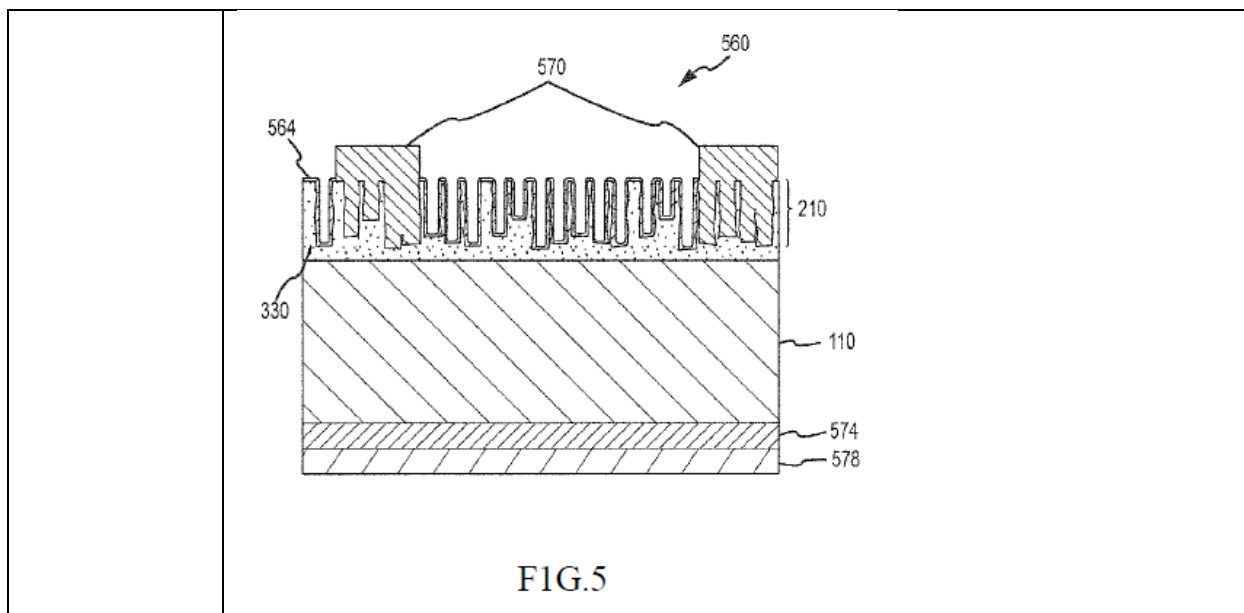
FIG. 5

Oh WO further states:

[0055] “Next, a front contact grid 570 may be formed such as by opening an array of slits in the passivating oxide on the front or textured surface side of the wafer/substrate and then covering these slits with Ti or the like such as by vacuum evaporation and lift-off of photoresist. The solar cell 560 may be further processed or be assembled with other cells to make solar modules, which in turn may be linked to form photovoltaic arrays. Of course, this is just one simplified method of fabricating a solar cell, and other techniques may be used to form a solar cell or other PV devices (such as a detector) that includes the wafer/device 450 of Figure 4.”

a p-n junction below the nanostructured area.

The EPO’s search opinion repeatedly references Figure 5 of Oh WO. A p-n junction is formed where Figure 5 shows 330 meeting 100. As ASGT appears to interpret the claims for infringement, the junction is below a nanostructured area.



35. Claim 1 of the '995 patent has substantial overlap with claim 1 of the '331 patent. The table above addresses the following elements of '995 patent claim 1: “A silicon nanostructured device comprising: a non-nanostructured substrate; a nanostructured area disposed on and contacting a surface of the substrate; a passivating layer coating the nanostructured area, the passivating layer comprising one of aluminum oxide, silicon dioxide, or silicon nitride; a first contact comprising a comb-like pattern of metal directly contacting the nanostructured area; a p-n junction below the nanostructured area.”

36. Claim 1 of the '995 patent further requires: “a second metal contact in electrical contact with the substrate.” Oh WO discloses a “back contact layer 578” that can be made of aluminum. Oh WO ¶ [0054]. Back contact layer 578 is shown in Figure 5 of Oh WO and discussed in ¶ 54, both of which were cited by the EPO in its search opinion.

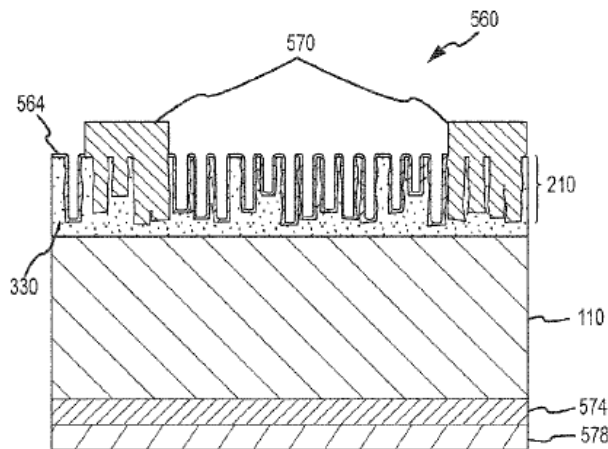


FIG.5

Oh WO Fig. 5

37. The evidence above also addresses all elements of '995 claim 11.

38. Thus, the EPO's identification of Oh WO as "particularly relevant" to the validity of an application that, in the applicant's words, "correspond[ed]" to the '640 patent, and its discussion of the disclosures of Oh WO, evidences that the applicant and attorneys/patent agents at Lando & Anastasi, including at least Marcie Black, John N. Anastasi, Marcus Browne, Matthew Grady, and/or Gregory K. Gerstenzang, were aware that Oh WO was material prior art to the '331 and '995 patents, and made a deliberate decision not to disclose it to the Patent Office.

39. The Patent Office would not have allowed at least one claim each from the '331 and '995 patents to issue had it been aware of Oh Wo, at least because it would have found a claim anticipated or obvious over that art, as shown by the discussion above.

40. Oh WO is not cumulative of other art or information before the examiner of the '331 and '995 patents. During prosecution of the '331 patent, the primary reference relied on by the examiner was U.S. Patent Pub. No. 2006/0207647 to Tsakalacos. The examiner concluded that Tsakalacos did not anticipate the issued claims. His reasoning included that "[a]ccording to Tsakalacos, the p-n junction is formed between the upper and lower segments of the nanowire"

and therefore would not meet the limitation “a p-n junction below the nanostructured area.” This argument had been urged by the applicant in an office action response submitted by the Lando & Anastasi, LLP firm signed by Gregory Gerstenzang and also listing John Anastasi on the signature block. The '995 patent is a continuation of the '331 patent with similar independent claims, and the prior art presented during prosecution of the '995 patent generally overlaps with what was presented during prosecution of the '331 patent.

41. Oh WO, in contrast, discloses forming a p-n junction that is not in the middle of a nanowire. In Figure 5 of Oh WO below, for example, the p-n junction can be formed where 110 meets 330. As ASGT appears to interpret the claims for infringement, this discloses “a p-n junction below the nanostructured area.” On information and belief, the applicant and its attorneys/patent agents, including Marcie Black and those at the Lando & Anastasi, LLP firm such as Mr. Gerstenzang and Mr. Anastasi, knew that Oh contained this disclosure and withheld it from the Patent Office during prosecution of the '331 and '995 patents.

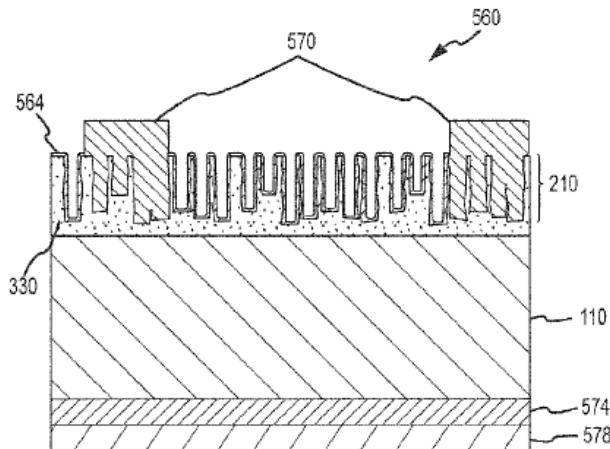


FIG.5

Oh WO Fig. 5

42. In sum, even though the same applicant, the same law firm, and overlapping lawyers/patent agents were prosecuting all three applications, which named nearly all the same

inventors and had similarities in subject matter, and even though Oh WO was disclosed in connection with the '640 patent after being identified by the EPO as “particularly relevant” and a search opinion read Oh WO onto an independent claim of a corresponding application to the '640 patent, no IDS disclosing Oh WO was ever submitted to the Patent Office during prosecution of the '331 and '995 patents. On information and belief, the examiner of the '331 and '995 patents was unaware of Oh WO.

43. On information and belief, the applicant and its attorneys involved in prosecution, including at least Marcie Black, John N. Anastasi, Gregory K. Gerstenzang, Marcus E. Browne, and/or Matthew Grady, specifically intended to deceive the Patent Office into believing that the claims of the '331 and '995 patents were patentable, by withholding Oh WO from the examiner during prosecution of the '331 and '995 patents.

44. Inequitable Conduct Defense: Any one or more acts set forth above are sufficient in and of itself/themselves to demonstrate inequitable conduct during the prosecution of the '331 and '995 patents that renders the asserted claims of those patents unenforceable.

45. Unclean Hands Defense: Furthermore, any one or more acts set forth above are sufficient in and of itself/themselves demonstrated that ASGT has unclean hands in relation to its assertion of the '331 and '995 patents that render the asserted claims of those patents unenforceable.

NINTH AFFIRMATIVE DEFENSE

(Inventorship)

46. To the extent that the alleged inventors did not invent the purported inventions, or to the extent that the actual inventors are not named as inventors, the Asserted Patents are unenforceable.

TENTH AFFIRMATIVE DEFENSE

(Claim Construction Estoppel)

47. Representations, omissions, and/or concessions made during prosecution of the Asserted Patents, and/or related U.S. or foreign patents and patent applications, limit the scope of

the claims of the Asserted Patents such that ASGT is estopped from construing the claims of the Asserted Patents to cover any accused Canadian Solar product.

ELEVENTH AFFIRMATIVE DEFENSE

(Relief Not in the Public Interest)

48. Complainant demands relief that is barred under 19 U.S.C. § 1337(d)(1) because the relief Complainant seeks is contrary to the public interest, to competitive conditions in the U.S. economy, and to the interests of U.S. consumers. There are strong public policy reasons for denying the relief Complainant seeks.

TWELFTH AFFIRMATIVE DEFENSE

(Standing)

49. Complainant lacks standing to pursue any claim for relief alleged in the Complaint because Complainant is not the sole and rightful owner of the Asserted Patents.

THIRTEENTH AFFIRMATIVE DEFENSE

(Other Defenses)

50. Canadian Solar further reserves the right to amend its Response to include other affirmative defenses that Canadian Solar may learn of during the course of this Investigation by way of discovery of additional evidence or otherwise.

REQUEST FOR RELIEF

WHEREFORE, by reason of at least the foregoing, Canadian Solar respectfully requests that the Commission:

3.1. Find that no violation of Section 337 exists by reason of any manufacture, importation, offer for sale, or sale by Canadian Solar as set forth in the Complaint and Notice of Investigation;

3.2. Determine that Canadian Solar has not manufactured, imported, sold for importation, or sold within the United States after importation any product covered by a valid and enforceable Asserted Claim of the ASGT Asserted Patents in this Investigation;

3.3. Dismiss the Complaint;

3.4. Deny Complainant's request for an exclusion order, cease and desist order, bond, or any other relief requested as to Canadian Solar or its products; and

3.5. Award Canadian Solar such other relief as the Commission deems appropriate based on the facts determined by the authority of the Commission.

Dated: August 18, 2021

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*Inc.; Recurrent Energy, LLC; and Recurrent
Energy SH Proco LLC*

VERIFICATION OF RESPONSE TO COMPLAINT AND NOTICE OF INVESTIGATION

I, Allen Wang, declare as follows:

I am the Vice President & General Counsel for the Americas at CSI Solar Co., Ltd., which is the Module & System Solutions Business subsidiary of Canadian Solar Inc., and I am duly authorized to sign this verification on behalf of Respondents. I have read **RESPONDENTS CANADIAN SOLAR INC.; CANADIAN SOLAR INTERNATIONAL LIMITED; CANADIAN SOLAR MANUFACTURING (CHANGSHU) CO. INC.; CANADIAN SOLAR MANUFACTURING (LUOYANG) INC.; CANADIAN SOLAR MANUFACTURING (THAILAND) CO. LTD.; CANADIAN SOLAR MANUFACTURING VIETNAM CO. LTD.; CANADIAN SOLAR SOLUTIONS, INC.; CANADIAN SOLAR CONSTRUCTION (USA) LLC; CANADIAN SOLAR (USA) INC.; RECURRENT ENERGY GROUP, INC.; RECURRENT ENERGY, LLC; AND RECURRENT ENERGY SH PROCO LLC (("CANADIAN SOLAR") RESPONSE TO COMPLAINANT ADVANCED SILICON GROUP TECHNOLOGIES, LLC'S COMPLAINT UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED, AND RESPONSE TO NOTICE OF INVESTIGATION ("the Response")** and am familiar with its contents.

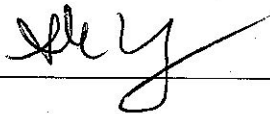
I do not have personal knowledge of every fact contained herein. To the best of my knowledge, information, and belief, formed after a reasonable inquiry within Canadian Solar for those facts for which I do not have personal knowledge, the foregoing responses and factual statements in the Response have evidentiary support or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery;

The claims and legal contentions in the Response 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

The Response is not being presented for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of litigation.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed this 17th day of August, 2021

By: 

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing of **RESPONDENTS CANADIAN SOLAR INC.; CANADIAN SOLAR INTERNATIONAL LIMITED; CANADIAN SOLAR MANUFACTURING (CHANGSHU) CO. INC.; CANADIAN SOLAR MANUFACTURING (LUOYANG) INC.; CANADIAN SOLAR MANUFACTURING (THAILAND) CO. LTD.; CANADIAN SOLAR MANUFACTURING VIETNAM CO. LTD.; CANADIAN SOLAR SOLUTIONS, INC.; CANADIAN SOLAR CONSTRUCTION (USA) LLC; CANADIAN SOLAR (USA) INC.; RECURRENT ENERGY GROUP, INC.; RECURRENT ENERGY, LLC; AND RECURRENT ENERGY SH PROCO LLC (COLLECTIVELY, “CANADIAN SOLAR”) RESPONSE TO COMPLAINANT ADVANCED SILICON GROUP TECHNOLOGIES, LLC’S COMPLAINT UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED, AND RESPONSE TO NOTICE OF INVESTIGATION AND EXHIBITS THERETO** were served on the following parties this 18th day of August, 2021, in the manner indicated below:

<p>The Honorable Lisa R. Barton Secretary to the Commission U.S. International Trade Commission 500 E Street, SW, Room 112 Washington, DC 20436</p>	<p>VIA EDIS</p>
<p>The Honorable David P. Shaw Administrative Law Judge U.S. International Trade Commission 500 E Street, SW Washington, DC 20436</p>	<p>VIA EMAIL Shaw337@usitc.gov Pyong.Yoon@usitc.gov</p>
<p>Vu Bui Investigative Staff Attorney The Office of Unfair Import Investigations U.S. International Trade Commission 500 E Street, S.W. Washington, D.C. 20436</p>	<p>VIA EMAIL vu.bui@usitc.gov</p>
<p>Jeffrey M. Telep KING & SPALDING LLP 1700 Pennsylvania Avenue, NW Suite 200 Washington, DC 20006</p> <p>Michael F. Heafey THE LAW OFFICES OF MICHAEL F. HEAFEY 1325 Howard Street, No. 160 Burlingame, California 94010</p>	<p>VIA EMAIL ASG_ITC_1271@kslaw.com ASG1271Service@TurnerBoyd.com</p>

<p>Karen Boyd Robert Kent TURNER BOYD LLP 702 Marshall Street, Suite 640 Redwood City, California 94063</p> <p><i>Counsel for Complainant Advanced Silicon Group Technologies, LLC</i></p>	
<p>Eric S. Namrow Morgan, Lewis & Bockius LLP 1111 Pennsylvania Ave, N.W. Washington, D.C. 20004-2541 Telephone: (202) 739-3000 Facsimile: (202) 739-3001</p> <p><i>Counsel for Respondents Boviet Solar Technology Co., Ltd., Ningbo Boway Alloy Material Co., Ltd., Boviet Renewable Power, LLC, and Boviet Solar USA Ltd.</i></p>	<p>VIA EMAIL ML-Boviet-ITC@morganlewis.com</p>
<p>S. Alex Lasher QUINN EMANUEL URQUHART & SULLIVAN, LLP 1300 I Street, NW, Suite 900 Washington, D.C. 20005</p> <p><i>Counsel for Respondents Hanwha Q CELLS & Advanced Materials Corp.; Hanwha Q Cells GmbH; Hanwha Q Cells Malaysia Sdn. Bhd.; Hanwha Q Cells (Qidong) Co., Ltd.; Hanwha Solutions Corporation; Hanwha Energy USA Holding Corp.; Hanwha Q Cells EPC USA LLC; Hanwha Q Cells America Inc.; Hanwha Q Cells USA Corp.; Hanwha Q Cells USA Inc.; HQC Rock River Solar Holdings LLC; and HQC Rock River Solar Power Generation Station, LLC</i></p>	<p>VIA EMAIL QE-HSC-1271@QUINNEMANUEL.COM</p>

/s/ Jerrice Thomas

Jerrice Thomas
Paralegal

RESPONDENTS CANADIAN SOLAR INC.; CANADIAN SOLAR INTERNATIONAL LIMITED; CANADIAN SOLAR MANUFACTURING (CHANGSHU) CO. INC.; CANADIAN SOLAR MANUFACTURING (LUOYANG) INC.; CANADIAN SOLAR MANUFACTURING (THAILAND) CO. LTD.; CANADIAN SOLAR MANUFACTURING VIETNAM CO. LTD.; CANADIAN SOLAR SOLUTIONS, INC.; CANADIAN SOLAR CONSTRUCTION (USA) LLC; CANADIAN SOLAR (USA) INC.; RECURRENT ENERGY GROUP, INC.; RECURRENT ENERGY, LLC; AND RECURRENT ENERGY SH PROCO LLC (COLLECTIVELY, “CANADIAN SOLAR”) RESPONSE TO COMPLAINANT ADVANCED SILICON GROUP TECHNOLOGIES, LLC’S COMPLAINT UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED, AND RESPONSE TO NOTICE OF INVESTIGATION

Exhibit A

Filed Separately as a confidential document

RESPONDENTS CANADIAN SOLAR INC.; CANADIAN SOLAR INTERNATIONAL LIMITED; CANADIAN SOLAR MANUFACTURING (CHANGSHU) CO. INC.; CANADIAN SOLAR MANUFACTURING (LUOYANG) INC.; CANADIAN SOLAR MANUFACTURING (THAILAND) CO. LTD.; CANADIAN SOLAR MANUFACTURING VIETNAM CO. LTD.; CANADIAN SOLAR SOLUTIONS, INC.; CANADIAN SOLAR CONSTRUCTION (USA) LLC; CANADIAN SOLAR (USA) INC.; RECURRENT ENERGY GROUP, INC.; RECURRENT ENERGY, LLC; AND RECURRENT ENERGY SH PROCO LLC (COLLECTIVELY, “CANADIAN SOLAR”) RESPONSE TO COMPLAINANT ADVANCED SILICON GROUP TECHNOLOGIES, LLC’S COMPLAINT UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED, AND RESPONSE TO NOTICE OF INVESTIGATION

Exhibit B

PATENTS

PATENT NO.		ISSUE DATE	INVENTOR
U.S. Patent	4,938,568	7/1990	Margerum, et al.
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