Hughes
Hubbard
& Reed

Hughes Hubbard & Reed LLP
1775 I Street, N.W.
Washington, D.C. 20006-2401
Telephone: +1 (202) 721-4600
Fax:+1 (202) 721-4646
hugheshubbard.com

October 11, 2017

NON-CONFIDENTIAL VERSION

Confidential Business Information Deleted
from pages 5 and 11 of the Brief; Exhibit List; Appendix A;
and Exhibits 2, 5, 6, 8, 31, 32, 33, 54 and 55.

VIA ELECTRONIC FILING (EDIS)

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

Re: *Crystalline Silicon Photovoltaic Cells (Whether or Not Partially or Fully Assembled into Other Products),* Inv. No. TA-201-75
SEIA's Posthearing Remedy Brief

Dear Secretary Barton:

On behalf of Solar Energy Industries Association ("SEIA") and its member company SunPower Corporation, we enclose for filing our Posthearing Remedy Brief in the above-captioned investigation.

Pursuant to 19 C.F.R. § 201.6, we respectfully request that certain information contained in this submission, identified by brackets, be accorded confidential treatment. The bracketed information contains highly sensitive confidential business proprietary information pertaining to company operations, production, capacity, sales, and shipments, as well as other information of

commercial value. The disclosure of such confidential business information would cause substantial harm to the competitive position of the above-mentioned companies and would impair the Commission's ability to obtain such information as is necessary to perform its statutory functions in the future. Accordingly, it is the type of information normally treated as confidential business information pursuant to 19 C.F.R. § 201.6(a).

The requisite certificate is enclosed in accordance with Sections 201.6 and 207.3 of the Commission's rules. This brief has been served by hand delivery on lead counsel for each of the parties listed on the attached public service list. Pursuant to the Commission's instructions, we request that the Commission treat the photocopied certification provided with this response as original, signed certification.

Should the Commission have any questions regarding this submission, please contact the undersigned.

Respectfully submitted,

/s/ Matthew R. Nicely

Matthew R. Nicely
Julia K. Eppard
Susie S. Park
Hughes Hubbard & Reed LLP
1775 I Street, NW, Suite 600
Washington, DC 20006

Counsel to SEIA and SunPower Corporation

COUNSEL CERTIFICATION

Crystalline Silicon Photovoltaic Cells (Whether or Not Partially or Fully Assembled into Other Products)

Inv. No. TA-201-75

In accordance with section 207.3(a) of the Commission's rules (19 C.F.R. § 207.3(a)), I, Matthew R. Nicely, of Hughes Hubbard & Reed LLP, counsel to Solar Energy Industries Association ("SEIA") and its member company SunPower Corporation, certify that under penalty of perjury under the laws of the United States of America and pursuant to the Commission's regulations:

(1) I have read the foregoing submission in the above referenced case;

(2) to the best of my knowledge and belief, the information contained therein is accurate and complete; and

(3) in accordance with section 201.6(b)(3)(iii) of the Commission's rules (19 C.F.R. § 201.6(b)(3)(iii)), information substantially identical to that for which we request confidential treatment is not available to the general public and the public disclosure of such information would cause substantial harm to the persons, firms, and other entities from which the information was obtained.

Matthew R. Nicely

DISTRICT OF COLUMBIA: SS
Sworn and subscribed to before me
this October 10, 2017.

Notary Public

My Commission expires: Oct 31, 2017

NOTARY PUBLIC DISTRICT OF COLUMBIA EXPIRES OCT 31, 2017

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PUBLIC
CERTIFICATE OF SERVICE

I, Matthew R. Nicely, hereby certify that a copy of the foregoing submission has been served this day, via EDIS and first class or air mail, upon the following persons:

Matthew J. McConkey, Esq.
On behalf of Suniva, Inc.
Mayer Brown LLP
1999 K Street, NW
Washington, DC 20006

Bernd G. Janzen, Esq.
On behalf of AES Distributed Energy, Inc., et al.
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Avenue, N.W.
Washington, DC 20036-1564

H. Deen Kaplan, Esq.
On behalf of NextEra Energy, and Canadian Solar, et al.
Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004

Kenneth G. Weigel, Esq
On behalf of Tesla Inc. and SolarCity Corporation
Alston Bird LLP
950 F Street, NW
Washington, DC 20004

Timothy C. Brightbill, Esq.
On behalf of SolarWorld Americas, Inc.
Wiley Rein LLP
1776 K Street, N.W.
Washington, D.C. 20006

Kristin H. Mowry, Esq.
On behalf of JA Solar International Co., Ltd., et al.
Mowry & Grimson, PLLC
5335 Wisconsin Avenue, NW
Suite 810
Washington, DC 20015

Diana Dimitriuc-Quaia, Esq.
On behalf of Goal Zero, LLC and Hanwha Q Cells
Arent Fox LLP
1717 K Street, NW
Washington, DC 20006

Kristen Smith, Esq.
On behalf of Sunforce Products Inc.
Sandler, Travis & Rosenberg, P.A.
1300 Pennsylvania Avenue, NW Suite 400
Washington, DC 20004

Kelly A. Slater, Esq.
On behalf of REC Solar Pte. Ltd., et al.
Appleton Luff Pte. Ltd.
1025 Connecticut Ave., NW
Suite 1000
Washington, DC 20036

Neil R. Ellis, Esq.
On behalf of Mission Solar Energy LLC, et al.
Sidley Austin LLP
1501 K Street, NW
Washington, DC 20005

Robert G. Gosselink, Esq.
On behalf of Changzhou Trina Solar Energy Co., Ltd., et al.
Trade Pacific PLLC
660 Pennsylvania Ave, SE, Suite 401
Washington, DC 20030

Daniel Porter, Esq.
On behalf of Korea Photovoltaic Industry Association, Government of Canada, et al.
Curtis, Mallet-Prevost, Colt & Mosle LLP
1717 Pennsylvania, NW
Washington, DC 20006

Daniel J. Gerkin, Esq.
On behalf of SunPower Corporation, et al.
Vinson & Elkins LLP
2200 Pennsylvania Avenue, N.W.
Suite 500 West
Washington, DC 20037

John P. Smirnow Esq.
On behalf of 8minutenergy Renewables
Smirnow Law
1717 K Street, NW
Suite 1120
Washington, DC 20006

Stephen J. Orava, Esq.
On behalf of Hemlock Semiconductor Operations LLC
King & Spaulding
1700 Pennsylvania Avenue, N.W.
Washington, DC 20006-4706

Kevin M. O'Brien, Esq.
On behalf of Depcom Power Inc.
Baker & McKenzie LLP
815 Connecticut Ave., N.W.
Washington, DC 20006

William J. Clinton, Esq.
On behalf of Boviet Solar Technology Co., Ltd., and Boviet Solar USA, Ltd., et al.
White & Case LLP
701 Thirteenth Street NW
Washington, DC 20005-3805

Lindsay B. Meyer, Esq.
On behalf of The Solaria Corporation
Venable LLP
600 Massachusetts Ave., NW
Washington, DC 20001

Fang Liu, First Secretary
On behalf of the Government of the People's Republic of China
Embassy of the People's Republic of China
2133 Wisconsin Avenue, NW
Washington, DC 20001

Ratheesh Malottu
On behalf of Vikram Solar
M.S. Pothal & Associates
F-12/4, 1st Floor
Malviya Nagar, New Delhi 110017
India

Jin Won Choi, Counsellor
On behalf of the Government of the Republic of Korea
Embassy of the Republic of Korea
2450 Massachusetts Avenue, NW
Washington, DC 20008

Deep Patel
On behalf of GigaWatt Inc.
Giga Watt, Inc.
310 E. Orangethorpe Avenue, Suite D
Placentia, CA 92870

Donald B. Cameron, Esq.
On behalf of Renewable Energy Systems Americas Inc., Red Sun Energy JSC
Morris, Manning & Martin, LLP
1401 Eye Street, NW Suite 600
Washington, DC 20005

Nguyen Phuong Nam
On behalf of the Vietnam Competition Authority Deputy Director General
Vietnam Competition Authority
Ministry of Industry and Trade
No. 25, Ngo Quyen Street
Hoan Kiem District
Ha Noi, Vietnam

Aristeo López, Esq.
On behalf of Ministry of the Economy of Mexico
Embassy of Mexico
1611 Pennsylvania Avenue, NW
Washington, DC 20006

Dr. Sibylle Zitko, Esq.
On behalf of the European Commission
The European Commission
2175 K Street, NW
Washington, DC 20037

Colin Bird, Minister Counsellor
On behalf of the Government of Canada
Minister Counsellor Embassy of Canada
501 Pennsylvania Avenue, NW
Washington, DC 20001

Reza Pehlevi Chairul
On behalf of the Republic of Indonesia
Embassy of Indonesia
2020 Massachusetts Ave., NW
Washington, DC 20036

Mohd Zahid Bin Abdullah, Director
On behalf of the Ministry of International Trade and Industry of Malaysia
Ministry of International Trade and Industry
Menara Perdagangan Antarabangsa dan Industri
No. 7, Jalan Sultan Haji Ahmad Shah
50480 Kuala Lumpur
Malaysia

Jeannie Kao
On behalf of Solartech Energy Corp.
Solartech Energy Corp.
8F., No. 760, Sec. 4, Bade Rd., Songshan Dist.,
Taipei 105, Taiwan

Prayoth Benyasut
On behalf of the Royal Thai Government
Office of Commercial Affairs
Royal Thai Embassy
1024 Wisconsin Avenue, NW
Suite 202
Washington, DC 20007

Hsiao-Chun Lu
On behalf of LOF Solar Corp.
LOF Solar Corp.
2F, No. 6, Prosperity Road 2
Hsinchu Science Park
Hsinchu 30078, Taiwan, R.O.C.

Mardjoko, Act. Director of Trade Defense
On behalf Government of Indonesia
The Government of Indonesia
Jalan M.1 Ridwan Rais NO.5
Jakarta 10110

Chien Chi Chao
On behalf of the Government of Taiwan
Taipei Economic and Cultural Representative Office in the United States
4301 Connecticut Avenue, NW
Washington, DC 20008

Chien Chi Chao, Economic Officer
On behalf of the Government of Taiwan, et al.
Taipei Economic and Cultural Representative Office in the United States
4301 Connecticut Avenue, NW
Washington, DC 20008

H. R. Gupta, Managing Director
On behalf of Indo Solar Ltd.
M.S. Pothal & Associates
F-12/4, 1st Floor
Malviya Nagar, New Delhi 110017
India

Brian L. Eftink, Esq.
On behalf of Wacker Polysilicon North America LLC and Wacker Chemie AG
Wacker Polysilicon North America LLC
553 Wacker Boulevard, NW
Charleston, TN 37310

Aluisio Gomien de Lima Campos
On behalf of Embassy of Brazil
Embassy of Brazil
3006 Massachusetts Ave., NW
Washington, DC 20008

Mrs. Pradnyawati
Counsel to Ministry of Trade
Director of Trade Defense
Ministry of Trade of Indonesia
Gedung II Lt. 10
JI. M. I. Ridwan Rais No. 5
Jakarta Pusat, Indonesia 10110

Thomas M. Beline, Esq.
On behalf of Auxin Solar Inc.
Cassidy Levy Kent (USA) LLP
2000 Pennsylvania Avenue, NW
Suite 3000
Washington, DC 20006

/s/ Matthew R. Nicely
Matthew R. Nicely

Dated: October 11, 2017

BEFORE THE
UNITED STATES INTERNATIONAL TRADE COMMISSION

In the Matter Of:

Crystalline Silicon Photovoltaic Cells (Whether or Not Partially or Fully Assembled into Other Products)

Non-Confidential Version

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Investigation No:
TA-201-75

SOLAR ENERGY INDUSTRIES ASSOCIATION ("SEIA")

AND SUNPOWER CORPORATION

POSTHEARING REMEDY BRIEF

AND ANSWERS TO THE COMMISSION'S QUESTIONS

Thomas J. Prusa
Professor and Chair
Department of Economics
RUTGERS UNIVERSITY

Matthew R. Nicely
Julia K. Eppard
Susie S. Park
HUGHES HUBBARD & REED LLP
1775 I Street, N.W.
Washington, D.C. 20006
Telephone: 202-721-4750

Counsel to SEIA and SunPower Corporation

October 10, 2017

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I. INTRODUCTION

This is a unique case, requiring a unique remedy. To our knowledge, the Commission has never faced a Section 201 case in which the product in question is subject to competition with so many substitutes whose prices are on a continual technologically driven downward trend. Nor has the Commission ever faced a case in which the price of the product in question is forced downward by the continual phasing down of government incentives. These factors alone make the case unique, but a further distinguishing factor is the domestic cell and module industry's ability to supply only a fraction of demand.

It is because of these peculiar conditions that the kinds of safeguard remedies most commonly recommended by the Commission are ill suited here. As we have explained, the petitioners' proposed illegal remedies would have a devastating impact on demand for solar equipment, leading to fewer solar installations and fewer solar jobs. All told, the effect of their proposed remedies would be tens of thousands of lost jobs in the greater solar industry, and more still in related industries. These include related manufacturing, which far exceeds direct cell and module manufacturing. Meanwhile, the cell and module producers will still not be profitable.

SEIA and its fellow respondents believe strongly that for cell and module producers to succeed they must follow in the footsteps of solar companies that have differentiated their products and achieved scale. We believe this is most smoothly achieved through federal technical assistance combined with a modest license fee, relying on the authority of Section 1102 of the Trade Agreements Act of 1979. Such a solution ensures both compliance with the Commission's duty under Section 201 as well as assistance to the domestic industry in adjusting to the injury found and thriving for years to come. SEIA's proposal does all this by calling on the Commission to recognize that creative but legally appropriate solutions are the best way to

thread the needle in a very difficult, high-stakes case, with tens of thousands of jobs hanging in the balance. The Commission has a tough job ahead as it seeks to disentangle the voluminous written materials of the parties, witnesses, and other stakeholders, and add to that its own analysis of the critical issues, which will inform the President's ultimate choice of remedies. We urge the Commission to stay true to both the letter and intent of the law, as it applies to both the Commission and the President, who are together bound in reaching a solution to this unique and complex case.

II. STATUTORY LIMITATIONS AND CONSIDERATIONS

As it considers its remedy recommendations to the President, the Commission must bear in mind the limitations and considerations set forth in the statute. Petitioners would have the Commission gloss over important legal concepts, promoting instead the application of traditional measures in a highly non-traditional case. Furthermore, the petitioners' aggressive, knee-jerk tariff, quota, and minimum price remedy proposals violate the statute on its face. Whether the President or the Commission holds responsibility for a given statutory obligation, it would be counterproductive for the Commission to recommend any remedy that would, if adopted, cause the President to violate the statute.

A. The Statute Calls for a Remedy that Facilitates Adjustment and Provides Greater Economic and Social Benefits than Costs

Chief among the relevant statutory requirements is the first sentence of Section 201, which states that if the Commission makes an affirmative injury finding, the President:

> shall take all appropriate and feasible action within his power which the President determines *will facilitate efforts by the domestic industry to make a positive adjustment to import competition* and *provide greater economic and social benefits than costs.*

19 U.S.C. §2251(a) (emphasis added). This provision is critical. It does not call upon the President to punish imported goods for causing injury to the domestic industry. Rather, it simply says that he or she is to facilitate the domestic industry's efforts to adjust to import competition. This statute is not aimed at remedying the effects of unfairly traded imports; its purpose is to find a way to assist an industry that has been unable to cope with competition from increased quantities of fairly traded imports. The responsibility of the Commission, therefore, is to provide the President with its best recommendation to help the domestic industry adjust to import competition, not to discipline fairly traded imports.[1]

In doing so, the Commission must bear in mind the final clause of Section 201(a), which requires any remedy to provide greater economic and social benefits than costs. The Commission is thus tasked with including in its report to the President a description of the short- and long-term effects that implementation of the recommended action is likely to have on the domestic industry, other industries, and on consumers.[2] A trade-restrictive remedy that seeks to discipline fairly traded imports at the significant expense of other businesses and tens of thousands of workers that now rely on imports – while also not helping the domestic industry to adjust to import competition – would fundamentally diverge from the clear intent of Congress.

[1] *See* 19 U.S.C. § 2252(f)(2)(G). Notwithstanding the petitioners' repeated exhortations to the contrary, Section 201 does not task the Commission with recommending a remedy that is focused on counteracting injurious imports. Rather, under 19 U.S.C. § 2252(e)(1), the Commission must recommend the action that would "address the serious injury" that it finds and be "most effective in facilitating the efforts of the domestic industry to make a positive adjustment to import competition." Had Congress wished to require the Commission to recommend a backward-looking remedy to counteract injurious imports, it would have chosen language parallel to that of the China-specific safeguard regime under Section 421 of the Trade Agreements Act of 1974. In Section 421 cases, pursuant to 19 U.S.C. § 2451(f), the Commission must "propose the amount of increase in, or imposition of, any duty or other import restrictions necessary to prevent or remedy the market disruption." The operative terms there are "import restrictions" and "market disruption," neither of which is an element of the Commission's charge, either expressly or in substance, under 19 U.S.C. § 2252(e)(1).

[2] *See* 19 U.S.C. § 2252(f)(2)(G).

B. The Statute Limits the Extent of the Relief

The statute also requires that the Commission recommend and the President choose a remedy that will: "address the serious injury" (19 U.S.C. §2252(e)(1)); "be most effective in facilitating the efforts of the domestic industry to make a positive adjustment to import competition" (19 U.S.C. §2252(e)(1); 2253(a)(1)(A)); and "not exceed the amount necessary to prevent or remedy the serious injury" (19 U.S.C. §2253(e)(2)). On top of these limitations that seek to ensure the remedy is carefully tailored to the injury found, the statute also limits any tariff relief to no more than 50 percentage points ad valorem over any existing duty (19 U.S.C. §2253(e)(3)), and limits any quantitative relief to a level no less than the average of quantity or value of imports in the most recent representative three years (19 U.S.C. §2253(e)(4)). Note that the current duty rate for CSPV modules and cells is zero.

III. TRADE RESTRICTIVE REMEDIES LIKE THOSE PROPOSED BY PETITIONERS WILL NEITHER FACILITATE THE DOMESTIC INDUSTRY'S ADJUSTMENT NOR PROVIDE GREATER ECONOMIC AND SOCIAL BENEFITS THAN COSTS

The petitioners have proposed trade-restrictive remedies that, in addition to violating the statute, will not realistically place the industry on a solid financial footing and will in turn cause significant harm to the members of the solar industry that rely on imported cells and modules.

A. The Petitioners' Proposals Violate Statutory Limitations

We provide in response to questions posed during the hearing detailed legal analysis of why the tariff, quota, and minimum price remedies proposed by the petitioners are not permitted by the statute. See **Appendix A** at **Questions 26-32**. None of these trade-restrictive remedies should be recommended to the President, because the statute prohibits him from adopting them.

B. Neither Petitioners' Illegal Proposals nor Statutory Maximum Remedies Will Make the Industry Profitable

SEIA has been working with federal, state, and local governments to promote solar as a viable energy source for forty-three years, since the days of the first oil embargo, and long before either petitioner or any commercial domestic industry was created. SEIA wants to see the entire industry thrive and has no interest in preventing petitioners from succeeding. But SEIA has, at this point, no reason to believe petitioners have a viable plan to succeed in what has become an extremely competitive global market. The Commission has no reason to believe it either.

The limited profitability analysis presented in the petitioners' prehearing briefs is insufficiently transparent and relies on assumptions that are not realistic.[3] Our initial review of this analysis suggested that petitioners were assuming that the industry consisted solely of the two petitioners. After all, the 2016 operating margin that appears in Table 1 of each petitioners' prehearing briefs is significantly higher than the Commission's Staff reports.[4] Although it now appears petitioners have included the entire industry, they made unexplained adjustments to various figures in the staff report to contrive a higher 2016 operating margin. Just as importantly, petitioners have adopted assumptions about future prices, volumes, and costs resulting from imposition of restrictive trade relief that are simply not realistic. Application of realistic assumptions regarding how high domestic prices will rise, how much demand will change, and how high module makers' costs will increase leads to the conclusion that the industry will remain unprofitable under either petitioners' proposal or a 50% ad valorem tariff.[5]

[3] SolarWorld Prehearing Remedy Brief at 36-38; Suniva Prehearing Remedy Brief at 18-20.
[4] Petitioners show a 2016 operating margin of [ ]%, whereas the Staff Report shows a 2016 operating margin of [ ]% for modules and [ ]% for cells. CR at III-44 to III-47, Tables III-18 and III-21.
[5] *See* **Appendix A** at **Question 20**.

Petitioners' assumptions are particularly unrealistic because they ignore the impact trade relief on cells will have on independent module producers' costs. Suniva claims that, if trade relief is imposed, it will bring back on line both its old ion implant facility plus its new PERC equipment, the combination of which will exceed the needs of its own module production capacity, therefore creating an abundance of cell production for sale to independent module assemblers.[6] The Commission should carefully scrutinize this claim for two reasons.

First, the reason Suniva purchased new PERC equipment is because its ill-fated 2011 decision to partner with Varian Technologies to develop ion implant cells[7] failed in the end, for reasons detailed in our injury briefs and affidavits. The 2011 era cell lines are irreparable in the opinion of the industry. As a result, it's questionable that Suniva will be able to build out cell capacity beyond its own internal module assembly needs.

Second, as also detailed in affidavits in our injury briefs, when Suniva's own manufacturing failed for technical and management reasons and it was unable to assemble its own cells, it shipped those cells to other countries for assembly rather than sell them to independent module producers. Suniva's scope definition for this case would still permit this.[8] Under such circumstances, the module producers will not have access to domestic cells and imported cells will nearly double in price. The notion that independent module producers will become profitable upon imposition of trade relief because of theoretical future excess cell production is therefore unfounded.

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6 Remedy Tr. at 172 (Mr. Card).

[7] "Suniva Collaborating with Varian Semiconductor on Advanced N-Type Solar Cell Using Boron Implantation," *BusinessWire* (Feb. 15, 2011), http://www.businesswire.com/news/home/20110215005497/en/Suniva-Collaborating-Varian-Semiconductor-Advanced-N-Type-Solar (**Exhibit 1**).

[8] According to the scope, any imported module using U.S.-made cells will be considered a U.S. module and not be subject to the safeguard remedy.

Professor Prusa presented a detailed analysis of the likely effect on the industry's profitability assuming imposition of the $0.40/watt tariff that Suniva originally proposed as well as the legally permitted 50% ad valorem tariff.[9] According to Professor Prusa's realistic assumptions, the domestic cell and module manufacturers will not reach profitability under either tariff remedy.[10] *Neither* remedy is sufficiently beneficial to justify the costs the greater solar industry will incur, as discussed below.

Part of the problem, of course, is that the petitioners have not presented a detailed plan for how they will adjust to import competition.[11] In fact, as the Commissioners learned during the hearing, petitioners have not yet developed a plan for how they will adjust.[12] If the petitioners had submitted plans to the Commission (as domestic washer producers have done in the other pending Section 201 action[13]), rather than waiting to share them with USTR,[14] perhaps the Commission would have a better idea of why and how the proposed relief would actually put the industry on a solid financial footing. Thus far, the numbers simply do not add up. Petitioners are therefore asking the Commission to impose trade-restrictive relief based on the hope and prayer that it will work, while the greater solar industry hangs in the balance.

C. The Costs that Will Be Incurred by Other Members of the Solar Industry Far Outweigh the Benefits

Petitioners promote the delusional belief that price increases resulting from their proposed import relief will have no impact on demand.[15] They do so without the benefit of any market analysis whatsoever. And, they do so for an understandable reason: their arguments only

[9] SEIA Prehearing Remedy Brief, Appendix A at 4-12.
[10] *See* **Appendix A** at **Question 20**.
[11] *See* **Appendix A** at **Questions 1-3**.
[12] Remedy Tr. at 115-17 (Mr. Brightbill), 118-20 (Mr. Card).
[13] Large Residential Washers: Adjustment Plan of Whirlpool Corp. (Oct. 3, 2017) (Inv. No. TA-201-076); Large Residential Washers Section 201 – GE Appliances Adjustment Plan (Oct. 3, 2017 (Inv. No. TA-201-076).
[14] Remedy Tr. at 116 (Mr. Brightbill).
[15] *See, e.g.*, SolarWorld Prehearing Remedy Brief at 41.

hope to work by ignoring fundamental partial equilibrium economics of supply, demand, and price. Accepting their position would also require the Commission to ignore massive amounts of factual evidence demonstrating the opposite.

Tossing aside economic fundamentals is particularly egregious where the domestic product participates in one of the most competitive markets in the world: the robust electricity markets of the United States. Here, natural gas, coal, wind, nuclear, and other electricity-generating resources produce electrons for entrance onto an excruciatingly competitive platform – the electric grid – to power our national economy. Price and reliability are key. To ignore the impact of higher prices on the demand for any one electricity generation source, to claim that these ultra-competitive markets are inelastic when they are almost completely elastic, demonstrates a complete failure to understand the market for petitioners' own products and the markets they seek to serve.[16] The highest quality CSPV products will not compete in these markets – whether residential (retail) or utility-scale (wholesale) – if their prices are not competitive with those of other sources of electrons. Further, any remnants of "inelasticity" in the market from state incentives are gradually and consistently declining—and even at the apex of such programs, CSPV providers faced stiff competition from other solar developers and other renewable sources depending on the state and the program.[17]

[16] As the Commission has learned from various experts in the market – including Amy Grace of BNEF and MJ Shiao of GTM Research – state government incentives are continuously declining, and many state renewable energy and/or solar-specific mandates have already been met. *See* Injury Tr. at 253 (Ms. Grace); Respondents' Injury Hearing Presentation at 9 (SEIA's Posthearing Injury Brief at Exhibit 2); Remedy Tr. at 212-13 (Mr. Shiao); Joint Respondents' Presentation, Safeguard Investigation Hearing on Remedy (Oct. 3, 2017) (hereinafter "Joint Respondents' Remedy Hearing Presentation") at 12 (**Exhibit 2**). Where such incentives or mandates still exist, CSPV-based projects must still compete against other renewable energy sources like wind and/or thin-film solar. The free market is therefore driving purchasing decisions, not government policy. To assume solar installations will continue to grow regardless of price is therefore pure fallacy.

[17] *See* Affidavit of Craig Cornelius, NRG (**Exhibit 55**); *see also* **Appendix A** at **Question 8**.

Fortunately, the Commission has on the record reliable economic analysis as well as sworn testimony of multiple members of the industry, which bely petitioners' demand forecasts. Even the economist whom petitioners cite in support of their false forecast rejects their reliance on his analysis as "wholly inappropriate."[18] For a more realistic assessment of the effect the proposed tariffs will have on future solar installations, the Commission has access to the forecasting undertaken by leading energy market analysis firms GTM Research and IHS Markit.[19] Although the two companies' baseline demand forecasts differ, their independent assessments of the impact that high tariffs will have on demand are remarkably similar.[20]

Several industry witnesses also testified to the effect the proposed tariffs will have on their businesses.[21] In doing so, they directly rebutted petitioners' simplistic argument about how modules represent a small proportion of total PV system pricing and therefore are of little relevance. As witnesses from residential providers Sunrun and SunCommon explained, even though modules may represent only 13-20% of total retail system costs, imposition of the tariffs would eliminate a substantial share of the cost savings for residential customers, disincentivizing a switch from traditional power to solar.[22] Investors are also demonstrating their unfavorable expectations for future demand by sending the stock price of both Sunrun and Vivint plummeting in response to this investigation.[23]

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18 *See* Affidavit of Kenneth Gillingham (**Exhibit 3**).
19 SEIA's Prehearing Remedy Brief at 38-49; Dr. Thomas Prusa, *The Economic Effects of CSPV Safeguard Tariffs: Industry Profitability, Deployment, and Estimated Job Effects* (SEIA's Prehearing Remedy Brief at Appendix A); SEIA Letter to the Commission, "Back-Up Documentation for Remedy Modeling" (Oct. 6, 2017).
20 *See* **Appendix A** at **Questions 12, 14**.
21 *See* SEIA's Prehearing Remedy Brief at Appendix B. This is also why numerous lawmakers and other public officials, including 92 members of Congress, have also warned of the tariffs' deadly blow to solar demand. *See* SEIA's Prehearing Remedy Brief at Exhibit 1 (corrected version filed Sep. 28, 2017).
22 Remedy Tr. at 338-39 (Mr. Fenster), 341 (Mr. Schulte)
23 *See* SEIA's Prehearing Remedy Brief at 38 n.136.

Meanwhile, the fact that modules already represent 33-44% of total system pricing for utility-scale projects demonstrates why representatives of the largest segment of the U.S. solar market adamantly presented their concerns as witnesses at both the injury and remedy hearings. Executives from NRG, Swinerton, 8minutenergy, AES, NextEra, and Depcom all testified to the dramatic decline in solar deployments that trade relief will cause for their segment of the industry.[24] Recall that the utility-scale segment of the market was where nearly all the growth in solar installations occurred in 2015 and 2016. Even a small increase in cost will wipe out that progress.

In addition to these residential and utility-scale users of modules, the Commission also heard from several solar equipment manufacturers who will be negatively affected by imposition of trade-restrictive relief on CSPV cells and modules and who reject the petition.[25] Importantly, these manufacturers, from household names like 200-year old DuPont to innovative startups like PanelClaw, together employ about 20 times more people than U.S. cell and module producers, even assuming Suniva and SolarWorld's production lines return to full capacity utilization.[26] The petitioners' claim that they represent "solar manufacturing" is simply untrue.[27]

The decline in demand is relevant to the Commission's consideration of the proper remedy for two reasons. First, a decline in demand reduces the market into which the domestic industry can sell. While reduced supply may put upward pressure on prices, the fall in demand will exert downward pressure. Although it can be assumed that reduced import supply will

[24] Remedy Tr. at 227-28 (Mr. Cornelius), 231-32 (Mr. Hershman), 248-49 (Mr. Masinter), 251-53 (Mr. O'Sullivan), 254-55 (Mr. Taul), 256 (Mr. Haubenstock)
[25] Remedy Tr. at 241-42 (Mr. Alyanalian), 244-45 (Mr. Roberts), 245-47 (Mr. Nicolaou).
[26] SEIA's Prehearing Remedy Brief at 45, Exhibit 24 (The Solar Foundation, *2016 National Solar Jobs Census* at 8).
[27] SolarWorld Prehearing Remedy Brief at 43.

increase the domestic cell and module producers' market share, such an increase will occur merely because the formula's denominator decreases, which is an empty accomplishment.

Second, as discussed in detail in Professor Prusa's study at Appendix A of SEIA's Prehearing Remedy Brief, the decline in demand reduces solar deployment, which reduces employment. The impact is substantial and far outweighs any modest increase in employment that may occur within the cell and module industry as a result of imposing the proposed tariffs.

Petitioners claim there will be a multiplier effect associated with the gains in employment by cell and module producers due to the tariffs. We disagree with the petitioners' multiplier. Even if we suspend reality to presume it to be correct, however, applying that multiple to the direct job effects calculated in Professor Prusa's analysis leads to job losses that would be even more massive than those we have projected. According to the petitioners, [ ] indirect jobs are dependent on every solar job.[28] Using this multiplier with the job impacts based on the highly disaggregated JEDI model, we estimate direct and indirect jobs losses of [ ] (under the petitioners' proposed remedy) to [ ] (under a 50% ad valorem tariff).[29]

As discussed in Section II above, these considerations must be taken into account as the Commission considers the relief to recommend to the President. A tariff that will devastate demand and, in turn, significantly reduce jobs – but not place the domestic industry on a solid financial footing – will not create more economic and social benefits than costs. The Commission should tap its trade policy expertise to recommend a remedy that avoids such costs, respects the law, and presents the President with an actionable plan that can aid the domestic industry while not severely disrupting the growth of solar power – a true American success story.

[28] SolarWorld's Prehearing Remedy Brief at 40 n.118.
[29] Job losses as reported in Joint Respondents' Remedy Hearing Presentation at slide 29, multiplied by [ ] *See* **Exhibit 2**.

IV. GIVEN THE UNIQUE CIRCUMSTANCES OF THIS CASE, THE COMMISSION SHOULD RECOMMEND ALTERNATIVE, NON-TRADE RESTRICTIVE REMEDIES LIKE THOSE PROPOSED BY SEIA

Nothing in the statute requires the Commission to recommend to the President a trade-restrictive remedy, and there is no better case in which to deny such relief than one like this where the impact has devastating ramifications. Alternative remedies that target federal technical assistance opportunities while raising funds for the domestic cell and module industry will benefit the industry far more than trade distorting tariffs and quotas. Meanwhile, such alternative remedies will prevent the dramatic decline of the overall industry on which cell and module producers depend for their future success. Other measures should stand on their own, and should not be used merely as adjuncts to trade relief.

Specifically, SEIA has proposed that the Commission recommend to the President targeted technical assistance and alternative sources of funding by means of a license fee, either pursuant to existing legislative authority under Section 1102 of the Trade Agreements Act or the President's negotiating authority under Section 202(e)(4)(A) of the Trade Act (19 U.S.C. §§ 2252(e)(3), 2253(a)(3)(G)). SEIA also supports several of the other forms of non-trade based relief that petitioners have proposed. We address these alternatives below.

A. The Industry Needs Technical Assistance

As discussed in SEIA's Prehearing Remedy Brief, the two petitioners need technical assistance in order to improve their competitive positions vis-à-vis imports.[30] If this does not happen while safeguard relief is in place, the industry will be in no better position four years from now than it is today, and it will not be prepared to compete with what will no doubt be even lower global CSPV cell and module prices by that time.

[30] *See* **Appendix A** at **Questions 35–36, Commission Posthearing Question 2**.

SolarWorld supports the further funding of cooperative research, development, demonstration, and deployment projects through the DOE SunShot program and asks the Commission to recommend that the President direct DOE to fund the full cost of its grants during the remedy period. SEIA would support this as well, but only in combination with technical assistance to ensure that federal funding is efficiently spent to help petitioners compete.[31]

B. Funds for Capital Expenditures Should Be Directed to the Industry

SEIA supports the funding of U.S. cell and module producers' capital expenditures through existing legislative authority. We also support creation of non-government sources of funding to amass the capital needed to invest in U.S. cell and module manufacturing.[32] We reiterate our support for the use of Section 1102 of the Trade Agreements Act of 1979[33] to collect, as part of a quota system, import license fees for distribution to the CSPV cell and module industry.[34] This provision provides wide latitude to the President to sell import licenses "under such terms and conditions as he deems appropriate." Those terms and conditions could be structured such that the quota is non-binding, the fees collected are placed into an escrow account, and the escrow account is used to fund investment that will enable domestic cell and module producers to scale up. In effect, the quota portion of Section 1102 would act as the means by which the President triggers his statutory authority create the license fee structure. The quota should either be set at levels that U.S. CSPV imports would not approach or have a cap structure that does no damage to the greater solar market if surpassed.

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[31] *See id.*
[32] *See* **Appendix A** at **Questions 32–34** (explaining in detail how license fee proposal would work).
[33] 19 U.S.C. § 2581 (amending the Trade Act of 1974).
[34] Potential alternative fee structures are presented in **Exhibit 4** and discussed in greater detail at **Appendix A** at **Questions 32–33**.

Note that the Commission may also recommend, pursuant to Section 202(e)(4)(A) of the Trade Act,[35] that the President "initiate international negotiations to address the underlying cause of the increase in imports of the article or otherwise to alleviate the injury or threat." Petitioners have proposed that this provision be used to address overcapacity.[36] In our view, rather than focus on the overcapacity red herring, any negotiations should focus on alleviating the domestic industry's injury through agreement of foreign suppliers and/or their affiliated importers to pay an export or import fee that would fund the U.S. industry's efforts to scale up and become competitive with foreign suppliers.

Assuming the Commission believes that the increase in foreign capacity contributed to the decline in CSPV costs and, in turn, prices, which placed downward pressure on U.S. prices and industry profits, then the best method to attain competitiveness is to differentiate products so they can achieve scale as quickly as possible. This will not occur as a result of the imposition of trade relief, which will not make the industry sufficiently profitable to generate the funds necessary to finance restructuring. Rather, the funds can be raised through collection of a small fee on imports or exports. In order to raise enough funds, however, the fee must remain small; if the fee is too large, import volumes will decline and the total funds raised will be insufficient to cover the needed investment.[37]

Whether funded via an import or export fee, the arrangement should include a distribution system that funds existing companies' capital investments in new technology or production levels while also incentivizing the flow of new investment into the United States.

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[35] 19 U.S.C. §2252(e)(4)(A).

[36] SEIA believes negotiations on overcapacity are unnecessary because of the massive growth in global demand. We discuss this in more detail in response to questions from the hearing. *See* **Appendix A** at **Question 24**.

[37] This is also why restrictive trade relief cannot be imposed in addition to the license fee. If trade is restricted, fewer funds will be collected for distribution to the industry.

This will ensure support from both existing and future suppliers who might otherwise not benefit from the scheme. Such a system would also provide the investment boost that sometimes accompanies imposition of safeguard tariffs, but which is unlikely to occur in this industry without a funding mechanism.[38]

C. Communities and Workers Also Deserve Adjustment Assistance

SEIA supports the use of existing adjustment assistance authority, which the Commission can recommend pursuant to 19 U.S.C. §2252(e)(2)(D), to benefit both communities and workers in the solar industry by better equipping them to compete with imports.

V. CONCLUSION

For all of the foregoing reasons, the Commission should decline to recommend restrictive trade relief and propose instead the adoption of remedies that are more certain to facilitate the domestic industry's adjustment and create greater economic and social benefits than costs.

Respectfully submitted,

Matthew R. Nicely
Julia K. Eppard
Susie S. Park

Hughes Hubbard & Reed, LLP
1775 I Street, N.W. Suite 600
Washington, DC 20006
matthew.nicely@hugheshubbard.com

Counsel to SEIA

[38] *See* Remedy Tr. at 342-43 (Mr. Cornelius).

APPENDIX A: ANSWERS TO QUESTIONS POSED AT THE HEARING AND WRITTEN QUESTIONS FROM THE COMMISSION

POSTHEARING BRIEF EXHIBITS

EXHIBIT	DESCRIPTION	Public/ CBI
1.	"Suniva Collaborating with Varian Semiconductor on Advanced N-Type Solar Cell Using Boron Implantation," *BusinessWire* (Feb. 15, 2011)	Public
2.	Joint Respondents' Presentation, Safeguard Investigation Hearing on Remedy (Oct. 3, 2017) ("Joint Respondents' Remedy Hearing Presentation")	CBI
3.	Affidavit of Kenneth Gillingham	Public
4.	License Fee Remedy vs. Tariff Remedy Scenarios	Public
5.	Calculations from GTM Research *U.S. Solar Market Insight, Full Report Q3 2017*: Module Price Share of Overall System Cost Q2 2017	CBI
6.	GTM Research, *U.S. Solar Market Insight: Full Report Q3 2017*	CBI
7.	IHS Markit Deployment / JEDI Jobs	Public

8.	Comparison of IHS Markit and GTM Research Deployment Effects	CBI
9.	U.S. Department of Energy, "Renewables Portfolio Standard," https://energy.gov/savings/renewables-portfolio-standard (Connecticut)	Public
10.	U.S. Department of Energy, "Renewables Portfolio Standard," https://energy.gov/savings/renewables-portfolio-standard-0 (New Jersey)	Public
11.	U.S. Department of Energy, "Renewables Portfolio Standard," https://energy.gov/savings/renewables-portfolio-standard-1 (California)	Public
12.	U.S. Department of Energy, "Renewables Portfolio Standard," https://energy.gov/savings/renewables-portfolio-standard-2 (Delaware)	Public
13.	Max Bloom, "San Francisco's Community Choice Aggregation Program for Clean Energy Goes Online," *Renewable Energy World* (May 18, 2016), http://www.renewableenergyworld.com/articles/2016/05/san-francisco-s-community-choice-aggregation-program-for-clean-energy-goes-online.html	Public
14.	Cape Light Compact Annual Report 2015, http://3jy14ha9u771r7qzn35g0s6c.wpengine.netdna-cdn.com/wp-content/uploads/2016/11/2015-AR-for-WEB-9-21A.pdf	Public
15.	Julia Pyper, "Solar Policy Actions Spiked in 2016, With a Focus on Net Metering," *GTM* (Feb. 2, 2017), https://www.greentechmedia.com/articles/read/distributed-solar-policy-actions-nc-state-clean-energy-technology-50-states	Public
16.	"Net Metering for Home Solar Panels: What is Net Metering?", *Energy Sage*, https://www.energysage.com/solar/101/net-metering-for-home-solar-panels	Public
17.	"50 States of Solar: Q2 2017," North Carolina Clean Energy Technology Center, https://nccleantech.ncsu.edu/wp-content/uploads/Q22017-SolarExecSummary-v.2.pdf	Public

18.	Chris Warren, "The National Debate Unfolding Over PURPA and Solar Power," *GTM* (Aug. 28, 2017), https://www.greentechmedia.com/articles/read/national-debate-purpa-solar-power	Public
19.	Kim Riley, "Trump's energy reform winds could blow over PURPA," *Daily Energy Insider* (July 5, 2017), https://dailyenergyinsider.com/featured/6262-trumps-energy-reform-winds-blow-purpa	Public
20.	Christian Roselund, "North Carolina governor signs PURPA overhaul bill," *PV Magazine* (July 27, 2017), https://pv-magazine-usa.com/2017/07/27/north-carolina-governor-signs-purpa-overhaul-bill	Public
21.	Jeff Lovinger, "PURPA: Current issues for generators to qualify for payment under PURPA and calculation of avoided costs," National Regulatory Research Institute, http://legisweb.state.wy.us/InterimCommittee/2017/07-0518APPENDIXE-10.pdf	Public
22.	"Idaho PUC shortens PURPA contracts," *Capital Press* (Aug. 20, 2015), http://www.capitalpress.com/Idaho/20150820/idaho-puc-shortens-purpa-contracts	Public
23.	Krysti Shallenberger, "Utah regulators slim down PURPA contracts to 15 years," *Utility Dive* (Jan. 8, 2016), http://www.utilitydive.com/news/utah-regulators-slim-down-purpa-contracts-to-15-years/411790	Public
24.	Ian Clover, "Intersolar Europe: Global solar market could grow 80 GW in 2017, Europe by 8 GW, says SolarPower Europe" *PV Magazine* (May 30, 2017)	Public
25.	Ian Clover, "European solar demand fell 20% in 2016, says SolarPower Europe," *PV Magazine* (Feb. 3, 2017)	Public
26.	Letter to the European Commissioner for Trade (Oct. 11, 2016)	Public

27.	"What inhibits market growth for solar panels in the EU? Frank Niendorf shares his insights," *pv Europe* (Apr. 5, 2016)	Public
28.	"Utilization of European solar module factories declined to 40% – SolarPower Europe calls for removal of the MIP," *pv Europe* (Jan. 18, 2017)	Public
29-A.	U.S. CSPV Manufacturing Facilities	Public
29-B.	U.S. Independent CSPV Module Manufacturers	Public
30.	"Tesla Starts Production of Solar Cells in Buffalo," *Bloomberg* (Aug. 31, 2017), https://www.bloomberg.com/news/articles/2017-08-31/tesla-starts-production-of-solar-cells-in-buffalo	Public
31.	GTM Research, *PV Pulse – July 2017*	CBI
32.	GTM Research, *PV Pulse – September 2017*	CBI
33.	Bloomberg New Energy Finance (BNEF), [ ]	CBI
34.	International Energy Agency (IEA), *Renewables 2017: Analysis and Forecasts to 2022, Executive Summary* (Oct. 2017), https://www.iea.org/media/publications/mtrmr/Renewables2017ExecutiveSummary.PDF	Public
35.	Mark Hutchins, "AECEA: China installations to surpass 40 GW in 2017," *PV Magazine* (Aug. 22, 2017), https://www.pv-magazine.com/2017/08/22/aecea-china-installations-to-surpass-40-gw-in-2017	Public

36.	"China Is Adding Solar Power at a Record Pace," *Bloomberg* (July 18, 2017), https://www.bloomberg.com/news/articles/2017-07-19/china-adds-about-24gw-of-solar-capacity-in-first-half-official	Public
37.	*Conversion of Specific and Compound Rates of Duty to Ad Valorem Rates: Report to the President on Investigation No. 332-99 under Section 332 of the Tariff Act of 1930, as Amended*, USITC Pub. 896 (July 1978)	Public
38.	Memorandum to the USITC from General Counsel, *Remedy Recommendations in Section 201 Cases* (July 3, 1984)	Public
39.	"First Solar Is Differentiating Itself from the Competition," *Seeking Alpha* (Dec. 8, 2015), https://seekingalpha.com/article/3740696-first-solar-differentiating-competition	Public
40.	Richard Martin, "How First Solar Is Avoiding the Industry's Turmoil," *MIT Technology Review* (Apr. 20, 2016), https://www.technologyreview.com/s/601219/how-first-solar-is-avoiding-the-industrys-turmoil	Public
41.	Kevin Bullis, "GE Stalls Solar Factory Construction, *MIT Technology Review* (July 5, 2012), https://www.technologyreview.com/s/428422/ge-stalls-solar-factory-construction	Public
42.	Ucilia Wang, "American Solar Industry's Secret Sauce: Innovation," *GTM* (Dec. 12, 2008), https://www.greentechmedia.com/articles/read/american-solar-industrys-secret-sauce-innovation-5357#gs.nmCbO=s	Public
43.	MJ Shiao and Shayle Kann, "6 Ways to Encourage American Solar Manufacturing Without Import Duties," *GTM* (Sep. 25, 2017), https://www.greentechmedia.com/articles/read/5-ways-to-encourage-us-solar-manufacturing-without-import-duties#gs.9wCzje0	Public

44.	"The SunShot Initiative: Making Solar Energy Affordable for All Americans," SunShot, Department of Energy (June 2016), https://energy.gov/sites/prod/files/2016/06/f32/SunShot-factsheet-6-10_final-508.pdf	Public
45.	Molly Riddell, "Driving Solar Innovations from Laboratory to Marketplace," *Continuum Magazine*, Issue 3, NREL (Nov. 2012), https://www.nrel.gov/continuum/spectrum/photovoltaics.html	Public
46.	Department of Energy ("DOE"), "Solar Energy Technologies Office Support for Crystalline Silicon Research: Portfolio Connections and the National Renewable Energy Laboratory"	Public
47.	DOE, SunShot Initiative, "Crystalline Silicon Photovoltaics Research," https://www.energy.gov/eere/sunshot/crystalline-silicon-photovoltaics-research	Public
48.	Joyce Laird, "SunShot: Solar PV's falling costs," *Renewable Energy Focus* (Aug. 23, 2011)	Public
49.	Editorial Board, "Solar Power Death Wish: Subsidies aren't enough. Now solar-panel makers want tariffs," *Wall Street Journal* (Sep. 15, 2017)	Public
50.	List of SunShot's CSPV projects	Public
51.	NREL, National Center for Photovoltaics (NCPV), https://www.nrel.gov/docs/gen/fy17/68685.pdf	Public
52.	NREL, "Working With NREL" (May 2014), https://www.nrel.gov/docs/gen/fy14/60986.pdf	Public
53.	Affidavit of Jeffrey Kalikow, Recurrent Energy, LLC	Public
54.	Affidavit of Brian Evans, RES Americas, Inc.	CBI

55.	Affidavit of Craig Cornelius, NRG Renewables	CBI

Appendix A

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COMMISSIONERS' QUESTIONS AT THE REMEDY HEARING

A. Adjustment Plans

1. CHAIRMAN SCHMIDTLEIN (Tr. at 114): So I wanted to start with the question about the adjustment plan and the commitments under the statute and the Respondents have made a point of arguing that your failure to file an adjustment plan or commitments has deprived the Commission of a key source of information. So I guess my first question is why haven't we seen either an adjustment plan or commitments because it's my understanding that that's fairly typical in a safeguard, that you would see that from the domestic industry. And secondly, I guess I'd like to talk about what your plans are for adjusting.

VICE CHAIRMAN JOHANSON (Tr. at 124): I agree with Chairman Schmidtlein concerning the use of the industry that would be in an adjustment plan. I know that such plans are optional under the statutes, but I believe that the views of the domestic industry found in an adjustment plan would be helpful to the Commission in determining remedy, so if you all could perhaps address in the post-hearing brief I would appreciate it.

COMMISSIONER BROADBENT (Tr. at 138): Thank you. Mr. Brightbill, sorry, I didn't quite get your answer on the adjustment plan. I was probably not paying as much attention, but I'm just trying to understand with, you know, a company with your resources and legal representation, why you couldn't have given us a basic adjustment plan that would have been a little more detailed than what we have in terms of what kind of investment, what your production goals will be, employment, what kind of materials you're going to be purchasing, sales and a marketing plan, something that we could look at, that would be a little more comprehensive?

ANSWER: SEIA remains just as perplexed as the Commissioners as to why petitioners chose not to provide the Commission with adjustment plans either within the statutory timeframe or even prior to the Commission's hearing. SEIA formally requested that the Commission consider in its injury determination the fact that petitioners had failed to submit their adjustment plans within the statutory timeframe,[1] and again explained the importance of such adjustment plans in

[1] *See* "Re: Crystalline Silicon Photovoltaic Cells (Whether or Not Partially or Fully Assembled into Other Products), Inv. No. TA-201-075; Request for Action – Commission Consideration of Petitioners' Failure to Submit Adjustment Plans" (Sep. 21, 2017).

SEIA's Prehearing Remedy Brief.[2] We expected petitioners to act as promptly as possible, in a cooperative spirit, and with due respect to the process in place to correct their mistake. Thus, the Commission still lacks adequate information in order to perform its statutory duty of recommending the action that would "be most effective in facilitating the efforts of the domestic industry to make a positive adjustment to import competition."[3] Suniva formally declined to submit an adjustment plan to the Commission.[4] For its part, SolarWorld claimed that "it would have made little sense" for the domestic industry to "prematurely" present an adjustment plan within the 120-day statutory timeframe,[5] and then proceeded to provide only platitudes, not plans, in the last few pages of its prehearing remedy brief.[6]

As Chairman Schmidtlein[7] and Commissioner Broadbent[8] pointed out during the hearing, the short section in SolarWorld's Prehearing Remedy Brief that purportedly provides an adjustment plan[9] merely references the minimal, three- to four-line long responses to Question II-5 in the U.S. Producer Questionnaire about anticipated adjustments under import relief, and

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2 SEIA's Prehearing Remedy Brief at 13–17.

3 *See* 19 U.S.C. § 2252(e)(1).

4 *See* Letter from Matthew McConkey of Mayer Brown to the Commission, "Re: Petition for Global Safeguard Relief Pursuant to Sections 201-202 of the Trade Act of 1974 - Crystalline Silicon Photovoltaic Cells (Whether or Not Fullv Assembled into Other Products) : Response to SEIA Letter Regarding Adjustment Plans" (Sep. 19, 2017) (justifying its failure to submit an adjustment plan by arguing that such a plan would be part of Suniva's restructuring plan, which is submitted to the bankruptcy court, not the Commission).

5 SolarWorld's Prehearing Remedy Brief at 50. SolarWorld argues that "a robust, realistic plan {sic} adjustment plan depends on the scope of the injury determination, as well as on a determination of what relief efforts may be most effective given that scope." *Id.*

6 *Id.* at 54-56.

7 *See* Remedy Tr. at 116 (Chairman Schmidtlein addressing Mr. Brightbill) ("Okay, didn't really answer my question, but -- so I'm looking at it. This in the Annex D-10, that's the information you're talking about, right? And we have roughly . . . four lines for one company and . . . four lines for the other company. Do you think you all can expand on this in the post-hearing brief in terms of a timeline and any more detail with regard to the actual steps that you plan to take to put some of these adjustments in action?").

8 *See* Remedy Tr. at 138 (Commissioner Broadbent addressing Mr. Brightbill) ("I'm just trying to understand with, you know, a company with your resources and legal representation, why you couldn't have given us a basic adjustment plan that would have been a little more detailed than what we have in terms of what kind of investment, what your production goals will be, employment, what kind of materials you're going to be purchasing, sales and a marketing plan, something that we could look at, that would be a little more comprehensive?).

9 SolarWorld's Prehearing Remedy Brief at 54–56 (Part VII.B).

does not provide basic details regarding the steps to be taken. Nor does it provide sufficient support for the amount of money that is supposed to "permit the U.S. industry to compete more effectively against imports."[10] There is little to no explanation regarding how petitioners are planning to fund the specified investment amount, nor is there a timeline showing when such investment will be secured and made. It is no wonder that several Commissioners did not consider that short section of SolarWorld's prehearing remedy brief to be an adjustment plan, and asked petitioners why they failed to submit any such plan. Any information to be gleaned from that section, [

], falls short of providing to the Commission the kind of "robust, realistic"[11] and "achievable"[12] plan that even SolarWorld itself recognizes should be provided so that the Commission can determine which remedy would "be most effective in facilitating the efforts of the domestic industry"[13] for positive adjustment.

2. CHAIRMAN SCHMIDTLEIN (Tr. at 115): Do you think there's any difference between an adjustment plan and commitments in the statute?

ANSWER: In the course of an investigation, the Commission is required to "seek information . . . on actions being taken, or planned to be taken, or both, by firms and workers in the industry to make a positive adjustment to import competition."[14] Moreover, if the Commission makes an affirmative injury determination, the Commission is required to recommend the action that would address the serious injury (or threat thereof) to the domestic industry and "be most effective in facilitating the efforts of the domestic industry to make a

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10 *Id.* at 54.
11 *Id.* at 50.
12 *Id.* at 51.
13 19 U.S.C. § 2252(e)(1).
14 19 U.S.C. § 2252(a)(6)(A).

positive adjustment to import competition."[15] Similarly, the President is required to take action that he determines will "facilitate efforts by the domestic industry to make a positive adjustment."[16] Building a corporate plan for success for any entity that has fallen into bankruptcy is no small feat. Perhaps that is why we did not see these plans from Suniva and SolarWorld. But, this emphasizes once again the importance of the development of a plan going forward after consultation with those who know solar best and have the greatest guidance to offer: the DOE SunShot program and the national laboratories, especially the National Renewable Energy Laboratory. *See* **Question 36** and **Commission Posthearing Question 2**.

An "adjustment plan" provides such information on the domestic industry's present and planned efforts to make a positive adjustment and is generally submitted to the Commission (as well as to the United States Trade Representative ("USTR")) by a petitioner.[17] Under 19 U.S.C. § 2252(a)(6)(B), regardless of whether a petitioner has submitted an adjustment plan — which, in the instant case, Suniva and SolarWorld have not — if the Commission makes an affirmative injury determination, any person or entity, including firms in the domestic industry, may submit to the Commission "commitments regarding actions {they} intend to take to facilitate positive adjustment to import competition." The table below compares adjustment plans and commitments:

	Adjustment Plans	**Commitments**
Submitted by	Petitioner(s)	Any person or entity, including but not limited to firms in the domestic industry

[15] 19 U.S.C. § 2252(e)(1).
[16] 19 U.S.C. § 2253(a)(1)(A).
[17] 19 U.S.C. §2252(a)(4) ("A petitioner under paragraph (1) may submit to the Commission and the United States Trade Representative . . . , either with the petition, or at any time within 120 days after the date of filing of the petition, a plan to facilitate positive adjustment to import competition.").

	Adjustment Plans	**Commitments**
Submitted to	• Commission • USTR • President (through the Commission in its report)	• Commission • President (through the Commission in its report)
Timing of submission	Within 120 days after the date of filing of the petition	Between the date of the Commission's affirmative injury determination and the date of the Commission's report to the President (which may not be more than 180 days after the filing of the petition[18])
Is the Commission required to take the adjustment plan or commitments into account in making its remedy recommendation to the President? (19 U.S.C. §2252(e)(5)(B)[19])	Yes	Yes
Is the Commission required to include the adjustment plan or commitments in its report to the President? (19 U.S.C. § 2252(f)(2)[20])	Yes	Yes
Is the President required to take the adjustment plan or commitments into account in determining what action to take? (19 U.S.C. § 2253(a)(2)[21])	Yes	Yes

[18] 19 U.S.C. § 2252(f)(1) ("The Commission shall submit to the President a report on each investigation undertaken under subsection (b). The report shall be submitted at the earliest practicable time, but not later than 180 days (240 days if the petition alleges that critical circumstances exist) after the date on which the petition is filed, the request or resolution is received, or the motion is adopted, as the case may be.").

[19] 19 U.S.C. § 2252(e)(5)(B)(ii) provides: "For purposes of making its recommendation under this subsection, the Commission shall . . . take into account the objectives and actions specified in the adjustment plan, if any, submitted under subsection (a)(4) {and} any individual commitment that was submitted to the Commission under subsection (a)(6) . . . ."

[20] 19 U.S.C. § 2252(f)(2) provides (emphasis added):
The Commission shall include in the report . . . the following:
(A) A copy of the *adjustment plan*, if any, submitted under section 2251(b)(4) of this title.
(B) *Commitments submitted*, and information obtained, by the Commission regarding steps that firms and workers in the domestic industry are taking, or plan to take, to facilitate positive adjustment to import competition.

[21] 19 U.S.C. § 2253(a)(2) provides (emphasis added):
"In determining what action to take under paragraph (1), the President shall take into account . . . the efforts being made, or to be implemented, by the domestic industry (including the efforts included in *any*

The legislative history shows that the Senate bill had originally *required* the Commission to seek to obtain commitments from "such persons and entities that the ITC considers appropriate, regarding actions such persons and entities intend to take to promote positive adjustment."[22] As explained in SEIA's Prehearing Remedy Brief, the Senate bill had similarly required petitioners to submit adjustment plans.[23]

In summary, under the safeguard statute, both adjustment plans and commitments seem to serve the common purpose of informing the Commission and the President of the steps that the domestic industry have been or will be taking to facilitate positive adjustment to import competition: such information is crucial for the key task before the Commission and the President, *i.e.*, determining which remedy options would best facilitate the domestic industry's efforts for positive adjustment. The main difference between adjustment plans and commitments is the identity of the submitter and the statutory submission period. Any commitments submitted by an individual person or entity at this late date would be useful to the Commission and the President *only if* they are reliable, concrete, and realistic.

3. COMMISSIONER BROADBENT (Tr. at 139, responding to statement by Mr. Brightbill that SolarWorld will consult with the USTR): Well, I mean, what would they tell you in terms of your production? . . . But just tell me here, what is the Commerce Department or USTR going to tell you that will inform you?

COMMISSIONER BROADBENT (Tr. at 140): Okay, but I mean, our responsibility here is to try to figure out what the world's look like in four years if we put in place your requested adjustment measures. And I mean, adjustment measures, but your remedy. And it's kind of difficult if it's a moving target like that, right?

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adjustment plan or commitment submitted to the Commission under section 2252(a) of this title) to make a positive adjustment to import competition{.}"

[22] See *Omnibus Trade and Competitive Act of 1988*, Conference Report to Accompany H.R. 3, H. Rept. 100-576 at 665 (Apr. 20, 1988).

[23] *See* SEIA's Prehearing Remedy Brief at 16.

ANSWER: During the hearing, Mr. Brightbill indicated that part of the reason SolarWorld failed to submit an adequate adjustment plan was that SolarWorld would want to consult with the USTR and "other agencies" as part of the process "to make sure what {SolarWorld is} recommending is realistic."[24] By referencing the USTR and other agencies, Mr. Brightbill appears to have in mind 19 U.S.C. § 2252(a)(5)(A). However, a careful reading of that provision shows that a petitioner submitting an adjustment plan "may consult with the Trade Representative {USTR} and the officers and employees of any Federal agency" that the USTR considers as appropriate "*before* submitting an adjustment plan under paragraph (4)."[25] Paragraph (4) of 19 U.S.C. § 2252(a), as the Commissioners are well aware, requires that any adjustment plan be submitted within 120 days of the petition. We are not aware, and petitioners do not allege, that petitioners consulted or made a request to consult[26] the USTR or any other federal agencies prior to the 120th day after the petition was filed.

Moreover, Mr. Brightbill's reference to consultations overlooks the USTR's role under the statute. 19 U.S.C. § 2252(a)(5)(A) provides that such consultations would be "for purposes of evaluating the adequacy of the proposals being considered for inclusion in the {adjustment} plan in relation to specific actions that may be taken" as a safeguard remedy. In other words, the USTR (and any other agencies considered appropriate by the USTR) would provide input regarding the potential adequacy of a petitioner's proposal in the context of potential relief.[27] If

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[24] Remedy Tr. at 139.

[25] 19 U.S.C. § 2252(a)(5)(A) (emphasis added).

[26] *See* 19 U.S.C. § 2252(a)(5)(B) ("A request for any consultation under subparagraph (A) must be made to the Trade Representative. Upon receiving such a request, the Trade Representative shall confer with the petitioner and provide such assistance, including publication of appropriate notice in the Federal Register, as may be practicable in obtaining other participants in the consultation. No consultation may occur under subparagraph (A) unless the Trade Representative, or his delegate, is in attendance.").

[27] According to the legislative history, the provision for consultations with the USTR was part of the House bill for the 1988 amendment of the Trade Act. *See Omnibus Trade and Competitiveness Act of 1988, Conference Report to Accompany H.R. 3*, H. Rept. 100-576 (Apr. 20, 1988) at 665. The Conference Report provides: "The

SolarWorld had genuinely wanted to take advantage of the opportunity to consult with the USTR for guidance,[28] it would have prepared adjustment plan proposals that are sufficiently concrete for the USTR to review and evaluate for adequacy, and would have done so prior to expiration of the 120-day statutory timeframe for the submission of an adjustment plan to the Commission.

purpose of the consultations shall be to consider the adequacy of proposed adjustment measures in the context of any relief which might be provided and thereby enable the petitioner to develop a more effective statement of adjustment measures." *Id.*

[28] Remedy Tr. at 139-40 ("I think that part of the adjustment plan is intended to gather guidance from other agencies as well and input into the process, which we very much want to do. . . . {W}e want to consult with the broadest number of parties as possible to put the remedy forward.").

B. Legal Relevance of Impact on Other Industries and Customers

4. COMMISSIONER WILLIAMSON (Tr. at 194): Suniva, in your prehearing brief at page 21 you state: For purposes of remedy, as the Commission knows it is not tasked with considering the impact of relief on the entire U.S. economy, including customers. SEIA in its prehearing brief notes at page 21 that under the statute the Commission is required in its report on remedy to provide a description of the short- and long-term effects of the implementation of its recommended action of the domestic industries and consumers. Can you reconcile these two statements?

ANSWER: According to the Commission's General Counsel, "{a}s a matter of policy the Commission should recommend only such relief as the President is authorized to provide . . . . A recommendation of relief inconsistent with the President's Section 203 authority, while not expressly prohibited by the statute, would not provide the President with the guidance intended by Congress."[29] Regarding the impact of relief on the entire U.S. economy, {T}he Commission should be aware of these considerations and may take certain of them into account in determining what relief is 'necessary.' While the Commission's focus must be on the relief necessary to prevent or remedy injury, the Commission often has before it several alternative forms of relief which would provide the desired result. In selecting a form of relief, it seems appropriate to consider, among other things, the impact that the different forms would have on consumers and competition."[30]

Consideration of the broader impact of any safeguard measures permeates the statute. Below is a list of every provision of the Trade Act that guides the Commission and the President in determining whether trade remedy is warranted:[31]

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[29] USITC Memorandum to the Commission from General Counsel, "Remedy Recommendations in Section 201 Cases," USITC GC-H-190, at 1 (July 3, 1984) (**Exhibit 38**) (SolarWorld's Prehearing Remedy Brief at Exhibit 15).

[30] *Id.* at 3.

[31] Many of these provisions were added in 1988 when the Trade Act of 1974 was amended. The Congress recognized that there may be circumstances "when any action that would facilitate adjustment would result in greater economic and social costs than benefits. If there is such a case, the President should not be forced into

- 19 U.S.C. § 2251(a): "{T}he President, in accordance with this part, shall take all appropriate and feasible action within his power which the President determines will facilitate efforts by the domestic industry to make a positive adjustment to import competition *and provide greater economic and social benefits than costs*." (Emphasis added.)

- 19 U.S.C. § 2252(a)(3): "{T}he Commission shall afford interested parties and *consumers* an opportunity to be present, to present evidence, to comment on the adjustment plan, if any, . . . to respond to the presentations of other parties and *consumers*, and otherwise to be heard."[32] (Emphasis added.)

- 19 U.S.C. § 2252(f)(2): "The Commission *shall include* in the report {the President} the following: . . . (G) A description of –

  (i) the short- and long-term effects that implementation of the action recommended under subection (e) is likely to have on the petitioning domestic industry, on other domestic industries, and on consumers, and

  (ii) *the short- and long-term effects of not taking the recommended action* on the petitioning domestic industry, its workers and the *communities* where production facilities of such industry are located, and *on other domestic industries*." (Emphasis added.)

- 19 U.S.C. § 2253(a)(1)(A): "*After receiving a report under section 2252(f)* of this title containing an affirmative finding regarding serious injury, or the threat thereof, to a domestic industry, the President shall take all appropriate and feasible action within his power which the President determines will facilitate efforts by the domestic industry to make a positive adjustment to import competition *and provide greater economic and social benefits than costs*." (Emphasis added.)

- 19 U.S.C. § 2253(a)(2): "In determining what action to take under paragraph (1), the President *shall take into account* . . .

  (A) the recommendation and *report of the Commission*; . . .

  (E) *the short- and long-term economic and social costs of the actions* authorized under paragraph (3) relative to their short- and long-term economic and social benefits and other considerations *relative to the position of the domestic industry in the United States economy*;

  (F) other factors related to the *national economic interest of the United States*, including, but not limited to—

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taking such action." *Omnibus Trade and Competitiveness Act of 1988, Conference Report,* H. Rept. 100-576, Part B at 680 (Apr. 20, 1988).

[32] The statute contains a parallel provision affording consumers an opportunity to be heard at the monitoring stage of any proceeding. 19 U.S.C. § 2254(c)(2).

> (i) the economic and social costs which would be incurred by taxpayers, communities, and *workers if import relief were not provided under this part*,
>
> (ii) the effect of the implementation of actions under this section on consumers and on competition in domestic markets for articles, and
>
> (iii) *the impact on United States industries and firms* as a result of international obligations regarding compensation . . . ." (Emphasis added.)

- 19 U.S.C. § 2253(e)(2): "Action of a type described in subsection (a)(3)(A), (B), or (C) {tariff, tariff-rate quota, or quota} may be taken . . . *only to the extent the cumulative impact of such action does not exceed the amount necessary to prevent or remedy the serious injury*." (Emphasis added.)

Every step of the process is framed by the weighing of economic and social costs against potential benefits. The interplay of these provisions is important to understanding the Commission's role as fact-finder and decision-maker. The capstone provision of the statute, granting the President's authority, limits any safeguard measure(s) to those that "*provide greater economic and social benefits than costs*."[33] In determining whether to take action, the President "shall take into account" the economic and social costs to taxpayers and communities, the effect on consumers and competition, and the impact on United States industries and firms.[34] The statute clearly intends for the Commission to inform the President's decision, by requiring the President to "take into account" the Commission's report,[35] which must explain the impact of any action on consumers and industries.[36] Thus, the Commission's findings and recommendation are integral to the overall process.[37]

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[33] 19 U.S.C. § 2251(a) (emphasis added).
[34] 19 U.S.C. §§ 2253(a)(2)(A), (E), (F).
[35] 19 U.S.C. § 2253(a)(2)(A).
[36] 19 U.S.C. § 2252(f)(2).
[37] *See, e.g.*, *Lamb Meat*, Inv. No. TA-201-68, USITC Pub. 3176 at I-35 (Apr. 1999) (recommending a remedy that is "the most effective means to 'facilitate efforts by the domestic industry to make a positive adjustment to import competition and provide greater economic and social benefits than costs") (emphasis added); *Steel Wire Rod*, Inv. No. TA-201-69 at I-53 to I-54 (Jul. 1999) (rejecting petitioners' proposed remedy in part because it "would restrict imports to such a degree as to cause shortages of steel wire rod in the domestic market"); *id.* at I-70 to I-72

The Commission has contemplated this issue before. In *Extruded Rubber Thread*, the Commission explained:

> We are, of course, charged with recommending a remedy that both addresses the serious injury and is "most effective" in facilitating the efforts of the domestic industry to make positive adjustment to import competition. *We are also mindful of the President's obligation to take action that 'provide{s} greater economic and social benefits than costs.*' As a legal matter, these statutory obligations of the Commission and the President are separate and distinct. As a conceptual and practical matter, however, there is some overlap.[38]

In that case, the concern was that overly restrictive trade remedies would increase the costs of downstream consuming industries and drive them offshore.[39] The Commission took "into account the concerns of U.S. industries that rely" on the subject product and "designed {the} import relief recommendations so as not to unduly restrict imports."[40]

In the present case, most of the downstream industries are developers, installers, and power generation providers that are rooted in the community and cannot move offshore.[41] Downstream solar industries therefore are extremely vulnerable to restrictive trade remedies that increase the cost of CSPV. The Commission should heed the advice of its General Counsel and

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(additional views) ("Any import relief granted . . . would have an immediate adverse impact on independent wire producers, placing them at a disadvantage relative to fairly traded merchandise originating outside the United States. . . (with additional price effects passed on to customers further downstream). . . . {*A*}*ny* import relief will entail net welfare losses . . . . Very significant net welfare losses will result from even small tariffs. . . . Moreover, it is likely that any import relief will fail to have the flexibility to adjust to changing supply circumstances" like shortages) (emphasis original); *Certain Circular Welded Carbon Quality Line Pipe*, Inv. No. TA-201-70, USITC Pub. 3261 at I-80 (Dec. 1999) (finding that the domestic industry's proposed quota limits would be excessive in light of strong end use demand); *id.* at I-99 (dissenting views) ("Any action that restricts imports would exceed the amount of relief necessary to prevent or remedy any injury experienced by the domestic industry, would have substantial short- and long-term effects on other domestic industries and consumers, and would create greater social and economic costs than benefits.").

[38] *Extruded Rubber Thread*, Inv. TA-201-63, USITC Pub. 2563 at 32-33 (Oct. 1992) (some emphases in original and some emphases added; citations omitted).

[39] *Id.* at 33.

[40] *Id*.

[41] *See generally* Dr. Thomas Prusa, "The Economic Effects of CSPV Safeguard Tariffs: Industry Profitability, Deployment and Estimated Job Effects" (SEIA's Prehearing Remedy Brief at Appendix A).

consider the impact of any relief on other industries and consumers in determining what remedy to recommend.

C. Demand Elasticity

5. CHAIRMAN SCHMIDTLEIN (Tr. at 148): So just to follow up on this argument with regard to what's driving demand, in the staff report, the staff says that demand is elastic. And they report an elasticity of I think minus 1 to minus 1.5. And -- so does your theory comport with that with regard to how a change in the module price would affect demand overall?

ANSWER: SEIA agrees with the Commission that demand for CSPV cells and modules is elastic. Our analysis also suggests the elasticity varies by segment, with the utility-scale segment being the most vulnerable (highly elastic).

Furthermore, our analysis indicates the demand elasticity will vary from state to state. States can be partitioned into three groups: (i) those that do not buy (much) CSPV, both before and after the tariff, (ii) those where solar is currently competitive but will become uncompetitive (i.e., demand will essentially disappear) upon imposition of the trade-restrictive remedies proposed by the petitioners, and (iii) those where solar would remain competitive in the event of trade restrictions but there will still be some decrease in demand due to higher prices (i.e., move along the demand curve).

At the remedy hearing, Mr. Shiao of GTM Research testified about the impact of trade restrictions.[42] According to Mr. Shiao, if such restrictions are not imposed, residential solar will be economically competitive in 37 states plus the District of Columbia. If a $0.30/watt tariff were imposed, nine states will be pushed out of grid parity and 11 will be on the cusp of being pushed out. Said differently, in 25 of these 37 states (68%) with competitive solar markets, CSPV will be uncompetitive or close to uncompetitive. If a $0.40/watt tariff were imposed, 16 states out of those 37 will be pushed out of grid parity and 11 will be on the cusp. That means 27 of 37 states (73%) solar will be uncompetitive or close to uncompetitive.

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[42] *See* Joint Respondents' Presentation, Safeguard Investigation Hearing on Remedy (hereinafter "Joint Respondents' Remedy Hearing Presentation") at slides 14-15 (Oct. 3, 2017) (**Exhibit 2**).

GTM's analysis therefore suggests that 13 states are in the first group (i.e., CSPV is not competitive even without trade-restrictive remedies). Another 25 to 27 states are in the second group (i.e., those where demand will be driven to zero or will be close to zero). Finally, about 10 to 12 states are in the third group (*i.e.*, those where demand will fall significantly but will not go to zero).

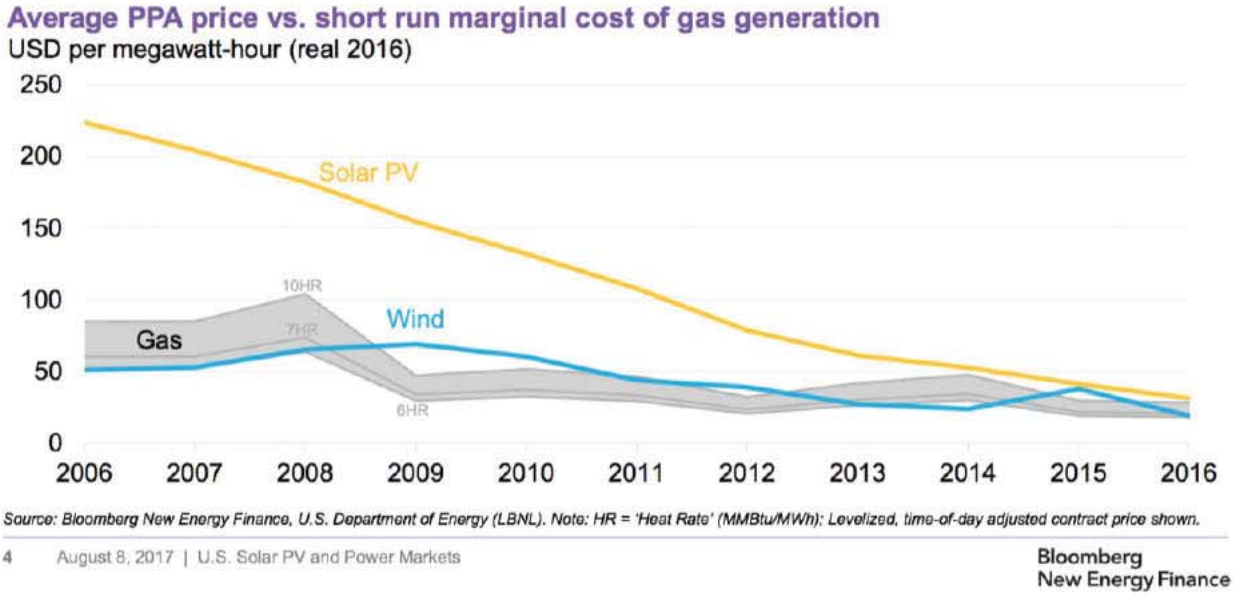
6. COMMISSIONER BROADBENT (Tr. at 144): But the pricing pressure on demand I would think changes the demand, because you've got all sorts of other sources of energy that the solar utility project are competed against?

COMMISSIONER BROADBENT (Tr. at 144): Well, under your proposal and maybe Mr. Kaplan can talk about it, do you think that the proposed remedies will allow solar energy to remain cost competitive with other forms of energy in the utility market?

ANSWER: All prominent solar market experts recognize that CSPV must be price competitive against other sources of electricity production in order to remain a viable alternative energy source. They also agree that CSPV's competition for space on the grid (natural gas, wind, thin-film and geothermal) is experiencing significant, ongoing price declines. This, in turn, requires CSPV's price to decline ni order to compete.

As shown below in a slide presented at the injury hearing by Amy Grace of Bloomberg New Energy Finance ("BNEF"),[43] solar is just beginning to become competitive with natural gas and wind. Any trade remedy that increases the cost of solar will reduce CSPV's competitiveness.

[43] Joint Respondents' Presentation, Safeguard Investigation Hearing on Injury at Slide 4 (Aug. 15, 2017) (SEIA's Posthearing Injury Brief at Exhibit 2-A).



Further, the independent deployment (i.e., demand) models of GTM Research and IHS Markit confirm that demand will fall significantly if a tariff is imposed. For example, using IHS Markit's market analysis, the petitioners' proposed tariff remedy and a legally allowable 50% tariff will have the following effects on demand:[44]

	2018	2019	2020	2021	POI
GW Installed					
No Tariff	12.8	16.3	17.8	17.2	64.1
S/SW Proposal	7.9	10.8	12.2	12.0	42.9
50% tariff	9.8	12.6	13.6	13.0	49.0
Change in Deployment (GW)					
S/SW Proposal	(4.9)	(5.5)	(5.6)	(5.3)	(21.2)
50% tariff	(3.0)	(3.7)	(4.2)	(4.2)	(15.1)
% Change in Deployment					
S/SW Proposal	(38.4%)	(33.7%)	(31.2%)	(30.6%)	(33.1%)
50% tariff	(23.6%)	(22.5%)	(23.6%)	(24.5%)	(23.6%)

As shown in the above table, the petitioners' proposed remedy will devastate demand. The legally maximum tariff will also cause a significant reduction in demand. Moreover, as

[44] *See* Joint Respondents' Remedy Hearing Presentation at Slides 22–25 (**Exhibit 2**); *see also* **Exhibit 5** for full data and calculations.

discussed at the remedy hearing, these numbers understate the potential effect on CSPV demand because the deployment estimates include thin-film PV.[45] As consumers shift away from CSPV to thin-film due to the trade restrictions, the decrease in CSPV demand will be even greater than depicted in the table.

7. COMMISSIONER BROADBENT (Tr. at 147): I think I'm hearing something different, because Mr. McConkey said that the module costs were 33 percent of systems costs in utilities. And if we're -- is that different than what you said, Mr. Kaplan? . . . {I}f when we place this tariff that you're suggesting in place, the module costs will double for utilities?

COMMISSIONER WILLIAMSON (Tr. at 337-38): On Page 44 of SolarWorld's brief and Pages 22 of Suniva's brief, they describe solar panels costs as a small share of total panel installation costs. I think they were talking 10, 11, 12%, but I guess 33% for the utilities. And I was wondering if y'all agree with those breakdowns? … I guess the question is, and we've seen it in other cases where the cost of the particular component is relatively small compared to the end product. And the impact of that is different than if the component is a very high percentage of the cost.

ANSWER: GTM Research regularly reports on the module price share of overall system cost.[46] The share varies from segment to segment. Summarizing from GTM's *U.S. Solar Market Insight Q3 2017 Full Report* below are the approximate shares by segment:

Module Price Share of Overall System Cost Q2 2017[47]

Residential	[ ]
Commercial	[ ]
Utility - 10 MWdc fixed tilt ground mount system	[ ]
Utility - 10 MWdc 1-axis tracking ground mount system	[ ]

[45] Remedy Hearing Tr. at 217-18; Joint Respondents' Remedy Hearing Presentation at slide 26.
[46] GTM Research, U.S. Solar Market Insight Q3 2017 Full Report (**Exhibit 6**).
[47] Calculations based on data from GTM Research. *See* **Exhibit 7** (providing all data and calculations) (electronic version submitted separately).

The petitioners' emphasis on the module's share of overall system cost reflects an attempt to hide the fact that highly disaggregated deployment models show that an increase in these costs imposed by the petitioners' proposed tariff remedies would reduce CSPV demand, and, in turn, result in the loss of tens of thousands of jobs.[48]

Specifically, based on IHS Markit projections, the magnitude of trade relief requested by petitioners would decrease residential PV demand by 23% in 2018, commercial by 28%, and utility-scale by 48%.[49] IHS Markit's estimates are consistent with testimony the Commissioners heard from Sunrun's Ed Fenster, who explained that an increase in module costs would eliminate the savings that Sunrun and other residential developers are able to pass to customers, thereby reducing demand.[50]

Mr. Fenster's view is confirmed by GTM Research:

> For the residential PV segment, the largest reductions come from state markets that fall below the tipping point (i.e., year 1 bill savings above 10%) or fall out of grid parity altogether (i.e., year 1 bill savings). While grid parity is a prerequisite for market growth, the "tipping point" for growth generally happens when solar can provide customers with at least 10% net savings on their first year of bills.[51]

Finally, the deployment studies independently conducted by IHS Markit and GTM Research confirm that the trade remedy proposed by petitioners would devastate demand.[52]

To suggest that an increase in module costs would not affect solar demand is an indication that petitioners do not understand the end-market they are serving.

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[48] Dr. Thomas Prusa, The Economic Effects of CSPV Safeguard Tariffs: Industry Profitability, Deployment, and Estimated Job Effects (SEIA's Prehearing Remedy Brief at Appendix A).

[49] *See* Joint Respondents' Remedy Hearing Presentation at slide 24 (**Exhibit 2**). Further back-up supporting these calculations is provided in **Exhibit 5**.

[50] Remedy Tr. at 234–37 (Mr. Fenster).

[51] GTM Research, *U.S. Solar Outlook Under Section 201: The Trade Case's Impact on U.S. Solar Demand* at 11 (June 2017), EDIS Document 623265 (SEIA's Prehearing Remedy Brief at Exhibit 22).

[52] *See* **Exhibit 7** (full reporting of IHS results) (electronic version submitted separately); **Exhibit 8** (comparison of IHS and GTM data) (electronic version submitted separately).

8. CHAIRMAN SCHMIDTLEIN (Tr. at 149): It won't respond at all to a change in the price?

MR. SZAMOSSZEGI: If there is a solar requirement in a particular state, then that's correct.

CHAIRMAN SCHMIDTLEIN: And do you have an estimate of what those requirements are? In other words, what the extent of that is across the country right now? And there's no allowance made for the price of modules in those requirements?

MR. SZAMOSSZEGI: I think the number we had in the presentation was 39 percent of the current pipeline.

CHAIRMAN SCHMIDTLEIN: For utility projects?

MR. SZAMOSSZEGI: Yes.

CHAIRMAN SCHMIDTLEIN: So 39 percent -- 40 percent of the projects would be inelastic, but 60 percent would not be, is that what I'm hearing you say? So there would be --

CHAIRMAN SCHMIDTLEIN (Tr. at 150): There would be an effect on demand in 60 percent of the utility market? {T}hat is demand for the module, right? So I mean, you're pointing out state law requirements or state programs that -- unqualified -- have an unqualified requirement for solar. But 60 percent of those utility projects don't -- aren't mandatory in that way?

ANSWER: Petitioners' answer to this question suggests a vast misunderstanding of how renewable and/or solar incentives work in this country. Policy mandates are not absolute. They do have limits. For example, where Renewable Portfolio Standards ("RPS") are the drivers of demand, in most instances, solar competes head to head with other renewable energy sources, like wind.[53] A trade-restrictive remedy will therefore cause solar to lose market share to other renewable sources of energy.

Even in places that have solar-specific requirements, CSPV modules will compete with thin-film modules. Further, a solar project must still meet a threshold of cost-effectiveness to be

[53] *See* Joint Respondents' Presentation, Safeguard Investigation Hearing on Injury (Aug. 15, 2017) (SEIA's Posthearing Injury Brief at Exhibit 2-A).

incentivized by the mandate. Utilities must either procure the required clean power (renewable energy credits or RECs) or they pay an alternative compliance payment ("ACP").[54] The RECs are payments to solar energy providers, and ACPs are penalty payments if not enough renewable energy is available. Because the utility can pay either the REC or the ACP (per KWh), the ACP effectively sets a ceiling on what utilities must pay to procure RECs. If solar is more expensive than the ACP, utilities will just pay the ACP instead of purchasing solar.

CCA ("community choice aggregation") is another type of renewable mandate. CCA is a very new and local renewable procurement mechanism that can easily be rescinded or switched to wind by communities looking to procure clean energy.[55]

Mr. Shiao's Slide #12 from Joint Respondents' Remedy Hearing Presentation shows that only 28% of the market is driven by policy mandates.[56] Mr. Shiao's slide refers to "policy mandates" as "policy-driven."

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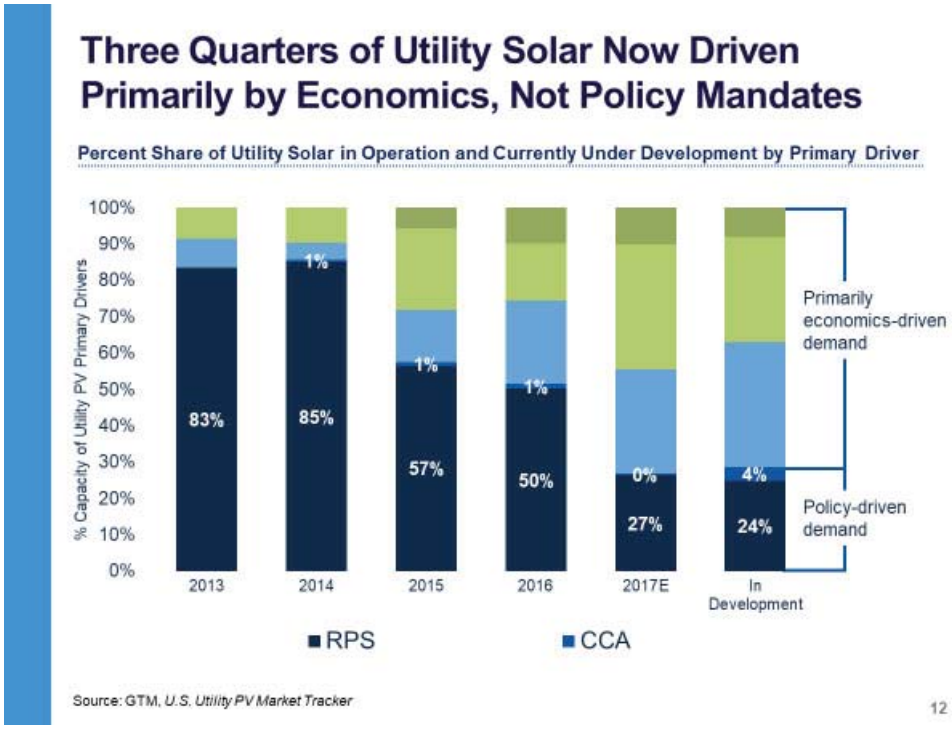
[54] *See, e.g.*, U.S. Department of Energy, "Renewables Portfolio Standard," https://energy.gov/savings/renewables-portfolio-standard (Connecticut) (**Exhibit 9)**; https://energy.gov/savings/renewables-portfolio-standard-0 (New Jersey) (**Exhibit 10)**; https://energy.gov/savings/renewables-portfolio-standard-1 (California) (**Exhibit 11)**; https://energy.gov/savings/renewables-portfolio-standard-2 (Delaware) (**Exhibit 12)**.

[55] *See* Max Bloom, "San Francisco's Community Choice Aggregation Program for Clean Energy Goes Online," *Renewable Energy World* (May 18, 2016), http://www renewableenergyworld.com/articles/2016/05/san-francisco-s-community-choice-aggregation-program-for-clean-energy-goes-online html ("Most of CleanPowerSF's initial renewables come from local wind projects. . . . Like most CCAs, CleanPowerSF operates on an opt-out basis, meaning customers in the service area are enrolled in the program by default, but can choose to opt-out at any time. Typically, 80 to 85 percent of customers choose to stay with the CCA.") (**Exhibit 13**); Cape Light Compact Annual Report 2015, at 6 ("Power Supply: Stability, Security, Choice and Green Power Options"), http://3jy14ha9u771r7qzn35g0s6c.wpengine netdna-cdn.com/wp-content/uploads/2016/11/2015-AR-for-WEB-9-21A.pdf (**Exhibit 14**).

[56] Joint Respondents' Remedy Hearing Presentation at Slide 12 (**Exhibit 2**).

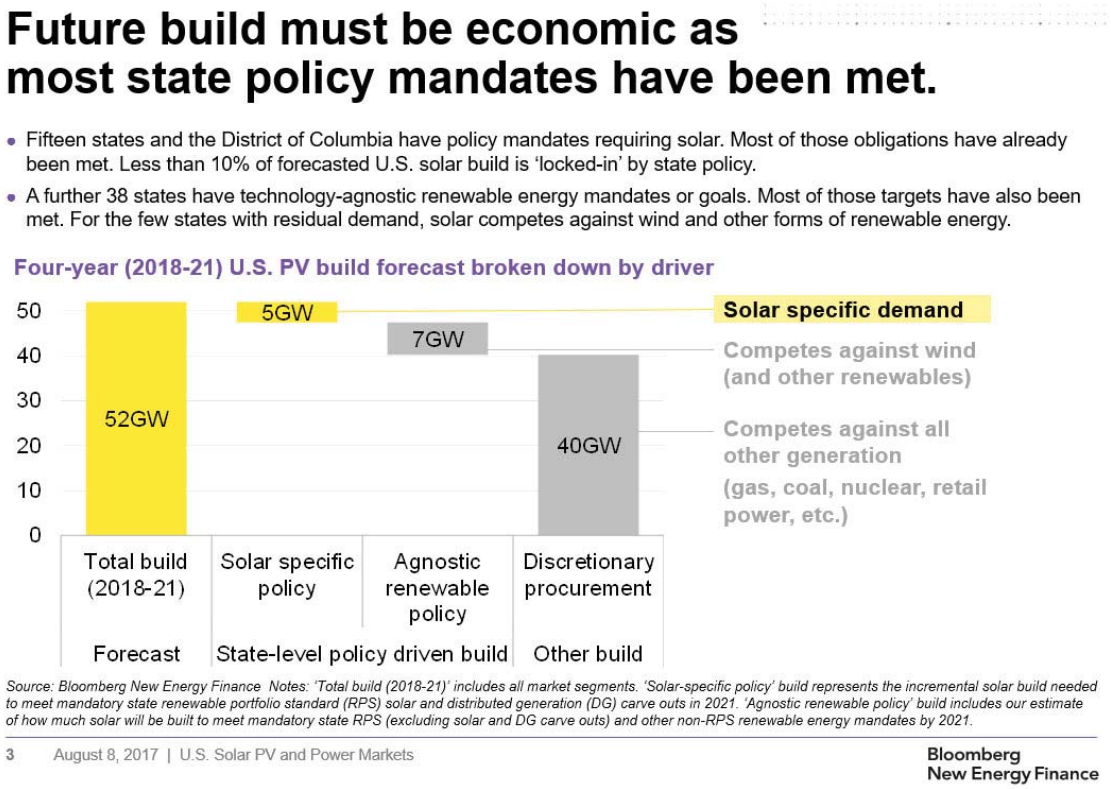


GTM Research is not alone in the view that most solar "policy mandates" no longer exist. Amy Grace of BNEF testified to the same market reality at the injury hearing. According to Ms. Grace:

> Bloomberg New Energy Finance forecast the U.S. to add 52 gigawatts… between 2018 and 2021. First, policy still matters. The Federal Investment Tax Credit remains instrumental in bolstering solar project economics. State policies mandating solar have played an equal, if not more important role historically; however, these state policies have become less important over the last couple of years as a driver for new solar build. *Less than 10 percent of our forecasted U.S. solar build is effectively locked in by solar-specific state mandates*, seen here in Slide 3. *Most of the solar-specific targets have already been met. Another 13 percent we expect will be driven by technology agnostic renewable mandates where solar competes head-to-head against wind and other forms of renewable energy generation.* [57]

[57] Injury Tr. at 253 (Ms. Grace) (emphasis added).

Below is the slide Ms. Grace refers to in her testimony.[58] As can be seen, 5 GW of BNEF's projected 52 GW of installations is subject to solar specific mandates – just 9.6% of the total. Moreover, considering "renewable policy" mandates (which means CSPV has to compete against low-cost thin-film and wind, hydropower, and geothermal), BNEF believes there is another 13% of demand where solar could be affected by a policy preference. Taken together, BNEF estimates about 23% of U.S. solar deployment is subject to some type of renewable energy policy mandate, which, again, is not necessarily a solar-specific mandate.



Given that the experts at GTM Research and BNEF independently have assessed the U.S. solar market and agree that only 23% to 28% of demand is subject to some type of renewable

[58] *See* Joint Respondents' Presentation, Safeguard Investigation Hearing on Injury (Aug. 15, 2017) (SEIA's Posthearing Injury Brief at Exhibit 2-A).

mandate, the notion put forward by petitioners that policy mandates make CSPV demand highly inelastic denies the reality that is the ***current*** U.S. energy market.

9. COMMISSIONER BROADBENT (Tr. at 199): One question for the record with respect to this document, EDIS Document 623-265. Can you comment on whether you agree with the document's assessment of the most and least vulnerable market segments to a change in price, for the record?

ANSWER: The GTM Research study that Commissioner Broadbent mentions indicates that there will be a very large decline in demand in all segments, if the remedies proposed in Suniva's petition are imposed. Quoting from the document:[59]

- "Utility PV is expected to see the largest downward revisions to its base-case forecast. A majority of utility PV procurement now hinges on solar being cost-competitive with natural gas alternatives, with nearly three-fourths of the utility PV pipeline procured outside renewable portfolio standards."[60]
- "Residential PV: Impact of Minimum Module Price: 34% reduction to the 2018-2022 forecast."[61]
- "For the residential PV segment, the largest reductions come from state markets that fall below the tipping point (i.e., year 1 bill savings above 10%) or fall out of grid parity altogether (i.e., year 1 bill savings). While grid parity is a prerequisite for market growth, the "tipping point" for growth generally happens when solar can provide customers with at least 10% net savings on their first year of bills."[62]
- "Commercial Segment: Impact of Minimum Module Price: 39% reduction to the 2018-2022 forecast."[63]
- "Utility Segment: Impact of Minimum Module Price: 59% reduction to the 2018-2022 forecast."[64]

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59 GTM Research, *U.S. Solar Outlook Under Section 201: The Trade Case's Impact on U.S. Solar Demand* (June 2017), EDIS Document 623265 (SEIA's Prehearing Remedy Brief at Exhibit 22).
60 *Id.* at 6.
61 *Id.* at 11.
62 *Id.*
63 *Id.* at 13.
64 *Id.* at 17.

We agree with GTM's analysis. The results of GTM's market analysis are similar to those prepared by IHS Markit, which were presented in Appendix A to SEIA's Prehearing Remedy Brief.

In addition, GTM's written commentary echoes testimony provided by Ed Fenster of Sunrun, who stated:

> A study performed for our marketing department by a third party in 2015 found customer interest in solar decreases two-thirds when the discount to grid power we offer falls from 20 percent to 10 percent. Currently, Sunrun offers about 20 percent savings to many customers. Doubling the cost of panels would require a cut in savings of more than 10 percentage points destroying the necessary value proposition for many.[65]

We believe the proper interpretation of GTM's results is that residential and commercial segments are very vulnerable, albeit not *as* vulnerable as the utility-scale segment.

10. CHAIRMAN SCHMIDTLEIN (Tr. at 325): Do you agree with those elasticity numbers? I understand that they're not relevant I think for the models that you've used?

CHAIRMAN SCHMIDTLEIN (Tr. at 151 to Petitioners): {D}o you disagree with the staff report? Do you disagree? I mean, there was an opportunity for people to comment on the elasticity numbers for demand and no one commented. So . . . if the Commissioners accept what the staff has said about elasticity with regard to 60 percent of the utility market and it would apply to residential and commercial, I presume? . . . Is that inconsistent with your theory?

ANSWER: We first direct Chairman Schmidtlein to our response to **Question 5**. In that response, we discuss why we think the Staff's demand elasticity of minus 1 to minus 1.5 is a realistic figure.

[65] Remedy Tr. at 234 (Mr. Fenster).

Second, the IHS Markit analysis (which is discussed at length in our Prehearing Remedy Brief, especially in Appendix A) indicates that the utility-scale segment has the greatest demand elasticity. A similar result is reported by GTM Research, as we discuss in **Question 14**.

There are two reasons why the utility-scale segment is so vulnerable. First, the margins in the utility-scale are quite small. GTM Research estimates that the "installed" price for a fixed-tilt utility system is [ ] and for a tracking utility system is [ ].[66] Developers have essentially no cushion. This is especially true given that the size of such systems require bank financing and capital is only available if installers can document viable returns.[67] Second, modules account for somewhere between [ ] and [ ] of the cost of a utility-scale system.[68] Even without the extreme price sensitivity of utility-scale installation, the cost impact of a trade remedy is quite large given the large share of costs accounted for by modules.

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66 GTM Research, U.S. Solar Market Insight Full Report Q3 2017 (**Exhibit 6**).

67 Injury Tr. at 406 (Mr. Hall) ("When we are purchasing modules I would say it enters into the realm of bankability in terms of how our customers are going to view the project that we are selling to them and how their financial partners are going to view that. . . . I'm going to bankability because if we can't prove how much the system is going to produce then we can't sell that.").

68 Calculations provided in **Exhibit 5**.

D. Projected Demand and Effect of Remedies on Demand

11. COMMISSIONER BROADBENT (Tr.at 196-97): As I kind of go through some of these studies that we've looked at, I was really interested in a graph that's in EDIS Document 623-265, which is really a projection of what we think is going to happen to demand under the scenario of your tariff proposal.

And I think we've just got competing visions here of course where the SEIA will say that the demand is really going to plummet, and you all are going to say it's going to get back to its kind of steady increase after the big spike that we had when the tax credit expired.

The Petitioners point to late 2015 and early 2016 as being a good reference point for what is likely to occur if the tariffs are imposed. And I guess what I'm confused about is, given that demand was growing in that time, don't you think that demand will falter if prices rise to this 2015 fourth quarter, 2016 first quarter levels? Because it's the period of time when demand was surging because of the impending expiration of the investment tax credit at the end of 2015.

So you had this big spike in demand there, and it looks to me without the impending expiration of the tax credit that demand is going to plummet.

Can you talk to me about why you think this is a good period to make your estimates on?

ANSWER: Central to the petitioners' argument is the incorrect assumption that one can turn back the clock on pricing to a particular point in time and cause demand to revert to where it was at that earlier juncture. The dynamics of this market do not work that way. If demand for solar were akin to demand for home appliances or automobiles, then levying a trade-restrictive remedy would possibly allow one to restore the market to 2015 supply and demand conditions. After all, consumers need to wash their clothes, clean their dishes, and bake their food. Solar is fundamentally different. Consumers of solar – regardless of whether they are residential, commercial, or utility-scale – are always comparing the cost of electricity generated by solar with the cost of obtaining the electricity via another energy source (e.g., natural gas, wind,

nuclear). They do not need to buy CSPV in order to obtain electricity. Using trade remedies to turn back the clock to 2015 would lead to a catastrophic collapse in CSPV demand.

As we discussed in our answer to **Question 6**, solar's competitors have seen their costs decline since 2015. Solar costs must decline just to stay even with the competition. Returning the price of solar to 2015 levels means solar would be competing at a huge cost disadvantage relative to 2017 prices for substitute electricity generation sources.

In addition, since 2015, many major residential and commercial solar markets, such as states and utility territories, have experienced adjustments to their net metering policies.[69] Many markets that have not yet seen their policies adjusted will likely see them modified by the end of 2018.[70] Net metering programs provide value to commercial and residential solar users.[71] The changes to net metering programs that have occurred since 2015, however, have reduced the value of net metering, which in turn has reduced the value of solar to customers.[72] Consequently, the cost of solar needs to be lower now than it was in 2015 or early 2016 in order to compensate for less generous net metering programs. If solar prices are pushed back to their 2015/early 2016 levels, customers will not choose solar.

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[69] *See* Julia Pyper, "Solar Policy Actions Spiked in 2016, With a Focus on Net Metering," *GTM* (Feb. 2, 2017), https://www.greentechmedia.com/articles/read/distributed-solar-policy-actions-nc-state-clean-energy-technology-50-states (**Exhibit 15**) ("The most common change was related to net energy metering, a policy that compensates distributed solar customers for the excess energy they export back to the grid -- a policy that utilities say is costly and unfair. There were 73 actions on net metering in 28 states last year, up from 42 actions in 27 states the year before, according to the report. . . . Not all states that acted on net metering chose to do away with the policy, but many states are considering alternatives.").

[70] See id.

[71] Net metering or net energy metering (NEM) is a policy that enables electric utility customers to realize value from the energy generated by their PV systems. Essentially, it is a billing mechanism under which a retail electricity customer is only billed for the net electricity purchases from the utility each month. That is, if the customer receives 500 kWh from the utility and exports 400 kWh to the utility, the customer will only be billed for the net consumption of 100 kWh for that month. In the absence of net metering, a customer might get zero credit for the energy they export to the grid, severely undercutting the value of their PV investment. *See* "Net metering for home solar panels," *energysage*, https://www.energysage.com/solar/101/net-metering-for-home-solar-panels (**Exhibit 16**).

[72] *See* Pyper, "Solar Policy Actions Spiked in 2016, With a Focus on Net Metering," *GTM* (**Exhibit 15**).

The highlighted elements from the table below represent actions taken that reduce the value of net metering for new customers just in Q2 2017.[73]

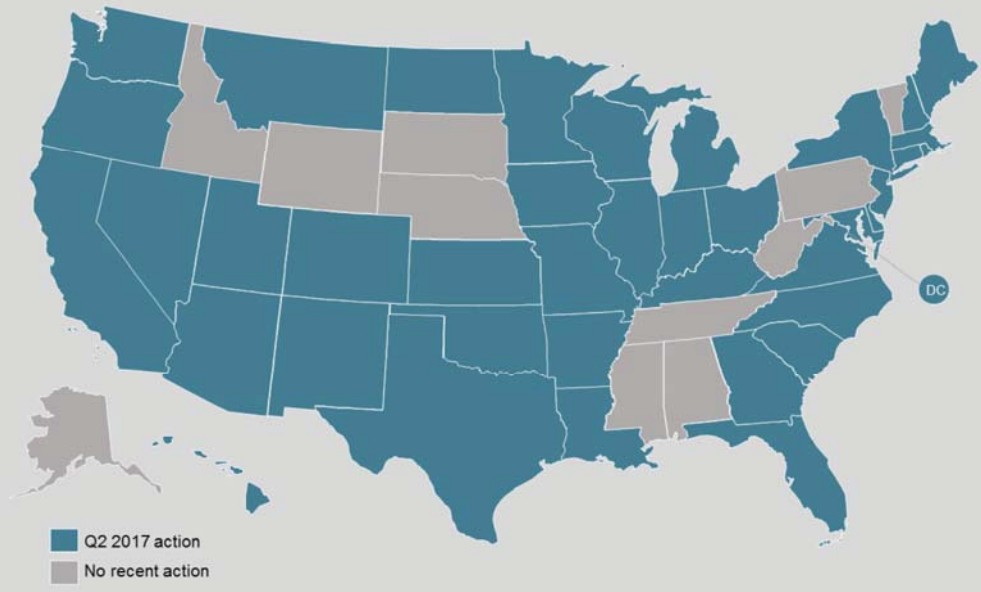
Table 1. Q2 2017 Summary of Policy Actions

Policy Type	# of Actions	% by Type	# of States
Residential fixed charge or minimum bill increase	42	30%	25 + DC
DG compensation rules	39	27%	24
DG valuation or net metering study	21	15%	17 + DC
Community solar	14	10%	12
Residential demand or solar charge	13	9%	8
Third-party ownership of solar	8	6%	6
Utility-led rooftop PV programs	3	2%	3
Total	**140**	**100%**	**39 States + DC**

Note: The "# of States/ Districts" total is not the sum of the rows, as some states have multiple actions. Percentages are rounded and may not add up to 100%.

The following map shows the locations of these actions:[74]

Figure 1. Q2 2017 Action on Net Metering, Rate Design, & Solar Ownership Policies



These changes to net metering programs do not affect the incentives to install utility-scale (wholesale) solar. However, there have also been changes to government programs that have

[73] "50 States of Solar: Q2 2017," North Carolina Clean Energy Technology Center, https://nccleantech ncsu.edu/wp-content/uploads/Q22017-SolarExecSummary-v.2.pdf (**Exhibit 17**).

[74] *Id* at 6.

affected those incentives. In particular, major markets have reduced the rates at which they compensate new utility-scale solar generators.[75] For states like North Carolina, this rate is called the "qualified facility" ("QF") rate as defined under the Public Utility Regulatory Policy Act ("PURPA"). If CSPV prices go up, as they would under the petitioners' proposed remedy, many utility-scale solar projects will not "pencil out" at the new QF rates and therefore will not be built.

North Carolina is hardly the only state changing its QF policies in a way that disadvantages solar.[76] Idaho recently changed its QF program, significantly reducing its QF market.[77] Utah enacted a similar policy change and has also been experiencing a falling QF market.[78]

12. COMMISSIONER BROADBENT (Tr. at 141): If the petitioners propose tariffs and quotas resulted in lower demand than projected during the course of the remedies for CSPV cells and modules, where do you think this would lead the market after the remedy expires, say in four years if there wasn't an extension? Do you think that the demand would recover or snap back after imports resumed unrestricted entry into the U.S. market?

COMMISSIONER BROADBENT (Tr. at 299): If Petitioners proposed tariffs and quotas resulted in lower demand than projected during the course of the remedies for cells and modules, where do you think this would leave the market after the remedy expires? Do you think that demand would

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[75] *See* Chris Warren, "The National Debate Unfolding Over PURPA and Solar Power," *GTM* (Aug. 28, 2017), https://www.greentechmedia.com/articles/read/national-debate-purpa-solar-power (**Exhibit 18**); Kim Riley, "Trump's energy reform winds could blow over PURPA," *Daily Energy Insider* (July 5, 2017), https://dailyenergyinsider.com/featured/6262-trumps-energy-reform-winds-blow-purpa (**Exhibit 19**).

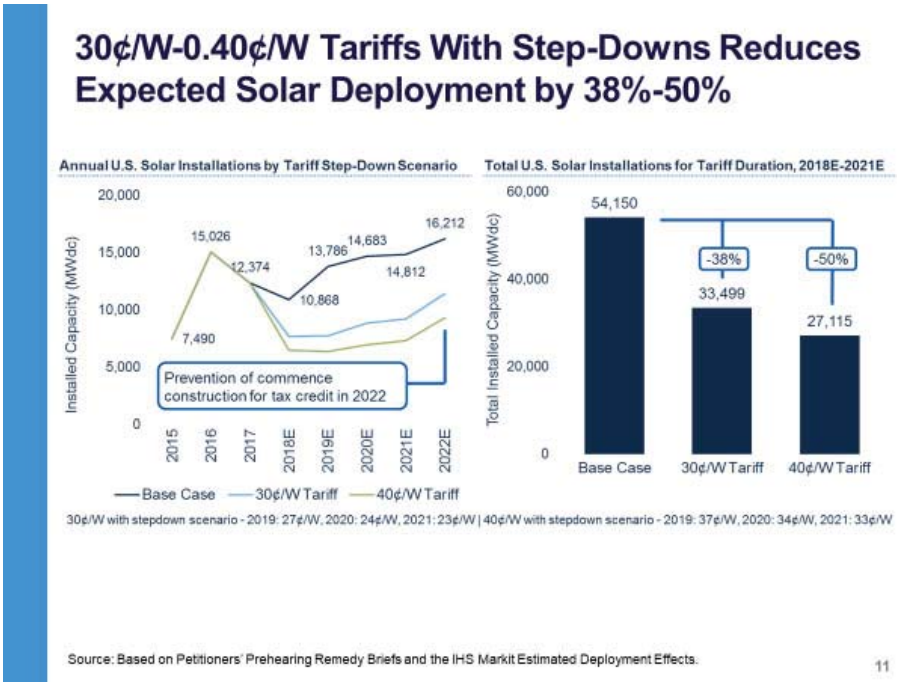
[76] *See* Christian Roselund, "North Carolina governor signs PURPA overhaul bill," PV Magazine (July 27, 2017), https://pv-magazine-usa.com/2017/07/27/north-carolina-governor-signs-purpa-overhaul-bill (**Exhibit 20**); see also Jeff Lovinger, "PURPA: Current issues for generators to qualify for payment under PURPA and calculation of avoided costs," National Regulatory Research Institute at 27, http://legisweb.state.wy.us/InterimCommittee/2017/07-0518APPENDIXE-10.pdf (**Exhibit 21**).

[77] *See* "Idaho PUC shortens PURPA contracts," *Capital Press* (Aug. 20, 2015), http://www.capitalpress.com/Idaho/20150820/idaho-puc-shortens-purpa-contracts (**Exhibit 22**); *see also* Warren, "The National Debate Unfolding Over PURPA and Solar Power" (**Exhibit 18**).

[78] *See* Krysti Shallenberger, "Utah regulators slim down PURPA contracts to 15 years," *Utility Dive* (Jan. 8, 2016), http://www.utilitydive.com/news/utah-regulators-slim-down-purpa-contracts-to-15-years/411790 (**Exhibit 23**).

recover or snap back after imports resumed unrestricted entry into the U.S. market?

ANSWER: We do not believe that the solar market would snap back to "no remedy" demand levels should trade restrictions be imposed and then, later, removed. Slide #11 of SEIA's remedy presentation included GTM Research's perspective on the issue.[79] To facilitate the discussion, we reproduce that slide here:



In the line graph on the left half of the slide, GTM Research forecasts the deployment effects if a trade-restrictive remedy were imposed for the 2018-2021 period. GTM assumes the trade remedy will no longer be in effect in 2022. Yet, in 2022, GTM forecasts that demand will be about 6 GW less than it would be, had a trade-restrictive remedy not been imposed. This shows that GTM does not expect a quick return to undistorted market demand, *i.e.*, snap back is unlikely to occur.

[79] Joint Respondents' Remedy Hearing Presentation at slide 11 (**Exhibit 2**).

According to Mr. Shiao's statement at the hearing:[80]

> We don't believe that demand would snap back to originally projected demand and that's for a number of reasons.
>
> One – first of all, as some of the other witnesses have testified these projects are long-term projects. They are often bid out two, three, four years in advance and they have to reserve spots and ques{sic} and if they can't meet those obligations or if they don't have price certainty to allow them to be able to bid into those markets then they won't be able to win those competitive RFP's and they can't reserve their spots.
>
> Meanwhile, . . . there is price uncertainty, there are other competing technologies as far as natural gas and wind that will also provide generation -- electricity generation for these off-takers and again that means that there is less available total adjustable market for solar.
>
> And finally, one thing to keep in mind too is that there is a step down that is going to happen with the investment tax credit. Some of the ability to capture that investment tax credit will be compromised by not -- by higher module prices during the tariff period, remedy period.

A major reason for the expected lingering impacts beyond the remedy period is that the current so-called 30% federal investment tax credit is set by statute to begin stepping down in 2019.[81] The 30% credit is actually the combination of credits provided under two different statutory schemes:

1) Section 25d credit:[82] This is the credit in the individual income tax code used by homeowners to claim the credit on personal income taxes for solar property that they *own*. It drops to zero in 2022. It follows a "placed in service" standard, meaning that the project must be completed in the year the credit is claimed, which is depicted in the chart below:

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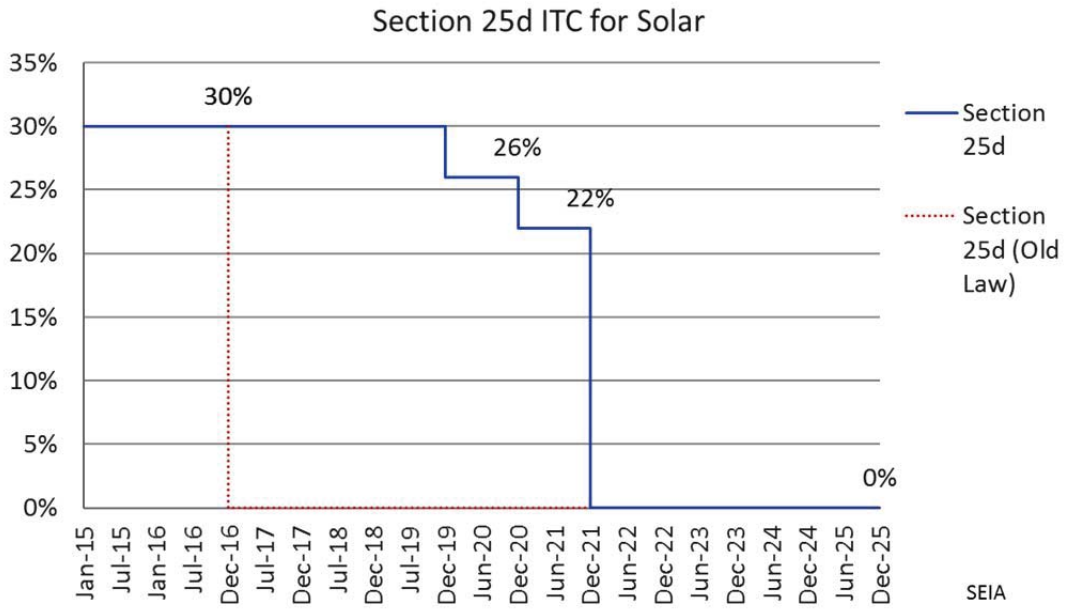
80 Remedy Tr. at 299-300 (Mr. Shiao).
81 SEIA's Prehearing Injury Brief at 105–07.
82 19 U.S.C. § 25D.



2) Section 48 credit:[83] This is the credit used under the federal corporate tax code for utility PV systems, commercial PV systems, and residential systems that are owned by third parties (leased to, not owned by homeowners). It drops to 10% in 2022. It follows a "commence construction" standard, meaning that projects must have begun and maintained significant construction activity to establish the level of the credit for which they will be eligible. The requirements are defined under Internal Revenue Service guidelines. The expected way for companies to comply with this is for project developers to procure modules specifically for these projects in 2020 or 2021 ("work in process" purchases).[84] If the petitioners' proposed remedies were to be implemented, however, such "work in process" purchases would not be financially feasible.

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[83] 19 U.S.C. § 48.

[84] *See* Injury Tr. at 396 (Mr. Haubenstock) ("It takes a long time to build these utility scale projects and for financers to put the money up to build these projects they have to be assured that it is going to be done 6 months before the deadline for the ITC {Investment Tax Credit}. So if it takes 18 months to two years to build the projects -- sometimes it's less, sometimes it's a year, you need to assure your financers that you have everything in place to get it done in case there is going to be some delay because the ITC is such a large percentage of the financing of the project."); *id.* (Mr. Shugar) ("There are tax credits, the 30% federal investment tax credit was due to expire at the end of . . . 2016 and . . . these projects are big and so there was a huge acceleration of project development in the U.S. in '15 and '16 as a result of that.")

13. VICE CHAIRMAN JOHANSON (Tr. at 128): In connection with trade remedy proceedings in the European Union on solar cells and modulars from China, the European Commission and a group of Chinese solar manufacturers entered into a price undertaking agreement that went into effect in August of 2013. What lessons, if any, regarding remedy may be learned from the experience of the price undertaking agreement in the European Union?

ANSWER: The EU CSPV undertaking agreement is a cautionary tale for the unintended consequences of trade restraints. As in the U.S. market, declining prices in the European market have allowed solar generation to become more competitive with other sources of energy.[85] Government incentives also encouraged renewable energy.[86] Yet, the EU AD/CVD measure has done nothing to spur CSPV production in the European Union. Rather, demand has shrunk. "In 2010 Europe accounted for almost 80% of the global solar installations, in 2015 it accounted for just over 15%. This is against a backdrop of a global solar market that has risen from 40 GW to 230 GW in the same period."[87] According to another industry source, "{w}hile international markets like the US, Latin America, the Middle East or Asia are going from strength to strength and have fantastic growth prospects thanks to sharply falling systems prices, many of our European customers are forced to significantly reduce the size of their organisations."[88] CSPV customers "either have to move their business abroad or cease their involvement in the solar industry altogether."[89]

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[85] Ian Clover, "Intersolar Europe: Global solar market could grow 80 GW in 2017, Europe by 8 GW, says SolarPower Europe," *pv magazine* (May 30, 2017) ("new solar power installation on the continent fell 20% year-on-year in 2016, dropping from 8.6 GW of grid-connected PV in 2015 to around 6.9 GW last year") (**Exhibit 24**).

[86] Ian Clover, "European solar demand fell 20% in 2016, says SolarPower Europe" *pv magazine* (Feb. 3, 2017) (**Exhibit 25**).

[87] Letter to the European Commissioner for Trade at 2 (Oct. 11, 2016) (**Exhibit 26**); Ian Clover, "European solar demand fell 20% in 2016, says SolarPower Europe," *pv magazine* (Feb. 3, 2017) (**Exhibit 25**).

[88] "What inhibits market growth for solar panels in the EU? Frank Niendorf shares his insights," *pvEurope* (Apr. 5, 2016) (**Exhibit 27**).

[89] *Id*.

This drop in demand has led to declining EU module production and plant closures.[90] With the EU measures in place, "{i}n 2016, module manufacturers had facilities in the EU with 6.7 GW annual production capacity, a three percent drop from 6.9 GW in 2015. Production output decreased by 16 percent in the same period to around 2.7 GW, from 3.2 GW in 2015."[91] Therefore, the EU CSPV industry is worse off, not better, with import restrictions.

As SEIA predicts with any safeguard trade restrictions, the negative effects of trade restraints in Europe have been widespread:

> This trend has unforeseen consequences on the non-module assembly upstream manufacturing jobs in the European solar value chain, which account for 80% of the upstream jobs. With module prices at an artificially high level the manufacturers of other solar products, where Europe is currently leading, are being required to drop prices, even though they face extremely tough competition and cannot reduce prices as quickly as module producers. Sectors such as inverter manufacturing, steel mounting frames, polysilicon and other European industries are bearing the weight of the effects of the measures. This is risking jobs in some of the key sectors of European manufacturing at a time when they need support from policymakers.[92]

These impacts mirror the analysis of solar market experts like BNEF, GTM, and IHS Markit, as well as the additional analysis that Dr. Prusa performed for this investigation. The Commission should therefore consider alternative, more productive measures that will actually facilitate the domestic industry's positive adjustment.

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[90] Letter to the European Commissioner for Trade at 2 (Oct. 11, 2016) (**Exhibit 26**). "The MIP and the duties are increasing the price of solar, at a time when competitive tenders for solar have been introduced. This is having two effects, it is prolonging the time that governments in Europe must provide financial support for solar, while simultaneously delaying the point at which solar reaches direct competitiveness with other forms of energy generation. This is not serving the interest of the EU on renewable energy." *Id.*

[91] "Utilization of European solar module factories declined to 40% -- SolarPower Europe calls for removal of the MIP," *pv Europe* (Jan. 18, 2017) (**Exhibit 28**).

[92] Letter to the European Commissioner for Trade at 2 (Oct. 11, 2016) (**Exhibit 26**).

E. Dr. Prusa's Analysis Using IHS Markit Model

14. CHAIRMAN SCHMIDTLEIN (Tr. at 311-18, 324): Professor Prusa, I have a few questions about your analysis. As it seems to me that understanding what's going to happen to demand is really key to this case. Obviously, that drives what happens to jobs and what happens to prices and so forth. So your report hinges on a finding by IHS market from how I understand it? … And well and one question I have is what -- do we have that analysis? Do we have an underlying report that you received from IHS market? … So I'm curious, did you have them run any other numbers besides the Suniva's request and the 50 percent ad valorem? ... And so, was that based on AUVs of imports for 26 -- the ad valorem rate? What did you … what value did you base that on? Okay. So it wasn't based on the C table from the staff report? … I mean, obviously, the Commission's not bound to recommend the maximum rate. There could be other rates. So -- we would be curious to see what the results of -- what the model produced when you ran the other rates.

ANSWER: The IHS Markit report was submitted to the official case docket on October 4, 2017. As stated in that report, IHS Markit ran five deployment models.

(1) No remedy (benchmark)
(2) $0.10/watt tariff
(3) $0.20/watt tariff
(4) $0.30/watt tariff
(5) $0.40/watt tariff

The runs were based on IHS Markit's intelligence. SEIA prepared and submitted a detailed explanation for the Commission immediately following the hearing, in which we described the model and data used. IHS' Markit's deployment estimates are as follows:

IHS Markit – Total Solar PV Deployment, MW[93]

	2018	2019	2020	2021
No Tariff	12,833	16,277	17,764	17,224
$0.10 (25% ad valorem)	10,881	14,063	15,292	14,796
$0.20 (50% ad valorem)	9,803	12,611	13,570	13,010
$0.30 (75% ad valorem)	8,612	11,151	11,875	11,263
$0.40 (100% ad valorem)	7,429	9,370	9,604	9,145

[93] *See* IHS Markit Deployment / JEDI Jobs (**Exhibit 7**). Full data and calculations can be found in **Exhibit 7.**

In the next table, we report the loss in deployment using IHS Markit's model.

IHS Markit – Loss of Solar PV Deployment, MW[94]

	2018	2019	2020	2021
$0.10 (25% ad valorem)	-1,951	-2,215	-2,472	-2,428
$0.20 (50% ad valorem)	-3,030	-3,666	-4,194	-4,214
$0.30 (75% ad valorem)	-4,221	-5,126	-5,889	-5,961
$0.40 (100% ad valorem)	-5,404	-6,907	-8,160	-8,079

MJ Shiao of GTM Research presented GTM Research's deployment estimates in his remedy presentation. GTM Research's estimates are as follows:

GTM Research – Total Solar PV Deployment, MW[95]

	2018	2019	2020	2021
No Tariff	[ ]	[ ]	[ ]	[ ]
$0.10 (25% ad valorem)	[ ]	[ ]	[ ]	[ ]
$0.20 (50% ad valorem)	[ ]	[ ]	[ ]	[ ]
$0.30 (75% ad valorem)	[ ]	[ ]	[ ]	[ ]
$0.40 (100% ad valorem)	[ ]	[ ]	[ ]	[ ]

In the next table, we report the loss in deployment using GTM Research's deployment model:

GTM Research – Loss of Solar PV Deployment, MW[96]

	2018	2019	2020	2021
$0.10 (25% ad valorem)	[ ]	[ ]	[ ]	[ ]
$0.20 (50% ad valorem)	[ ]	[ ]	[ ]	[ ]
$0.30 (75% ad valorem)	[ ]	[ ]	[ ]	[ ]
$0.40 (100% ad valorem)	[ ]	[ ]	[ ]	[ ]

While there are variations in the two company's year-by-year estimates, their overall picture of the impact of the trade-restrictive remedies is eerily similar.

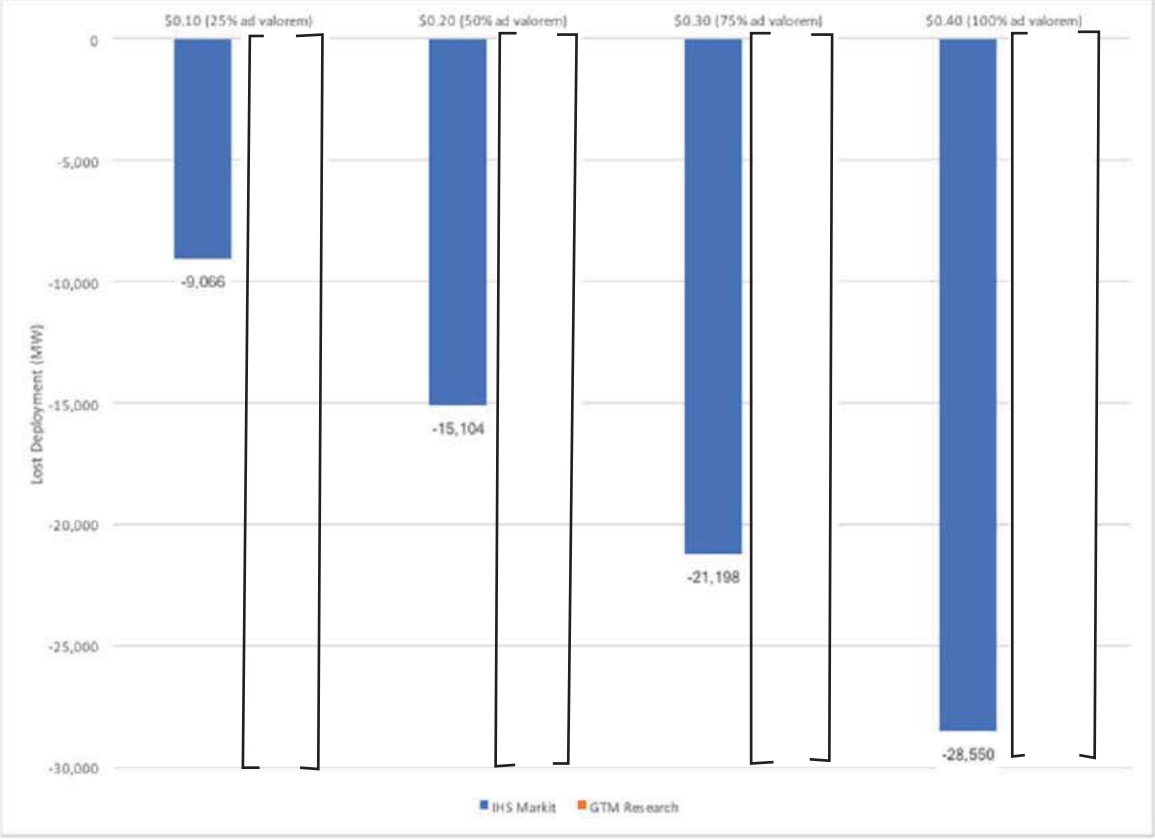
94 See id.
95 *See* "Comparing IHS Markit & GTM Research Deployment Effects" (**Exhibit 8**).
96 See id.

Decrease in Deployment, 2018-2021 Period (MW)[97]

	IHS Markit	GTM Research
$0.10 (25% ad valorem)	-9,066	[ ]
$0.20 (50% ad valorem)	-15,104	[ ]
$0.30 (75% ad valorem)	-21,198	[ ]
$0.40 (100% ad valorem)	-28,550	[ ]

The similarity between the two companies' estimates of the effect of the trade-restrictive remedies is clearly seen when graphed:

Decrease in Deployment, 2018-2021 Period (MW)[98]



97 *See id.*

98 *See id.*

15. COMMISSIONER WILLIAMSON (Tr. at 330): Mr. Prusa, on the studies that you're going to provide, is -- could you provide it, you know, right away so that petitioners will have a chance to comment on it in their post hearing brief. So I think it would only be fair that they had a chance to comment on those?

ANSWER: The IHS Markit report was submitted to the official case docket on October 4 2017.

F. GTM Baseline Projections Data

16. COMMISSIONER BROADBENT (Tr. at 363-64): Mr. Shiao, Exhibit 16 of SolarWorld's pre-hearing remedy brief is an article from GTM. On page 3 it shows base case projections for PV installations in 2017 through 2022. For 2017 have these projected installations resembled reality, given that we're pretty far through 2017? … I'm interested in whether our base projections for PV installations are panning out. So you've got base projections of CSPV installations 2017 through 2022. And for 2017 I'm just asking whether your pretty much on track with what the projections were and do you think that the between 2018 through 2022 base case projections in this document are pretty reasonable?

ANSWER: We have two comments on the accuracy of GTM's forecasts.

First, as noted by Mr. Shiao at the hearing, given the extreme detail in their market analysis (over 1.3 million different projects from the United States), GTM's "near-term forecasts are within single digit percentages at the mid-year point."[99]

Second, we do not believe even petitioners doubt GTM's accuracy. For example, SolarWorld thinks highly enough of GTM's market research that it quotes GTM Research's deployment forecasts in its Annual Reports.[100] If SolarWorld thinks GTM's forecasts are good enough when making statements to its shareholders, it must mean SolarWorld believes GTM's forecasts are accurate for purposes of this case.

[99] Remedy Tr. at 364–65.

[100] *See* SolarWorld AG, Annual Group Report 2014 at 36 (Mar. 25, 2015) (SEIA's Posthearing Injury Brief at Exhibit 12); SolarWorld AG, Annual Group Report 2016 at 31–32 (Mar. 28, 2017) (SEIA's Posthearing Injury Brief at Exhibit 10).

G. Witness Project Development – Installations and Employment

17. COMMISSIONER BROADBENT (Tr. at 347): This is for firms that work in project development and installation. Can you please provide us information in your post-hearing briefs on the volume and megawatts of your 2016 U.S. installations? And your aggregate 2016 U.S. employment in CSPV product development, construction and installation.

ANSWER: In response to Commissioner Broadbent's request, SEIA collected the following data from companies that primarily focus on installation or development:

	U.S. Installations (2016)	U.S. Employment (2016)
Utility-Scale		
Swinerton	1,326.5 MW	3,996
Recurrent Energy[101]	1,200 MW	2,479
NRG[102]	753 MWdc	1,700
RES Americas[103]	[ ]	1,306
DEPCOM	205 MWdc	1,100
AES	31 MW	35
Residential		
Sunrun[104]	282 MW	3,000
Amicus Cooperative[105]	200 MW	1,800
SunCommon[106]	23 MW	100

Note that those companies with diversified businesses were not able to specify the number of employees that are devoted to installations and/or development (e.g., RES and Depcom). Note also that the residential installers are far more labor intensive than utility-scale.

[101] Affidavit of Jeffrey Kalikow, Recurrent Energy, LLC (**Exhibit 53**).
[102] Installations are reported in gross MWdc. NRG had 29 individual installation projects in 2016, with 200 employees working on new project development and estimated construction employment of 1,500 FTE.
[103] Affidavit of Brian Evans, RES Americas, Inc. (**Exhibit 54**). [ ].
[104] *See* Sunrun's Posthearing Remedy Brief, Affidavit of Ed Fenster, Sunrun at 1. Sunrun reported that it "deployed deployed 1,027 MW through June 30, 2017. During this period, Sunrun has had more than 3,000 employees in the United States, and our local channel partners and subcontractors employ over 8,000 more." *Id.*
[105] Remedy Tr. at 238-39 (Mr. Schulte) (testifying that SunCommon is one of 43 members of Amicus Solar Cooperative, a solar purchasing cooperative that collectively installed more than 200 MW of CSPV in 2016 with approximately $350 million in revenues).
[106] In 2016, SunCommon installed 620 projects. In addition to its 100 employees in New York and Vermont, the company used 50-150 subcontracted employees at any point in time, mostly for construction and more than 50% via local trade unions.

We also refer the Commission to NextEra's separate posthearing submission, which will provide additional information in response to this question.

H. Job Effects

18. CHAIRMAN SCHMIDTLEIN (Tr. at 121-22): I mean that sounds like a wish list to me. You know you want to revive upstream supply chain and this was following up on your testimony where you said you envision five or six producers. You envision a revived upstream supply chain. You envision creating that there would be 35,000 jobs created at a minimum. And so my tion is what do you base those on. Is that just a wish list or do you have some sort of methodology you used to come to those numbers?

COMMISSIONER BROADBENT (Tr. at 365): SolarWorld and Suniva have said that an increase in CSPV cell and module manufacturing would result in a multiplying effect on upstream manufacturing. How do you respond to this argument and the multiplier they have provided for estimating the effect on job creation at upstream manufacturers as a result of increased CSPV production? What are the employment effects for upstream industries making the components used by manufacturers of balance of system products?

Commission's Posthearing Question, For SEIA: SolarWorld and Suniva have said that an increase in CSPV cell and module manufacturing would result in a multiplying effect on upstream manufacturing. How do you respond to this argument, and the multipliers they have provided for estimating the effect on job creation at upstream manufacturers as a result of increased CSPV production (see SolarWorld prehearing remedy brief at Exhibit 26)? What are the employment effects for upstream industries making the components used by manufacturers of balance-of-system products?

ANSWER: There is no evidence on the record that the petitioners have any basis for their quoted 35,000 jobs estimate. We say this for two reasons. First, no supporting evidence or source was provided in either Suniva's or SolarWorld's prehearing remedy brief multiplier effect. The best petitioners could do as the basis for their upstream jobs effects multiplier was stating it was [ ].[107] SolarWorld provides no citation or basis for its forecast. Apparently, SolarWorld came to this estimate without referring to any government source (DOE, NREL, or EIA), the JEDI model, The Solar Foundation *Job Census*, GTM Research, Bloomberg New Energy Finance, or IHS Markit.

[107] SolarWorld's Prehearing Remedy Brief at Exhibit 26.

As far as SEIA can tell, it is an arbitrary number – as is the number of jobs at cell and module facilities that SolarWorld estimates will be created if 4 GWs of new capacity are added in the United States.[108] According to Bloomberg New Energy Finance, about 500 jobs are associated with 1 GW of cell and module capacity.[109] BNEF's estimate is confirmed by Ed Fenster of Sunrun (referring to petitioners' claims about jobs created at the new cell and module facilities), who stated, "Our suppliers tell us on average, they employ only 212 people per gigawatt of cell capacity and 420 people per gigawatt of modules."[110] Petitioners, on the other hand, estimate "8,300 to 9,600" production related workers as a result of the approximately [ ] GW in new capacity.[111] Their job projections of more than 2,000 workers per GW entail 3 to 4 times as many workers as what is now standard in the cell and module industry.

SEIA believes that if 4 GW of new cell and module capacity were built in the United States, there would be some upstream job effects. SEIA maintains, however, that the job "multiplier" upstream is much, much smaller than petitioners suggest. We say this because no one is promising that new wafer capacity will be built in the United States. Wafers are a crucial component in making cells and all of the upstream economic activity associated with wafers will occur abroad – polysilicon manufacturing, ingot growth, and sawing. Petitioners are not claiming all upstream production will be located in the United States. There are additional inputs required for cell and module production (glass, aluminum, encapsulants, etc.), but we believe the <u>total</u> jobs – upstream jobs plus those at a competitive cell and module producers – amount to approximately 1,600 jobs per GW. For reference, 1,600 (upstream plus cell/module) jobs per

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108 Remedy Tr. at 112 (Mr. Szamosszegi).

109 Amy Grace, Bloomberg New Energy Finance (BNEF), "U.S. Solar PV and Power Markets" at 24 (SEIA's Prehearing Injury Brief at Exhibit 10).

110 Remedy Tr. at 235.

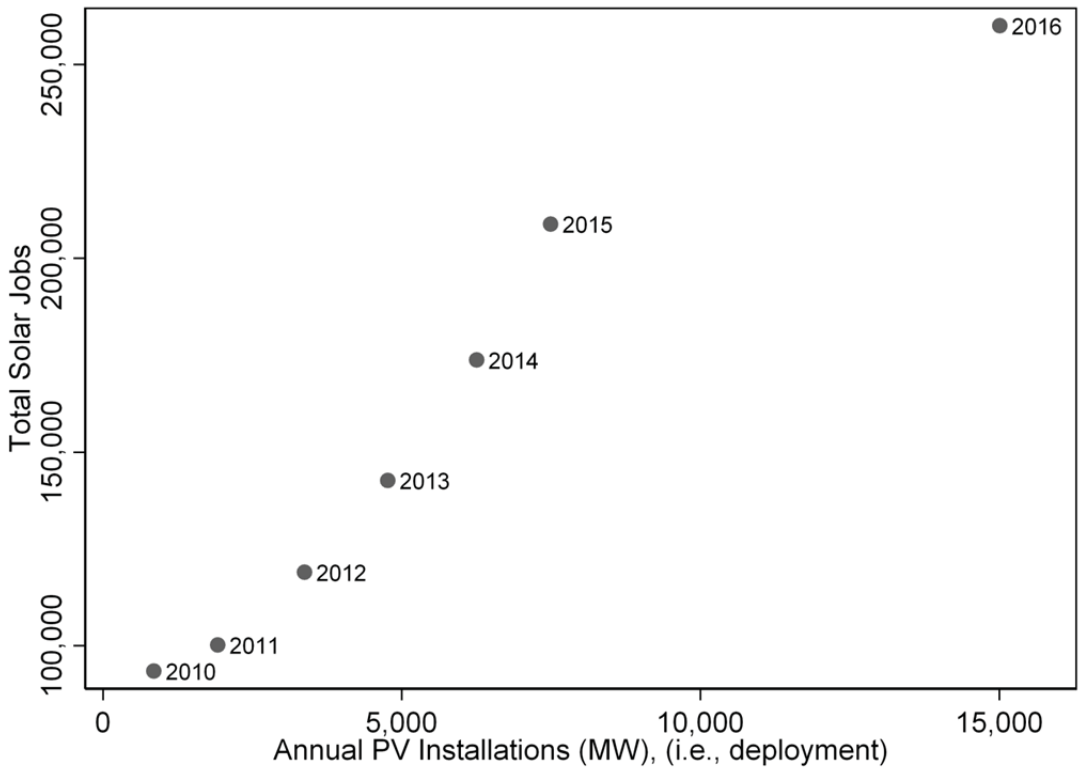
111 SolarWorld's Prehearing Remedy Brief at 39–40.

GW is the figure used in SEIA's JEDI model. The challenge from a jobs perspective is that the early stages of the solar production chain are among the least labor intensive of the entire process.

Moreover, the best evidence on job creation in the solar industry is produced by The Solar Foundation. As documented in SEIA's prehearing remedy brief, there is very little correlation between total solar jobs (manufacturing and other solar jobs) and cell and module production.[112] By contrast, the correlation between solar ***deployment*** and solar jobs (inclusive of all solar related jobs) is 0.97. The following figure graphically depicts the relationship. Despite petitioners' undocumented assertions to the contrary, it is clear that jobs in the solar industry are primarily driven by deployment.

[112] *See* SEIA's Prehearing Remedy Brief, Appendix A at Annex F ("Correlation of Jobs, Cell Production, Module Production, and Deployment") (based on the cell and module net sales quantity data from the Staff Report and the solar jobs data from The Solar Foundation's *2016 National Solar Jobs Census* data).

Solar Deployment and Solar Jobs, 2010-16[113]



[113] *See* GTM Research, *U.S. Solar Market Insight: Full Report Q2 2017* at 6 (SEIA's Prehearing Remedy Brief at Exhibit 9A); The Solar Foundation, *2016 National Solar Jobs Census* at 8 (SEIA's Prehearing Remedy Brief at Exhibit 24).

I. Component Producers

19. COMMISSIONER BROADBENT (Tr. at 199-200): In your posthearing brief, can you please provide us with information on which firms are the major U.S. producers of components and materials used in CSPV cell and module production?

ANSWER: Please see **Exhibit 29-A** for a recent directory of U.S. CSPV manufacturing facilities. The column labeled "Product/Service" shows the product or service produced by the facility, including inverters, trackers, racking, glass, batteries, monitors, chemical/metals, ingots and wafers. The column labeled "Supply Chain" indicates which stage of the supply chain – *e.g.*, cell, module – the product or service of the facility serves.

J. Effectiveness of the Remedy

20. COMMISSIONER BROADBENT (Tr. at 144): Well, under your proposal and maybe Mr. Kaplan can talk about it, do you think that the proposed remedies will allow solar energy to remain cost competitive with other forms of energy in the utility market?

COMMISSIONER BROADBENT (Tr. at 314): Yeah, Mr. Nicely, you've been pretty clear that you don't think the requested remedy recommendation is gonna return Suniva and SolarWorld to profitability.

ANSWER: The issues pointed out by Commissioner Broadbent at the hearing raise fundamental questions about whether restrictive trade relief will improve the industry's current condition. Ascertaining whether such relief will help make the industry profitable is integrally linked to the question of whether the relief will allow solar to remain cost competitive with other forms of energy. SEIA explains in response to several other questions how demand is certain to decline precisely because solar will no longer be cost competitive with other forms of energy. This, in turn, is also part of the reason why the industry will not become profitable: petitioners' assumptions about future profitability assume that demand for CSPV modules is highly inelastic. But, this is simply not true, as demonstrated by the modeling independently conducted by IHS Markit and GTM Research and explained by multiple witnesses at the hearing.[114] This market's price elasticity is widely understood throughout the solar industry.

Petitioners' analysis of the effect their proposed remedy will have on the industry's business is badly flawed and warrants a complete response. First, petitioners make ad hoc and unspecified adjustments to the financial data reported in the Staff Report. These accounting changes by themselves account for [ ] of petitioners' estimated increased profits, and are almost equivalent to their estimate of the impact of their proposed trade-restrictive measures. Second, even if one accepts the petitioners' unspecified accounting

[114] *See also* Affidavit of Craig Cornelius, NRG (**Exhibit 55**).

adjustments, their financial calculations do not capture the impact the proposed relief (or even a legal level of relief) will have on sales prices, sales volumes, and costs. We show below that, if any of these effects are accounted for, the proposed trade-restrictive remedy does not return the industry to profitability.

(a) Petitioners Adopt Unspecified, Large Adjustments to Financial Data as Reported by the Staff Report.

The petitioners make ad hoc and unspecified adjustments to the financial data reported in the Staff Report. In particular, operating income as a ratio to net sales is as follows:

	Cells (Table III-18)[115]	Modules (Table III-21)[116]	Petitioners' Briefs[117]	Only the two petitioners[118]
Operating Income	[ ]	[ ]	[ ]	[ ]

For 2016, U.S. cell and module producers reported an operating income of [ ] for cells and [ ] for modules. However, petitioners reported as their "base scenario" an operating income of [ ]. The industry's operating income is a combination of its cell operations and its module operations. That is, the industry's operating income must be a weighted average of income of [ ] for cells and [ ] for modules. However, petitioners report the industry's operating income as [ ]. It is not possible for petitioners' number to reflect the combined results of [ ] and [ ].

It is not clear how petitioners came to believe the industry's "base scenario" operating income is [ ] as they do not state what adjustments they make to the Staff Report's data. (We note that, perhaps coincidently, had petitioners calculated the operating income based just

115 CR at III-44.
116 CR at III-47.
117 SolarWorld's Prehearing Remedy Brief at 37; Suniva's Prehearing Remedy Brief at 19.
118 SolarWorld's U.S. Producer Questionnaire Response at III-9a, III-9c; Suniva's U.S. Producer Questionnaire Response at III-9a, III-9c.

on Suniva's and SolarWorld's financial statements, they would have reported an 2016 "industry" operating income of [ ].)

(b) Even Given Petitioners' Unspecified Adjustments, a Properly Performed Financial Analysis Reveals the Domestic Industry Will Remain Unprofitable

Remarkably, even after adding [ ] of operating income to the industry's bottom line, the petitioners had to make a series of implausible assumptions about how the domestic industry would perform under their proposed remedy. Their financial analysis misrepresents each of the three key components of financial performance: sales price, sales volume, and costs.

1. Domestic Price: Petitioners' Proposed Remedy

As a reminder, Suniva's proposed trade remedy is that (in 2018) a $0.25/watt tariff is imposed on cells and a $0.32/watt tariff is imposed on modules. In addition, Suniva asks that a minimum price of $0.74/watt be imposed on modules. At current prices (roughly, 20 cent cells, 40 cent modules), these tariffs are equivalent to approximately a 125% ad valorem tariff on imported cells and an 85% ad valorem tariff on modules.

For the sake of argument, assume that petitioners' remedy request is imposed. Petitioners' analysis states that the domestic AUV would be [ ] cents per watt – a full [ ] cents above the imported price. Considering (i) the petitioners' arguments (made at the injury hearing) that their prices are forced down by imports[119] and (ii) the evidence that the petitioners had serious quality and reliability problems during the period,[120] it seems doubtful that the domestic industry could command [ ] cent per watt premium.

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119 Injury Tr. at 224 (Mr. Card), 226 (Mr. Shea).

120 SEIA's Prehearing Injury Brief at 71-95; SEIA's Posthearing Injury Brief at 8-10, Appendix A at 114-20.

We reproduced petitioners' table below but with one adjustment – the domestic sales AUV is set at $740 per KW.[121] If we adjust petitioners' assumption regarding price and instead assume that the domestic AUV is $0.74/watt (or $740 per KW), the domestic industry will LOSE money – specifically, they would have an operating margin of [ ].

Petitioners' Financial Analysis Using Realistic Domestic AUV, Petitioners' Proposed Remedy (CBI)

	Base Remedy	Remedy Scenario
	Quantity (Kilowatts)	
Cell Production	[ ]	[ ]
Module Production	[ ]	[ ]
Net Sales Quantity	[ ]	[ ]
	Value ($1,000s)	
Net Sales Value	[ ]	[ ]
COGS	[ ]	[ ]
Gross Profit	[ ]	[ ]
SG&A	[ ]	[ ]
Op. Income	[ ]	[ ]
	Unit Value ($/KW)	
Net Sales AUV	[ ]	[ ]
Unit COGS	[ ]	[ ]
Unit Gross Profit	[ ]	[ ]
Unit SG&A	[ ]	[ ]
Unit Op. Income	[ ]	[ ]
	Percent of net sales	
Gross Margin	[ ]	[ ]
COGS / Net Sales	[ ]	[ ]
Operating Margin	[ ]	[ ]

2. Domestic Price: Legal 50% Ad Valorem Remedy

Financial performance is even worse for the domestic industry if instead of an illegal trade remedy we assume that a legal 50% tariff is imposed. If this were the trade remedy, at

[121] An electronic version of the Excel file accompanies this brief.

current module prices (about $0.40/watt) it is unlikely the domestic price would rise to the "baseline" [ ]/watt. But, for the sake of argument, suppose it does. In this scenario, the domestic industry loses [ ].

Petitioners' Financial Analysis Using Realistic Domestic AUV, Legal 50% Ad Valorem Tariff Remedy (CBI)

	Base Remedy	Remedy Scenario
	Quantity (Kilowatts)	
Cell Production	[ ]	[ ]
Module Production	[ ]	[ ]
Net Sales Quantity	[ ]	[ ]
	Value ($1,000s)	
Net Sales Value	[ ]	[ ]
COGS	[ ]	[ ]
Gross Profit	[ ]	[ ]
SG&A	[ ]	[ ]
Op. Income	[ ]	[ ]
	Unit Value ($/KW)	
Net Sales AUV	[ ]	[ ]
Unit COGS	[ ]	[ ]
Unit Gross Profit	[ ]	[ ]
Unit SG&A	[ ]	[ ]
Unit Op. Income	[ ]	[ ]
	Percent of net sales	
Gross Margin	[ ]	[ ]
COGS / Net Sales	[ ]	[ ]
Operating Margin	[ ]	[ ]

3. Domestic Sales Volume

The petitioners' proposed remedy would devastate domestic demand. According to IHS Markit's deployment study, PV demand in 2018 would fall by 38.3%.[122] If a 50% tariff were imposed PV demand will fall by 23.4%.[123]

Despite the massive demand destruction, petitioners assume that the domestic sales volume will soar by [ ]. Petitioners are assuming that every U.S. cell and module producer is operating at full capacity. It is hard to believe this would transpire under any circumstances, but it is even more implausible given that petitioners are assuming the domestic industry will charge [ ]/watt more than the tariff-distorted imports AND that petitioners want to raise the costs of module makers by more than 100%.

Given that petitioners did not provide any explanation of how they used sales volume to adjust COGS and SG&A, we cannot precisely calculate how their demand assumption biases their financial analysis. It is clear, however, that arbitrarily increasing volume makes the industry look more profitable.

4. COGS: Petitioners' Proposed Remedy

Petitioners' assumptions regarding per unit COGS are completely implausible and appear to deny the core challenge of independent module makers, which is that they have to purchase cells on the open market. The petitioners' proposal involves a 125% tariff on module makers. Nevertheless, petitioner assumes per unit COGS will fall by [ ].

According to Table III-7 in the Staff Report, of the domestic industry's [ ] of module capacity, [ ] is accounted for by firms who are currently purchasing cells. Said differently, [ ] of the domestic industry will see its cell price increased by 125%.

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122 *See* IHS Markit Deployment / JEDI Jobs (**Exhibit 7**).

123 *Id*.

Given that cells (currently selling for 20 cents per watt) are about 50% of the module price (currently selling for 40 cents per watt), this means [ ] of the industry will experience a 62.5% increase in their per unit COGS. Even with the beneficial effects of (the assumed) larger sales volume, there is no circumstance where module makers can absorb that kind of cost increase and yet have their COGS decrease (as petitioners assert will happen).

For the sake of argument, we accept petitioners' assertion that volume effects will cause per unit COGS to fall for the integrated producers by [ ]. We also apply that beneficial volume effect to the module makers but incorporate the 62.5% in per unit COGS for the module makers (yielding a net per unit COGS increase to module makers of [ ]). Combining the falling per unit COGS of the integrated producers with the rising per unit COGS of the module makers, we find industry-wide per unit COGS will rise by [ ]. Using the rest of petitioners' assumptions, a proper accounting of COGS results in the domestic industry losing [ ]. Comparing petitioners' "base remedy" to this outcome, we see that the tariff provides essentially zero benefit to the overall domestic industry.

Petitioners' Financial Analysis Using
COGS Impact of Petitioners' Proposed Remedy (CBI)

	Base Remedy	Remedy Scenario
	Quantity (Kilowatts)	
Cell Production	[ ]	[ ]
Module Production	[ ]	[ ]
Net Sales Quantity	[ ]	[ ]
	Value ($1,000s)	
Net Sales Value	[ ]	[ ]
COGS	[ ]	[ ]
Gross Profit	[ ]	[ ]
SG&A	[ ]	[ ]
Op. Income	[ ]	[ ]
	Unit Value ($/KW)	
Net Sales AUV	[ ]	[ ]
Unit COGS	[ ]	[ ]
Unit Gross Profit	[ ]	[ ]
Unit SG&A	[ ]	[ ]
Unit Op. Income	[ ]	[ ]
	Percent of net sales	
Gross Margin	[ ]	[ ]
COGS / Net Sales	[ ]	[ ]
Operating Margin	[ ]	[ ]

5. COGS: Legal 50% Ad Valorem Remedy

Similar results are found if we instead look at a 50% ad valorem tariff. In this remedy scenario, module makers will experience a 25% increase in per unit COGS. We once again apply petitioners' assumed beneficial volume effect on per unit COGS (a reduction of [ ]) to both the integrated and independent module makers.[124] Yet, the tariff's serious impact on module makers' costs means the overall industry per unit COGS rise by [ ]. Furthermore, as discussed above, at current module prices, it is unlikely the domestic price would rise to the

[124] As a result of the assumed 6% reduction in COGS due to volume, module makers' net per unit COGS rise by 23.5% (.25 x .94 =.235).

"baseline" [ ]/watt (from $0.40). But, for the sake of argument, suppose it does. In this scenario the domestic industry loses [ ]

Petitioners' Financial Analysis Using
COGS Impact of Legal 50% Ad Valorem Remedy (CBI)

	Base Remedy	Remedy Scenario
	Quantity (Kilowatts)	
Cell Production	[ ]	[ ]
Module Production	[ ]	[ ]
Net Sales Quantity	[ ]	[ ]
	Value ($1,000s)	
Net Sales Value	[ ]	[ ]
COGS	[ ]	[ ]
Gross Profit	[ ]	[ ]
SG&A	[ ]	[ ]
Op. Income	[ ]	[ ]
	Unit Value ($/KW)	
Net Sales AUV	[ ]	[ ]
Unit COGS	[ ]	[ ]
Unit Gross Profit	[ ]	[ ]
Unit SG&A	[ ]	[ ]
Unit Op. Income	[ ]	[ ]
	Percent of net sales	
Gross Margin	[ ]	[ ]
COGS / Net Sales	[ ]	[ ]
Operating Margin	[ ]	[ ]

All of the above scenarios lead to a single conclusion: the Commission must not accept the petitioners' profitability analysis. Their adjustments and assumptions are neither justified nor plausible. The analyses set forth above, along with the analyses in Dr. Prusa's Appendix A accompanying SEIA's Prehearing Remedy Brief, all demonstrate that the industry will not become profitable upon imposition of trade-restrictive relief. A significant part of this analysis is that trade relief will not allow the industry to remain competitive with other sources of energy.

K. Domestic Capacity

21. COMMISSIONER WILLIAMSON (Tr. at 168-69): Part of the reason why I'm pursuing this is I guess Auxsin {sic} Solar in their brief, they're not here, but that says that there will be insufficient supply of domestically produced cells to meet existing demand. So I'm wondering how should the Commission consider these -- and cell production under your proposed remedy plan, and anticipate increased cell production and fashioning your remedy? I mean because it's going to take a while to gear up to increase cell production.

And so what happens here and also what about those other domestic producers of modules who are relying on imported cells?

COMMISSIONER WILLIAMSON (Tr. at 171): And by sufficient supply, you mean sufficient supply of whatever type of cell they're looking for? . . . Anything you can add post-hearing about the proposal containing the flexibility to ensure that all of the different domestic module manufacturers have the cells that they need.

ANSWER: In addition to petitioners, both of whom have in the past needed to purchase cells that were not manufactured by themselves, SEIA is aware of at least 23 independent module producers in various stages of operation including:

	Company
1	Amerisolar[1 3]
2	Auxin Solar Inc. [1 3]
3	CBS Solar [1 3]
4	Colored Solar [1 3]
5	FPI Solar (UNICOR) [1]
6	Heliene [1 3]
7	Itek Energy [1 2 3]
8	Kyocera [2]
9	Lumos [1 3]
10	Mission Solar [2 3]
11	Nu-Cell Solar [1 3]
12	PowerFilm, Inc. [1]
13	Prism Solar [1 3]
14	SBM Solar [1 2 3]
15	Seraphim Solar USA Manufacturing [1 2 3]

	Company
16	Sharp [2]
17	Siva Power [1]
18	Solaria [1 2 3]
19	Solartec Energia [1 3]
20	SolarTech Universal [1 3]
21	SunSpark Technology Inc. [1 3]
22	Tesla [1 3]
23	Wanxiang [1 2]

[1] Based on SEIA's U.S. Solar Manufacturing Facilities Directory (last updated Oct. 4, 2017) (**Exhibit 29-B**).
[2] Based on CR at Table I-2.
[3] Based on CR at Table III-3.

SEIA understands, based on its own recent manufacturing facility directory and from the Commission's Staff Report, that all of the companies listed above except Tesla are independent module producers that must purchase cells from other companies for producing modules. Tesla is currently in the process of ramping up its integrated cell and module production over the next several months.[125]

Therefore, there are more than 20 companies in the near future that may need access to cells in order to produce modules. The quota of 0.22 GW proposed by Suniva on CSPV cells is exceedingly restrictive and would strangle production while cutting down options even for petitioners who may need to rely upon imported cells as they retool their facilities. In fact, a quota makes no sense for a product like CSPV cells where all parties seek to encourage manufacturing growth, and cells are the required building blocks for the construction of CSPV modules.

No one would be hurt more by a CSPV cell quota than this portion of the domestic industry, the great majority of whom rely upon imported cells. It is no surprise that the pre-

[125] *See* "Tesla Starts Production of Solar Cells in Buffalo," *Bloomberg* (Aug. 31, 2017), https://www.bloomberg.com/news/articles/2017-08-31/tesla-starts-production-of-solar-cells-in-buffalo (**Exhibit 30**).

hearing brief of one of the largest independent module manufacturers, Mission Solar, soundly rejects a cell quota.[126]

U.S. cell producers sell only miniscule quantities into the commercial market, even when additional capacity has been available. U.S. cell producers' commercial U.S. shipments of cells were [ ] in each year from 2014 to 2016, which equates to [ ] percent of apparent U.S. cell consumption.[127] By comparison, U.S. cell producers' exports of cells ranged from [ ] over the same period.[128] They clearly have no interest in supplying their domestic module producer counterparts with cells.

This is, of course, because the U.S. cell producers are themselves module producers, and they compete downstream with the independent module producers. They have no incentive to sell to their competitors at all, and certainly not in quantities or at prices that would allow these companies to be competitive. Consequently, independent module producers are essentially entirely reliant upon import sources. Therefore, unduly restricting independent module producers' access to cell supply would cause them – and therefore the domestic industry -- serious harm.

Apart from the reasoning presented above, however, the petitioners' proposed quota for CSPV cells is not consistent with the statute and should be rejected by the Commission on that basis alone. The statute requires that any quota imposed be "not less than the average quantity or value of such article entered into the United States in the most recent 3 years that are

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126 *See* Mission Solar's Prehearing Remedy Brief at 7 ("MSE strongly urges the Commission not to adopt {quotas on imported CSPV cells}. Quantitative restrictions on imported cells . . . would almost certainly generate shortages and would lead to the inflation of the prices of CSPV products – again, to the serious detriment of MSE and like-situated module producers.").

127 CR at Table C-2.

128 CR at Table III-9. Even U.S. cell producers' exports to unrelated firms ([ ]) were far greater than their U.S. commercial shipments.

representative of imports of such article and for which data are available . . . .".[129] Petitioners' proposed cell quota of 0.22 GW is far less than imports any recent three-year period, whether that period starts in 2013 ([ ]) or 2014 ([ ]).[130] See the table below:

CSPV Cell Imports: Averages Over Representative Periods[131]

Total	**2013**	**2014**	**2015**	**2016**
Quantity of CSPV cell imports (kw)	[ ]	[ ]	[ ]	[ ]
Period Average, 2013-2015		[ ]		
Period Average, 2014-2016			[ ]	

In sum, SEIA submits that the Commission should decline to impose any quota on CSPV cells because the petitioners have not only failed to properly consider the harm this would cause to other domestic producers; they have not explained, nor can they explain, how this proposal is consistent with the statute.

22. COMMISSIONER WILLIAMSON (Tr. at 334): Aren't there other U.S. companies that are making modules and maybe even cells? And so it's not just the two petitioners that are part of the manufacturing sector in this industry?

ANSWER: As discussed above in response to **Question 21**, there are at least 20 or so other cell or module producers in the United States besides the two petitioners. And, as also discussed above, the independent module producers stand to be placed in significant jeopardy with the imposition of any relief on cells. In addition to the independent module producers, there is also Tesla, which is building a factory in Buffalo, NY that will produce both cells and modules that will produce both cells and modules with planned capacity of 1-2 GW.[132] [

129 19 U.S.C. § 2253(e)(4).

130 [ ] *See* CR at Table C-2.

131 CR at Table C-2.

132 "Tesla Starts Production of Solar Cells in Buffalo," *Bloomberg* (**Exhibit 30**).

[133]

[134]

[135]

[136]]

23. COMMISSIONER WILLIAMSON (Tr. at 356): Just forget about the two Petitioners in this case and I was wondering why hasn't any -- you know producers haven't decided to produce in the United States. What factors went into the decision not to do it in the U.S.? We've seen how quickly people have ramped up in Vietnam and Thailand and Malaysia, so why not the U.S.?

ANSWER: It is not true that there are no other producers of these products in the United States. As discussed directly above, Tesla is building a 1 GW plant in Buffalo that will produce both cells and modules. In addition, First Solar has shown its ability to produce very cost-competitive thin-film solar panels here in the United States, while also generating significant profits.[137]

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133 [ ]

134 [ ]

135 [ ]

136 [ ]

137 *See* SEIA's Prehearing Remedy Brief at 36-37.

L. Global Capacity

24. COMMISSIONER BROADBENT (Tr. at 180): In SolarWorld's post-hearing injury brief, I think it was in response to a question by Commissioner Johanson, you all provided some information on global overcapacity. And I just had a couple of questions.

The data provided showed that the difference between CSPB {sic.} cell producing capacity and solar installations has been declining since 2012, between 2012 and 2016. Where are we on the global overcapacity situation? Is it abating somewhat? And what are you projecting going forward?

COMMISSIONER BROADBENT (Tr. at 297-98): Mr. Shiao from GTM, I just had a question on just the global over-capacity issue. How would you assess that? Is the global over-capacity abating at this point and where do you project it going forward? ... So when you're looking at capacity in China you're looking at wafer and cell capacity?

ANSWER: The so-called global overcapacity alleged by petitioners is grossly overstated: the data on which petitioners base their claim of supply-demand imbalance fail to capture the reality that global PV installations are growing at a breakneck pace and constantly exceeding forecasts.

In its posthearing injury brief, SolarWorld relied largely on GTM Research's *PV Pulse* from July 2017 to argue that the 2016 global solar module production capacity significantly exceeded installations.[138] The brief cited global PV module production capacity and cell production capacity figures, and compared them to the global PV installations figure.[139] This is an inaccurate, if not misleading, method of determining the extent of any supply-demand imbalance. As Mr. Shiao explained at the hearing and also previously discussed in SEIA's Posthearing Injury Brief,[140] such analysis requires examining the entirety of the PV production chain, instead of comparing just module production capacity with module demand.[141] Global PV wafer and cell manufacturing capacities must be taken into account because those are "typically

[138] SolarWorld's Posthearing Injury Brief, Exh. 1 (Answers to Questions) at 43; GTM Research, *PV Pulse – July 2017*, at "1A – Supply/Demand Summary Metrics" (**Exhibit 31**).
[139] *Id*.
[140] *See* SEIA's Posthearing Injury Brief, Appendix A (Answers to the Commission's Question) at 105.
[141] *See* Remedy Tr. at 298–99.

more {of} the limiting factors in terms of what {is} available to be produced as . . . modules."[142] Mr. Shiao further explained that the ongoing supply tightness within the wafer sector in particular has been limiting the volume of modules that could actually be produced, regardless of the theoretical module production capacity.[143] Please see the figure below:[144]

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Thus, on the supply side, according to GTM Research's *PV Pulse* cited by SolarWorld, global wafer production capacity is projected to reach 102 GW by the end of 2017, with global CSPV cell production capacity to reach 118 GW by that time.

With respect to demand, it should be noted that the projection for 2017 global PV installations has been revised upward several times since the start of this investigation. The most recent edition of GTM Research's *PV Pulse* raised its 2017 global installations projection by 9

142 Remedy Tr. at 298.
143 *Id.*
144 GTM Research, PV Module Supply Chain Service.

GW, to 90 GW.[145] Bloomberg New Energy Finance ("BNEF") recently estimated that as of 3Q 2017, global PV demand reached [ ] GW[146] and projects to [ ] GW by the end of 2017.[147] This figure is estimated to rise as high as [ ] GW by 2019.[148] See the figure below:[149]

[

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Much of this expansion is due to the expectation-surpassing growth of the Chinese PV market: China accounted for about half (34 GW) of the new global PV installed capacity in 2016,[150] and is expected to deploy 40-45 GW by the end of this year.[151] In fact, BNEF estimates

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145 GTM Research, *PV Pulse – September 2017*, at "1A - Supply/Demand Summary Metrics" (**Exhibit 32**). Meanwhile, the projections for global wafer and cell production capacities did not change significantly: 102.5 GW for wafer and 117 GW for cell. *Id.*

146 BNEF, [ ] at 4 (**Exhibit 33**).

147 *Id.* at 2.

148 *Id.*

149 BNEF, [ ] at 1 (**Exhibit 33**).

150 International Energy Agency (IEA), *Renewables 2017: Analysis and Forecasts to 2022, Executive Summary* at 3 (Oct. 2017), https://www.iea.org/media/publications/mtrmr/Renewables2017ExecutiveSummary.PDF (**Exhibit 34**); *see also* Mark Hutchins, "AECEA: China installations to surpass 40 GW in 2017," *PV Magazine* (Aug. 22, 2017), https://www.pv-magazine.com/2017/08/22/aecea-china-installations-to-surpass-40-gw-in-2017 (**Exhibit 35**).

that China has already added [ ] GW by 3Q 2017.[152] Such robust growth in annual PV installations in China is projected to continue, as demand is "ramping up along with declining solar costs and the improved returns of power stations."[153]

Why, then, did SolarWorld have such a grim outlook on the global PV supply-demand balance? The reason is simple: SolarWorld was relying on outdated projections. The 2016 article cited in SolarWorld's posthearing injury brief to support its claim that the global PV supply significantly exceeded demand stated that "actual installation growth is not expected" for China in 2017.[154] As mentioned above, however, this year's PV installations in China are now forecasted to be 10-15 GW higher than last year's. Similarly, petitioners' dated article predicted that global PV demand would increase by just 0.3 GW, stopping at 63.7 GW in 2017. This misses BNEF's most recent estimate by [ ] GW.[155]

Considering global wafer production capacity, which acts as a cap on actual module production, and the rapidly growing PV demand around the world, the picture that petitioners attempt to draw of a severe PV supply-and-demand imbalance is just not real. Moreover, as Commissioner Broadbent noted, the difference between PV manufacturing capacity and installations has been narrowing in recent years.

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[151] *See* Hutchins, "AECEA: China installations to surpass 40 GW in 2017" (**Exhibit 35**); *see also* Remedy Tr. at 297 (Mr. Shiao).

[152] BNEF, [ ] at 3 (**Exhibit 33**).

[153] "China Is Adding Solar Power at a Record Pace," *Bloomberg* (July 18, 2017), https://www.bloomberg.com/news/articles/2017-07-19/china-adds-about-24gw-of-solar-capacity-in-first-half-official (**Exhibit 36**).

[154] SolarWorld's Posthearing Injury Brief, Exh. 1 (Answers to Questions) at 43 (citing Mark Osborne, "EnergyTrend expects solar industry overcapacity to last through 2017," *PV-Tech.org* (Sep. 19, 2016), https://www.pv-tech.org/news/energytrend-expects-solar-industry-overcapacity-to-last-through-2017).

[155] *See* BNEF, [ ] at 2 (**Exhibit 33**).

25. COMMISSIONER BROADBENT (Tr. at 183): Could anybody speculate why the Chinese demand would be decreasing?

ANSWER: During the hearing, Mr. Brightbill claimed that Chinese PV demand had peaked last year and was likely to drop until 2022. As discussed above, however, Chinese PV demand is actually gaining momentum, growing from 34 GW last year to 45 GW this year.[156] Official data released by China's National Energy Administration states that 24.4 GW of new PV capacity was installed in China during the first half of 2017.[157] On top of this, another 10.5 GW was added in July, bringing total installations between January and July 2017 to 34.92 GW, which is about 380 MW ahead of the figure for January-July 2016.[158] According to the International Energy Agency, PV deployment in China is expected to "speed up," as "China is moving away from its feed-in-tariff (FIT) program to a quota system with green certificates," in synergy with "ambitious power market reform, new transmission lines, and the expansion of distributed generation."[159]

[156] Hutchins, "AECEA: China installations to surpass 40 GW in 2017" (**Exhibit 35**); *see also* Remedy Tr. at 297 (MJ Shiao).
[157] *Id*.
[158] *See* Hutchins, "AECEA: China installations to surpass 40 GW in 2017" (**Exhibit 35**).
[159] IEA, Renewables 2017: Analysis and Forecasts to 2022, Executive Summary at 3-4 (**Exhibit 34**).

M. Legality of Petitioners' Proposed Trade Restrictions

26. VICE CHAIRMAN JOHANSON (Tr. at 124-25) SolarWorld has used the years 2013 to 2015 as a reference period for its proposed tariff recommendations and quota recommendation and Suniva has used the same reference period for its tariff recommendations, and these can be seen at SolarWorld's brief at pages 11, 13, and 17, and in the Suniva brief at page 4. Why is this period the most accurate for considering a quota and how should we consider the impact of the AVD CVD orders during this period? And also, as it relates to tariffs, is 2013 to 2015 a proper reference for complying with the requirement that any tariff not be more than 50 percent ad valorem above the existing rate, if any?

COMMISSIONER WILLIAMSON (Tr. at 193): Returning to Commissioner Johanson's question regarding the correct representative period, are you arguing that the Commission has maximum flexibility in determining this period? And I recognize that U.S. prices fell substantially between 2015 and 2016. However, import prices fell relatively little. So is it because of the falling U.S. prices that should determine the representative period, or follow the import prices? And if you want to think about it and do it post-hearing, I can accept that.

VICE CHAIRMAN JOHANSON (Tr. at 276-77): Mr. Wetstone, you concluded by talking about possible, how you'd prefer to see a non-trade restrictive remedy but this was something which was raised quite extensively by the Petitioner so I am going to go ahead and start the question in that area. It deals with a possible reference period for any possible tariffs. How do you all respond to the Petitioner's reliance upon 2013 to 2015 prices for consideration of the maximum allowable tariff under the statute? This argument can be seen on pages 11 and 13 of SolarWorld's brief. Is this the proper measure under the statute for consideration of the statutory 50 percent threshold limitation for any recommended tariff?

VICE CHAIRMAN JOHANSON (Tr. at 278): With that, I'm going to segue into the quota issue and I think I know what the answer is but I am going to ask it anyway because this is an important issue. How do you respond to SolarWorld's reliance upon 2013 to 2015 as a reference period for the calculation of any quota? Is this the most recent three years that are representative? This can be seen at page 17 of SolarWorld's brief.

CHAIRMAN SCHMIDTLEIN (Tr. at 321): So what information do you think the Commission should use if we were to look at an ad valorem rate versus a fixed tariff rate? … In determining what the value is…

ANSWER: As the Commission is well aware, the statute requires any quota recommendation to be based on the most recent three years that are representative of imports and for which data are available.[160] The safeguard statute does not establish the same requirement for tariffs, but as discussed in more detail in response to **Questions 27-28** and in SEIA's prehearing remedy brief at 24-26, petitioners have complicated the tariff discussion by proposing a per-watt specific rate. Any tariff (however stated) must comply with the statute's maximum allowable rate of 50 percentage points above the existing duty rate.[161]

(a) There Is No Legal Support for Petitioners' Use of a Three-Year Representative Period to Calculate a Specific Rate Tariff

The petitioners' calculation of a specific tariff is erroneous, and the petitioners' justification that such tariff does not exceed the statutory limit of 50% is preposterous. As indicated by the many questions posed during the remedy hearing, the Commission has legitimate concerns about whether the proposed specific rates violate the statute.[162] SEIA opposes imposition of any trade-restrictive remedy, but the Commission needs to focus on the distinctive problems with a specific tariff that is static and will undoubtedly violate the statute's maximum allowable tariff as prices naturally fall.[163]

The petitioners misapplied the statute to calculate a specific tariff and to justify it as consistent with the legal limit of a 50% duty. Suniva and SolarWorld calculated a per-watt tariff based on 50% of the average unit value of CSPV imports for 2013-2015 as "the reference

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160 19 U.S.C. § 2253(e)(4).

161 19 U.S.C. § 2253(e)(3).

162 As discussed in more detail in response to **Questions 27-28**, there are other problems with a specific rate, including enforcement and administration of a specific rate expressed as cents per watt as applied to entries that are reported on a per-unit basis.

163 *See* **Question 28** regarding technology-driven price declines for CSPV.

period."[164] *A fortiori,* the petitioners assert that 50% of a three-year AUV is consistent with the statute because it does not exceed the 50% maximum.[165] The petitioners cite no statutory authority or Commission precedent for this "reference period threshold tariff."

Nowhere in the safeguard statute are representative periods mentioned with respect to tariffs. The requirement to consider the most recent three-year representative period applies to quotas only – not tariffs.[166] Instead, SolarWorld cites in a footnote the definitions section of the Trade Act of 1974 for the idea of converting a specific rate to an "ad valorem equivalent" wherever the term "ad valorem" is used in the statute, including the 50% legal limit for a safeguard tariff.[167]

SolarWorld's reliance on the definitions is misguided. The Trade Act of 1974 defines "ad valorem" and "ad valorem equivalent" as follows:

> (3) The term "ad valorem" includes ad valorem equivalent. Whenever any limitation on the amount by which or to which any rate of duty may be decreased or increased pursuant to a trade agreement is expressed in terms of an ad valorem percentage, the ad valorem amount taken into account for purposes of such limitation shall be determined by the President on the basis of the

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[164] Suniva's Prehearing Remedy Brief at 4 (citing PR at C-3 (Table C-1)); SolarWorld's Prehearing Remedy Brief at 11 (citing PR at C-3 (Table C-1)). Petitioners calculated the "reference period threshold tariff" of $0.63/watt for modules by dividing total import value (in $1,000's) by total import quantity for 2013-2015 ($[ ] / [ ] kw = $0.63/watt). Petitioners' proposed tariff for modules of $0.32/watt is 50% of $0.63. They apply the same methodology for calculating and rationalizing a cell tariff of $0.25/watt. *See* Suniva's Prehearing Remedy Brief at 6; SolarWorld's Prehearing Remedy Brief at 13.

[165] Suniva's Prehearing Remedy Brief at 4; SolarWorld's Prehearing Remedy Brief at 10 n.27.

[166] "Any action taken under this section proclaiming a ***quantitative restriction*** shall permit the importation of a quantity or value of the article which is not less than the average quantity or value of such article entered into the United States in the ***most recent 3 years that are representative of imports of such article*** and for which data are available, unless the President finds that the importation of a different quantity or value is clearly justified in order to prevent or remedy the serious injury." 19 U.S.C. § 2253(e)(4) (emphasis added).

[167] SolarWorld's Prehearing Remedy Brief at 10 n.27. This footnote also cites a 1984 USITC General Counsel memorandum regarding "Remedy Recommendations in Section 201 Cases." *Id.* This memorandum does not address representative periods, a "reference period threshold tariff," or calculation of ad valorem equivalents. *See generally* SolarWorld's Prehearing Remedy Brief at Exhibit 15. Suniva does not even attempt to explain the legal basis for its specific rate calculation or compliance with the 50% limit.

> value of imports of the articles concerned during the most recent representative period.[168]
>
> (4) The term "ad valorem equivalent" means the ad valorem equivalent of a specific rate . . . . The ad valorem equivalent shall be determined by the President on the basis of the value of imports of the article concerned during the *most recent representative period*.[169]

Use of the terms "limitation" and "most recent representative period" here do not mean what the petitioners think they mean. The safeguard statute's 50% limit on new tariffs *sounds* like a limitation mentioned in the definition of ad valorem, but it is not. The legislative history of the Trade Act of 1974 makes clear that any limitation on the decrease or increase of a duty pursuant to a trade agreement must be evaluated on the basis of the value of imports during the most recent representative period. A safeguard tariff is not pursuant to a trade agreement.

The House Committee report clarified that the Trade Act defined terms "of a general nature used throughout the bill, *as well as certain terms having applicability to specific sections of the legislation*."[170] The 1974 Senate Committee Report explained:

Under Section 601(3) of the House bill, the base period for determining the AVE {ad valorem equivalent} rate of duty would have been defined to be the most recent period *before the date on which a trade agreement is entered into under the bill.* The Committee agreed to amend this section so that the base period for determining AVE rates of a duty could be moved forward to the earliest representative period of time, which would then *coincide with the initiation of negotiations under Title I of the bill.* This would permit the Tariff Commission {now the U.S.

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168 19 U.S.C. § 2481(3). (emphasis added).

169 19 U.S.C. § 2481(4). The legislative history refers to this definition and the definition of "ad valorem" under 19 U.S.C. § 2481(3) in the same context of limitations on the President's authority to adjust duties pursuant to trade agreement negotiations. *See Trade Reform Act of 1974, Report of the Committee on Finance, United States Senate*, S. Rept. No. 93-1298, at 229 (Nov. 26, 1974).

170 Trade Reform Act of 1973, Report of the Committee on Ways and Means, House of Representatives, H. Rept. 93-571, at 89 (Oct. 10, 1973) (emphasis added).

International Trade Commission} to make its recommendation to the President as to the impact of the duty modifications on the U.S. economy prior to the time any trade agreement offers are made, consistent with the prenegotiation procedures provided in Title I of the bill.[171]

The Trade Act of 1974 had many other purposes besides safeguards. Title I concerned negotiating and other authorities. "Relief from Injury Caused by Import Competition" (*i.e.*, the safeguard statute) was Title II of the Act. Therefore, the calculation of an ad valorem rate based on the most recent representative period *does not apply* to determining whether a safeguard tariff violates the legal 50% limit.

Instead, the Commission should use current prices to evaluate petitioners' proposed tariff for compliance with the statute. The Commission is not limited to a three-year period like the quota provision in the safeguard statute.[172] Rather, the plain language of the statute supports use of more recent data: "No action may be taken under this section which would increase a rate of duty to (or impose a rate) which is more than 50 percent ad valorem above the rate (if any) *existing at the time the action is taken*."[173] Clearly, the highlighted language refers to the current tariff rate, not value, but it evidences an intent to assess any new safeguard duty in the context of the present, not the past. A three-year period ending over a year and a half ago is nowhere near the "time the action is taken." The petitioners proposed an initial specific tariff of $0.32/watt for

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171 *Trade Reform Act of 1974, Report of the Committee on Finance, United States Senate*, S. Rept. No. 93-1298, at 229-30 (emphasis added). The text of 19 U.S.C. § 2481(3) has not changed substantively since the original 1974 Act. In 1979, Congress amended the provision to the current text (with minor grammatical changes) pursuant to the Tokyo Round of Multilateral Trade Negotiations. The legislative history does not explain why the text was edited, indicating no intent to change the meaning or application of the provision. More generally, the 1979 House report confirmed the need to calculate tariff rate equivalents to verify that any new duty rates comply with the cap on the President's authority to increase duty rates above MFN and non-MFN negotiated rates under section 101 of the 1974 Act. *See Trade Agreements Act of 1979, Report of the Committee on Ways and Means, House of Representatives*, H. Rept. 96-317, at 7. The 1984, 1988, and 1994 amendments did not address this provision.

172 19 U.S.C. § 2253(e)(4).

173 19 U.S.C. § 2253(e)(3) (emphasis added).

modules. Modules are currently selling for about $0.40/watt.[174] A $0.32/watt tariff would be an *80% tariff,* well above the 50% legal limit.[175] At current prices, a $0.25/watt tariff on cells would be an illegal *125% tariff*.[176]

Therefore, the petitioners' proposed tariffs should be rejected as inconsistent with the statute's 50% maximum rate. In response to Chairman Schmidtlein's question, the Commission could avoid these uncertainties altogether by considering a low *ad valorem* rate below 50% (if any at all) that would be consistent with the statutory limitation at the time of the recommendation as well as in the future when applied to entries.

(b) Import Volumes in 2016 Should Be Included in Any Representative Period for Quotas

As discussed in response to **Questions 32-33**, SEIA opposes SolarWorld's proposed quota for imported cells and modules as unduly disruptive to the U.S. market, creating significant uncertainty, and inadequately accounting for short supply from U.S. producers. If the Commission nonetheless considers a quota, it should use the most recent three-year period in accordance with the statute.

The statute provides:

> *Any action taken under this section proclaiming a* quantitative restriction *shall permit the importation of a quantity or value of the article which is* not less than the average quantity or value of such article entered into the United States in the most recent 3 years that are representative of imports of such article and for which data are available, *unless the President finds that the importation of a different quantity or value is clearly justified in order to prevent or remedy the serious injury.*[177]

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174 According to BNEF, cells sold for $0.24/watt and modules sold for $0.42/watt in August 2017. *See* [ ], BNEF, [ ] (SEIA's Prehearing Remedy Brief at Exhibit 12).

175 *Id.*

176 *Id.*

177 19 U.S.C. § 2253(e)(4).

The plain language of the statute favors the average of the most recent three years. That preference is qualified only by the requirement that the period be (1) "representative of imports of such article" and (2) "for which data is available." The record of this investigation satisfies the latter. The Commission collected import quantity and value data for calendar years 2012-2016.[178] The question is whether 2014-2016 is "representative of imports of such article."

The Commission's practice in selecting the most representative period is not consistent, but the Commission has considered the meaning of the provision. In *Wheat Gluten*, the Commission acknowledged the statutory requirement to base any quota on the most recent three-year period and explained "that, in the absence of anomalous circumstances that render any of those years unrepresentative of imports, any quantitative restriction should take into account average import levels during the most recent three years."[179] Further, the Commission clarified "*{w}e generally would not consider an increase in imports during the most recent three years to mean that any or all of those years are not 'representative' of imports*."[180]

This makes sense because the Commission only recommends actions to the President if it first determines that increased imports are a substantial cause of serious injury or threat thereof.[181] An increase in imports is foundational, not anomalous. There must be some other unusual circumstance to justify a period that is not the most recent. SolarWorld provided no

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178 PR at Table II-1.

179 *Wheat Gluten*, Inv. No. TA-201-67, USITC Pub. 3088, at I-28 (Mar. 1998). The relevant statutory provision was the same at the time of *Wheat Gluten*. In *Wheat Gluten*, the Commission nonetheless chose an earlier three-year period during which the domestic industry was profitable in hopes of restoring it to profitability. *Id.* Although not clearly explained, the anomaly must have been the losses later in the POI. However, this logic does not apply to the present case because the domestic CSPV industry was [ ]. *See* CR at Table C-1a.

180 *Wheat Gluten*, USITC Pub. 3088, at I-28 n.133 (emphasis added).

181 19 U.S.C. § 2252(e)(1).

justification other than increased imports.[182] If the Commission considers a trade-restrictive quota, it should reject the petitioners' proposed three-year period and instead rely upon the most recent three-year period (2014-2016).

27. COMMISSIONER WILLIAMSON (Tr. at 188-89): I was wondering, why do you prefer specific tariffs to an ad valorem tariff? Do you agree that an ad valorem tariff allows duties to adjust to changes in prices resulting from raw material cost technology advances and great production efficiency?

Also, a specific tariff does not allow such flexibility but would become more restrictive each year if prices continue the downward trend that has characterized the industry for decades.

And if a foreign producer chose to lower his prices to absorb the effects of an ad valorem duty, couldn't they do the same with the specific duty?

COMMISSIONER WILLIAMSON (Tr. at 190): So you're saying it's hard to prevent the flexibility--hard to prevent the circumvention. You'd probably have to give up on some of the flexibility that might be in the ad valorem tariff.

ANSWER: Petitioners argue that specific tariffs are preferable to *ad valorem* tariffs because foreign exporters may evade ad valorem tariffs by understating the value of their goods. However, this issue is not unique to the case at hand, and the Commission has been aware of it for decades.[183] In cases where the Commission recommended duties as a part of a safeguard remedy, it has nevertheless consistently recommended *ad valorem* duties, "even when the imported article was a commodity and the existing tariff was in the form of a specific rate."[184] For instance, in 1999, although the existing duties on lamb meat were specific duties (in cents per kilogram), the Commission recommended *ad valorem* tariffs as part of a tariff-rate quota

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[182] *See* SolarWorld's Prehearing Remedy Brief at 17 ("the pre-surge period of 2013-2015 is the most representative of imports of CSPV modules").

[183] See Conversion of Specific and Compound Rates of Duty to Ad Valorem Rates: Report to the President on Investigation No. 332-99 under Section 332 of the Tariff Act of 1930, as Amended at 12–13, USITC Pub. 896 (July 1978) (**Exhibit 37**); see also Memorandum to the USITC from General Counsel, Remedy Recommendations in Section 201 Cases at 10 (July 3, 1984) (hereinafter "1984 USITC General Counsel Memo") (**Exhibit 38**).

[184] 1984 USITC General Counsel Memo at 11 (**Exhibit 38**).

system.[185] (*Lamb Meat* is the latest case in which the subject merchandise had existing duties in specific rate terms.)

As discussed in response to **Question 25** above, the specific duty the petitioners propose in this case would violate the statute immediately upon its imposition, as it would exceed the 50% ad valorem maximum level: a $0.32/watt duty on current module prices is at least an 80% ad valorem duty. Specific duties also present problems in the future.

As Commissioner Williamson noted, specific tariffs suffer from a lack of flexibility in that they fail to take account of naturally occurring fluctuations in value — resulting from improved production efficiency, dynamics in the commodity market, raw material technology advances, and various other factors. Commissioner Williamson is absolutely correct that PV prices have continued a downward trend for decades and this trend will continue as an inherent characteristic of this industry whose very existence hangs on cost-cutting innovation. As PV prices have been falling, as long predicted by Swanson's Law and widely assumed by industry participants, specific tariffs like the ones proposed by petitioners will become increasingly onerous, because the ratio of the amount of duty collected to the price of a PV product will rise. (The answer to **Question 28** discusses this issue in more detail.) Not only do specific tariffs sacrifice flexibility, they are likely inconsistent with the statutory requirement in Section 203(e)(5) of the Trade Act[186] —any tariff, tariff-rate quota or quota (with an effective period of more than 1 year) imposed as a safeguard remedy must be "phased down" at regular intervals during the relief period. As PV prices decline, the restrictive effect of specific tariffs will become amplified, which is the *opposite* of a phase-down.

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185 *See Lamb Meat*, Inv. No. TA-201-68, USITC Pub. 3176 at I-3, II-8 (Apr. 1999).

186 19 U.S.C. § 2253(e)(5).

An additional problem with a specific tariff is the administrability: as with a minimum import price (as discussed in the answer to **Question 29**), a per-watt specific tariff would be difficult to administer because CSPV modules are reported on a per-unit basis, not per-watt, at the time of entry. Imposition of specific tariffs would require new procedures and enforcement mechanisms, increasing the burden on Customs.

If the Commissioners are concerned about the circumvention risk associated with *ad valorem* tariffs, SEIA would like to remind them that the proper avenue for addressing that is already provided for in Section 204 of the Trade Act.[187] Under that provision, the President may modify an implemented safeguard action if a majority of the representatives of the domestic industry submit to the President a petition requesting such modification on the basis that the "effectiveness of the action" has been "impaired by changed economic circumstances,"[188] and the President determines that "the domestic industry has made a positive adjustment to import competition."[189] The President may also take such additional action under the statute "as may be necessary to eliminate any circumvention of any action previously taken" under the statute.[190] Since the statute has expressly provided several effective mechanisms to address any circumvention that may occur, changing the form of a tariff used by the Commission is not an appropriate solution, especially since specific tariffs likely contravene the phase-down requirement in the statute.

187. 19 U.S.C. § 2254.
188. 19 U.S.C. § 2254(b)(1)(A)(ii), (B).
189. 19 U.S.C. § 2254(b)(1)(B).
190. 19 U.S.C. § 2254(b)(2). President Clinton invoked this authority to reduce the European Community's 1999/2000 wheat gluten quota allotment, after finding that quantities of European Community's wheat gluten product had been entered in excess of the allocated amount during the first year of the relief period. *See* Presidential Proclamation 7202, *To Eliminate Circumvention of the Quantitative Limitations Applicable to Imports of Wheat Gluten*, 64 Fed. Reg. 29773, 29773–74 (May 28, 1999).

28. COMMISSIONER WILLIAMSON (Tr. at 191): So going back to my question about the specific tariff, to the extent there is sort of, shall we say, a natural decline, is the specific tariff going to make it more -- the tariff more restrictive over time?

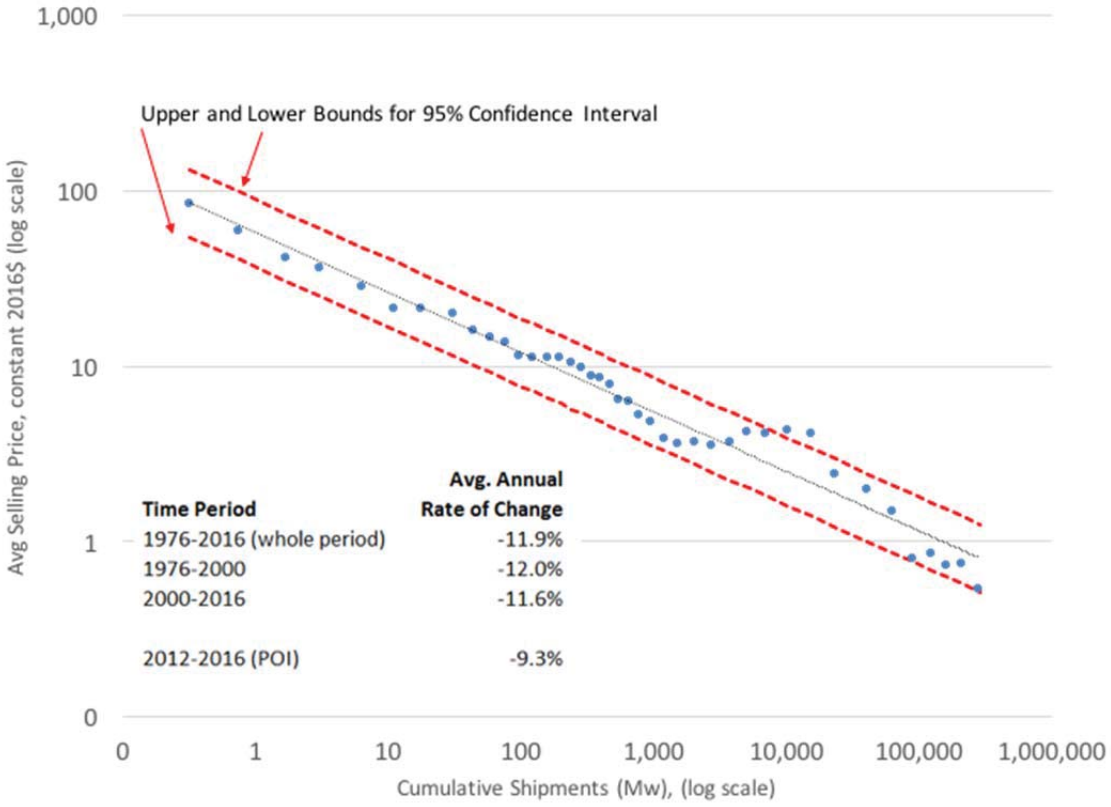
ANSWER: Commissioner Williamson highlighted a crucial problem with the petitioners' proposed specific tariff rate. It is well-established, as predicted by "Swanson's Law," that the price of CSPV cells has declined by 10% per year for decades, in large part due to the continuous and relentless pace of technological change that characterizes the entire global CSPV industry.[191] At the remedy hearing, Dr. Kaplan's response to this question was disingenuous and overstated the CSPV price declines during the POI as "completely detached from the historical patterns of prices."[192] The fact that prices strayed above or below the line is immaterial and statistically insignificant. The consistent long-term trend has been downward. Petitioners' witnesses admitted as much at the injury hearing. Suniva's Mr. Card stated, "in nine years, I don't think we ever raised prices."[193] Mr. Shea of Beamreach agreed: "I have never seen a solar business plan that anticipated prices going up in my history."[194] This is because innovation and competition with other energy sources drive down the price of CSPV and history tells us that this trend will continue even with trade restraints.

Dr. Prusa updated the findings from Swanson's 2006 report documenting the cost declines of CSPV cells. Over the whole 1976-2016 period, prices have fallen (on average) by 11.9% per year. If one compares the first part of the period (1976-2000) with the second part (2000-2016), the annual average fall in prices is about the same. *The annual average fall in*

191. *See* Richard M. Swanson, "A Vision for Crystalline Silicon Photovoltaics" (SEIA's Prehearing Remedy Brief at Exhibit 7); Dr. Thomas Prusa, *Econometric Analysis of Residential and Utility-Scale CSPV Pricing* (SEIA's Prehearing Injury Brief at Appendix A).
192. Remedy Tr. at 191 (Dr. Kaplan).
193. Injury Tr. at 224 (Mr. Card).
194. Injury Tr. at 226 (Mr. Shea).

prices over the POI (2012-2016) was 9.3%, which indicates a slower rate of price decline than is the industry's historical norm.

Swanson's Law for CSPV[195]



The point is not the amount or percentage of price declines, but their predictability. A specific tariff rate does not keep up with this continuous change, resulting in an even higher ad valorem equivalent rate. As discussed at pages 24-26 of SEIA's Prehearing Remedy Brief and in response to **Question 26**, the petitioners' proposed initial specific tariffs of $0.32/watt for modules and $0.25/watt for cells are equivalent to *80% and 125% tariffs,* respectively, well

195. *See* Dr. Thomas Prusa, *Econometric Analysis of Residential and Utility-Scale CSPV Pricing* (SEIA's Prehearing Injury Brief at Appendix A); SEIA's Posthearing Injury Brief at Exhibit 28 (providing the underlying data).

above the 50% legal limit.[196] As CSPV prices continue to fall, the ad valorem equivalent duty would increase.

Again, SEIA opposes all trade-restrictive measures, but, regardless, the Commission should reject the petitioners' proposed specific tariffs. As discussed in response to **Question 26**, there is no legal basis for the petitioners' calculation of these rates and they violate the statute's 50% limit on new tariffs – now and in the future.

196. According to BNEF, cells sold for $0.24/watt and modules sold for $0.42/watt in August 2017. *See* [ ], BNEF, [ ] (SEIA's Prehearing Remedy Brief at Exhibit 12). Customs value is at a minimum 80% of these prices. As such, this table assumes customs value of $0.20/watt for cells and $0.40/watt for modules. This calculation assumes (for argument's sake) that prices do not decline in the future. When prices fall, the ad valorem equivalent would be even higher.

N. Legality of Minimum Import Price

29. COMMISSIONER WILLIAMSON (Tr. at 132-34): I think you made a proposal, talked about negotiating with the Chinese. Is it in that context that you would talk about a minimum import price? I'm trying to figure out how do you enforce that minimum import price.

ANSWER: Like other trade restrictions that increase the cost of CSPV and drive down demand, SEIA opposes Suniva's proposed floor price (or minimum import price) on modules.[197] Beyond the negative effect on demand, Commissioner Williamson correctly points out that the proposal would be difficult to administer. At the time of entry, CSPV modules are currently reported on a per-unit basis, not per watt. New procedures and enforcement mechanisms would be required, further complicating implementation of a minimum import price. Furthermore, Suniva clarifies that its minimum price is inclusive of the tariff,[198] meaning that the price is presumably the importers' price to their customer. Suniva offers no clue as to how this would be policed. Given other options available – such as non-restrictive measures – and the significant consequences of a minimum import price on demand, the additional administrative burden is not justified.

30. VICE CHAIRMAN JOHANSON (Tr. at 159): Now I'd like to discuss the issue of floor price. Has the Commission ever recommended a floor price such as that proposed by Suniva, and specifically how would this fit into our statutory scheme?

ANSWER: A floor/minimum price is not among the enumerated trade restrictions authorized by statute.[199] In response to this question, Mr. Keeler acknowledged that the Commission has never before recommended the type of floor/minimum price as proposed by Suniva.[200] Even more so, the Commission has never recommended a combination of floor/minimum price and

197. *See* Questions 11-13.
198. Suniva's Prehearing Remedy Brief at 8 n.21.
199. 19 U.S.C. § 2253(a)(3)(A)-(H).
200. Remedy Tr. at 159 (Mr. Keeler).

per-watt specific tariff, in addition to the many other measures proposed by Suniva. The proposal is excessive and does not "provide greater economic and social benefits than costs."[201] SEIA opposes Suniva's proposal because the combination of a floor/minimum price and specific tariff would add significant uncertainty to the marketplace and raise the cost of CSPV to be uncompetitive with other sources of energy.

31. COMMISSIONER WILLIAMSON (Tr. at 173): On the floor price, wouldn't a floor price encourage importers to concentrate in higher end products or add value to the module?

ANSWER: In response to this question, Mr. Keeler acknowledged that it is possible that foreign producers might switch to higher value products in response to a floor/minimum price on modules.[202] The more serious issue would be the devastating effect a floor/minimum price would have on modules needed to serve the utility-scale sector on the market. As discussed in more detail in response to **Questions 21-23**, the domestic industry does not have sufficient capacity – and is realistically unlikely to have sufficient capacity in the next few years – to produce 72-cell modules in sufficient quantities to meet demand. A floor/minimum floor price would unduly restrict such imports and thereby constrict the end use market. The domestic industry does not measurably gain from these restrictions, and the broader solar industry would significantly suffer.

201. 19 U.S.C. § 2252(a).
202. Remedy Tr. at 173.

O. Petitioners' Flawed U.S. Inventory Adjustment

32. COMMISSIONER WILLIAMSON (Tr. at 283-84): Mr. O'Sullivan, I just want to stay on this. You talked about the, you know people not looking -- wouldn't be hoarding panels for now. But then I think you also earlier in your testimony talked about the long lead time that's required to do a project and I was just wondering if things get locked in under a long lead time, what happens -- I mean prices have been falling significantly. There have been lots of developments. And you just now say of course they wouldn't hoard because the panels would be out of date. It doesn't seem to add up to me so can you kind of help sort this out?

COMMISSIONER WILLIAMSON (Tr. at 359-60): You talked about the inventory levels and why you disagreed with the Petitioners about the claim -- but what sources should we be looking to for data on inventory levels? And you can either address it now or address it post-hearing.

ANSWER: These questions about inventories are only relevant in the context of SolarWorld's proposed quota for modules. The methodology presented by SolarWorld for its proposed first year quota is deeply flawed in large measure because of its inaccurate and self-serving assumptions about inventories. As discussed separately above, SEIA's position is that the use of a quota as a remedy is trade distorting and inappropriate, and will cause substantial harm to the domestic solar industry, its customers, and U.S. consumers more generally. In the event that the Commission considers the application of a quota, however, it should not be based on petitioners' methodology. Petitioners have based their calculations as much on fevered speculation as on record evidence, and where the record evidence is referenced, it is mischaracterized or distorted.

Much of the petitioners' justification for the application of a quota with respect to modules seems based on the "surging" imports that have led to "hoarding" and elevated levels of inventory in the advance of any Presidential remedy proclamation.[203] As discussed below, the petitioners provide no evidence to support their claims of a "surge" beyond a few speculative trade press articles. They argue that any supposed "pre-remedy surge" of solar cell and module

203. SolarWorld's Prehearing Remedy Brief at 8, 12.

imports would further harm the domestic industry and would undermine any remedy, because "{i}nventory levels in the United States are already elevated."[204] To support this contention, they point to an increase of U.S. importer inventories over the POI, from 303,409 KW in 2012 to 1,238,641 KW in 2016, or roughly 308%.[205] SolarWorld fails to provide the important context of the even greater growth in apparent consumption over the same period, which increased from [ ] KW in 2012 to [ ] KW in 2016, or by [ ].[206] Thus, while importers' inventories roughly quadrupled over the POI, apparent consumption [ ]. As a result, importers' inventories as a percent of apparent U.S. consumption in 2016 were [ ] of the POI. See the table below.

Importers' Inventories Compared to Apparent Consumption Declined Over the POI[207]

	2012	2013	2014	2015	2016	Change, 2012-2016
U.S. importers' end-of-period inventories	303,409	327,638	560,211	1,107,536	1,238,641	308.2%
Apparent U.S. consumption	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Inventories/Apparent U.S. Consumption	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Moreover, as shown at Table III-15, importers' inventories in 2016 were at their lowest point of the POI when compared to U.S. imports, U.S. shipments of imports, and total shipments of imports. Thus, Petitioners' claim that importers' inventories were already elevated is untrue when viewed in the proper context of the U.S. market.

The evidence that the petitioners present to support their claim of an import "surge" is flimsy at best. They primarily rely upon a series of trade press articles,[208] which discuss market

204. *Id.* at 8.
205. CR at Table III-15.
206. CR at Table IV-1.
207. CR at Tables III-15 and IV-1.

disruptions arising since the filing of the Petition but make no mention whatsoever of any increase in imports, focusing instead on shortages of supply in the U.S. market and the effect that such shortages are having on pricing. Yet, even those shortages do not demonstrate hoarding of inventories but simply the purchase of products for specific projects, as discussed at the hearing.[209]

Petitioners point to a fictitious "spike" in imports and claim it is consistent with importers' prior behavior, referring to an increase in imports following the filing of the Petition on Chinese CSPV cells in 2011.[210] They then apply the 2011 increase in imports to the arranged imports for second-half 2017 to create a phantom inventory overhang.[211] Apparently, they must use 2011 import data to make their case, because 2017 import data show no such surge. In fact, the year-to-date August 2017 import quantity and value statistics are substantially lower than the equivalent period in 2016. This is also true when comparing the May-to-August periods (i.e., the periods following the filing of the Petition). See the table below.

CSPV Imports In 2017 Are Lower Than In 2016[212]

	January-August		May-August	
	2016	**2017**	**2016**	**2017**
Quantity (Actual units)	117,945,748	48,714,231	71,190,557	25,343,348
Landed Duty-Paid Value ($)	6,361,519,984	2,397,959,424	3,376,102,740	1,475,710,199

Thus, in sum, there is absolutely no basis for petitioners' claims of excess inventory due to "hoarding." The Commission should reject these claims. What this means is that even if the Commission were to adopt the petitioners' broad methodology for setting a quota level, it should

208. SolarWorld's Prehearing Remedy Brief at Exhibits 3 and 10.
209. Remedy Tr. at 281 (Mr. Nicely), 281–82 (Mr. Cornelius), 282 (Mr. O'Sullivan).
210. SolarWorld's Prehearing Remedy Brief at 16.
211. SolarWorld's Prehearing Remedy Brief at 16.
212. Based on data from ITC DataWeb using HTS 8541.40.6020 and 8541.40.6030.

at the very least exclude the 2.0 GW deduction for the alleged "excess inventory due to hoarding."[213]

SEIA submits, however, that even the quota that results from this calculation (7.7 GW) would be inappropriately low, insufficiently reflective of market conditions, and inconsistent with the statute. SolarWorld attempts to justify the reasonableness of their proposed quota level of 5.7 GW by arguing that it is consistent with the statute, which requires "the importation of a quantity or value of the article which is not less than the average quantity or value of such article entered into the United States in the most recent 3 years that are representative of imports of such article and for which data are available . . . ."[214] For SolarWorld, the "representative period" is 2013-2015, "as it does not include the surge levels of 2016."[215] Petitioners have no basis to exclude 2016 as unrepresentative, as any "surge" in imports was required to meet an increase in demand that the domestic industry was unable to supply. As discussed extensively during the Injury Phase of this investigation, CSPV consumption in 2016 increased substantially as consumers and developers sought to get installations in place before an anticipated expiration of the investment tax credit ("ITC").[216] While it is thought that the rush to beat the ITC expiration "pulled" some of 2017 CSPV demand forward into 2016,[217] it would be completely incorrect for the Commission to disregard 2016 as unrepresentative of the level of market demand overall, especially when calculating a three-year average. Therefore, the representative reference period should be 2014-2016, and, to be consistent with the statute, any trade-restrictive quota imposed by the President must not be less than the average annual imports from that period, which were

213. *Id.*
214. 19 U.S.C. § 2253(e)(4).
215. SolarWorld's Prehearing Remedy Brief at 17.
216. *See* SEIA's Prehearing Injury Brief at 21, 106; *see also* Injury Tr. at 273 (Statement of Ed Fenster), 396 (Mr. Shugar).
217. Remedy Tr. at 212 (Mr. Shiao).

[ ] GW. Moreover, even if the Commission excludes imports from Singapore in its calculation, any quota imposed must not be less than [ ] GW. See the table below.

Total CSPV Imports – Average Over Representative Period[218]			
Total	**2014**	**2015**	**2016**
Quantity of CSPV imports (kw)	[ ]	[ ]	[ ]
Representative period average		[ ]	
Total Excluding Singapore	**2014**	**2015**	**2016**
Quantity of CSPV imports (kw)	[ ]	[ ]	[ ]
Representative period average		[ ]	

Thus, Petitioners' proposed quota for total CSPV products is too low by at least 25% to be compliant with the statute.[219]

218. CR at Table C-3b.
219. Petitioners' proposed quota of 5.7 GW is [ ]% below the [ ] GW benchmark calculated using total imports, and [ ]% below the [ ] GW benchmark calculated using total imports less imports from Singapore.

P. SEIA's License Fee Proposal – A Remedy That Will Not Unduly Restrict Trade

33. COMMISSIONER WILLIAMSON (Tr. at 360): I understand your position that you don't want any kind of trade restriction relief. If the Commission were to recommend some sort of trade restriction is there a particular type of restriction, tariff, TRQ that you think would be more or less injurious to the entire solar industry than others? And do you think any trade restrictions should apply equally to imports of cells and modules; and if not, how should they differ -- knowing what your position is.

ANSWER: Trade restrictions will lead to staggering deployment and job losses, and they do not redeem themselves by delivering gains for the domestic industry that would offset the injury found by the Commission. As explained below, this is in stark contrast to the more positive overall impact of SEIA's proposed license fee remedy.

Under a 50% tariff, the maximum allowable under the statute, the deployment losses are in the range of 23-24%. In 2018, the loss relative to expected deployment is 3.0 GW, or 23%. In 2019, the loss is 3.7 GW, again roughly 23%. In 2020, the loss is 4.2 GW, roughly 24%, and that loss would be repeated in 2021.[220] As a result of the deployment losses, demand would shift over to competing energy sources, and tens of thousands of jobs would be lost. As Professor Prusa's analysis shows, however, these deployment losses would not be counterbalanced by profits for the domestic industry.[221] And tariffs at less than the statutory maximum rate – while admittedly causing less harm to deployment – would fall even shorter of bringing about profitability for the domestic industry.

The problems with binding quota limits are also severe. As SEIA discussed at the remedy hearing, SolarWorld admits that the domestic industry will have no more than 1.7 GW of CSPV module capacity in 2018 in a market that anticipates a level of demand of 10 GW.[222]

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220. *See* IHS Markit Deployment / JEDI Jobs (**Exhibit 7**).
221. *Id.* at 30; Joint Respondents' Remedy Hearing Presentation at Slide 32 (**Exhibit 2**).
222 Remedy Tr. at 210 (Mr. Nicely).

With SolarWorld's recommended quota of 5.7 GW, the market would be short at least 2 GW of module supply. As with tariffs, demand would shift over to competing energy sources and tens of thousands of jobs would be lost. Those market conditions cannot translate into profits for a capacity-constrained domestic industry.

A small import licensing fee, used to provide needed capital to the domestic industry, involves a much lower cost than trade restrictions and delivers much more substantial benefits, which is why it is the only import measure that would be acceptable to SEIA. A fee of no more than $0.01 per watt would generate sufficient revenue to fund Petitioners' requested adjustment support over a three-year remedy period.[223] Alternatively, a fee of $0.02/watt that phases down over the relief period would do the same, with the benefit of raising more money earlier. Whether $0.01 or $0.02, the point is that for a relatively small fee, the benefits to the cell and module industry are greater and more certain – and the costs to the broader solar industry (and independent module producers) much lower – than with a trade-restrictive tariff. Consider the following table showing the differences in benefits and costs as between SEIA's license fee proposal and petitioners' illegal $0.32/watt tariff proposal:

[223] SEIA's Prehearing Remedy Brief at 56-59 (showing funds raised using 2016 import levels). **Exhibit 4** shows funds raised using IHS projections. Both provide substantial revenues for the domestic industry, with far more limited costs compared with a tariff.

First Year Remedy Scenario Comparisons (2018)					
			Change in		
License Fee Scenario	License (per watt)	Imports (MW)	Domestic Industry Cash From License Fees	Demand (MW)	Jobs (FTE)
A	$0.01	8,337	$83,000,000	(195)	(1,039)
B	$0.02	8,142	$163,000,000	(390)	(3,245)
			Change in		
Tariff Scenario	Tariff Rate (per watt)	Domestic Sales (MW)	Domestic Industry Cash From 18% Increase in Prices[224]	Demand (MW)	Jobs (FTE)
C	$0.32	1,100	$79,000,000	(4,931)	(56,963)

Note that for the tariff scenario we use the petitioners' own assumptions about the 18% increase in price that will result from imposition of the petitioners' proposed $0.32/watt tariff. As shown, the increased revenues are far greater with SEIA's license fee proposal than with the tariffs the petitioners propose. Meanwhile, the negative effect on demand and jobs is devastating with a tariff and only modest with a license fee.

The reason an import licensing fee delivers so much benefit at such a modest cost is that, unlike trade restrictions, it transfers resources directly to the domestic industry and enjoys the advantages of a multiplier effect. With imports exceeding domestic capacity by a multiple of 5 to 10 times, a penny per ***imported*** watt of licensing fee translates into 5 to 10 times that value per ***domestic*** watt. The fact that the fee is low enough not to restrict imports means that the multiplier will remain high as the fee is implemented – to the benefit of the domestic industry, which cannot fund its restructuring by means of internal or external sources of capital without governmental assistance. Combined with the technical assistance SEIA has proposed, these

[224] SolarWorld's Prehearing Remedy Brief at 37, Table 1; Suniva's Prehearing Remedy Brief at 19, Table 1. The $79 million gain is the result of applying an 18% increase on sales of $440,000,000 (1.1 GW of production multiplied by a module market price of $0.40).

additional funds create the pathway to ensure the domestic cell and module producers' future success.

SEIA is well aware of the statutory requirements that govern the Commission's recommendation on remedy. As discussed at length in SEIA's Prehearing Remedy Brief, the statute, *inter alia*, provides that any remedy must "address the serious injury, or threat thereof, to the domestic industry." 19 U.S.C. § 2252(e)(1). This does not, however, mean that trade restrictions must be, or should be, recommended in every case where, as here, the Commission finds that serious injury was substantially caused by increased imports. It does not mean that trade restrictions are appropriate under the statute where they cannot make the domestic industry profitable and they would at the same time inflict substantial harm on the broader solar industry. To find otherwise would be to say, in effect, "We had to destroy the industry in order to save it."

34. COMMISSIONER WILLIAMSON (Tr. at 131): I guess the real question is you mentioned the import licensing idea, so I guess you're saying there are various ways that maybe could be funded and would most of them require legislation for the President to do this{?}

VICE CHAIRMAN JOHANSON (Tr. at 304): And now I'd like to talk about the whole -- the import license mechanism proposal. SEIA with the support of the other respondents has proposed the use of an import license mechanism as a funding mechanism for the domestic industry. Can you all please explain how this could work?

ANSWER: SEIA's proposal uses Section 1102 of the Trade Agreements Act of 1979, in combination with Section 201, to enable the President to create a funding mechanism for the restructuring of the domestic industry. Underlying the funding mechanism would be a high quota, that is, a quota that is not intended to restrict imports of CSPV cells and modules. The President would sell import licenses at auction at a low, fixed price, perhaps $0.01 per watt, and the purchase of a license would be conditioned on the deposit of the license fee into a special escrow account established to benefit the domestic industry that would be administered in

accordance with an agreement entered into by domestic CSPV producers and importers. Funds from the account would be distributed to the domestic industry based upon an established formula, which might, for example, be based on production levels or manufacturing capital investment expenditures. As explained below, this approach could be implemented within the framework of existing legislation.

Under 19 U.S.C. § 2252(e)(2)(C), the Commission is authorized to recommend to the President, "a modification or imposition of any quantitative restriction on the importation of an article into the United States." Under 19 U.S.C. § 2253(a)(3)(C), the President is authorized to modify or impose any quantitative restriction on imports, and, under 19 U.S.C. § 2253(a)(3)(F), the President is authorized to "proclaim procedures necessary to allocate among importers by the auction of import licenses quantities of the article that are permitted to be imported into the United States."

Section 1102 of the Trade Agreements Act of 1979, 19 U.S.C. § 2581, provides the President's broad authority to conduct such auctions: "the President may sell import licenses at public auction under such terms and conditions as he deems appropriate." The term "import license" is then defined to mean, "any documentation used to administer a quantitative restriction imposed or modified after the date of enactment of this Act (enacted July 26, 1979) under – (1) section 125, 203, 301, or 406 of the Trade Act of 1974 (19 U.S.C. 2135, 2253, 2411, or 24360…" Thus, under Section 1102, the President has the authority to establish an import licensing scheme under whatever terms and conditions he deems appropriate. One of those terms and conditions could be the deposit of funds into an escrow account established for the benefit of the domestic industry.

As pointed out at the Commission's hearing on remedy, import licenses have been discussed in past Commission recommendations, albeit not in the context of creating a funding mechanism intended to benefit the domestic industry.[225] Nevertheless, the funding mechanisms used in certain antidumping/countervailing duty settlements suggest that, where escrow accounts are funded directly from private sources – not from U.S. government accounts – such accounts are a legally available method for directing needed resources to an industry. In particular, in the 2006 settlement of *Softwood Lumber from Canada* and in the settlement of *Gray Portland Cement from Mexico*, the U.S. Government helped to establish escrow accounts for the benefit, at least in part, of the domestic industry.[226]

The escrow account SEIA proposes is distinguishable from a prior case involving a federal agency and an agreement to collect funds. In *Motor Coach Industries v. Dole*, 725 F.2d 958 (4th Cir. 1984), the FAA and the airlines servicing Dulles International Airport entered into an "interwoven set of agreements" designed to fund the purchase of buses for airport ground transportation. The FAA agreed to waive certain fees it normally charged the airlines for services the FAA provided at the airport, in exchange for the airlines establishing a trust at a national bank and funding the trust with a per passenger fee based on an FAA-approved formula. Although the airlines were the settlors of the trust, the Court found that "the FAA maintained firm control over vital aspects of the trust" and that the "{t}rust's resources were dedicated to the objective of primary importance to the agency – securing suitable buses for Dulles Airport."[227] No expenditures from the trust could be made without FAA authorization, and the FAA was its

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225. *See Nonrubber Footware*, Inv. No. TA-201-55, USITC Pub. 1717, at 119 (July 1985).
226. *See* Softwood Lumber Agreement 2006 at Annex 2C; Cement Agreement 2009 at Appendix 13.
227. Motor Coach Industries, 725 F.2d at 961.

sole beneficiary.[228] Considering these facts, the Court observed that "the FAA's hand was visible in all critical aspects of the Trust – its creation, its funding, and its administration" and that, in regard to the role of the airlines in the trust, "there is every indication that the role was nominal."[229] Consequently, the Court found that the trust moneys at issue were public funds, subject to federal procurement guidelines, and that the trust arrangement undermined the integrity of the congressional appropriations process.[230]

Under SEIA's proposal, the escrow account into which import license fees are deposited would be like those created for *Softwood Lumber from Canada* and *Gray Portland Cement from Mexico*, not like the trust rejected by the Court in *Motor Coach Industries*. The account would not be run by the U.S. government, U.S. government approval would not be required for account funds to be expended, and the U.S. government would not be a beneficiary. Moreover, the account's purpose would be to fund the restructuring of private entities, not to provide public services as in *Motor Coach Industries*. Consequently, SEIA's remedy proposal could be effectuated based upon existing statutory authorities – it would neither undermine the integrity of the congressional appropriations nor otherwise run afoul of limitations on the President's prerogatives.

35. CHAIRMAN SCHMIDTLEIN (Tr. at 348, 351): I just wanted to follow up on that line of questioning with Mr. Cornelius. I think you were suggesting that what Suniva and SolarWorld need are working capital, and I guess this would come through the import licensing fee. Is that one of the mechanisms that you're thinking? So my question is, though, if you look at their performance over the last five years, right, they've lost money. So why would we expect anything different if all we did was give them more money without putting in place any kind of measure that would affect the volume and price of imports, especially given the fact that the Commission just found on a unanimous basis that imports are a substantial cause of serious injury to the

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228. *Id.* at 962.
229. *Id.* at 965.
230. *Id.* at 964–65.

> **domestic industry, which I know this panel disagrees with that finding. But given that we've found causation, right? And we've seen what happened over the last five years, so why would you expect that giving them more money, whether through import licensing fee or otherwise, would have a different outcome without changing anything else? … Doesn't that ignore our finding, that imports were a substantial cause of injury? So if you're not doing anything with regard to the imports and they're still coming in, in the same volume at the same low prices, why would they be competitive? After having been given import license fees for four years?**

ANSWER: SEIA does not take issue for present purposes with the Commission's finding that increased imports were a substantial cause of serious injury to the domestic industry producing CSPV cells and modules. However, the Commission did not find that imports were the only cause of injury to the domestic industry, and SEIA has no reason to think that the Commission failed to recognize that their injury was the result of multiple factors. Thus, although the ***intent*** of trade-restrictive relief would be appropriate (that is, to offset the impact on the domestic industry of the increased imports) the ***consequences*** would be both harmful to the broader solar industry and not nearly as beneficial to domestic CSPV cell and module producers as the petitioners maintain. In fact, independent domestic CSPV module producers would suffer some of the worst harm from trade restrictions, so that the industry would not enjoy a return to profitability as a consequence of their imposition. A narrow insistence on addressing import injury by means of trade restrictions and a refusal to take seriously their practical implications would neither represent the highest and best use of the Commission's trade policy expertise nor would it fulfill the Commission's statutory mandate to assist the President in identifying a remedy for which the economic and social benefits exceed the costs.

As discussed in SEIA's Injury Briefs, Suniva and SolarWorld have missed significant opportunities to supply the U.S. market, they have had issues with quality, and multiple U.S.

purchasers have reported problems with their timeliness and adequacy of supply.[231] Neither company has been able to match the world-class facilities of its most successful competitors. It would represent a tragic loss of opportunity if the remedy imposed as a result of this proceeding were global trade restrictions, which would do nothing to address the petitioners' internal, structural problems. Indeed, such restrictions would likely reinforce the complacent posture that helped to create the petitioners' predicament in the first place.

The petitioners need fresh sources of capital in order to restructure and make themselves competitive. Because prices in the industry move steadily downward over time, as all parties acknowledge, tariffs/minimum prices would not enable domestic producers to raise prices sufficiently to become profitable. Nor would quotas make the industry profitable. Without enhanced profits, petitioners would be in no better position to finance an overhaul post-remedy than they are now. They simply do not possess the necessary capital, and they are not attractive to external sources of finance. They are desperately in need of an upgrade, and the capital they need to make that happen will not be conjured into existence by trade restrictions.

SEIA's import licensing fee proposal, combined with technical assistance, would provide the domestic industry with the capital and expertise the industry needs to facilitate restructuring. Such restructuring is the *sine qua non* of an effective remedy in this investigation, and, unlike trade restrictions, its benefits would far outweigh its costs.

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[231]. SEIA's Prehearing Injury Brief at 71-95; SEIA's Posthearing Injury Brief at 9-10, Appendix A at 114-20.

Q. Remedies Aimed at Technology/Innovation

36. COMMISSIONER BROADBENT (Tr. at 295): Why is it do you think we don't have a differentiated competitive advantage in the cell and module production? I mean I know you guys have a hard time with the particular Petitioners in this case but they are following a long line of U.S. companies that have gone out of business?

ANSWER: As Mr. Fenster of Sunrun answered at the hearing, the U.S. solar manufacturing actually has a differentiated competitive advantage if a particular solar company that has been excluded from the scope of this investigation is taken into account: First Solar.[232] As the Commissioners are aware, First Solar makes thin-film PV cells and modules in the United States using Cadmium Telluride ("CdTe") technology, for which the firm has successfully achieved global competitiveness[233] and is the most profitable PV manufacturer in the world.[234] According to the *MIT Technology Review*:

> Despite the fact that the last quarter of 2015 was the best three-month period in the industry's history in terms of megawatts installed, and that Congress in December extended the investment tax credit . . ., shares in big solar developers such as Sunrun and SolarCity have lost nearly half their value in recent months. First Solar's stock, by contrast, jumped by 17 percent after it reported strong 2015 results in late February. More important, unlike most of its competitors, First Solar is profitable: the company made $546 million in 2015 on nearly $3.6 billion in revenue.[235]

How was First Solar able to maintain success in its "quest to invent the future of solar power . . . amid turmoil that has engulfed many solar companies"?[236]

232. Remedy Tr. at 295.
233. "First Solar Is Differentiating Itself from the Competition," *Seeking Alpha* (Dec. 8, 2015), https://seekingalpha.com/article/3740696-first-solar-differentiating-competition (**Exhibit 39**).
234. SunShot Q4 2016 / Q1 2017 Industry Update at 80 (SEIA's Prehearing Remedy Brief at Exhibit 4); *see also* First Solar, "First Solar Investor Overview" at 3, 19 (2017) (SEIA's Prehearing Remedy Brief at Exhibit 8).
235. Richard Martin, "How First Solar Is Avoiding the Industry's Turmoil," *MIT Technology Review* (Apr. 20, 2016), https://www.technologyreview.com/s/601219/how-first-solar-is-avoiding-the-industrys-turmoil (**Exhibit 40**).
236. *Id.*

As explained in SEIA's Posthearing Injury Brief, one of First Solar's primary ingredients for its success was its commitment to innovate to differentiate its products and provide more efficient products at reduced costs.[237] First Solar has stayed ahead by continuing to invest heavily in sophisticated and expensive cell technology, spending about 4% of its revenues on R&D, nearly twice the solar industry average.[238] As explained by Mr. Cornelius in his affidavit,

> Unlike petitioners or other failed CSPV companies, First Solar has achieved both competitive differentiation of its product and has committed to continued scaling. First Solar forecasted a module price of $0.52-$0.63/W and module efficiencies between 13.5% and 15.3% by 2014. By the end of 2014, First Solar had achieved a module cost of $0.55/W and average module efficiencies of 14.9%.[239]

While silicon has traditionally been regarded as more efficient than CdTe, First Solar's recent results have indicated that its cells are becoming competitive with CSPV, reaching nearly 17% efficiency in the field -- which is comparable to the efficiency of multi-CSPV.[240] Even within the thin-film space, First Solar was singular in its success for the same reasons: focusing on efficiency improvements and manufacturing innovations, First Solar acquired GE's technology in 2013 after GE canceled plans for a 400 MW plant due to technological inadequacy.[241] Back in 2008, a GTM market research report urged U.S. thin-film producers to "establish their technologies quickly and fend off growing expertise in thin-film by Honda, BP, Sharp and others."[242] First Solar remained competitive because it took that advice to heart.

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237. SEIA's Posthearing Injury Brief at 10, Exhibit A.
238. *See* Martin, "How First Solar Is Avoiding the Industry's Turmoil" (**Exhibit 40**); *see also* SunShot Q4 2016 / Q1 2017 Industry Update at 59 (SEIA's Prehearing Remedy Brief at Exhibit 4).
239. Affidavit of Craig Cornelius, NRG Renewables at 5 (SEIA's Posthearing Injury Brief at Exhibit 52).
240. Martin, "How First Solar Is Avoiding the Industry's Turmoil" (**Exhibit 40**).
241. *See id.*; Kevin Bullis, "GE Stalls Solar Factory Construction, *MIT Technology Review* (July 5, 2012), https://www.technologyreview.com/s/428422/ge-stalls-solar-factory-construction (**Exhibit 41**).
242. Ucilia Wang, "American Solar Industry's Secret Sauce: Innovation," *GTM* (Dec. 12, 2008), https://www.greentechmedia.com/articles/read/american-solar-industrys-secret-sauce-innovation-5357#gs.nmCbO=s (**Exhibit 42**).

37. COMMISSIONER WILLIAMSON (Tr. at 330-31): Mr. Shiao, the -- a statement of yours was I think this morning, one of the panelists may refer to a statement you made to note that domestic manufacturing drives innovation. And I was wondering if you wanted to comment on that? I think the statement was quite simply manufacturing drives technology innovation. If we read that solar is a key part of the future of electricity that the U.S. should be a leader in the clean electric future and that technology innovation is a key driver towards realization, then we must increase investment in domestic manufacturing. This, you know, they made there's a connection why it's so important to keep I guess cell and module production in the U.S. So I was wondering if you wanted to comment on that since they made reference to you?

ANSWER: Commissioner Williamson's question regarding investment in domestic CSPV manufacturing was raised in relation to Mr. Brightbill's reference to a GTM article titled "6 Ways to Encourage American Solar Manufacturing Without Import Duties."[243] As Mr. Shiao said at the hearing, in this article, he and his co-author Mr. Shayle Kann explained that domestic solar manufacturing is important, "outlined why {they} don't agree with trade-restrictive remedies as a means of encouraging or having new domestic manufacturing rebuilt, and then outlined a number of . . . suggestion{s}"[244] for encouraging domestic solar manufacturing. The article lays out six better alternatives to trade restrictions that would "support real investment in domestic solar manufacturing without sacrificing a strategic market,"[245] emphasizing that "if the U.S. hopes to lead solar innovation, an investment that seeks to lower the cost of domestic solar

243. MJ Shiao and Shayle Kann, "6 Ways to Encourage American Solar Manufacturing Without Import Duties," *GTM* (Sep. 25, 2017), https://www.greentechmedia.com/articles/read/5-ways-to-encourage-us-solar-manufacturing-without-import-duties#gs.9wCzje0 (**Exhibit 43**).

244. Remedy Tr. at 331; *see also* Shiao and Kann, "6 Ways to Encourage American Solar Manufacturing Without Import Duties" (**Exhibit 43**) ("This is not an endorsement for Section 201-driven remedies. Far from it. We estimate that the remedies requested by the Section 201 petition would eliminate half of potential solar deployments over their term in exchange for limited new domestic module manufacturing. But that doesn't mean solutions for domestic upstream solar manufacturing should be abandoned.").

245. Shiao and Kann, "6 Ways to Encourage American Solar Manufacturing Without Import Duties" (**Exhibit 43**).

is the better path."[246] SEIA's proposals for addressing the problems facing the domestic industry correspond to two of these alternatives.

A. Provide assistance for workforce and technology development

Mr. Shiao and Mr. Kann found that "{o}ne common reason for not bringing manufacturing to the U.S. is the relative scarcity of experienced solar manufacturing engineers"[247] and concluded that this country "needs to invest in ideas and people."[248] They pointed to knowledge-sharing as a "key driver" for pushing CSPV costs down, finding a parallel example in thin-film solar.[249] As stated in the answer above, First Solar acquired intellectual property from GE's failed thin-film effort in 2013, and afterward First Solar's efficiencies "skyrocketed to parity with standard multicrystalline silicon in the span of a few years."[250]

The Department of Energy ("DOE") – through both the SunShot Initiative and its renewable energy research laboratory, NREL – has also recognized the critical importance of investing in R&D for the competitiveness of the U.S. solar industry. The very mission of DOE's SunShot Initiative is to "aggressively drive{} innovation to make solar energy fully cost competitive with traditional energy sources."[251] In explaining its role in the solar industry, NREL states:

> By performing basic research and development (R&D), NREL works to bridge the energy sector's first unique barrier, known as the "technological valley of death." This is the phase when investments in time and capital are needed to prove the market viability of a promising technology. NREL also helps bridge the later barrier, known as the "commercialization valley of death," by

246. *Id*.
247. *Id*.
248. *Id*.
249. *Id*.
250. *Id*.
251. "The SunShot Initiative: Making Solar Energy Affordable for All Americans," SunShot, Department of Energy (June 2016), https://energy.gov/sites/prod/files/2016/06/f32/SunShot-factsheet-6-10_final-508.pdf (**Exhibit 44**).

> supporting industry partners in scaling up technology to attract private funding for manufacturing.[252]

In other words, NREL agrees that the U.S. solar industry needs investments in technology development and the subsequent scaling up of technology to continue to compete. NREL also holds up First Solar as the best example of the importance of R&D investment for the ultimate success in commercialization and large-scale deployment.[253] According to NREL, First Solar's CdTe thin-film technology was optimized at NREL, and First Solar enlisted NREL's deposition expertise to aid its efforts to improve light transmission into the electrical junction, which was important for forming lower-cost, higher-efficiency thin-film modules.[254] Also, NREL and First Solar together developed a unique process for manufacturing high-efficiency thin-film CdTe cells on low-cost commercial soda-lime glass—which is "considered a significant milestone in the race to produce cost-competitive solar energy."[255]

This kind of investment in R&D is exactly what SEIA has continuously advocated as a means to address the problems facing the domestic industry. Pages 50-53 of SEIA's Prehearing Remedy Brief discuss technical assistance as one of the most effective ways to address petitioners' critical areas of need. Government provision of such technical assistance is already authorized in the Trade Act.[256] SEIA has offered suggestions for how technical assistance would work — such as strategic partnership agreements or consultations with NREL.[257] First Solar's example demonstrates that petitioners and other players in the CSPV manufacturing industry

252. Molly Riddell, "Driving Solar Innovations from Laboratory to Marketplace," *Continuum Magazine*, Issue 3, NREL (Nov. 2012), https://www.nrel.gov/continuum/spectrum/photovoltaics.html (**Exhibit 45**).
253. *Id*.
254. *Id*.
255. *Id*.
256. *See* 19 U.S.C. §§ 2343, 2355.
257. *See* SEIA's Prehearing Remedy Brief at 52–53.

would benefit immensely from tapping into the expertise residing in NREL to jumpstart innovation necessary for their recovery and growth.

B. Direct collected duties toward supporting domestic manufacturing

Mr. Shiao and Mr. Kann also suggested "tak{ing} the duties collected from existing tariffs on Chinese and Taiwanese solar products and equitably redirect{ing} them toward new manufacturing investment."[258] As stated on page 56 of SEIA's Prehearing Remedy Brief, SEIA and its members would welcome a mechanism that uses the AD/CVD deposits as a fund from which to disburse assistance to the domestic industry, as part of a settlement of the AD/CVD orders.

Similarly, SEIA has expressed its support for the use of Section 1102 of the Trade Agreements Act to collect import license fees for distribution to CSPV cell and module industry members. This simply is a variation of Mr. Shiao and Mr. Kann's suggestion and would serve the same primary purpose of raising the capital needed for the domestic industry's investments. For more detail on the Section 1102 funding mechanism, please see page 56-59 of SEIA's Prehearing Remedy Brief and **Questions 31-33**, herein.

258. *See* Shiao and Kann, "6 Ways to Encourage American Solar Manufacturing Without Import Duties" (**Exhibit 43**).

R. Remedies Concerning Government Procurement

38. VICE CHAIRMAN JOHANSON (Tr. at 185): SolarWorld argues that the Commission should recommend that the President issue an Order mandating all U.S. Government agencies to use U.S.-origin cells and panels for all U.S. Government projects. And this is at page 21 of the SolarWorld brief.

Could you all please describe the scope of what you're proposing and how it differs from existing "Buy America" rules? . . . Is it around page 21 or so?

VICE CHAIRMAN JOHANSON (Tr. at 186): Would non-Department of Defense agencies already be covered by Buy America?

ANSWER: SEIA supports the idea of the federal government, including both civilian and defense agencies, procuring more solar product that is made in the United States. The branches of the Department of Defense each maintain their own renewable energy consumption goals that help improve our national security, and several executive orders have been issued over the last two decades covering the use of renewable energy by the federal government as a whole.

SEIA does not support any tightening of the Buy American Act ("BAA") 41 U.S.C. § 10a-10d, however, as we believe it is already properly structured to encourage the procurement of solar products made in the United States and ally nations. Restricting BAA-compliant nations from providing solar product could lead to supply constrictions or shortages while the industry is trying to encourage further governmental procurement of solar to improve national security and environmental conditions.

We also believe this would be a difficult effort in the current Congress, and changes to BAA do require legislative action. Many large development companies who work in the federal building area count on a reliable supply of solar modules among their many lines of federal work, and could decide to simply exclude solar from their plans if forced to hold up work in the alternative due to supply constrictions.

S. Other Federal Government Financial Support

39. COMMISSIONER BROADBENT (Tr. at 200): Can you all comment on the utility of Sun Shot as a mechanism for providing financial support to the CSPV cell and module producing industry?

COMMISSIONER BROADBENT (Tr. at 200, concerning response that SunShot requires matching funds): Would that take a legal change?

ANSWER: The DOE SunShot Program has been instrumental in providing public sector support to complement private sector efforts to collectively drive down the cost of CSPV. According to the DOE, the SunShot focus on CSPV focuses on "innovative ways to reduce costs."[259] Activities span from research and development to commercialization efforts. Work in research and development is being conducted in many areas within CSPV, such as to "reduce raw material requirements, including pioneering ultra-thin crystalline silicon absorber layers,"[260] developing more efficient production processes and optimizing silicon ingot growth.[261]

But financial assistance alone may not be sufficient for success depending on the recipient company and its internal characteristics, the market segment within which the CSPV recipient of financial assistance competes, the sophistication of the funding recipient's technologies, the commitment and level of private funding for the recipient, or the scale of the funding recipient's production. Both Suniva and SolarWorld received millions of dollars in financial assistance under the DOE SunShot program during this decade,[262] and neither is

259. DOE, "Solar Energy Technologies Office Support for Crystalline Silicon Research: Portfolio Connections and the National Renewable Energy Laboratory" (**Exhibit 46**); *see also* DOE, SunShot Initiative, "Crystalline Silicon Photovoltaics Research," https://www.energy.gov/eere/sunshot/crystalline-silicon-photovoltaics-research (**Exhibit 47**).
260. *Id*.
261. *Id.*
262. *See* SEIA's Prehearing Injury Brief, Appendix A at 149–50; *see also* Suniva Press Release, "Suniva Selected for Second SunShot Award from DOE" (Oct. 22, 2014), http://suniva.com/documents/Suniva%20Awarded%20SunShot%20Initiative%20Grant%202014%2010%2021.pdf (SEIA's Prehearing Injury Brief at Exhibit 120); DOE, SunShot Initiative, PROJECT PROFILE: Suniva Inc (T2M2), https://energy.gov/eere/sunshot/project-profile-suniva-inc-t2m2 (SEIA's Prehearing Injury Brief at Exhibit 73); SolarWorld News Release, "SolarWorld to Leverage $4 million U.S. Department of Energy Award to Develop

successful. This gives credence to the propositions that CSPV is both an extremely competitive industry, and that without technical expertise – including but not limited to materials, operations, logistics, and market intelligence – funds alone are insufficient to guarantee success.

SEIA strongly believes that any financial assistance provided to the domestic industry, possibly from SEIA's proposed Section 1102 license fee structure, must be accompanied by robust technical assistance that taps into the expertise of the SunShot program and its national laboratories and universities that have helped successful firms such as First Solar and SunPower become market leaders.[263]

Next-Generation Crystallization Technology for More Efficient, Affordable Solar Cells" (Oct. 22, 2014), http://www.solarworld-usa.com/newsroom/newsreleases/news/2014/solarworld-leverage-doe-award (SEIA's Prehearing Injury Brief at Exhibit 121); DOE, SunShot Initiative, Solar Manufacturing Technology, https://energy.gov/eere/sunshot/solar-manufacturing-technology.

263. *See* Riddell, "Driving Solar Innovations from Laboratory to Marketplace" (**Exhibit 45**); Joyce Laird, "SunShot: Solar PV's falling costs," *Renewable Energy Focus* (Aug. 23, 2011) ("SunPower (CA, U.S.) has been working with DoE for more than 25 years. . . SunPower has added to {the solar industry} with innovations developed with the help of DoE funding, such as the SunPower T5 Solar Roof Tile . . . .") (**Exhibit 48**); *see also* answers to **Questions 36-37**.

T. Auxin Solar's Flawed Remedy Recommendations

40. COMMISSIONER WILLIAMSON (Tr. at 336): Talking about other manufacturers, in its brief, Auxin Solar recommends two sets of products, specific price floors, covering cells and modules. And they said this is designed to balance and incentivize domestic solar cell and module production and allow for imports to meet the domestic supply shortfall. And that there needs to be a reasonable price gap between cells and module pricing is necessary just for a cell or module production over a three-year period. I was wondering if y'all want to comment on that?

ANSWER: While we sympathize with certain of Auxin Solar's concerns, SEIA does not support its remedy proposals, for reasons we have expressed separately.

We agree with Auxin Solar's concerns about the negative effect petitioners' proposed trade-restrictive relief would have on independent module producers. Domestic cell producers have insufficient cell capacity to supply the module producers, which have thus been forced to rely on imports. Tariffs like those proposed by SolarWorld and Suniva will push the costs of independent module producers so high – well above the minimum prices Auxin Solar proposes for any of the cells it lists[264] – as to make it impossible for these producers to remain competitive.

We cannot, however, support Auxin Solar's specific remedy proposals, either with respect to cells or modules. First, Auxin Solar proposes minimum prices, which SEIA has explained – and the Commission has previously concluded – is not authorized by the statute.[265] Second, the minimum prices Auxin Solar proposes would have a devastating impact on demand, similar in effect to the remedy proposals advanced by petitioners. Auxin Solar provides no discussion of the demand implications of its proposals, other than to combine its trade relief

264. Auxin Solar's Prehearing Remedy Brief at 4. Note that Auxin Solar's prehearing remedy brief, like SEIA's, analyzed the effect of Suniva's original remedy proposal. However, the new $0.25/watt tariff the petitioners propose would likewise well exceed the minimum prices Auxin Solar proposes.
265. *See* SEIA's Prehearing Remedy Brief at 26–28.

proposals with a wish list of other remedies that include new incentives – like an increase in the federal Investment Tax Credit – that might permit the market to absorb some of the price increases its suggested trade relief would bring about. Congress extended the core federal solar incentive, the Investment Tax Credit, at the end of 2015 in a rare show of bipartisan support. The notion that Congress would approve an even higher credit after almost not extending the existing one is simply unrealistic. As a result, the Commission must make its decision based on current market conditions, in which the level of incentives across the country – that is, both state and federal – are forcing solar to compete based on market economics rather than policy. Like petitioners, Auxin Solar fundamentally misunderstands this foundational aspect of the market in which solar competes. Its proposals will unwittingly result in killing the very market into which it sells.

U. Trade Secrets

41. COMMISSIONER BROADBENT (Tr. at 174-75): Mr. Card, in a letter to the editor in the Wall Street Journal, you wrote that Chinese trade secret theft is an example of foreign governments trying to control this solar technology. Can you describe whether the proliferation of the bank's {sic.} technology cells and modules in recent years is a result of trade secret theft, deliberate government action or something more positive? . . . Can you talk to me about what, where you think we are on the situation of trade secret theft, vis-a-vis the Chinese in this industry? You had a letter to the editor complaining about that and if you could just describe to me how you protect your IP and what the current state of your concerns about theft are.

ANSWER: This question – and Mr. Card's concerns – are not properly addressed through this proceeding. There are federal and state civil and criminal procedures to enforce trade secrets. At this stage, the Commission's objective is to gather facts and make a recommendation to the President for any safeguard action.[266] Trade secrets are not among the factors that the Commission is meant to consider.

Interestingly, in his letter to the editor of the Wall Street Journal, Mr. Card was purportedly responding to a September 16 letter by the Editorial Board that criticized the domestic industry's petition.[267] Mr. Card side-stepped the main points of the article, which highlighted the relatively small size of cell/module manufacturing within the U.S. solar industry, the likely negative effect that any remedies will have on downstream industries like power producers, Suniva's investor offering to terminate the suit if a Chinese company would buy Suniva's equipment, and existing trade protection from AD/CVD orders.

This is yet another example of the petitioners' efforts to distract the Commission with inflammatory and irrelevant language: "cyberattacks" by the Chinese military,[268] "hacking,"[269]

266. 19 U.S.C. § 2252(e)(1).
267. Editorial Board, "Solar Power Death Wish: Subsidies aren't enough. Now solar-panel makers want tariffs," *Wall Street Journal* (Sep. 15, 2017) (**Exhibit 49**).
268. Remedy Tr. at 54 (Mr. McConkey).

"threat to our Nation's security,"[270] "hoarding,"[271] "espionage,"[272] "dumping and subsidized imports,"[273] and "scrap heap of death"[274] to name a few. The Commission should disregard this hyperbolic and obfuscation and focus on the statute and the factual record. The core issues concern the harm that trade-restrictive remedies will do to demand and other industries, which is far more substantial than any small that might accrue benefit to the domestic CSPV industry.

269. Remedy Tr. at 54 (Mr. McConkey), 79 (Mr. Card), 176 (Mr. Card); SolarWorld's Prehearing Remedy Brief at 25-26.
270. Remedy Tr. at 79 (Mr. Card); *see also* Suniva's Prehearing Remedy Brief at 15-16.
271. Remedy Tr. at 69 (Mr. Brightbill), 109 (Mr. Szamosszegi), 374-75 (Mr. McConkey).
272. Remedy Tr. at 83, 176 (Mr. Card).
273. Remedy Tr. at 54 (Mr. McConkey), 100 (Mr. Yang), 106 (Mr. Kaplan).
274. Remedy Tr. at 84 (Mr. Card), 377 (Mr. McConkey).

COMMISSION POSTHEARING QUESTIONS
(October 5, 2017)

1. For SunPower: Can you explain how SunPower's R&D and supply chain strategy works, such that U.S. producers can be profitable doing management, R&D, and distribution in the United States and manufacturing abroad without having trade secrets appropriated by foreign manufacturers and losing their competitive advantage through intellectual property theft? Would it be possible for other U.S. producers to replicate this model?

ANSWER: Please see the separate Posthearing submission by SunPower.

2. For SEIA: SEIA states on page 52 of its public prehearing remedy brief that the National Renewable Energy Laboratory, or NREL, has worked in all major aspects of CSPV cell structure, manufacturing, testing, and commercialization. They state that the domestic industry "could be given access to the crown jewels of America's solar scientific research through NREL's long-established expertise and its established technology licensing program." If NREL has these crown jewels, who is already benefiting from them on a commercial level? Have SolarWorld and Suniva, or any other U.S. producers, benefited from this technology licensing program or any other assistance from NREL?

ANSWER: As stated multiple times in the our posthearing brief, SEIA firmly believes the path to success in CSPV involves two key characteristics in an ultra-competitive market:

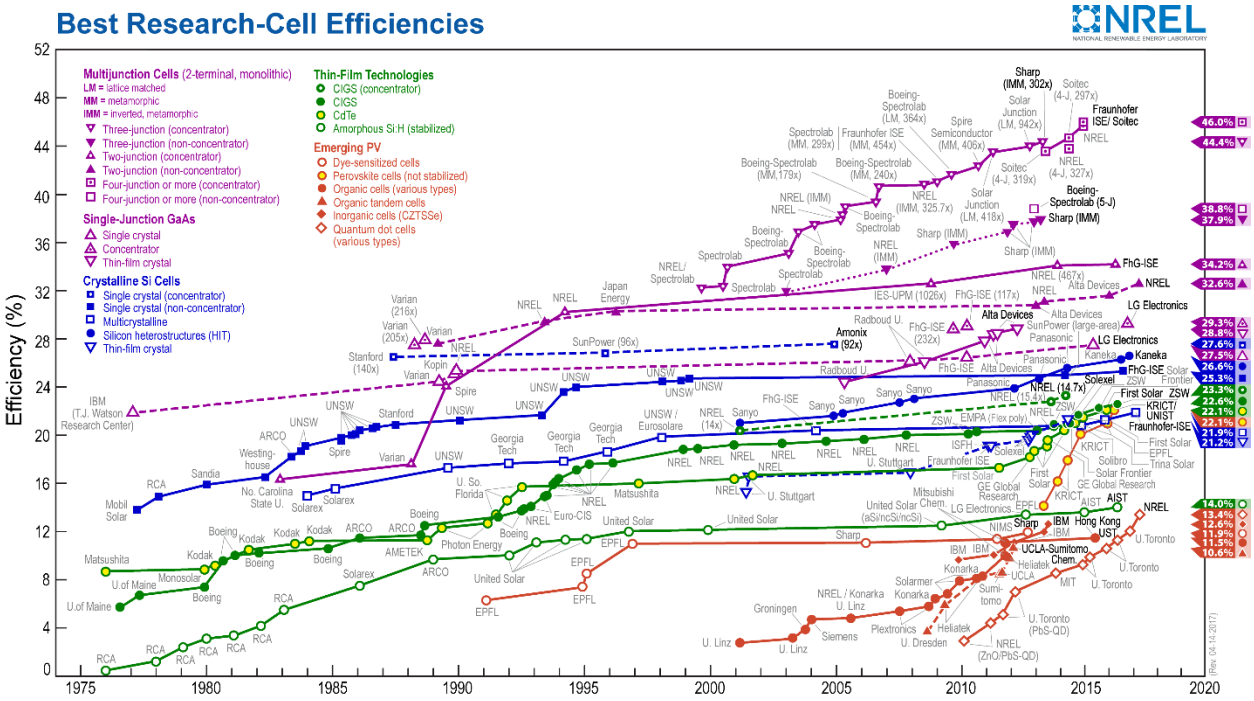
1) *Product differentiation*, which allows companies to both lower prices of products, but also provide additional benefits such as targeted market segments for selling, unique uses in markets and architectures, high performance in certain lighting conditions, etc.

2) *Ability to scale*, which requires funding.

Without both, long-term success is near impossible in the CSPV cell and module industry. Both Suniva and SolarWorld have suffered from the inability to achieve either one, although Suniva notably started down the product differentiation path of having thinner wafers and cells at the R&D stage, but encountered significant technical problems in actual commercialization.

NREL can provide the assistance needed in helping achieve product differentiation through market analysis, technology assessment, process review, and more. Its programs and laboratories read as though they were tailor-made for the likes of Suniva and SolarWorld.

NREL's history is in solar. It was founded as the Solar Energy Research Institute forty years ago in 1977 in Golden, Colorado. Its name was changed to the National Renewable Energy Laboratory in 1991 but its strength in solar has not changed. The chart below shows the evolution of world record PV cell efficiencies for different PV technologies over time.[275] The number of times NREL was involved in setting records is telling. NREL does fundamental research that has benefited all producers in the world.



Today, the core solar work at NREL is done through the National Center for Photovoltaics (NCPV), which "focuses on technology innovations that drive industry growth in

275. NREL, Best Research-Cell Efficiencies, https://www.nrel.gov/pv/assets/images/efficiency-chart.png.

U.S. photovoltaic (PV) manufacturing."[276] According to its mission, the "interaction of the {NCPV} with industrial, university, and government partners is the key to moving advanced photovoltaic technologies into the marketplace and the U.S. economy. We provide opportunities to use our facilities, develop technology partnerships, and license our technology."[277] Please see **Exhibit 46** for a DOE document, "Solar Energy Technologies Office Support for Crystalline Silicon Research: Portfolio Connections and the National Renewable Energy Laboratory."

The tools, history, human capital, expertise, and world-class reputation of the NCPV at NREL is precisely what the petitioners need to access, and they do so via the U.S. Department of Energy's SunShot program, as described in earlier Q&A responses. The number of corporate and other partners of NREL in solar is in the hundreds. **Exhibit 50** shows a list of SunShot's CSPV projects.[278]

In combination with work at the NCPV, NREL's overall approach to collaboration is described as below, which seems written to address petitioners' needs.

> A critical part of the laboratory's mission is the transfer of NREL developed technologies to renewable energy markets. NREL's technology transfer capabilities support laboratory scientists and engineers in the successful and practical application of their expertise and the technologies they develop.
>
> In short, our Technology Transfer Office paired with our Innovation and Entrepreneurship Center bridge the gap between basic and applied scientific research and technology development at the laboratory and in the cleantech marketplace. We work closely with industry, entrepreneurs, investors, and cleantech stakeholders to advance NREL's mission—transforming our nation's energy future.

276. NREL, National Center for Photovoltaics (NCPV), https://www.nrel.gov/docs/gen/fy17/68685.pdf (**Exhibit 51**).
277. *Id*.
278. Based on data from DOE, SunShot Solar Projects Download, available at https://energy.gov/eere/sunshot/downloads/sunshot-solar-projects-download.

> We believe in the power of innovation and partnership to address energy challenges. Our innovation culture creates a "can-do," entrepreneurial attitude throughout NREL—a key part of our success in working with partners and moving technologies to market.
>
> At NREL, we work with businesses large and small through research partnerships, the licensing of NREL technologies, support for cleantech stakeholders, and fostering the clean energy economy."[279]

SEIA strongly encourages the Commission to recommend that the President direct the Secretary of Energy to provide access and direction to Suniva and SolarWorld to put them on the path to achieve product differentiation, which will lead to private funding opportunities. In addition, the fees raised through the proposed license fee structure will provide a core baseline of funding for the exploratory work and refinements needed by both companies as they define their role and path to success within the CSPV market.

3. For SEIA: SolarWorld and Suniva have said that an increase in CSPV cell and module manufacturing would result in a multiplying effect on upstream manufacturing. How do you respond to this argument, and the multipliers they have provided for estimating the effect on job creation at upstream manufacturers as a result of increased CSPV production (see SolarWorld prehearing remedy brief at Exhibit 26)? What are the employment effects for upstream industries making the components used by manufacturers of balance-of-system products?

ANSWER: Please see our answer to the Commissioners' **Question 18**.

279. NREL, "Working With NREL" at 2 (May 2014), https://www.nrel.gov/docs/gen/fy14/60986.pdf (**Exhibit 52**).

4. For SEIA: As staff has already requested, please provide inputs and outputs for the IHS-Markit model, the model specifications, and an executable electronic copy of the model for Commission staff to use. If you cannot provide the last item, please explain why not. Please explain how U.S. production of CSPV cells and modules adjusts to the remedy in the model.

ANSWER: The requested information regarding the IHS Markit model was placed on the record on October 4, 2017.[280] Additional back-up documentation was submitted October 6, 2017.[281]

As far as the question about how the production of CSPV cells and modules will adjust to the new remedy, we have several comments.

First, it is critical that the Commission recognize that solar deployment is only viable relative to its competition's price for supplying electricity on the grid. The prices of alternative forms of electricity generation relative to the price of CSPV significantly influences CSPV demand. When the relative price of CSPV increases, CSPV demand will fall. The relative price of CSPV will increase if either (i) the price of CSPV itself increases or (ii) the price of other forms of electricity generation falls. In many states and market segments as the relative price as CSPV increases, the demand fall will be sharp (i.e., CSPV demand is elastic).

As SEIA documented in its Prehearing Injury Brief[282] and as Amy Grace of Bloomberg New Energy Finance ("BNEF") testified to at the injury hearing,[283] the prices of CSPV's primary competition (wind and natural gas) have fallen significantly in recent years and are expected to continue to fall. This means CSPV prices have to "keep pace" with the competition or its demand will plummet. This "grid parity" constraint means that a trade-restrictive remedy will

280. *See* "IHS Markit Model: An analysis of the impact of PV module pricing on demand for PV in the United States," EDIS No. 624-716 (docketed Oct. 4. 2017).
281. SEIA's Letter to the Commission, "Back-up Documentation for Remedy Modeling" (Oct. 6, 2017).
282. SEIA's Prehearing Injury Brief at 97-104.
283. Injury Tr. at 250-56 (Ms. Grace).

serve to reduce CSPV demand significantly. The IHS Markit deployment model discussed in our prehearing remedy brief indicates PV deployment will fall by 40 to 50% under the petitioners' proposed remedy. GTM Research's deployment analysis (not available to us when we were preparing our prehearing remedy brief but presented by MJ Shiao at the remedy hearing) also forecasts a demand decrease of comparable magnitude.

Additional information regarding IHS Markit's and GTM Research's deployment results are contained in our answer to **Question 14**. The forecasted decrease in demand over the 2018-2021 period for the two company's deployment models is given in the following table

Change in Deployment (MW), 2018-2021[284]

	IHS Markit	**GTM Research**
$0.10 (25% ad valorem)	-9,066	[ ]
$0.20 (50% ad valorem)	-15,104	[ ]
$0.30 (75% ad valorem)	-21,198	[ ]
$0.40 (100% ad valorem)	-28,550	[ ]

As seen, the two companies' forecasts over the period are very similar.

Second, since filing their petition, petitioners' predictions regarding how much new capacity would be built if their proposed remedies were imposed have varied significantly. In August 2017 Mayer Brown issued a jobs study where it predicted U.S. capacity would increase to 3 GW by 2021.[285] By contrast, in their prehearing remedy briefs, petitioners predict U.S. capacity would increase to 5 GW by 2021.[286] No justification is provided why they increased

284. *See* Exhibit 8.
285. Mayer Brown, "Impact of the Section 201 Remedy on Employment in the U.S. Solar Industry" (Aug. 8, 2017), available at http://www.ourenergypolicy.org/wpcontent/uploads/2017/08/REPORT_Final-Economic-Analysis-of-Section-201-Remedy.pdf (SEIA's Prehearing Remedy Hearing at Exhibit 37).
286. *See* Remedy Tr. at 112 (Mr. Szamosszegi) ("An additional 30- to 35,000 jobs would be added if the industry were to expand to 5 gigawatts by 2021.").

their estimate of new capacity. No economic model underpins either prediction. From what SEIA can tell, petitioners are essentially pulling their estimates out of thin air.

5. For SEIA: At the hearing, Dr. Prusa stated that using a COMPAS model, the petitioners' proposed remedy does not remedy their financial losses. Please provide this model, including all inputs and outputs.

ANSWER: The COMPAS model used by Professor Prusa is based on the Excel spreadsheet implementation developed by the USITC Office of Economics.[287] The inputs for the COMPAS model were taken from the Final Staff Report. Market data was based on Tables IV-3 and elasticities were reported on pages V-25 through V-27.

COMPAS requires information on the baseline tariff level. While the standard customs tariff on cells and modules is zero, adjustments were made to account for existing AD/CVD duties on China and Taiwan. For China, the "all other" rate is 25.35% (7.82% AD plus 17.53% CVD). For Taiwan the "all other" rate is 4.10%.

These elasticities and inputs are summarized below.

CSPV	85.00% tariff						
Market Segments	Value	Quantity	Tariff	Trans	Quotas	In Duties	Out Duties
Domestic	[ ]	[ ]	0.0%	0.0%		0.0%	0.0%
Canada	[ ]	[ ]	0.0%	4.0%		0.0%	0.0%
Singapore	[ ]	[ ]	0.0%	4.0%		0.0%	0.0%
China	[ ]	[ ]	25.4%	4.0%		85.0%	85.0%
Taiwan	[ ]	[ ]	4.1%	4.0%		85.0%	85.0%
All Others	[ ]	[ ]	0.0%	4.0%		85.0%	85.0%

[287] An electronic version of the COMPAS Excel file accompanies this brief.

Elasticity Ranges:	lo	hi
Substitution	3	5
Demand	-1	-1.5
Domestic Supply	2	4
Canada Supply	6	8
Singapore Supply	6	8
China Supply	6	8
Taiwan Supply	6	8
All Others Supply	6	8

To estimate the petitioners' proposed remedy we assume an 85% tariff is imposed (the proposed minimum price of $0.74/watt is 85% larger than the current market price of $0.40/watt).

The output of the COMPAS runs are given in the following table.

Summary effects of remedy			
U.S. market effects (in percent unless otherwise noted)	**CSPV**		**Avg**
Domestic price	9.108 to 26.497		17.80%
Domestic quantity	26.500 to 108.160		67.33%
Domestic revenue	42.277 to 150.033		96.16%
Canada:			
Price	5.704 to 16.134		10.92%
Quantity	47.962 to 175.968		111.97%
Revenue	57.946 to 213.303		135.62%
Singapore:			
Price	5.704 to 16.134		10.92%
Quantity	47.962 to 175.968		111.97%
Revenue	57.946 to 213.303		135.62%
Import Market Share:			
Covered imports	64.9 to 77.4		
Total imports	88.3 to 92.4		
Change in consumer surplus (1,000)	($3,415,211,628) to ($2,797,443,717)		
Change in producer surplus (1,000)	$51,074,990 to $159,830,284		
Change in tariff revenue (1,000)	$1,646,716,700 to $2,485,646,072		
Change in net welfare (1,000)	($1,128,668,584) to ($741,839,056)		
Quota rent (1,000)	$0 to $0		
Remedy	85.00%		
	tariff		

As far as the domestic industry's profitability (or lack thereof) following the remedy, the COMPAS model only reports changes in revenue, not changes in COGS. Nevertheless, we can ascertain per unit profitability based on the COMPAS results and known data about COGS.

With respect to COGS, the petitioners' remedy proposal would entail sharply higher cell costs (a $0.25/watt specific tariff on $0.20/watt cells is equivalent to 125% ad valorem tariff) for the independent module makers. Cells are approximately 50 percent of the module cost. Specifically, cells currently sell for $0.20/watt and modules sell for $0.40/watt. This means petitioners' proposed remedy would raise the module makers' costs by 62.5% (50% of 125% = 62.5%).

With respect to per unit revenue, the COMPAS model predicts domestic prices would rise only by an average of 17.8% (with a lower bound estimate of 9.1% to an upper bound estimate of 26.5%). But, this module price increase is far less than the module maker's increase in per unit COGS. This means the module makers, who already report [ ], will be even worse off under the petitioners' proposed remedy.

According to Table III-7 of the Staff Report, module makes capacity accounts for [ ]%, of the domestic industry's module capacity.[288] The [ ] that the petitioners' proposed remedy implies for the module makers makes it impossible for the overall industry to become profitable.

The same lack of profitability occurs if we examine what COMPAS estimates for a 50% ad valorem tariff. The inputs for this COMPAS run are given in the following table.

288. [ ], [ ] is [ ].

CSPV	50.00% tariff						
Market Segments	Value	Quantity	Tariff	Trans	Quotas	In Duties	Out Duties
Domestic	[ ]	[ ]	0.0%	0.0%		0.0%	0.0%
Canada	[ ]	[ ]	0.0%	4.0%		0.0%	0.0%
Singapore	[ ]	[ ]	0.0%	4.0%		0.0%	0.0%
China	[ ]	[ ]	25.4%	4.0%		50.0%	50.0%
Taiwan	[ ]	[ ]	4.1%	4.0%		50.0%	50.0%
All Others	[ ]	[ ]	0.0%	4.0%		50.0%	50.0%

Elasticity Ranges:	lo	hi
Substitution	3	5
Demand	-1	-1.5
Domestic Supply	2	4
Canada Supply	6	8
Singapore Supply	6	8
China Supply	6	8
Taiwan Supply	6	8
All Others Supply	6	8

The results of the COMPAS run are given in the following table.

U.S. market effects (in percent unless otherwise noted)	**CSPV**		**Avg**
Domestic price	6.022 to 17.267		11.64%
Domestic quantity	17.008 to 65.297		41.15%
Domestic revenue	26.568 to 87.427		57.00%
Canada:			
Price	3.791 to 10.668		7.23%
Quantity	29.925 to 100.546		65.24%
Revenue	35.720 to 118.772		77.25%
Singapore:			
Price	3.791 to 10.668		7.23%
Quantity	29.925 to 100.546		65.24%
Revenue	35.720 to 118.772		77.25%
Import Market Share:			
Covered imports	76.8 to 83.2		
Total imports	91.9 to 94.1		
Change in consumer surplus (1,000)	($2,223,106,978) to ($1,880,733,960)		
Change in producer surplus (1,000)	$31,621,038 to $95,144,006		
Change in tariff revenue (1,000)	$1,462,775,487 to $1,878,882,676		
Change in net welfare (1,000)	($419,153,038) to ($224,250,493)		
Quota rent (1,000)	$0 to $0		
Remedy	50.00%		
	tariff		

The logic as to why COMPAS indicates the industry is not profitable discussed above applies to the 50% tariff scenario.

With respect to per unit revenue, the COMPAS model predicts domestic prices would only rise by an average of 11.64% (with a lower bound estimate of 6% to an upper bound estimate of 17.3%). But, once again, this module price increase is far less than the module maker's increase in per unit COGS. A 50% tariff on cells would drive up module makers' costs by 25% -- which is greater than the COMPAS predicted increase per unit revenues. This means the module makers, who already report [ ], will be even worse off under the petitioners' proposed remedy.

6. For all parties: For any economic modeling performed in your briefs, be sure to include all inputs, outputs, and detailed methodology.

ANSWER: These have been or are being submitted.