EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF THE U.S. TRADE REPRESENTATIVE

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PUBLIC HEARING ABOUT THE ADMINISTRATION'S ACTION FOLLOWING A DETERMINATION OF IMPORT INJURY WITH REGARD TO CERTAIN CRYSTALLINE SILICON PHOTOVOLTAIC CELLS

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December 6, 2017
9:30 a.m.

Office of the U.S. Trade Representative
1724 F Street, N.W.
Washington, D.C. 20508

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I N D E X *(Continued)*

I N D E X *(Continued)*

I N D E X *(Continued)*

P R O C E E D I N G S

(9:30 a.m.)

MR. MARTYN: Good morning. I bang the gavel to signify the formal opening of our process here. Good morning and welcome. My name is Will Martyn, with the United States Trade Representative's Office of General Counsel. I will be chairing this hearing.

The purpose of today's hearing is to receive public testimony relating to what action within the authority of the President would be appropriate and feasible to facilitate efforts by domestic producers of crystalline silicon photovoltaic cells to make a positive adjustment to import competition and provide greater economic benefits than costs.

Before we begin the hearing, I will briefly summarize the background of this matter, provide some procedural and administrative instructions, and introduce the other agency representatives participating in the hearing today.

On June 1, 2017, the U.S. International

Trade Commission investigated -- instituted investigation TA-201-75 under Section 202 of the Trade Act in response to a petition filed on May 17, 2017, by Suniva, Incorporated, alleging that crystalline silicon photovoltaic, or CSPV, cells and modules were being imported in such increased quantities as to be a substantial cause of serious injury or threat thereof to the domestic industry producing like or directive competitive products.

On September 22, 2017, the ITC announced its determination that increased imports of CSPV cells and modules were a substantial cause of serious injury. On October 25, 2017, the Office of the United States Trade Representative issued a Federal Register notice seeking comments from interested parties on whether a remedy in response to the serious injury caused by increased imports is appropriate and in the public interest. The notice requested interested parties to address first the appropriateness of any proposed action and how it would be in the public interest; second, the short- and long-term effects the proposed action is likely

to have on the domestic CSPV industry, other domestic industries, and downstream consumers; and, third, the short- and long-term effects that not taking the proposed action is likely to have on the domestic CSPV industry, its workers, and on other domestic industries and communities.

The TPSC will carefully consider the testimony from this public hearing and all comments received in preparing a recommendation to the President as to what action the President should take under Section 203 of the Trade Act.

Now for some procedural, administrative instructions. We have six panels of witnesses scheduled to testify today. We will have a brief break between panels to let the witnesses situate themselves. Each organization represented is limited to 5 minutes of oral testimony. Mr. Mroczka, to my left, will be keeping time. Please wind up your testimony when he indicates that there is one minute left and concludes when he indicates that your time is up.

After the testimony from each panel of

witnesses, agency representatives will have an opportunity to ask questions. All questions will be from agency representatives. There will be no questions accepted from the floor. We have a very busy schedule today and a large number of witnesses. We will accordingly be very strict with time limits and ask that you assist us by winding up your testimony or answers immediately when time expires.

All public submissions for this hearing are available for public review on the regulations.gov website under docket number USTR-2017-0020. A written transcript of this hearing will be posted in the same location as soon as possible after the conclusion of this hearing. If you have questions about the facilities, please feel free to ask the guards at the front of the desk. I would like to remind you that video recording and photographs of the proceedings are not permitted.

I would now like to introduce the agency representatives who will be helping us this morning. Starting on my left, we have Maureen Pettis of the

Department of Labor, Logan Sturm from the Department of the Treasury, Charlie Gay from the Department of Energy, Victor Mroczka also from USTR, myself, Ian Steff of the Department of Commerce, Timothy Fitzgerald of the Council of Economic Advisors, and Kara Aylward of the Department of State.

We are expecting, before we begin with the panels, the statements of Senator Heinrich and Governor McMaster. And so we will take a moment, I'll ask the folks in front to vacate two seats for those gentlemen for this brief moment and we will wait until they are ready, until we start the process. Thank you very much.

(Pause.)

MR. MARTYN: Thank you. Governor McMaster, please being.

GOVERNOR McMASTER: Oh, thank you. Thank you very much and good morning. Mr. Chairman and members of the Committee, I thank you very much for this opportunity. My name is Henry McMaster. I have the distinct pleasure of serving as the Governor of South Carolina, and I appreciate the

opportunity to appear before you today to address this important issue facing South Carolina and the country. And I particularly appreciate it because of the late request that we made and we are very happy to be here. We appreciate you working us in.

In South Carolina, power generation means two things: low cost energy and high quality jobs. Accordingly, on behalf of the 5 million people of the state of South Carolina, I am here to express our concerns regarding the pending Section 201 Global Safeguard Case on Solar Cell and Module Manufacturing in the United States. Solar power generation is an important part of South Carolina's current and future prosperity and the extraordinary tariffs sought in this case risk disrupting the otherwise bright future of solar power in South Carolina and in the United States, including the innovations in building design, architecture, public safety, and other industries.

This unprecedented trade case threatens the status of solar in South Carolina as an affordable, clean energy option. As one of the

fastest growing state economies, South Carolina is home to some of the largest manufacturers in the United States, as well as a robust port system. Ensuring the availability of a diverse and affordable energy infrastructure to serve this growth is of paramount importance to our state. Every time we speak to an industry, a company wanting to come to South Carolina from another state or from abroad, they ask about the availability and dependability of power, every time.

Solar power generation is a critical part of our energy portfolio, providing affordable electricity and maintaining downward pressure on electric prices. In a regulated market like South Carolina, utility-scale solar farms receive a contract for power only when they can supply electricity at or below the avoidable cost -- avoided cost -- excuse me -- rate set by the Public Service Commission. At less than 4 cents per kilowatt hour, South Carolina has one of the lowest avoided cost rates in the nation, so a rise in input cost would not just wipe out a few projects, but it

could eliminate most of the competitive solar projects in South Carolina.

If these solar tariffs are imposed, residential and commercial ratepayers alike would face higher energy costs. In addition to the over 20,000 homes already powered by solar in South Carolina, homeowners interested in buying residential rooftop systems would face higher prices. Meanwhile, because the current domestic cell and module capacity in the country cannot serve even a fraction of the demand for solar panels in the country, other homeowners, renters, and businesses in our state would encounter increased energy costs if solar is removed from the grid and utilities are forced to supply existing demand using a more expensive alternative.

Second, the extraordinary tariffs sought in this case both jeopardize future economic development and threaten to devastate good paying, high tech jobs in South Carolina at a time when the solar sector is establishing itself as a real job creator and a money saver for families in South

Carolina. South Carolina has a strong solar presence with over 70 companies engaged in the solar market, including a steel mill, and in excess of 2,700 solar workers, in addition to the thousands of other employees who work in industries and supply the solar sector.

Since January of 2011, in South Carolina we have announced dozens of commercial solar projects totaling nearly $1 billion of investment. Factories in South Carolina and across the nation would suffer from solar tariffs and increased solar panel prices. I understand that there is only 1 operating factory in the United States, 1 operating factory petitioning for these extraordinary tariffs and there are over 50 American-owned factories employing thousands of people that would be harmed by the remedies requested in this case, including manufacturers in South Carolina.

As you know, the two petitioners in this case, both foreign owned, are seeking to impose significant tariffs on imported solar cells and high minimum prices for imported solar modules. Although

they assert that their proposed global safeguard remedies will boost solar manufacturing the United States, I am concerned that their remedies will instead cause irreparable damage to our domestic solar industry.

Therefore, in the Administration's deliberations regarding this trade case, I join Senators Graham and Scott and other members of our congressional delegation in respectfully urging you to consider the potentially devastating impact of the proposed trade remedies on the future of solar power in South Carolina and in the United States. And instead, I respectfully urge you to embrace a creative, non-restrictive remedy which would help domestic panel assemblers gain access to necessary investment capital without devastating the customer demand for the product and the availability of the product.

I strongly support President Trump's America First trade policies and I am convinced that imposing the requested trade protections on the solar industry as it stands today will have the

opposite effect; that is it will hinder and not help American manufacturers. South Carolina represents one of the fastest growing solar markets in the United States and with the Administration's support the future for solar in South Carolina is even brighter. I submit that it is not the petitioners, but we who oppose their request who are standing with the President in favor of American manufacturing.

I appreciate your time and consideration very much. Thank you.

MR. MARTYN: Thank you, Governor McMaster.

Senator Heinrich?

SENATOR HEINRICH: Good morning. Thank you for allowing me to testify this morning. I'm Senator Martin Heinrich of New Mexico. And I, too, am very concerned that imposing high tariffs or quotas on imported solar cells and panels would be a major setback for our nation's efforts to transition to clean, affordable energy. And trade barriers on solar panels would threaten thousands of good-paying jobs across the American solar industry.

It's important to remember that the production of solar panels is just a small piece of the solar industry as a whole. Only a little more than 1 percent of the hundreds of thousands of American solar workers manufacture solar panels or modules. Tariffs and quotas for solar panels may help a very small number of domestic solar panel manufacturers, but major price increases would threaten the rest of the entire American solar industry, including the manufacturing jobs tied to racking, trackers, inverters, and electronics.

My home state of New Mexico has seen major job growth in the industry thanks to the rapidly declining cost of solar panel -- of solar power. Investment in solar energy in New Mexico has surpassed $1.5 billion, which is a significant amount for a state of just over 2 million people. Nearly 3,000 New Mexico workers are employed in local companies that manufacture equipment, install residential rooftop solar, and build utility-scale solar installations. We have seen a 54 percent increase in solar industry jobs in New Mexico in the

last year alone.

And the important thing to understand as you are making your decisions is that the vast majority of New Mexicans and the vast majority of Americans working in the solar industry are not working in jobs manufacturing solar panels. Much of the rest of the equipment used to install and to distribute solar panel is manufactured domestically. Within solar manufacturing as a whole, approximately 20 times more American workers work for companies like New Mexico's Unirac that manufacture other hardware and equipment used to produce solar power. Those companies have warned that they may have to lay off employees if the United States imposes costly tariffs or quotas on imported panels.

The same grim picture is true for the hundreds of thousands of Americans who work for local solar installation companies in communities spread across our nation. It is estimated that more than 88,000 American solar jobs could be lost next year if the proposed tariffs are imposed. In New Mexico, alone, we could stand to lose over 1500 jobs

in 2020 if high tariffs are imposed on solar panels. That would result in a loss of between 45 and 64 million dollars in wages for our state's workers.

The large majority of job growth that we have seen in the American solar industry over the last 5 years has been as a result of jobs in installation. Although panels can be manufactured anywhere, the labor to install them on rooftops or in large utility-scale arrays must be done by local American workers. Earlier this year, I had the privilege of joining a crew of installers with the New Mexican company SunPower by Positive Energy Solar as they installed rooftop solar on a home in Santa Fe. They told me about the benefits of the booming growth in the solar industry and the great job opportunities that currently occur.

If President Trump imposes high tariffs on imported solar panels, we might see prices effectively double. We would be shooting ourselves in the foot by threatening to end the growth of a booming industry that is employing American workers in good-paying, high quality jobs. Solar jobs are

exactly the types of jobs that we should be encouraging if we're promoting a trade policy that truly puts American workers first. Installers and solar equipment companies are almost entirely American owned and operated, and they are critical to local economies.

As just one more example of what is at stake, the construction of the Chavez County solar energy centers in Roswell, New Mexico, created 300 jobs last year. This rural community of just over 65,000 people is still working its way out of the recession. Without those solar construction jobs, the unemployment rate last year in Chavez County would have been almost 8 percent. Instead, the actual rate was 6.8 percent. That's the difference we're talking about in communities in my state and across the nation if we threaten the American solar industry as a whole.

I hope that President Trump will look at the bigger picture of the American solar industry and its role as a major employer of American workers while making a decision in this case. His decision

has the potential to adversely impact hundreds of thousands of American workers, hundreds of locally owned American companies and jeopardize billions of dollars investment in communities across the country. I hope he will make the right choice for American workers.

Thank you again for this opportunity to testify this morning.

MR. MARTYN: Thank you, Senator Heinrich.

And with that, our testimony of elected officials is finished, so thank you very much, gentlemen.

GOVERNOR McMASTER: Thank you, sir.

(Pause.)

MR. MARTYN: Suniva and SolarWorld, are you ready to begin? All right, thank you very much.

MR. BRIGHTBILL: Thank you, Mr. Martyn, and members of the TPSC. I am Tim Brightbill of Wiley Rein LLP on behalf of SolarWorld Americas, Inc. SolarWorld and Suniva greatly appreciate all of your hard work already on this proceeding, which means everything to our companies, this industry,

and its workers.

The International Trade Commission has found unanimously that the domestic solar cell and module industry is seriously injured by reason of a global surge of imports. It has recommended actions to address the serious injury and to facilitate the efforts of the domestic industry to make a positive adjustment to import competition. Now the President has broad discretion to proclaim the remedy that will rebuild the U.S. solar manufacturing industry and return it to a leadership role in the world for generations to come. U.S. solar cell and module manufacturing is at the critically important intersection of manufacturing, high technology, renewable energy, and national security. This is why we need the strongest, most effective remedy possible.

I will refer briefly to one of the handouts in front of you titled Presentation of the U.S. Solar Industry, which is taken from our remedy hearing at the ITC. As shown on page 2, this remedy should do the following -- slide 2, that is. It

should restore U.S. solar cell and module manufacturing. If America wants to have a strong solar industry, it needs to have a strong solar manufacturing industry. Even our opponents agree solar manufacturing drives technology innovation. It should allow U.S. manufacturing to scale up, to become world-class competitive for the long term. It should ensure continued solar demand and deployment and solar jobs. It should increase solar innovation and R&D to ensure the next generation of solar products is invented, developed, and manufactured here in the United States. And it should bring stability back to the U.S. marketplace. Our proposed remedy accomplishes all of these goals through a combination of tariffs, quotas, funding, and other forms of relief.

As shown on slide 6, we recommend a specific cents-per-watt tariff beginning at 25 cents per watt for cells and 32 cents per watt for modules. As shown on slide 7, we recommend specific quotas on cells and modules to ensure that foreign producers do not simply sell through or absorb the

tariff, and to ensure that the domestic industry has market share. Quotas can be reviewed as necessary and must be supported by an effective, comprehensive monitoring system similar to that established for the Steel 201.

Additional remedy recommendations are shown on slides 8 and 9, and include industry funding, Buy America initiatives, international negotiations on overcapacity, a DHS study of the risks of foreign solar panels, settlement negotiations on the U.S. Antidumping and CVD orders on solar products, as well as the Chinese trade orders on polysilicon.

As shown on slide 11, our remedy is carefully calibrated to rebuild and quickly grow U.S. solar cell and module manufacturing. It will benefit all producers, not just SolarWorld and Suniva, allowing them to increase production, capacity utilization, and employment. It will ensure sufficient supply of solar cells and modules in the U.S. market. It will encourage investment in new manufacturing throughout the solar supply chain,

as well as thousands of new, good-paying jobs here in America.

As shown on slide 16, we also urge the TPSC to recommend relief that will address the reality of circumvention, which has happened in all of the prior solar trade cases in the United States and the European Union. To emphasize, the President is not limited to the ITC's recommendation of which countries are included and excluded, and Free Trade Agreement rules of origin do not control the scope of the safeguard's case.

MR. MARTYN: I've had a request that you speak a little bit closer to the microphone, which I understand is not picking up everything.

MR. BRIGHTBILL: All right, sorry. Very good. Free Trade Agreement rules of origin don't control the scope of the safeguard's case or the President's relief.

Finally, both SolarWorld and Suniva have provided detailed confidential adjustment plans that specify how they will use a 4-year remedy to adjust to import competition. So we look forward to

presenting our remedy proposal in more detail this morning. We're confident that you and the President will put forward a remedy that will address our industry's serious injury and allow it to adjust, recover, and grow and innovate well into the future.

Now we'd like you to hear from our industry witnesses starting with Mr. Juergen Stein, the CEO of SolarWorld Americas.

MR. STEIN: Thank you. Good morning, my name is Juergen Stein. I am the CEO of SolarWorld Americas, the largest solar manufacturer in North America. SolarWorld and its workers appreciate the TPSC's hard work on this case and the opportunity to testify here today to explain why SolarWorld's and Suniva's proposed remedies are needed to help U.S. producers and workers recover from the serious injury caused by imports.

The remedies are intended to benefit the U.S. industry as a whole, not just one or two producers. SolarWorld's vision of a healthy U.S. industry is one comprised of at least five to six U.S. solar cell and module producers, each with

1 gigabyte or more of integrated cell and module capacity. This capacity level will enable the industry to achieve scale and raw material purchasing power. A healthy industry would be fully competitive to supply all U.S. commercial, military, and federally funded projects, foster new research and development partnerships, and promote increased cell and module efficiencies.

SolarWorld also envisions a revived upstream supply chain where domestic solar cell and module producers can rely more heavily on domestic producers for their polysilicon, wafer, glass, pastes, ribbons, foils, and other raw material needs, and less on imports. To meet this goal, U.S. producers need strong remedies. The remedies must address three main issues: First, they must allow for price stabilization; second, they must provide funding to the U.S. industry; and, third, they must stop future import surges. This will allow U.S. producers to rebound from the serious injury suffered from the import surge, and make the necessary investments and expansions to improve

their competitive position. A tariff-quota combination along with funding are essential to make this happen.

SolarWorld and Suniva propose a 25-cents-per-watts tariff on cells and 32-cents-per-watt tariff on modules in 2018. These tariffs would return U.S. prices to levels before the most recent price crush, the period in which U.S. solar installations were increasing at a record pace. We also propose a quota of 220 megawatts for cells and 5.7 gigawatts for modules in 2018. These quotas would be significantly increased in years 2 to 4, to address stockpiling up front and then ensure supply to the market.

Both remedies in combination with funding are necessary to allow the U.S. industry to ramp up quickly. Further, these remedies will allow SolarWorld and other U.S. producers to expand their production and capacity, and will encourage investment by others. It has been widely reported in the press that a number of current solar cell and module producers from overseas plan to invest in the

United States if tariffs are imposed.

We need to rebuild solar manufacturing in the United States, including the entire solar supply chain. A tariff and quota combination would allow the U.S. industry and SolarWorld to significantly improve profitability so that it has the capital to continue in cutting edge research and development, and make the investments necessary to remain a leader in the marketplace.

Other elements of SolarWorld's recommended remedy would also help to achieve this goal. In general, SolarWorld supports the idea of a licensing fee to provide funding for the U.S. solar manufacturing. Another option would be the provision of loans and grants to stimulate U.S. solar manufacturing innovation, research and development, and growth.

SolarWorld is also requesting that the President commence international negotiations to address global solar cell and module overcapacity. In addition, SolarWorld urges the President to settlement negotiation with respect to assisting

U.S. AD and CVD orders on solar products from China and Taiwan, and with respect to China's trade duties on imports of U.S. solar grade polysilicon. SolarWorld wants the entire U.S. solar industry to grow to a competitive level and stay competitive in the years to come. We strongly believe our remedy proposals reflect this goal.

Finally, I would like to highlight one issue that I hope the TPSC will keep in mind as it evaluates the various remedy proposals. The United States was the pioneer of solar manufacturing innovation. One example is passivated emitter rear contact, or PERC, technology. SolarWorld developed this technology and was the first to industrialize it over the course of several years. But our competitive advantage was short lived when SolarWorld's proprietary technology was stolen by state-run Chinese hackers, who then provided that technology to China's producers, who shifted into PERC production and began competing with our U.S. product. I testified on this matter earlier this year in the context of the Section 301 IP

investigation.

In closing, the President has the power to help bring the U.S. solar manufacturing industries back from the brink and along with it the thousands of American manufacturing jobs up and down the solar value chain that have been wiped out by foreign subsidized imports. We believe that SolarWorld and Suniva's proposed remedies will do what it takes to ensure that the domestic industry can expand, and innovate, and succeed for years to come. Thank you.

MR. CARD: Good morning. My name is Matt Card. I'm the Executive Vice President of Commercial Operations for Suniva, one of the two co-petitioners in this investigation. I'd like to add my thanks to each of you for the diligence you are showing in this matter. The issues before us are significant and your recommendations will help shape the future of U.S. high technology manufacturing, and I thank you for your role.

When we initiated this process, we knew that this would be unpopular with those that have benefited from the targeted economic attacks of

foreign governments against this vital U.S. manufacturing segment. I could never imagine how unpopular it was to the point that these opponents have willfully aligned with those same foreign governments in an attempt to silence us. Thankfully, our laws are more powerful than those voices out to silence us. Process has proceeded and the merits of our claims have been validated by the ITC unanimously. Unfortunately, the recommendations proposed by the Commission are insufficient to remedy the serious injury to the domestic industry.

As you are aware, the President's obligation is broader than that of the Commission. He must also recognize the importance of this industry to our national and energy security. The President needs to implement a stronger remedy that allows the industry to overcome the extensive and continued efforts of foreign state support to offset any tariff and thus to survive and thrive on a permanent basis. A strong remedy is one that foreign governments cannot circumvent, wait out, or simply overwhelm through brute force.

While this is a global action, at the heart of the problem sits China, which in a mercantilist fashion set out to dominate the solar cell and module industry worldwide. The Chinese government has made dominance of the global solar market a national priority. It has been included in their last three 5-year plans. Of significant matter here, over that period, our industry here in the United States has gone from a slight trade surplus to a roughly $8 billion trade deficit.

When the U.S. government found that China had dumped products into our country in two separate cases over the last 5 years, the largest Chinese producers, backed by low-cost loans and state-owned banks, established manufacturing operations and proxy companies to evade those duties. They then bragged loudly of their actions to evade U.S. trade decisions in the press. And as you have heard, they did not stop there. In 2014, the U.S. Department of Justice indicted five members of the Chinese military for illegally hacking our co-petitioner to steal trade secrets for the benefits of its own

industry.

China's relentless attack has all but killed the U.S. cell module manufacturing industry. We talk about the potential of losses we've heard. Over the last 5 years, almost 30 U.S. manufacturers have closed. They've laid off thousands of workers or they've suffered extreme financial loss. That's not conjecture. That's not theory about what might happen. Those job losses are real. American manufacturing workers have suffered. There is no debate about that. Our company is in bankruptcy, as is SolarWorld's parents. And since this process started, another U.S. manufacturer, Stion, has announced it is closing its doors.

Sadly, this attack has not been limited to solar cell and module manufacturing. As part of this USTR process, the U.S. polysilicon industry has called for a comprehensive settlement of the existing U.S. AD/CVD orders against Chinese solar products, along with China's retaliatory orders against American-made polysilicon. We agree and believe the strong remedy that the petitioners have

requested will provide the maximum leverage for President Trump and Ambassador Lighthizer to negotiate the best deal for American manufacturers.

Conversely, as the last 5 years have proven, a weak remedy will just lead to more cheating and evasion against our industry, and more retaliation directed at our colleagues in the polysilicon industry. A strong remedy is required to preserve the U.S. industry, provide breathing space for this American-invented manufacturing technology to grow and thrive. Anything less risks the loss of this industry after the remedy expires, which would have a dramatically negative impact on America's energy and national security.

America will turn over its ability to generate electricity from the sun to foreign manufacturers and their governments. Having broken its dependence on foreign oil, America will willfully create 100 percent dependence on foreign solar producers and their governments. This cannot be allowed to happen. The ITC recognized this point as well. The commissioners explicitly held that the

loss of U.S. production of solar cells and modules will have, and I quote, "significant long-term consequences for U.S. economic and national security."

Our opponents desperately avoid the fundamental question of whether the U.S. should continue to manufacture this product, and I urge this panel to pose that question to them. That is the question before the President. Is it in the public interest to help the U.S. cell and module manufacturing industry live? Our answer is resoundingly yes. The public interest is served best by saving this American manufacturing sector and energy source.

Yesterday, our opponents repackaged their suggested alternatives under the euphemistic title, An America First Plan for Solar Energy. It should be lost on absolutely no one in this room that our opponents' proposal relies on China and their proxies to supply the U.S. market with solar, including our military. That is a strange, sad definition of America first.

Our opponents' core argument is that no trade remedy should be imposed because remedies will devastate demand. The Commission categorically rejected these assertions. Indeed, the Commission found that demand growth will continue even in the face of remedies. Claims that an increase in the cost of importing modules is going to kill demand have been sensationalized and, as importantly, historically have been proven to be wrong.

However, what is really at stake for our opponents is not demand, but rather their continued benefit of the market distortion that is the fruit of the poisoned tree of Chinese subsidies and IP theft. Saving the American solar cell and module manufacturing industry provides substantial, economic, and social benefits. Fundamental to our goals of this action is to create the incentive for new investment in U.S. cell and module manufacturing. A growing U.S. manufacturing sector will support the companies and workers that supply inputs to the cell and module industry as well. This creates a favorable supply chain, including for

U.S. polysilicon producers to sustain manufacturing post the safeguard period.

There is a growing body of evidence which shows others are poised to invest in additional capacity here in the United States should the President implement strong remedies. And strong remedies are exactly what are required. Unfortunately, right now China is on the verge of winning their planned economic energy and national security strategy for utterly destroying the U.S. solar manufacturing industry.

So, yes, the issues you face here are significant. They are important. And your voice matters. Your actions will be fundamental in whether another U.S. manufacturing segment lives or dies. I'd ask that you do your part in saving this industry. Thank you.

MR. SHEA: Good morning. My name is Stephen Shea, formerly Vice President at Beamreach Solar, a U.S. producer of crystalline silicon photovoltaic cells and modules located in California. Beamreach was forced into Chapter 7

bankruptcy earlier this year, so I'm here as an industry veteran to share my personal views based on a 40-year career as an engineer and executive in the solar field.

The President is explicitly tasked by the statute for considering the national security interests of the United States in this case. And I concur with the Commission's statement in its remedy report concerning the national security significance of this industry to the U.S. China has overtly targeted the development of a globally dominant solar energy manufacturing industry, including through massive state subsidies, for their own economic, energy, and national security goals.

But in addition, in 2014, the United States Department of Justice indicted members of China's military for covertly hacking into and stealing SolarWorld's intellectual property. The fruits of this state-sponsored theft were employed in Chinese-controlled production and subsequently exported to the United States.

If strong remedies to these behaviors are

not imposed, in the future there will be no CSPV cells and modules actually made in this country. Foreign powers will then control at least the supply of CSPV cells and modules, and potentially control the actual energy output of these products themselves. For example, U.S. domestic military bases will rely increasingly on renewable energy in coming years. If these installations are constructed with foreign product, they may be vulnerable to hacks and backdoors that could allow a third party to literally turn off the lights at these and other facilities.

I am not alone in this concern. The lead story in the August 2017 edition of *Photon* magazine expressed exactly this, that hackers might be able to launch attacks on solar arrays and, through them, on the broader electrical grid to which they are connected. Also, the Department of Energy recently announced that it is changing the focus of its SunShot Initiative to grid resilience reliability and storage.

Solar modules are part of our energy

infrastructure, connected to the power grid, increasingly connected to the internet of things, and thereby susceptible to disruption by external parties particularly when those parties have remote access from across the globe to the control systems on which these power systems depend. It is implausible to claim that solar energy production ensures grid security when the core product is designed, built, and susceptible to remote control by foreign powers.

Moreover, the U.S. leads the world in solar research and development and technology, which will atrophy in the absence of a robust, U.S. based manufacturing industry. We cannot risk losing that position either if we are to maintain control over our energy future and security.

Petitioners' requested remedy achieves the necessary goals of both mitigating national security risk to U.S. infrastructure in the near term and U.S. retention of the cutting edge R&D associated with these products for the longer term. Thank you.

MR. KAPLAN: The proposed remedy put

forward by the domestic industry has six elements: It encourages new entrance and the rejuvenation of an industry targeted by the Chinese government in multiple 5-year plans. It tries to return prices to a level where existing and new firms can be profitable. It tries to return price to where existing firms could recover from the severe damage that was caused by two rounds of unfair imports, as well as the serious injury caused by a surge in imports. It recognizes that solar technology is primarily in the cells and that a remedy that fails to recognize this could turn what remains of the industry into an assembly operation. It recognizes that the price declines in 2016 were much larger than any changes caused by materials cost or technological improvements, and it tries to protect a nascent industry from the effects of repeated surges and excess capacity, and the constant collapse of world prices.

And finally we place the remedy in the context of remediating the injury caused by the import surge, but are cognizant of where the

industry falls within the context of national interest, energy security, U.S. technological leadership, and a response to Chinese-caused distortions.

Before discussing the Commission's remedies, I wish to note that all four commissioners found serious injury caused by the import surge and overcapacity. Three commissioners suggested tariffs and three commissioners recommended industry funding. Our concerns with the commissioners' proposed remedies relate directly to the purpose of our proposed remedies.

Before beginning that discussion, I want to state that the economic logic behind the commissioners' remedies are somewhat opaque. They have not released their economic model nor characterized it for public, for the parties on the confidential record. They have not reported the complete set of model inputs and outputs on the confidential record. And they have not characterized the remedy as a remedy for the existing firms or as a remedy that considers entry.

We don't know whether capital in the industry is fixed or variable. So we're working from the dark a little bit trying to just analyze their results.

These are important issues, particularly whether capital is fixed or variable, because entry is quick in this industry. New facilities can be built in a year and a half for cells and much less time for modules. So our remedy proposal is based on entry, and a model that doesn't look at entry is a model that's insignificant for analyzing the effects of the remedy. That said, we believe the proposed remedies are insufficient because they don't appear to encourage entry based on the limited analysis we have seen.

The scale of new facilities ranges from 1 gigawatt to 5 gigawatts, and any analysis that fails to look at entry of this magnitude and entry at all kind of misses the point. We don't believe the Commission-proposed remedies even return the existing industry to profitability. We think the tariff rates need to be higher and the quotas need to exist based on our analysis of the income

statement and what we believe will happen to prices. They just aren't high enough.

We think the effect of the proposed remedies will be muted with respect to prices because of the compression of profits within the distribution chain, the terms of trade effect, and Chinese duty absorption in China or other countries. Respondents have testified to the former. The second effect is contained in the Commission's own analysis. And the third has been observed throughout the period of investigation.

We are unaware of whether these effects have been incorporated into the analysis of the various proposed remedies, but we ask that you look at the effect of our proposed tariff on prices and the Commission's remedies. And I think their remedies are insufficient because of these three factors that limit the price effect of tariffs that I think many of us could agree on.

We think that remedies without binding quotas, quotas that may be periodically reviewed, are insufficient to protect the industry from import

surges which have been part and parcel of the injuries suffered by U.S. producers. Quotas provide more certainty for industry investment than tariffs because they mitigate the type of import surge that preceded injury found in each of the three solar investigations.

The Energy Administration Agency predicts that half of new incremental electricity capacity in the United States through 2040 will be renewable energy, primarily solar. Solar energy sits at the confluence of three monumental policy issues that you must address and you are working on: energy security, technological leadership, and the U.S. response to Chinese industrial policy.

We understand it is the responsibility of corporate executives to maximize profits for the shareholders in what has increasingly become a quarter-by-quarter exercise, an environment where the median tenure for a Fortune 500 CEO is less than 5 years. In contrast, you, the TPSC, is charged with considering the national interest, whose time horizon extends not to quarters but to years, to

decades, to generations. This is particularly true with respect to energy security, U.S. technological leadership, and our response to foreign industrial policy, all of which are implicated in this proceeding. Thank you.

MR. YANG: Hello. I'm Frank Yang. I'm VP of Business Development and Co-Founder for Stion. We are not a petitioner in the case; however, we are testifying here today in favor of selected import restrictions.

As further background, Stion was a 100 percent U.S.-owned solar manufacturer in Hattiesburg, Mississippi. We were forced recently in October to discontinue production despite strong sales demand due to the price environment and a lack of investment capital in the sector.

At risk today are 137 high-skilled jobs in Mississippi, with average annual wages of $60,000 per year, as well as substantial indirect benefits. Since our project was initiated in 2011, we paid out $33 million in wages to employees in the state of Mississippi and over $80 million in payments to the

state in the form of taxes, vendor payments, and other economic considerations, including payments on our state loan with the State of Mississippi.

Now Stion actually, since its original formation in 2006, raised hundreds of millions of dollars in funding from some of the largest and most sophisticated U.S. and Asian investors, Banner Solar. However, all these investors ultimately reached fund limitations or decided they were unable to compete. As you've seen in many reports, the average cost of capital for Chinese solar manufacturers is less than 2 percent and they have over 100 days of cash flow both from customers and suppliers. We're simply unable to compete with those mechanisms.

The company today is at a crossroads, but we are also here speaking as individuals to encourage the health of the industry. As we have documented in our submission to USTR, we are in support of not only stronger tariffs, as well as minimum import pricing and tangible financial assistance for manufacturers, but we would like to

consider lessening or elimination of import quotas because manufacturing capacity is very difficult to build; but as well as considering some type of quantitative threshold to protect certain larger residential and utility purchasers from tariffs because the output simply doesn't exist in the U.S.

MR. MARTYN: Excuse me. I'm sorry, Mr. --

MR. YANG: I understand we're limited on time and thank you for the opportunity to speak.

MR. MARTYN: Yes, thank you very much, and I'm sorry to cut you off, but we have a lot of folks talking today so we're going to have to be strict with the time limits. Thank you, gentlemen, for your presentation.

Before we begin with questions, I would like to say we have crafted these questions to address areas where we have some uncertainty or need some further information. Please do not, from these questions, attempt to divine some views at this time. Some of these are going to be deliberately provocative because we are looking for information and sometimes that is the best way to develop useful

points.

I would also ask the participants, the folks in the audience in the back, have you been able to hear us so far? All right. Well, then I would ask -- oh, does this work? Better? All right. I would ask then as we have testimony or as we are asking questions, if you folks in the back are having trouble hearing, please stand up and wave, and that way we will understand that we need to get closer to the microphones.

With that I will say we are going to be dividing our questioning over the next hour into four categories. We will be looking at the question of positive adjustment to import competition, the action recommended for the President to take, economic and social benefits and costs, and then finally the remaining topics. And we'll divide that time about equally.

I'll begin though with a general question. Beyond the report, the ITC report assembled by the International Trade Commission staff, what other reliable sources of data on the solar industry are

publicly available?

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. I'll also mention, by the way, you do have handouts from Dr. Kaplan, selections from his economic presentation for the Commission, and you have a handout that is a map of facilities that closed or went bankrupt or suffered layoff, losses during the Commission's period of investigation.

So we think some of the other reliable sources include Bloomberg New Energy Finance materials; reports from NREL, N-R-E-L; the U.S. Energy Information Administration. There is also some information from GTM Research, which is not necessarily publicly available but is subscription data. And then, of course, the ITC report as well.

MR. MARTYN: All right. Thank you very much.

All right. Moving on to the adjustment questions, what are the maximum output levels the domestic producers of cells and modules can achieve using current existing production facilities? And then what are the maximum amounts the industry

anticipates it could produce in the second, third, and fourth years of the proposed 4-year remedy period if they make all of the adjustment efforts indicated in their submissions?

MR. STEIN: Maybe I can start. Juergen Stein from SolarWorld. I am not aware of the exact data from the entire industry that is business confidential. But, of course, what we see right now is that probably the domestic industry has a capacity in cell of 1 gigawatt and probably similar in module, another 1 gigawatt. The capacity reflects at the moment far less than 10 percent of the demand of the United States.

If we look back in the past, then we see that we had been more than 30 percent of the demand as a capacity in the United States, and that is what we think is the right answer, to bring the domestic industry back to that level of 30 percent of the demand. That is the reason that we set the five to six companies with each more than 1 gigawatt capacity is the right answer for the overall industry. We have both petitioners speaking here,

because Suniva, Matt, you can follow up on that.

We have plans ready to expand. Our capacity at the moment is 450 megawatt on cell and 600 on module. This is public knowledge. We have plans ready to grow that to more than 1 gigawatt, both areas, which is important to reach the scale and also the purchasing power, as I mentioned earlier.

MR. CARD: Matt Card, Suniva. I'll add to that briefly. It's also public information Suniva had just conducted a tripling of our U.S. manufacturing capacity to the expense of about $50 million in CapEx during the year 2016. As you guys are also aware, 2016 saw a massive collapse in pricing. So we have effectively a new factory, triple the capacity of what it was. That was the first phase of a multiphase expansion plan. So Suniva has a master plan that also effectively doubles or slightly more than doubles that capacity again. And that's something that we have expressed in our adjustment plan that was filed would contain as well.

Juergen is right, there is roughly a gigawatt of cell capacity in the U.S. and roughly 2 gigawatts of module capacity, give or take, as additional factories that are -- have idle capacity have the ability to come back online and as other entrants decide based on the tariff output whether they will finish construction that's in place now. I agree with what Juergen's comments in the open were, we share a vision of a U.S. manufacturing industry that has five to six major suppliers at a gigawatts-plus capacity. SolarWorld certainly has the capabilities of getting there during the adjustment period, as does Suniva, so we would look to lead that way. But the information is fairly well documented.

I guess I'll say factually, if you trust the press as factual, multiple foreign manufacturers have indicated an interest in coming into the United States' market and building significant supply. Each of those are caveated, and I think you'll hear from some of those today, are caveated of those with the caveat dependent on the remedies that the

President puts in place.

MR. MARTYN: All right. And then --

MR. BRIGHTBILL: Tim Brightbill. Slides 12 and 13 in our handout refer to some of those foreign -- those manufacturers who are thinking of relocating here depending on the results of this proceeding.

MR. MARTYN: All right. Thank you.

To be sure I understand, you said 1 gigawatt of cell and 2 gigawatts of module?

MR. CARD: That's usefully precise and that represents not only the supply of Suniva and SolarWorld, but a few other manufacturers in the industry.

MR. MARTYN: Right. So then just so I'm making sure that I have my math right, that would suggest that there is 1 gigawatt of module capacity that is using imported cells as inputs; is that correct?

MR. CARD: For Suniva, I can't speak to that. 100 percent of our modules, are using our cells. But I can't speak to anyone else in the

industry.

MR. STEIN: From my understanding, we are talking capacity, talking not current loading, and therefore you don't see that input of cells at the moment to that level because much of that capacity is not used at the moment, we have to admit.

MR. MARTYN: All right. Thank you for that clarification.

There is also a timing element to that question. So I understand that you have an expectation of ramping up over this period. Do you have a firm expectation as to when you or other producers will add this additional capacity?

MR. STEIN: We have a specific plan in place in the first instance to re-ramp to the capacity level we have. You know that we had to reduce it during the year, our loading of the production. We want to be back at 100 percent of our capacity in May/June 2018. That is the first step we have. And then, of course, it is heavily dependent on the remedies in place how quick we then can come to the expansion plans. We have detailed

expansion plans ready, how to bring that in the current facilities we have. So if we have strong remedies in place, it takes normally, as I said before, 12 to 18 months to bring additional capacity online depending on the technology, depending on the facilities prepared, and module or cell.

MR. MARTYN: Thank you. Please.

MR. CARD: To add to that, we've been public in prior testimony that we anticipate the time to reenergize our existing facilities in the 3-ish month range, give or take some weeks around that. We've also provided details in Exhibit 7 on additional capacity expansion. I will use as a guidepost for you, though, the fact that we built our current, our most recent expansion that took us to 450 megawatts in just under 12 months of time, from ground up construction, actually while modifying and continuing to run an existing factory in that process. So that gives you some sense of ongoing kind of expansion ramp. But the details are in Exhibit 7.

MR. MARTYN: Thank you.

Now we noted from the ITC report that Suniva and SolarWorld have sold some quantities into the utility market; however, I don't think that we would characterize those as significant quantities compared to the size of that market. So we have some questions about your companies' participation in that market. I'll start with, why have Suniva and SolarWorld not sold in larger quantities into the utility market?

MR. CARD: Matt Card for Suniva. I'll answer that first. I would dispute the characterization that we've not invested or that we've not sold in large quantities. To give you a sense of perspective, from Suniva's perspective we've committed a large quantity to that market. Roughly, on average, over 2015/2016, which was our last full year of production as obviously our bankruptcy in early 2017, approximately 35 to 40 percent of our overall production mix was in the product that is called -- that has typically been called utility scale or 72-cell product.

It's important to distinguish the utility.

What's been kind of interchanged here as a dialogue is others have characterized the 72-cell product as a utility-scale product. That's not in fact correct. The product is completely interchangeable with other applications. Suniva's 72-cell product has gone into traditional ground-mounted field sort of utility projects. But Suniva's 72-cell product also sits on rooftops here in Washington, D.C., on U.S. government buildings such as the GSA, such as the Cohen Building, and other locations. So there is a high degree of interchangeability.

The 72-cell product that people characterize as the utility product is also highly desirable for what I call carport projects, which are VA hospitals in which Suniva and SolarWorld both have done significant participation, have utilized to great effect. So there is a high degree of transferability between markets. But while certainly based on our overall capacity relative to the utility-scale market, we don't represent a significant thing.

To characterize Suniva as not wanting to

participate in that market, not willing to participate in that market is simply inaccurate. Like I said, we devoted 35 to 40 percent of our production to that product.

MR. STEIN: Maybe just some additional information from SolarWorld. Our latest investment for SolarWorld, a double-digit million dollar range, was exactly to build a new 72-cell line for that segment. So it's not true that we are not serving or less serving that segment. Last year, we had a big bunch of our overall sales was in the utility sector and we would like to continue to do so. So, therefore, I think what Matt said before, it's all correct, that we will continue to focus on that, even we learn that some companies say we would not serve that segment, which is simply not true because exactly these companies are using our modules. So just additional information.

MR. CARD: To be very brief, because it's all in prior testimony, we shared under affidavit and under testimony in prior hearings a specific example of Suniva attempting to participate in that

and the case study of one particular client where we had a verbal agreement for a project for our 72-cell product for a utility-scale project. As time intervened, even after we had a verbal agreement with contract negotiation in place, time continued to intervene. Prices in 2016 continued to plummet and by the time the project signed, the end customer went with an Asian-made product at roughly half the price they had verbally committed to the product with Suniva. So to say not participating there as opposed to potentially being driven out of opportunity because of the massive distortion in price that occurred is maybe a more accurate reflection.

MR. MARTYN: All right. Thank you.

I don't want to monopolize the questions. Do any of my colleagues have questions on the topic of adjustment? Please, Mr. Gay?

MR. GAY: I'd like to ask at what scale do you see needing to be in a year and a half or whatever the time horizon is for ramping back up and it being necessary to manufacture to have a

competitive position?

MR. STEIN: The reason that we say that should be five to six companies having more than 1 gigawatt is simply the reason that the scaling factor is getting less important after 1 gigawatt capacity you have. Before that, it is very important. So that is the reason that we go for that number and say we want to be there, on 1 gigawatt on cell and module as soon as possible. So if we have a desired place, we want to be there in 12 to 18 months for both areas. That is the main driver for the scaling.

MR. GAY: And if you get to that scale of 1 gigawatt, what kind of cost structure do you anticipate?

MR. STEIN: Because you understand that I cannot go into the cost structure in detail here, I'm happy to discuss that after that meeting. But there is out of our view no reason that a product in the United States cannot be as competitive as produced somewhere else. It's a question of the right technology to continue to run on the leading

edge of the technology, as we have done that in the past on the PERC technology, to get automatization into the production as we have that. And the raw material, if you have the right purchasing power -- the raw materials is the highest cost driver. If you have the purchasing power with 1 gigawatt and more and a healthy industry where you can buy it locally, there is no reason for us that you cannot compete on international standards on a fair, level playing field.

MR. GAY: Let me ask what do you see coming after PERC so that there is a pipeline of competitive progress that could be made to stay competitive in the future?

MR. STEIN: Again, PERC was the technology we industrialized here in the United States in the year 2012-2013. Then it was -- the information was stolen. We explained that before. And with that, it came much faster on the world market from China, as we expected. And there was a disadvantage that we could not gain that profit we expected with that to build more capacities.

PERC itself, as a technology, and we are at the moment on a cell efficiency level in the range of 22 plus on a lab stage and we are running on 21½ efficiency level, that's the efficiency, how we calculate that, in the mass production. So this technology has enough potential still to be developed that we have modules with more than 20 percent upside potential in power output. So a module which is today 300, we can develop with that technology further to a 360 over the next couple of years. Just on the cell level -- PERC is the cell technology, so this cell technology is good for the next couple of years, 4, 5, 6 years, to drive it further.

If we see the learning curve over the last couple of years of this or comparable technologies, on top we can do something on the module side. Nevertheless, we have now make in the next couple of years, we have to make the decisions which is the cell architecture after that. I don't expect that this would come online in the next 4 years, but we have to drive now the R&D in that direction, say,

okay, what is the next level of any kind of -- and there we can look in, not opening our R&D and technology roadmap here, but we can look at public statements going into some tandem structures based on the PERC and so on. But we have to make the decisions in the next couple of years and make sure that we know in which direction we want to run. I hope that answered the question.

MR. MARTYN: We are going to need to move on to the next topic. If you have something you want to say, make it very brief, please.

MR. CARD: Very brief. What should not be lost here is the direct cause and effect between research and development manufacturing. As DOE well knows, Suniva has a tight research relationship, as DOE did, with Georgia Tech, one of the top premier photovoltaic research companies or institutes in the world. Georgia Tech in their research and development capabilities have taken a significant hit as Suniva has entered into bankruptcy because we became the largest private sponsor of research. So if you want to continue to see innovation as was

going on, and DOE is well aware of some of the innovation projects that we were partnering on with DOE and with Georgia Tech, you have to have a manufacturing industry to do that. Short of that, the innovation will not occur here. We will lose that leadership unless the government fully plans on supporting R&D so that technology can be exported to China for commercialization. You need that industry.

MR. MARTYN: All right. Thank you.

We'd like to -- next topic we'd like to discuss is the actions available to the President in response to the ITC determination. I'd like to begin by noting that we have seen in the submissions by the parties a substantial degree of disagreement over how foreign suppliers would respond to an increase in duties. What factual information rather than anecdotal information can the TPSC use to evaluate how increased duties would affect imports of solar cells and modules into the United States? And how can we determine the point at which duties would become prohibitive?

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. I can start. I think the best factual information is the evidence from the prior trade cases where we have seen that duties still in existence today of approximately 30 percent have been insufficient to deter Chinese producers from continuing to export their product to the United States. And, in fact, those U.S. imports have increased. So that is factual information, so that's why we stress to this group that a higher duty level is needed if there is going to be a real impact. We're just asking again to return pricing to levels that existed in 2016 prior to the most recent price collapse that harmed so many U.S. companies.

MR. McCONKEY: Matthew McConkey. With respect to your question on when do tariffs become -- what factual information is there out there as to when tariffs might become prohibitive? There is no factual information. It's all conjecture. There were claims, prior trade cases, AD/CVD, that you put these duties in place, you're going to kill demand.

The opposite happened.

MR. KAPLAN: Seth Kaplan. I would say that the models presented by both us and SEIA anticipate that a 50 percent duty is not prohibitive, not even close to prohibitive. So you can look at the presentations made. I have concerns with their modeling, severe concerns, and I would ask you to look at the ITC confidential memos regarding those. But even parties that were adverse and brought forth modeling exercises, weren't even close to prohibitive at those levels. So I think we all agree that 50 percent is not.

MR. BRIGHTBILL: Just one other act quickly. We also know that duties at that level will not impact demand. We saw it in the prior two trade cases, where there were predictions that imposing duties on China would eliminate 50,000 jobs. There were studies submitted by respondents to that effect. Instead, the opposite occurred. Solar demand continued to increase. Solar installations and solar jobs all continued to increase.

MR. KAPLAN: Recent academic studies show that there -- the inelasticity of demand for solar is greater than presented by other parties, equivalent to presented by us. It is particularly inelastic in the home and commercial segment, but also inelastic in the utility segment as well.

MR. MARTYN: Some interested persons have argued that regardless of what happened in the past, that solar -- prices for solar cells and modules have gotten to a point where duty absorption is not economically impossible. How would you react to that view?

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. We disagree. The duties have not prevented harm to the domestic industry due to duty absorption. That's why we think a remedy should be cents-per-watt tariff to prevent or at least deter some of that duty absorption. And it's also why we've said there needs to be a quota that will ensure some domestic market share. Design the remedy correctly, companies will be much less able to absorb those duties.

MR. MARTYN: All right. Thank you.

Do any of my colleagues have any brief questions on the tariff issue?

All right. The next question is on quantitative restrictions. We have noted SolarWorld's submission on page 16 estimates hoarding based on inventory increases in 2011. How is the experience of 2011 indicative of hoarding that might have arised in the period covered by the initial -- by this current proceeding? And how are SolarWorld's assertions regarding hoarding consistent with the inventory data on Table C-1a of the ITC staff report?

MR. BRIGHTBILL: Tim Brightbill again. We know the reason why 2011 is relevant is that is, of course, when Trade Case 1 was pending and we know the level of hoarding and stockpiling occurred. So that's why that data is indicative.

I would also point out we have slides, again, in our handout. If you look at slides 14 and 15, indicate the hoarding and stockpiling that has been going on since these cases were filed. So as

far as Table C-1a, I believe it's all confidential information, but we believe the data does show some inventories. But at the same time, the Commission was unable to gather -- it has limited, limits in terms of the data it can gather, so it doesn't fully reflect all of the inventories that can be building throughout the supply chain, which again happened in Trade Cases 1 and 2, and the Chinese respondents in those cases and other parties made public statements to that very effect.

MR. SZAMOSSZEGI: I'm sorry, just quickly, Andrew Szamosszegi from Capital Trade. The data in the staff report only go up to 2016. The hoarding has occurred since the filing of the petition, and so all of that occurred in 2017 and would not be present in the staff report.

MR. MARTYN: Thank you. That's a useful clarification. I'll just ask as a follow-up, are there any public data rather than anecdotal evidence indicative of hoarding?

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. We can look and provide it after the hearing

to the extent it's available.

MR. SZAMOSSZEGI: Andrew Szamosszegi. The best indicator really is increases in prices. Following the petition, there was an increase in module prices that persisted for several months. And that is where you get the interpretation that people in the market, that you read in the press, have interpreted that as being indicative of hoarding.

MR. MARTYN: All right. And also to be clear, we are not asking for additional submissions after this hearing.

All right. Do any of my colleagues have any additional questions about the remedy issue?

Okay. I guess I'll end with one last question. If the remedy contains a quantitative element, should there be a mechanism to allow an increase in the quantity allowed if expected increases in domestic production do not materialize?

MR. McCONKEY: Matt McConkey of Mayer Brown. Yes.

MR. MARTYN: Okay. All right. Our next

topic is the economic and social benefits and costs. And my colleague, Mr. Steff, from DOC will be leading the question on that topic.

MR. STEFF: Yes. How do you respond to the assertion that the manufacture of solar cells and modules is so automated that it will not lead to a meaningful increase in U.S. manufacturing jobs? Are many of the jobs in your plants automated? How do your plants compare with your overseas competition?

MR. STEIN: Difficult to answer. But if this were true, then the reverse would also be true, so that the import-driven closures of U.S. companies would not have resulted in layoffs. So just try to make from --

MR. MARTYN: Speak up a little bit.

MR. STEIN: Just try to make it from that piece. But there is also one important piece to mention here, R&D and driving the new technologies forward, this cannot be automated so this has to be people who work, and this is also a piece we also always have to mention.

MR. CARD: I agree.

MR. YANG: This is Frank Yang from Stion. I think all of it stems from a slightly different technology. I wanted to provide a little bit of commentary from our end. Although it is true that all these facilities today are becoming increasingly automated, obviously a significant amount of labor content is still involved to operate them.

So as an example, our plant in Hattiesburg was 150 megawatt capacity before we discontinued the operations. That's less than -- that's about 1/50th of the largest manufacturing plant in China. And of the 140 people that I mentioned, 80 of them work on the production line. And so most of these roles, you know, as the factories automate, transition from manual labor to things like equipment maintenance, production operators who run machines, and then some assembly and testing functions is largely machine driven. So although the factory scale, there is a decrease in labor content, but it's not a linear decrease. I think that job creation is still pretty significant.

So for example, at a 1 gigawatt, hypothetical, Stion facility in Mississippi would at that point employ about 400 people. And so if you had seven of those facilities in the U.S., they'd employ several thousand employees. And I think as you know from your studies at Commerce and Labor, the indirect multipliers for manufacturing jobs are fairly high both in terms of the number and the duration of those, so you may see anywhere from two to four additional jobs in the local supplier community as a result of that. So I think that obviously the quantitative basis today of solar manufacturing jobs is very weak in the U.S. because of the level of injury that's been imposed upon the manufacturers, but I think that the job creation angle is actually quite compelling if you look at the numbers despite the automation.

MR. STEIN: Juergen Stein from SolarWorld. We should always keep in mind we want to revive the entire industry so we are not talking just about the 5, 6 gigawatt factories for cell and module manufacturing with, I don't know, 1,000 plus each

workers, but also to revive the entire upstream supply chain, as we had that in the past. And of course possibility to buy more or less all the materials in the United States in the past, from glass to the frame of aluminum, the ribbons, paste, and so on. And this will come once the manufacturing sector is there. Automatically, these additional jobs will be created in the United States.

MR. CARD: And I would add that's not supposition. We had testimony in the original hearing from some of those suppliers. It's also been well documented of other component suppliers that have, because of the troubles suffered by cell and module manufacturers, have subsequently laid off their plants or their factories as well.

There was powerful testimony in the original injury hearing by SKC Materials, who talked about the filter-down effect not only to their materials because Suniva and SolarWorld were no longer able to buy it, but down to cardboard tubing manufacturers in their local community and pallet

manufacturers who they had to lay off people because they were no longer operational to sell to us. So the multiplier effect should absolutely be noted, as well as the job impact of additional industry.

MR. SHEA: Steve Shea. Also, the level of automation in at least the Suniva factory with which I'm familiar is fairly comparable of the level of automation in a contemporary Asian facility. That wasn't the case 10 years ago. There was more labor in Asia 10 years ago. They are continuing to automate in an effort to bring their prices down. But it's still a fairly labor-intensive industry, much less automated than, for example, the automotive industries.

MR. STEFF: Thank you.

MR. KAPLAN: Also, just this is an unusual industry to consider for TPSC. This is an industry where the whole supply chain, the degree of injury suffered by this industry in its upstream and downstream producers is unprecedented. Coupled with the fact that we know demand for this product is going to be strong 50 years from now, coupled with

the fact that we know it's at the technological forefront. This is semiconductor industry. This should all be considered in context in terms of the web and interconnection network this industry has created and what it has suffered.

There are economies of scale. There are economies of scope. There are technological issues. There are energy security issues. And this is an indicator of what we are facing in this nation with respect to Chinese industrial policy, who is on three 5-year plans. I hope you're well aware of the industries that were on the current 5-year plan. We are first in line. Behind us are the advanced semiconductor industry, the robotics industry, the electric car industry, the autonomous car industry, the medical device industry.

When people write down that they want to dominate the industries that they've looked at, and they have done it over a 20-year period, I would take very seriously the list that is on the current 5-year plan. And this is a precursor to the issues that you're going to face. And that's why I talked

earlier about your position being so distinct, the government position relative to corporate CEOs. I want you to consider that as you reflect upon the remedies, the effect on the U.S. industry and national policy and public interest.

MR. STEFF: Thank you.

Is it possible to use a module produced for a utility-scale application in a residential or non-residential application? If doing so would require a modification, what would be the process to do this? I know you alluded to this.

MR. CARD: It's vital for you to understand that the solar cell level, the actual building block, the power generating level, there is absolutely zero distinction between what goes into those three classes of modules. It is certainly -- with regards to residential applications, it is certainly not the norm, but I've absolutely seen what's called a utility module, a 72-cell module used in residential applications. They are used with increasing regularity in commercial applications.

You have had as well what's typically called a residential or -- historically a residential commercial module, which is a 60-cell module. There are utility-scale applications, because of specific space constraints use some portion of those, not as the dominant product, but certainly they are used there. So there is a high degree of interchangeability between the three market segments.

MR. STEFF: Thank you.

One more? All right. Several parties argue that any increase in duties will be prohibitive if it causes the price for imports to rise to a level at which solar energy becomes more expensive than competing sources such as gas for open competitions and wind for RPSs. What is your reaction to this argument? How can we determine the point at which this occurs with respect to an alternative source of power?

MR. BRIGHTBILL: Tim Brightbill. I can start out and then others can chime in. There's no evidence that imports will cease or decline with the

tariffs that we've been -- that have been proposed by the Commission or the staff within the limitation of the 201 remedy. There were substantial import quantities in installation prices when module prices were much higher. Again, that's why our remedy asks to return pricing to the level before the most recent price collapse in 2016. And I would say the Commission thoroughly addressed in the first two trade cases and in this proceeding the issue of grid parity and the fact that there is not evidence showing that the prices of natural gas, for example, determined solar prices or quantities.

MR. MARTYN: I don't think we're saying that they determine, but it would -- you know, again, I am not an economist by training or by having studied, but it does seem that solar cells would be an input into the cost of opening a solar energy plant and that a utility that was inclined to profit maximize would take that into account when it was deciding which kind of plant to put online.

And it sounds to me like you're saying that, no, that doesn't happen; that the price of

solar cells is irrelevant to the decision-making process, and that -- there seems to be a disconnect there.

MR. BRIGHTBILL: I wouldn't say irrelevant, but I would say that the price of modules in the scheme of putting the solar plant together, and others can speak to this, is a relatively small and declining portion of that solar energy installation.

MR. MARTYN: Well, the numbers I have seen are somewhere between 33 and 37 percent of the cost of a utility installation. Would you folks think that's inaccurate, or is there better data that we should be looking at to understand the relationship between the cost of solar cells and modules and the cost of producing energy?

MR. KAPLAN: It depends. The cost depends on which segment -- excuse me -- the cost depends on which segment it's in. But while you're considering this, I think there's several things. This is a 4-year remedy for a demand outlook that extends well beyond 40 years according to the government. There

was an enormous increase in 2016 such that all the industry analysts said it was going to take multiple years even without any measure for it to reach that level of installed capacity. They had installations going down, not even reaching that level, because how severe the surge was, until 2021.

There is an enormous amount of material that is in here that was hoarded. The head of one of the associations in a phone call told everybody to bring in product and repeated it three times. The industry was notified by its leadership to hoard product.

So as you're considering the remedy, consider on the one side the rebuilding of the supply chain in the industry and the fact that this is a 50-year proposition that entails both energy security, technological leadership, and your policy response to any short-term effects that might occur. And those short-term effects, based on history and based even on the forecasts of some people on the respondents' side, are relatively small in the context of the national interest and of energy

production in the United States.

MR. SHEA: Steve Shea. Just, you know, the concept that you're querying is what we call grid parity, right, which has always been the Holy Grail, if you will, of solar; the point at which renewables reach cost competitiveness with conventional sources of power. The country, as you know, is not one single electric market but in fact many, many electric markets. And there are large parts of the country where PV has been at grid parity for years, going back before the trade cases. It reached grid parity early in, for example, Hawaii and California, states that have a high energy cost.

And the country is in the process of transitioning through grid parity from the point where it didn't exist anywhere to the point where now it exists in a number of states, a large number of states, to the point where eventually later in the century it will be true in all of the states. So you can't say that it's not competitive, that tariffs would push it back, going back to 2016, in fact, goes back to an era where a large part of the

country was in fact at grid parity.

MR. MARTYN: All right. Thank you.

I believe Ms. Aylward has a question.

MS. AYLWARD: In light of the right of other WTO members to impose compensatory tariff measures 3 years after the United States applies import restrictions under Section 201, should our evaluation of a proposed fourth year of import restrictions differ in any way from our evaluation of the first, second, and third years? Do we need to make allowance for the possibility that, whatever we conclude in this regard at the present time, the economic situation 3 years from now may differ?

MR. KEELER: Tim Keeler. No, we believe that the focus should be on responsibility under U.S. law, first and foremost, and the President's obligations. I will note that if the remedy is more than 3 years, it does provide for a review during that process, another point in time when it will be closer to that date. And under WTO rules as well, the U.S. can negotiate a way to compensate as opposed to just waiting to be in retaliation. We

have quite a bit of confidence in industrializers and Suters, and the U.S. government's ability to negotiate on this front as well.

MR. MARTYN: Just I would draw your attention to Section 203 -- (2)(f)(3), which requires the President to take into account the obligations of the United States with respect to compensation. So this is something that he is required by statute to consider.

I would say it has been our experience in past safeguard proceedings that the United States has not been successful in negotiating compensation and that our trading partners have put in place compensatory measures on the very first day to which they were entitled, and that those compensatory measures have typically been eye-opening.

And with that in mind, we are asking should we be thinking about that fourth year differently? Now what I thought I heard you say was no. Do I understand correctly?

MR. KEELER: Again, we believe that obviously, as I mentioned, you can negotiate it.

You do have the opportunity to have a review if the remedy is more than 3 years, we think, that's closer to that date, if you're going to look at it in that fashion. I think it's important to note all four commissioners recommended a 4-year remedy and I think that's something that we hope the TOPS and the President take into account.

I think that, first and foremost, the U.S. government should be looking at how to respond to what has already been the injury inflicted upon the United States industry, which is a fact and part of the record, and not be guided as much by potential future threat of compensatory tariffs. I think that is very consistent with what this president has laid out as his trade agenda and that, again, you'll have the opportunity to, if the remedy is more than 3 years, to take that into account at a date that is much closer to what that reality might be and you will have learned quite a bit based on your initial negotiations with other members during the first year and a half of the remedy.

MR. BRIGHTBILL: Tim Brightbill. Very

briefly, we talked about investment, the need to have a new scale here, a number of new investors. If you want to have that investment, we think you need to have the 4-year remedy, especially because it does take 12 months to get a new facility put in place. So I think that needs to be given very strong consideration.

MR. KAPLAN: Given the fact that there is -- this matter does involve new investment in a remedy and building of new facilities, you should consider the consequences of limiting the remedy both in its magnitude and its duration and the decision of people to decide to invest capital here. So it's in your interest to impose a remedy that will solve the problem, and part of that is sending the signal that the people that will invest here, build new facilities here, participate in this industry and investigate in technology will have the relief that they should wait it out.

MR. MARTYN: Thank you.

I think we will now move on to some of the remaining topics. I'd like to begin by noting the

limitation in Section 203(e)(3) of the Trade Act that the *ad valorem* rate, the President can impose no more than a 50 percent *ad valorem* tariff. We have looked at the submissions from SolarWorld and Suniva, and noted that the proposal is that we calculate an *ad valorem* equivalent rate today based on prices in the 2013 to 2015 period.

We've also noted the observation in SolarWorld's submission, which tracks what we've heard from many other sources, that the prices for cells and modules tend to decrease over time and quite markedly. So how is your view that we should look at *ad valorem* equivalents today based on 2013 to 2015 consistent with this observed trend in pricing?

MR. BRIGHTBILL: Tim Brightbill. So, I mean, prices do decline for solar over time, but what we saw happen that caused the injury in 2016 is well beyond that point. We think under the statute once an *ad valorem* tariff is established or an *ad valorem* equivalent is established, it --

MR. MARTYN: I'm sorry, can you speak up?

MR. BRIGHTBILL: Sorry. Once an *ad valorem* tariff is established or an *ad valorem* equivalent, that addresses the mandate under the statute. So that's also why we've argued again for a cents-per-watt tariff that is an *ad valorem* equivalent. So I don't know if anyone else would --

MR. MacConkey: Yeah, I'll just jump in and I'm going to use an analogy that Mr. Card used with the -- well, I'm not sure he used the ITC. But to use 2016 was an incredibly anomalous year, that's when the prices came. So to roll that into the period you're looking at is like having the insurance adjustor come to your house while it's a pile of burning ashes and saying that's the value of your house. That would be the same thing of using the year 2016. You can't include the year 2016.

MR. KAPLAN: Yeah, the disconnect between input prices and technological change in market prices has been so severe through two dumping cases and the recent surge, that you should certainly consider that when you're figuring out the baseline. Certainly 2016, the declines in prices were

magnitude above the decline, what has been historical kind of efficiency proven. So and that's why we didn't look at that year. But you can also take a look at what happened in the two previous dumping investigations. So as a theoretical notion of how efficiency improves, there is a number in the market. World price numbers have been severely disconnected from this historical technology change.

MR. KEELER: And I would just note that -- Tim Keeler. I would just note that the President determines that using a specific tariff is the appropriate and necessary means to avoid some of the risks that we have identified with using an *ad valorem* tariff based on the history of this product, then I think he's got the ability to determine that that is what is necessary and appropriate on the remedy. Even if you have a declining price over time -- and the ITC held quite clearly that you can use specific tariffs as a matter of law. Even if you have a declining price over time, if the President determines that's what's necessary to remedy the injury, including the risk that you have

artificial price drops to get around or evade the duties, then I think that meets the requirements of the statute.

MR. MARTYN: Section 203(e)(5) of -- okay, Section 203(e)(5) of the statute indicates that the remedy needs to be -- must be phased down at regular intervals. What considerations should guide the TPSC in recommending a phase-down rate? And do SolarWorld and Suniva agree with the statement from CCCME that because Section 201 relief is temporary, it is essential that relief be carefully calibrated to assist the domestic industry in achieving long-term competitiveness and not just shield the industry from imports?

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. I mean, the remedy that we proposed is the one that would allow us to achieve long-term competitiveness. Sorry, I keep leaning away from this. And I guess I would point out, look at what the commissioners recommended in their remedy recommendations, that phase-downs there are modest, and I think that's a recognition of the need for,

not only for 4 years of relief, but for 4 years of very strong relief to encourage the investment, and to encourage and to rebuild this industry given the harm that has occurred.

So the remedy does have to be digressive over time under the law. We've proposed a remedy that is and we're sure you will recommend that to the President as well. But the primary focus has to be on recovery of this industry, not on phasing it down equally over the period.

MR. MARTYN: All right. With that in mind, when we see the phase-down proposals from the domestic producers, we note that they are in fact modest and would leave a year 4 with relatively high import restrictions in place and then a year 5 with nothing. So what is there in your plan that would allow you to move from that regime of high imports to a regime -- sorry -- high import restraints to a regime of no import restraints in a non-disruptive fashion?

MR. STEIN: All we put in there for the plans for us to become competitive again is around

technology and is around scaling. That needs some time, and this is not done in 2 or 3 years, so we have to bring that up. And for that we also need a certain security of the price levels that we can get the profits and with that finance also, a big bunch of what is ahead of us. So, therefore, we want to be ready and competitive by -- at the latest by the end of the fourth year, if it works out, a little bit earlier. But we need the entire timeline to build that up and to become competitive.

MR. MacConkey: Yeah, I would like to second. As Mr. Card said in his opening statement, the strong remedy is one that foreign governments cannot circumvent, wait out, or overwhelm. And the concern is if you have a phase-down that's a dramatic drop in year 2, they will wait it out. That's why we need it for the full 4 years. This needs to be a full 4-year strong and effective remedy.

MR. KAPLAN: Seth Kaplan. This industry has a tradition, U.S. industry, the leadership of technology as demonstrated by PERC. And they'll

continue to invest, continue to work with Georgia Tech, they'll continue to drive down the costs. And at the end of 4 years, there's no reason to believe that an industry that was at the leadership of technology wouldn't remain there and could deal with fairly traded imports. So the problem is, once again, this is not bringing capacity online from existing facilities, but the lags generated with new capacity in building up this chain, creating the need for 4 years. But there's no reason to believe that this wouldn't be an industry -- the U.S. industry wouldn't be a technological leader again and a low-cost producer of products. They have in the past. That isn't speculation.

MR. MARTYN: All right. Thank you.

Now we are almost out of time. I want to make sure that -- do any of my colleagues have questions they would like to ask before we move to the last question?

All right. Thank you very much.

If we decide to exclude developing countries from the application of any safeguard

measure, what period should we use to calculate the percentages set out in the Article 9.1 of the Agreement on Safeguards? And how should we determine which countries are developing country WTO members?

MR. BRIGHTBILL: Tim Brightbill. We don't think developing countries should be excluded. As you know, the Safeguards Agreement, Article 9.1, has not been adopted into U.S. law. So the United States is not required under law to identify developing countries for safeguard purposes or to treat them differently in terms of the scope and application of relief. So we think they should be included and they also should be included in any -- particularly in any licensing scheme that is set up so that imports from all sources can be tracked and that, if surges arise, that those can be addressed as allowed under law by the President.

MR. MARTYN: All right. As you are aware, I'm sure, in most of our past safeguard measures adopted since the Safeguards Agreement went into effect in 1995, we have excluded developing country

members from the application of safeguard. Oh, we have -- in past safeguard measures, we have excluded developing country members. If, contrary to your view, we do that in this matter, do you have any objection to the mechanisms we used before for that exclusion to deal with a surge from developing countries and to identify developing country members based on the GSP list?

MR. BRIGHTBILL: No, you've used the GSP list in the past. We wouldn't necessarily object to that. I guess I would just point out, given the concerns about evasion and circumvention, and the ability to set up plants quickly, we think developing countries should -- you should take that -- look at that very carefully, understanding what you've done in prior cases would not apply as well in this case.

MR. McCONKEY: And Matthew McConkey, Mayer Brown. Let me jump in. There's an issue that's very important here as you consider developing countries and free trade countries such as Canada.

This is a case that was filed on CSPV

cells, whether or not assembled into other products. Therefore, the country of origin that is important in this case is the country of origin of the cell. There has been lots of discussions and lots of briefing especially at the ITC on the issue of Canada. And if you exclude Canada, what does that do? What's exceedingly important, if you take a Korean cell and send it to Canada and put it into a module in Canada, that product has to be covered by this order. If that doesn't happen, you have blown a hole as big as a city through this case. That will -- they will circumvent that immediately. So as you're looking at free trade agreement countries, developing countries, you need to make sure that you're covering the product correctly and the origins on cell.

MR. KEELER: One last note on the developing country question. The whole reason this case was brought was because of what we view as the unforeseen circumstance that a producer would be able to get around the U.S. anti-dumping/ countervailing duty orders in such a quick fashion.

And that's exactly what happened here, because production was ramped up in a number of countries that are considered developing country on the GSP list.

MR. MARTYN: I'm sorry. We're out of time. I would like to thank you gentlemen very much for coming here and for presenting this testimony and for responding to our questions.

We will now break for precisely 5 minutes to allow a change in the folks at the table and any other matters people want to attend to. We will start back again at precisely 11:22.

(Off the record at 11:18 a.m.)

(On the record at 11:22 a.m.)

MR. MARTYN: Thank you very much. As you are taking your seats, will you please be quiet so we can hear the witnesses. I hope you all were observing our experience of this morning. You have to get very, very close to this microphone for everyone to hear you. Thank you. And with that I will ask the EU to begin for us.

MR. LEVIE: Thank you, Mr. Chair. The

European Commission would like to thank USTR and Trade Policy Staff Committee for the opportunity to participate in this hearing. I'll refer to the full written comments submitted by the Commission, the European Commission on the 20th of November and wish to stress the following points.

At the outset, the Commission would like to note that right of defense has not been fully respected. Indeed, a significant amount of relevant information used and referred to by the ITC in its preliminary final injury report remains confidential. Unfortunately, meaningful non-confidential summaries of confidential data were not made available on the ITC record, neither were the reasons why such summaries cannot be shared made clear despite the Commission's requests for access to such information in our submission to the ITC of August 8. Furthermore, the public version of the ITC report was not available prior to the deadline of 20th November for written comments as set by USTR. Therefore, we are not in a position to analyze whether the final injury determination by

the ITC is in line with the strict criteria for safeguard measures under the WTO rules.

Now this being said, should USTR and TPSC nevertheless recommend that remedies be applied, we would urge you to take the following considerations into account. The biggest increase of import of the product under investigation the last years came from a handful of Asian countries. These were responsible for more than 80 percent of the total U.S. import volume in 2016. Therefore, if not carefully crafted, remedies may therefore negatively affect countries which did not pose any economic problem to the U.S. industry, notably European Union. Safeguards should be triggered by a sudden and sharp increase of imported quantities of relevant product. The European Union thus considers that the most adequate remedy should primarily be a volume measure and not a tariff.

Looking at the recommendations by Chairman Schmidtlein on the one hand and Vice Chairman Johanson and Commissioner Williamson on the other, we consider these measures unnecessarily overly

restrictive. Indeed, they're suggesting imposing additional tariffs as soon as the import reaches very low level, corresponding to only about 6 to 11 percent of the total U.S. imports in 2016, a duty of 30 percent would apply to all imports irrespective of their price levels. This would penalize much more significantly high priced imports, which neither increased nor caused any problem to the U.S. industry, such as those from the European Union.

These concerns do not apply, would not apply to the global quota remedy of 8.9 gigawatts proposed by Commissioner Broadbent. However, the Commission, the European Commission considered that any quota should be designed with sub-quotas for each individual exporting country and one for all European Union member states. The quota levels should be set according to historical market share of the U.S. market. This could not be achieved with selling import licenses at public auction as proposed by Commissioner Broadbent. A public auction would potentially enable the highest bidder to import products irrespective of historical market

shares.

Furthermore, in order to avoid a shortage of products on the market, imports involve a global quota level of 8.9 gigawatt in the first year must still be allowed, albeit subject to a remedy, just tariffs on minimum import price designed to avoid any injurious effects. The Commission is also of the opinion that what we call import licenses should be issued only to importers, distributed for free and non-transferable in order to avoid trading and speculation. Those not used, those import licenses not used should be surrendered so that other importers can use it.

Now should USTR not agree with the global quota remedy modified in the manner of the European Commission, then we believe a standard safeguard remedy could be an adequate alternative solution, a TRQ by which remedies, tariff for minimum import price, would only be applied above average import volumes of the last 3 years established for each individual country and the European Union as a whole. Any remedy imposed should be dynamic and

less restrictive over time as required by the WTO Safeguard Agreement.

The advantage of this type of remedy is that it would specifically target imports that increased significantly in the last year, that according to the ITC caused injury, but at the same time would preserve historical trade flows and fair competition particularly from the European Union. In any case, USTR should also keep in mind that the remedy should achieve a sufficient balance between supply and demand in a growing U.S. solar market. It should also avoid that measures would reduce competition and leave the downstream industry rolling out solar projects without product which the U.S. domestic solar industry is simply not able to supply.

In conclusion, while the proposal made by Commissioner Broadbent would in theory reduce the negative effects on the U.S. economy since it does not constrain historical fairly traded imports, her proposed system of auction may in fact have an opposite effect. The other two recommendations

would surely increase costs overall since it's suggesting introduction of a 30 percent tariff. Given Commission's alternative proposal, modified version of the global quota remedy or a standard safeguard remedy would just present, you know, if you -- the most balanced option. Thank you for your attention.

MR. MARTYN: Thank you. Do we have any questions for the EU?

MS. AYLWARD: The European Union argues that 30 percent tariffs would be prohibitive. What is the basis for this assertion? Is there a tariff level that is not prohibitive? What is the basis for your conclusion?

MR. LEVIE: As you know, the expected demand, the instruction goes by this level of tariff has been modeled economically and is very significant especially on the utility side. And in addition, we believe that a duty of 30 percent on all imports would be prohibitive in the sense that it would penalize much more significantly high priced imports with neither increased nor caused any

problem to U.S. industry, such as those from the European Union. Therefore, we believe that imposition of a high tariff would advantage cheap Asian importers which would take over some of the market share from EU importers as a result of a further price increase caused by this 30 percent tariff.

MS. AYLWARD: One more question, thank you. You argue in your submission that any safeguard remedy should address the root of the problem which you identify as increased imports. At the same time, you note that a remedy must not unduly penalize fairly traded imports and should avoid endangering the market position of traditional economic operators that are now also being affected by the aggressive pricing behavior or newcomers to the market. Can you explain in more detail how your import licensing proposal will accomplish this goal if the so-called newcomers are able to similarly penetrate the markets of traditional operators as well?

MR. LEVIE: As I just explained, we

believe that the key is that the historical fairly trade import levels must be preserved. An application of quota by country and one for all European Union member states would, we believe, achieve that. And a defined share of the licenses should also be granted to newcomers within the quota distributed to each importing country and the EU as a whole. And if newcomers do not apply for their shares of licenses within a specified period of time, those licenses should be compulsory made available to traditional importers from the same country and the EU as a whole. And part of the global quota could also be reserved for newcomers from other countries, but the key is that this does not go to the detriment of historically fair traded imports.

MR. MARTYN: All right. Thank you very much to the European Commission.

Our next testimony will come from Mr. Xie on behalf of the People's Republic of China, Chamber of Commerce for Import and Export --

UNIDENTIFIED SPEAKER: Well, no, it's the

Chinese government.

MR. MARTYN: Chinese government, excuse me, please.

MR. XIE: Good morning, Mr. Chairman, and members of the Trade Policy Staff Committee. My name is Li Xie. On behalf of the Ministry of Commerce of the People's Republic of China, I would like to present our recommendation as follows.

First, there is nothing exceptional about the recent change in the U.S. solar market that would justify imposing safeguard measures on imported solar products. The WTO Agreement on Safeguards provides that safeguard measures may be applied in an exceptional circumstance and with special caution. Transient import of solar products are well known and clearly anticipated based on U.S. market demand. In most situations, foreign producers receive business orders from U.S. clients first and then arrange production. Several professional organizations such as Energy Tree, PVinsights, and IHS regularly produce detailed forecast of the U.S. solar market. U.S. clients'

purchase of solar products and the corresponding production abroad largely and globally depend on this predictable data.

We note that the USTR has asked ITC for a supplemental report on any unforeseen development that led to the articles at issue being imported into the United States in such increased quantities. The evidence before you plainly shows that there is nothing unforeseen or exceptional about the role of import in the U.S. market.

Second, any restrictive measures on imported solar products would not be in line with the U.S. public interest. This is overwhelmingly documented in more than 3,800 public comments filed with your agency. These comments show that imported solar products constitute a beneficial complement to the U.S. solar application market and play an important role in the U.S. economy. Currently, there are thousands of U.S. enterprises and more than 260,000 U.S. jobs relying on imported solar products. The economic and social value created by import of solar products is many times greater than

the $8.3 billion that such imports represented in 2016.

This important domestic reliance has already been disrupted over the last 6 years by a series of remedying measures against imported solar cells and panels. Rather than create even greater disruption, the U.S. government should try its best not to further disturb the U.S. market by unnecessary restrictions.

Third, any additional restriction imposed on solar products following this investigation would derail the U.S. administration's oft-stated American First policy. American First is neither American only nor a few American companies only. While we appreciate the industrious work and the cautious recommendation of the USITC, tariffs and quotas do not protect the U.S. companies and the welfare of millions of U.S. citizens, as balanced against the interest of a few U.S. producers. We suggest that the TPSC should evaluate the ITC's recommendations as a whole and consider the fact that anti-dumping and countervailing measures on imported solar

products from China are still in effect, and the volume and share of Chinese imports have dropped significantly in recent years.

In conclusion, we hope the Committee will make an objective and comprehensive assessment of all the relevant elements and reach a cautious, balanced, and justified decision. Thank you for your attention.

MR. MARTYN: Thank you, sir. Any questions?

MS. AYLWARD: You argue in your submission that existing U.S. anti-dumping and countervailing duties on imports of CSPV from China are sufficient to remedy any alleged injury to those imports. Therefore, your submission argues that special caps should be imposed on any safeguard remedy imposed on Chinese goods that would not exceed existing AD/CVD rates. Can you explain this argument in more detail, particularly given the fact that AD and CVD measures remedy the dumping and subsidization occurring, while safeguard measures are designed to remedy a distinct injury? Furthermore, can you

explain how such a proposal would be consistent with existing international trade rules?

MR. XIE: We note that these our main points in our argument, because if you look at the figure from -- you look at the figure, the imported solar from China, in 2016 there is $1.5 billion and in the first 8 or 9 months of this year, the figure has dropped to $100 million, roughly 90 percent of that. So we think this can show that even there is injury posed by the Chinese imports, the CVD and AD measures is -- have effect. So we argue if you -- we think the 201 investigation is no use. If you want to make some measures, maybe we submit you can maybe revoke the AD/CVD measures at this time. Thank you.

MR. MARTYN: Any further questions?

Thank you very much, Mr. Xie.

Our next testimony will come from Mr. Griffith with the China Chamber of Commerce for Import and Export Machinery.

MR. GRIFFITH: Thank you, Mr. Chairman, and members of the TPSC. I also want to express my

appreciation. I know how hard everyone is working on this case. My name is Spencer Griffith with the law firm of Akin Gump. I'm here today on behalf of the China Chamber of Commerce, CCCME. The chamber's members include a wide range of producers of solar cells and modules in China.

First, as an initial matter, Suniva's petition in this case is an outrageous misuse of the trade law. One of Suniva's creditors who was financing this 201 petition sent a letter to CCCME offering to cut off financing for the trade case and have the case terminated in exchange for CCCME members purchasing about $50 million worth of Suniva's equipment. The U.S. trade laws are not designed or intended to allow private parties to file a case in order to try to financially benefit themselves. The fact that Suniva's petition has been mishandled in this manner directly addresses the merits and bona fides of this petition.

Second, contrary to petitioners' claims, which we again heard repeatedly this morning, the existing dumping and countervailing duties in place

against China have and will continue to constrain import volumes from China. Imposition of the Solar 1 and Solar 2 orders has resulted in a significant decline in the volume of imports from China in recent years. Import volume dropped considerably in 2016 and absolutely plummeted in 2017. The official U.S. import statistics confirm this fact. Imports from China were $1.7 billion in 2015, $1.5 billion in 2016, and $112 million year-to-date through October 1 of 2017. Where is the increase in import volume that you heard about repeatedly this morning from China that petitioners were putting on the table? Look at the official U.S. import statistics. They simply contradict this repeated assertion. The Commission itself noted in the 201 determination that the AD/CDV orders "restrained imports" from China.

Third, the fact that Chinese producers may have opened capacity in third countries is not unreasonable or surprising and is certainly not an unforeseen development, nor does it represent evasion of duties. In such a global market as this,

it makes sense for producers to open capacity in more than one country. And, in fact, most producers worldwide including SolarWorld have done the same.

Fourth, as you are aware, the U.S. Statement of Administrative Action states that the President in 201 cases will continue the practice of taking into account relief provided under the AD and CVD laws, which might alter the amount of relief necessary in a 201 case. Thus, if the President here were to impose a trade restrictive remedy, he must account for the fact that the Solar 1 and Solar 2 orders have already significantly constrained imports from China, as I just discussed. Contrary to Suniva's overblown rhetoric, this is not an issue of "letting China win," which I think indeed was the cover page of their comments to this Commission, because the U.S. has already imposed AD and CVD duties against China, which have significantly constrained imports and indeed, in 2017, have essentially cut them off.

Finally, the EU experience here is instructive. The EU entered into a price

undertaking with Chinese solar producers to resolve the EU AD and CVD cases. That price undertaking was structured such that it in effect also limited a Chinese producer's ability to ship solar products to China from facilities in third countries. The result was that in 2010 Europe accounted for almost 80 percent of global solar installations. In 2015, it accounted for just over 15 percent. Such a crippling of the EU market demonstrates what would likewise happen in the U.S. if the President imposes global trade restricting remedies on imports of solar products from all sources.

An import licensing scheme is the only effective way for the President to get needed cash to the petitioners to help them compete, while not at the same time crippling the U.S. market as is what happened in the EU. Thank you.

MR. MARTYN: Thank you. Any questions for CCCME? Mr. Fitzgerald?

MR. FITZGERALD: On your last point, could you be specific about which conditions in the United States are similar enough to those in Europe so that

the remedies proposed by SolarWorld and Suniva or for us to draw inference as to lessons from the European Union case?

MR. GRIFFITH: Certainly. And thank you for that question. The EU case, even though it was an AD/CVD case, as I mentioned, the nature of the price undertaking was such that it restricted imports not only from Chinese producers' facilities in China, but also their facilities in other countries under Article 7 of the EU price undertaking. So what you in effect had in the EU price undertaking was in essence and large measure a global restriction. Similarly, here in the U.S., a 201 case would be a global restriction.

Secondly, in the EU case, the terms of the price undertaking which was a minimum import price deal, that minimum import price was so restrictive that it killed demand in the EU market. So the point here from our perspective is that if the President were to similarly impose a high tariff and low quota anywhere near the levels that petitioners are proposing and as they discussed earlier this

morning, you would in effect have the same thing. You would have a cutting off of import volume which would cripple demand in the U.S. market.

So it's those two features of the EU price undertaking that we think are highly instructive for what would happen here if the President imposed high tariff relief.

MR. STEFF: Thank you. Your submission asserts that being close to the customer is logical and reasonable. Given the strong demand for solar in the United States in recent years, why haven't more Chinese manufacturers set up facilities in the United States?

MR. GRIFFITH: I do not know the answer. I think it would have to vary by individual producers' plans and I don't know the answer to that question. I'm sorry.

MR. STEFF: Thank you.

MR. MARTYN: Any further questions?

All right. Thank you very much, Mr. Griffith.

Our next testimony will come from

Mr. Chao.

MR. CHAO: Thank you, Mr. Chair, members of the Trade Policy Staff Committee for this opportunity to testify today. My name is Chien Chi Chao, an economic officer from the Taipei Economic and Cultural Representative Office in United States, TECRO, representing the Government of Taiwan.

The Government of Taiwan would like to convey a simple message. Any restriction on solar cells will only damage the CSPV industry in the United States. Taiwan is not alone in recognition of this fact. In their report to the President, all four commissioners recognized that non-integrated U.S. module producers require imports of CSPV cells to compete. Numerous other comments received by this Committee reaffirm this view. Non-integrated U.S. module producers have made clear that any restriction on cells will make them less competitive, leading them to shared jobs and ultimately guaranteeing less usage of solar energy in the United States. In other words, such a restriction will hurt the non-integrated U.S. module

producers that they are meant to help.

Without the needed supplier of CSPV cells imports, many of these non-integrated module producers which constitute a significant portion of the U.S. industry will disappear. It would be inconsistent with the Committee's goal of protecting the U.S. CSPV industry and guiding the President to take actions that promote a national or economic interest to allow such an outcome.

The Committee should recommend that any remedy imposed by the President contains no import restriction on CSPV cells. If the Committee automatically recommends a remedy that includes import restrictions on cells, the Committee should propose relief that does not curb the flow of CSPV cells to the non-integrated domestic module producers.

First, the President can and should provide for separate remedies on CSPV cells and modules with more flexible remedies on cells so as to allow continued supply of this vital input. Indeed, the President has done so with regard to

such key inputs in past Section 201 cases such as steel slab in the steel case.

Second, if the President adopts a territory rate quota, TRQ, on CSPV cells, the TRQ should include a higher in-quota volume level than that in any of the Commission's proposals. A sufficiently high in-quota volume level will guarantee that non-integrated U.S. module producers will maintain their access to necessary import cells, therefore, keeping them in business. There should also be no in-quota tariff on the cells. An in-quota tariff will unnecessarily increase the cost of production of U.S. module producers making them less competitive.

Third, if the President enacts a TRQ or quota on cells, such a remedy should provide a proportionate country-specific sub-quota for Taiwan. This would recognize Taiwan's established role as one of the only long-term supplier of high quality, high efficiency commercial CSPV cells to non-integrated U.S. module producers. And this will be consistent with precedent action in safeguard

cases such as wheat, gluten, and certain steel wire rods, which recognize key suppliers of these products to the United States.

Finally, with respect to modules, we support SEIA's proposal that a quota imposed through import items, so through a fixed-price option, is the most appropriate remedy. Such a remedy will apply only to modules and not to cells. Import items, so through a fixed price option by setting the quota sufficiently high so as not to interfere with U.S. solar growth would in turn ensure stability and availability in a market of CSPV module, which is in the public interest. Thank you for your time.

MR. MARTYN: Thank you, sir.

Any questions for Mr. Chao?

MS. AYLWARD: You noted that sufficiently high tariff rate quotas for cells is necessary. What do you consider a sufficiently high tariff rate quota for cells to be? What do you consider an appropriate increase in the TRQ that would adequately account for what you argue to be an

increased -- an anticipated increase in demand for cells from the new module manufacturers? And additionally, what constitutes in your view an appropriate proportional country-specific sub-quota for the in-quota amount for Taiwan? Should all country-specific designations be made on the same basis or is your submission arguing for a special volume that would be determined in a unique way?

MR. CHAO: Thank you for the question. As an initial point, Taiwan believes that no import restriction is necessary on this case. We have made it clear in our written comments and the statement I just delivered, because we believe any import restriction on cells will hurt the non-integrated U.S. module producers.

To that end, we believe an appropriate increase in the TRQ that would integrate the amount for this anticipated increase in demand for cells is one that preserve non-integrated U.S. module producers access to this crucial input. The Taiwan government cannot and would not purport to speak on behalf of these member of the U.S. CSPV industry.

However, it knows that several such producers have made clear what they consider to be appropriate increase.

For example, Mission Solar, Texas, a non-integrated module producer, states in its initial comments that the TRQ in-quota volume must be large enough to ensure an adequate supply of cell imports. Auxin Solar, California, a non-integrated module producer, estimated that the minimum amount needed to assure continued viability of the existing domestic module manufacturing industry is 5 gigawatts. So we believe the U.S. industry knows what it need best. So Taiwan government therefore urge the TPSC to consider this and reinforce our statement that there should be no restriction on cells.

As to your question regarding the sub-quota, yeah, as noted in our initial comment and the statement we delivered today, we have establish a role as one of the long-term supplier of high efficient -- high quality and high efficiency CSPV cells on a commercial basis to the United States.

However, as a foreign government entity, we do not and did not have any access to the confidential information to the ITC report which was submitted to the USTR. Accordingly, without such relevant knowledge as specific market shares, production, and consumption data, Taiwan government is not in a position to comment on how this Committee should determine a relevant country-specific sub-quota for the cells. It nevertheless reiterates that any such sub-quota should recognize Taiwan's important role in providing commercial cells to the U.S. market. Thank you.

MR. FITZGERALD: What specific characteristic of the U.S. market and the global module industry leads you to recommend a uniform price option for modules as opposed to some other scheme?

MR. CHAO: Thank you very much for this question. However, I believe I have no -- I am not in a position to provide any answer.

MR. MARTYN: All right. Thank you.

Our next testimony will come from Mr. Kim

of the Embassy of South Korea.

MR. KIM: Thank you. Good morning. I am Heesang Kim, Deputy Director General for Directorate Economic Affairs at the Korean Ministry of Foreign Affairs. It is a great honor for me to present today some comments on this important matter.

The Korean government still believes that a safeguard measure cannot be justified for this case under the WTO Safeguard Agreement, as well as regular U.S. legislation. There is no clear link between increased imports and serious injury. Moreover, imposition of trade restriction will have serious adverse effect on the U.S. public interest, particularly tens of thousands of jobs in the solar industry.

The Korean government strongly requests that USTR do not recommend any trade remedies that can be challenged at WTO and, more importantly, significantly damage interest of U.S. worker, consumers, and downstream industries. Furthermore, we want to emphasize that imports from Korea should not be included in any trade remedy as they will not

be substantial cause of injury to the U.S. domestic industry. Statistics show that imports from Korea only amounted to 6 percent of total imports, while the price level was 18 percent higher than the average price of total imports. In other words, imports from Korea cannot possibly be the substantial cause of serious domestic injury.

KORUS FTA and KORUS FTA Implementation Act stipulate that a party taking a global safeguard measure may exclude imports of an originating good of the other party if such imports are not substantial causes of serious injury or a threat thereof. Hence, the Korean government respectfully requests that USTR recommend the exclusion of Korean imports from any global safeguard measure as it is not a substantial cause of serious injury or a threat thereof.

In the report sent to the President on October 31st, the International Trade Commission found that while all the other imports constituted a substantial cause of serious injury to the U.S. producers, imports from Korea did not cause them

serious injury but only a threat of serious injury. Even the ITC admitted that the imports from Korea has not caused a serious injury during the investigation period.

As you may be well aware, Article 5.1 of the Safeguard Agreement stipulates that a member shall apply safeguard measures only to the extent necessary to prevent or remedy serious injury and to facilitate adjustment. Since import from Korea has not caused any serious injury, remedy should also be different from other imports that actually caused a serious injury. We believe that for Korean exporters, at least the current market access level should be provided, which is the most recent 2016 import volume.

In conclusion, the Korean government once again emphasizes that safeguard measures should not be used as a disguise protectionist measures against fair and free trade. Imports from an important FTA partner, Korea, which did not cause any serious injury to domestic industries, should not be subject to any trade restrictions and the current market

access should be provided to Korean exporters. Thank you.

MR. MARTYN: Thank you.

Any questions?

MS. AYLWARD: The ITC found that Korean imports were not a substantial cause of serious injury. In your view, does that imply that imports did not cause current injury at all? If so, what is the basis for that inference?

MR. KIM: I can say imports from Korea are not the substantial cause of serious injury. As I explained, statistics show that imports from Korea only amounted to 6 percent of total imports, while the price level was 15 percent higher than average price to imports.

MR. DURLING: This is Jim Durling. If I could just add a little more specificity, the ITC referred to Korean imports four times: page 6, page 72, page 74, and page 79. All four times they used the phrase threat of serious injury, only threat of serious injury. That is a defined statutory term. And so the page reference at 74 is the most clear,

distinguishing the clearly imminent threat. Because these are statutorily defined terms and because threat by definition cannot be injury, because each definition defines a separate subset, by definition, a finding of threat and only threat precludes any finding of current serious injury.

MR. MARTYN: Any further questions?

MR. SCHWEITZER: This is Frank Schweitzer. Can I add one point to that? In addition, the statute doesn't provide any other basis for causation analysis other than substantial cause. So when you have defined terms of injury and threat of injury, and the standard for causation, there's no way to infer any additional impact as a legal matter.

MR. MARTYN: Thank you.

Do you have one more question?

MS. AYLWARD: Is your proposal for differential treatment of Korean imports consistent with Article 2.2 of the WTO Agreement on Safeguards?

MR. KIM: Korea believes that imports from Korea did not cause any serious injury to the

domestic industry. Therefore, according to the principle of parallelism established by previous WTO cases, I think different treatment of Korean import is consistent with Article 2.2 of the WTO on safeguard.

MR. SCHWEITZER: This is Frank Schweitzer. Could we amplify that a bit?

MR. MARTYN: As this is the time available for the Government of Korea, if that's okay with the Government of Korea, I suppose it's fine with us. Is that okay?

MR. SCHWEITZER: Apologies. Our understanding that these are Korea-specific question, so --

MR. MARTYN: Please.

MR. SCHWEITZER: In terms of the principle of parallelism that is reflected in Article 2.1 and 2.2 of the Safeguards Agreement, it contemplates with the conduct of a global safeguards investigation and the resulting determination of injury that any application of a safeguard measure is parallel to that finding. And here, excluding

Korean imports or treating them differently would be consistent with that principle because in the Commission's global safeguard investigation and determination of injury, Korea was found not to be a substantial cause of present injury but only in the later country-specific determination a threat of future injury.

MR. DURLING: This is Jim Durling. One small elaboration just as a technical matter. Article 2.2 sets forth the general principle that cannot be an absolute principle. The exception of Article 9 for developing countries makes clear that the general principle may give way to specific rules. And as the Government of Korea has already indicated, Article 5.1 makes clear that the measure can only be imposed if necessary to prevent or remedy. In the context of threat, remedy doesn't really apply, but prevent does. So in the context of preventing, is it necessary to prevent injury, and for Korea it's not.

MR. MARTYN: All right. Thank you for those perspectives. Certainly, as those of you who

have been in WTO's processes know we could probably talk about this for another hour or two but I'm afraid that we're going to need to move on.

Our next witness is Mr. Change or Chang on behalf of the Government of Korea -- sorry -- LG Electronics.

MR. DURLING: Actually, for logical flow, we switched, so we'll go after the KOPIA representative, if that's okay with the Committee?

MR. MARTYN: Absolutely fine.

MR. YOO: Can I?

MR. MARTYN: Please.

MR. YOO: Good morning. My name is Hanzin Yoo, in-house counsel, Hanwha Q CELLS Korea Corporation. Thanks for the opportunity to testify today on behalf of Korea Photovoltaic Industry Association, Hanwha Q CELLS Korea, and Hyundai Heavy Industry Clean Energy Corporation. We are very proud that we are making the most innovative products in the world. We greatly appreciate the effort of the Committee. We welcome the opportunity to assist you through our prior written comment and

with our testimony today.

I would like to make three points. First, no remedy should be applied in this case. We cordially ask the Committee to consider the broad application to the Section 201 proceeding expressed by public officer and the private sector in the underlying ITC safeguard investigation. This petition is also clear from the numerous comment submitted to the Committee. There is general agreement that import restriction and associated price increases would reduce demand and impose significant cost on the industry and the U.S. economy. Any such restriction on imports would ultimately impose far greater economic and social cost than benefit; therefore, no remedy should be applied in this case.

Second, no remedy should be applied in the import from Korea. In the case of import from Korea, there is no legal commercial or economic justification for any restriction. As we have explained in our written comment, any recommendation based on the ITC's finding of present injury cannot

have any application to Korea. The Commission clearly determined that import from Korea considered separately posed only a future threat of injury. Because imports from Korea were not a substantial cause of present injury, there is no base for safeguard measure against Korean import to remedy that present injury.

It is also important for the Committee to recognize that the large part of the total increase in import from Korea in 2016 consists of solar panel destined for the utility segment. This is a segment of the market in which petitioners do not meaningfully participate at the time. The growing demand in utility segment combined with a domestic industry that does not serve the segment means that any such import increase from Korea cannot be a substantial cause of any present injury or even threat of injury.

Finally, at a minimum, there should be no restriction on import from Korea up to 2016 import volume level. Even if the President decide to impose some form of remedy, import from Korea must

be treated differently. At a minimum, Korea should be permitted to continue to ship CSPV products free from restriction or any reduction from the volume level of 2016. This is a level that the Commission found were not a substantial cause of present injury. Consequentially, maintaining this level would not pose present injury or threaten future injury.

In summary, because import restriction would impose far greater economic and social cost than benefit, no remedy should be applied. Because Korea was found not to be a substantial cause of present injury, no remedy should be applied to import from Korea and under any circumstances. Because the ITC found only that import from Korea posed only a future threat of injury, no restriction whatsoever should be placed on import up to 2016 level.

Based on the foregoing, we respectfully request that wise determination will be taken as we sincerely expect. Thank you.

MR. MARTYN: All right. Since I think our

Korean parties are sort of working together, I'll ask the next and final Korean testimony follow right now and then we'll move to any remaining questions.

MR. DURLING: Thank you and good morning, or actually good afternoon. My name is James Durling with the law firm Curtis Mallet-Prevost, appearing today on behalf of LG Electronics. Our written comments covered a range of issues, but this morning or this afternoon, I would like to focus on the issues related to Korea.

If the President imposes any import restrictions --

MR. MARTYN: Jim? Jim? Microphone, please.

MR. DURLING: -- we urge him to exclude Korean imports from any such remedy. Korean imports did not cause the current serious injury the Commission found to exist and should not be part of that remedy. Rather, Korean imports were found only to threaten future injury.

Petitioners' arguments have largely focused on the past and continuing imports from

Chinese companies. The arguments this morning from petitioners were the same. But Korea is not China. Petitioners' complaints did not focus on Korea. Korean companies have developed distinctive products, supply distinctive market niches, and current production in Korea involves only Korean companies.

Moreover, if the imports from other countries are restrained, as petitioners seek, Korean imports alone cannot be a threat of any future injury to the domestic industry. Any future imports from Korea cannot possibly make up the shortfall that would be caused by restricting other sources of imports. Thus, in practical terms, Korean imports cannot realistically threaten any future injury if other imports are restricted. Restrictions against Korea are not necessary to prevent the injury from Korea from materializing and are thus contrary to both U.S. and WTO law.

But if the President nevertheless determines to impose some import restrictions on Korean imports, those restrictions should be

specific to Korea and specific to the need to prevent any threat from turning into injury. It is fundamentally wrong to include Korean imports in any general remedy focusing on the past. Doing so would ignore the distinctive Commission finding that Korean imports have been too small to have caused any current injury and were at most only a threat of future injury. Thus, there is no need to rollback Korean imports. Instead, any restrictions on Korean imports should be a tariff rate quota with the quota set at the level of 2016 import volume and with a limited out-of-quota tariff, if any. Such remedy would allow the quantity of non-injurious imports to continue and would prevent Korean imports from increasing enough to pose any real future threat.

Finally, beyond imposing a different remedy for Korean imports, the President should also exclude certain Korean products from any remedy. Allowing exclusions for those specialty products not produced by U.S. producers better balances the social and economic interest of both producers and consumers. In this case, there are two compelling

candidates for product exclusions: solar modules with N-type technology and CSPV products with microinverters. Since the domestic industry does not manufacture these products, they can be excluded without undermining the remedial effect of any remedy.

SolarWorld's attempt to rebut LG's argument to exclude N-type technology completely fails. SolarWorld makes assertions without any evidentiary support. In contrast, LG has provided substantial evidence in its written submissions that N-type technology does not compete with U.S. producers. LG also provided substantial evidence that U.S. producers do not and will not produce N-type solar panels. SolarWorld's unsupported protest to the contrary cannot overcome LG's supporting evidence.

Our written comments address the product exclusion issue at length and we have here today an LG official knowledgeable about these specific products to answer any questions you may have. Thank you.

MR. MARTYN: Thank you.

Any remaining questions for our friends from and on behalf of Korea?

MS. AYLWARD: In your testimony, you had mentioned the two product types that you're looking for an exclusion for. What should be the standard applied to evaluate whether to grant a product-specific exclusion?

MR. DURLING: Thank you for that question. I think in simple terms, it's if the domestic industry does not currently produce the product. And if there is no specific plan articulated in their adjustment plans to produce that specific technology, the absence of current production and quite frankly what would be the -- the question is assuming there are restrictions on others. If there are restrictions on more basic technologies, the economic incentive for the U.S. industry to invest in technology to produce more limited niche products simply isn't there.

If you're a U.S. producer contemplating new -- either existing investment or new investment

on a 1-gigawatt scale or higher, which is what you heard this morning, why would you do that to produce a niche product when in fact you could be providing more generic products in much, much larger volume. So the absence of current production and the absence of a specific demonstrated plan to begin production of that technology could guide your decision to do a product exclusion.

MR. MARTYN: All right. One last question. Is it the view of Korea that the exclusion based on FTA provisions that it is requesting would be consistent with U.S. WTO obligations?

MR. KIM: You mean the product exclusion?

MR. MARTYN: No, I meant the exclusion of all Korean imports.

MR. KIM: Yes. Just as an answer to the previous question, we believe this is consistent with the WTO agreement because we believe the imports from Korea does not -- is not the cause of substantial cause of serious injury, so based on the Korea -- the KORUS FTA, we can exclude Korean

product from the trade remedies. It's consistent with the parallelism established in WTO cases.

MR. MARTYN: Thank you very much. And I think this concludes our questioning for the group of parties at the table, so could we have a moment for you to exchange with the next group, please.

(Off the record at 12:16 p.m.)

(On the record at 12:17 p.m.)

MR. MARTYN: All right. I think that in line with what we saw with our Korean colleagues, we will ask the two representatives of Vietnamese persons to give their testimony one after the other, and then we will move to all questions with respect to those testimonies afterward. Please begin.

MR. FREED: Good afternoon. My name is Jon Freed of Trade Pacific, PLLC, here on behalf of Vina Solar Technology Company. Being as though we jointly filed comments with Boviet Solar and joined by Boviet counsel today, we'll keep our comments brief and look forward to any questions.

If the TPSC recommends trade restrictions be implemented, CSPV products originating in Vietnam

should be excluded from the safeguard measure pursuant to Article 9.1 of the agreement. The Article 9.1 requires WTO members imposing safeguard measures on presumptively fairly traded goods to take all reasonable steps to not restrict trade from developing countries that account for less than de minimis levels of the import volume specified in the agreement.

SolarWorld contends the United States can ignore Article 9.1 because it is not specifically adopted into U.S. law. But as acknowledged earlier, the United States has already acknowledged and adhered to the developing country exclusion in previous safeguard cases, so we can put aside whether or not Article 9.1 applies.

Vietnam is a developing country. Although Vietnam is not listed in the General Note 4 to the Harmonized Tariff Schedule designating developing countries for purposes of the Generalized System of Preferences, or GSP, we note that this list is limited for that purpose. It is not the list designating developing countries for all purposes.

And by all objective measures, Vietnam is a developing country and other actions by the United States recognize Vietnam as a developing country.

Specifically, the U.S. has recognized Vietnam's developing status in the U.S.-Vietnam Bilateral Trade Agreement, BTA. The BTA went into effect in 2001 and laid the foundation for the U.S. and Vietnam trade relationship. The BTA has no fixed duration or expiration date. In addition, the U.S.-Vietnam Trade and Investment Framework Agreement, TIFA, signed in 2007, states that it does not prejudice the rights and obligations of the parties under the BTA, thus reaffirming the recognition of Vietnam's developing country status. Other international organizations, such as the UN and the World Bank, have long recognized Vietnam's developing country status.

By all objective measures, Vietnam is a developing country. Many countries designated as developing for purposes of GSP have significantly higher gross national income per capita than Vietnam. For purposes of this action under Section

203, the most appropriate basis for identifying a developing country is using GNI per capita. A simple and accurate basis for identifying developing countries for this purpose is to include all WTO members on the -- with GNI per capita within the range of the GNI per capita of countries already recognized as developing for purposes of GSP.

Finally, the import share for Vietnam is below the de minimis threshold data collected by the ITC and the investigation shows that Vietnam meets the import share requirement. The de minimis calculation is in the remedy brief we filed before the ITC and we have referenced that brief in the comments submitted to this Committee.

With respect to the period for calculating the de minimis percentage, the period of investigation, 2012 and 2016, is the appropriate period. Any other period would be arbitrary. And since our comments were submitted jointly, I'd like to allow Mr. Chunfu Yan to provide a few comments.

MR. YAN: Thank you, Mr. Freed. Good afternoon. My name is Chunfu Yan from the law firm

White & Case. I am here on behalf of Boviet Solar Technology Company, Limited. Irrespective of the Committee's -- recommendation regarding imports of all CSPV products from Vietnam, the Committee should in any event recommend that import of Vietnam origin cells be excluded from any safeguard measures. The exclusion of a sub-particular product, that is, cells, from the subject merchandise is consistent with the Safeguards Agreement and the U.S. safeguard practice. Article 9.1 of the Safe Agreement [sic] uses the term "a product" instead of the term "product concerned," meaning CSPV products in this case.

Further, in the steel safeguard case, the President provided exclusion for certain sub-particular product instead of all product concerned from the same developing country. Article 9.1 of the Safeguards Agreement provides the legal basis for excluding cells from Vietnam for the same reason stated by Mr. Freed just now, Vietnam is a developing country.

Data collected by the ITC shows that

Vietnam origin cells meets the import share requirement for the exclusion. Vietnam exported no cells to the U.S. during the period of investigation. We are able to identify all countries that have reported cell export to the U.S. during the POI from the ITC staff report. The countries that have a respective de minimis import share collectively accounted for a nominal share of all cell imports. The detail calculation can be found in our confidential remedy brief before the ITC.

In addition to the above legal and factual basis, excluding cells from Vietnam is consistent with the fact that the U.S. market for cells and modules are different. The ITC commissioners already noticed the current U.S. cell capacity is insufficient to supply non-integrated U.S. module producers and imports of cells will benefit them. The petitioners also acknowledged the difference by proposing different remedy on cells and modules and other responding parties have provided significant information to distinguish the market for cells and

modules.

For the foregoing reasons, the Committee should at least recommend excluding Vietnam origin cells from the safeguard measures pursuant to Article 9.1 of the Safe Agreement. This concludes the joint Vietnamese respondents' presentation. We look forward to your questions. Thank you.

MR. MARTYN: Thank you.

Any questions?

MS. AYLWARD: What is the future projected growth of CSPV cell production in Vietnam?

MR. FREED: And, I'm sorry, I don't have that information.

MR. MARTYN: All right. Thank you very much.

Our next testimony will come from Kelly Slater on behalf of REC Solar.

MS. SLATER: Good afternoon. My name is Kelly Slater and I'm with Appleton Luff law firm. I represent REC Solar Private Limited, the sole Singaporean producer of solar cells imported into the United States. Thank you very much for the

opportunity to present testimony here today.

REC's view is that solar cells originating in Singapore should be excluded from the proposed remedy. It is telling that all relevant private parties as well as the International Trade Commission are in agreement about excluding Singapore from the remedy. That being the case, REC simply asks that the President join in this agreement moving forward, for it is a sound recommendation grounded both in law and in fact.

By way of background, under the U.S.-Singapore Free Trade Agreement, the U.S. government must determine whether solar cell imports from Singapore were a substantial cause of serious injury or threat thereof. REC has provided extensive information and argument establishing that Singaporean origin solar cells were not a substantial cause of serious industry -- injury to the U.S. industry. Volume and pricing trends for Singaporean solar products did not correspond to the operating performance of the U.S. industry. Also, the Singaporean industry is relatively small and

stable and does not pose a threat to the U.S. industry.

After considering these arguments and confidential information collected in the normal course of the proceeding, the ITC unanimously found that imports from Singapore were not a substantial cause of serious industry -- injury to the U.S. industry. This finding was sound. The ITC also unanimously found that imports from Singapore did not threaten serious injury moving forward. This finding was also sound. As a result, each of the commissioners' recommendations excluded imports from Singapore from their proposed remedies. Each of the commissioners also accounted for the Singaporean exclusion when they calculated their proposed quota remedies.

But there is even more support for the Singapore exclusion. That comes from the U.S. petitioners, themselves. SolarWorld and Suniva have followed the same approach as the ITC. SolarWorld's proposed remedy excludes imports from Singapore, and SolarWorld accounted for that exclusion in the

calculation of its proposed quota remedy. This was publicly confirmed by the CEO of SolarWorld just last week in an interview. By openly adopting the SolarWorld remedy recommendation and its underlying calculations, Suniva has implicitly accepted the same Singaporean exclusion. Thus, all relevant parties and the ITC are in agreement that imports from Singapore should be excluded from the remedy.

With a few minor exceptions described in the rebuttal comments we filed, all relevant parties are also in agreement on how the exclusions should be administered. Accordingly REC recommends that the President carry forward the sound reasoning and analysis undertaken already and exclude Singapore from any application of the remedy. Thank you very much again for this opportunity.

MR. MARTYN: Thank you very much. I will also add I am gratified to see that I am not the only person who occasionally mixes injury and industry.

Any questions for REC? No? Well, then thank you very much. We will move on to the

Canadian parties, and if it is acceptable, I will propose that we again have all of the testimony from Canadian parties first, followed by questions for Canadian parties. And I don't include the statements from the representatives of the Senate and House of Representatives of Minnesota in that group.

MS. GOODGE O'BRIEN: Good afternoon. My name is Carrie Goodge. I'm Trade Policy Counsellor at the Canadian Embassy here in Washington. The Government of Canada appreciates the opportunity to present its views today to the Trade Policy Staff Committee --

MR. MARTYN: Louder, please?

MS. GOODGE O'BRIEN: -- in this case.

Canada shares the concerns of industry and stakeholders on both sides of the border that if duties are applied as a result of the investigation, this would have negative commercial implications for the North American solar industry. Trade between Canada and the United States depends on a high degree of cross-border integration, which allows for

complex supply chains and industry collaborations supporting a competitive and innovative North American economy. The imposition of duties on solar products would risk undermining this important relationship and risk negatively impacting both Canadian and U.S. industry and consumers.

Canada would also like to ensure that the special provisions of NAFTA that apply to U.S. safeguard investigations are fully respected and properly interpreted. We have three main points to make in this respect.

First, under U.S. law, the President must determine whether imports from a NAFTA country account for a substantial share of total imports and whether they contribute importantly to serious injury. An affirmative determination concerning substantial share with respect to Canada can only be made if Canada ranks among the top five suppliers of the product under investigation. All of the evidence on the ITC's record shows that Canada does not rank within the top five supplying countries. The ITC, therefore, concluded that imports from

Canada did not constitute a substantial share of total imports.

Similarly, with respect to whether imports from Canada contribute importantly to injury, the ITC found that the evidence showed only a small change in Canada's import share and a modest change in the level of imports from Canada. The ITC found that imports from Canada actually declined from 2015 to 2016, while global imports continued to increase. As a result, the ITC made a negative finding on this factor as well. Canada, therefore, requests that the President acknowledge the uncontested evidence on the record, adopt both of these negative findings, and exclude Canadian imports from any safeguard measure.

Our second points relates to the applicable rules of origin for Canadian products, specifically solar modules manufactured in Canada are of Canadian origin regardless of where the cells used in those modules might have originated. Under U.S. law and NAFTA there are specific rules for determining whether an imported good is considered

to originate in a NAFTA country. Under the applicable rules for solar cells and modules, no change in tariff classification is required for those goods to be considered as originating in Canada. Furthermore, U.S. Customs and Border Protection has already ruled that solar modules manufactured in a NAFTA country from imported cells are correctly designated to be of natural origin. Therefore, Canada respectfully submits that the President should adhere to U.S. Customs interpretation of NAFTA rules of origin and confirm the ITC's decision that existing NAFTA rules of origin will be applied in the imposition of any safeguard measures.

Finally, our last point responds to allegations from the petitioners that excluding Canada from any safeguard measure would lead to circumventions of the measure. The rules for determining whether imports from Canada should be included in the safeguard measure are well-defined under U.S. law and under NAFTA. U.S. law already provides the ability to address any potential future

problems associated with excluding imports from Canada from the safeguard measures. There is no need to include fairly traded Canadian imports in a safeguard measure to address a problem that may never occur and which can be fully addressed by existing U.S. laws if it does occur.

In conclusion, in accordance with U.S. law and NAFTA rules, we respectfully ask that the President uphold the ITC's findings by excluding products from Canada and confirming that existing NAFTA rules of origin will be applied in the imposition of any safeguard measure. I thank you very much for your time this afternoon and look forward to any questions.

SENATOR EICHORN: Mr. Chair and Committee, good afternoon and thank you for the opportunity to speak with you today. My name is Justin Eichorn and I serve in the Minnesota State Senate from the 5th District, which in North Central Minnesota. About 80,000 people call the 5th District home, but I am proud today to represent all Minnesotans. As a state senator, I am active on several important

issues including education, capital investment, and environment and natural resources. I am here in Washington today to urge the Committee to exempt Canadian imports from safeguard measures.

The people of Minnesota are fortunate to see a bright future in the solar industry, but our position as innovators/producers depends in part on the continued collaboration with our Canadian partners. Restrictive trade measures against Canada would prevent this ability to work together and would injure Minnesota workers and families. The U.S. International Trade Commission already studied the issue and the market closely. The Commission correctly determined that both the facts and the law support excluding imports from Canada from any safeguard remedy because such imports are not injuring U.S. solar interests.

Minnesotans have embraced the potential of solar energy and are excited about the future in our state. Minnesota ranks 16th in the country for installed solar capacity, with enough solar power in 2017 to power about 57,000 homes. According to the

Solar Energy Industries Association, there are about 159 solar companies in my state in total solar investments of more than $460 million.

Let me talk about what really matters: jobs. The Solar Foundation data indicates that there were 2,872 solar jobs in Minnesota in 2016. These include more than 1100 solar installation jobs and more than 300 solar manufacturing jobs. Moreover, we added 900 new solar jobs in 2016, an amazing 44 percent increase in growth over 2015. And solar jobs are estimated to have grown another 16 percent in 2017. This makes sense. Over the next 5 years, Minnesota is expected to grow by more than 1200 megawatts in solar capacity.

My colleagues and I previously wrote the International Trade Commission and explained that our partnership with the Canadian industry plays a vital role in this success story for Minnesota. Through collaboration with our Canadian partners, the Mountain Iron Solar Plant has been a model for success. The story of this plant could have ended much like other stories on Minnesota's Iron Range

with layoffs and empty unused facilities, but we are fortunate to have received investment and commitment from a Canadian company, Heliene. My colleague, Representative Metsa, will be providing details. But Heliene's commitment has saved American manufacturing jobs that otherwise would have been lost, and they also promise to create even more jobs in the future.

Of course the solar industry in Minnesota means much more than just the Mountain Iron plant. More than one-third of solar jobs in the state are held by solar panel installers who work and live throughout the state. These installation jobs grew by 224 percent from 2015 to '16 as Minnesota has continued to expand its residential utility-scale and solar installations. These installers are only one piece of the puzzle. Solar jobs also include sales, distribution, project development, and manufacturing. Solar power accessibility provides wide-ranging benefits as well. Over a dozen schools and school districts in Minnesota, for instance, are now subscribers of community solar areas, showing

how important this technology is to Minnesotans.

Given the promise of the solar industry to American workers and the strong support received from our Canadian neighbors, I urge the Committee to exempt Canada from any restrictive safeguard measure. Bringing solar components and vital investment across the border from Canada is crucial for the continued success of the Minnesota solar energy. Thank you.

REPRESENTATIVE METSA: Mr. Chair, Committee members, good afternoon. Thank you for having me as well and for this opportunity to discuss the Administration's solar safeguard decision. I am Jason Metsa, a State Representative for Minnesota in District 6B, and have served since January 2013. My district is in the northeastern part of the state and is home to about 40,000 people. And on behalf of these hard-working Minnesotans, I am here today to urge the President to exempt imports from Canada from any safeguard measures that are being contemplated at this hearing.

Solar manufacturing offers great promise in my district and state, and our Canadian partners are collaborating closely with us to make this possible. My colleagues and I submitted two bipartisan letters to the International Trade Commission during its investigation, stressing the importance of our partnership with Canada to the Minnesota economy and the U.S. solar industry. Two members of our legislature, a Republican and Democrat, came to Washington to testify at the ITC hearing in August, and two different Minnesota legislators have come to Washington today, again a Republican and Democrat, to explain the importance of this issue to the American workers that we represent.

Investment from Canada has brought much needed jobs and opportunities to our region and this trade will continue to be a source of growth for years to come. After a thorough investigation, the Commission correctly recognized that solar trade with Canada is not hurting the United States. We urge the Administration to recognize this fact as

well and exempt Canada from any safeguard measure.

This issue is of particular importance to me because I know that the residents of my district would suffer if the Administration decided to impose safeguard measures against Canada. I live in Virginia, Minnesota, in a region of the state called the Iron Range, and Virginia is just down the road from Bob Dylan's hometown, Hibbing, and the range appears in some of his most powerful songs.

As my fellow legislators pointed out to the Commission, the range and our natural resourced based economy have struggled to recover from an economic downturn driven largely by forces outside of our control. And the renewable energy sector and solar industry are a great fit for the industrious and pragmatic people in my state. Moreover, solar trade with Canada has presented opportunities through much needed investment and diversification. We are particularly excited by the promise of the Mountain Iron Solar manufacturing plant described in our bipartisan letters to the Commission.

Solar panel manufacturer Silicon Energy

opened this plant in my district in 2011, bringing manufacturing jobs and opportunities for growth. When Silicon Energy shuttered due to quality-related problems, Ontario-based Heliene came to the rescue, starting contract work at the plant in 2015 and eventually assuming the entire lease. This was a real commitment on the part of our Canadian friends. Heliene saved manufacturing jobs that would have otherwise been lost and doubled the number of solar panels previously being manufactured by Silicon Energy.

We are thrilled to see Minnesotans working and excelling in this new field in Minnesota. And Minnesota state agencies have worked with Heliene to invest nearly $10 million on new manufacturing equipment and production expansion. As the Mountain Iron plant demonstrates, our relationship with our Canadian partners has brought significant benefits to American workers. If safeguard duties or quotas are imposed on solar products from Canada, operations like Heliene's Mountain Iron facility will lose access to vital components and Minnesotans

will suffer the consequences.

We ask the Committee to see that imposing restrictive measures against our Canadian partners would inevitably harm workers and producers in the United States as well. Thank you once again. I'd be happy to answer any questions the Committee may have. And one side note, I did, when I was a roofer, put the roof on the solar plant in the middle of winter in Minnesota.

MR. STOEL: Good afternoon and thank you for the opportunity to testify before you today. My name is Jonathan Stoel. I am a partner at Hogan Lovells. I am here representing the small Canadian solar industry which does not produce solar cells and is comprised of only three producers of solar modules. I respectfully urge you to reconfirm the exclusion of imports of both Canadian solar cells and modules from any safeguard remedy.

I make this request for two principal reasons. First, the exclusion of Canadian cells and modules is demanded by applicable U.S. law, the Tariff Act of 1974, and the North American Free

Trade Agreement Implementation Act, as well as the applicable provisions of the NAFTA itself.

As a threshold matter, the governing statutes require the United States International Trade Commission to determine whether imports from Canada (1) account for a substantial share of total imports, and (2) contribute importantly to the serious injury caused by the imports. The Commission has already correctly answered both of these questions in the negative and recommended that the President exclude both Canadian solar cells and modules from any safeguard relief.

In so doing, the Commission established and examined a detailed factual record supporting its negative determination as to Canada, including demonstrating that Canada was not among the top five suppliers of imports of CSPV products during the most recent 3 years. In fact, we were only a mere 10th in 2016.

The Commission also found that imports from Canada declined from 2015 to 2016 even as global imports continued to increase. The

Commission also found that the Canadian industry is very small, lacks solar cell production, and consists, as I already said, of only three solar module producers.

The governing statutes also require that if the President received an affirmative serious injury determination from the Commission, he also shall determine whether Canadian imports account for a substantial share of total imports and contribute importantly to serious injury or threat thereof found by the Commission. Where the Commission already has rendered negative findings on these two questions, the President should follow suit.

There have been six instances in which the President has assessed whether to impose safeguard remedies against imports from one or both of the NAFTA countries following a negative injury determination by the Commission. In each and every instance, the President has excluded those imports from the safeguard remedies. The law and the facts demand the same in this very proceeding.

As you have already heard this afternoon

from our Minnesota state government colleagues, the Canadian industry has been a reliable partner for its American friends, not a cause of actual or threatened harm. In fact, the Canadian industry has close relationships with the U.S. industry, including with petitioners. For example, one of the three Canadian solar module producers, Silfab Solar, accounted for a majority -- that's right, a majority -- of Suniva's solar module sales in 2015 and 2016.

For all of these reasons, the President should exclude Canadian imports from any safeguard action. Thank you.

MR. LEWIS: Good afternoon. My name is Craig Lewis of Hogan Lovells on behalf of the Canadian producers. I'd like to briefly address a single legal issue, the rule of origin that applies to imports from Canada.

All of the parties to this proceeding, including at least until recently Suniva, agree that for purposes of safeguard actions the country of origin of solar modules assembled in Canada is not determined by the origin of the cell but by where

the processing of the module occurs. Before this Committee, Petitioner Suniva now suggests that the President may choose to adopt a different rule of origin that would require use of Canadian cells. This position is, by the way, at odds with statements Suniva originally made in its own petition and more recently to USTR in the context of the NAFTA renegotiations. It's also wrong.

NAFTA origin rules clearly apply the safeguard measures on imports from Canada. The scope of the NAFTA agreement, including the scope of 201 provisions, expressly covers originating goods. There is an exception to this for anti-dumping and countervailing duty measures, but there is no exception for safeguards. Applying these rules, U.S. Customs and Border Protection has confirmed that the origin of the solar modules assembled in a NAFTA country is not determined by the origin of the cells but by where the processing occurs.

The ITC closely examined this legal issue during the injury phase of this proceeding and all four commissioners agreed that this conclusion is,

quote, "persuasive." As the Commission pointed out, petitioner did not identify any flaws in the legal reasoning underpinning this analysis.

In summary, the law is settled in this area and the Administration should reject Suniva's claims to the contrary. Thank you very much.

MR. MARTYN: Thank you.

Any questions for our Canadian and Minnesota friends?

MR. FITZGERALD: I have a question just for the Canadians. So one of the statements you made at the opening of your remarks, you said there was a complex supply chain between the United States and Canada. Do you have specific examples of that with respect to solar cells and modules?

MR. STOEL: Thank you, Mr. Fitzgerald. As I said in my testimony -- this is Jonathan Stoel of Hogan Lovells, for the record. As I said in my opening testimony and we put in our response comments to USTR and this Committee, the fact is that Canada and the United States, our industries have been intertwined. As I said earlier, one of

the three, and emphasize again only three Canadian companies supplying to the United States, solar module producers, has very close relationship with Suniva. We detailed that extensively before the Commission.

Another one of the three producers actually has very close relationships with both Suniva and SolarWorld. So, again, we've been a supplier to the U.S. industry as well as, of course, to our American consumers in the various segments of the market.

And then I would come to Canadian Solar, which is the third component of the small Canadian industry. Canadian Solar has invested nearly a billion dollars -- that's right, a billion dollars -- in the United States, including acquiring a company called Recurrent Energy, which is a major utility-scale developer in the United States.

So I think the relationships among the solar industries between Canada and the United States is not just strong, they are exceptionally strong.

MR. STEFF: You mentioned that you currently have no cell production in Canada and three module producers. Has this always been the case? Can you exemplify on the market there in Canada and the domestic producers?

MR. STOEL: Again, this is Jonathan Stoel, for the record. I think it's really important for this Committee, and you're fortunate to have experts from the energy department who can assist you with this, to understand that this is not a simple industry. To develop solar cell manufacturing takes significant time and significant investment. So the answer to your question is, yes, Canadian companies have looked at having solar cell production in Canada, but the reality is that's very expensive; it takes technology and technique. And ultimately they concluded because of the high production costs and other factors impacting Canadian production, which by the way are very similar to some of the things you heard this morning from the petitioners here in the United States, there has not been solar cell manufacturing in Canada.

MR. STEFF: Thank you. Just one follow-on. Should Canada be exempted from any remedy, how much of the module capacity, existing module capacity is likely to be diverted to the U.S.?

MR. STOEL: For the record, again Jonathan Stoel for Canadian industry, Hogan Lovells. We put significant substantial evidence before the Commission, which we put on the record again before this Committee, demonstrating that in some areas of the world solar production has been increasing and growing, and obviously you're aware of that from your review of the extensive record. That has not been the case for Canada. The Canadian industry has been shrinking, in fact, quite dramatically. And so the evidence is that while imports from other countries have increased, imports from Canada have declined.

The evidence on the record actually shows that we expected that trend to continue. The biggest producer in Canada, Canadian Solar, actually laid off 130 production workers last year. They

idled one of their lines and they completely dismantled the other. They have a facility in Guelph, Ontario, which is their headquarters, where Canadian Solar has been shifting a lot of its focus to R&D and technology in the industry, not to the production of solar modules, much less solar cells.

So I think the sum is that partly due to Canada's loss in the FIT case in the WTO, unfortunately the Canadian industry has been dwindling and has been shrinking.

MR. STEFF: Thank you.

MR. MARTYN: All right. One last question. Is it Canada's view that excluding Canada from any remedy that were to result from this inquiry would be consistent with U.S. WTO obligations?

MS. GOODGE O'BRIEN: Carrie Goodge for the Canadian government. I think in the prior portion of this panel you've had a good discussion on sort of the legal basis for WTO and safeguard exclusions. And I think the legal question is very important, and we would point to the legal requirement to

comply with existing U.S. law that requires that Canadian imports be excluded if they are not a substantial cause of serious injury, as the USITC has found in their report.

MR. MARTYN: I don't think that answers my question. However, we are nearing lunchtime and I am familiar with the diplomatic realm, and I suspect that that was the considered response of the Government of Canada, and I will not hear differently.

So with that in mind, we will close this session in the morning. A few notes before we leave. We will reconvene this hearing at 1:55 on the nose. You have no doubt noticed that clearing the security will take some time, so I would advise all of you to finish your lunch arrangements as quickly as possible and get back.

I will also note that because of the space limitations of this room, with the exception of 11 representatives of the U.S. industry, the morning witnesses from the U.S. and from foreign governments, foreign producers, and Minnesota, will

be seated in the overflow room upstairs for the afternoon session if you wish to watch, and the folks who are listening upstairs will have the seats down here in the afternoon. With that I thank you for all of this very informative testimony and all the attention that you have given us to our questions this morning and hope that you all enjoy your lunch.

(Whereupon, at 12:51 p.m., a lunch recess was taken.)

A F T E R N O O N S E S S I O N

(1:55 p.m.)

MR. MARTYN: All right, good morning and -- good afternoon and welcome to the afternoon session of our hearing. We'll be hearing first from the panel representing the solar industries -- Solar Energy Industries Association. I have no other prefatory things to deal with, so SEIA, if you will take it -- go ahead, please.

MS. HOPPER: Absolutely. Thank you. And thank you very much for the opportunity to (a) have a break and (b) speak with you this afternoon. My name is Abby Hopper. I am the President and CEO of the Solar Energy Industries Association.

As a nonprofit association, SEIA chose to serve as lead respondent last spring, as soon as this case was filed. We took this position because this case was different than the prior AD/CVD cases. Our membership of over 800 companies was overwhelmingly opposed to this petition.

This case threatens the progress of the fastest growing energy industry in the United

States. It risks the jobs of 260,000 Americans and the well-being of their families. It endangers the progress of the understanding of solar that's progressed over the last 6 decades since the invention of the PV cell here in America at Bell Labs.

It will shut down massive utility-scale installations across swaths in the Southwest that lower the cost of tens of thousands of rate pairs, hundreds of commercial installations in the Southeast and Midwest that help small businesses break even each month, and untold number of solar installs on houses in all 50 states, where homeowners can no longer save money with solar. And for what? For two foreign-owned manufacturers that couldn't make it even with years of trade protection, that blame their mistakes on imports and ask the U.S. government for a bailout. That's not an acceptable outcome, not just for SEIA but for all of the companies that we represent.

We have fought this case, but we also propose and imagine. We have put forth an

innovative proposal that the Trump Administration can implement that saves tens of thousands of American jobs, allows solar to continue to increase U.S. national security, drives innovation in universities and companies with domestic solar energy, and invests in the American worker, while making the petitioners able to operate at profitable margins.

You will hear in a few moments from our counsel on the legal merits of the case, then from senior representatives of the U.S. solar industry. They'll explain to you why the proposal you've heard from the petitioners is problematic, and in accordance with the safeguards statute the damage it will cause that far outweighs any benefits. But through all this afternoon and over the weeks ahead, I urge you, each of you, to think about how the Administration can propose the most optimal solution, not one that works best for SEIA, not one that works best for petitioners, but one that works best for America and its native solar industry which stands before you in firm opposition to this

petition.

So thank you for your time and I look forward to your questions.

MR. NICELY: Matt Nicely for SEIA, from Hughes, Hubbard & Reed. Before turning it over to our industry witnesses, John Magnus and I have a few legal and factual issues that we think are worth pausing on for a moment. I'll address the legal problems associated with the remedy proposals the petitioners have presented.

First, petitioners' 32-cent-per-watt tariff for modules and 25-cent-per-watt tariff for cells would immediately exceed the 50 percent *ad valorem* limitation in Section 203(e)(3) of the statute. As you know, not a single commissioner agreed with the petitioners about imposing a per unit specific duty of any kind. As the Commission plurality observed, even a specific duty that doesn't immediately violate the 50 percent *ad valorem* limitation would risk violating the statute when prices fall as technological advances and production efficiencies take their normal course.

Second, imposition of the tariffs recommended by three of the four commissioners, while not in violation of the 50 percent limitation immediately, would involve more social and economic costs than benefits in contravention of Section 201(a) and 203(a). The testimony from industry witnesses and the economic analysis we have presented both at the ITC and before this body strongly counsel against petitioners' tariff proposals on this basis. I'll let our industry witnesses speak for themselves.

With respect to the economics, petitioners' analysis is obviously wrong. Look at footnote 96 of SolarWorld's responsive comments. The notion that demand for solar cells and modules is inelastic is completely at odds with reality. Given the competition with other forms of electricity, it is plain fact if prices for CSPV cells and modules increase, demand will fall and jobs will be lost. Meanwhile, imposition of otherwise legal duty rates is insufficient to make the U.S. cell and module industry profitable, as

they already have indicated. Trade restrictive duties are therefore a lose-lose proposition. Our economist, Dr. Tom Prusa, is here today to answer any questions you may have on these issues.

Third, petitioners propose a quota on modules that presents its own legal and factual challenges and should likewise be rejected. Like their tariff proposals, their quota would clearly cause more harm than good as it would cut off U.S. customers' access to imported modules at a time when U.S. production is nowhere near capable of supply and demand in this booming part of the American economy. Petitioners' justification of a small 5.7 gigawatt first-year quota is based in part on their unfounded claim of hoarding, the only support of which is a few news articles.

We urge you to look at import statistics, which show that 2017 year-to-date imports are literally half the size they were for the same period in 2016. Meanwhile, demand has not fallen off by anywhere near that much. There is simply no hoarding and petitioners have no evidence to support

their claim.

As you will hear from our witnesses, developers are already having a hard time obtaining sufficient supply to meet U.S. demand this year, which is clearly linked to the significant uptick in demand for these products around the rest of the world. The global trade-restrictive relief petitioners seek is neither legal nor wise.

I'll turn it over to John to talk about a proposal that both comports with the statute and amply serves the interest of all interested parties including those of the petitioners.

MR. MAGNUS: Good afternoon. No traditional import relief at lawful levels can turn petitioners' red ink to black ink or can generate benefits exceeding costs. Sounds like a terrible trap. I'm here today in this holiday season to tell you to be of good cheer. There is a way out of the trap and it rests on Section 1102 of the 1979 Trade Agreements Act which augments the President's authority under Section 201.

Three things at the most general level the

President would need to do: proclaim quantitative import relief at a high level that does not restrict trade; operationalize that quantitative limit by requiring and selling import licenses; and then use the license sale proceeds to fund the domestic CSPV cell module industry. By adopting this proposal, the President can achieve both effective relief and preservation of demand. He can redirect funds from foreign goods to American manufacturers and he can minimize the prospect of a WTO challenge.

This approach, while available since 1979, has not yet been used in a safeguard proceeding. There is, of course, precedent for steering money that's collected in connection with U.S. importations into special funds that are used to benefit U.S. producers, domestic producers. Some such measures like the wool and citrus trust funds remain in force today. Others like the Berne Amendment are not still in force today.

As for applying this concept to fees charged temporarily as part of a safeguard remedy, the idea isn't novel. It was suggested by the ITC

Chairman Paula Stern as far back ago as 1985. She recognized and this administration should likewise conclude that the safeguard statute in Section 1102, both of which are written very broadly, provide the next necessary authority.

A few quick points about the compatibility of this proposal with the Miscellaneous Receipts Act, or the MRA, which some of you may have been distressed to become familiar with as you looked into this case. I'll be glad to take follow-up questions. Reported cases in which agency schemes have been faulted under the MRA involve fact patterns that do not resemble this one. Under an escrow arrangement, the government would not receive or constructively receive the license sale proceeds. Import license fees would not constitute payment for government-provided goods or services or for the use of government property. This has been a key factor in cases applying the MRA in the past.

With disbursements that follow criteria laid out in a safeguard proclamation, there would be no need at all for discretionary decision-making or

ongoing governmental supervision, another key factor in the MRA case law. It is common for the government to use escrow accounts in this way when settling regulatory enforcement actions in a manner that promotes underlying statutory objectives. It's not a policy tool that Congress would have intended any administration to use lightly, but extraordinary cases call for some creativity and it should be easy for us to agree that this is an extraordinary case.

I could give you an endless list of examples, but on three metrics it's extraordinary in terms of size. There has never been a case where petitioners accounting for a few hundred jobs tried to pin duties on so many billions of dollars of annual imports. It's extraordinary in terms of demand elasticity. There has never been a case featuring, as this one does, a grid parity condition, ensuring that cost-raising import relief will systematically shrink U.S. demand. And it's an extraordinary case in terms of competitiveness. Safeguard relief has never been granted to petitioners so uncompetitive that even tariffs at

the statutory maximum level would not help them.

So you need something different. Our proposal creates precisely what is needed, an injection of capital funded by those members of the greater solar industry who choose to import. Thank you.

MR. FENSTER: Good afternoon. I'm Ed Fenster, Executive Chairman and Co-Founder of Sunrun. Thank you for inviting me here today.

Sunrun is the fastest growing and likely largest provider of solar energy systems to homeowners. Together with our local partners, we employ about 11,000 people in 22 states. These sales, design, and installation jobs are year-round, well-paid, and can't be automated or exported.

Today I carry one message: The proposed tariffs will grievously harm people seeking rooftop solar and the 84,000 workers who build it. Tariffs will drive tens of thousands of job losses across all 50 states and near losses in many -- and near total losses in many. Homeowners choose rooftop solar because it is cheaper. But when we can't

offer savings versus the utility of at least 20 percent, demand falls precipitously. The proposed tariffs cut deep into customer savings, destroying the solar value proposition for millions of Americans.

This year our declining costs allowed Sunrun to offer savings opportunities for homeowners in seven new states including Texas, Florida, and Wisconsin. Tariffs will force Sunrun to exit some of these and other markets, shedding jobs. This risk is not academic. In Nevada, in 2015, a regulatory order there eliminated customer savings from solar and overnight 2600 solar jobs were lost.

Claims that quotas and tariffs will create meaningful CSPV manufacturing jobs are nonsense. On average, our suppliers tell us they employ 212 factory workers per gigawatt of cell capacity and 420 per gigawatt of modules. So fewer than 2,000 factory workers can make all of the solar panels used by residential solar's 84,000 workers. At best, tariffs will replace tens of thousands of good American construction jobs with an army of robots,

while also damaging SunPower, an R&D leader.

The economic impacts of tariffs will be most severe in the residential rooftop sector. Although residential represents only 22 percent of the market by capacity, it provides more jobs and drives more investment dollars than any other solar sector. By avoiding fuel, transmission, and distribution costs, residential solar is cost competitive with retail power rates, while providing tremendous employment opportunities. Residential solar employs 10 times as many people per megawatt hour than the overall grid today, while delivering a lower cost consumer product.

Sunrun can manage small increases like the 1102 import license fee proposed by Commissioner Broadbent. It is absurd that petitioners claim resetting cost structures to 2015 is no big deal. That year, margins were so bad that four publicly traded U.S. solar developers lost $5 billion in cash. As today's low stock market valuations for solar companies attest, investor tolerance for losses of any kind, let alone that kind, is long

gone.

Meanwhile, government incentives are falling. Several state utility commissions are curtailing that metering and the investment tax credit is phasing down. The House and Senate just passed tax legislation that would eliminate at least 10 cents a watt in value by 2019, coincident with this determination. We need to reduce costs to offset these lost incentives, not increase them. Solar tariffs will also hobble innovation and distributed storage, power electronics, and smart home, which Mr. Bywater of Vivint Solar will address.

The Labor Department just projected solar installation will be the fastest growing job over the next decade. Without tariffs, next year the 84,000 employees in residential solar will install half a million solar systems, driving about $10 billion of investment into communities across the country. Don't reverse this awesome source of economic growth before it has any chance to take hold. Thank you for your consideration.

MR. BYWATER: Good afternoon. My name is David Bywater. I'm the CEO for Vivint Solar, one of the largest residential solar companies in the United States with over 4,000 hard-working employees across 21 states. I want to begin by reiterating some of the comments you heard from Ed about the changing economics of residential solar and how devastating restrictive tariffs would be.

Despite petitioners' claims that grid parity doesn't matter, when we meet with homeowners at their kitchen tables, the first question they typically ask is "How much can I save by going solar?" Vivint Solar customers expect to save around 20 percent on their utility bills and if we can't deliver those savings, they rarely sign up. It is our extensive experience that demand is not inelastic. It is very elastic.

As a national installer, we closely track our costs, and modules make up a significant portion of a residential solar project's cost. Over the past 5 years, declining costs have expanded the number of states in which it is now economically

viable for homeowners to go solar. This has allowed us to expand our operations, create new and well-paying jobs throughout the United States. The tariffs the petitioners propose threaten to erase this progress by increasing costs and in return decimating both expected savings and overall demand.

The potential for harm is exacerbated by other changes that the residential solar industry currently faces. Many of the incentives and policies that jumpstarted residential solar are being phased out. These changes make solar adoption more sensitive to price increases in panels than ever before. Tariffs and quotas would further drive up the cost of our systems and in doing so negatively impact the demand for solar in every state across the country.

Having a robust market and demand for our product allows us to continue to fund and bring important technological innovation of our current and future energy ecosystem, that is desperately needed and where the future of solar truly lies. Vivint Solar is driving innovation behind the meter

through distributed energy production, smart energy consumption, and the integration of local energy storage. This innovation relies on the intersection of software and the state-of-art intelligent control systems, and simplifies the interaction of production and consumption for the benefit of American homeowner customers.

Tariffs will hamper our ability to solve today's and the future challenge in an attempt to revive domestic production of solar modules for what has become a low margin and fiercely competitive global commodity market. Without tariffs, employment will flourish and innovation towards tomorrow's challenges, like improved grid reliability and integrated storage, will continue.

Thank you for allowing me to testify and for your consideration of this important matter.

MR. NICELY: Mike?

MR. O'SULLIVAN: Good afternoon. My name is Mike O'Sullivan. I'm Senior Vice President and I head up the development at NextEra Energy Resources. We are the competitive energy generation arm of

NextEra Energy, which happens to be the largest utility in the world market cap-wise, which was 74 billion a little earlier today. NextEra also owns Florida Power & Light, one of the largest utilities in the U.S. Some of you may own condos and be actual customers of our affiliate.

At NextEra, we employ over 14,000 people in the United States. We power over 13 million homes. We paid nearly $600 million just last year in property taxes in over 30 states, and most of that is through our wind and solar portfolio that numbers over 17,000 megawatts. We are not only the global leader in the world in producing wind and solar energy, but we are also the largest owner of capacity of both here in the United States.

We actually invest the capital and develop, construct, and own long-term the solar projects to provide the wholesale electricity to the utilities that provide such retail to their residential and commercial customers. Together with Florida Power & Light and NextEra, we have invested over $30 billion in wind and solar in the last 10 or

15 years. We have plans in the next 3 years to invest another $15 billion in wind and solar. These projects, if built, would create tens of thousands of new jobs that are good-paying construction jobs just out of our portfolio.

A critical aspect of our business is the length and size of such investments. Most of our electricity is sold wholesale to those utilities across the country in those 30 states I referred to through long-term wholesale contracts that are entered into years before any of these projects are built. These generation facilities have 30- to 60-year useful lives and often cost billions of dollars. We live with our successes. We also live with our failures for a long time, as do our customers, shareholders, and employees. And I'll come back to that with my closing comment.

Right now, major utilities across the U.S. are planning for billions of dollars in cost competitive solar projects due to the progression of solar technology and the reduction in cost over the last few years. I deal with over 50 utilities in

this country as part of my job and the executives that run those companies. Our backlog alone approaches 5 billion of new solar investment that's at risk. These projects are going through various rigorous local state and federal agency approvals across the country, and all are based on an expectation of continued availability of modules at competitive global prices.

Utility-scale solar is a very price-sensitive commodity in the wholesale electricity market. Unless projects are cost competitive, these energy sources will lose to things like natural gas and wind, and they will not move forward in the 20 to 25 states where solar is now competitive wholesale and was not 2 or 3 years ago. If projects in this industry are burdened by new tariffs or quotas, many if not all will not get built. Good-paying, high-skilled U.S. solar jobs will not only be lost, but the property taxes from those jobs that infiltrate or go into local communities from such economic activity will also be lost.

If the Committee determines that some form of relief is necessary, we urge that you at least structure something that, one, encourages the world's leading solar firms to shift their manufacturing jobs into the United States and, two, refrain from measures in the form of a hard quota or punitive tariffs that would make solar uncompetitive with those other forms of electricity that seem to get lost in this proceeding.

Such would lead to demanded structure and result in a loss of downstream solar jobs. Any remedy should at least ensure sufficient supply of solar panels to support this continued growth you've heard about in solar development across this United States. This would be challenging, but we think there are ways to do such.

In closing, I'd like to make one comment. It makes no sense to effectively tax tens of thousands of good-paying U.S. jobs out of existence solely to benefit the commercially unskilled Chinese and German owners of Suniva and SolarWorld, who will cut and run, leaving this administration, U.S.

households, U.S. utilities, and U.S. workers holding the bag. Please do not destroy these projects or the tens of thousands of jobs that are reliant upon the solar development world.

MR. CREAMER: Thank you. Good afternoon. Ryan Creamer. I'm the CEO of sPower, based in Utah. sPower is one of the leading solar independent power producers in the United States. sPower for the last 2 years has invested over $2½ billion building solar projects and has an operating portfolio of over 1200 megawatt across the U.S. Our projects provide direct benefit and low-cost energy for over 20 years to 13 states such as Indiana, Utah, Arizona, North Carolina. Directly, we've created more than 3,000 jobs in that time period in rural America.

As the governor mentioned this morning, we're creating new areas with low cost, stable energy, non-variable fuel, places that are perfect to create manufacturing, to build technology parks so that investments can be made in these rural communities. sPower has plans to build another 5,000 megawatts of solar installation in the next 4

years and we want to continue hiring and training more Americans in this dynamic industry. This case jeopardizes all of that. The uncertainty is paralyzing.

Developers need to commit significant monies years before construction begins. Over the last 18 months, for example, sPower has invested tens of millions of dollars for future projects, some of which these projects won't be completed till 2021. The trade case is already causing policy and economic risk that greatly endangers sPower's future here in the U.S. Not only will tariff on solar panels harm the solar industry and the over 3,000 jobs sPower has created, but the harm will be directed to workers in rural communities where the economy is just now on the mend from the housing crisis in 2008 and from the abandonment of the oil fields due to the low prices of natural gas in the economy that we sit in today.

I ask the President and his administration to reject the relief in this ill-suited Section 201 case. Thank you.

MR. HERSHMAN: Good afternoon. My name is George Hershman and I'm the President of Swinerton Renewable Energy. We are a division of Swinerton, Incorporated, a 130-year old, 100 percent employee-owned American general contracting firm with offices throughout the United States.

Our company specializes in utility-scale and commercial solar installations. In 2016 alone, we installed over 1500 megawatts of solar projects, more than 10 percent of all projects installed across the U.S. These projects provided hundreds of good paying jobs in mostly rural communities. In the last few years, Swinerton has employed over 8200 people in 11 states. To highlight the scale of some of these projects, this year we employed over 400 people in a site at Lafayette, Alabama, and 850 people at a site in Fort Stockton, Texas.

But remedies put forth by petitioners puts our future in jeopardy. Modules are the single biggest cost for a utility-scale project, making up 30 to 40 percent of the total project costs. I also must stress that this case is not like other trade

cases where companies are simply choosing not to buy American products due to cost. In the case of solar, there is not enough American supply to meet the demand.

National security would also be threatened, but not like you heard this morning. Modules are not directly connected to the internet and cannot be turned off remotely. Our military uses solar to reduce electricity cost and improve operational resiliency. The Department of Defense sets a mandate to procure 20 percent of its energy from renewables. This year, we built 120 megawatts of solar projects in Pensacola, Florida to power local air force and navy bases. In the face of federal budget cuts, tariffs would only make solar uneconomical and damage national security for years to come.

I ask the President and the Administration to listen to the guidance provided in the safeguard statute and make sure that the remedy chosen does more good than harm. The best option is to avoid restrictive trade relief altogether, recognize the

benefit of SEIA's 1102 proposal, and stand with the 260,000 American workers in the American solar industry. Thank you.

MR. CORNELIUS: Thank you for the opportunity to speak today. My name is Craig Cornelius and I serve as the President of NRG Renewables. NRG is one of the largest independent power producers in the United States and one of the largest owners of renewable generation in the country. And while I would gladly answer questions pertaining to the market dynamics ably described by my colleagues from solar businesses like our own here and the relevance to the rational design of a remedy in this case, I'd like to instead turn to the question you posed about the prospects for a global settlement and offer up a framework for one that I believe would be in the national interest and in the best interest of all key stakeholders.

The framework I'd propose for a global settlement has three components. First, the Section 201 case should be resolved through use of an import license fee which would impose a manageable cost

impact on our industry, and through the strategic use of the collective revenue could catalyze investment in rational places in the domestic manufacturing supply chain.

The import license minimum fee should be set at 2 cents per watt initially and decline each year. This is two times above the level that Commissioner Broadbent recommended. And a fee at this level would certainly be painful for the downstream industry to bear, but this may be a worthwhile investment for the industry as part of a larger resolution of this case and to allow the domestic manufacturing industry to have the best chance possible at successfully ramping up and modernizing production.

To ensure that it serves the purpose of providing meaningful support to the domestic CSPV industry and certainty to the market they service, these features of an ILF would be beneficial. It should differentiate between loose cells and cells assembled into modules or other products in order to provide support for standalone module manufacturing,

as well as integrated cell and module manufacturing. Disbursement should be set at a specific dollar per watt level that declines every year to ensure that distribution is equitable and performance based.

In order to provide assistance to the industry participants that were producing prior to this case as well as to new entrants, the distribution of funds in the first year only could provide some credit for production in 2016 and 2017. This resolution of the 201 case should, by itself, be sufficient to allow for the stabilization of the petitioners if they are operated successfully, and should provide a foundation for new capacity in the domestic module supply chain.

Second, though not necessary for stabilization and adjustment of the domestic CSPV industry, but in the service of broader national interest, the U.S. and China should consummate a comprehensive settlement of their ongoing solar trade disputes with the following components of that settlement. China should terminate the duties it imposed on U.S. manufactured polysilicon in 2013.

The U.S. would terminate the existing AD/CVD orders imposed on cells and modules from China and Taiwan in 2012 and 2015.

In conjunction with that termination, duties collected under the U.S. AD/CVD orders, which are estimated to be over $1.5 billion, should be distributed as follows. Domestic CSPV manufacturers should receive the greater of $500 million or one-third of the available funds allocated in proportion to their share of CSPV production from 2013 through 2015. In return, they should vote as required to endorse the termination of the U.S. AD/CVD orders. The second one-third should be returned to the entities that originally paid the duties on entries in proportion to their original payments with a further condition that at least 50 percent of the funds received should be retained exclusively for reinvestment in U.S. solar business operations. The last one-third should be distributed to the U.S. polysilicon producers to support their stabilization and recovery from the trade disputes, also allocated in proportion to

their share of U.S. production.

In connection with the settlement of these orders through bilateral agreement between U.S. and China, all parties benefitting from this agreement should also enter into covenants that should restrict them from challenging any of the elements of this global settlement or the ILF. An orders for orders settlement of this kind eluded the previous administration, but this administration has a real opportunity to succeed where others failed as a result of your commitment to a rebalancing of trade relations, the desirability and domestic economic significance of a growing U.S. marketplace for solar, and the changing landscape of the global polysilicon industry. Thank you for the opportunity to testify. I look forward to your questions.

MR. MARTYN: Thank you very much and very well timed. I'd like to begin, before we move into the particular topics, with the question that I posed to SolarWorld and Suniva this morning as to what beyond the ITC report are publicly available sources of information and data on the industry that

we can look to in case we have questions that we seek to resolve in the coming weeks.

MR. NICELY: Thank you, Mr. Chairman. This is Matt Nicely for SEIA. I would first point you to our -- the public briefs that we submitted to the ITC, which are obviously available to you and we are of course hoping that you are also referencing them. Within those briefs, we included several references to, and in the exhibits references to some of the materials the petitioners mentioned this morning, like GTM, National Laboratories, IEA, but also there's the BNEF, Bloomberg New Energy Finance, IHS market, Solar Foundation which does its national job, solar job census. The Department of Energy has its SunShot studies. And SEIA, itself, has a variety of solar industry data on its web site.

Some of these materials are subscription based, but we know that the Department of Energy has a subscription to them.

MR. MARTYN: All right. Thank you.

For the remainder of our questions, we will have a very small number of questions on

adjustment. We will then also have questions on the action the President can take, cost and benefits, and then, finally, the remaining issues.

We'll start with adjustment questions. I don't have any specific questions for you folks on what we heard this morning. I'd just like to ask if, very briefly, you have any reactions to the statements made by SolarWorld and Suniva with regard to their expected response to import relief if it is imposed.

MR. NICELY: Mr. Chairman, they were relatively vague this morning as far as what they would do. And I would also point out that they did not bother to submit an adjustment plan during the course of the ITC's proceedings, during which we add an administrative protective order so that at least the lawyers could see what they were talking about. During this phase of this proceeding, when there is no APO, they submitted -- they finally submitted adjustment plans and most of the information that's important for any of us to react to is confidential so we haven't been able to look at it.

MR. MARTYN: We heard some estimates as to current domestic capacity this morning. Did those sound in line with what you know about the current producers?

MR. NICELY: We have no reason to question their current capacity. We do have reason to question how quickly they could ramp it back up, that part of which closed down.

MR. MARTYN: All right. Thank you.

All right, I'd like to move now to addressing the different actions available to the President. First question is again, there seems to be some disagreement among persons over how foreign suppliers would respond to increase in duties. What factual information and data other than anecdotal information can the TPSC use to evaluate how increased duties would affect imports of solar cells and modules to the United States? And is there some way that we could determine the point at which duties would become prohibitive?

MS. HOPPER: We're going to ask that Tom Prusa respond to that one.

DR. PRUSA: Tom Prusa. So as part of our injury and remedy briefs, we did submit information on this question, particularly our remedy brief has quite a bit on this. So it's more than speculation. We have industry analysts. IHS market is completely separate, GTM Research, both conducted studies of deployment effects of different levels of protection, and they both give similar results. I want to stress that these studies are based on utility district by utility district level analysis, so they'll actually be able to map out when certain districts become no longer grid parity. And they both show gigawatts of loss.

Now as far as the question of prohibitive or not prohibitive, certainly, and certainly districts -- prohibitive, does it mean zero or just a huge loss? Right, so I would say even at the lowest levels each of those companies analyzed, there is dramatic loss in deployment. I think you have to dig into the individual districts to know which districts went to zero.

MR. FENSTER: This is Ed Fenster from

Sunrun. I would just add to that, that the recent tax bills passed by the House and the Senate, as I mentioned in my testimony, for as an initial, as an example, carve about 10 cents a watt of value out. So the analysis that Dr. Prusa is describing was done before that, before those bills were passed and without consideration to their effects, which would obviously make the effects of trade restraints more substantial.

MR. MAGNUS: On more quick point at the risk of quibbling with the question itself. It's the sort of question that one would ask in a normal safeguard case. At what point do the duties become prohibitive, meaning too high to sell over so whoever wants to buy the product is going to have to buy it domestically instead. But here what you have is at what point does the extra cost become demand destroying. Right? And it's prohibitive in terms of like a lockout rate isn't the issue. The issue is you shrink the pot, and that is a characteristic of this case that one doesn't normally bump into. It isn't present, for example, in the other

safeguard case that's in front of the government right now. And so prohibitive may be a word that is not as specific as you'll find you want it to be.

MR. CORNELIUS: Okay. Data collected by GTM Research showed that while procurement under an RPS where price elasticity would not have applied made up over 80 percent of installed utility-scale capacity in 2013 and 2014, that share dropped to 50 percent in 2016 and 27 percent in 2017. GTM Research forecast that even if module prices continued to decrease and solar is more cost competitive with wind and other sources than it is today, RPS procurements would account for just 25 percent of total utility-scale deployment between 2019 and 2022.

And what's more, the vast majority of this 25 percent is not price inelastic because RPS obligations that would prospectively be met with solar can also be met by other generation sources and are only forecasted to be met by solar based on the assumption that it will be the least cost, best bet source for the RPS.

For the other 75 percent of demand that would only be serviced in wholesale markets based on competitiveness, we do not expect prices to rebound quickly to their 2014 and 2015 levels in any state that we've assessed as a possible market. It is reflected in the low prices seen in markets that have recently become economical for utility-scale solar where public contracts have been signed and are available for your review. PPA prices in those markets have been in the $35 per megawatt hour range in Georgia, Florida, and Kansas, and in the 40 to $45 per megawatt hour range in Virginia, South Carolina, and Texas.

Our own modeling shows that a tariff or fee of 1 cent per watt, if it cannot be offset through other components of the project, would require an increased PPA rate of 45 to 85 cents per megawatt hour for a typical utility-scale project. At higher levels, the increase would be dramatic. Ten cents per watt in the form of a tariff would increase PPA prices between $4.50 and $8.50 per megawatt hour. And a 30-cents-per-watt tariff that

the petitioners effectively have requested would increase PPA prices by between $13.50 and $25.50 per megawatt hour.

Accordingly, at that 10-cent-per-watt level, roughly equivalent to the tariff recommended by Commissioners Johanson and Williamson, solar would no longer be a cost competitive source of generation for execution of new contracts in 8 of the 10 markets where we develop utility solar projects today. Consequently, we would cease development in those markets with a corresponding adverse impact to investment and deployment of those regions.

MR. MARTYN: Thank you.

Any further questions from my colleagues on tariff issues?

All right. Let's move on to quantitative restrictions. SolarWorld and Suniva have proposed that if we adopt a quantitative measure that any quota start with estimated demand in 2018 and then subtract the available amount of non-subject merchandise, domestic producers' capacity, expected

volume from excluded countries, and excess inventory due to hoarding.

Now leaving aside whether SolarWorld and Suniva have correctly estimated each of these inputs, is a formula like that an appropriate way to estimate a quota assuming -- and I know you don't agree with this, but assuming we were to choose a quota as the proper remedy?

MR. NICELY: I'm glad you mentioned that we don't agree with it. Obviously, we agree because of what Mr. Magnus talked about in terms of a license fee program, we would agree to what would effectively be a non-binding quota. A quota of the sort that they talk about and the way in which they get down to 5.7 gigawatts, as I talked about during my testimony, is problematic on a host of -- from a host of perspectives not least of which is the inventory, the so-called hoarding issue that I've already talked about. Again, we encourage you to look at the import statistics which clearly show that it's just simply not true.

We also would point out that they seek a

sizeable exclusion for Singapore. But I would also urge you to look at those same import statistics that show you the extent to which Singapore has fallen off this year. The decline in imports from Singapore in 2017 are dramatic. It's a far greater decline than most of the other countries. So the notion that you would pull Singapore out and have that large of a chunk or that large of a deduction off of a quota is -- would be foolhardy.

And the other issues we've already addressed. The fact is that the industry simply doesn't have the capacity to supply demand. They've already admitted this morning that they would accept a short supply mechanism because they recognize -- they must have answered that way because they recognize they can't supply demand. So the notion of having a quota that would bind as much as the one that they proposed is simply not -- wouldn't work, would not be workable, would cause severe demand destruction.

MR. MARTYN: Okay. But then I take it from your answer that were we to adopt a

quantitative measure and start from demand, you would imagine that available non-subject merchandise and domestic producers' capacity would be issues we should take into account in looking at that -- at a quantitative measure?

MR. NICELY: Yes. I would agree, again assuming that we correctly calculate what is domestic capacity and what is available supply from non-subject sources, because again those are significant question marks.

MR. FENSTER: This is Ed Fenster from Sunrun. If I can comment quickly, I think two items worthy of consideration, many companies at the ITC hearing, Sunrun included, testified that the quality of product manufactured by Suniva and SolarWorld did not meet the standards necessary for deployment. For instance, in residential leased assets like those that we deploy or, for instance, in utility-scale deployment, that is especially the case with Suniva and potentially as well the case with SolarWorld.

In addition, the premise of a quantitative

-- of a restrictive quota is that there is capital available for formation of new capacity in the United States. I think that is a highly subject -- highly questionable assumption. The petitioners haven't demonstrated the availability of this capital. One of the benefits of the license fee is that it provides that capital directly, because I do not have great reason to believe the capital sources would form around the construction of the manufacturing, given how difficult capital formation generally is in solar, even with proven track records of success, net income, and leading management teams.

MR. NICELY: Mr. Chairman, just one more thing I'd like to mention. A part of your calculation should also include something about exports, which of course their calculation doesn't take into consideration.

MR. MARTYN: And before we move ahead, I should also step back a moment and remind -- give you a caution that I gave the morning folks and that is that please do not take any assumptions from the

questions we're asking. They are all directed at gathering more information and we are inquiring in areas where we have some questions. There are some areas that we're not inquiring about because we feel that the excellent submissions we've received fully cover the ground and don't require further questions from us.

All right. Now I noted a statement that you just made that there was testimony to the ITC that domestic producers' quality didn't meet standards. Did the ITC address that issue?

MR. FENSTER: The ITC concluded in its statements, my understanding, that it didn't see that was a materially -- a more material consideration than other factors. The facts remain that -- and we've submitted emails and other primary documentation into the ITC record illustrating substantial problems with quality, especially with Suniva. We know that we would not be able to or willing to purchase the equipment that comes from their existing capacity for use in our business.

SolarWorld, we bought in very limited

quantities. We did have a recall even on the limited quantities, and they refused to submit their equipment for testing and they wouldn't even share with us the bill of materials that they used, which is customary and all of our other suppliers review them.

So we have two companies that didn't submit their products for testing, one that we know from some experience wouldn't qualify. And I know that there are other people who had those experiences as well.

MR. MARTYN: And before we go further on this topic, is it the position of SEIA's counsel that these assertions are something that we should be taking into account during this process?

MR. MAGNUS: Absolutely. The fact that the ITC did not regard this as being a larger cause of problem than increased imports certainly cannot be construed to mean that the ITC did not credit all of these very, very detailed affidavits. And so they are part of the factual record. And even if not larger than imports as an explanation of all the

problems, they certainly are important factual circumstances for you to take into account in developing advice within the executive branch about what's appropriate to do here. Absolutely.

MR. MARTYN: All right. Thank you.

Well, as you say that you have documented this on the Commission record, we will to the extent we consider it relevant go and look at those materials.

All right. Moving on, next question. If we were to conclude that we lack statutory authority to take the proceeds of the sale of import licenses and pay that amount to domestic producers, what alternative remedy would you propose that we adopt?

MR. MAGNUS: Thank you. John Magnus for SEIA. You've heard already that an important and ideally simultaneous agenda would be orders for orders, a global settlement of the anti-dumping measures that are in place and that, similar to the import licensing fee, also would develop a source of capital for a U.S. industry that seems to need it and isn't getting it any other way.

Other than that, there isn't a version of traditional import relief that delivers benefits that exceed costs. There just -- lawfully, if you stick within what's lawful, you cannot, using traditional import relief, bring these companies back into the black. So you'd be left with technical assistance or some sort of a global arrangement that might be sort of a global export license arrangement, as opposed to a U.S. administered import license arrangement.

MR. FITZGERALD: If I can follow on that? One way to interpret your import license fee proposal is that you guys would be happy with a 5 percent *ad valorem* tariff. You've suggested in your remarks here that at, say, a 25 percent *ad valorem* tariff there would be significant demand destruction. I'm wondering if you've conducted any sensitivity analysis between those two points as to where demand destruction begins to be significant?

MR. CORNELIUS: Well, you're exactly right that sort of the import license fee quantity that we have recognized or that we have recommended thus far

would be consisted with roughly a 5 percent *ad valorem* tariff. And we would for the avoidance of doubt still forecast some demand destruction even at that level in certain end markets where solar is right at the cusp of economic competitiveness. For example, qualified facilities in Montana or Idaho, where recent development has been enabled by solar modules being at prices that were offered 12 months ago and that aren't even available today. And consequently you can see evidence of the demand destruction from that price inflation, from the cessation of development of projects in those regions.

As to higher *ad valorem* levels than 5 percent, as noted before, there are certain step functions that are observable in wholesale power prices based on a combination of those wholesale prices and resource, solar resource. In certain jurisdictions, you'd see individual markets come off the map if the *ad valorem* tariff percentage went up over 5 percent. The first places where we would expect to see demand destruction beyond 5 percent

would be wholesale markets in Texas, in South Carolina, in Florida, where for utilities like NextEra solar has become a new least-cost best-fit source of generation for their rate base.

For us, beyond 3-cents a watt, we would expect significant curtailment of our utility deployment by at least six markets.

MR. FENSTER: And this is Ed Fenster. Speaking quickly for residential, likewise every penny reduces demand somehow. It could be an east facing roof in California. It could be any customer in Florida. There is -- it's a continuum of demand destruction and it's hard for me as a leader of a company to say how many employees I'm comfortable to recommend laying off. But the continuum of that destruction is significant.

I think one of the things that also brings comfort to the SEIA license proposal is the knowledge that the funds at least could be used for domestic investment in the industry, which is an additional benefit.

MR. O'SULLIVAN: This is Mike O'Sullivan

from NextEra. I'd like to add on to your observation. Demand destruction has already happened because it's showing effects on the market that started a few months ago and it has rippled across the whole country. Solar demand destruction is already happening and most of 2018 is getting damaged. It's probably too late to save much of 2018. 2019 and 2020 is what's at stake here with the forward-thinking utilities that are trying to compete.

And what you're not adjusting for in all the proposals and remedies and suggestions that everybody's had over many months in this, is natural gas is very, very cheap, and is the fuel of choice in almost every utility region in this country. Wind has also dropped 5 to $10 a megawatt hour in a levelized cost equivalent in the last year or two, as has natural gas with improved heat rates, and cheaper natural gas and more pipelines. And the whole flow of natural gas in this country has almost reversed itself in the last 2 or 3 years, what was going on in the Marcellus and the Utica.

That is happening real time, outside the little Petri dish for what to do here. Not to recognize those market forces which are hundreds of times bigger than what your graveling with I think would be something that would be an error on your part.

MR. RYNAR: If I could just add some real world context to what Michael and Ed are saying. My name is Robert Rynar. I'm chief engineer with DEPCOM Power. We're an EPC/O&M service provider in the utility-scale solar space.

Real world examples, we have two 100-megawatt projects, one on the Eastern Coast of the United States and one in the West. Both projects were developed between 24 and 36 months ago based upon economics that the industry uses, forward-looking price curves, technology trends, et cetera. Due to the uncertainty of this case and its effect on cost of modules, which you've heard undisputedly is a major expense in any PV installation especially utility scale which drives the cost of -- levelized cost of energy, which drives the cell price. Both

of those projects are teetering on collapse. There is already millions of dollars of investment money at risk that's been put out, design services, site prep. Modules are hard to come by because the prices have jumped significantly due to the uncertainty. These projects, which would employ up to 1,000 blue collar, hard-working men and women are on the verge of disappearing only under the threat of tariffs. Thank you.

MR. MARTYN: All right. It occurs to me at this point I should probably ask you folks a question that we asked the SolarWorld and Suniva folks in the morning, and that is, what's the process to switch production -- first off, are 60-cell and 72-cell modules substitutable? And, if so, how long would it take to adapt a cell used in one application for the other?

MR. BYWATER: David Bywater. They are interchangeable. The cost per watt from both are comparable for us. We're not using 72 today. We use 60, but we can use 72. They are larger. They're a little heavier. They have impact on the

availability of some roofs where it would be space constrained. Also on the structural support, a little heavier weight. So there are implications, but they are interchangeable. With regards to the time it takes to change, I don't know how to speak to that.

MR. CREAMER: The utility front, where they are interchangeable, the cost associated with going from a 72- to a 60-cell module, you have to look at the balance of plan, everything that it costs, everything that goes into it. There are more piers that go into the ground to hold the rack and there's more rack and there's more panels. There's more touches, more labor to install it, additional wiring. All those costs add up even to a point to where it's similar to what this tariff would be and we would consider it a tax on how we build our system.

MR. MARTYN: Okay. Thank you.

So it appears that there is some overlap between your views and some degree of difference with what we heard this morning.

MR. FENSTER: Yes. I think like there's slight efficiencies in certain places to use 60. There are slight efficiencies in 72. They are largely substitutable. I think Tom Werner from SunPower may be on a panel that follows. He could be a good person to ask the question of how quickly production lines can be switched. In our discussions with manufacturers, it seems like that's a reasonably quick possibility, but I think Tom would be the right person to direct the question to.

MR. MARTYN: Thank you very much.

I think we have already touched on some issues associated with the cost-benefit analysis, but my colleague from DOC has some further questions, so why don't we move over to that.

MR. STEFF: Sure. Thank you. Are any of the remedies recommended by the ITC Commissioners likely to result in a positive net revenue stream for domestic producers?

MS. HOPPER: I'll take that one. We think that only Commissioner Broadbent's would result in that outcome. We think that she raised the ILF

proposal that we put forward and those dollars would go directly to domestic manufacturers. We don't think any of the other commissioners' recommendations would result in a positive benefit. And we're not the only ones saying that, ironically. It is the petitioners' own words, the press releases they put out the day of the decision, as well as their presentation, slide number 9 from this morning, which shows that -- titled, the commissioners' remedies are insufficient. So I think that question has been answered, that really the only way to get money directly to the petitioners is through the ILF.

MR. FITZGERALD: That's an interesting response given that your ILF proposal basically says that Commissioner Broadbent got it wrong by 100 percent and you need to get twice as much money.

MS. HOPPER: Oh, I don't think we said she had it wrong by 100 percent. I said --

MR. FITZGERALD: Well, your proposal is down for 2 cents. Her proposal was at a penny.

MS. HOPPER: So, yes, we are being more

generous than she is and we also think that the quota she put in was too restrictive. So we think there's two areas in which we can improve upon her recommendation, and that's the recommendation that we put in our filing. But we do think that the construct and certainly the fundamental construct of money going directly to petitioners is the most important aspect of that.

DR. PRUSA: This is Tom Prusa. I'd like to add one more point. We point to the slide that the petitioners gave you that they admit that under the -- under their own calculations the industry does not return a profitability. That understates the issue because the footnote there is that's only considering the two companies that were here today, not the independent module makers. Their proposal is terrible for the independent module makers and that analysis does not take that into account. So the situation in terms of just a straight-up trade remedy is more damaging to the industry than that chart even suggests.

MR. MAGNUS: One other quick point in

response to your question about the relationship between what SEIA has proposed and what Commissioner Broadbent proposed. I would encourage you to think of the import license fee idea. There's some aspects of it that are structural and some aspects of it that are kind of scenarios or model run issues, right. So structurally what it is, is you have an underlying quota, you have import licenses, and you're selling them and you're redeploying the revenue. Everything else is a scenario or a model run issue.

You can set it at 1 cent, 2 cents, 3 cents. You can twist different dials in different ways. We don't agree in every respect with the model that she presented of it, but that's distinct -- you know, her overall, if you read her analysis, she said first of all she was trying to design a quota that wasn't going to bite and we think maybe she cut too close. And that she was very concerned, as she should have been and we wish the other commissioners were even more concerned about this, regarding demand destruction elsewhere. The

fundamental thing is that this proposal turns every penny into a super penny. Every penny imposed on imports has whatever effect it has as import relief and then 10 times more because of it becomes capital for the domestic producers.

MR. STEFF: Mr. O'Sullivan, you mentioned in your response here to us today the importance of taking into account foreign direct manufacturing investment in crafting any potential remedy. Can you expand on that?

MR. O'SULLIVAN: Could you expand on what you mean by foreign direct investment?

MR. STEFF: Foreign direct manufacturing investment in the solar market --

MR. O'SULLIVAN: In the U.S.?

MR. STEFF: In the United States, yes.

MR. O'SULLIVAN: I think we can provide something offline with confidential protection after the hearing. But the discussions we've had with manufacturers, they're eager to site manufacturing the United States, but the balance I think you have to provide is how do you incent them to show up on

shore without some punitive tariff that chills the whole market and nobody builds utility-scale solar. Guys like us are buying thousands of megawatts, not dozens of megawatts. And the creditworthiness of the counterparty is very important.

And the two proponents or the two petitioners, I think is the right term -- I'm not up to the legal terms -- are not creditworthy. There is nothing you can do in this case to allow them to sign a contract with somebody of our size and scale, and our size of an order, no matter what type of panel they make. They're just not going to be able to stand behind their order creditworthiness wise, and deliverability is certainly an installation criteria.

The commitments we're making downstream to our wholesale customers, all the utilities around this country are hundreds of millions of dollars per project. You just can't make that counterparty commitment with somebody that, no matter what you do here, you're not going to make these guys creditworthy. And what we're looking for is the

guys that are creditworthy, whether they're already in market from other countries, have shown tremendous interest in site manufacturing in the United States. And that signal needs to be made and we think there's creative ways to do it here.

MR. STEFF: Thank you.

MR. CREAMER: I would maybe just add to that. Ryan Creamer with sPower. We've had the same type of discussions. We talk about buying thousands of megawatts of solar panels. And same issue under NDA, so can't talk specifically about it. But when the 1102 proposal was put forth by the industry, it did spark a great interest with multiple creditworthy counterparties, as Michael has just described.

MR. MARTYN: All right. Well, first, I'm also -- I'll reiterate a point I made this morning which is that we are not asking for additional information from participants at this point.

I was -- I'm always struck when I hear areas of agreement from both sides of one of these issues. And one area that I just heard right now

was that there are investors that are eager to set up in the United States. And it strikes me that this is presenting something of a conundrum. Everyone agrees that folks want to set up here, but nobody is setting up here. And I think the folks in the morning made a point that import relief would be incentive. I think I heard from you that what is essentially a subsidy would be an incentive.

Is that a correct understanding of what we're seeing here, is that what's missing is that there is -- they need some additional reason beyond the obvious attraction of being close to your customers to set up in the United States?

MR. O'SULLIVAN: Let me first say something that applies to almost all wind and solar manufactures globally. It's not just unique to solar. They don't know how electricity is bought and sold in this country, wholesale or retail. When you talk to these manufacturers, they don't understand the whole food chain of how the electron gets bought and sold on paper, how it moves on the grid, how it gets sold wholesale and eventually

retail. They just don't. They're not stupid. They just -- they're manufacturers or R&D companies or things of that. It's not lack of knowledge. It's just they don't understand it. It hasn't happened for decades, in the 35 years I've been in this business.

What you're trying to balance now is these same manufacturers that are putting hundreds of millions of dollars of R&D globally into their product based on the efficiency or prudence of all these panels that these two petitioners have been left onshore about, no pun intended, but they've been left at the shoreline, right. And all these other companies have been advancing their product and redeploying -- or reemploying capital, recycling capital into their business from an R&D or research point of view.

And now they're sitting on the sidelines for two reasons, in my opinion. One is they don't want to lose a great profit opportunity to sell a bunch of panels into a giant price increase that might to into the market based on what you may

decide, because then they look like shmucks at the end of the day for selling panels at 35 cents when tomorrow the market price, the day after you make a ruling, figuratively speaking, might be 55 cents based on something you guys do.

The second thing is they are fearful that demand goes away. I'm not talking about residential. I have no area of expertise in that. My point is most of the solar that's going to be built in this country is going to be wholesale at the utility-scale from a gross gigawatts point of view, the next 3, 5, or 7 years. They are fearful they're going to make an investment decision in Georgia, South Carolina, Florida, Texas, Nevada, wherever they're going to build these manufacturing facilities, and the day they make that decision, they fly back to their home country, and the board of directors or the management team there that gave them the hundreds of millions of dollars to deploy says, what happened to demand? And they're going to sit there and go, there's no customers want to buy solar because wind is half the price, or natural gas

is half the price, or the political desire to raise rates high enough to pay for this new pricey solar product that was suddenly inexpensive and competed on its own the last year or two, current rates, you're talking real time today, is no longer there.

You cannot force people to buy solar wholesale but for two or three states in this country under the RPSs.

MR. CORNELIUS: And I think that the argument that we would make is that the distinction between the ILF-based incentive for locating module assembly facilities to service U.S. demand and a tariff-based incentive is that a tariff-based incentive set at a high enough *ad valorem* percentage to incentivize those foreign manufacturers to site facilities here would destroy demand.

So that's sort of -- that I think is the ultimate conclusion that these -- that our side would try to help explain here, is that if a foreign manufacturer needs 3 cents a watt worth of pricing differential between manufacturing costs within its current location of manufacturing and siting a

module assembly facility here, that 3 cents a watt difference, which in fact I think is based on what we see customarily higher, 5 or 6 cents a watt, can be subsidized, yes, through revenues from an ILF scheme. But if you were to impose a tariff that's at a high enough percentage to make up for that 5 or 6 cents a watt difference, then we won't be able to build projects in certain places because that 5 or 6 cents a watt difference in end market price for modules means that we can't sell electricity competitively in certain markets.

MR. MARTYN: I'm sensing a bit of a disconnect or I'm experiencing a bit of disconnect here. I'm hearing some folks say that the existing market and existing price structure would be attractive for new investment here, but is unwilling to come forward because of uncertainty about what we might do. There is certainly a logic to that. It's an argument we've heard in past Section 201 disputes. But what I'm not understanding is, if prices were to rise to a level that were demand destroying, wouldn't an efficient new facility

established here be potentially demand creating because they could sell at a price that was attractive to utilities?

MR. O'SULLIVAN: I think the wild card -- a couple of wild cards you may be missing under that theory, which I understand, is perhaps two things. One thing is the tax credit of 30 percent has a cliff coming at it in a couple of years. It takes time to build these new manufacturing plants. Whether you buy an old manufacturing facility, as some of these folks are considering, and retrofit and bring your internal equipment over, and staff them up, that might save a few months. But you're still looking at a 12, 18, or 24-month process depending on the company and the part of the country where you can get up and start putting out hundreds of megawatts of product.

By the time that gets going, you not only have lost '17, '18, you're going to be into '19. And now you're starting to talk about saving some manufacturing -- saving some demand in 2020. And then in 2020, the tax credit starts dropping and

going away, notwithstanding what happened in Congress the last 2 weeks around tax reform. Let's just go by the rules that were in place in June or July or August when this whole proceeding got going. That is what these folks are thinking about, too, as are we, as are our customers that were effectively the kind that we're providing those panels for at scale, at giant -- you know, giant orders. That's what everyone is looking at.

And in 20 to 25 states -- this is the part I can't emphasize more. Two years ago, solar beat wind in maybe three states and everybody in this room could tell me those three states even if you didn't understand solar power. Today, you can draw a straight line from those spots in the desert across I-10, across the whole southern half of this country and all the way up to New England and all of those states are cheaper than wind but for two or three.

You put a tariff on these things or you make the panels more expensive, those utilities have a choice to buy something else or not buy. And

that's the dynamic right now that I think everyone is losing in the rules of this proceeding. And I understand they're very complex rules, nor am I ever going to be an expert on such. But that's the part I'm trying to address with your question. Hopefully, that's responsive.

MR. MARTYN: Thank you.

All right. As far as I can tell, there's widespread agreement that there are three basic segments in the solar industry among customers. Are there differences in the way that those different segments respond to price increases? And, if so, what are those differences?

MS. HOPPER: Yes. You have agreement that there are roughly three different ones. We have representatives from all of them here who will be happy to describe that.

Ed, do you want to go first?

MR. FENSTER: Sure. So the fundamental difference between rooftop and utility-scale would be that rooftop systems cost more to install but compete with the retail rate, and utility-scale

systems cost less to install but compete with the wholesale rate. And so, for instance, residential is a significantly smaller market size by megawatts than utility-scale, but it actually employs more people and actually generates more dollars of investment because each megawatt of capacity is both more valuable because it's on a rooftop, and therefore also costs more to do and has more economic impact.

So for in residential, we shared this with the Commission, we had an independent study that was done for our marketing department -- I believe it was in 2015 -- that showed that the price elasticity for solar was such that if savings dropped from 20 percent to 10 percent the demand interest fell by about two-thirds. So it's a very price elastic market that really to hum requires about a 20 percent customer savings. And I believe Mr. Bywater from Vivint has a similar experience in his business. And so we have to operate in reference to the retail rate.

Someone -- Craig, do you want to chat

from, or Robert?

MS. HOPPER: Rob's going to take that one.

MR. RYNAR: On the utility-scale side, purchases are basically primarily made on the levelized cost of energy. You've heard earlier about how in recent years the markets where the avoided cost of solar power has reached a point where it's below the cost of traditional fossil fuel and even wind energy, and applying tariffs at this stage will reverse that trend and bring us back many years in the past where we have to rely, utility-scale projects would have to rely on government mandates. And we know that those days are long gone.

From a commercial standpoint, customers also base their decisions on cost of energy and generally have lower rates than residential customers. However, they will sometimes take into consideration things like bankability. Often these are rooftop installations as well on a large scale, large investments, hospitals, manufacturing facilities putting systems on their roofs. They

want to know that these are reliable and are not going to disrupt their businesses. So bankability is very important. And in all cases, pennies per watt can decide whether these customers will build or not.

MR. MARTYN: All right. Thank you.

We have -- yes, we have heard several assertions that the United States is currently experiencing a shortage of solar cells and modules and that prices have stopped falling and may even be increasing. Can you point to any publicly available data that would support those assertions?

MR. RYNAR: Import stats shows that imports are only half of what they were at the same time last year. As a result, GTM data shows increase in pricing of both cells and modules in Q3 of this year over the last few quarters. GTM Research data shows average sales price in the United States has climbed almost 16 percent from Q4 of last year to current times. In fact, by our calculations, the aggregate national price for a solar module at the end of 2016 or Q4 of '16 at

39 cents aggregate. This time currently that is around 45 cents.

As I stated earlier, the real impact can be seen in the two projects that I mentioned, two 100 megawatt projects that are on the verge of not being built because of that increased cost.

MR. MARTYN: All right. Thank you.

Is there anything else we should be looking at or do you think that's the very best data that we could consult?

MR. RYNAR: Our industry holds GTM Research up in extremely high, high regards.

MR. STEFF: Just a quick follow-on to that.

MR. MARTYN: Oh, sure.

MR. STEFF: It was alluded to earlier that China was still the second largest source of solar modules in 2016. However, in 2017, based on the current data that we have access to, Chinese imports were down dramatically to only 107 million. Other markets were also significantly less compared to last year -- Malaysia, Mexico, Singapore, Thailand

to some extent. What factors can be attributed to this trend?

MR. CREAMER: On the utility-scale side, I'm going to talk to you a little bit about -- call it the development wave, if you will. An industry that was incentivized by tax credits in 2015, we stopped and we faced a cliff date mid of 2016. Everyone developed up to that 2016 cliff date. Now once we got those tax credits assembled in 2015, you had this second wave of development coming right up behind it. And so what I think you're seeing in 2017, and to the point of Michael, in 2018, there is a little bit of a lull. It's because all that front-end development work when the investment wasn't being put due to the uncertainty of the tax credits being extended, really that effort ramped up the first part of 2016 when we had our tax credits extended in December of 2015, I think that's where you're seeing the lower volumes coming into place.

MR. O'SULLIVAN: I think the term we use is a lot of demand got cannibalized forward into 2016 because everybody in '12, '13, and '14 saw that

cliff. And the cliff didn't get relaxed until too late in that process. So the demand that's dropped in '17 and '18 is normal. We've seen that in the wind business two or three times in the last 6 or 8 years where we had a cliff, we had a renewal, we had an extension for 4 years, and we had a giant build in that final year, and there was hardly anything built the following year. So we expected that.

The only difference that happened this calendar year that we're about to finish is people didn't get fired for missing that cliff. Usually, you get fired for missing the cliff because you lose the tax credit entirely. With the extension that happened, it was too late to save certain poorly designed projects, but it did allow some projects to roll over into '17 and still get done. People just didn't get, figuratively speaking, taken out.

MR. MARTYN: All right. Note that Section 203(e)(4) of the statute requires that if we impose a quantitative restriction it be not less than the average quantity or value of the article entered in the United States in the most recent 3 years that

are representative of imports of such articles.

Now, again recognizing that you do not advocate a quantitative restriction, if we were to adopt one, what period would you suggest that we use to ensure compliance with Section 203(e)(4)?

MR. NICELY: We obviously would recommend that you not make an adjustment for any of the most recent period. You would use 2014 through 2016 because, notwithstanding what Mike just mentioned, the fact is that that is your best estimate of what's going to be happening in the future. Yes, there are times when there are peaks, but they've gone down again. And so looking at -- including 2016 in the calculation is the most, would be the most appropriate if you're inclined to use a 3-year period.

But we would point out that, again, as part of our license fee proposal, a quota level that makes sure that we are not causing some demand destruction would be more appropriate in order to avoid the kinds of deployment declines and the kind of job losses that it would cause.

MR. CREAMER: I'd maybe just add to that that there is that development cycle that I talked about, that wave that we're all jumping on. If you look at the history of sPower, I founded the company in 2012. The first couple of years, we had about 40 megawatts. As we were developing those projects, some started to come in line. 2014, we did about 150 megawatts. We doubled that in 2015 to 300 megawatts. We doubled it again in 2016 because that development all finished up and projects were able to be brought online. I think that's very similar to what that development that we started in 2016, is that, you know, we were down at 150 megawatts this year. Next year, we'll get about 500 megawatts, and the following year a little over a gigawatt. So it is a reoccurring cycle.

MR. MAGNUS: Just a quick add-on. It does seem odd to be fielding questions about a quantitative approach that not only we don't favor, but the commissioners generally rejected as well. In the last 24 hours, I had occasion to become more familiar with the European Commission's unified

field theory of quantitative relief in safeguard cases and it's actually, it's kind of elegant. What they put in their filing to you is, if you're going to do a quantitative approach, you have a tariff rate quota, you take recent historical shipments and you put those inside the tariff rate quota amount and you don't tax them, and then you put some reasonable tax on what comes in over and above that, so you're hitting with bulging and not what's traditional and historic and presumptively non-injurious. And there you are.

MR. MARTYN: Thank you.

All right. If we were to conclude that increased imports were a substantial cause of serious injury in spite of U.S. AD/CVD measures, would we need to take any further account of those duties in our evaluation of what actions to recommend under Section 203?

UNIDENTIFIED SPEAKER: Rock, paper, scissors?

(Laughter)

MR. NICELY: Are you asking us to cover

material that CCCME and their counsel covered this morning?

MR. MARTYN: I assume that there is a possibility that you take different views.

MR. NICELY: We defer to what counsel for CCCME discussed on that topic.

MR. MARTYN: All right. Thank you.

We have noted that there are many requests that we put in place a product exclusion process. Were we to take up that suggestion, what would SEIA consider would be the standard under which we should exclude a product from a remedy that was otherwise in place?

MR. NICELY: I think we'd have to defer to the folks who have actually asked for those exclusions. That's not a -- we haven't taken a position on that. Obviously, to the extent a product is not available here in the United States, then obviously we think you should be allowing imports of that product. But, again, it's a case-by-case basis and we'd urge you to listen to what you're going to hear this afternoon on those

topics.

MR. MAGNUS: Having been through the product exclusion process during what -- until this one, was our last safeguard case, right, I would personally advise you to find something that's less laborious than that was.

MS. HOPPER: The only other sort of clarification I would say on that is there are product exclusions and then there is a proposal for differentiation between either end users or size of panels, and that is not a position that SEIA supports. We think that the entire industry should be treated similarly and that's, again not to sound like a broken record, but that's one of the benefits of our ILF process. And I think you'll hear that sort of from folks up and down both the supply chain and these different aspects of the market that there is consensus around that as a resolution.

MR. NICELY: I would also add on a slightly different topic, at least in terms of to the extent a remedy is imposed, I urge you to develop a remedy that is nimble enough to be changed

as it goes along, that as new technology is developed, if that technology is unavailable in the United States, then that ought to be made available via imports without restriction.

MR. MARTYN: All right. Do we have any more questions from other folks at the table?

Please, Mr. Gay.

MR. GAY: Could you walk through the cash flow here? Licensing starts to accrue and then what's the timeline look like in order to respond to an ability to utilize funds?

MR. CORNELIUS: You're asking about under the ILF proposal that SEIA has made, about what time could funds collected from the sale of licenses become available to domestic producers entitled to receive them?

MR. GAY: And then there's also a time constant for being able to actually apply the funds and convert it into some manufacturing capacity or some capability here they could use those funds for. So there's two aspects at least: one, gathering enough funds to get to a critical mass -- I'm trying

to make sure I'm able to understand properly --

MR. CORNELIUS: Yes.

MR. GAY: -- what we would do or what could be done, and how much could get done within the 4-year time horizon that's covered.

MR. CORNELIUS: Yes. I will attempt to explain extemporaneously and then will look to some of my colleagues on the economist side of the panel here to help fill in details. And I'm working from memory here, but I believe that in our most recent forecast of collections of ILF revenues based on the schedule and the levels that have been proposed by SEIA, and using installation forecasts consistent with what the petitioners had employed in their prior testimony for the ITC, we forecasted that roughly at least $833 million would be collected in ILF revenues during the course of the next 4 years.

We have recommended a mechanism for the release of those funds from escrow that would allow for those funds to be released as soon as the first -- after the first quarter that they are collected. Importantly, the mechanism that would allow for that

would look to prior years of production as a basis for calculating the percentage share that any given domestic producer receives from that escrow. That represents an improvement of the prior design that SEIA had proposed, which would have otherwise required the collection of current production share data to determine what percentage of the collected revenues would go to the domestic industry.

So we'd recommend a structure that looks to the prior year and cumulative production through that prior year to determine who gets the monies collected in any given quarter, that those monies be retransmitted to the entities that are due to receive them quickly so that capital can be formed. And based on that convention, we'd expect that nearly all of the monies that are collected in any given year would be returned to producers in the domestic industry.

Part of what you touched on also explains our view of why an import license fee scheme can facilitate capital formation for domestic manufacturing more quickly than a tariff. Cash flow

through price support that's provided by a tariff is only received after a product gets manufactured and then sold. Payment is made to a customer -- or payment is made from a customer to that manufacturer. And the supplemental cash flow impact of a tariff then could take at least a year as opposed to 3 months to be able to hit the balance sheets of domestic producers that might be siting facilities here.

And if I might, Mr. Chairman, I recognize that I --

MR. MARTYN: I'm sorry, you're -- I've been very tough on everyone else and in the sake of fairness, I think I need to be equally tough on you folks. Our time for questioning is up, but unfortunately, we could, as I think you imagine from your experience, talk about this almost endlessly, and with a great deal of interest and I'm sure a great deal of enlightenment for us. But we have other folks we need to listen to in the time that's available to us today. So I just want to say thank you very much for your submissions and your

testimony. And we'll now take a 5-minute break so that the next panel can take the table. Thank you.

(Off the record at 3:26 p.m.)

(On the record at 3:32 p.m.)

MR. MARTYN: All right, we are ready if you would like to begin.

MR. SMIRNOW: Great. Thanks. John Smirnow, Smirnow Law, representing the Utility-Scale Solar Coalition. I'm not going to do any direct presentation, but I am available for answering questions. Arthur Haubenstock, 8minutenergy, will start out -- or let's start with Jon Downey from Southern Current. And you have the handout, his Southern Current handout.

MR. DOWNEY: Thank you. Thank you all for your time and willingness to listen to the industry, today. My name is Jon Downey. I'm President of Southern Current, a residential, commercial, and utility-scale solar developer and contractor based in South Carolina.

As a company who engages in all three market segments of the solar industry, I want to

discuss the fundamental differences between the market segments and how the two products, the 60-cell panels focused on by Suniva and SolarWorld, and 72-cell panels which have seen the bulk of the increase in imports have developed and meet the varied needs.

Sales of solar systems to residential customers is not unlike selling windows or large appliances to them. They typically want good quality, a good warranty, and good aesthetics for a fair price relative to their power bills. 60-cell modules have been developed to meet these needs. They are sized for ease of installation. One installer can safely carry a panel. They are optimized for efficiency given space constraints and constructed with more expensive frames and backing materials to complement home aesthetics. And because energy cost savings is often 12 to 15 cents per kilowatt hour, they can afford to pay more for these more expensive panels and maintain good rates of return. Also important to note is that the panels are typically less than 20 percent of the

entire system cost.

By contrast, commercial and utility-scale markets are completely cost and reliability driven. With revenues now often at 4 cents per kilowatt hour or less, to be financially viable all costs must be constrained. 72-cell panels have developed to fit this need. Larger sizes, different engineering to produce higher voltage ratings with less focus on optimal efficiency, and cheaper framing and backing materials have all produced a product that can serve this highly cost-sensitive market. In this market, panels often approach 40 percent of the total project cost. Any increase in panel prices has dramatic implications for this segment. Pennies matter. As an example, in South Carolina we have just become cost competitive and any cost increases at this point put our $1.4 billion of grid infrastructure investment and over $200 million of wages in jeopardy.

I'd also like to answer one of your questions directly and I know it's already been answered in the last one, but you asked if it's

possible to use a 72-cell model in a residential application. The answer is, yes, just as you heard. But given the difficulty of installation, design challenges, and poor aesthetics, having great commercial success with this strategy is highly unlikely.

To close, I'd like to say that we respect the ITC's finding and believe that SEIA's recommendation is a good solution. However, if you and the President believe that further remedies are necessary, we certainly would hope that the petitioners' failure in the residential segment would not be allowed to undermine the utility and commercial segments, and the products that serve them.

MR. HAUBENSTOCK: Good afternoon. I'm Arthur Haubenstock, Vice President, Policy and Strategy at 8minutenergy Renewables, one of the largest utility-scale solar developers in the United States, and my testimony is supported by the nation's leading utility segment companies.

We fully support SEIA's proposed remedy.

The SEIA remedy offers the President the greatest opportunity for success both for the domestic manufacturing industry, as well as preparing overall U.S. manufacturing and our overall economy with the abundant and affordable solar energy increasingly enjoyed by competing nations. The SEIA remedy also eliminates the very high risk of catastrophic remedy failure with tens of thousands of jobs lost across the country and little or nothing to show for it.

There are two reasons restrictive remedies would only cause harm with respect to the utility segment. First, increases in module cost would simply reduce solar share in the utilities market, as you've heard earlier today. The utility market for the long-term contracts we need to finance and build our projects is inelastic, but the solar share of that market is not. Second, the domestic industry cannot meaningfully meet the utility segment demand at any price. The utility segment must compete head-to-head with other wholesale energy suppliers, as you've heard earlier today. Utilities do not sign more contracts if the price is

lower or less if it is higher, but they have many choices for energy whether it's RPS or whether it's all source requests for offers. If we lose out on our projects, the solar manufacturing industry does not benefit. Only non-solar producers of energy will benefit instead.

The petitioners simply do not have the capacity to provide the utility-scale segment. The utility segment installed more than 10,000 megawatts last year. In contrast, domestic manufacturing capacity for the 72-cell or higher modules that the utility projects require is only 150 megawatts, as you heard earlier. And as petitioners acknowledge, new production of domestic supply of cells and modules would take 2 years. We believe, after checking with equipment suppliers, it would take far longer.

We ask that the TPSC recommend the SEIA remedy to the President. And since import restrictions applied to the utility segment would only produce harm, we respectfully request that if the TPSC recommends restrictive remedies that they

exclude the 72-cell or higher modules dedicated for utility segment use based on the actual use provision of U.S. Customs law. Thank you.

MR. MARTYN: Thank you.

MR. BELUR: Good afternoon. I'm Raghu Belur, Co-Founder and Chief Product Officer for Enphase Energy. Enphase is a leading producer of solar inverters, called microinverters, a sample of which I have here in my hand. There are no cells, solar cells in a microinverter.

We are based out of California, in Petaluma, where we employ more than 200 people in the U.S. facility, including engineers, analysts, sales people, and other workers. I am here today on behalf of Enphase to urge the Trade Policy Staff Committee to recommend that the President exclude from any remedies imposed as a result of this investigation microinverters that enter the United States as part of an integrated AC module. And I have a sample of that as well here.

As you may know, microinverters are highly intelligent, power electronics devices that convert

DC current generated by a solar panel to alternating current that powers homes and businesses. Enphase microinverters represent American innovation at its best, as illustrated by the fact that we have more than 70 granted patents, 300 of them filed worldwide, to develop this product. Enphase systems are used in about 25 percent of all residential installations in the U.S.

Recently, Enphase has collaborated with leading solar module manufacturers to develop products that combine its state-of-the-art microinverter with the solar panels to create a single integrated AC module. These integrated products are more efficient, more reliable, easier to install and service than non-integrated products.

To help you better understand Enphase's products, I have brought a sample of the AC module. Imagine this as a mock-up of a module, and this microinverter is simply attached to the back of it. And that brings about the ease of installation, supply chain efficiencies, et cetera. It's a very natural progression where we see further improvement

in industry products. This microinverter, which doesn't have any solar cells in it, just electronics that's fastened to the back of the solar panel.

Importantly, Enphase's microinverters do not contain solar cells. Therefore, they fall outside the scope of the ITC's injury finding. However, I am concerned that if the President imposes remedies on integrated AC modules, such remedies will subject American microinverters to the very remedies aimed towards protecting the domestic solar industry. Such a result would not serve to prevent all remedied injury incurred by the domestic solar industry, but rather significantly stifle innovation and inflict serious economic and social costs on Enphase and its workers here in the United States.

To prevent such an outcome, the TPSC should recommend that the President establish a process whereby remedies are imposed on only the solar module portion of the integrated AC module and not the attached microinverter. To facilitate such a process, the TPSC could recommend that the U.S.

Customs and Border Protection instruct importers to separately report modules and their microinverters upon entry into the United States. As explained in our written comments, CBP has experience implementing similar procedures in other cases such as the anti-dumping proceedings involving DRAM, or dynamic random access memory semiconductors, from Korea. It was done in the past.

Alternatively, if the TPSC prefers not to recommend that importers report modules and their attached microinverter separately upon entry, it should recommend that the President establish a lower duty for integrated modules than for non-integrated modules. The difference between these duties should correspond to the general price differential between the integrated AC module product and the non-integrated module.

By following these recommendations, the President would ensure that the remedies established as a result of this investigation do not inflict significant economic and social cost on the U.S. microinverter industry and its workers. Please

ensure that we are not collateral damage here. Thank you.

MR. MARTYN: Thank you.

MR. FLORES: Good afternoon. I am Archie Flores. I am the U.S. GM of LONGi Solar. LONGi Solar is the largest pure-play solar company in the world in terms of market value and monocrystalline capacity. So I am here today on behalf of LONGi to express, first and foremost, our support for free and fair trade, and our opposition to tariffs of any kind including those proposed by the USITC. We hereby urge the Trade Policy Staff Committee to reject the ITC's proposals and develop an alternative set of remedies based on the following two recommendations.

The first recommendation we have is we urge the TPSC to ensure that the remedies it recommends to the President are technology neutral and do not encourage a shift towards the lowest priced imports of cells and modules. In particular, the TPSC should not recommend the imposition of *ad valorem* tariffs which tend to choose winners and

losers by widening the price gap between better performing, higher quality, more reliable products and its inferior counterparts.

Manufacturers of better performing panels often use high quality, semiconductor grade materials and processes to improve product performance. The added cost in corresponding price premium associated with better performing panels is justified by the cost savings realized by customers in a system and energy level. If the price premium for better performing panels exceed these cost savings, then the customers will be inclined to purchase lower priced panels.

Should tariffs be imposed, the TPSC should instead recommend that any tariff on solar cells or modules be applied on a per-watt basis, not a percentage basis. A per-watt tariff structure would maintain the absolute price spread between high and low-priced products and thereby maintain a level playing field in which the winners and losers will be decided through fair competition. Moreover, this approach will provide clarity to industry

participants, conform to the industry-wide standard of pricing solar products on a dollar-per-watt basis, and is easier for Customs to administer.

Our second recommendation, we also urge the TPSC to recommend that the President exclude AC modules from any remedies imposed as a result of this investigation. So as you may know, and as the gentlemen here before me presented, AC modules combine solar modules and microinverters which convert direct current generated by the solar module to alternating current. These integrated products are faster and easier to install, more efficient, more reliable, and easier to service than non-integrated options on the market.

So any remedies on AC modules would cause serious injuries to workers and businesses in the United States that provide components for imported AC modules. This includes upstream businesses such as U.S. producers of microinverters, which rely to a significant degree on sales from major foreign solar module makers. Accordingly, remedies on AC modules would lead to substantial deterioration in foreign

demand for U.S. microinverters and significantly harm the U.S. industry and its workers. Similarly, any remedies on AC modules would also cause serious injury to the upstream businesses such as installers of AC products in the United States.

So by following these two recommendations that we have, the President will significantly reduce the economic and social costs that these remedies will impose on workers and businesses in the United States, while at the same time it protects the domestic industry from inferior solar products that can be detrimental to the country's energy infrastructure. Thank you.

MS. QUALA: Good afternoon. My name is Diana Quala with the law firm of Arent Fox, representing Goal Zero, today. We are seeking an exclusion from any import remedy for certain panels with a peak power of 100 watts or less that are used in off-grid and portable applications. These small portable panels are not available from domestic producers. Compared to the utility-scale panels discussed by the witness before -- the first witness

on this panel, Goal Zero's products are literally at the other end of the solar panel spectrum.

Goal Zero is a U.S. company with 77 employees and the company moto is "power anything anywhere." True to that principle, Goal Zero designs and produces consumer goods that are light, portable, and multifunctional, such as flashlights and portable panels that can charge consumer devices or power packs. They are used off grid for recreational purposes. They are used for emergency situations or to bring power in remote locations where there is no access to the grid. For example, Goal Zero has sent millions of dollars of product to hurricane ravaged areas like Texas, Florida, and Puerto Rico.

I have two samples here today to demonstrate the scale of our products. This is the Torch 250 flashlight. It is a flashlight that incorporates a 1-watt panel. This is the Nomad 7. It is a foldable solar panel that has two panels measuring less than 35 square inches each in a foldable case. Panels like this of 7 watts can

charge a phone, a camera, or a tablet.

There are good reasons to exclude these products. First, Goal Zero knows of no domestic CSPV producer that has the expertise to make the small and customized panels needed by Goal Zero. While traditional 62- and 70-watt panels are produced in high volume on automated lines, the small output panels used by Goal Zero require significant transformation. One panel in the Nomad 7 is roughly the size of a 6 by 6 inch cell used in a panel for a utility-scale project, for example. Because these panels are intended for portable application, each cell must be cut into several pieces, wired and laminated to produce the combination of voltage and watts required for the consumer goods. So, for example, 5 volts is required to charge cell phones. So panels like the Nomad 7 are made of cells that are cut and wired and laminated for 5 volts.

These small off-grid panels are not interchangeable with panels available from domestic sources. It is essentially fair to say that Goal

Zero takes a crystalline, a monocrystalline cell and rebuilds it into a small panel at the voltage needed for the portable application. This processing takes skill, experience, and specialized equipment, and is something that domestic sources do not offer.

Second, the very low volume of Goal Zero's imports of off-grid portable panels is an important reason to exclude them. No one disagrees that the off-grid segment is a very small segment of the U.S. solar market. The Commission has collected data on U.S. shipments, U.S. imports, pricing data that are specific to off-grid portable solar panels, and such data is available in the confidential version of the Commission's report to the President. The data is compelling in illustrating both the very small size of the off-grid market and the fact that such small output panels do not compete with petitioners' panels.

And my last point is that, to their credit, petitioners have not opposed Goal Zero's exclusion request. In their comments to the Commission, petitioners indicated that generally

they do not object to an exclusion for Goal Zero's products and will be working with us on appropriate exclusion language. SolarWorld reiterated that same position in its comments to this Committee.

Goal Zero is indeed available to work on exclusion language that leaves room for product innovation within agreed-upon criteria and in this context we request that the Committee follow the recommendations of Commissioners Johanson and Williamson on product exclusions. The two commissioners recommended and I quote, "The petitioners' consideration of the product exclusions requested by respondents, to which petitioners have not objected and have indicated they will work to draft appropriate product-specific exclusions."

The exclusion requested by Goal Zero is one such unopposed request. The small category of imports that is insignificant in volume and market share should be excluded from any remedy. Thank you and I look forward to any questions.

MS. NOONAN: I'm Nancy Noonan from Arent Fox appearing on behalf of Solatube International,

Inc. We endorse the comments just made on behalf of Goal Zero. We also have a similar product.

Solatube is a U.S. company that, among other products, designs and produces solar-powered attic fans in the United States. We ask that certain 10- to 60-watt round or rectangular panels, which Solatube further manufactures in the U.S. into attic fans, and 1- to 2-watt nightlights and daylight dimmers, as described in exhibit 1 to our comments on the remedy recommendation, be excluded from any import relief.

These products should be excluded from any import relief for three main reasons. First, such small panels are either not produced or not produced in sufficient quantities by the domestic industry. Second, these panels are designed for off-grid use and are not interchangeable with any other CSPV products covered by this proceeding. And, three, including such products in the import restrictions would provide no relief to the domestic producers, thus no economic or social benefits as required by the statute.

In its rebuttal comments, SolarWorld stated that it has reviewed the request of Solatube and has no objection, in general, to excluding those specific products. We ask that this exclusion be included when any safeguard measure takes effect rather than through a subsequent exclusion process, because this exclusion has already been identified and the U.S. industry does not object to it. Thank you.

MR. PATEL: Hi, my name is Deep Patel. I'm the Founder and CEO of GigaWatt, a solar company I started out of my garage in 2006, and I grew it into a small business that employs 25 people. We help customers install solar panels on their rooftops. Over the last 11 years in this industry, sitting at the kitchen table with a lot of my customers, I've learned how they actually decide to purchase solar panels. What I've learned is that homeowners are looking for the best value, an intersection of quality and price.

The petitioners during the hearings at the ITC painted a picture that the cheap imported solar

modules prevented them from succeeding in the marketplace. I argue poor business strategy, execution, and lack of innovation by the petitioners has led to their demise. My argument is backed by evidence. There are importers thriving in the U.S. residential market selling at higher prices than the petitioners of Solar 201.

According to data published by EnergySage, solar electric systems installed on homes with LG or SunPower solar modules are priced up to 16 percent higher compared to SolarWorld, and up to 21 percent higher than a large Chinese importer. Homeowners are choosing LG and SunPower because both companies have developed a high efficiency solar module that generates more watts per square foot and, therefore, customers are paying a premium for their product. LG and SunPower are exceeding because they've innovated and offer a unique product that provides value to a homeowner that they will pay extra for it.

Petitioners of the Solar 201 have failed because they did not focus on a particular niche in

the solar industry. The petitioners suffered from a form of corporate attention deficit order by trying to sell their products into the residential, commercial, and utility sector, rather than mastering one segment of the market and becoming the best at it. For example, First Solar is an American module manufacturer that has focused and become very successful in the utility segment.

I recommend the President does not implement any tariffs or quotas to help two foreign-owned companies without a sound adjustment plan. Finally, I'd like to request that you grant a product exemption for portable panels that are used to charge consumer electronics. We have a business called Sunjack, similar to Goal Zero, that manufacturers 5- to 100-watt portable solar panels, that are very popular in the camping and emergency preparation market. It's just common sense to exclude these because any form of remedy is not relevant to this case, so I highly recommend that you consider that. Thank you for your attention and I look forward to your questions.

MR. WERNER: Thank you for the opportunity to address you today. I'm Tom Werner. I'm the Chief Executive Officer of SunPower.

I'm here to convey three messages. First, SunPower is the second largest American solar company and the largest affected by this safeguard action. We are both a job creator and a world leader in advanced solar technology; yet, we would be disproportionately harmed by the tariffs and quotas some have proposed. And I've handed out a photocell. Don't worry, it has no resale value. So you can take a look at that, please.

Second, products based on SunPower's patented interdigitated back contact, or IBC, technology are fundamentally different than other solar products and should not be subject to the same safeguard measures. Third, we support the sale of import licenses as the best means to help American companies compete.

To elaborate, first, SunPower's global headquarters is in the United States. We run our company from here. We develop our products here and

the U.S. market is the heart of our business. SunPower directly employs more than 1,000 American workers in offices throughout the U.S. In the last 5 years alone, we have paid more than $1 billion in U.S. wages. Our dealer partners support more than 12,000 additional American workers across 40 states, and our supply chain and construction partners employ another 4500. This handout here shows you those statistics.

Moreover, we conduct our research and development in the U.S. Our next generation pilot production lines are located in the U.S. and we've spent more than $200 million on domestic research and development in the last 2 years alone. By contrast, SolarWorld conducts its R&D in Germany. In fact, the only American solar company larger than SunPower or with a commitment to domestic R&D like ours is First Solar. Products based on First Solar's differentiated technology are excluded from this safeguard action. Products based on SunPower's IBC technology should be excluded as well.

The tariffs and quotas proposed by the

petitioners and a few others would jeopardize the viability of our distinctly American company and our technology. Such tariffs would force SunPower to pay duties that are significantly higher than those that Chinese companies would have to pay. As a result, SunPower and its network of dealers alone would likely be forced to eliminate more American jobs than their proposed measure would create.

Second, products based on SunPower's unique copper-plated IBC technology are fundamentally different than other solar products and should be excluded from the safeguard measures. No one else can make IBC products, not the petitioners and not the Chinese. Our one-of-a-kind products cost significantly more to manufacture and they can only be produced in the factories that SunPower owns and controls, factories that use customized equipment, materials, and processes that we invented.

Our products, the most efficient, most reliable solar products available, are the result of more than 30 years of innovation and more than half

a billion dollars in domestic R&D. Because of this, customers ask for SunPower products by name and are willing to pay a substantial premium for them. Customers like Bed, Bath, and Beyond, Campbell's Soup, and the U.S. military depend on our unique, American-designed products and our exclusive intellectual property. For many of these customers, we are the only solar product that meets their needs. Without SunPower, they would be forced out of the solar market. See the second handout.

Third, SunPower strongly supports the sale of import licenses as the most effective way to help American solar companies compete. At best, tariffs and restrictive quotas would incentivize Chinese companies to establish highly automated manufacturing facilities, while crushing growth in innovation. Such measures would eliminate tens of thousands more American jobs than they would create. By contrast, the revenue generated by the sale of import licenses can be distributed through existing Department of Energy programs to provide direct support for domestic product and process innovation

without raising taxes.

Lastly, like everyone in this room, we want America to lead the world in solar and for American companies and American workers to succeed. We just ask for the opportunity to continue to compete without being penalized by unfair and misguided safeguard measures. Thank you for your time.

MR. MARTYN: Thank you.

All right. Mr. Gay from the Department of Energy has some questions for you folks.

MR. GAY: A couple of questions around the differentiation categories here, and let me start with a portable panel. What's the easiest criteria do you think that could be used in a pragmatic way to differentiate a portable panel from other power panels?

MS. QUALA: For Goal Zero, in order for the panel to be portable, it has to be light. So from our perspective, the limitation on the number of watts and on maybe the size of the panel, but primarily the limitation on the number of watts

would be a major criterion, which is why -- and also consistent with the ITC's collection of data for off-grid portable panels of 100 watts or less.

MR. GAY: And above that, is that where the other two groups see the differentiation being made?

MR. PATEL: Yeah, I agree with that, at least 100 watts or lower, anywhere between 5 to 20 volts of output primarily would charge most of these devices that our customers are using.

MS. QUALA: Just to add one more comment. In the area of trade remedies there is a precedent for a limitation of 100 watts or less without other conditions and that would be Canadian has -- Canada has an AD/CDV order on solar products and they have an exclusion for products that are 100 watts or less.

MR. GAY: Let me shift gears then to AC modules. I appreciate the show and tell there. I'm sitting here looking at a separate piece of the inverter that you were able to show us as distinct from the rest of the module. And I'm wondering how

pragmatic a criteria could be where somebody attaches an additional box to a module and therefore the entire module plus the unit doesn't have to pay a duty of some sort.

MR. BELUR: At the end of the day it has to create value. I think there is real value creation when you attach a microinverter to it, where you are doing actual conversion from DC to AC. So I think a criteria that says it's an inverter that's attached to the back of the module does create that clear distinction that says that it's an AC module and hence the categorization that it's an AC module.

MR. GAY: So would the customs inspectors need to be electrical engineers here? How does one actually pragmatically come up with some kind of a criteria for an AC module?

MR. BELUR: That's a good question. I think we could by declaration that it is -- that it's not a DC module and it's an AC module. By declaration we could say there is a microinverter attached to the back of it. You couldn't attach a

big string inverter to the back of it. It has to be a microinverter that's attached to it, and that would be the declaration that it's converting from DC -- a device that's attached to it that's converting from DC to AC. So that's how we would do it, and I think that's how the precedence was when -- in the DRAM case, when it was integrated into a subsystem, my understanding is that that's how it was done, that it was declared as such. So I would declare it as a microinverter that's attached to the back. I think it's very clear what a microinverter does. I think there is no ambiguity about it.

MR. GAY: And does LONGi see it the same way here?

MR. FLORES: Yeah, so we like what LG said in the morning about this product being differentiated and could serve a different market, so we just want -- we see the value of what they bring and so we would either want this to be excluded, at least the value of the box to be excluded from the declared value.

MR. GAY: I guess why don't you just

attach the box once the module arrives in America?

MR. BELUR: If I may? I think a lot of value is lost when that happens. Just the handling of attaching, the process of attaching, the value that it -- of course, it's expensive to do that here. Second, when you do it in the factory, when the attachment occurs in the factory you get a lot of -- you get much higher quality because it's in a much more controlled environment. You can do all the testing on the combined unit. Of course, the units are tested separately, they are put together and they are retested. So I think there is a great degree of value created when it's done in an automated fashion in a factory, as opposed to someone doing that manually once it comes on shore here. It's still prone to errors. So I think there is a lot of value creation that way.

MR. FLORES: I also would like to add that -- so we're aware that AC generators are covered under a different HSC code, so AC gens now have about 2½ percent of tariff or 7 percent? Two and a half percent.

MR. GAY: Okay. Let's shift gears to the 60 versus 72. Help me understand how this differentiation would be robust enough to gaming in some way?

MR. SMIRNOW: Sure. John Smirnow, Smirnow Law. As a prelude to that, a couple of things I want to clean up from earlier today. One thing to recognize, sure, you can use -- interchange 60, 72, but that's not how it works today. In the commercial segment where 72-cell modules are used, in 2016, that was a 1,600 megawatt market. And so our best estimate is that 72-cell was probably 5 to 10 percent of that market. So 72-cell used outside of the utility segment, 100 megawatts, 200 megawatts. In contrast, in the utility segment, 10,000 megawatts, it's all 72. You could use 60, but nobody does. It's all 72. So I think that's an important distinction that needs to be made.

Under the actual use provision, the product has to actually be used in utility application, 1 megawatt or more, as defined by the Commission. So how it would work at the border, and

we have built in several layers and these layers, we've discussed these with Customs to get some ideas of things that would work with them.

One, the importer of record has to provide a certificate saying that this is going to go into the end use, 72-cell. They can physically see 72-cell, so that's the first thing, importer certificate. There is a bonding requirement to protect any loss of, potential loss of tariff revenue if it's not actually used.

We could also have the end user at the time of entry provide a certificate under 28 -- there is a provision under U.S. law for unsworn -- you're making kind of a confirmation, unsworn declaration under threat of perjury. You can say that right at the time. Then the products actually have to physically be installed in the utility project. And then there would have to be an end use certificate that would come back to Customs to close everything out.

Customs does this every day. In our initial comments, we provided a Customs Informed

Compliance Publication for the agricultural sector, so Customs knows how to do this. Customs systems over the last couple of years have also become highly automated, the automated commercial environment system, so these certificates are going to be easy to file. But at the end of the day, you'd have the threat of customs fraud, you'd have the threat of perjury, and you'd have a bond that would protect modules from being used in other non-utility segment applications.

MR. GAY: Mr. Werner, let me ask how much of SunPower's products utilize this kind of a cell that you handed out here?

MR. WERNER: 100 percent of the cells that we make are this. We do make a product that uses other cells and it's probably less than 10 percent. We have not asked for exclusion on that product.

MR. GAY: That's all I had in the way of questions.

MR. MARTYN: Going back to a question that Mr. Gay raised about the 60 versus 72 cells. I noted that Mr. Smirnow, you said that Customs could

look at the module and tell it's 72 versus 60. I think it's been our experience that sometimes the imposition of differential trade remedies leads people to do things that they didn't used to do. In your understanding, how hard would it be for someone to switch a line from making, say, 60-cell attractive rooftop modules to 72-cell attractive rooftop modules?

MR. SMIRNOW: Again, they wouldn't do that because they wouldn't have -- they'd have to be committing customs fraud to do that. They'd have to put their bond at issue. The end user could potentially be under threat of perjury. As far as the ability to shift lines, I think that's a very -- a company-specific issue. I think some companies, it's very easy for them to shift, but other companies, the way their lines are set up, it may not be. But we have a manufacturing expert here too --

MR. WERNER: Yeah, I can -- maybe I could comment. SunPower has made about 2.5 million modules and I've been there the entire time. The

difference is the size of the module. Obviously, you have a bigger module with 72 cells. In the old days, 10 years ago, you'd have two different material handling systems, two different laminators. Nowadays, you have equipment that can adjust to the size. So it would be fair to say modern mod codes can make either 62 -- 60 or 72 cell, either size. If you went back 10 years, you would in fact run them on custom lines.

MR. MARTYN: All right. So I can --

MR. HAUBENSTOCK: One further note. We've done some checking with suppliers of equipment. Due to the tremendous worldwide demand, especially increasing demand in India and China, the availability of the kind of equipment that Mr. Werner was talking about is extremely limited and there are substantial delays in delivering that. And so switching lines would be a difficult thing to do for many suppliers of 60-cell modules and would be difficult for us to be able to finance. In order for us to be able to build -- to finance and build our utility-scale projects, our financers actually

want to know what lines these modules are coming from, want to know what the quality is, want to know that these are bankable. If they are not bankable, we don't get financing, our projects don't get built.

MR. MARTYN: All right. The conclusion that I draw from what I've heard, and please correct me if I'm wrong, is that depending on the equipment, it might be relatively easy to a bit more complex to switch from a 60-cell to a 72-cell production, but at the end of the day, the enforceability of your proposal would rest on the end user certifications, rather than the physical differentiation among the products?

MR. SMIRNOW: Initially, it would be 72 cells, so that would be the first threshold. It would have to be a 72-cell module. And then U.S. Customs law actual use provision, the perjury declaration, the importer certification, bonding, and then a certificate on the back end, when actually used collectively, that's what would protect the product from being diverted into another

segment.

MR. DOWNEY: As a practical matter, and I think John talked to this.

MR. SMIRNOW: Yes.

MR. DOWNEY: I was going to say as a practical matter, the installation of a 72-cell model on a residential rooftop is a real challenge. It's why the size is what it is. It sounds silly, but a single person being able to carry a module onto a rooftop is a significant difference. And the 72-cell modules are about 20 percent bigger, so it is very difficult -- I don't put my guys, a single guy on a 72-cell module ever because it just doesn't work. I don't think we should understate how that simple difference is important.

The other piece as well is just, as you're designing for a residential rooftop, you have different eaves that come in, there are different angles. Strings have to be in line, facing the sun in the same direction. The smaller panels allow you to engineer better. So it's not just the factor of can I put it -- can you do it, yes, but does it make

sense? No, most of the time it does not.

Now if you have an enormous roof somewhere that's totally all in line and there's no shade, okay, then maybe you could do it. But we don't see it.

MR. MARTYN: All right. I think -- any more questions from folks on the panel?

MR. STEFF: Yeah.

MR. MARTYN: Oh, yes. Please.

MR. STEFF: Particularly for SunPower and LONGi, what is your outlook for future U.S. manufacturing assistance from your companies? And feel free, others can jump in, too.

MR. WERNER: Sure. As I mentioned in my prepared comments, we spent a gross amount of $40 million to build the pilot line in San Jose, California. To scale that up to a full-scale solar cell manufacturing in America would take several years because, as I mentioned in my prepared comments, all of the equipment is -- 90 percent of the equipment is custom to SunPower. There's a longer lead time and there's more of the equipment

because the cell is harder to make. So it would take 2 years plus to establish a facility and get it running. Then you would have to ramp it, so call it 3 years before you're at full capacity, and then three-fourths of the time for a tariff. So it would be fair to say that a tariff is highly unlikely to motivate us to build a cell fab in America unless we cross a point over the next few years where the automation offsets the higher cost.

MR. FLORES: LONGi is a global company, so we are always trying to understand our different markets. One thing we noticed -- we remain committed to our customers, so when we are having this discussion with U.S. customers, we try to balance out the cost of building a factory versus what the market can bear in terms of what customers, they're willing -- what prices they can pay for.

So I think in the panel before us they did mention, they did acknowledge that there is a cost difference between panels manufactured in the U.S. versus low-cost countries, so how do you compensate that difference, that delta? And I think the ILF,

the import license fee, structure is a very intriguing approach to probably offset that difference.

MR. STEFF: Thank you.

MR. MARTYN: All right. Thank you.

I don't think we have any more questions. Before we wind up, I will say that the last time that we had a Section 201 remedy with an exclusion process, one of the requirements was that every exclusion be based on physically observable differences among the products. And you folks requesting exclusions may want to think about that as you are thinking further about how to structure all of this.

All right. With that observation --

MS. QUALA: Mr. Chairman?

MR. MARTYN: Yes, please.

MS. QUALA: Is it possible to make one last comment?

MR. MARTYN: Certainly.

MS. QUALA: So since we are the exclusion panel and there was a question about the exclusion

process that was posed to the SEIA panel before us, just to echo the comments of counsel for Solatube, also from Goal Zero's perspective, since we have been on the record regarding our data and our information and our product description, for Goal Zero, we don't believe that an exclusion process after the Presidential proclamation is necessary. Because typically what the government would seek in an exclusion process like we've seen in steel years ago would be what are the product characteristics, what is the basis for exclusion, the U.S. consumption, size of U.S. market, and so on. And specifically for off-grid portable products, that information is already collected and on the record and it's there. It's ready to be used. So that is one point.

And the very last point is, to the extent there is an exclusion process and Goal Zero and Solatube are part of that process, we would respectively ask that any exclusion that would be granted would be effective as of the date of the proclamation and not as of a later date.

MR. MARTYN: Thank you very much.

MR. PATEL: I'd like to make a quick, just a quick comment on that.

MR. MARTYN: Sure.

MR. PATEL: I mean, it's just obvious, right, a portable panel. I mean, there's no way you can fool Customs with like connecting a bunch of portable panels to make it look like a 72 or a 60-cell, like it's just too obvious of a small panel. And I'm an entrepreneur, a business owner, and I need to get back out in the field and start selling more so I can start hiring more people. So coming back here to then define portable panel, it's -- it all adds up. It's all cost and time, so just a consideration.

MR. BELUR: We have a similar request as well. I mean, it's fundamentally different, a DC -- a module that puts out DC versus a module that puts out AC. And this is a fully compliant, safety certified inverter, so it's completely different in the sense that -- from a module that doesn't have a standard DC module.

MR. MARTYN: Thank you very much for all of your comments. And with that, we are I think finished with this panel. I will say we'll take a 5-minute break and be back at 4:27 for the next panel, which is representatives of upstream industries. Thank you.

(Off the record at 4:23 p.m.)

(On the record at 4:27 p.m.)

MR. MARTYN: Can we move to the next panel? All right, thank you. Please, you may begin.

MS. SANDERSON: Mr. Chairman and members of the Trade Policy Staff Committee, thank you for the opportunity to testify this afternoon. My name is Laureen Sanderson and I'm the Chief Communications Officer at 1366 Technologies, a U.S. manufacturer of silicon wafers.

Silicon wafers are the most valuable component of CSPV cells, representing 70 percent of their value. Our proprietary process for manufacturing wafers is globally recognized as some of the most innovative in energy. And after nearly

a decade of development and more than $100 million in R&D, we're moving into commercialization. We hope to scale this technology in the U.S.

Though a non-party to the investigation, we are compelled to weigh in on a matter that will dramatically impact our industry, as well as our long-term U.S. solar manufacturing competitiveness. Our ideal scenario is fair and open trade. But if it's determined that tariffs are required, they should be discounted based on U.S. content throughout the value chain, which is inextricably linked.

We share the very real concern of our fellow panelists. Any remedy focused on only one sector of the U.S. solar industry and at the expense of the entire value chain will cause additional long-term and irreparable damage to the security and sustainability of U.S. manufacturing across the entire sector. It will also relinquish any chance of U.S. manufacturing leadership to foreign entities. It is with this concern that we ask the Trade Policy Staff Committee to consider relief that

will both nurture and leverage our manufacturing strengths to create the foundations of a vibrant, U.S. manufacturing industry.

The U.S. has clear strengths in two vital pieces of this value chain: silicon, which of course is the raw material used in 90 percent of the panels made today; and wafers, the most expensive component of a panel. We have heard throughout this case that to compete in manufacturing, innovation and scale are essential. Our U.S. polysilicon industry is the only sector within the U.S. solar value chain that has both.

The companies represented on this panel are responsible for 80,000 metric tons of silicon refining capacity and they have an enviable technological advantage. Technical advantage is also shared by U.S. wafer manufacturing. The ability to produce silicon wafers directly from molten silicon rather than saw them from an ingot solves a nearly 4-decade old manufacturing challenge and slashes 50 percent off of production cost.

With a level playing field, maintaining a

tariff-free environment for the entire value chain and reaching a comprehensive settlement that eliminates the Chinese punitive damage tariffs on U.S. polysilicon is the best route to support the U.S. solar industry. It will not only eliminate the impediments to U.S. polysilicon growth, a settlement will make funds available for investment in new capacity for the U.S. solar value chain and we support proposed measures that would increase access to this capital for companies willing to invest in new U.S. capacity. However, in the absence of fair trade and any negotiation likely to open the Chinese market to U.S. silicon, and in light of the ITC's recommendations, we must embrace mechanisms that will spur demand for U.S. products without compromising valuable downstream jobs and install activity.

We believe it is possible for the U.S. to design relief that will ensure the livelihood of the entire U.S. solar industry and provide broad social and economic benefit as required by Section 201. Our recommendation is simple: To strengthen our

domestic solar manufacturing, we should promote the use of U.S. manufactured products. Tariffs should be based on the content produced in the U.S. and distributed appropriately across the value chain. This distribution would involve a 30 percent tariff reduction for imported cells and modules using U.S. silicon or U.S. wafers and a 40 percent tariff reduction for U.S. cells and modules made with foreign content.

A distributed tariff structure that creates immediate demand for U.S. silicon and U.S. wafers will support a strong domestic industry. It will offer an incentive for manufacturers to bring the entire supply chain into the country, and it will preserve downstream jobs by reducing tariffs for foreign cell and module manufacturers who use U.S. content. Our biggest concern is that we avoid the well-intentioned mistakes of the past. Tariffs on cells and modules only will not help U.S. manufacturing, especially in this instance when the petitioners are acting in the interest of their foreign creditors and have neither the scale nor the

technological advantage to compete in the market.

MR. MARTYN: All right. Thank you. I'm sorry, but the time is up.

MS. SANDERSON: My time is up.

MR. MARTYN: Thank you.

MR. DEMBOWSKI: Yes, thank you for the opportunity to address the Committee, today. My name is Phil Dembowski. I am the Chief Commercial Officer for Hemlock Semiconductor Corporation, one of the world's leading producers of polycrystalline silicon, the fundamental raw material necessary to produce both solar cells and semiconductors.

Hemlock began production of polysilicon in the United States over 55 years ago and has been at the leading edge of the technological innovation that established the U.S. polysilicon industry as the global leader in high purity polysilicon for solar and semiconductor uses.

Our facility is located in Hemlock, Michigan, a rural community in Central Michigan. We are the home of an advanced manufacturing facility with a highly skilled labor force, employing

thousands of employees and contractor personnel. Unfortunately, our high tech jobs, our exports, and our global technological leadership have suffered significant damage and are now in an extremely vulnerable position because of the reciprocal trade measures between the United States and China, and the potential imposition of additional U.S. measures that may further distort the global market.

The solar value chain starts with polysilicon, which is a highly capital and technology intensive manufacturing process. The United States simply cannot sustain and develop its domestic solar sector and preserve its U.S. semiconductor manufacturing sector without a strong and thriving U.S. polysilicon industry.

In considering potential action under the 201, Hemlock urges the President to take a comprehensive remedy that includes resolution of the anti-dumping and countervailing duty orders between the United States and China. As the Committee is aware, the United States imposed AD/CVD duties on imports of crystalline silicon solar cells and

modules from China and Taiwan beginning in 2012. China responded by imposing significant AD/CVD duties on imports of polysilicon from the United States. As a result, since 2014, U.S. polysilicon producers have been unable to access 80 percent of the global market, 80 percent of the market.

The impact of the Chinese measures has been significant. Hemlock was forced to permanently close and demolish a $1.2 billion, state-of-the-art polysilicon production facility in Tennessee before it ever started, sacrificing significant high tech manufacturing and the U.S. jobs that went with it. Total exports of U.S. polysilicon to China have fallen from over $1 billion in 2011 to less than $200 million last year, while Chinese demand for polysilicon has more than doubled over this same time period. In October, Hemlock announced the loss of another 100 jobs at our facility as the impact of the trade dispute continues.

We continue to encourage the Administration to pursue a comprehensive remedy of the 201 case that includes settlement of both the

U.S. AD/CVD orders against the imports of crystalline silicon solar cells and modules from China and the Chinese AD/CVD measures against imports of polysilicon from the United States. A comprehensive remedy is a perfect case study for the Administration's economic agenda by preserving and expanding U.S. jobs, unleashing significant U.S. export capacity that would also reduce the trade deficit with China, providing incentive for investment in the U.S. solar value chain, and protecting U.S. energy and national security interests.

There is already broad support among the stakeholders in this case for a comprehensive settlement. In testimony and written arguments, the petitioners in this case, the Solar Trade Association, SEIA, and even Chinese suppliers represented by CCCME have pointed out the benefits of a comprehensive settlement that includes resolution of the AD/CVD case. In fact, I think that is every panelist's thought here. It's pretty much universally agreed on the AD/CVD cases being

resolved. A 201 remedy that does not address the vulnerable position of the U.S. polysilicon industry or provide a platform for immediate capital investment in the entire U.S. solar value chain would be a missed opportunity.

As required by the statute, the President must consider the impact of any proposed action on the entire U.S. solar value chain including its fundamental building block, U.S. polysilicon. We urge the President to adopt and implement a comprehensive remedy that includes the settlement of U.S. and Chinese AD/CVD cases in a manner that would restore meaningful market access to China for U.S. polysilicon exports and would distribute duty deposits immediately to restore and strengthen the entire U.S. solar value chain. Thank you.

MS. HUDSON: Good afternoon. My name is Mary Beth Hudson. I am the Vice President of Wacker Polysilicon North America and Site Manager of Wacker's facility in Charleston, Tennessee. I've been with Wacker for over 18 years at our Kentucky and Tennessee sites. I appreciate the opportunity

to testify today.

I am appearing on behalf of Wacker and its nearly 700 employees who depend on our Charleston polysilicon site for their livelihood. The health of our Tennessee facility and our future ability to expand that facility depends on the favorable resolution of all the solar/polysilicon trade cases through a comprehensive settlement. I am also here to give voice to the approximately 1700 employees working at our 8 locations throughout the United States that are affected by the solar and polysilicon trade actions. Our company is proud that we recently celebrated our 50th anniversary operating in the United States.

Our Tennessee facility, which just started production in 2016, represents a $2.5 billion commitment to state-of-the-art, high value added manufacturing here in the United States. This is the largest single private investment ever in the state of Tennessee. And though Wacker had many options, we decided to build our polysilicon plant in the U.S. to continue our involvement in advanced

manufacturing and ensure protection of critical intellectual property.

Wacker envisioned that this polysilicon plant would serve as an important platform for high value U.S. exports to China, which accounts for over 80 percent of global polysilicon demand. Wacker's broader vision is that its investment in Tennessee will be the foundation for a multibillion dollar complex that will support expanded manufacturing jobs including production of related products in years to come. In support of this vision, Wacker announced earlier this year another $150 million investment at our Tennessee site to produce pyrogenic silica, adding an additional 50 jobs.

I am here today to urge the Administration to derive a comprehensive settlement of all the solar/polysilicon trade cases to preserve and grow U.S. manufacturing jobs and promote U.S. exports. The polysilicon industry is the dominant and critically important segment of the U.S. solar manufacturing sector, serving 18 gigawatts of solar in demand, six times as much as the U.S. cell and

panel makers. However, the pending polysilicon and solar trade disputes threaten the nearly 1800 high-skilled U.S. polysilicon jobs and billions of dollars of investment in the polysilicon industry, not to mention the 1100 jobs and billions of dollars in total exports already lost as a result of current actions.

Failure to reach a comprehensive settlement of these trade duties would lead to further deterioration of the U.S. polysilicon industry, jeopardizing our remaining jobs, precious technology, and intellectual property. Once shuttered, a polysilicon manufacturing facility is nearly impossible to restart. Conversely, a comprehensive settlement could be a win-win for the U.S. solar value chain. With restored access to the Chinese market, the U.S. polysilicon industry could add hundreds, if not thousands, of high-skilled jobs to our current work force and immediately export an additional several hundred million dollars' worth of polysilicon.

The ITC commissioners recognize the value

of funding mechanisms to assist the U.S. solar industry. A comprehensive solar/polysilicon settlement of these trade cases facilitated by the lowest possible Section 201 remedies is the only option that would provide substantial and immediate cash infusions for U.S. solar and polysilicon manufacturers to invest in new and innovative capacity. A comprehensive settlement would further the Administration's objectives, while preserving and growing polysilicon and solar jobs, promoting further U.S. polysilicon and solar investment, protecting U.S. intellectual property, reducing the trade deficit with China, and protecting U.S. energy and national security. It has never been more critical than it is right now to reach a comprehensive settlement and restore U.S. polysilicon's access to the Chinese market.

Thank you for your time. On behalf of our 1700 hard-working employees in Tennessee and across the United States, including our offices in Michigan, Ohio, California, Iowa, Kentucky, Pennsylvania, and Georgia, I appreciate your

consideration.

MS. SULLIVAN: Hello, my name is Francine Sullivan. I'm the Vice President of Business Development at REC Silicon. I am here to ask the Administration to take the current opportunity to develop a comprehensive settlement of the solar and polysilicon AD/CVD cases and the Section 201 case to preserve and grow U.S. manufacturing jobs, preserve and grow the U.S. solar industry, and promote U.S. exports.

REC Silicon is a leading producer of polysilicon globally. Currently, our production facilities are located in the United States in Butte, Montana, and Moses Lake, Washington. REC Silicon supplies both the global solar PV and semiconductor industries. In 2010, REC invested $1.7 billion of our own money on a brand new, solar-focused polysilicon production facility in Moses Lake, Washington. This facility employs our energy efficient, state-of-the-art technology. REC has never received any government subsidies for its large-scale investments in the United States.

REC Silicon is a prime example of a high tech, innovative, globally competitive U.S. manufacturer. REC developed its unique and groundbreaking energy efficient technology for the production of solar grade polysilicon here in the United States. REC is one of the lowest cost producers of polysilicon in the world. Solar panels made using REC's U.S.-made polysilicon have the potential to be cheaper and, therefore, ultimately increase solar demand here in the U.S.

REC has maintained its low cost position through R&D, which is now conducted at our new $7 million lab located in Moses Lake, Washington, and through continuous cost reduction. We have achieved our leading position the old fashioned way, that is, through hard work and innovation. The U.S. polysilicon industry is an industry that the U.S. should be proud of and REC is a company that the U.S. should be proud of. We do it better than our international competitors and we do it here in the United States.

However, as my colleagues in the

polysilicon industry have already outlined to you today, the prolonged solar trade war between China and the U.S. has been catastrophic for the U.S. polysilicon industry. REC's future and its continued operation in the U.S. is at risk if this trade war is not resolved. REC has been severely adversely impacted by the solar trade war. We have reduced our work force by 450 jobs and we've reduced our production capacity by 50 percent in Washington. We have been forced to mothball a $150 million project located in Washington State, employing our next generation, energy efficient technology.

Prior to the imposition of trade measures by China, in 2011, REC alone exported $320 million of its U.S.-made production to China. However, in 2016, REC's exports to China had dropped dramatically, to approximately $40 million, because of the solar trade war. To date, the solar trade war and the solar trade measures between China and the U.S. have only benefitted China and have adversely affected U.S. interests. U.S. solar interests, including those both upstream and

downstream in the solar value chain, will continue to be harmed unless there is a global settlement that both restore U.S. polysilicon access to the China market and includes action by the President to ensure substantial and immediate cash infusions for the U.S. solar and polysilicon manufacturers to strengthen their businesses.

A comprehensive settlement would preserve and grow polysilicon and solar jobs. It would protect this U.S. industry that is strategic to semiconductor production, reduce the trade deficit with China, and promote U.S. energy and national security. If a comprehensive settlement is reached, REC would immediately add dozens if not hundreds of jobs to our current work force, continue important solar-focused manufacturing investments here in the U.S. that benefit the whole U.S. solar industry by providing low cost inputs to solar panels, and immediately export well over $100 million of polysilicon to China in the next year.

A comprehensive solar polysilicon settlement is the only option. The Administration

can save the U.S. polysilicon industry, enhance U.S. solar manufacturing, and support the entire solar value chain. Thank you.

MR. MARTYN: Thank you very much, members of the panel. I will say I don't have a lot of questions for you folks. Your submissions have been very clear and thorough. But I will open the floor to my colleagues to see if they have any questions for you.

MR. STEFF: Thank you for your testimony. You mentioned that the Chinese, 80 percent of the global market for your polysilicon is in China. Was that true before the duties were imposed? Roughly what percentage of the global market did the Chinese represent at that time approximately?

MR. DEMBOWSKI: I'll answer. I don't have the exact data. China has always been very strong in the very next step in the value chain, which is ingot wafer. There has been more ingot wafer outside the Chinese area; there still is. But a lot of the ingot wafer outside of China has shut down because it wasn't cost competitive and it wasn't at

scale.

So, for instance, the last ingot wafer producer in the United States really of any supply of a crystalline kind was Panasonic and they shut down their facility earlier this year. So there is really no -- for the next step in polysilicon, all of our product has to essentially be exported for the solar market.

MS. HUDSON: I would just add that also China is the largest market for solar installations so the end use is the largest market in China.

MR. STEFF: And, Francine, you mentioned this in your oral testimony here, what percentage of the Chinese market did your companies represent in China prior to and now?

MR. DEMBOWSKI: Yeah, I can answer. I won't get into company-specifics, but --

MR. STEFF: No.

MR. DEMBOWSKI: -- in 2011, 2012, U.S. -- China was importing a lot of polysilicon. The U.S. represented about 50 percent of Chinese imports. Today, it's less than 5 percent. So they have

swapped trading partners really. They've swapped out the U.S. and they've bought a lot more from Korea and some more from Germany as well, but Korea has been the primary one they swapped out because Korea was imposed very low duties when they did the anti-dumping investigation.

MR. STEFF: Thank you.

One last question. As solar cell production has expanded in some of these other countries, particularly in Southeast Asia, has your industry been able to expand exports to those markets? If not, why not?

MR. DEMBOWSKI: Again, Phil Dembowski. I didn't say that before. Partly because the very next step in the value chain is ingot wafer. So not everybody does every step in the value chain. The very next thing you do with polysilicon is melt it and then you slice wafers. Typically people who make cells don't actually make wafers. They buy the wafers from the wafer producers, like LONGi, who was up here earlier.

Some people have a fully integrated

facility, but there aren't really too many fully integrated facilities outside of China. So the next step, that ingot wafer production, that's when we said there is only 20 percent of the global demand is outside of China.

MS. SULLIVAN: Also, as well as swap trading partners, the Chinese have brought on more domestic capacity; they've used this opportunity. That's why when I say this has benefitted Chinese interests, the domestic producers in China have really benefitted from the competitive protection.

MR. STEFF: Thank you.

MR. GAY: I have one question.

MR. MARTYN: Please.

MR. GAY: Ms. Sanderson, I was interested to pursue a little bit of the thought that you shared with us around duties on wafers that would somehow encompass an offset related to use of silicon from the U.S. Is there a practical way to actually implement that idea?

MS. SANDERSON: There is, and it's a good question, thank you. I'm Laureen Sanderson with

1366. We are a U.S. wafer manufacturer. We're moving into commercialization and we eliminate the ingot step, which is the most wasteful part of the wafer manufacturing process. Our thinking is that we have two areas in the value chain that are strong technically. One also has scale, which is polysilicon.

If we can create a U.S. customer base through wafer manufacturing and allow that polysilicon to funnel to a U.S. manufacturer, and that silicon and those wafers are exported for cell and module manufacturers to use, then they receive a discount at the border. So it's a very simple strategy that can be implemented easily through the cooperation of the manufacturers, so we would need to share with customers quantity, how much polysilicon, how much wafer was being shipped, and then that would be tracked at the border.

Did that answer your question?

MR. GAY: Yes, thank you.

MR. STEFF: I have one more question.

MR. MARTYN: Please. Go ahead.

MR. STEFF: One more question as it relates to enhanced U.S. manufacturing capacity. There is forecasted increased cell production or foreign direct investment in cell production, is that beneficial to your supply chain and your companies?

MR. DEMBOWSKI: Certainly, I mean, if there is more demand, that's beneficial because it requires more polysilicon. It would be nice if there was more ingot wafer production in the U.S. Laureen talks about a wafer process. They have a good wafer process. It's very small scale compared to the U.S. total demand for wafers, right? So unfortunately there isn't a lot of scale for ingot wafer, so it has to go outside the U.S. and then come back. So, yes, if they expanded here, that would be good, but not directly. We still have to export the polysilicon until somebody builds substantial ingot wafer capacity in the U.S.

MS. SULLIVAN: And that would take billions and billions of dollars.

MR. STEFF: Thank you.

MR. PALERMO: May I?

MR. MARTYN: Please.

MR. PALERMO: So we have a lot on the agenda with China these days. If a comprehensive settlement is not possible, at least not in the near term, beyond Ms. Sanderson's suggestions, do you all have any other ideas about what kinds of measures you might like to see us implement?

MR. MARTYN: Or I would add in addition to might like, might least dislike.

MR. DEMBOWSKI: Well, first of all, I mean I think you heard clearly that a comprehensive settlement is very important. And we, quite honestly, we can't answer what happens if we don't get a comprehensive settlement because it essentially would abandon a critical window that we have right now to settle with China. If we lose this window and we don't get a comprehensive remedy, it just means that the U.S. polysilicon continues to ebb away and we'll be left with no energy security, no national security, only a downstream industry that's reliant on foreign-sourced material, and the

opportunity for a strong and vibrant U.S. solar value chain will be lost. The fundamental, high tech foundation on which the entire U.S. solar and semiconductor industries rely on will be destroyed as collateral damage.

And we've given that message before. It's we really feel strongly that the window is now for this comprehensive settlement. And we think it should be an easy ask for the Administration because everybody you've heard from almost says we want it, and so it's not controversial among almost any of the parties. So we're really hopeful the Administration can take that seriously and finally get this done to protect the whole solar value industry and certainly U.S. polysilicon.

MS. SANDERSON: If I may add, a distributed tariff structure would solve that problem. So even if the wafer is not included in the near term, then the ability to send polysilicon to foreign cell and module manufacturers who then receive a discount as a result of using that content coming back satisfies a number of needs. It

satisfies the polysilicon industry; it certainly helps them. It allows U.S. wafer manufacturing to find its footing in the U.S. and to scale, ultimately becoming a source and a customer for the U.S. polysilicon industry. And it also allows downstream activity to continue because you're seeing a reduction of the tariff, the broadly proposed tariff, from using U.S.-sourced content.

MR. DEMBOWSKI: I just need to comment that while that's true and it would help as far as getting the money back, it doesn't increase the pie for polysilicon. It's still 20 percent. Even with a duty, even with a tariff reduction, no one in China is going to be able to afford the 80 or 57 percent duties that we have on polysilicon. So it won't increase the market share or the market availability for polysilicon. It would just mean the people we already sell to get some benefit.

MS. SANDERSON: Unless foreign manufacturers -- I apologize -- are actually incented to set up shop in the U.S., because then you have additional cell and module capacity coming

in that can use the polysilicon, so you're finding another distribution channel.

MS. HUDSON: This is Mary Beth Hudson, Wacker Chemicals. I just wanted to reiterate the statements earlier. This is a critical window. We don't have a plan B. It could be devastating to the polysilicon manufacturing in the U.S.

MS. SULLIVAN: Francine Sullivan, REC. We've heard all day about the complexities of the issues in relation to this case and the downstream. We think that a negotiated settlement is the only way to get this resolved in a way that will benefit U.S. interests.

MR. MARTYN: All right. Thank you very much. That message is loud and clear, and will certainly be in our minds constantly through the coming weeks. Thank you.

(Off the record.)

(On the record.)

MR. MARTYN: I think we are ready, so please begin.

MR. BELINE: Thank you, Mr. Chairman.

Good afternoon. My name is Thomas Beline with the law firm of Cassidy, Levy, Kent. I'm appearing here on behalf of Auxin Solar, Inc. and it's 60 employees in San Jose, California.

Auxin has been a domestic producer of modules since 2008. Auxin produces 72-cell and 60-cell modules in-house and can switch production based on customer needs in under an hour. Auxin was able to withstand closure over the last several years because of these types of production efficiencies, responsible growth, OEM production opportunities in the United States, and the decision to begin exporting to new markets in Asia, Australia, and Europe.

Unfortunately, Auxin is one of only a handful of remaining domestic producers of modules. Let me absolutely clear, Auxin Solar strongly supports a remedy to stem the tide of injurious imports of CSPV products. That said, Auxin Solar is concerned about a remedy that causes harm to it and other non-integrated domestic module manufacturers here in the United States.

Non-integrated producers must acquire cells from another party in order to produce modules here in the United States. While Auxin would prefer to source all of its cells from domestic parties and it has tried to in the past, this has not been possible. Domestic cell producers have never made their cells available in commercial quantities to companies like Auxin Solar. Therefore, Auxin Solar had to begin sourcing imported cells and will continue to do so at least over the near term.

Auxin Solar's margins are entirely dependent upon what it can command in the market for its modules. This price must account for its costs, including the cost for sourcing cells. The imposition of a tariff on cells directly eats into Auxin Solar's margins and that is why Auxin Solar opposes a tariff-based remedy on cells. Likewise, price erosion of domestic solar modules because of surging import volumes of modules can be ruinous to companies like Auxin Solar and that is why Auxin Solar supports a tariff-based remedy on modules.

Auxin requests that the President impose a

TRQ of 5 gigawatts to account for the expectant needs of the current non-integrated domestic producers and then a tariff on imported modules of 30 percent to allow these producers to make a positive adjustment to import competition. This is similar to the same style of remedy that three of the four commissioners have proposed, but it just allows for domestic producers of modules to acquire the cells needed for domestic production.

To administer the TRQ, Auxin requests that the President direct the Secretary of Commerce to develop an import licensing system that would allocate the quota to existing module producers so that foreign-based producers do not consume the entirety of the quota at the expense of domestic production. Auxin also requests the Secretary of Commerce validate that all domestic producers qualifying for import licenses actually be domestic manufacturers. This will avoid screwdriver operations setting up in the United States with the goal of circumventing the remedy and not reinvesting in American manufacturing because they see an end to

the tariffs over the course of time.

These remedies, along with the other adjustments and incentive programs that the petitioners have asked for, will return the United States to its leading role in solar manufacturing. In fact, Auxin has already seen an uptick in demand for its products and has already purchased new production equipment to expand existing capacity.

We thank you for the work you have already done on this important matter and for the opportunity to provide testimony on behalf of Auxin. I'd be happy to answer any questions that you have.

MR. MARTENS: Good afternoon. I am Sam Martens, Commercial Director at Mission Solar Energy. Mission Solar is a proud member of the domestic industry, designing, engineering, and assembling CSPV modules. Our factory, built in 2014, in San Antonio, Texas, employs more than 100 U.S. workers today and has plans to hire additional workers in 2018. But the factory, the livelihoods of our entire work force, and our expansion plans are at serious risk if the remedy proposed by

SolarWorld and Suniva is adopted by the President.

Let me state the obvious just to be sure it is absolutely clear. There is currently no commercial market in the United States for domestically produced cells, period. We import cells to make our modules because companies like Suniva and SolarWorld have not sold and are extremely unlikely ever to sell their cells to us in volume and permit us to compete against them in the module market.

This is evident from the history of these two companies. Suniva originally exported almost its entire cell production to be manufactured into modules overseas and then imported the modules back into the United States as finished products. It never sold its cells to us or any other U.S. module manufacturers in significant quantities. And SolarWorld has exported all of its excess U.S. cell production to its related overseas module manufacturing facilities. They may have told you otherwise today, but given that record, there is absolutely no reason to believe that their practices

will change if the President imposes the remedy these two companies are demanding.

Mission Solar also imports cells because we have learned that as a mid-sized facility it is extremely challenging to keep pace with the evolving cell technology demanded by the U.S. market without economies of scale. That makes us seriously question the likelihood that a wealth of new cell production is going to spring up if the President imposes a tariff rate quota.

I should also note that module manufacturing is more labor intensive than cell manufacturing. Cell manufacturing is more capital intensive and more highly automated. That means that Mission Solar's module manufacturing is providing more employment than would manufacturing the same quantity megawatt value on cells. Mission Solar has made and continues to make significant employment and investment commitments to San Antonio. We have a long-term contractual arrangement that subjects us to monetary penalties if we cannot honor our commitments under that

agreement. Capping cell imports at anything less than 5 gigawatts a year or imposing a tariff on those imports will surely prevent us from being able to produce or sell a sufficient volume of modules to meet those commitments. We would then be compelled to lay off employees and pay monetary penalties. That would be a dreadful waste of valuable capital that we would much rather invest in upgrades, jobs, and further expansion.

The President must do a cost-benefit analysis in deciding what remedy is appropriate for cells. Here, that means he must recognize the devastating effects a ridiculously small cell quota and an outrageous tariff would have on communities like San Antonio workers, consumers, and competition. But he can achieve the appropriate balance if he: (1) establishes a cell quota level that makes sense, namely no less than 5 gigawatts in the first year and increasing each subsequent year; (2) does not impose any tariff on those in-quota quantities; and (3) sets up an allocation system for in-quota cells that ensures that companies like

Mission Solar that have been manufacturing in America for several years will continue to have access to imported cells needed to manufacture and expand our business.

One final point, Suniva wants the President to believe that imposing a safeguard provides a means to punish China. While Mission Solar has never imported cells from China, yet we would be devastated by a global safeguard that blocks our access to cells. A safeguard remedy is not about China. It's about America, our workers, and our ability to continue manufacturing. Thank you.

MR. WOOLF: Good afternoon. I'm Malcolm Woolf with Advanced Energy Economy. I'm here today representing Advanced Energy Buyers Group, which is a business-led coalition of large energy users engaging on policies to expand their opportunities to procure energy that is secure, clean, and affordable. It's been a long day, appreciate your patience and listening to a whole array of stakeholders up and down the supply chain for solar.

But I suggest that there has been a missing voice in this conversation thus far, and that's the downstream customer outside of the solar supply chain and that's what The Advanced Energy Buyers Group represents.

Let me quickly cover who we are, why we care, and why we're concerned about undue tariffs being imposed in this case. Members of The Advanced Energy Buyers Group are among the 71 percent of Fortune 100 companies and 43 percent of Fortune 500 companies that have established renewable energy or sustainability goals. This is part of their corporate ethic. This is what their boards require them and their shareholders require them to do. At one point, this was cutting edge, a leading edge. Now it is just mainstream corporate American behavior.

In 2016, members of The Advanced Energy Buyers Group totaled over $1 trillion in revenues and collectively consumed over 18 terawatt hours of electricity, 11 terawatt hours of which were renewable energy, which is equivalent to the sales

of electricity of the 40th largest state. So there is a lot of renewable energy being consumed by downstream corporate America, which brings me to my main point why we care. Our message is pretty simple, increasing the cost of solar hurts corporate America.

Four basic points. First, corporate America wants solar and other renewables. This is not a new trend, nor is it likely to go away. One of our members, Walmart, noted that they established their renewable energy 100 percent goal back in 2005. So this is not a fad. This is not a political trend. This is the evolution of corporate America.

There was a recent survey of Fortune 500 corporate procurements that was asked the question why are you buying what kind of power you're buying. The four leading answers were energy cost reductions; renewable gas -- renewable energy or greenhouse gas target; investor/customer demand; and price stability. That's what's driving corporate buyers. The final option, the last of all of the

answers given was brand image and appearance. So that is only 8 percent of what's driving this trend, and yet it has hugely moved to renewables.

Which brings me to my second point. As you've heard from others, my members would agree demand is incredibly inelastic. Pennies matter. These are not purchases being driven by state RPS laws. These are being purchases driven based on largely the economics of the products.

According the National Renewable Energy Lab, part of the Department of Energy, voluntary corporate procurement of utility-scale solar accounted at the beginning part of this year for 17 percent of total utility-scale procurement, so corporate procurement is now 17 percent of utility-scale. That's up from 9 percent last year. Just a couple of years ago, 2014, it was 1 percent. So this has quickly evolved into a major driver of voluntary purchasing of solar, and even small price deviations can kill a project. If projects fizzle out, they'll buy something else.

My third point, corporate America can't

buy from U.S. manufacturers. There simply isn't the capacity. You've heard a lot about that already today from others who know more about it, so I won't belabor the point other than to say that unlike typical tariffs where a tariff can help drive demand to U.S. manufacturers, that's simply not the case here.

Final point, what does this mean from a corporate procurement perspective? I think tariffs are going to have at least three options or three results. First, imposition of undue remedies are going to drive some solar projects not to move forward. Cost goes up; they're going to choose to do something else. You've heard about demand destruction. I think it's real. My members have projects in the pipeline that are going to be affected by that next year.

Second, some solar projects are likely to move forward but at a higher price and our members are going to pass the prices down to consumers, so you're going to be paying for it when you go to retailers across the country.

Finally, as you have heard today, the imposition of undue remedies is going to harm the U.S. solar industry, itself, which has a cycle of innovation and driving prices down, which is again good for the U.S. economy.

So in sum, as downstream solar customers, members of The Advanced Energy Buyers Group would be directly and indirectly harmed by increased operating costs due to the imposition of undue remedies and we're concerned about this case. With that, I look forward to any questions.

MR. HEWITT: Thank you. I'm James Hewitt. I'm filling in for Todd Foley on behalf of the American Council on Renewable Energy. ACORE is a national nonprofit organization representing the nation's leading renewable energy developers, manufacturers, financial institutions, corporate end users, utilities, grid technology providers, and many other diverse industries that make up the burgeoning and thriving renewable energy sector.

I'd like to build on some of the points that Malcolm stated, but first, while ACORE supports

measures to promote U.S. solar technology manufacturing, we're deeply concerned about the potential impact of tariffs or other trade restrictive actions on investment and employment in the wider solar sector. Given the potentially substantial negative impacts on any large scale trade restrictive remedy on employment and investment in the U.S. solar industry, we strongly urge the Administration to avoid recommending substantial tariffs or other trade restrictive measures. The best remedy, as we've heard already, would be a negotiation of a trade agreement, especially an agreement with China, that not only avoids tariffs and the international retaliation that would certainly be triggered, but also allows U.S. manufacturers a fair opportunity to compete in China's burgeoning energy market.

If an agreement is not possible, ACORE respectfully urges the President to look to nontariff approaches or lower level tariffs to promote domestic U.S. solar manufacturing without interfering with the fundamental economics and cost

competitiveness of solar power, or endangering investment and job creating in the solar sector.

The petition and the investigation have already had a negative impact on the U.S. solar market. Our member companies, who are many of the same as Malcolm has already mentioned here, and independent market surveys report that solar projects and utility-scale solar power purchase agreements or PPAs are already being delayed or canceled as a result of the pricing uncertainty created by this trade case. Our members are experiencing less investment and fewer solar PPA deals in the second half of 2017 as market players evaluate pricing and supply risks while awaiting signals on the potential outcome of the case itself.

Tariffs at levels recommended by the ITC or those proposed by the petitioners would significantly reduce investment and deployment in the U.S. solar market, hampering an important economic U.S. growth sector. As has been mentioned throughout the day, solar power is the largest source of new electric generation additions in the

U.S. for the last 2 years, with approximately 25.5 billion in capital invested in 2016, and 15 gigawatts of new solar power installed within that year.

Market forecasts before this case emerged projected continued growth in the deployment totaling as much as 64 gigawatts over the next 4 years. The remedies proposed by the petitioners would effectively double the late 2016 prices for CSPV cells, according to the Department of Energy, and would result in more than 40 percent reduction in the forecasted solar deployment between 2018 and 2021, with an estimated revenue loss of 25 billion in new capital investment across the U.S.

The utility-scale solar sector, as has been mentioned, which makes up the largest share of the U.S. solar market, is most at risk for new tariffs because it is the most intensively price competitive part of the marketplace. Of the 15 gigawatts of solar installed in 2016, more than 10 gigawatts was for large utility-scale projects. Given the tight margins of the U.S. wholesale power

markets, the imposition of tariffs would increase the cost of cells and modules at a time of exceptionally low power costs from competing sources of generation, especially natural gas, effectively undermining the competiveness of solar power and threatening a burgeoning source of investment in job creation.

Moreover, tariffs at the levels recommended by the ITC would dramatically harm investment and employment in U.S. technology development, installation, and associated manufacturing industries. Particularly at risk are domestic manufacturing jobs associated with the production of tracking systems, inverters, racking systems, and related solar products. Importantly, data suggests that substantial tariffs in the range recommended by the ITC petitioners will not revive the U.S. CSPV manufacturing market. Import restrictions that increase pricing on imported CSPV cells and modules will not substantially improve the competitiveness of cells and modules produced by the petitioners or any other manufacturers. Instead,

investment in CSPV cells and modules will decrease in favor of other forms of energy such as low cost natural gas. And as CSPV cells and modules pricing becomes less competitive in the U.S. market, demand for solar manufacturing will weaken.

While some analysts suggest that import restrictions could lead to increased investment in domestic CSPV cell manufacturing facilities, it is highly unlikely that sufficient investment in U.S. manufacturing capacity could be made at the scale or within the time frame needed to avoid substantial disruption in the U.S. market. ACORE member companies have indicated that it would take approximately 2 years to complete a siting process, procure the necessary production equipment and build the facilities, at which point only 2 years would remain for any 4-year tier tariff regime. Such an investment --

MR. MARTYN: I'm sorry, your time has finished.

MR. HEWITT: Sure.

MR. MARTYN: All right. With that we will

move on to questions. I will turn to my colleagues first to see if there is anyone on the panel who has questions for this panel. Please, go ahead.

MR. FITZGERALD: I have a question for two of the integrated manufacturers. How did you come to the 5 gigawatt --

UNIDENTIFIED SPEAKER: You might bring the microphone down lower?

MR. FITZGERALD: Sorry about that. Question for the two integrated manufacturers, how did you come about getting to the 5 gigawatt quota for imported cells?

MR. MARTENS: So, first of all, I would like to state that the numbers that were recommended by the ITC commissioners, the 1 gigawatt or less than 1 gigawatt level, we feel is less than current capacity today. So 1 gigawatt would not fulfill the needs of the market as it exists today. We think the numbers mentioned this morning by SolarWorld, the 2 gigawatts, is closer to the accurate number today.

The 5 gigawatt number is accounting for

the 2 gigawatts that exists today and then leaving room for capacity expansion as is currently being undertaken by Mission Solar, and I think Auxin as well, as well as leaving room for new entrance into the module market.

MR. MARTYN: With regard to the number you project for new entrants, is there a basis for that number or is it just, say, an educated guess?

MR. MARTENS: Definitely as in regards to our own projections, we have some degree of visibility around that, but for the new entrants, a lot of that we based on public data from announcements that are made in the press by various parties, as well as figures from GTM Research and other solar related publications.

MR. BELINE: This is Tom Beline from Cassidy, Levy, Kent. I should say that what was remarkable about the 5 gigawatt number was Auxin Solar and Mission got on a phone call not too long ago and just asked what we were going to propose, and both of us said 5 gigawatt just out of what we know of the market. There is some truth to what is

based in that number. It's everything that was said, including our proprietary numbers as to what expansion is.

We were also cognizant of not -- one of our requests is that any tariff rate quota be allocated first to existing domestic producers because the statute basically says do no harm to the domestic industry, right? And knowing that the statute says that, we didn't want to be pigs, and we knew that there would be a need to have both ramp-up for cell producers to come back online if they do, so during that time they'll need some imported cells, as well as, we didn't want to preclude new entrants from coming into the market. There is something to be said for not wanting to be monopolists and so we tried to recognize that balancing.

But we can say for certain that the existing numbers from the International Trade Commission are insufficient to address our existing demand among the group of the existing non-integrated module producers that remain.

MR. STEFF: I'm just trying to get a better sense of your ability to source the cells both domestically and globally in your experience over the last 5, 6 years. You mentioned you had issues getting them sourced domestically. Can you expand on that? And also do you experience issues sourcing from integrated companies? I'm just trying to get a sense who are you getting the cells from and are they supplying solely to you or do you just kind of get what's left over sometimes? I'm just trying to get a better sense of your industry.

MR. BELINE: Sure. Tom Beline of Cassidy, Levy, Kent on behalf of Auxin. So the first part of your question was about my statement regarding the inability to source from domestic suppliers. In recent history, very recent history, last 3 years there was an ongoing discussion between Auxin and one of the domestic producers here to have that domestic producer supply to Auxin. Basically what had happened there was the can kept getting kicked down the road and before there could ever be a purchase, price has eroded to a degree that there

were closures. And so Auxin had to go elsewhere to fulfill the supply needed to fill existing module orders that they had made relying on domestic supply. Auxin maintains those record emails if you ever wanted to see them. So that's the first answer there, is the big drive couldn't happen.

The other thing is that the ITC, I think, said definitively that looking at the data -- because they asked about emergent market cells, right? And they said there was literally no commercial quantities available over the period of investigation. So Auxin's anecdotal experience is confirmed by the International Trade Commission's data collection.

To your second point, Auxin has suppliers in a couple of countries around the world. We provided the data in our confidential submission to give you some insight as to where those cells were coming from, but I don't believe that Auxin has ever secured 100 percent of that cell supply. These are larger companies that sell to other module producers as well, not only in the United States.

MR. MARTENS: Sam Martens from Mission Solar. Similarly, we have in the past reached out to the U.S. producers of cells; however, were unsuccessful in securing the required volumes to meet our demands. Currently and in the past, we have secured cells from a variety of supplies, some of them are pure-play cell manufacturers, other are integrated plays that have more cell capacity than module capacity, or in the case of some parties they have more cells currently than they require to turn into modules. But similarly to Auxin, we do not rely on single supplies and we definitely do not absorb the entirety of any cell manufacturer's capacity.

MR. STEFF: Thank you. Just a general question for all of the panelists. Are you all in agreement that increased cell manufacturing capacity in the U.S. is vital toward future leadership in the U.S. in the solar industry?

MR. MARTENS: So I'll start with that. Again Sam Martens with Mission Solar. If possible, we would love to be able to source cells

domestically. It would give us more control, we feel, over quality control, better access to material, speed to market, quicker feedback to our vendors. Unfortunately, the market hasn't existed. We would definitely encourage more cell investment in the United States. But I think as mentioned by the previous panelist from SunPower, it would require several years at least for significant cell capacity to come online.

MR. BELINE: For Auxin Solar, the same is true. They would love nothing more than to have a domestic source of cells. It absolutely provides more certainty. It provides clearer sightlines on when you can get the product into inventory and when you can then sell out our module. And it also provides certainty when it comes to bidding out projects.

Many of Auxin Solar's projects are in the university educational space where universities are taking grants to have clean energy basically, and they've been able to do very well in that space. Those grants though run out over time and so the

longer you string along trying to get product in to be able to produce the modules, the more difficult it is to sustain. And so they would love -- that's why they went to domestic suppliers in the first place a couple of years ago. It didn't work out, but if somebody comes back online, they would love to purchase from them.

It's equally true that they are mindful of Sam's experience. Mission Solar used to produce cells in-house. Auxin feels that if the market rebounded in a way they would be able to make investments, if that's the case, they've always thought about doing it, but the market just doesn't sustain that type of investment now. I think that that's a --

MR. WOOLF: Malcolm Woolf with The Advanced Energy Buyers Group. As major U.S. corporate buyers, our members have spent a lot of time trying to figure out how to make projects pencil out and provide long-term price stability for their members. This issue has never come up. I don't know where they would actually be in terms of

domestic sourcing. Just not a conversation I've had with them.

MR. HEWITT: From our perspective at ACORE -- this is James Hewitt -- just the proposed remedies and the petitions would not sufficiently create a market for U.S. cell production.

MR. MARTENS: Just one final comment I would like to add. Again, Sam Martens from Mission Solar. Another key component of our cell sourcing is of course access to a variety and leading edge technologies. I think it was mentioned as well by some panel that there are particularly high requirements particularly in the residential rooftop markets, where having a high power, high quality product is essential. Having only one or two domestic suppliers obviously would limit our ability to source the highest technology or the right technology to fit with our module manufacturing strategy.

MR. MARTYN: All right. Any more questions? Then I think that means that we are finished with this panel and I think that means also

we are finished with this day. Before I go on to a very small number of closing comments, I would like to observe that as many of you know this is the first time we have done a hearing like this for Section 201. I spent the last 3 weeks thinking of all of the things that could go wrong with this hearing. To my knowledge, none of them have.

Now to the extent that that has happened or that I am unaware of things that have been artfully covered up, that is because of heroic efforts by our staff, Gwendolyn Diggs, Karah Fissel, Sandy McKinzy, Yvonne Jamison, and my colleagues in this effort, Joe Loveless and Dax Terrill, who is sitting to my left, who have done an excellent job making all of this happen.

I also have some thanks for all of you who have cooperated with some things that have had change very rapidly over the course of this process. Now having said that, I would also like to thank all of you for your submissions which have been very informative and helped us to wrap our heads around what's going on here. Your testimony and your

answers to questions today, we will keep all of this in mind in the coming weeks as we debate what recommendation to make to the President.

And so with those thanks and also to my colleagues on the panel today from the TPSC, we can close this session. Thank you.

(Whereupon, at 5:34 p.m., the meeting adjourned.)

C E R T I F I C A T E

This is to certify that the attached proceedings in the matter of:

PUBLIC HEARING ABOUT THE ADMINISTRATION'S ACTION FOLLOWING A DETERMINATION OF IMPORT INJURY WITH REGARD TO CERTAIN CRYSTALLINE SILICON PHOTOVOLTAIC CELLS

December 6, 2017

Washington, D.C.

were held as herein appears, and that this is the original transcription thereof for the files of the Office of the United States Trade Representative.

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Dominico Quattrociocchi

Official Reporter