UNITED STATES
INTERNATIONAL TRADE COMMISSION

In the Matter of:	)	
	)	Investigation Nos.
CRYSTALLINE SILICON	)	701-TA-481 and 731-TA-1190
PHOTOVOLTAIC CELLS AND	)	(Preliminary)
MODULES FROM CHINA	)	

REVISED AND CORRECTED COPY

Pages: 1 through 260

Place: Washington, D.C.

Date: November 8, 2011

HERITAGE REPORTING CORPORATION
Official Reporters
1220 L Street, N.W., Suite 600
Washington, D.C. 20005
(202) 628-4888
contracts@hrccourtreporters.com

THE UNITED STATES INTERNATIONAL TRADE COMMISSION

In the Matter of:	)	
	)	Investigation Nos.
CRYSTALLINE SILICON	)	701-TA-481 and 731-TA-1190
PHOTOVOLTAIC CELLS AND	)	(Preliminary)
MODULES FROM CHINA	)	

Tuesday,
November 8, 2011

Room No. 101
U.S. International
Trade Commission
500 E Street, S.W.
Washington, D.C.

The hearing commenced, pursuant to notice, at 9:35 a.m., before the United States International Trade Commission.

APPEARANCES:

On behalf of the International Trade Commission:

Staff Present:

CATHERINE DEFILIPPO, DIRECTOR OF INVESTIGATIONS
CHRISTOPHER CASSISE, INVESTIGATOR
ANDREW DAVID, INTERNATIONAL TRADE ANALYST
NANNETTE CHRIST, ECONOMIST
SAMANTHA WARRINGTON, ECONOMIST
CHARLES YOST, ACCOUNTANT/AUDITOR
MARK REES, ATTORNEY
JAMES MCCLURE, SUPERVISORY INVESTIGATOR
WILLIAM R. BISHOP, HEARINGS AND MEETINGS COORDINATOR
SHARON BELLAMY, HEARINGS AND MEETINGS ASSISTANT

APPEARANCES: (Cont'd)

In Support of the Imposition of Antidumping and Countervailing Duty Orders:

On behalf of SolarWorld Industries America Inc.:

GORDON BRINSER, President, SolarWorld Industries America Inc.
KEVIN KILKELLY, President and Sales Manager, SolarWorld Industries America, LLC
SETH T. KAPLAN, Principal, Capital Trade, Inc.

TIMOTHY C. BRIGHTBILL, Esquire
ROBERT E. DEFRANCESCO, III, Esquire
ADAM H. GORDON, Esquire
Wiley Rein
Washington, D.C.

In Opposition to the Imposition of Antidumping and Countervailing Duty Orders:

On behalf of The Chinese Chamber of Commerce for Import and Export of Machinery and Electronic Products and its respective members:

ROGER EFIRD, Managing Director, Suntech America
ROBERT PETRINA, Managing Director, Yingli Green Energy Americas, Inc.
THOMAS YOUNG, Senior Director of Investor Relations, Trina Solar Limited
ALAN KING, Vice President of Sales, Canadian Solar (USA) Inc.
SHELDON KIMBER, Chief Operating Officer, Recurrent Energy
KENNETH R. BUTTON, Senior Vice President, Economic Consulting Services, LLC

NEIL R. ELLIS, Esquire
RICHARD L.A. WEINER, Esquire
BRENDA A. JACOBS, Esquire
RAJIB PAL, Esquire
JILL CAIAZZO, Esquire
Sidley Austin
Washington, D.C.

APPEARANCES: (Cont'd)

On behalf of Sun Edison, LLC:

KENNETH H. HANNAH, President, Solar Materials, MEMC Electronic Materials, Inc.
BRADLEY D. KOHN, Senior Vice President and General Counsel, MEMC Electronic Materials, Inc.
KEVIN S. LAPIDUS, Senior Vice President and General Counsel, Sun Edison, LLC

MATTHEW R. NICELY, Esquire
DAVID S. CHRISTY, Esquire
Thompson Hine LLP
Washington, D.C.

On behalf of Suntech Power Holdings Co., Ltd. ("Suntech") and its wholly owned affiliates:

JEFFREY C. LOWE, Esquire
Mayer Brown LLP
Washington, D.C.

On behalf of Trina Solar (US) Inc. ("Trina Solar"):

JOHN M. GURLEY, Esquire
Arent Fox LLP
Washington, D.C.

On behalf of SolarOne Solutions, Needham, MA:

MOONER H. AZZAM, President and CEO, SolarOne Solutions

I N D E X

P R O C E E D I N G S

(9:35 a.m.)

MS. DEFILIPPO: Good morning, and welcome to the United States International Trade Commission's conference in connection with the preliminary phase of antidumping duty and countervailing duty Investigation No. 701-TA-481 and 731-TA-1190 (Preliminary), concerning imports of Crystalline Silicon Photovoltaic Cells and Modules From China. My name is Catherine DeFilippo, and I am the Director of the Office of Investigations. I will preside at today's conference. Among those present from the Commission staff are, from my far right, Mr. James McClure, the Supervisory Investigator; Christopher Cassise, the Investigator; to my left, Mark Rees, the Attorney Advisor; Nannette Christ, the Economist; Samantha Warrington, Economist; Charles Yost, the Auditor; and Andrew David, the Industry Analyst.

I understand that parties are aware of the time allocations. I would remind speakers not to refer in your remarks to business proprietary information and to speak directly into the microphone. We also ask that you state your name and affiliation for the record before beginning your presentation or answering questions for the benefit of the court

reporter. Speakers will not be sworn in, but are reminded of the applicability of 18 U.S.C. 1001 with regard to false or misleading statements and to the fact that the record of this proceeding may be subject to Court review if there is an appeal. Finally, I ask those in the audience to please silence your cell phones so as not to interrupt the witnesses as they are speaking. Any questions?

(No response.)

MS. DEFILIPPO: Hearing none, we will proceed with the opening statements. Mr. Brightbill, please join us and begin your opening statement when you're ready.

MR. BRIGHTBILL: Thank you very much, and good morning. I am Tim Brightbill, a partner in the international trade practice of Wiley Rein LLP in Washington, D.C., and counsel to SolarWorld Industries America, the Petitioner in this case, and the Coalition for American Solar Manufacturing. We welcome the opportunity to explain today how U.S. manufacturers of crystalline silicon solar cells and modules are materially injured by dumped and subsidized Chinese imports. Even as the staff is compiling questionnaires from U.S. producers, foreign producers and importers, the evidence of material

injury by reason of Chinese imports is already compelling, and indeed overwhelming.

Chinese cell and module producers are dumping their product in the United States at very substantial margins, well in excess of 100 percent. In addition, Chinese cell and module producers benefit from a system of pervasive and illegal subsidies from the Chinese national, provincial and local governments, including, among others, massive cash grants, subsidized raw material inputs, such as polysilicon and aluminum, Chinese state ownership and control of leading producers of polysilicon, which is the single largest input into solar cells, and more than $40 billion in preferential loans and directed credit for Chinese solar producers, including multibillion dollar loans and lines of credit to individual Chinese companies.

With regard to injury, the petitions describe how Chinese producers have moved from negligible levels of solar production to market dominance in just a few short years. About 95 percent of China's solar production is for export, and during all of the period of investigation, Chinese solar imports have targeted and completely overrun the U.S. market. As the ITC's own import data shows, U.S.

imports of solar cells and modules from China rose by more than 350 percent from 2008 to 2010, and Chinese imports through August of 2011 were already far higher than for the entire year of 2010. China's share of the U.S. market has risen from about eight percent in 2008 to 45 percent this year and more than 50 percent in the most recent month. Even for China this kind of tremendous volume increase is remarkable.

Massive Chinese underselling of these import volumes has caused U.S. prices to fall by 40 to 50 percent in the last 12 months and these dumped and subsidized Chinese imports have caused material injury to the U.S. industry. As a result of these Chinese imports, numerous local U.S. producers have been forced to shut down or lay off more than 1,700 workers, and the industry as a whole has suffered tremendous harm in the form of lost production and capacity, as well as financial losses. Today you will hear from two senior officials from Petitioner SolarWorld, a market leader and world-class competitor that has finally decided enough is enough, but the dumping and subsidies taking place today have harmed the entire U.S. industry from large, integrated companies, like SolarWorld, to numerous small and start up module producers.

One other thing to keep in mind, the Chinese industry, backed by its government, has made no secret that it would use dumping and subsidies to take over this market. It's been clear for years, spelled out in China's five year plans and in its industry's own statements. Notably, they want to take the U.S. market at precisely the point where it is poised for strong growth, the point where domestic solar power is today a realistic and affordable energy solution. This should be a booming U.S. industry, adding thousands of jobs. Instead, it is fighting for its very life. In conclusion, we look forward to the Commission conducting thorough investigations of China's unfair trade practices in the solar industry. We request legal relief from these dumped and subsidized imports and enforcement of our trade laws on behalf of the U.S. manufacturing industry, solar manufacturing industry, and its thousands of workers. Thank you very much.

MS. DEFILIPPO: Thank you very much, Mr. Brightbill. We will now have the opening statement on behalf of Respondents, Mr. Richard Weiner from Sidley Austin. Welcome, Mr. Weiner. Please proceed when you're ready.

MR. WEINER: Good morning. My name is

Richard Weiner from Sidley Austin, speaking today on behalf of Respondents and their U.S. suppliers and customers. Until 7:00 p.m. last evening it was quite clear that the scope of this investigation was to be crystalline silicon photovoltaic cells, whether or not assembled into modules, from the Peoples Republic of China. Then, in an unprecedented maneuver, SolarWorld filed its fourth scope revision in 20 days seeking to recast its claims, this time to include all solar modules made in China, even those incorporating crystalline silicon photovoltaic cells from other countries. Petitioner again also changed its definition of the domestic industry.

The Commission has not collected data on the Petitioner's broad, new product scope and has no basis for concluding that there exists a reasonable indication of material injury. Given that these evidentiary inadequacies are of Petitioner's own making, the Commission should make a negative determination on a facts available basis at this preliminary phase. Even without these unfortunate procedural gymnastics, Petitioner's claims lack foundation and threaten to destroy a nascent, yet thriving U.S. solar energy industry. First, Petitioner has asserted that the domestic industry in

this investigation comprises only those companies producing CSPV cells, although yesterday, remarkably, Petitioner has sought to add certain U.S. panel makers to the industry.

Under either industry definition, Petitioner is attempting to exclude thin film producers, such as First Solar and Uni-Solar, from its domestic industry definition. There is no basis for this distinction. Thin film and CSPV cells have the same fundamental characteristics and end uses, are interchangeable and directly compete and have direct price effects on each other. In short, they are like products. Once thin film producers are added to the domestic industry, Petitioner's claims of injury vanish. Second, even Petitioner's claims that imports have injured the domestic industry as it has defined it are without merit. We urge you to review Petitioner's financial filings. SolarWorld said it was flourishing economically from 2008 until the second half of this year.

Third, whatever injury Petitioner may be suffering is not attributable to Respondents. As you will hear today, while Petitioner claims that price is the only factor that drives sales of CSPV cells and modules, that is patently not the case. Nonprice

factors, such as so-called bankability, and the willingness to share risk play a critical role in the selection of suppliers. Moreover, the availability of federal and state incentive programs are important in shaping demand. Petitioner claims to have suffered from a cost price squeeze, but the price of solar cells and modules is inextricably linked to the price of polysilicon, the key raw material used in these products. Polysilicon prices have dropped sharply in recent years, and consequently, so, too, have prices for CSPV cells and modules. To the extent Petitioner is suffering injury, that injury is caused by the company's own poor supply chain management which has locked SolarWorld into undesirable contracts for key inputs, such as polysilicon.

It is undeniable that lower prices for thin film solar panels pressure CSPV panel prices, and thin film has a significant presence in the U.S. market. Further, given the differential in pricing between fossil fuels and solar energy, demand for solar energy, and therefore the pricing of CSPV cells and modules, is driven significantly by government incentives. Regulators set terms that ultimately shape how much a buyer is willing to pay per watt and this effectively caps the price that a buyer is

willing to pay for solar panels used in its projects. Fourth, Petitioner's claims of threat of injury are also without merit. Demand is growing in the U.S. and around the world, including in China and key other emerging markets.

In closing, I would like to remind the Commission that the solar energy industry in the United States comprises many different elements, from silicon makers and machine tool producers to cell and wafer and panel manufacturers to distributors, installers, electricians and technicians. This industry employs more than 100,000 Americans of which SolarWorld represents only a sliver, and absent trade disruption, total U.S. solar jobs are expected to grow. The industry is widely supported by federal and state government policy as it offers enormous promise for combating climate change and reducing dependence on fossil fuels. Petitioner has launched an ill-advised attack, threatening the foundation of an entire U.S. industry. The Commission must not lose sight of this bigger picture in its investigation. Thank you.

MS. DEFILIPPO: Thank you very much, Mr. Weiner. We will now proceed to direct testimony of those in support of the imposition of the antidumping

and countervailing duty orders. Mr. Brightbill, if you and your panel would proceed to the table. Welcome, gentlemen. We're happy to have you here today. Please proceed when you're ready to go. Thank you.

MR. BRIGHTBILL: Thank you very much. Tim Brightbill again from Wiley Rein. I thought I would begin things with just a few slides to set the tone before you hear from our industry witnesses this morning. You have these handouts in front of you as well. The ITC, to its credit, has monitored this industry and prepared a report and analysis of this industry even before these cases were filed, and among the data that it compiled is data on import volumes of Chinese cells and modules. Here you see the surge of Chinese imports of cells and modules is truly remarkable. It has continued throughout the period of investigation. There has been no let up whatsoever. Not year-to-date, not in the most recent month of import data.

Viewed in terms of market share, China's share of imports has followed a similar trajectory. The market share gains of this year are particularly troubling, and, as noted, in August, imports from China exceeded imports from all other countries

combined. How has China accomplished this? Well, they've told you. They've done it through dumped and subsidized and even below cost pricing, as you see the chief executive of Suntech stating to the *New York Times* two years ago that to build market share, Suntech is selling solar panels on the American market for less than the cost of materials, assembly and shipping.

Here's something I've never said to the Commission before. This is a picture I took a couple of weeks ago. This is one example of the pricing practices we're talking about. The day after the petitions were filed, I was in Dallas at the Solar Power International 2011 Trade Show. Very impressive, massive trade show for the solar industry put on by SEIA. More than 20,000 people attending altogether. You heard me refer to prices down 40 to 50 percent already this year, and this is a picture that I took in Dallas of a promotional offer selling solar modules at 89 cents per watt for a purchase of one megawatt or above. This is just one example of what is clearly evident at these shows. You'll hear from Mr. Kilkelly later on that. Again, there's no signs of any of these pricing practices letting up. This just gives you an idea of the solar manufacturing supply chain.

A couple of things to note on this.

SolarWorld is the only integrated U.S. producer remaining in the market. I would also just note that the Chinese subsidies are through every step of this process, including polysilicon, where we've presented evidence in the petition that the top 10 polysilicon producers are state owned in China and ranging through the cell and module industry as well. What has been the result of the surge in imports, and the pricing practices and the underselling? Material injury in a variety of forms, production declines, shipment declines, losses, and also shut downs and lay offs for crystalline silicon producers alone. This table documents only public announcements from 2010 and 2011 of either shut downs, lay offs, outsourcings in the industry we're talking about, crystalline silicon production. We also believe the ITC questionnaire data will provide an even more complete picture of the harm that has occurred. All right. With that, I'd like to turn over to our first industry witness, Gordon Brinser, the President of SolarWorld Industries America, Inc.

MR. BRINSER: Thank you, Tim. Good morning. I'm Gordon Brinser, President of SolarWorld Industries America, and on behalf of SolarWorld and its more than

1,100 employees in the United States, I would like to thank the Commission staff for its hard work on this case, and I urge the Commission to find that imports from China have injured our industry and threatened our industry with further injury. SolarWorld is the largest crystalline silicon photovoltaic, or PV, cell and module producer in the United States. We're a completely vertically integrated producer and the only remaining producer in operation in the United States that is vertically integrated. We grow the crystalline silicon, we cut the wafers, convert the wafers into cells and assemble the modules.

Since 2007 we've invested more than half a billion dollars without any federal subsidies to produce right here in the United States. We produce both cells and modules in our Hillsboro, Oregon facility, and until recently we have produced modules in our Camarillo, California facility, which was the oldest crystalline silicon PV manufacturer facility in the country. Camarillo had been producing solar products since the 1970s, which we were forced to shut down in September of this year. We employ more than 1,100 highly-skilled employees in our state-of-the-art facility in jobs ranging from Ph.D.s to operators on the shop floor. We can compete with anybody in the

world in any market that trades fairly under international and U.S. law.

Competing against the Chinese government, however, is a different story. As we have detailed in our subsidy petition, the Chinese government has chosen to make the solar industry one of its key initiatives under its various five year and renewable development plans. As is often the case, the Chinese government identifies a key industry capacity and exports rapidly expand well beyond any demand, and prices artificially decline due to the sale of dumped and illegally subsidized products. The solar industry is no different. From 2009 to 2010, through massive government intervention, the Chinese more than doubled their total capacity from six gigawatts to 16 gigawatts. Incredibly, while total cell capacity increased globally over this period, China's share of that capacity increased from 37 percent to 52 percent. By 2011, China continued to increase its capacity and now possesses well over half of the global capacity.

For this key industry the Chinese government has pumped massive amounts of support through preferential loans, raw material inputs, export financing and insurance and other types of direct capital infusions. These policies, among others,

resulted in a development of massive amounts of excess capacity in China and an almost pathological need to continue to export well beyond any demand. Over 95 percent of China's solar production is destined for export. There simply is not enough demand in China or in other markets to absorb this capacity. As a result, a significant portion of this capacity is focused directly at the U.S. market, harming the U.S. industry and its workers. For the massive amounts of support from the Chinese government, China's solar industry has no production cost advantage to warrant its exceedingly low priced product.

In this industry, labor only counts for approximately 10 percent of the total production costs. Additionally, China has imported a portion of its raw materials that's equivalent from the United States and competes for the same raw material inputs. Consequently, without subsidies from the Chinese government and the dumping practices of its producers, the Chinese would not be able to flood the U.S. market with unfairly priced products, yet that is exactly what has happened. Just as the U.S. market begins to flourish and take solar mainstream, the Chinese have trained their sights on this market and the domestic industry. In the U.S., year over year, total solar

installations have steadily increased.

Solar panels and solar electricity is here to stay. The U.S. market will continue to grow steadily over time. To take advantage of this growth, SolarWorld and other domestic producers have made significant investments to service this market with U.S.-produced product. Given our investments, we should have been able to take advantage of the increase in demand but couldn't because of the surge in unfairly traded Chinese imports. From 2008 to 2010, the Chinese volume of cells and modules surged by 358 percent, far beyond the percentage increase in actual installations and at prices that were well below the industry's. As you saw from the slides, Chinese executives were blunt. They stated that their goal was to price solar panels below even their cost of production to gain market share at any cost, and they've done just that.

In 2011, the flood continues. Imports of cells and modules from China in August alone were nearly as much as Chinese imports for all of 2009. At the same time, as Kevin will tell you, prices have continued to decline. These massive price declines have caused significant harm to businesses and the domestic industry. The Chinese have pushed prices

down so rapidly, so steeply, that we in the domestic industry cannot keep up. The more product we sell, the more money we lose. Shortly after we completed the ramp up of our state-of-the-art facility in Hillsboro, the Chinese surge gained momentum, forcing us to begin curtailing production as we lost an increasing number of cells to Chinese imports. Despite the fact that we have extracted every bit of efficiency in our production processes, made substantial R&D investments, we simply could not reduce the prices enough to keep pace with the dumped and illegally subsidized Chinese prices.

Chinese prices have declined between 40 and 50 percent. Without massive intervention by the Chinese government, this type of collapse in market pricing does not reflect a sustainable, long-term cost reduction. Ultimately, we were forced to shut down our Camarillo facility in September of 2011, laying off more than 186 highly-skilled workers, some of whom have worked at the facility since it opened in 1979. At our Hillsboro facility we've also been forced to reduce our workforce. We will have to idle the facility for three weeks at the end of this year. In the middle of what ought to be a strong market, we're laying off workers, idling and curtailing facilities.

We've been able to hang on longer than many, some of the other domestic producers who, as you saw from the slide, are no longer with us today.

The domestic industry has steadily invested of this market to service the U.S., but it has been decimated by the surge in unfairly traded Chinese imports. There is simply no need for massive volumes of dumped and illegally subsidized Chinese cells and modules into this market. Any claim by the Chinese that they act as responsible suppliers to the U.S. or other global markets is simply not credible. By any measure, the imports of Chinese crystalline silicon cells and modules are injuring the domestic industry and threaten the domestic industry with even further injury. From their executives' statements and by their actions, the Chinese producers' plans are clear.

They intend to dominate the U.S. solar industry at the expense of the domestic industry and our suppliers. The United States is already dependent on foreign sources for our fossil fuel needs. The question is will the United States become dependent on China for our green energy needs? Without the imposition of AD and CVD duties, the answer to this question may very well be yes. As I said at the outset, SolarWorld and our employees can compete with

any company in the world on a fair playing field. We respectively request that the Commission give us the opportunity by imposing AD and CVD duties against the unfairly traded Chinese product. On behalf of SolarWorld and our unemployed and underemployed workers, I thank you for your time today. I'm happy to answer any questions at the end here that you might have. Thank you.

MR. BRIGHTBILL: Thanks, Gordon. Next is Kevin Kilkelly, President and Sales Manager, SolarWorld Industries America.

MR. KILKELLY: Good morning. I'm Kevin Kilkelly, President and Sales Manager for SolarWorld America. In this capacity, I'm responsible for SolarWorld's sales and marketing operations throughout the Americas. As you've heard, the green energy market, and specifically, the solar power market, has been growing steadily. SolarWorld, like other members of the domestic industry, continues to improve our technology, increasing manufacturing efficiencies and lowering costs. Unlike the Chinese producers, however, we do this without massive government intervention. In the years covered by this case, we have substantially increased our output of our solar panels from 175 watts in 2008 to 250 watts last year.

By continuously investing in our business we have been steadily reducing costs to reduce the gap of conventional fossil fuels. Our goal is to continue to increase our wattage, decrease our cost per units, so that prices continue to come down and solar power pricing can be competitive with traditional energy sources. At SolarWorld we have increased our marketing and sales effort to keep pace with the growth. In this expanding market, we, and others, also have made significant investments to expand production of cells and modules in the U.S. using U.S. raw material, U.S. suppliers and U.S. workers. In 2010, SolarWorld purchased significant goods and services in about 45 states.

At least $2 million were spent in 15 of those 45 states and over $86 million was spent in California alone to our supply chain. In this type of market environment, we ought to be doing well. Demand is increasing. We are an efficient, low cost producer with an outstanding workforce, offering leading, high-quality, high-tech products made wholly in the U.S. from pure silicon, and yet we're here today because the Chinese have flooded the market with volumes of unfairly priced product, causing a collapse in pricing. Market prices simply do not seem to apply to

Chinese producers. Rather than allowing increased efficiencies to steadily decrease costs and prices, the Chinese government continues to pump billions of dollars of subsidies into their solar industry to build massive amounts of excess capacity.

Nearly 95 percent of their production capacity is targeted towards export markets, including the United States. Chinese producers' only goal is to push huge volumes of cells and modules into the U.S. and other markets through extremely low prices. The price per watt is the primary driver of customers' purchasing decision. As the surge in Chinese imports accelerated, sometimes almost on a daily basis, I saw lower and lower Chinese price offerings which I knew could simply not reflect parallel decreases in their production costs. As the disparity between the U.S. and unfairly traded Chinese prices grew, we were under increasing pressure to keep dropping our prices as well. As part of my job, I travel around the country and attend various green technology trade shows.

At every event I attend I find Chinese companies are offering product at cut throat prices. From one event to the next, their prices continue to decline, and over time I see more and more Chinese exhibitors and fewer and fewer domestic producers. At

one of the largest shows of this year, Inner Solar, in San Francisco in July, I found a roughly 10:1 ratio of Chinese to domestic producers. On a daily basis I'm continually confronted with the Chinese price offerings from existing customers, potential customers and through direct solicitation by Chinese companies. In general, at the beginning of this year, the Chinese were offering modules at $1.80 per watt. Now they're offering modules as less than $1. In addition, Chinese producers are offering financing for utility scale projects that no U.S. company can match. Typically, Chinese producers will offer developers cut rate financing for projects as long as their modules are used.

Despite the fact that demand increased in the U.S. during this period, prices continue to fall significantly. In less than one year, prices fell between 40 and 50 percent. Such a large drop in prices during this period of strong demand is a direct result of the unfairly priced Chinese imports. Chinese producers and exporters are willing to sell below cost to take more and more market share. More often than not, Chinese prices are so much lower than our prices, we simply lose sales without ever getting a chance to compete. As a consequence of the Chinese

strategy to offer rock bottom and below cost prices, Chinese producers have dramatically increased their U.S. market share at the expense of the domestic industry. By overwhelming the U.S. market, the Chinese have collapsed pricing to the point that it's difficult for domestic producers even to cover their cost, leading many of them to close their doors or outsource production to China.

As Gordon noted, the Chinese strategy to continually push higher volumes of unfairly priced products into the U.S. has had a predictable consequence. Several producers have completely shut down U.S. operations or declared bankruptcy, and more than 1,600 U.S. workers have lost their jobs. As prices continue to plummet, it becomes increasingly difficult to cover costs and to continue to make the necessary investments to increase efficiencies and reduce costs that threaten the long-term viability of this domestic industry. I have no doubt that Chinese producers will continue to take U.S. sales at any cost. These Chinese producers have crippled our emerging industry and stand poised to inflict additional injury in the absence of trade relief.

Finally, on a personal note -- excuse me -- I, and my sales staff, are based in Camarillo. In

September we were forced to shut down the facility. Nearly 200 workers. I've worked with these people every day. I know their families. They've competed competitively and successfully for more than 30 years, and we've done it against any company in the world, but when you go against a country, the stakes are different. Telling these people that they are losing their jobs due to unfair competition from China was very difficult. We are here today because we will not, and do not, want to have the same conversation with our existing and remaining working forces. So on behalf of SolarWorld and the more than 1,100 current employees and the nearly 300 laid off employees, I urge the Commission to find that dumped and subsidized imports of these cells and modules from China are injuring us, the domestic industry and threaten the domestic industry of further injury. Thank you for your time. I'll be here to answer questions. Thank you for your hard work.

MR. BRIGHTBILL: Thanks, Kevin. And now, Seth Kaplan from Capital Trade.

MR. KAPLAN: Good morning. I'm Seth Kaplan, Senior Economic Advisor at Capital Trade, Inc. I will discuss how the actions of the Chinese government has negatively affected the CSPV market, and, in

particular, the injury suffered by the U.S. industry as a direct result of Chinese government industrial policy directed at foreign markets. There has been a cascade of effects resulting from China's decision at the very highest levels of the government to target this market, so if you could think about it as four effects. First, the Chinese government targeted the market explicitly in its most recent five year plan. To carry this out, they then subsidized the industry, consistent with the plan. The subsidization resulted in vast Chinese CSPV overcapacity, which, as we have seen, and which I will discuss, was targeted at foreign markets. Finally, the U.S. foreign market for them, our industry, has been injured by these policies.

The plan was spelled out in the eleventh five year plan to target the solar energy market, and the State Consul's guidelines prioritize low cost, mass development and utilization of renewable energy, and, in particular, the development of high-performance, low cost solar voltaic cells and technologies that use them. That's the plan. How to carry out the plan. As reported in *The New York Times* and documented extensively in the petition in this investigation, there have been many subsidies worth

many billions of dollars to support the Chinese industry. To quote *The New York Times* from a 2009 article, "Since March, Chinese governments at the national, provincial and even local levels have been competing with one another to offer solar companies even more generous subsidies, including free land and cash for research and development."

We've listed some of the subsidies that are documented in the petition, but these include cash grants, input subsidies, including both polysilicon, aluminum, power and water, preferential loads and credits, tax incentives, programs for producers at designated locations, export assistance and export insurance at preferential rates, once again, in the tens of billions of dollars. How has this affected Chinese capacity? Well, unsurprisingly, given these incentives, given government industrial policy and the decision to subsidize, you've seen a very significant increase, a compound annual growth rate of over 100 percent in the Chinese industry since 2007. This is from a Goldman Sachs investment research report.

I've seen other documents which show higher levels, but we have shown the most conservative accounting of the capacity, and its plain how large the increases are and that they're across many firms

within China. The next slide shows that based on the subsidization and this targeting of the industry, that China's CSPV producers are now the world's largest. Of the top five producers, five of them are owned by the Chinese, four of the five, and four of the five have production locations in China. Their increase in output has been in the triple digits. These companies are expanding quickly and massively, using the subsidies provided by the national, and regional and local governments to increase output and to take that output, as we shall see in the next slide, and send it abroad. This is not the case of a Chinese industry that's large, relative to the world, producing for its home market and at times having excess supply.

This chart shows that the Chinese consumption, listed as Chinese demand, is a half a gigawatt, while the exports are 10.7. This is a country where I'm sure your industry analysts and economists on the staff here will see are developing coal-powered energy plants at an incredible pace. Polluting, coal-powered energy plants are being built in China at a very rapid pace, and yet the solar power, clean energy, all of it's being exported. Government industrial policy targeting foreign markets, not serving its own home market. The next

slide shows that the export values to the U.S., in particular, have increased at very high rates, particularly last year and this year. As Tim has discussed earlier, over half the imports into the United States are from China.

Their import penetration levels are close to 50 percent, and the prices have dropped by nearly half all in the last year. The next slide is another graph showing how the increase in Chinese imports has now come to dominate the import market, that they are now the largest importer relative to all other importers combined. The increase has been steady, it has been continuous, and it has been accompanied by declining prices and accompanying as a result of the subsidies in China. The next slide shows that the targeting in the U.S. market isn't accidental or incidental. It is thought through, it is directed, it is purposeful and it is with intent. Only several months ago, Yingli Green Energy Holdings, a single company in China, not speaking for the industry, but just for themselves, said we have become a leading module supplier in North America and we expect to capture nearly 15 percent of the North American market. This is one Chinese firm.

Below cost sales. This is a quote from 2009. The chief executive and founder of China's

largest solar panel manufacturer, Suntech, said that, "to build market share in the United States," that they will sell in the American market for less than the cost of materials, assembly and shipping. What are the effects of the government plan carried out through subsidization affecting excess capacity in China and targeting export markets? What has been the effect of that? This slide shows that in 2010 and 2011, where all these quotes are from, that there's been significant job losses and bankruptcies. Despite the fact of growing consumption in the United States, the turn toward green energy, the economic viability of this industry as a competitor, and nonetheless, jobs in Frederick, an hour ride from where we sit today, have been lost, jobs in New York, jobs in California have all been lost.

Given this oversupply, given that the prices the Chinese are selling, admittedly below their own cost, given the losses and the closures in the United States, what is the plan to get the market in balance? There is no plan to get the market in balance. The plan is to continue to increase capacity in China. That is the industrial policy that has been adopted through subsidies, affected by dumping, as well, in the United States. What do we see? We expect to see

increases in global capacity from China going forward. This, despite the fact that one of their major markets in the EU is now cutting back given the economic conditions in the EU. So now you have increasing additional and excess capacity in China and a decline in one of their other markets. It only makes it more apparent and clearer that their actions in the United States will continue, accelerate and have the same effects unless action is taken by the ITC to impose antidumping and countervailing duties to equalize and make the imports fairly traded.

Finally, as an economist, I just want to go quickly through that the story makes a lot of common sense. It's well-documented, it's consistent with economic theory. Financial subsidies, and production subsidies and construction subsidies lead to excess capacity. The tax incentives have encouraged producers to make investments that would have not have taken place otherwise. That's what subsidies do. There are input and production subsidies that affect the marginal cost of production, so you have the overcapacity from the direct subsidies to build, and now you have incremental marginal cost subsidies from input subsidies and production subsidies that lower the price further, create the overcapacity and

overslide the market, create production and input subsidies to shift out the supplier, and you even have export subsidies that distort sales between home and foreign markets. Which way are they distorted? They're distorted to export. So all these distortive subsidies tend to increase capacity, lower costs and target foreign markets. The consequences are what we've seen today. Severe declines in price and the consequent effects on domestic producers. That concludes my presentation of the effects of Chinese industrial policy on the U.S. industry, and I'd also be happy to answer any questions. Thank you.

MR. BRIGHTBILL: Thanks, Seth. Just to highlight the one additional point back on Slide 12, what Seth was showing was the projected increase in global demand for solar next year, 2012, of about 1.2 gigawatts. Chinese capacity expected to increase by three times that amount in the same year. So I think that's very compelling of what's coming, global demand versus Chinese capacity, for next year, increases in both. All right. With that, we'd like to point out that we brought along a SolarWorld solar panel. We invite you to take a look at that. We also have two solar cells on the table next to that module. With that, we'd like to hold the remainder of our time for

any rebuttal, to the extent it's needed, and we're happy to answer any questions. Thank you.

MS. DEFILIPPO: Thank you very much, Mr. Brightbill, and thank you to the panel, in particular, Mr. Kilkelly and Mr. Brinser. It's always nice to have industry folks come and help us understand the product and the market, so we appreciate you taking the time to come be with us today. I will start staff questions with Mr. Cassise.

MR. CASSISE: Good morning, and I'd like to also thank the witnesses for their testimony. I'd like to begin my questions with a document that I received at about 9:15 this morning, which was the Petitioner's revised scope language which was mentioned by Respondents. If I understand the revision, it is to include within the scope those panels in China that were manufactured using third-party cells. I'd like to ask whether or not that's, you know, a fair assessment of the change, and how you believe that may, or may not, affect the data that we've collected.

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. That is a fair explanation of the clarification that we made, a clarification in response to a question from Commerce staff. The scope always covered both

cells and modules, as demonstrated by page 1 of our petition and just about every other page of our petition. Yes, that is the clarification that we made, and we believe the ITC questionnaire data, the questionnaire is already set up properly to gather that data, both domestically and on the foreign side, so you're gathering the correct data and you're able to make proper assessments using the data that you've already sought from the questionnaires.

MR. CASSISE: Okay. I guess I will continue then with a few points of clarification on your testimony. One of the slides had import data and I believe the source of that was our data web, but in the petition on page 15, footnote 28, you mention a potential anomaly on the import data where some importers may have been reporting number of panels instead of number of cells. Is that a large anomaly that you think makes the import data from the data web unreliable, or is this something that you don't believe is material?

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. We think the data web data is reliable and provides an accurate assessment of import data on cells and modules, so, you know, pending what we see with the questionnaire responses coming in and tallied up, we

think it certainly gives you evidence of the surge of imports and the levels of cells and modules, so we think the anomalies are likely to be minor in nature. Obviously, as the questionnaires come in, if we were to reassess that, we'd let you know right away, but the data is reliable.

MR. CASSISE: Okay. Thank you. Also, in a postconference brief your position on whether or not you believe the Commission should use the data web import data for China, or for nonsubject countries, or the importer questionnaire data.

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. We will do that in our postconference brief.

MR. CASSISE: Another question regarding what constitutes the domestic industry. Mr. Brightbill, you had mentioned that SolarWorld is the only U.S. integrated producer, and then in one of the slides we had a linear chart of the supply chain. At what point in that production chain does a company become a U.S. producer? Now, the way I read the petition, you have included what I called in the questionnaires assemblers those companies that assemble panels or modules from either imported or purchased cells. It seems to me that you included them as U.S. producers in the petition, and then

argued under our related parties provision to exclude a certain number of them who you believed imported from China. I guess my question is is that a fair assessment of the way I read the petition? Do you consider those assemblers U.S. producers, and, if not, you know, where along this chart, what is this, page 6 of the first handout, at what point does a company become a U.S. producer?

MR. BRIGHTBILL: Yes. Tim Brightbill, Wiley Rein. Your assessment is correct. The scope of the petition covers cell producers and module producers, or assemblers. We've tried to highlight a point in the scope where a wafer becomes a cell. We do not cover wafers because those can be used for other purposes. Gordon or Kevin could address that. The point where a PN junction is formed is the point that we've defined in the scope as where a wafer becomes a cell and becomes subject to the case. So you've got cell producers, and then the cell's assembled into modules, or panels, and both of those types of companies, the cell producers and the module assemblers, are part of the domestic industry.

MR. CASSISE: What if a firm takes a downstream product, something that's even more developed than just cells? If I'm not mistaken, there

are what's called laminates in the market which are even more, there's even more production that has been done. If a company imports or purchases laminates and then turns those into modules, would you consider that a U.S. producer?

MR. BRIGHTBILL: Well, first, maybe you could, Gordon, clarify a laminate --

MR. BRINSER: So let me clarify a little bit on the process. As Tim had mentioned that the silicon itself gets transformed into a silicon wafer, that's really the same starting raw material as the semiconductor industry, so wafers that are destined for the solar industry, once you have that PN junction is how we define it. Those cells then can be turned into a laminate. Basically, at that point, they are interconnected. One cell may be interconnective of 60 different cells, as you see there. So each of the little, black cells is an individual cell that has a PN junction that will convert light into electricity.

Those individual cells, in this case, 60 of them are strung together to give the correct wattage and the power requirements out of that module. A laminate is defined, it's a jargon used within the industry where those cells basically are laminated between a piece of glass in the front and, in this

case, a what we call back sheet. That provides an environmentally safe place for those cells to basically perform their job. Those laminates then go through a process in the module assembly and a frame will be attached around the edge of the laminates for structural integrity, handling, mounting mechanisms and everything else. So the process, you know, goes through those various steps. So the module assembler would take an individual cell, assemble it into the matrix, laminate it and put a frame around it and, you know, prepare it for shipment.

MR. CASSISE: I guess, Mr. Brinser, I'll stay with you on this line of questioning, which is how involved is the production process of just assembling the cells into modules or panels? How capital-intensive, labor-intensive is it? Say I wanted to start a module assembly plant next week and I needed to gather capital. How much would it take for me to start that kind of production facility?

MR. BRINSER: So this is Gordon Brinser, SolarWorld. Forgot to do that the first time. For the manufacturing, we describe growing the crystal cell or the crystal itself to the module assembly. The most capital intensive part of that process is the cell manufacturing piece itself. It's the dominant

driver from the capital. If you look at that complete value chain there, the module assembly is, you know, much closer to, you know, around 15 to 20 percent, and we can detail that in our posthearing brief, if you'd like to.

MR. CASSISE: Absolutely. Yeah. No, that would be helpful. So 15 to 20 percent value added the assemblers add to the panel.

MR. BRINSER: Yeah. Not the actual cost, that's the capital cost.

MR. CASSISE: That's just the cost.

MR. BRINSER: That's just the capital outlay for. The actual value added self is roughly in the neighborhood of, you know, 30 percent. Again, that's something that we can detail in the brief because there's a lot of detailed cost information in that.

MR. CASSISE: And, Mr. Brinser, what share of U.S. production say in 2010 is produced by what I have termed U.S. assemblers? Now, I guess if you're the only, well, I guess if you're the only integrated producer does that mean every other company that produces in the U.S. is an assembler?

MR. BRINSER: Gordon Brinser of SolarWorld. I'll get it yet. If you look at the U.S. domestic industry as far as the manufacturers themselves, there

are approximately three companies that have any substantial cell production remaining, and most all of us have done layoffs over the last year because of the subsidized and harmful imports into the industry. We are the only fully vertically integrated, which we grow the crystal, we manufacture the wafer, we produce the photovoltaic cell. There was one other vertical integrated producer who just recently shutdown the first part of their operation.

(Electronic interference.)

MR. CASSISE: -- in production, the production that they outsource is the cell production and not the module assembly. That is the first to go to China.

MR. BRINSER: Yes, this is Gordon Brinser from SolarWorld. Yes, the first thing that does get shut down is the cell production itself. It is highly capital intensive.

As you can see from the slides earlier, with the subsidiaries, this is where the free money, the free subsidies, are flowing into the domestic manufacturers in China. So obviously we are the capital intensive piece.

It is a very highly technical step, the cell manufacturing, but for the most part, because of the

capital intensiveness, is moved to China where these subsidies basically are flowing to the point where it is easy for those individuals to use that subsidized money to set up shop.

MR. CASSISE: Is it fair to say that it is not a labor intensive process?

MR. BRINSER: Gordon Brinser, SolarWorld. Our labor in the U.S. accounts for about 10 percent of our manufacturing costs. So it is not a labor intensive process that we have. Labor is a very small portion of the total cost.

And therefore as we have mentioned, there is no warranted cost advantage because that labor portion is so cheap.

MR. CASSISE: What about regulatory costs, such as environmental or otherwise, that would make it cheaper to go to China and do this?

MR. BRINSER: Gordon Brinser, SolarWorld. The regulatory costs -- obviously in China, there are different standards around environmental policies, and environmental standards, and the manufacturers there do not have to uphold the same level of standards.

And we have seen that, and it has even been documented in the press about some of the atrocities that have occurred in China due to manufacturing in

China, and even most recently with pollution in a community.

And so those standards -- you know, for the U.S., this is an energy supply that is supposed to be a renewable, green energy, supply, and it needs to be manufactured in a location that is close to the end-consumers.

The transportation environmental impact, and the impact of the manufacturers in China with the looser regulatory demands, contradict many of the benefits that you would see.

MR. CASSISE: But to build a new facility, it is not a nuclear plant. Do you need a government permit to build a new plant in the United States?

MR. BRINSER: Gordon Brinser, SolarWorld. We have to go through the same local permitting processes for -- like let's say for the semiconductor industry plant, and whether you are making microprocessors, d-rams.

We would apply for the same air emission permits, and the same water discharge through our waste water treatment, to the city, local city, county, State, permitting processes like anybody else in the United States.

MR. CASSISE: And nothing that would single

out the solar industry then?

MR. BRINSER: No. There is nothing that really singles out the solar industry. We have to abide by all of the regular laws that we as a people in the United States have decided that this is a fair way to manufacture in a global environment, and we abide by those by manufacturing here in the U.S.

MR. CASSISE: Okay. Now, just shifting gears slightly, Mr. Brinser, you had mentioned in your testimony that regardless of where you produced this product, the raw materials are the same, and the largest being the polysilicon.

Mr. Weiner, in his opening statement, had mentioned that SolarWorld may have been involved in some long term supply contracts that affected their cost structure. I wanted to know if you wanted to address that issue and respond to his allegation.

MR. BRINSER: Gordon Brinser from SolarWorld. Polysilicon is a major component in the overall cost structure of producing a module, and we can detail that out.

The polysilicon demand over the last three or four years, it has been under pressure from a supply and demand standpoint. It is the same starting raw material as the semiconductor industry, and we

compete for some of those same raw materials.

We do have long term contracts with those silicon supplies, but what I just state is what we have seen is that the pricing of their product has really decoupled from the cost of the polysilicon.

The subsidizing, and highly subsidized and dumped prices that we are seeing is really decoupled from the polysilicon pricing itself in the market.

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. Just to emphasize on the polysilicon side, too. A large portion of the subsidies in China are directed to creating a whole polysilicon industry, and until recently, China bought its polysilicon from a very limited number of worldwide sources as Gordon can talk about, including U.S. sources.

But they have created an entire industry, a State-owned industry, as we have documented in the petitions.

MR. CASSISE: Okay. And I will ask the Respondent's this afternoon to address the same issue. You know, in a post-conference brief, if you could just give us a little more detail on some of those long term supply contracts for the raw materials.

Mr. Kilkelly, I want to get to you. You had mentioned something interesting, that some of the

Chinese producers had financed their customers for the big projects at low rates.

Does SolarWorld finance or offer customer financing for projects? Is that common in the industry?

MR. KILKELLY: Kevin Kilkelly, SolarWorld Industries America. It is becoming increasingly more and more of a value proposition, as within the last five months.

Five months ago, my answer would be different, but within the last five months, because they are actually trying to specify in their product certain things, and they are saying, look, we will go ahead and finance the preconstruction and some costs for these larger scale projects.

These typically have to be -- the capital has to be raised somewhere else. Traditional bank financing will not -- it is too much capital risk for them. They won't even entertain it, and the risk premiums will be too high for a traditional financing institution to go in and say, look, we will take on that capital risk.

Venture capitalists do not want to entertain that as well. They would rather buy the project when it is actually built at the end of it. So, these

developers are saying, look, we don't have the capital either.

We just entered this industry within the last two years. We know how to build this, but we need additional risk capital earlier in the stage of the construction, and so from there, Chinese funds have been raised to say, look, we will take that capital risk on, but you have to specify our modules.

So it is basically a way to lock in the specification for that.

MR. CASSISE: And part of the deal is exclusivity?

MR. KILKELLY: Exclusivity.

MR. CASSISE: But SolarWorld doesn't offer these kind of -- you don't get involved in these kind of deals, the financing deals?

MR. KILKELLY: We are now within the last 60 days trying to offer these same type for specific projects as well, because it is the only way to lock in your specification. And this is usually in the utility scale, large commercial, segment.

MR. CASSISE: Okay. So this is mostly in the utility sector?

MR. KILKELLY: Large solar farms, yes, that's correct.

MR. CASSISE: Mr. Kaplan.

MR. KAPLAN: Yes. We were talking yesterday about the specifics of this, and we will put some of this in the post-conference brief, but you are talking about loans for financing that is in the tens of millions of dollars that could cover half-a-year.

So that is a pretty sweet deal if you are getting a construction loan for that much money, with that long a lag, and to pay the piper, you have to purchase the product from the person making the loan.

So it is yet another type of subsidy, and another type of mechanism, to try to capture the market share and lock in customers, and exclude domestic producers by offering these types of deals.

MR. CASSISE: And although I will ask them in the afternoon, I am assuming that this is what the Respondents had called a non-price factor of competition, where there were bankability and share of risk of the large products, or the large projects?

MR. KAPLAN: Well, when you loan someone tens of millions of dollars, and forego interest payments for half-a-year, I would be happy to turn that into a price effect for you.

That is not what are traditionally called non-price factors at the ITC, where there is

availability of supply, or reliability of shipment. This is something that you could put a dollar value on, and capitalize it into the per megawatt cost.

So I think that is kind of an odd statement from an ITC practitioner to say that this is a non-price factor.

MR. CASSISE: No, my statement was that is what the Respondent's called it.

MR. KAPLAN: Well, that is what I meant, and not by yourself, but by the Respondent's, and they are calling it -- you know.

MR. KILKELLY: This is Kevin Kilkelly. Just to elaborate one more time. This is predatory in nature, okay? It is a one-two punch, first with the pricing effect, and the second one is with the predatory financing that couples with that to lock in the specification for these larger scale volumes, okay?

It is absolutely predatory in nature. Their cost of capital, no one in the world can touch. No single company can acquire that risk capital at those interest rates, or zero interest rates.

I can go and trade on the open market today, and I can ask what the cost of capital will be for me, and to float 6 to 9 months, and it will be far higher

than what the People's Republic of China will offer those producers.

MR. CASSISE: Okay. Again in a post-conference, if you could provide some more detail, and maybe quantify how many deals that you know have occurred in the marketplace.

And I am under the impression that this is a recent phenomenon that started this year?

MR. KILKELLY: This is Kevin Kilkelly. Yes, you are correct. It has happened within the last five months, and we will into more detail in our post-hearing brief.

MR. KAPLAN: And I think that the Respondent's would have a better idea of how many they have financed themselves. We will provide information about what we know about it, but I think it would be useful for them to provide a complete list of all the financing that they have provided to the United States, with both the value, and the terms, and the quantities of cells involved for the Commission to examine.

MR. CASSISE: I want to shift gears once again, and talk about the thin-film technology. I know in the petition that you have some information about that you believe the differences between the two

products are, and why you believe they are two different industries.

Mr. Brinser, and Mr. Kilkelly, I would appreciate a little more detail on that, and anything that you could provide me now, and in a post-conference, but it is going to be raised.

MR. BRINSER: Gordon Brinser, SolarWorld. So, I mean, I can start with that the raw inputs into making a crystalline module, versus a thin-film product itself, are completely different.

Obviously, our base material is crystalline silicon itself, and all the raw inputs into that are completely separate. Their production facilities, their processes, the equipment, the workforce required to produce a thin-film, versus a crystalline technology, crystalline technology is very capital intensive.

And it has many different processing steps, and completely different than the thin-film technology itself, and I will let Kevin cover some of the end-uses and markets.

MR. KILKELLY: Yes, Kevin Kilkelly. Thin film and crystalline technology, based on the market segments, thin-film is usually deployed based on the strength of that technology, okay?

It is a very low power producing module, and you need a lot of space, a lot of geography, to actually deploy the solar. This is why you do not see thin-film applications mentioned by some of the other folks in residential, light commercial, even commercial, scale.

We do not see thin-film competitors out there in the market in those segments. Seldom do we see them going head-to-head on utility scale RFPs. Usually the thin-film market strategy has been to go into bilateral negotiations directly with the utility.

It is not a reverse auction process where it is there, and they will come in and they will try and deliver a full turn-key. So it is absolutely a different approach to their market, and to where the strength of that technology is actually deployed; rooftop versus large field in the desert, or some other application.

So we look at the technology completely separate. From its core molecular essence, as Gordon had said, that starting material is completely different.

They both produce electricity, but in different forms, and the strengths of each of those technologies are deployed differently, and should be

deployed differently, to benefit the best needs of the consumers.

MR. CASSISE: Mr. Kilkelly, SolarWorld does not produce thin-film technology and thin-film products?

MR. KILKELLY: We do not.

MR. CASSISE: And are you aware of any U.S. producer that produces both?

MR. BRINSER: This is Gordon Brinser, SolarWorld. I am not aware of anybody that produces both. They are really a distinct product.

MR. CASSISE: But if a firm did produce both, they would need two production facilities; one to produce the CV cells, and one to produce the thin-film products? It is not something that you can do on the same production line?

MR. BRINSER: Gordon Brinser, SolarWorld. You are correct. The production of the photovoltaic cell has to be done in a separate facility.

MR. CASSISE: Mr. Kaplan.

MR. KAPLAN: Just to give you a quick summary. Different inputs, different product facilities, machinery, and end-workers. Different characteristics, higher power per square foot; thin-film, lower power.

That goes into different channels, because since these are higher power, they are used in the top of buildings, commercial, residential, light commercial.

The lower power and larger surface areas of the thin-film makes it more suited for a place where there is low land costs, and you have a lot of room to spread out for utilities in the desert.

You need a lot of light to see those. It is my understanding in the southwest that you see those up in the northeast, as well as in the southwest. The channels are different because one is going to a utility, and these cells could go to utilities, but they are also going to the residential and the commercial.

So there is different paths of end use, and they are perceived differently by consumers because of that. If you are living in Boston, and you want to use solar for your house, thin-film is not really much of an option.

So the consumers perceive it differently, and the producers, because they use different production processes, because the films that make the stuff are different, and because the technologies are different, because the inputs are different.

The producers all perceive these as two separate industries. So if you go through the like product factors, I just wanted to summarize it. I think it is pretty clearcut.

MR. CASSISE: No, that is very helpful, except that it does seem like that there may be some overlap in the utility end-use market.

MR. KILKELLY: You are correct, and those utilities and developers, based on the constraint of the land that is actually available for that array, usually dictates which technology will be used.

MR. KAPLAN: What was really interesting after you asked the question was do you recall a time that a utility -- and not commercial or residential, but a utility, where at the final bid process, you are going head-to-head against thin-film, and this is someone who -- you know, this is his job, to sell this to utilities, and at the premier company in the United States, and as the president and head of sales, and why don't you discuss that answer with me.

MR. KILKELLY: That's correct. In solicitations, public solicitations, there is a tender offer, and there is the Respondent's, and 5 to 15 developers would respond. Usually that is shortlisted down to three.

And in my time in the last two years, we have not gone head-to-head with any thin-film company or producer out there, and we have been very successful in competing in the utility sector.

MR. CASSISE: All right. To shift gears again on a different like product, or another product issue. I have been contacted by a number of firms regarding what is called off-the-grid products, stand alone products.

And I guess my initial question would be do you, or does SolarWorld, produce those products here in the United States? Well, first, could you describe the products, and then state whether you produce them here in the U.S.?

MR. BRINSER: Gordon Brinser, SolarWorld. The off-grid product that you are referring to, my assumption would be that it is a much smaller wattage that may be used in remote areas -- you know, South America, Africa -- where they need a panel that maybe produces 20 or 40 watts to power a light or a pump.

And those are typically what is referred to as an off-grid product. So they may have nine cells, as opposed to 60 cells. In the U.S., SolarWorld only produces the module that you see there, are the standard 60 cell grid connected type module. So we do

not produce any off-grid here in the U.S.

MR. KILKELLY: Kevin Kilkelly. I have a followup on that. Off-grids are usually -- there are some type of storage capacity that is needed for that application, and so the power wattage are anywhere from 50 watts to 885, to 130.

So, SolarWorld produces globally from our German factories that off-grid product to be used in that application either in the telecommunications group, to power repeater stations, in the cottage industry, where you may be on an island, and the cost ratio compared to diesel generation power, or solar power, the economics actually work.

Any time you add storage to it, the economics usually do not pencil lens. There is some distinct benefit where you are importing diesel or other types of fossil fuels to generate that power.

So we see the off-grid markets primarily in Latin America, in the Caribbean, the Hawaiian Islands, and in some cottage industries in the U.S. and Canada.

MR. BRINSER: Gordon Brinser, SolarWorld. So when I mentioned or I described an off-grid panel as maybe a small, maybe 40 watt, panel, you can also use the standard product that you see here, the 240 watt, the 250 watt, panel itself as an off-grid

application if that is the required wattage.

So you could have with an off-grid product by definition, because it is not connected to the grid, could be anything from four cells, you know, up to a standard 60 cell module like this.

So it all depends on the end-use application, and as Kevin said, you are focused on a very specific purpose for that, whether it is a pump, light, backup, and so it can take many different forms of power.

MR. CASSISE: So, Mr. Brinser, there is not a set of physical characteristics that automatically make something an off-the-grid panel, wattage, or number of cells? Mr. Kilkelly?

MR. KILKELLY: Kevin Kilkelly. Usually off-grid is required by the voltage. So the solar modules are designed to generate either 12 volts or 24 volts, because that is what is needed to charge a battery.

So in those unique applications that is why the off-grids are there. So you see this in maritime, and you see this in water pumping stations charging a storage source, and that you are going to reuse that power later on in off-hours, or non-peak sun hours if you will.

MR. CASSISE: You know, just out of

curiosity, I am stuck in traffic on I-66, and I see one of the construction signs with solar panels on it. Would that be an off-the-grid application?

MR. KILKELLY: Yes, sir, because the transportation traffic signal area is off-grid. Those signals are still working at nighttime, and so during the day, it is producing the power to generate the signaling, and then also any excess power is charging the battery, and then in evening times as you are commuting home from work, the traffic signals still work. There is no extension cord going to the grid.

MR. CASSISE: Mr. Brinser, the way the scope is defined, those products would be within the scope of the investigation, correct?

MR. BRINSER: That's correct, to the extent that it meets the description of cells, or modules, as we have provided. Now, there is one exclusion that we have built in relating to cells of a certain small size, so long as they are permanently integrated into a consumer good.

For example, a piece of a solar cell in a calculator or a flashlight is excluded from the scope. But otherwise, yes, to the extent that it is a cell or a collection of crystalline silicon cells or modules, it could well be subject to the case, yes.

MR. CASSISE: I mean, would there be circumvention issues if off-the-grid products were excluded from the scope? Just something to think about.

MR. BRIGHTBILL: Tim Brightbill. We could consider that and respond in the brief.

MR. CASSISE: And also, Mr. Brinser, I would like to discuss some of the U.S. tax policies and incentives, and how they affect your business and in any pricing decisions that you make.

I will just go down a list, and you can give us a brief general description of it, and how you think it affects the U.S. market. The solar investment tax credit, and if you could explain how the tax credit works, and if it affects your pricing policies at all?

MR. KILKELLY: The solar investment tax credit, it is a 30 percent Federal level. It is just a tax credit that the end-consumer who purchases a solar system -- and this is Kevin Kilkelly -- can go ahead and take it in that year's tax, or be spread out.

There is different incentives based on the State, too. So you have different incentive programs pushed through the Federal level, and local, and State

utilities all have different types of incentive programs to shift people away from traditional fossil fuels, or to make it somewhat more -- well, the payback sooner from an investment perspective. Could you elaborate more on the question?

MR. CASSISE: Well, a 30 percent tax credit. So if I wanted to put solar panels on my house, the government would reimburse me 30 percent of what I paid you?

MR. KILKELLY: That's correct.

MR. CASSISE: Okay.

MR. KILKELLY: Which goes to all producers, consumers, anyone who -- any consumer who purchases solar would have that.

MR. CASSISE: Now, the --

MR. BRINSER: If I could follow up. This is Gordon Brinser from SolarWorld. So, again, as Kevin was mentioning, this is a demand driven or supplier driven incentive, and it allows, and it provides the consumer the ability to purchase.

And they can use that tax credit for any product, any solar product, whether it is produced in Europe, here in the States, or in China. So, it is unbiased as to the origin of that product, which again it makes solar more appealing to the end-consumer, but

it doesn't drive the pricing.

The pricing has been -- we have seen it decoupled and price has been driven by the dumped and subsidized products.

MR. CASSISE: So it is not like the real estate agent who gives you the price of your monthly mortgage after the home interest deduction? You don't use that to cite prices to your customers?

MR. KILKELLY: That is absolutely correct. This is Kevin Kilkelly. We do not use the investment tax credits in any form or fashion in our pricing strategy.

Our pricing has been to try and get close to the dumping that is occurring, and to Gordon's point, the pricing that is current today, and artificial today, and illegally subsidized today, is absolutely decoupled from efficient cost structures to production.

So, its costs are totally different than what current pricing is today. It is decoupled.

MR. CASSISE: Okay. Mr. Kilkelly, could you describe what the 1603 Treasury Program is, and how that affects the market?

MR. KILKELLY: Kevin Kilkelly. The 1603, we are now talking about a tax grant, versus a tax

credit. It is due to be either renewed or could expire at the end of this year, calendar year, on December 31st. They can immediately take a cash grant instead of a tax credit.

MR. CASSISE: Is this for the consumers?

MR. KILKELLY: I'm sorry, yes, all consumers. All consumers.

MR. CASSISE: Okay. And again regardless of the country of origin of the solar panel?

MR. KILKELLY: Yes, country agnostic, producer agnostic, and it just applies to any consumer.

MR. CASSISE: And I don't know who would like to address this, but if the Department of Energy loan guarantee program affects your company, or how you believe it affects the industry?

MR. KILKELLY: This is Kevin Kilkelly. The loan guarantee program does not affect SolarWorld in any form or fashion, and we have not received any. So how it has affected the industry, the Department of Energy enables technology to leave the laboratory and university studies in an attempt to be commercialized and deployed mainstream for the benefit of all consumers.

So that money helps companies start up,

deploy their technology, and I think that it is personally taking a black eye in the political environment of today.

Those loan guarantees, or DOE, Department of Energy programs, are specifically there, and have been there for many years and many Administrations, to help get technology out of the universities, out of the laboratories, and to test their strength and their commercial viability in the open market.

MR. CASSISE: So, SolarWorld is not currently engaged in that program?

MR. KILKELLY: SolarWorld is not engaged in that program.

MR. CASSISE: Okay. My final question is to Mr. Brightbill, and you may not have come to a decision on this, but I have read media reports that there may be a petition filed in the EU against Chinese solar panels and cells. Has SolarWorld made a decision regarding that petition?

MR. BRINSER: Gordon Brinser, SolarWorld. So, obviously as was shown in the slides earlier, the impact by the legal subsidized programs in the Chinese solar industry is impacting markets worldwide.

And the markets in Europe are no different than the markets here as far as the impact of these

illegally subsidized and dumped products. Our colleagues in Europe are wrestling with the same decision.

This was a difficult decision for us to make, because we have been able to compete with anybody anywhere in the world that abides by the International and U.S. law.

And what we have seen here is a country purposely who has gone out to decimate an industry, and so Europe has the same -- they are wrestling with the same issues there, and I am sure that they will have to make a decision soon on their own on how to react to it.

MR. CASSISE: Okay. With that, I have no further questions.

MS. DEFILIPPO: Thank you, Mr. Cassise. We will now turn to Mr. Rees.

MR. REES: Thank you. Mark Rees from the Office of the General Counsel. I have just asked Mr. Cassise to forward me a copy of the new scope, which I have not had a chance to read it.

But with investigators as thorough as Mr. Cassise, he covered a great deal of ground, including a number of issues that I would otherwise have asked about. So I say that affectionately.

(Laughter.)

MR. REES: I will be briefer than I otherwise would be. But obviously I am at a disadvantage. I am just reading this scope now, but if I get it, then -- well, actually, I am not sure. I guess, Mr. Brightbill, if you could just tell me -- I think the gist of what you said, if I have got it straight, is that you think that you got the scope right the first time, but you have amended it, the proposed scope, to clarify certain issues such as they may have been raised by Commerce, or Respondents, or others. Is that right?

MR. BRIGHTBILL: Yes. Tim Brightbill from Wiley Rein.

MR. REES: Okay.

MR. BRIGHTBILL: We have always felt that we have always covered cells, and whether or not assembled into modules, and what that means is that a cell made in China, a module made in China, a cell made in China that is integrated into a module in another country, and then sent here, and a cell made in another country, or a module made in China using material from a third country as well, those are all covered by the scope of this investigation.

MR. REES: And did I understand you to say

that there are also some additional exclusions that have been identified in the amended language, or perhaps not?

I won't have a chance to read this very carefully, but are there any other differences in the new proposed scope that you want to make me aware of?

MR. BRIGHTBILL: Tim Brightbill. No, there are no new exclusions in the clarification that we put in yesterday. Adam, do you have anything else?

MR. GORDON: Yes, this is Adam Gordon from Wiley Rein. That is correct. The exclusion that is there was introduced in one of the earlier clarifications to exclude these small solar cells that are integrated into consumer products, of a size up to 10 thousand square millimeters.

MR. REES: Okay. So in additional to that that point, and this business about the modules, there is nothing else in the scope as of 7:00 p.m. last night, or this morning at 9:15, or right now at 11:00, that is any different from the scope as previously proposed?

MR. GORDON: This is Adam Gordon from Wiley Rein. We did change two phrases when we were describing what previously were called bus bars and fingers, which I came to learn is sort of an industry

slang. Instead, we were referring to metalization and conductor patterns.

MR. REES: And the first part of that, something fingers?

MR. GORDON: Bus bars and fingers are the metal stripes on the cells that pull the electricity off the cell, and feed it into the junction box. So we have -- how shall I put it? We have improved our phraseology there.

MR. REES: Okay.

MR. GORDON: To keep the solar engineers happy.

MR. REES: Okay. I will try to digest that quickly. Obviously to the extent that you hear argument from the Respondents that this somehow caused problems with this proceeding, or data issues, or the like, we would obviously anticipate that that is something that you will respond to specifically in your post-conference brief.

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. Yes, we will do that in our brief.

MR. REES: Now, to the extent that modules are clearly included in this scope under the clarifying language, if I have got it straight, you have brought in a sample of a module, or I'm sorry,

would you refer to that as a panel or a module, or do the terms --

MR. BRINSER: Gordon Brinser, SolarWorld. The terms are more or less used interchangeably; a panel, module, they are interchangeable.

MR. REES: Okay. And so this large -- do you prefer that I call it a panel or a module?

MR. BRINSER: It doesn't make any difference to me.

MR. REES: Okay. This module that we have, if I understand it correctly, the scope includes everything that I am looking at, right? Do I understand that correctly, or --

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. Yes, any part of the module, yes. So it would include the entire value of the module, and not just the crystalline silicon components. That is correct.

MR. REES: Right, because as I understood it, the module is made up of a string of these cells, which I will refer to them briefly, but a module also has, or may have, a glass cover.

It may have this laminate that you just discussed previously. If I understand it, it may also include an electrical junction. I don't know if the sample that you brought includes an electrical

junction does it?

MR. BRINSER: This is Gordon Brinser for SolarWorld. Yes, when you go through the process that we go through, once a photovoltaic cell is created, that's where we talk about a PN junction, which is an electrical term that is used inside the silicon itself that has opposing electrical charges.

So it has a positive charge, and it has a negative charge, and that is what we will call a PN junction. Once that is created within the silicon base material, then basically the cell is capable of turning sunlight into electricity.

Those cells, through various steps of optimization, and getting the blue cular, and fingers, and buss bars, or the interconnects as we call them, go through many different steps.

Those are assembled into a laminate, and what we would consider laminate, and they are interconnected into a matrix, and as we said here, about 60 cells.

And that has changed over the years, depending on the industry standards for the crystalline technology. The cells are interconnected into a matrix, and that matrix, and is basically sandwiched and sealed inside, and to which or where

most people will refer to as a laminate of glass. You know, an ethyl vinyl acetate, or some other type of sealant in there.

Sometimes people use silicon, and then in our case, there is a back sheet, and that back sheet again keeps the environmental elements -- water, rain, snow, wind, dirt -- from getting up in there, and impacting the performance of that module itself.

There are companies that put glass on the back, and so cells are sandwiched in between two pieces of glass. That typically makes the modules a lot heavier, and it also -- you know, glass is -- it makes it heavier, and we do get some other benefits from having that while back sheet on the module itself.

Now, at that point, that is a laminate. That laminate then is framed. An aluminum frame is put around the module for, again, structural integrity, handling, mounting to, or whatever racking system or device that it may be mounted to.

On the back of the module, if you would take a look once we are done today, there is what is called a junction box, and that is where all the interconnects come together and basically then the electricity would flow out of there in cables, of

positive and negative cables, and those can be strung together with other modules, or in the case of an off-grid, that would go to -- and like Kevin mentioned -- the power device, or to a storage unit.

But in the product description itself, the PN junction is something that is inside the base material itself that you cannot physically see. Hopefully that answers your question.

MR. REES: That was very helpful. Thank you. And so then -- well, I will just ask this open-ended. Is it then the Petitioners' position -- and maybe this goes to Mr. Brightbill first, and then the industry witnesses can fill in as useful.

Is it the Petitioners' position that the -- and I will call it a completed module, a finished, completed module, but is it the Petitioners' position that that is part of a single like product definition?

MR. BRIGHTBILL: Yes. Tim Brightbill, Wiley Rein. Cells and modules are part of a single like product. So, yes, a single domestic like product.

MR. REES: Okay. I think, especially given the clarification of the scope, or just as it currently sits before us, and what we are dealing with, in light of that, I would -- well, I am not even certain that it is an issue in this case.

So we don't need to raise any issues that are unnecessary to reach, but I would float this out there, and a lot will depend on what the Respondent's position is in this case.

But with respect to the domestic like product, to the extent that it raises any issues under the traditional six factor test, it would be useful to the Commission to see a discussion of why the cells individually, versus the cells -- not simply strung together in more than one, but as they sit in a completed module, how it is that the completed module and the cells individually are a single domestic like product.

And that may be something that you can deal with rather succinctly, but it is something that would be useful to have that discussion.

MR. BRIGHTBILL: Yes. Tim Brightbill, Wiley Rein. We will certainly provide that in the brief. I think that we have laid out already, and we will lay out in more detail, the module is basically a collection of some cells, with some additional materials.

So in terms of physical characteristics and uses, obviously there is -- they are overlapping, if not coterminous, in terms of manufacturing processes,

facilities, equipment, often a lot of overlap as well.

The cells have little other use than as part of a module, but we will run through all the factors as part of your analysis.

MR. REES: Thank you. You have already discussed, and I understand that you will include in your post-conference brief, the thin film product, like product issue. So I won't get into that.

In your view, Mr. Brightbill, is there any relevance of the semi-finished products analysis in considering like product issues in this case?

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. Again, we want to be very precise about it, and so we will want to lay it out on the post-conference brief, but yes, to the extent that the ITC has employed its semi-finished analysis, it looks at a series of factors that looks at the significance and extent of the processes that are used to transform an upstream into downstream articles.

And there is some processing required as you have heard about to transform cells into modules, but it is not the bulk of the technology. It is not the bulk of the intellectual property of the capital investment.

So you also look at whether the upstream

article is dedicated to the production of the downstream article, and that is clearly the case. Solar cells are dedicated to the production of solar modules.

And then we can run through the other factors as well, in terms of characteristics and functions, in separate markets and so forth.

MR. REES: Thank you. That would be helpful if that were included in the post-conference brief, and you need not necessarily take a position on which analysis you think is required. It is simply a question of thoroughness.

And ultimately it is the Commission's determination as to which analysis to apply, and sometimes it applies both. Other issues were discussed, and so I am not going to get into those, such as the off-grid, and we may hear other points on these issues, or other issues in the context of domestic like product.

And I would just reiterate that your thoroughness in your post-conference brief in addressing any of those other issues will be helpful to the Commission as it makes a decision in the preliminary phase of this investigation.

In terms of domestic industry, we have

already had discussion. Both Mr. Brinser and Mr. Kilkelly have discussed that. So I will be -- well, actually, I will be just very brief.

There is, as there is with these other issues, obviously a test that the Commission applies, and I won't even belabor it here. And Mr. Cassise's questions were getting at issues under that rest. So I am not going to ask anything further about that. I would just ask that you include that in your post-conference brief.

Related party issues, we touched on briefly, and these are addressed in the petition, and to the extent that any new information is developed through this conference proceeding, or through questionnaire responses, please include a complete discussion of that in your post-conference brief as well, Mr. Brightbill.

MR. BRIGHTBILL: We will do that.

MR. REES: I think that there are only two issues that Mr. Cassise didn't cover that I would ask you about, and the first is -- and gentlemen, I will keep this focused on Mr. Brightbill for the moment -- captive production.

Well, first of all, Mr. Brightbill, did you consider the provision relevant in this investigation,

where it would appear that to the extent that the scope includes, and the like product inquiry, will cover modules, and to the extent that cells are produced individually, and then those go into downstream products, such as completed modules, that there may be an issue of internal consumption.

That is, with the industry using cells that it produces in the production, at least for those three companies -- and it sounds like there are three that you would still characterize as integrated -- to the extent uses those cells in the production of modules, and how and whether that triggers the captive production provision of the statute, and your application of that here, if in fact you think it applies?

MR. BRIGHTBILL: Tim Brightbill. Well, we will want to do that in the brief, but Mr. DeFrancesco can touch on that briefly.

MR. DEFRANCESCO: Sure. Robert DeFrancesco from Wiley Rein. We don't think the captive production provision applies here. I mean, typically, you have seen that in cases like hot rolled and cold rolled, where you are consuming a portion of the hot rolled to make the cold rolled, which is a different market, and it is a different product, and it is a

different industry.

There is no distinction here. There is internal consumption of cells, but those cells are consumed in the production of a module. It is the same industry, and we are not -- we see it as completely different.

MR. REES: Now, are the cells themselves sold on an open market? In other words, for these integrated producers that I guess we have been talking about?

MR. DEFRANCESCO: For the integrated producers? No. For an integrated producer, there is a small fraction of cells that will be sold on the open market, and there are other producers that may make cells, but those cell sales go to module assemblers to be assembled into a module.

So, you know, you can't have one without the other basically.

MR. REES: Okay. That brief response is very helpful, and obviously its development in your post-conference brief will assist the Commission. And then the final question that I would ask is -- well, this I can put to the industry witnesses.

So what role do non-subject imports play in this market? We have seen some charts, and one of Mr.

Kaplan's showed non-subject imports in the U.S. market, and developments in trends in the period of this investigation.

And I am wondering if the industry witnesses could comment on the role of non-subject imports, and the competitive factors that you face with non-subject imports.

MR. KILKELLY: Kevin Kilkelly, SolarWorld Industries America. Non-subject imports are acting rational. They are acting fairly, and they are not being illegally subsidized, and they are not dumping their pricing.

We welcome non-subject imports and we have competed against them for over 30 years, and to meet the demands within the market, global markets, non-subject imports are needed. But they compete fairly on the playing field.

MR. REES: Okay. I don't know if Mr. Brinser wanted to add, or perhaps that captured his point.

MR. BRINSER: Gordon Brinser, SolarWorld. No, that captures the point. I think the main thing is that the U.S. market is open to any producer worldwide.

And as Kevin mentioned, we have competed on

an open global market, and with companies that do compete fairly. And what we have seen here is clearly an industry in China that has been heavily subsidized, with the specific intent to basically dismantle the U.S. industry.

And, therefore, the non-subject imports, they compete on a global market, and they are impacted similarly in their domestic markets, as we are here with the subject imports.

MR. REES: Thank you. Both of you. Mr. Brightbill, I would include in your discussion if you will in your post-conference brief of the role as they have started to develop it of the Petitioners' view of the role of the non-subjects in the marketplace, and what role you think they should play in the Commission's analysis of the injury issues presented in this case.

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. We will certainly lay that out, and obviously the trends are much different for the Chinese imports, versus the non-subject imports, and we will explain all of that in our brief.

MR. REES: Thank you, and with that, I have no further questions.

MS. DEFILIPPO: Thank you, Mr. Rees. We

will now turn to Ms. Christ. Do you have questions for this panel?

MS. CHRIST: I actually wanted to mention that I also share the same affection for Chris, as Rees does, and so many of my questions will probably be more followup, with a few -- maybe one or two -- of the same amount of original questions.

First of all, I do want to thank you all for being here and helping me to understand this industry. There is a lot of information out there, but I think the industry perspective, and your firsthand knowledge, cannot be replicated by any of the independent research that is out there. So, I thank you.

I wanted to start with sort of the beginning of this process, the raw materials and the polysilicon. Chris had already asked a little bit about that, and I wanted to see if you could give me some idea of what the lag is between polysilicon prices and cell or module production?

MR. BRINSER: Gordon Brinser, SolarWorld. So, again, polysilicon is a global product that is used not only in the solar industry, but also in the semiconductor industry as the raw starting material.

Historically, a lot of that production has

been in the U.S. and in Europe. Just recently, along with the heavily subsidized production of the wafer, cells, and the modules in China, they have also now come to dominate the world supply of polysilicon also.

The actual, like any raw material, it does influence the cost of the product. Let's be clear. It is no different than any other product out there. We have systematically over the years reduced our consumption of silicon in our product.

We have also reduced or improved the efficiencies by which we can convert the sunlight into power within the silicon. We also work on our internal yields to reduce again the amount of consumption of silicon.

So there is a lot of effort going into reducing that over the last 30 years that we have been doing this. The actual polysilicon pricing on the open market is influenced by many different factors; the supply and demand by the individual polysilicon suppliers, as they have ramped up their capacity as the semiconductor capacity goes up and down, and as the growth of the Chinese production industry.

What we have seen is that the pricing that we have seen in the last six months is decoupled from the polysilicon pricing. The major suppliers or the

major competitors in China have historically had either purchased silicon from the U.S., and the U.S. has been a major exporter of raw silicon material into China.

And so they use that same raw starting material, and so there is many factors that go into this, but overall, we do see that pricing has been decoupled, and most recently the dumping and the severe decline in pricing did not match any pricing of the polysilicon.

MR. KILKELLY: I have a followup. Kevin Kilkelly. Cost follows pricing, and I think that is what you are asking for on a lag, and so cost follows pricing in its simplest form.

MS. CHRIST: Okay.

MR. KILKELLY: And the Chinese do not. That is the main point.

MS. CHRIST: And what source does the industry rely on for polysilicon prices?

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. You are referring to the price index, or how to follow up prices?

MS. CHRIST: Yes.

MR. BRIGHTBILL: I will let Gordon take that.

MR. BRINSER: Well, I mean, there are various industry analysts out there as far as the pricing of the raw silicon. We work closely with our polysilicon suppliers to make sure that the pricing is competitive in the open market.

Personally, I don't follow the market that closely because we have good long term relationships with our suppliers.

MR. BRIGHTBILL: But just to -- Tim Brightbill. It is a globally traded commodity, and I think that there are -- that if you want to find an index for polysilicon prices, there are several that are readily available.

I believe that we referred to them in our petition and petition supplements, and there is no reason for pricing to differ a great deal from one place to another, except to the extent that there are subsidies in China distorting the market there.

MS. CHRIST: Okay. Are you -- is one of the sources that you are referring to the photon index for polysilicon prices?

MR. BRINSER: Yeah, that's one. Gordon Brinser, SolarWorld. There are many different indexes out there, and I think that we did outline a couple, and we can follow up with more details on that in the

brief.

MS. CHRIST: If you have any of those price series, that would be very useful. Thank you.

MR. BRINSER: We can do that.

MS. CHRIST: You had mentioned contracts. What is the typical length of a polysilicon contract?

MR. BRINSER: Gordon Brinser, SolarWorld. That really varies historically, and I would like to cover that in the post-hearing brief if we could, because those types of contracts are very instrumental as far as strategic within the company.

MS. CHRIST: I think that one of the supplemental exhibits provided indicated that there were differences between contract and spot prices for polysilicon.

If you could comment on that, too, in terms of the 2008 to 2010 time period, and the difference in the spot and the contract prices, and the role in pricing.

MR. BRINSER: The polysilicon market, as was mentioned previously, there is lots of global pressure on that product because of the use in the semiconductor industry. You know, the semiconductor industry goes through its annual cycles.

You know, I am a product of the

semiconductor industry from years ago, and they go through different cycles, depending on consumer purchases, and everything else, and seasonal.

And they have historically driven the polysilicon market -- pricing, investment, and everything else. And the solar industry, obviously with the growth and the awareness in environmental, and with the increase in pricing in the traditional sources of energy, and renewable energy is becoming much more predominant now, that has stimulated the growth of solar.

And along with the solar production came the starting raw material, and the suppliers in the West -- in the U.S., and in Europe -- have expanded their capacities.

Historically, they had a large share of the global market. If you look at the global share of polysilicon market, two Chinese companies that have received huge subsidies, and from the programs that we talked about before, now dominate the polysilicon market.

The spot market and the contract market, because it is a raw starting material, without it, we can't produce; and without it, our factories would close down.

We have to have a good solid source of polysilicon. If not, we close down our factories, and we can't service our customers. So, therefore, most companies historically go into contracts, and anywhere from one year to five years, and maybe longer, with the suppliers.

And those are contracted prices, and you see those vary depending on the duration and the financing sources, and everything else. The polysilicon producers in the U.S. have used some of those long term contracts for financing for their own investment, and their capital, where it is shared between us and the producer.

Where unlike in China, where it is heavily governmentally subsidized with money and cash, and so there is another big difference in the playing field. The spot market prices, obviously with any commodity out there, there is spot market prices.

So any excess available capacity that a polysilicon supplier has, and/or a company may have in their warehouses, they can put on the spot market, and depending on supply and demand at various times.

And I think what you saw with the growth, the unprecedented growth, and really unsustainable, and what was really not required from the demand side,

the growth in the Chinese production artificially pushed the spot pricing of polysilicon extremely high during this time period.

And that would have impacted a lot of the smaller second and third tier suppliers out there, but again you did not see this same change in the pricing of the products themselves.

And again we see a complete decoupling between the prices that are being dumped into the market here, and that long term trend.

MS. CHRIST: Thank you very much. I wanted to move on to the production process, and what Mr. Cassise has referred to as the assemblers. Do assemblers exist in any part the production process?

So, for example, would an assembler take cells and then produce a laminate? Would they take laminates? I mean, in any part of the module production process can product be sold to an assembler?

So would an assembler take the laminate and frame it, and turn it into a module? Would they take the module, and put an invertor on it, and well it? Would they take it with an invertor, and put a battery on it and cell it?

Or are there certain places in this process

where assemblers do not really participate, or where they do participate?

MR. BRINSER: Gordon Brinser, SolarWorld. There are distinct places like you mentioned. As far as when the product goes through the individual processes, there are common places where you could pull out the product at that point, and finish it someplace else, or assemble it someplace else.

Commonly what you see in the market is most of the time individuals, or assemblers, would take the photovoltaic cells itself, and finish the process at that point, and basically make it work and function.

The cells rely on being put into laminate, and into a module for it to function. So we do see where individuals do move laminates from one place to the other.

There are cases where we have heard of them being done this way to avoid some of the "Buy American" clauses, where you can take a laminate, put a frame on it, and put a junction box on it.

And obviously moving the laminate around, you avoid a lot of extra shipping costs, because it is thinner than the module itself. But you are correct that at any point -- and typically you will see in the industry right now, the junction box, and the framing

process, and the laminate process, is pretty well connected.

Anything downstream from that for an invertor or battery, it is not the dominant assembly point. Usually an invertor or battery would be connected further at the integrator level, though there are some trends now where the inverters are becoming attached to the module.

MR. BRIGHTBILL: Tim Brightbill. Just to clarify. Most of the time, the assembly process is taking cells and making them into the finished module, ready to plug in somewhere, but with some laminates in individual cases.

MS. CHRIST: And since you mentioned it, could you give me some idea or estimate of the market that is covered by either the Recovery Act or By America provisions?

MR. KILKELLY: I would say less than 10 percent of the U.S. market falls under the ARRA Act, or the Buy American Act, for both of those, less than 10 percent.

MS. CHRIST: Is that any particular market segment?

MR. KILKELLY: Kevin Kilkelly. Usually it is around the commercial segment, because this is

where those government rooftops are located. You don't see a lot of utility scale need.

MR. BRIGHTBILL: And Tim Brightbill, Wiley Rein. Again, we were discussing with Kevin last night that the impact of Buy American is that -- I mean, the Chinese imports can take advantage of that as well.

MR. KILKELLY: Yes, absolutely. Those Acts are so wide open that there is no true rigor or teeth behind those Acts. They apply to all global importers, who can participate in that as long as they meet a certain percentage.

The threshold, the barrier, of entry in there is so low that it is easily covered by an assembler.

MS. CHRIST: Okay. In your petition, and in the exhibits that you provided, you provided a few SEIA reports. I believe U.S. Insight Reports, and which seem to indicate that in this last year that there has been a large increase in the installations in the utility market segment.

Could you give me an idea of what is driving the disproportionate growth of the utility market segment in just the last year? And especially if the 1603 and the Investment Tax Credit are consumer, or would they also be benefiting from those incentives?

MR. KILKELLY: Ms. Christ, could you just rephrase your question one more time?

MS. CHRIST: I'm sorry, the SEIA U.S. Insight Report that was included in the exhibits to the petition, seem to indicate that there was an increase in the utility installations, in the segment for residential, non-residential, and utility.

Do you have or can you comment on why this last year there was a large increase in the utility installations, in that market segment relative to the other market segments?

MR. KILKELLY: Kevin Kilkelly. Yes, absolutely. Renewable energy portfolio standards started to hit and become more apparent to huge utility companies two to three years ago.

The lead time for development and processing of these large solar farms is 2 to 3 years, because you have to get through the environmental permitting, and you have to get through the land use rights. The sales cycle is two years.

And so when they first got the notion that they would be faced with meeting RPS standards, both at the State and Federal level, those requirements, those utilities started to take action, and looked at their portfolio products and the production, and where

that power is coming from, and we need to start doing something.

Solar is just one avenue, and that's why wind -- you see wind farms and everything else, and it is really starting to take action. But the solar sales cycle for these utility scale projects is around two years.

So when all this happened two years ago, the sales cycle started, and now you are seeing the deployment of those larger utility scales actually being built at the second half of this year, and going into the next year.

And that's why you see in the SEIA data that the installed projections will increase because those projects are now getting built.

MS. CHRIST: Okay. And you can comment on this in the post-conference brief, but there have been different demand drivers that have been identified, including the State, the renewable portfolio standards, the incentives, individual consumers going green.

If you could give me some idea of which of these demand drivers are more or less relevant or important to different market segments. So, for example, the non-residential, the residential, and the

utility market segments, if you could elaborate on that, I would find that very useful.

MR. KILKELLY: We will be glad to do that in the post-hearing brief.

MS. CHRIST: Okay. And my final question. I have heard mentioned the combination of thin film and crystalline silicon. Is that sort of a thin filled products put on a normal silicon cell, or is this something that is just an experiment, and how might it affect -- I mean, is there a hybrid here?

MR. BRINSER: Gordon Brinser, SolarWorld. The thin film is -- they are completely separate technologies. So the thin film is usually applied to just the back of a piece of glass, or some other media.

So there is physically completely different characteristics there. There is no overlap as far as application on a silicon cell itself.

MS. DEFILIPPO: Thank you, Ms. Christ. Ms. Warrington, do you have questions for this panel?

MS. WARRINGTON: Good morning, Samantha Warrington, Office of Economics. I did have a few questions. When you are considering a module, and you say that it has a peak power wattage of 226 to 230, or 236 to 240, is the five watt range, is that an

industry standard for categorizing peak watts?

MR. KILKELLY: Yes, it usually is an industry standard, five watt increments.

MS. WARRINGTON: Okay. Do firms usually produce the full range of wattages, or just a select few?

MR. KILKELLY: Kevin Kilkelly. We are talking about efficiencies in a product and power envelope increases in technology advances. That power envelope moves up in the power range, and so it is a standard Bell Curve of distribution if you would look at it on power.

So as that power moves up, that curve moves, and so lower wattage products can't even be made anymore because the technology has advanced so far that you are collecting too many electrons to produce too much electricity and watts.

So it moves up with the power curve, and as the power advances, so does the Bell Curve, and within that curve, that band of products advances also.

MS. WARRINGTON: Okay. So then would you say that if you are looking at two different -- the ones with the peak wattage of 220, or the peak wattage of 225, are those considered competitive?

MR. KILKELLY: Kevin Kilkelly. They are

within a five watt differential, and so we actually look at every system. Aside from the building block that we actually looked at, because the consumers' concern about how they are going to actually get -- well, it is a total kilowatt hours generated system.

It has nothing to do truly with the building block or how many watts are coming out of there. It is what is the size of the roof that is available, and how many kilowatt hours can they get, because actually the rate payers are getting charged on kilowatt hours of consumption.

And what they are trying to offset is kilowatt hours of production. So that is where that the grid parity, or equilibrium is kind of met at the system level.

So, watts -- this is just a building block, but at the end-state, the whole goal is to get the kilowatt hours produced because that is what the consumption metric truly is and that the rate payers have to pay.

MS. WARRINGTON: That's very helpful. Thank you.

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. I would just emphasize that everything competes with each other here. I mean, it is really a function of

kilowatts and price. So that is what is going to factor into the decision.

MS. WARRINGTON: Would you say that any production doesn't fall on the five watt differential? I mean, if we were looking at the 235 and 240, would anything happen to be like 236 or 238?

MR. KILKELLY: Kevin Kilkelly. Well, I guess you are asking if a specific module falls within a five watt increment before it jumps up and gets rated at the next level, and we refer to that in the industry as plus sorting.

And which means that it is a conservative metric for the consumer, and that that module will be warranted for that rated power, and that usually goes up.

And in your example, a 240 watt module is rated anywhere from 240.0 up to 244.9 in watts that that panel will generate. Once it hits the next five increments, then it is rated by SolarWorld standards, because we use plus sorting, and we are the first in the industry to introduce plus sorting.

The rest of the industry has tried to mirror our leadership in that, but that is how we gauge it. So if you are looking at if a module is flash tested, and it generates 242 watts, yes, we would rate that

module as a 240 watt module.

So it is two extra watts of power given to that consumer for that price point, and because we are the industry standard, and first introduced plus sorting, China has mirrored that approach as well, because the consumers -- it has become an industry standard now, and China takes the same approach.

MS. WARRINGTON: Okay. How do prices for the residential, and non-residential, and utility markets compare?

MR. KILKELLY: I will talk in generalities as I don't want to get into specific pricing per segment. The consumers are all driven by price. Quality is somewhat -- for the tier one guys, it is all the same.

But price is driven, and it is usually driven by volume. But you can still see that pricing would be somewhat standardized across segments based on the volume that is aggregated for that customer.

If you have a residential homebuilder who is deploying solar on a tract of homes, and aggregates five megawatts, they would receive a price. If you have an integrator who is doing a five megawatt commercial rooftop, the volume is the same, and it is still five.

We as the industry have used that as a five megawatt tender. It is a five megawatt tender in the commercial sector, and it is also a five megawatt tender in the utility sector. So the pricing is pretty standardized based on the volume without going into specifics.

MS. WARRINGTON: Okay. Thank you. I have no other questions.

MS. DEFILIPPO: Thank you, Ms. Warrington. Mr. Yost, questions for this panel?

MR. YOST: Yes, thank you. Charles Yost, Office of Investigations. Thank you very much for your testimony. I found the testimony, particularly of Mr. Kilkelly, very poignant.

I just have two followup questions, and one was -- the first one is to comment if you want to any further than you have already mentioned regarding the Respondent's allegations that any injury that has been caused has been caused by your own supply chain problems.

And I would encourage you to put that in your post-conference brief. I think that you had said or have made several statements about that already today.

And the second one again for your post-

conference brief is to comment on why there may be a disconnect between the public filings of SolarWorld, and SolarWorld's parent, with the injury that you are alleging in the petition.

And that is all the questions that I have, and again, thank you for your testimony, and your appearance here today.

MS. DEFILIPPO: Thank you, Mr. Yost. We will not turn to Mr. David.

MR. BRINSER: Just one quick comment. Gordon Brinser, SolarWorld. As far as the injury that we have seen, this isn't just SolarWorld that has seen injury, and so I would refute the fact that it is due to any internal practices that we have.

In the domestic industry in the U.S., it has seen injury in the wide range of domestic manufacturers, and we again can compete in a global market with anybody anywhere.

So I think that from a global marketplace, we can compete with -- and we have shown that we can do it. The subsidized and dumping practices that are occurring illegally in China, and with the China products, that is what has caused the injury in this case. Not only to us, but to other individuals within the U.S., and we will comment on the rest in the brief.

MR. KAPLAN: This is Seth Kaplan. I would be curious as to their comments on the Frederick News Post, Reuters, the Boston Globe and Bloomberg, four companies that have shut down, each pointing to the Chinese product.

And I would like to hear if they think that each of those had supply chain issues, or there was another reason other than the reported Chinese imports for those four companies recently closed and relocated.

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. Just to emphasize. It is pervasive and it goes from the biggest companies, down to the smallest ones. I think that this will become increasingly apparent as the questionnaire responses come in, that there is one common source for the injury, and it is not these companies' own decisions.

MR. YOST: I will make one clarification. What they have been talking about is the public filing, the 20-F, I guess, of SolarWorld, and SolarWorld's parent.

And there is oftentimes that we see that there may be a product mix issue, and there may be a much broader range of products, and a much greater geographical range of sales.

So if you want to take a look at that, and take a look at the question from that standpoint, that is where I was headed with that question. Thank you.

MR. BRIGHTBILL: Thank you. We would be happy to comment in our post-conference brief.

MS. DEFILIPPO: Okay. Now we will move on to Mr. David.

MR. DAVID: Thank you. Andrew David, Office of Industries. I want to echo my colleagues, and thank you all for coming here today talk with us. As an industry analyst, hearing directly from you is very helpful for understanding U.S. industries.

So I am going to start out a little bit on the production process. Mr. Brinser, how automated is the production process at SolarWorld that it uses for producing cells and modules?

MR. BRINSER: Gordon Brinser, SolarWorld. We have invested in -- you know, it is highly automated. It provides the ability to continuously improve our quality, and reduce our costs.

MR. BRIGHTBILL: Tim Brightbill, Wiley Rein. I just have to add that, one, evidence of the automation is the cells, the ones that we are passing around, are laminated so that they won't break.

But if you just hold them in your hand, they

break quite easily. Several of us sitting at the table have done that inadvertently. So the automation, and the robots and all, is very much required in the production process because of how delicate these products are as they go through from the silicon, to wafer, to cell, to module.

MR. KILKELLY: This is Kevin Kilkelly. On the commercial side, we rely on that automation because of our warranties. It is a repeatable process that happens thousands and thousands of times a day, okay?

And so when you add human intervention in there, you are adding a potential quality input that could lower your standard of what that product is eventually going to do.

So because it is a repeatable process, and it happens so many times a day in the production, whether it is at the cell level, at the module level, the ingot level, the wafer level, that automatization is critical to the success that we have had thus far, and continues going forward.

MR. DAVID: To follow up on that are there decisions that you make in your production process that maybe other companies might make differently, in terms of let's say you are assembling a module, and

you could put the frame on manually, and that is the choice that you make, to automate that, or you could put the back sheet on manually, and maybe you make a choice to automate that?

Are there decisions and can there be varying levels in the industry of automation that you will see in these plants, or are those decisions that you make as a company to go more automated or more labor intensive?

MR. BRINSER: It's pretty similar across. I mean, individual companies can make their own decisions, in both the equipment suppliers that we share.

A lot of the equipment suppliers are the same, and the equipment is purchased and is similar to the equipment that the Chinese industry has purchased from the U.S., and/or from Europe itself. So we share the same equipment.

MR. DAVID: Have there been significant changes in this equipment over time? Has the output of this equipment changed every couple of years, or every few years? Is there a need to continually upgrade the equipment, or is it pretty much that once you have it in place that your output -- you know, the number of modules per hour or per minute is not

significantly changing over time?

MR. BRINSER: Gordon Brinser, SolarWorld. Within the high-tech industry, the technology is always improving. As was mentioned, you get more efficiency, and more -- you know, out of the cells themselves, and there is a lot of intellectual property, and capital investment, that goes into the manufacturing of this.

It is a highly capital intensive and highly technical, and so with those technology changes, there are times that you have to retrofit equipment, and/or even if the process sequence would change, you would have to bring in new equipment.

MR. DAVID: Okay. Now, if you are producing a module that is 249 watts, and one is that is at 245, and one that is at 250, is that a difference in the production process for the cells that go into that module?

Do you sort the cells by their output, and then assemble them into the module based on their output? How does that work?

MR. BRINSER: Gordon Brinser, SolarWorld. The variation really goes throughout the entire process from the time that the crystal is grown, the physical characteristics inside the crystal itself can

vary.

So with each individual process step that variation can occur that would impact the actual efficiency of the cell. The cell efficiency itself though is dominated really in the cell processing steps itself.

Some of these steps in moduling can also impact the efficientness. And like Kevin mentioned, there is a normal distribution of power that comes out of that whole processing step.

There is multiple variables that feed into it, and it is very technical, and you get that variation throughout the whole process steps.

MR. DAVID: So just to clarify. Do you set out to design a 245 watt module, or is that kind of where you test the modules at the end stage, and where you are testing the cells before they go into the module to get that specific wattage out of that module?

MR. BRINSER: Gordon Brinser, SolarWorld. We test the product at various stages to try to control the inputs. We test the cells before we put them into the module because you do want to match up like cells.

There is some various interdependencies

between the cells' power functions, I guess, and power characteristics, that you can optimize the panel, and so you test them at the cell level, and then you test it also then before it is actually shipped out the door once it is finally assembled.

And so we can put a 25 year guarantee on the power. SolarWorld was the leader in that guarantee. We set the precedent and that has now been copied by all of our Chinese competitors, as far as the warranty or guarantee, or workmanship warranty out there today.

MR. DAVID: Okay. And now for a 240 watt module, or let's say a 260 watt module, is that basically the same module, whether you are using it in a residential, or a commercial, or utility application, or is there any differences in the module?

MR. KILKELLY: This is Kevin Kilkelly. That is correct. It is all the same. A 240 is a 240.

MR. DAVID: Okay. Great. And to follow up my last question, I just wanted to get back to the applications again, and just one question on the thin film versus the crystalline for Mr. Kilkelly.

You said that the thin film doesn't go head-to-head in the residential sector. Do you go head-to-head with some of the more, let's say, more of the

silicon flexible thin films, or say flexible thin films in the residential or commercial rooftop sector, or would somebody choose those flexible thin films based on different criteria than they might choose a crystalline module for those types?

MR. KILKELLY: You are correct. They would choose that technology for a different building requirement for that application, I guess, and within the residential sector that is the core building block globally for residential solar applications.

MR. DAVID: Okay. I think that wraps up my questioning. I'm sorry, I have one more question to wrap up with, and so you talked about not much crossover between crystallin silicon and the thin film, and this gets back to Nannette's last question.

The Sanyo hit modules, are they a combination of crystalline and silicon, and amorphous silicon? And is that common in the industry or is that a proprietary technology?

And do you see any of that more mixing, or do you see any mixing along those lines happening going forward?

MR. KILKELLY: Kevin Kilkelly. We see that option and technology out there, and not a lot of others. It is proprietary, but not a lot of others

have gone down that path. It is very limited in its availability in production. It is hard to large scale commercialize it, and so we have no problem competing against Sanyo.

MR. DAVID: Okay. That wraps up my questions. Thank you.

MS. DEFILIPPO: Thank you, Mr. David. Mr. McClure, questions for this panel?

MR. MCCLURE: Jim McClure, Office of Investigations. I want to than you for coming. I have no questions for two reasons. One, I am perfectly happy with what Mr. Cassise and the rest of this great investigative staff asked all the questions, and the second is a piece of advice that my tech-heavy 25 year old son gave me Sunday night.

He had always wondered what I do, and when you investigate things like heliocospring lockhorse, which is an artist canvas, does cause people to yawn. But he said, oh, you have an interesting case. Will there be a hearing, and I said, well, there will be a conference.

And he said do the Commissioners ask questions, and I said, no, it will be the staff, and he looked at me and smiled, knowing of my battles with this computer, for instance, and he said try not to

embarrass yourself, dad. So I won't embarrass myself.

MS. DEFILIPPO: Thank you, Mr. McClure. I echo your comments on the Staff doing a great job. I started off with a number of questions, and as I listened to the testimony, and tried diligently to scratch them off as I go through.

I hope that I am successful if I ask a question, and I only have a couple, that have already been answered, and I apologize in advance for that. I don't remember exactly whether Mr. Brinser or Mr. Kilkelly mentioned this, but it was just something that you said recently in response to somebody's question.

The reference was made to tier one guys, pretty much the same, to Mr. Kilkelly. Were you referring to suppliers, and are there tiers of different suppliers in this market?

MR. KILKELLY: From a price perspective, no. From a quality perspective, we like to think that we are one of the best, and when we actually look at the pure engineering of it, there are differences out there based on different types of suppliers. From a price perspective, there is no difference.

MR. BRINSER: And let me clarify. So from the quality perspective, today we don't -- I mean, we

don't see a quality difference between a panel that we produce and a Chinese product coming in. It is an equivalent.

And like I mentioned previously, they have copied our warranty, and they have copied our guarantee, and they have copied our workmanship warranty around it.

They have copied the way that we plus sort also. So there is -- you know, it is a commodity, and it is heavily subsidized pricing.

MS. DEFILIPPO: And following along with that, as you mentioned the word commodity, and as I was listening to some of this, and panels and cells, it did harken back to my days of being an economist on the DM case.

MR. BRINSER: We have been doing this since the 1970s, and we have historically reduced our costs through conventional, legal, sustainable methods. As I mentioned, we internally have cost road maps to continuously drive down our costs, and we know that we need to do that, and we have shown that we are able to do that.

And you have seen historically pricing following that. What we have seen recently in the last year is an unsustainable, steep decline in dumped

prices out of the Chinese product.

So, yes, there has been, and we will continue to sustainably, legally, reduce our costs.

MS. DEFILIPPO: Dr. Kaplan.

MR. KAPLAN: Having participated in that same investigation several years ago, I just want to point out a couple of differences. Given Moore's law and the DRAM industry, or the semiconductor industry as a whole, the declines are sharper, and the path is there through being able to put more semiconductors on a particular sized piece of chip.

Here it is garnering efficiencies. So I think that there is two points to be made about that. First, while there is continuous development declines, or I mean, price declines, and efficiency gains, they are smaller.

And the second is that it seems that it is my understanding that there is some limits to how far those efficiency gains could go. And then to decouple that, the price changes are just in percentage terms just extraordinarily out of line with historic and potential efficiency gains in the future.

I will leave it to Kevin to amplify that if he thinks I have gotten something wrong.

MR. KILKELLY: Just one thing, the rise in

Caesar commodity products.

MS. DEFILIPPO: Okay. Thank you for those responses. We have talked a little bit in terms of -- or we talked a lot about the panels and the change in the scope language, and my understanding of that is what the scope covers and is intended to cover is if you have a Chinese solar cell that were to come in and be assembled here into a panel, that is covered.

If you had a Chinese cell that is put into a Chinese panel, or a panel in China, that would come in as a Chinese import subject. If you had, say, Taiwanese cell that is then put in a panel in China, that comes in as a Chinese import; is that correct?

MR. BRIGHTBILL: Tim Brightbill. Yes, that is correct.

MS. DEFILIPPO: If you had a Chinese cell that went to Taiwan, and was put into a panel, what would that be, and is that subject to this investigation?

MR. BRIGHTBILL: Yes, that also would be subject to this investigation.

MS. DEFILIPPO: So when those imports come in, they would need to declare where the cell originated from? I go back a little bit again to DRAMs, and Dr. Kaplan remembers this, where in the

DRAM industry, there were rules on basically what the country of origin was determined by where the wafer was fabricated if my recollection is correct.

Are there any such guidelines here, or you are just -- well, is there anything that is either a cell from China, or a panel in China, regardless of whether the panel is panelized somewhere else, it is still going to be subject?

MR. BRIGHTBILL: That's correct.

MS. DEFILIPPO: And we have talked about the production process in China, and I think I have gathered that it is similar to the production process here. Is the industry structured similarly, in that there are some integrated firms, and then there is also some firms in China that do just the panel assembly?

MR. BRINSER: Gordon Brinser, SolarWorld Industries. Yes, there is. You see a very diverse group of -- and very similar to the U.S., and there's some vertically integrated. There's some that just produces the cell. There's some that do panel assembly, and so all levels of integration.

MR. BRIGHTBILL: Tim Brightbill. I would just add that there is integration in China even back to the polysilicon level with regard to some

companies. So you have got that added dimension.

MS. DEFILIPPO: Thank you. I think that this might be my last one. I am looking at the first handout, where it talked about the shutdowns and layoffs, and there is two that are listed as plant shutdown, outsourcing, and I think just to clarify, somebody indicated in their testimony that that outsourcing was the solar cell production portion going to China; is that correct?

MR. KILKELLY: Evergreen and BP, that is correct. That was their strategy, and they were -- they had stopped as well, too. That's all public record.

MS. DEFILIPPO: Are they still -- was it a complete plant shutdown, or are they still doing some of the assembly work here?

MR. KILKELLY: I can only speak to BP. They have shut down their entire manufacturing arm. They have tried to go downstream in the commercial activity on the development side to act as an integrator to develop the solar projects. But their manufacturing is no longer in existence.

MR. BRINSER: Gordon Brinser, SolarWorld. So both companies were tragedies of what has happened here, and both of them have shut down with plant

closures, or their plants completely, and I believe even with Evergreen, they are getting ready to auction their equipment off here shortly.

MS. DEFILIPPO: You read my mind. I was going to ask what happened to their equipment, and whether you knew they moved it with the outsourcing, or whether they sold it here.

I think that gets out all of the questions. I will look up and down the table. Mr. Cassise, you have more questions?

MR. CASSISE: I have one more last -- not a question. It appears that a number of U.S. producers that file confidential declarations attached to the petition, and claimed to have supported the petition, did not submit a questionnaire to the Commission yet.

And if they are represented here, I would strongly urge them to file their responses to us by early next week. You know, even if you are not presently producing the subject product. If you produced it during the period, we need your submission. That's all. Thank you.

MS. DEFILIPPO: Thus, having come full circle, starting with Mr. Cassise this morning, one quick housekeeping matter. Should I include these two handouts as exhibits in the transcript, Exhibit 1 and

Exhibit 2? Is that okay?

MR. BRIGHTBILL: Yes, that's fine. Thank you very much.

MS. DEFILIPPO: Okay. Normally, I am a task master and plow through, but I have been convinced by my colleagues that we should take a little bit of a break, and I am going to do a half-an-hour break in case people have something they can eat to fortify themselves for the afternoon panel.

I would like to say again thank you very much for coming in and presenting your testimony, and answering our numerous questions. It has been very, very helpful. So, with that, we will take a 30 minute adjournment until 12:45.

(Whereupon, at 12:18 p.m., the preliminary conference in the above-entitled matter was recessed, to reconvene at 12:45 p.m. this same day, Tuesday, November 8, 2011.)

//

//

//

//

//

//

//

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

(12:51 p.m.)

MR. BISHOP: If the room will please come to order.

MS. DEFILIPPO: Welcome back everyone. We will now hear testimony from those in opposition to the imposition of the anti-dumping and countervailing duty orders.

I would just like to do a quick brief reminder that since this is such a large panel, and I am happy to see that, but I also would like to remind you to state your name and affiliation.

The Court-Reporter can't see everybody, and so it will help us in having a good accurate transcript if you could do that for us. So I will throw the ball to you, Mr. Ellis, and let you start off. Welcome everyone.

MR. ELLIS: Thank you, Madam Chairwoman, and members of the staff. My name is Neil Ellis from the law firm of Sidley Austin, and along with my team here, we represent the Respondent companies that produce CSPV solar cells.

Our panel will include several witnesses from major cell producers, customers, and economic consultants. However, before I turn this over to the

witnesses, I would like to identify a couple of overarching themes.

First we do not want you to be lulled by the Petitioners' assurances regarding the scope revision that happened last night. That in fact did change and expand the scope in a significant way, to include in addition to what was clearly covered, that is, Chinese cells.

It now also includes modules assembled in China from cells no matter where they were produced. That is a change. It also, quote, clarified that it now includes modules no matter where produced from Chinese cells, to include Chinese cells.

So if a module is produced in France, and we are now told that the French exporter is exporting cells that are covered by this case. This last minute revision has opened significant gaps in the data that the Commission has collected.

You have no data on any of the universes of products and sales that I have just noted. There are major potential segments of the market, and so this is not just a minor gap in the information of the type that the Commission sometimes has to work around in a preliminary investigation.

The Petitioner in effect has made it

impossible for the Commission to render a reasonable likelihood determination that is supported by substantial evidence.

Second, turning to the merits, assuming that you can overcome that hurdle, our panel will explain several points. First, solar panels made using thin film and CSPV solar technologies are, quote, like products, and the U.S. domestic industry must therefore include U.S. thin film producers, such as most prominently First Solar.

The Commission's determination of injury cannot be based on the conditions affecting the domestic industry as narrowly defined by the Petitioner, to include only CSPV cells.

Further, even leaving aside the like product issue, thin film is very important to your analysis, because competition in this industry occurs across the entire range of crystalline silicon and thin film solar products.

Third, several factors other than subject imports explain any injury that the domestic industry, as defined by the Petitioner, may be suffering. Most important is the sharp decline in polysilicon prices, which explains a similar decline in CSPV cell and module pricing that you have seen recently.

In addition, there is downward pricing pressure from competition with low cost thin film producers as I just mentioned.

This leads to the fourth and last thing that I will mention now, which is that downward pricing pressure has also arisen from government regulation. An important driver of demand in this industry has been government incentive programs, both in the United States, and abroad.

In the U.S., the Federal and State governments have been making a concerted effort to expand the use of solar energy and to reduce the cost of solar energy generation.

This is an unusual aspect of the industry and the market that is covered by this investigation. That is a primary government goal and policy, is to drive prices down, and to make solar energy affordable for the American consumers.

With that overview, I would like to turn the floor over now to Roger Efird, Managing Director at Suntech America. Roger.

MR. EFIRD: Thank you. My name is Roger Efird, and I am currently a managing director at Suntech America. Suntech America is a wholly owned subsidiary of Suntech Power, the world's largest

producer of solar panels.

Suntech is based in China, and was the first Chinese solar company to go public on the New York Stock Exchange. I have worked in the U.S. solar industry for around 25 years, both for domestic and foreign manufacturers.

I have several years experience as a private consultant to the solar industry, with a client base that includes both foreign and domestic companies. I am also the Chairman of the Board of Directors of the United States Solar Energy Association, SEIA.

SEIA represents twelve-hundred companies in the industry. I would like to make it very clear that my testimony today is on behalf of my employer, Suntech, and is not on behalf of my association with SEIA.

My first topic concerns the fact that crystalline silicon solar cells, or CSPV, and thin film solar cells, are the same domestic like product in the terms used by the Commission.

CSPV and thin film are interchangeable, and compete head-to-head in the U.S. marketplace. To exclude thin film from the like product and thin film producers from the U.S. domestic industry would seriously distort the Commission's understanding of

the U.S. solar industry.

To start with, Suntech competes in three segments of the market; the residential segment, the commercial rooftop segment, and the large scale utility segment.

Thin film can and does compete with crystalline in each of these market segments, including rooftops. CSPV is more efficient and generates more watts per square meter than thin film. About 15 percent of the sunlight striking a CSPV module will generate electricity, whereas, only about 12 percent of the light that strikes a thin film module will create electricity. However, thin film wakes up earlier in the morning, and goes to sleep later at night. So the period of time that it generates electricity is longer than crystalline.

Moreover, purchasers of solar purchase by the watt, and therefore, crystalline silicon modules and thin film modules are judged on a money per watt cost basis for the entire system.

Although thin film modules are cheaper than CSPV modules on a per watt basis for a given capacity system, the other costs of thin film are greater than with a crystalline system.

This is because thin film systems require

more land, more labor, more structure, and more wiring than a CSPV system of the same capacity. Thus, on a system-wide basis, thin film and CSPV modules are very competitive.

And accordingly the thin film systems are an important competitive force in reducing the U.S. market price for PV modules. First Solar is a U.S. producer that produces and markets only thin film. It does so in all three market segments.

According to public data, First Solar is the world's largest solar company by revenue, and has the second largest market share in the United States in 2010.

First Solar is very clearly the price leader in the U.S. market, and the largest competitor that my company, Suntech, faces. First Solar competes for the same customers, the same applications, and the same projects that we go after.

In fact, our marketing literature references First Solar, along with four other competitors, and discusses the features, advantages, and benefits of our crystalline product, versus their thin film products.

I know of numerous projects in the last two years in which Suntech bid that was ultimately won by

First Solar. By contrast, I am not aware of a single similar project on which Suntech bid that was awarded to SolarWorld.

While we do sometimes compete with SolarWorld, they are not one of the top five competitors in the U.S. market, and they are not featured in our competitive literature.

In fact, the majority of the modules sold by Suntech during the period of interest had considerably higher wattages than the modules proposed by SunWorld in its petition, and for the Commission, and for the data that you are now collecting.

First Solar's marketing strategy is to directly compete for projects in the large scale solar market in the U.S. First Solar has held the number one market share in that segment for the last several years.

At least one other firm, United Solar, has been competing in the residential and commercial rooftop market for the last 20 years. To exclude thin film technologies when the products, customers, applications, and markets are interchangeable with crystalline silicon, would result in a distorted understanding of the basic structure of our industry.

I next wish to discuss certain conditions of

competition in the solar industry. The solar industry is truly international in nature. Pricing for solar modules actually varies very little from country to country.

The U.S. solar market is less than 10 percent of the world's overall market, while more than 50 percent of the world's market is in Europe, led primarily by Germany and Italy.

Thus, what happens in Europe, including additional incentives, drives market and prices much more than what happens in the United States. Despite its relative size, there are an estimated five to six thousand solar companies in the United States today, located in all 50 States, and employing about 100 thousand people.

The industry was recently called the fastest growing industry in the United States. It will double in size this year, and add an estimated 30 thousand new jobs during 2012.

Future growth for the U.S. market is projected to be phenomenal. The U.S. industry will install about two gigawatts of solar this year, 2011. There is already a backlog of signed contracts in the U.S. for projects totaling 17 gigawatts over the next 3 to 5 years.

The industry's growth, however, is threatened should the present investigations result in the imposition of antidumping or countervailing duties. The reason for this powerful growth in our industry is really quite simple.

The cost of solar has finally gotten low enough to compete with coal, nuclear, gas, wind, and hydroelectricity, and that is our true competition, is primarily the fossil fuel industry.

Solar is adding more new electric capacity to the U.S. grid than all of the fossil fuel sources combined now, and this is a global phenomenon, and not exclusive to the United States. Twenty percent of all the electricity generated in Germany now comes from solar.

However, solar power only thrives where governments provide incentives and mandate renewables. Most utilities would not buy solar unless required by some renewable portfolio standard.

For example, incentives in California, Hawaii, New Jersey, and Maryland, now make solar power prices actually beat utility pricing. States like California have mandated that 30 percent of their energy come from renewables by the year 2020.

Nevertheless, one reason that the United

States is behind the rest of the world in solar power generation is because its incentives are relatively new and short term.

Two other important factors besides price affect the manufacturer's ability to compete in the large scale utility market. The first is bankability, and second is a willingness to accept risk.

In the interest of time, I will leave it to others to talk about these issues, but I will be glad to answer any questions that you have at the appropriate time. That concludes my prepared testimony.

MR. ELLIS: Thank you, Roger. We are now going to hear from Robert Petrina, the Managing Director of Yingli Green Energy Americas.

MR. PETRINA: Thank you, Neil. Good afternoon. My name is Robert Petrina, and I am the Managing Director for Yingli Green Energy Americas, a position that I have held since 2007.

My career has been focused on the solar sector exclusively since 2002 where I started with AstroPower, Inc., at that time the largest U.S. manufacturer, and I was responsible for the company's silicon procurement in Asia, Europe, and the U.S.

Most recently before joining Yingli, I was

with General Electric's Solar Energy Technology, again responsible for silicon procurement worldwide. I also serve on the board of SEIA, the Solar Energy Industries Association.

Yingli Americas is a subsidiary of Yingli Green Energy, with its principal office in Baoding, China. The company is listed on the New York Stock Exchange and has 11 thousand employees worldwide.

We are a vertically integrated solar energy company. We produce the entire PV value chain, from polysilicon to panels, or modules. I would like to address first why Yingli entered the U.S. market, and what has happened since then.

Second, Yingli's competition; and third, the factors that determine which company will win a sale in the U.S. solar energy market.

Yingli entered the U.S. market as an importer in late 2009 because the U.S. at that time was grossly underserved. The size of the U.S. market was growing, but supply had not kept up.

The supply shortage was so great that U.S. customers were at times waiting for six months to receive product. The bulk of worldwide production, including U.S. production at that time, was going to Europe, and particularly Spain, Germany, and Italy,

where pro-solar energy policies were creating a bonanza for companies that were selling to those markets.

The U.S. was, and still is, a relatively small market, particularly in comparison to Europe, but we believed that we could meet the unsatisfied U.S. demand and build our business as the nascent U.S. solar energy market grew.

Indeed, the U.S. solar energy market is expanding rapidly. It doubled between 2008 and 2009, and doubled yet again between 2009 and 2010. From Yingli's perspective, this was largely due to the progressively lower price of solar energy.

And if you can take a moment to look at the slide behind you, which shows the actual growth of installations in the U.S. market.

Polysilicon, a key input, which had faced a severe shortage and skyrocketing prices in 2007 and '08, has been in plentiful supply since late 2008, leading to a decline in cell and module prices.

When prices make solar energy more competitive with nonrenewables, demand for solar expands, and 2010 was a great year for the entire industry, from SolarWorld to Yingli.

Business, not just in the U.S., but

globally, was so good that once again not all could be fulfilled. So, naturally, we all added capacity, believing that demand would be there, and orders would continue to grow.

However, in early 2011, demand in Europe was less than anticipated, largely due to changes in government incentive policies. Yingli only makes crystalline silicon PV cells and modules, but there are other PV technologies.

As Roger mentioned earlier, there is the thin film technology. Thin film is just another means to the same end; solar equipment that will generate electricity.

Both crystalline silicon equipment and thin film equipment produce electricity from sunlight. It defies reality to suggest that these two technologies are different businesses.

There is head-to-head competition between thin film and crystalline silicon PV equipment every day. The fortunes of the two technologies are entirely aligned, and so long as there is demand for solar energy, equipment made from these two technologies will compete with one another at least until the next new more efficient technology comes along.

And even within the thin film and crystalline silicon technologies, there are technology subtypes which form a continuum of sunlight conversion efficiencies. And if you can take a moment to again look at Slide 2, this shows you some of the differences between the various subtypes that we just mentioned.

Of course, panels are just one component of a larger project cost that includes design, engineering, construction, and installation. Because thin film requires more panels or surface area to match the efficiency of crystalline silicon panels, an important area of competition between the two technologies is in larger scale projects, such as the utilities sector.

And that is where Yingli competes with First Solar, the largest producer of solar panels in the United States today. In fact, thin film panel production in the U.S. may actually be larger than crystalline silicon panel production.

Yingli does not often compete with the Petitioner, SolarWorld. Our businesses are different in size and in scope. We understand that SolarWorld's business is primarily focused on the residential sector, and to some extent, the commercial sector, and

we do participate across those three segments.

But these markets in the U.S. are very different in size relative to Europe. The residential -- or in our case the distribution -- market only accounts for 15 percent of the solar panels that we sell in the U.S., while the commercial and utility segments account for 40 percent each, respectively.

That makes the United States quite different from Europe, because in Europe a much larger portion of the business is focused on the distribution and sales to residential customers.

Utility scale projects generally involve sales of more than five megawatts, and utilities tend to pay slightly lower prices for their panel purchases than do distributors.

This is because utilities have superior credit and generally provide lower transaction costs than those buying in smaller quantities. But non-price factors are what really determine which company wins the sale.

Customers put a lot of weight on the financial strength and stability in determining whether Yingli or some other vendor's product is selected. They have to; solar panels are guaranteed to last for 25 years, and therefore, purchasers want

the assurance that the company with which they are doing business with today will be there for the long haul.

State government incentive programs also have an important impact on the market, both driving the business and affecting the market price. Any given solar project's total system cost must be sufficiently attractive enough to make it economically such that it will be competitive with conventional energy sources, and also be financially attractive to private sector investors whose financial backing is necessary for the project to actually be implemented.

Government incentives for such projects have been very important in lowering net costs so that the projects can achieve these goals and are implemented. However, with incentive levels declining on an unpredictable basis, there has been tremendous pressure to maintain the all-in total cost for the projects at levels that continue to be economically viable and drive adoption, preferably and ultimately without incentive support.

Therefore, the only way to save a utility scale project, and to make it economic, once again in light of declining incentives, is to cut its underlying costs, of which roughly 50 percent is the

cost of the module side of the equation.

As a result, if projects facing declining incentives are to survive, there is great pressure to cut the module price to a level low enough to make the total project economic returns become attractive yet again and be competitive. This fact is pulling U.S. module prices downward.

Finally, I just want to note that Yingli also views the Chinese market for solar energy as important to its business. For the first three quarters of 2011, about 20 percent of Yingli's global sales of solar panels went into the domestic Chinese market.

The projections for the growth of the Chinese market are very encouraging, and Yingli sees the size of the Chinese market with a lot of enthusiasm and optimism for the future. Thank you, and that concludes my remarks.

MR. ELLIS: Thank you, Robert. We are now going to hear from Thomas Young, the Senior Director of Investor Relations at Trina Solar Limited. Thomas.

MR. YOUNG: Good afternoon. My name is Thomas Young, and as mentioned, I am the Senior Director of Investor Relations at Trina Solar. Trina Solar is a leading, or tier one, vertically integrated

module supplier, and has a long history as a solar PV pioneer, with co-located manufacturing, research and development facilities, and a supply chain PV part.

We are traded on the New York Stock Exchange, and like some of the other companies present today, we compete in three separate solar channel segments, addressing residential, commercial, and utility scale projects.

Further, we are also a member of SEIA and other U.S. solar associations. I joined Trina Solar in 2007 after nine years spent in China in the corporate M&A sector. Since then, I have divided my time between Trina Solar China, and Trina Solar U.S., with the benefit of significant exposure in the solar energy market in both countries.

Trina Solar's U.S. management team has over 50 years of aggregate U.S. solar experience. Today, in my limited time, I would like to address three issues that I believe are important to an understanding of the U.S. solar energy market; non-price factors and purchasing decisions, China's domestic solar power market, and timing of imports into the U.S.

I understand that in many ITC proceedings that price is deemed to be the most important factor

to a consumer. But in the solar industry, more than others, there are hugely important non-price factors. A key non-price factor is what we call bankability.

Bankability refers to whether a banker, lender, or equity investor will finance a project, be it a utility, commercial, or residential customer. Put simply, bankability is a key criterion for solar module consideration, regardless of the project scale or user segment.

As recently confirmed through Trina Solar's bankability road show meetings in New York and California, technology risk remains the key lender consideration. Lenders are concerned whether investors can receive the projected return in power output and revenue terms over the project's lifetime, which is often as long as 25 years.

As such, obtaining and servicing a loan is highly dependent on the predicted performance of the system. In fact, despite crystalline silicon PV technology's long history, banks rely on established third-party engineering consultant reports as a primary tool to assess technology and performance risks. Because of the size and expense of many projects, long-term bankability in my experience can trump price, and is a critical component in customers'

purchasing decisions.

Beyond "Bankability", other non-price decision factors include product attributes such as Balance of System cost savings, performance warranty, technical capabilities, logistics support, marketing support and training for local system integrators. The manufacturer's demonstrated capability to support its warranty is also becoming increasingly important to decision makers.

I would like to talk next about what is happening in China. Despite issuing their Renewable Energy Law in January 2006, China's domestic solar market has only recently reached critical mass by western market standards. Recent large scale investment in grid infrastructure and transmission upgrades and a July 2011-announced national feed-in-tariff program have expanded the pace and outlook for Chinese domestic installations.

China's 2007 Renewable Portfolio Standard mandates require non-hydro renewable generation to provide 3 % of total electricity by 2020, while requiring power companies with over 5 GW of capacity to produce or purchase 8 % total renewable generating capacity by 2020. Solar energy will play an important role in meeting these targets.

From personal observations, China's wealthier coastal provinces having high manufacturing base growth, as well as ongoing real estate booms and urban population shifts contributed to rolling summer brownouts in both 2010 and this year in 2011. Thus there is clear incentive for China to stimulate its own adoption of solar generation in order to alleviate peak daytime power shortages.

Conversely, in less developed provinces, there is also a desire to attract and grow solar-driven economies involving domestic solar generation for transmission and Chinese domestic consumption in nearby provinces. Related to this, the April 2010 revised Renewable Energy Law included deadlines and penalties to assure its effectiveness in specific areas of renewable energy purchase and interconnection to the national grid for transmission.

China market analysts forecast that about three gigawatts will be installed in 2012 and that by 2015, aggregate installed solar capacity could reach 15 to 20 gigawatts, which we believe will absorb an increasingly significant proportion of China's effective manufacturing capacity. Solarbuzz, a recognized solar industry marketing research and consulting firm, currently estimates the backlog of

domestic projects at 16 gigawatts. Indeed, both Trina Solar and its global public shareholders and analysts anticipate the China market will play an increasing role in the sector going forward.

Lastly, I wish to touch on the timing of solar cell and panel imports into the United States. It is true that imports have increased in recent years, but that is a result of demand reflecting a growing acceptance of solar power and the increasing availability of various state and federal incentive programs.

We're now in the fourth quarter of 2011. To the extent that there's an increase of imports this quarter, it is largely due to federal and state incentives to provide advantages for importations or installations prior to December 31, 2011. Let me give you an example.

The most important recent program created to promote deployment of renewable energy is known as the Section 1603 Cash Grant Program. Under this program, renewable energy developers may opt to convert the existing renewable investment tax credit into a cash grant payment upon commercial operation of the project. At the end of 2010, the 30 percent Treasury grant program was extended for an additional year and

is available for qualifying projects that commence by the end of 2011. To further illustrate, the Section 1603 cash grant program requires a solar project developer to either: (1) place the renewable energy product into service by the end of 2011; or (2) qualify for the safe harbor, which essentially requires incurring at least five percent of the qualifying project cost, such as modules and equipment, before the end of 2011, then placing the project in service before the applicable tax credit determination date, which, in this case, is 2016 for solar.

Recognizing the existence of programs like this is key to interpreting the timing and trends in the solar power business and to explain the supposed wave of imports referenced by Petitioner in its claims. Thank you and this concludes by testimony.

MR. ELLIS: Thank you, Thomas. We're now going to hear from Alan King, Vice President of Sales of Canadian Solar (USA) Inc. Alan?

MR. KING: Thanks, Neil. My name is Alan King and I'm actually General Manager and Vice President of Sales of Canadian Solar (USA) or CSI-USA. I'd like to thank the Commission for allowing us the opportunity to further discuss the issues raised by

the Petitioner today and in their filing.

I joined Canadian Solar in 2010 as Vice President of Sales to further develop their market position in the USA. I spent close to a decade in sales and operations in the solar industry with hands-on experience in purchasing, developing sales and channel strategy, and interacting with distributors, dealers, and utilities. Since I've joined the solar industry, it's gone from a small, primarily off grid market, to a multibillion dollar industry that employs over 100,000 Americans and continues to grow even through these challenging economic times we're facing today.

I'm also former board member of the Solar Energy Business Association of New England and work closely with the State of Massachusetts in the development of their solar program. I've also worked for both domestic and foreign manufacturers of solar panels.

CSI-USA is a subsidiary of Canadian Solar, which is headquartered in Kitchner, Ontario, and has its principal production facility in China. CSI is publicly listed on the NASDAQ and is one of the world's largest solar companies. We are a vertically integrated producer of ingots, wafers, solar cells,

and solar modules. We also design, manufacture, and deliver solar products and system solutions to off-grid and on-grid use for customers worldwide. Today, I'd like to address two issues with you: first, the extent to which crystalline silicon PV cells and modules compete with thin film technology; and secondly, the impact that the global nature of this market has on producers in this industry.

First, based on my experience in this industry and a significant number of head-to-head battles, I can say without doubt that CSPV and thin film technology compete directly in the marketplace. Ultimately, these are both technologies that use solar modules to generate solar electricity and are, therefore, both considered as viable technologies by consumers and customers designing solar electric systems, whether they be utility or commercial. In fact, as you are likely aware, the largest U.S. producer of solar panels is First Solar and First Solar's panels employ thin film technology. When we work with our customers in the marketplace to try to close sales for Canadian Solar CSPV products, one of the principal competitors we face everyday is First Solar.

First Solar is a formidable competitor and

is widely viewed in the market as a price leader. One reason is that on a per watt basis, thin film has a lower cost of production than crystalline silicon producers such as SolarWorld. And if you look at slide four in your handout, you'll see the comparison that we did. Indeed, the levelized cost of electricity for thin film can be significantly lower than that of crystalline silicon and that's indicated in slide five. The LCOE is the all in generation cost per unit of energy standardized to consider all factors so that solar, nuclear, gas, and coal can be compared on technically the same basis.

CSI has lost sales for both large and small projects to First Solar, demonstrating the CSPV technology and thin film technology share many of the same end users, are interchangeable, and are perceived similarly by the producers and consumers. Regardless of the manufacturing process, it's really a function of kilowatt generated and the cost of those kilowatts.

Secondly, I would like to touch upon the global nature of this market and the impact that this has on producers of solar PV cells and modules. Only about eight percent of the PV modules installed worldwide are installed in the United States. Europe, particularly Germany and Italy and previously Spain,

have historically consumed much larger shares of solar PV modules than the United States. Accordingly, solar module manufacturers have tended to focus on customers outside of the U.S. This has been the case even for U.S. producers that have historically exported much of their production, U.S. production primarily to Europe. Thus, demand outside of the United States is a critical driver of success in the industry.

That concludes my statement. Thank you, very much.

MR. ELLIS: Thank you, Alan. We're now going to hear from Kenneth Hannah, President of Solar Materials, MEMC Electronic Materials, Inc.

MR. HANNAH: Good afternoon. I'm Ken Hannah, Executive Vice President of MEMC Electronic Materials and President of MEMC Solar Materials Division. MEMC is a St. Louis, Missouri based company, was founded over 50 years ago, and spun out from the Monsanto Company. A member of the S&P 500, MEMC manufactures polysilicon and wafers for the solar and semiconductor industries and has a polysilicon factory in Pasadena, Texas, and a solar wafering factory in Portland, Oregon. In 2009, MEMC acquired SunEdison, a solar energy services company that develops, installs, finances, and operates solar

electric power plants for the utilities, governments, educational and commercial customers throughout the United States and the world. SunEdison has installed and operates over 500 solar power plants globally.

MEMC is vertically integrated throughout the entire solar supply chain, from manufacturing polysilicon and wafers, to tolling cells and modules, to building and operating solar energy systems. To our knowledge, we're the only U.S. company that's vertically integrated throughout the entire solar supply chain. As such, we're uniquely positioned to talk about the solar cell and module market. We're here today to explain why this case and any resulting duties on imports from China are harmful to the U.S. solar market.

First, the premise of this case is that Chinese supply determines the price for solar cells and modules in this market. This simply is not true. Prices in this market are determined by a variety of other factors, including, one, state governments have sought to encourage the installation of solar power plants by providing financial support for solar industries. These incentives, however, are typically reduced each year and are merely a bridge to enable the solar market to growth, thereby creating economies

of scale, which ultimately leads to the declines in the price of solar power. This enables solar energy to compete against fossil fuel based electricity until we reach grid parity and solar electricity is equal to the cost of fossil fuel based electricity. As a result, solar installers depend on declining solar module costs for plants to be economically viable. Unless solar module costs continue to decline, the solar installation market cannot succeed.

Two, the decline in solar module cost goes hand-in-hand with the decline in cost up and downstream. The production of solar industry involves fives stages: production of polysilicon, turning that polysilicon into a solar wafer and printing a cell on that wafer, assembling the cells into a module, and installing a module into a system. In order to succeed and reach good parity, each step in the production chain must reduce its costs. And only is this achieved across the entire solar industry can any one of us be a successful business.

Three, for the last several years, increasing demand has permitted economies of scale to squeeze cost at every stage. This year, as various countries' solar energy costs get closer to grid parity, we are seeing a decline in government

incentives, placing even greater pressure on the cost decline up and down the chain.

By bringing a case focused on solar cells, which are less than 25 percent of the overall cost of a solar module, we ignore significant parts of the U.S. industry. MEMC is the second largest U.S. manufacturer of both polysilicon and solar wafers. The price of polysilicon has fallen over 40 percent from the beginning of the year and the price of solar wafers have fallen over 45 percent over that same period. The point here is that solar industry is experiencing price reductions across all the key stages of solar module manufacturing, not just in cells. We note that our data is contrary to the Petitioner's claim that there isn't a parallel and related price decline across all segments of the solar value chain.

SolarWorld has also excluded a major competing product from their petition, specifically thin film modules. This is surprising and it undermines the integrity of the case. After all, thin film modules are a ready substitute for silicon-based modules. Indeed, thin film sets the benchmark for silicon module prices. SunEdison has installed both thin film and CSPV modules and our customers look for

the best cost and technology solution. As a developer, we view thin film and CSPV modules as interchangeable and we can design a project using the best available technology.

Cost must continue to achieve the public policy goal of creating viable alternatives to fossil fuel based energy. SolarWorld is working directly against this public policy goal in the United States. If they succeed, prices go up, demand for solar energy in the United States will go down, and the U.S. solar market will be significantly undermined.

The solar energy market is one of the few growing sectors in the U.S. economy. The imposition of import duties on solar cells and modules will undermine this vibrant sector and result in significant job loss. There are over 100,000 solar workers in the United States this year, up from 93,000 last year, representing a growth rate of 6.8 percent, compared to the national average growth rate of 0.7 percent. Of the 100,000 solar workers in the United States, more than 50,000 are in the installation or downstream portion of the job market. Prior to the filing of this petition, solar job growth from 2011 to 2012 was anticipated to be 30 percent, which would add 30,000 additional new jobs, the majority of which

would have been in the installation part of the market, the portion of the market where our SunEdison division is a market leader.

We estimate that over 2.6 gigawatts of solar projects will be installed in the U.S. in 2012. These solar projects will require between $10 to $12 billion of investments and contrary to the Petitioner's claim, we like to note that we recently closed over 300 million of construction financing with two leading banks. These power plants and the capital to be invested are premised on certain expected module prices. An exogenous price shock to modules through the imposition of the tariff in this case will render many, if not most of these power plants financially not viable. As a result, a significant number of U.S. jobs will be lost and a large dollar volume of U.S. energy infrastructure investment will be eliminated.

Furthermore, these duties and the price shock to the market threaten jobs and upstream producers, including U.S. manufacturers of polysilicon, wafers, and all the equipment used to make solar cells and modules. Many other U.S. producers of these products depend on the growth of the solar power industry. If demand for solar components declines, demands for these products

decline, putting at risk thousands of U.S. jobs. MEMC's polysilicon plant in Pasadena Texas and our wafering plant in Portland, Oregon would be at risk. We value all U.S. jobs, but we, also, note the dramatic imbalance in SolarWorld's 1,100 U.S. jobs, as compared with the multiple U.S. jobs put at risk by the imposition of antidumping countervailing duties.

The irony of this case is the imposition of tariffs is unlikely to benefit SolarWorld's U.S. manufacturing. The solar cell and module market is global in nature and tariffs on these Chinese cells are likely to simply lead to the use of lower cost cells manufactured in other parts of Asia, instead of the higher cost SolarWorld cells. SolarWorld cells were not competitive before the increase of Chinese manufacturing and they won't be competitive if Chinese price increases because of this case.

So, in our view, the case is misguided for multiple reasons. It ignores multiple causes of cell and module price declines other than Chinese product. It undermines the important U.S. renewable energy policy, as it will cause a reduction in the use of solar power in this country. It will result in significant job losses in a U.S. industry that is in growth mode and uniquely positioned to create jobs and

it won't improve SolarWorld's financial performance.

The question at hand is not whether the U.S. solar cell industry can succeed; the question is whether the U.S. solar energy industry can succeed. The timing of this cannot be more ironic. After years of criticism that solar energy is too expensive, we now find ourselves on the cusp of the golden age of solar. Price declines have brought us within striking distance of grid parity and have created tens of thousands of jobs in the U.S. The imposition of tariffs will set back renewable energy policy, it will set back one of the few engines of job growth in the United States, and it will reduce the competitiveness of the United States. Thank you and that concludes my prepared remarks.

MR. ELLIS: Thank you, Kenneth. We're now going to hear from Sheldon Kimber, the Chief Operating Officer of Recurrent Energy.

MR. KIMBER: Good morning. My name is Sheldon Kimber. I'm the Chief Operating Officer of Recurrent Energy. Recurrent is one of North America's leading solar project developers. Our company is focused on what are known as wholesale distributed generation projects, which are two to 30 megawatts in scale. These projects are connected to existing

utility distribution networks in areas of high demand. Our customers are some of the largest electric utilities in the country, who buy our power to serve their retail customers. We are also developing a number of much larger projects that fit into the more traditionally utility scale market.

In my role as COO, I lead all of North American project development and origination activities and I, also, oversee all of our procurement activities, including solar panels and equipment. Previously, I served as the company's vice president of finance, where I was instrumental in developing and negotiating most of the company's existing projects and involved in the fundraising and joint venture agreements. In my background, I have over a decade of power experience in finance and development and have been involved in over two billion dollars of project financings, chiefly related to gas-fired power plants.

I'm here to discuss two issues with you today: first, what really drives the price of solar cells and modules; and, second, what is at stake in this investigation. And by now, these are common themes.

First, the prices of solar cells and modules are primarily driven by the cost of polysilicon. The

rapid drop in solar cell and module prices that we've seen in recent years has been driven by the rapid drop in the cost of polysilicon, itself. A few years ago, polysilicon cost about $400 a kilogram. That was when I entered the industry about four years ago. Today, that cost has dropped to about $25 a kilogram. If you'll note on slide six, I believe that's borne out. The reason for this is that polysilicon manufacturers have figured out that polysilicon is no longer just a specialty material supplied to computer chip manufacturers; rather, polysilicon has become a commodity input for the energy industry. This new application has the potential to use many times more volume of polysilicon than was needed for computer chips.

The production of polysilicon exhibits significant economies of scale, much like any other commodity chemical, making it extremely profitable for large manufactures to ramp up the capacity and production to address this huge new market at a lower price. The impact of declining polysilicon prices on crystalline silicon cells is clearly shown in slide seven, and you can see the correlation is striking. With these prices converted in an index, as shown on the next slide eight, it is even more starkly clear

that the polysilicon price decline explains essentially all of the cell price decline. And to be frank, if you look at it, even the module price decline.

Second, I would look to make sure that the Commission does not lose sight of what is really at stake in this investigation. The solar industry in the United States is a multibillion dollar industry with more than 100,000 jobs, of which Petitioner SolarWorld and its supporters make up only a tiny fraction. This industry consists not only of upstream solar cell and module manufacturers, such as Petitioner, but also of downstream project developers and installers, such as my company. Indeed, it has been a policy of the United States Federal Government and the state governments to support and promote the development of the downstream solar energy industry through various incentive programs, so as to make solar a competitive source of electricity supply and mitigate the environmental effects of more traditional sources of energy.

Over 10 to 20 gigawatts of new generation capacity comes on line every year in this country and solar energy has a chance to be part -- to capture an increasing share of that capacity as a direct

competitor of wholesale generation. The antidumping and countervailing duties being considered in these investigations, instead of supporting the U.S. solar energy industry, in fact, threaten it.

Companies such as mine sign contracts with major utilities for solar projects about two to five years in advance. Using publicly available data, Green Tech Media estimates that the U.S. solar utility pipeline at 21 gigawatts, worth approximately $80 billion when completed. About 9.7 gigawatts or roughly $40 billion have already -- of those projects already have firm supply contracts from utilities and are either in construction or about to go into construction. We have several such contracts in place today. The prices in these contracts are already firm. Should duties be imposed on Chinese cells and modules, these contracts will be turned upside down. The projects simply will not be financial viable at the prices that will result from these tariffs. They will be far above the cost of traditional energy sources.

As a result, these projects will be shelved and all of our bottom lines will suffer, as will the prospects for thousands of green energy related jobs in construction and installation in our country. The

onset of these investigations, itself, has already paralyzed our industry and that paralysis will continue as long as these investigations continue. Utilities and project developers are hesitant to commit to new investments with the uncertainty that now exists with respect to future cost of solar modules. Simply put, it is difficult to see how anyone, including Petitioner, gains from these investigations coming to fruition with antidumping or countervailing duties on cells and modules from China. Rather, should that happen, the cost of solar energy will actually increase to uncompetitive levels in this country with the inevitable result that the volume of demand for solar modules, including those of SolarWorld, will actually decline. Thank you, very much.

MR. BUTTON: Good afternoon. I'm Kenneth Button of Economic Consulting Services. There are a number of conditions of competition that are distinctive to the U.S. solar industry. First, Federal and state governments have implemented policies and incentives explicitly encouraging expansion of solar electricity production in the United States, as indicated in slide three. Prominent along the incentives are the investment tax credit or

cash grant equal to 30 percent of project cost. Additional programs exist at the state level, mandating the expansion of solar power generation in the state, particularly with the establishment of renewable portfolio standard targets and various monetary incentives. These monetary incentives encourage installation of solar power generation, while the cost of solar power generation is progressively reduced to a level competitive with other power sources, so-called grid parity.

As you've heard, as a general matter, any given solar project's total system cost must be sufficiently low to make it competitive with conventional energy sources and also financially attractive to private sector investors, whose financial backing is necessary for the project actually to be implemented. Government incentives have been key in lowering the net costs, so that the projects achieve these goals and are implemented. However, with the incentive levels declining, there has been tremendous pressure to reduce all in total cost levels for projects, so that they continue to be economically viable and drive further adoption of solar power. Therefore, in the face of declining incentives, the only way to keep a project economic is

to cut its underlying cost of which roughly 50 percent is the cost of modules. As a result, there is great pressure on project contractors to get the module supplier to cut the module price.

Second, the demand for solar electricity is highly price elastic, as it is very sensitive to changes in solar electricity prices. A decline in solar electricity prices tends to cause a shift in demand away from other generation sources towards solar electricity. The demand for solar modules is a derived demand, arising from the demand for solar electricity. Because solar modules constitute up to 50 percent of the total cost for a solar electricity system, a change in the price of solar module has a substantial direct impact on the total cost of a solar electricity system and, hence, the quantity of modules demanded in the market. As a result, the elasticity of demand for solar modules is, itself, very high.

Third, as you've already heard, non-price factors have a significant influence on U.S. purchaser decisions as to the selection of a solar module supplier, especially with respect to relatively large projects.

Fourth, trends in the price of polysilicon are an important determinant of prices in the U.S.

solar module market. As you have heard, in recent years, the price of polysilicon has been very volatile. As indicated in slide six, it increased very sharply between 2004 and 2008 in that period and then declined equally sharply from 2008 to the present. As indicated in slide seven, the decline in the cost of this primary raw material for crystalline silicon modules is at the root of the decline in prices for crystalline silicon modules. As indicated in slide eight, those data are even more compelling when expressed in index form where the declines in polysilicon, wafer, and cell values are virtually identical.

Fifth, a similarly important factor underlying the decline in crystalline silicon prices has been the head-to-head competition from U.S.-produced thin film modules particularly sold by First Solar, which is the largest U.S. producer of any type of PV module. As indicated in slide nine, First Solar, itself, states, "our advanced technology has allowed us to reduce our average module manufacturing cost to the lowest in the world." And then in 2010, its cost were "significantly less than those of traditional crystalline silicon solar module manufacturers."

As shown in slide four, public data appear to support this statement. As you have heard, the all-in cost of production for a thin film module is significantly lower than the all-in cost of production for a crystalline silicon module expressed on a comparable per watt basis. In other words, First Solar's low cost of production permits First Solar to have lower pricing. That is another important factor undermining the decline in U.S. photovoltaic module pricing.

Finally, as you recall from slide one, as a result of the declining installed cost of solar power permitted by the combination of the impact of lower polysilicon prices, the governmental incentives, and the declining of thin film cost trends, the demand for solar modules in the United States has grown substantially over the 2008-11 period.

As to like product, the definition of like product should be expanded to include thin film PV modules. As indicated in slide 10, crystalline silicon and thin film modules have the same fundamental characteristics and uses. The item of photovoltaic commerce is a module. Both crystalline silicon modules and thin film modules produce electricity from sunlight using the same photovoltaic

effect. As indicated in slide two, across these two technologies, there is a continuum of efficiency and electricity conversion, extending from the most efficient type of crystalline silicon technology to the least efficient type of thin film technology. Crystalline silicon and thin film modules are interchangeable and are, in fact, used in all major segments of the U.S. market. Thin film and crystalline silicon are sold to the same channels of distribution. Moreover, producers and consumers view crystalline silicon and thin film as directly competitive products, which was confirmed by the members of this panel today.

In addition, as shown in slide 11, First Solar, itself, states, "in the PV module segment, we continue to face intense competition from manufacturers of crystalline silicon solar modules." Customers share this perspective and that they receive bids from both First Solar and crystalline silicon module producers, such as SolarWorld, for the same projects. Competition from thin film module producers, such as First Solar, appears to have had a significant price depressive effect on SolarWorld's prices and continues to do so.

With respect to SolarWorld, it is evident

from public information that SolarWorld cannot reasonably assert sales or production volume injury to its U.S. operations. For example, as indicated in slide 12, SolarWorld publicly states that its U.S. sales increased in 2008, declined with the recession in 2009, skyrocketed in 2010, and continued to do so in 2011. SolarWorld states, "our U.S. business flourished gratifyingly in 2010. On the whole, we succeeded in more than tripling our U.S. sales of modules and SUNKITS in the year 2010." As to 2011, SolarWorld states, "in the U.S. business, we were moving at a high rate of growth in the first-half of 2011. In the first six months of 2011, our shipments in America already exceeded the level of the entire previous year."

We reserve our primary comments regarding SolarWorld's alleged price injury for the confidential post-conference brief. However, as indicated in slide 13, the Commission should appreciate that consistent with the history of a wide range of semiconductor type products, the price of PV modules has been declining progressively for many years, long before Chinese producers entered the PV market. The short-term increase during 2004 to 2008, you see in the chart, was directly tied to the temporary shortage of

polysilicon. The decline in module prices thereafter simply continues the long-term trend driven by declining polysilicon prices, thin film competition, and regulatory pressures.

With respect to threat, as shown in slide 14, the Commission should examine carefully the continuing new investment in the U.S. cell and module production, which indicate a confidence in the future of the U.S. solar manufacturing.

Finally, these investments are being made with the full understanding that the price of polysilicon is likely to continue its decline with inevitable implications for continued declines in the price of crystalline silicon modules. Thank you. That concludes my testimony.

MR. ELLIS: Thank you, Madam Chairwoman. That ends our prepared remarks. I'll save my remaining 30 seconds for rebuttal. I'm happy to take questions you may have. Thank you, very much.

Ms. DEFILIPPO: Thank you, Mr. Ellis, and thank you to members of the panel. We will first turn to Mr. Azzam for his five minutes and then we will do questions to both groups at that point.

MR. AZZAM: I want to thank the Commission for the opportunity to present our position. It is a

little different from the rest of the group here. I'm President and CEO of SolarOne Solutions, based in Needham, Massachusetts, not to be confused with Hanua Solar One, which is a Chinese manufacturer of solar cells. I, myself, have been in the PV industry for 25 years, before most people knew how to spell it, and 15 years of which were with a U.S.-based manufacturer of solar cells and modules, before I got started in the off-grid solutions business in starting SolarOne.

One of my primary objectives in my testimony is to make sure that the Commission understands the distinction between the off grid and on grid market for solar cells and panels. They do require different types of solar panels. On grid modules are used in high voltage systems that product bulk power into the grid, while off grid are high value solutions where the grid power is unavailable. SolarOne is one of literally thousands of U.S. companies of varying sizes that provide solutions virtually everywhere that you look around. Mr. Cassise observed one of those in the form of the aero boards; but, also, the speed traps that are out there, as well as security cameras, trash compactors, emergency phones, and our company, which does commercial scale lighting applications for roadway, advertising, and several other lighting

applications, all based on solid state LED technology.

And the U.S. market has been growing steadily, not in the meteoric fashion that we've seen the grid connected, but it's been growing steadily here in the U.S. and poised for enormous growth is in the developing world emerging markets, where the grid is nonexistent or underdeveloped or marginal. And, in fact, 30 percent of what we manufacture is exported. And so, we rely on off grid solar panels in the production of our equipment. And these modules are defined by lower wattages than typically -- the module that you see there is probably around 260 watts. We're typically below 200 watts of rated power. And I think Mr. Kilkelly described the need for an appropriate voltage for battery charging, 12, 24, or, on occasion, 48 volts. And so those are really important distinctions.

There are three key points that I want to leave the Commission with. First is that there really is a very broad based U.S. industry, it's disparate with many different applications, that does rely on off grid modules. We don't buy in nearly the volume that you're hearing about in terms of solar panels that these on grid projects use, but it does leverage the solar panel many times over, sometimes as high as

15 to 20 times the value of the solar panel in high value applications. Again, there are many military applications, lighting, water purification, the list is really very extensive.

And the applications are far less dependent on other government subsidies. It's rare that the investment tax credits have played a role in the sales or any of the buy down or the renewable portfolio standards, any of those play a role in the markets that we serve. In general, we're very solutions oriented and that does require some very sophisticated design work, software development, and that actually provides an advantage when we're talking about competition from foreign sources to what the strength is in American industry.

The second point is that essentially the PV manufacturers -- this may be a little harsh -- but PV manufacturers in the U.S. essentially abandoned the U.S. production of off grid modules well before 2008, I pursuit of the large grid connected market that was created by massive subsidies coming primarily from Europe to start with. And as a result, many manufacturers, in fact, sent their production of the off grid modules offshore. My own company that I had worked for, in fact, in 2000 sent all of the off grid

module production to India in the year 2000 and that's the case for many of the U.S. manufacturers today. In fact, we have a number of incidences where we were unable to find an appropriate made in the U.S. solar panel to address various military projects and had to get exemptions.

My last point, and I notice that it's red there, is that the imposition of antidumping and countervailing duties will have a devastating effect on companies like ours and our ability to compete both on the international and domestic levels. I thank you for your time.

Ms. DEFILIPPO: Thank you, very much, Mr. Azzam. Before I start with the staff questions, I would like to take the opportunity to thank everyone that came today. It's always gratifying to have a lot of witnesses on the Respondent's side to get the best out of a conference. I appreciate you all taking the time to come and be with us and share your information. With that, I will turn to Mr. Cassise for staff questions.

MR. CASSISE: I, too, would like to thank the panel for your testimony. It was very helpful. I'd like to start with Mr. Ellis. This may be more appropriately addressed in your brief; but, in your

brief, could you explain how you believe the change in the scope has affected our data and what you believe to be the most reasonable interpretation of our data, as we asked for it?

MR. ELLIS: Okay. I'll mention it briefly now and then we can certainly address it in the brief. And afterwards, if others want to join in, that's fine.

There's at least two major areas where we've got trouble, I think, and significant trouble with the data. One is the questionnaire didn't specify, did you include Chinese modules that are sold through third countries -- I'm sorry, the other way around -- Chinese modules with non-Chinese cells. And I have a hunch that if you've got Chinese module data in your questionnaire responses, it's Chinese modules from Chinese cells, because the title of this case and the understanding is that it covered Chinese cells. So the module data you have in your QRs from the producers, and from importers, as well, is going to be -- is not going to include modules produced in China from Taiwanese cells or Philippine cells or Malaysian cells or Korean cells or wherever. So, that's a serious problem, I think, if you're going to include those types of products within the scope of this

investigation.

The second one conversely, it wasn't clear that modules -- until last night, that modules produced in France or Mexico or Japan or wherever, but including Chinese cells, remain Chinese for the purpose of this investigation. Customs' rules, which, of course, don't necessarily apply, make it pretty clear that when a cell is converted to a module, it takes on the country of origin of the module. So, we're now being told, and I suspect that none of your importers or foreign producers told you -- thought about this, that modules being produced in third countries, in fact, retain their Chinese origin for this purpose. You're missing that data.

And one small example, you've got Mexico there as presumably a non-subject country, as one of the countries for pricing product data in your QRs. Well, a lot of Mexican module production is going to be from Chinese cells and you're going to treat it as a non-subject. You're not going to know what the data is telling you. It's a deep uncertainty here and I've never seen a case that had this problem before. If other folks want to join in?

MR. BUTTON: In our effort to itemize the number of questions that might be involved, in the

foreign producer questions, it would be two. It would be questions II-12 and 13. In the importer questions, there would be eight questions, to include II-3, 6, and 8; and III-2, a through b, c through d, and e through f; and III-18 and III-19. So, the uncertainty that you would face with respect to the cell and module issues as described by Mr. Ellis would apply potentially to all of these.

MR. GURLEY: Yes. This is John Gurley for Trina Solar. When I heard today from Petitioner that they "always meant to include modules that included cells from third countries," I was pretty astonished because the clear language of the petition and in supplemental responses to the Department of Commerce and the Commission have taken exactly the opposite position. So the first time we've ever heard that they were going to include modules that included third country cells was last night, the day before the conference and the day before the notice of initiation.

If you look at their petition, they have an exhibit, which is supposed to prove standing and in that standing exhibit, they include zero producers of modules. The exhibit is clearly dedicated to one thing, which is crystalline cells. So for them to

come today and make the bald statement, they always meant to cover it and this was a mere clarification, I think boggles the mind.

MR. CASSISE: Any of the Respondents that are here today, in light of the new scope clarification, would you have to revise the data that you've already submitted to the Commission?

MR. EFIRD: Roger EFIRD, Suntech. We would have to investigate that. I'm not sure.

MR. ELLIS: Yeah. This is Neil Ellis. The ripple effect to the questions that Ken Button identified, that was identified last night at roughly midnight. So, we haven't had a chance yet. I suspect that the answer could be yes, but we don't know where, we don't know who, and we don't how much.

MR. GURLEY: This is John Gurley. We would have the same response.

MR. CASSISE: Okay.

MR. NICELY: And Mr. Cassise, for Sun Edison, the same would apply on the importer side.

MR. CASSISE: Okay. I'm going through the slides here and I guess slide five is the levelized cost of electricity using the different technologies and we have the silicon and the thin film. And there was a lot of talk of grid parity and how the costs

need to come down in solar for it to be competitive with other fossil fuels. Just to complete our record here, what is the coal, natural gas cost that would be put on page five -- that's not page five -- I have silicon, $143.5 per megawatt; and thin film, $107.6. What would the fossil fuel equivalent -- or cost of that be?

MR. BUTTON: Mr. Cassise, Ken Button. We can provide you the source from which these data that are in the exhibit came, which additionally list these other that you request.

MR. CASSISE: Okay. Well, you don't have to give it to me on this basis. I'm assuming that everybody in this room knows what the grid parity cost is off the tops of their heads. I'm just curious to what it is.

MR. BUTTON: Yeah. The intent of the exhibit was to show relative cost between two technologies, as you see here, not to establish the specific metric between these technologies and all of the others.

MR. CASSISE: No, I know the intent of your exhibit. I want to use it for a different intent.

MR. BUTTON: Then, we can provide you the backup document that I think may meet your needs.

MR. CASSISE: Okay. Mr. EFIRD, could you tell me what the grid parity magic number is?

MR. EFIRD: I wish there was a magic number. To explain grid parity, you have to choose a geographic location. You have to look at the amount of sunshine that that particular location has, you have to look at the cost of what electricity is in that particular location, and then you can come up with a grid parity number. For instance, if I'm looking at Arizona, where I have a lot of sunshine, and maybe I have a low cost of grid electricity, my grid parity number is actually going to be higher than it would be in, say, northern California, where I have a lot less sunshine, but I have a very expensive cost of electricity from the utility company. So, grid parity actually varies from location to location based on a number of factors.

Now, I know that's not a real satisfactory answer, but there is data out there that shows today that we have three or four states where we have already achieved grid parity, Hawaii being one of them, a very cost -- a very high cost of electricity state with lots of sunshine. And there are approximately 10 major metropolitan areas in the United States where solar has grid parity when

compared to peak power plants. A peak power plant is a power plant that generally run -- a lot are often run by natural gas. It basically spins for 24 hours a day. It doesn't generate electricity unless there's a need. At 5:00 in the afternoon, when everyone is getting home from work and everybody is starting to crank up the stove and the dryer and the washer, electric demand goes up. While this plant is running 24 hours a day, they'll flip it on to make electricity for a few hours to help meet that peak demand that's out there. The cost of electricity from a peak power plant is very expensive because it runs 24 hours a day, it may only create electricity three or four hours of that period. Solar has reached grid parity from that standpoint.

So, grid parity is not a magic number. It really changes depending on where you are in the world.

MR. KIMBER: I think that, as someone who has been mind tacker in the electric power industry, not necessarily in the solar industry, I think it's incredibly important for the Commission and the Committee to dig into the electric power industry and maybe get an expert to help you out, as well, with how power prices work in different markets. In California

and in Erkat, Texas market, for instance, retail grid parity, behind the meter, where you're putting something on a rooftop, for instance, selling to a customer, it's probably anywhere between $100 and $160 a megawatt hour, very rough numbers. When you start getting below $100 a megawatt hour, it all becomes a function of gas prices because in both Erkat and in the California market, gas is the marginal fuel that sets the prices.

And so right now, you've got peak power prices that are very depressed because you've got very low demand for electricity and you've got very low gas prices. So, peak power prices are probably in the $50 to $70 range. Typically, in those markets, you see gas -- you know, peak prices over the last 20-30 years anywhere in the kind of $80 to $110 a megawatt hour range. These are very rough numbers, but that's kind of a gut check level of -- that's the wholesale side of the number and then the number, sort of $100 to $140, is a retail side. So, you should definitely tap an expert in power markets because, as Ken mentioned, the two are inextricably linked.

MR. CASSISE: Okay. So, there are many variables involved. But, I remember one witness had stated that, you know, we are finally getting to the

point where the solar prices were coming down to where we were even approaching a grid parity and some of the government Federal and state incentives were finally bringing that price down to something that was economically viable. And I guess where I was going with this line of questioning was that demand is, from what I've heard today, somewhat stimulated by these government incentives. And I've also heard that here, in the U.S., we have certain government incentives, some of which may expire, some of which may not. But, Europe, also, has their own incentives and the market has -- the economic incentives in Europe have been much greater, whereas even U.S. producers were sending their panels to Europe because the market was much bigger.

So, I guess, as a general question, could we compare the U.S. policies and incentives, at least at the Federal level, maybe the state level, with those of Europe? How has Europe stimulated the demand for that in a greater way than the U.S.?

MR. PETRINA: Mr. Cassise, fundamentally, the incentives -- Robert Petrina from Yingli Americas. Fundamentally, the incentives in Europe and the U.S. are different. In Europe, the predominant incentive mechanism is called a feed-in tariff, which is a

guarantee of a 20-year payout per kilowatt hour of the system's output, which makes it a very simple financial product that is understood by most people and is easily -- it easily attracts investors into it. Whereas in the U.S., you have a mix of incentives that are laid on top of each other. So, at the Federal level, you have the ITC, the 30 percent tax credit, which until the end of this year is a cash grant payable after completion of a system.

You have your state level incentives. For example, California's solar initiative, which is the largest incentive program in the country, was designed to tier down from $3.50 a watt for systems below 50 kilowatts or I believe 20 kilowatts as megawatts were installed. So the whole idea of the incentive scheme was that as we install more megawatts those incentives come down, right.

Essentially the goal from a policy level is to wean off the industry off incentives. So when you see the various fluctuations that move in products, you know, people are smart; they're going to chase those markets that provide the biggest returns. So that's what you saw in 2008 with Spain, in 2009 and '10 with Italy and so on. So I think that incentives are very important to understand and how they differ

in the different jurisdictions.

MR. EFIRD: I think one other point to add to that is most of the European -- Roger Efird, Suntech. Most of the European incentives, Germany, for example, if I recall correctly, their incentive program began in 1996 and the incentive has been dropping on an annual basis since 1996. So you're in year 17 of an incentive.

In the U.S. our incentives have tended to be more one year, two year in duration, especially the state incentives and many of the federal incentives. The only steady incentive that we've had in the U.S. I believe would be the 30 percent investment tax credit, which for residential the 30 percent investment tax credit actually began in 2008. So we're talking about rather short-term incentives.

You heard someone else testify earlier that some of these projects can be two or three years in length to get developed. An incentive that is good for one year doesn't help much when you're trying to develop a three-year project.

MR. CASSISE: And was it the 1603 incentive, Treasury plan? That's the one that's going to expire at the end of this year. Is that what you were referring to as it's going --

MR. PETRINA: Just to give you the history of that, in 2009, really with the onset of the very difficult financial times, the federal government chose to provide the ITC as a cash grant because at that time, financial companies and traditional investors, or that have the tax appetite to take those credits, were not profitable. So your GEs, Morgan Stanleys, et cetera, were just not present in the market. So for the market to really have a viable source of capital, it had to become a cash grant.

That cash grant was extended in 2010. And at the end of this year, we don't know what is going to happen. But obviously the bet is that it won't be extended.

MR. CASSISE: And it's the position of the industry that that stimulated some demand in the fourth quarter of this year.

MR. PETRINA: Certainly. I mean, I think we would have to agree with that. But just to supplement one more thing in terms of incentives, so states are different. If you look at New Jersey, New Jersey had a different mechanism called the SREC market, which is the solar renewable energy credit, which basically was -- its attempt was to create a market which would ultimately motivate the deployment of solar to meet

its RPS requirements.

So what you saw in the past couple of years in New Jersey was a huge growth in that market. But because all those assets became producing assets in terms of SRECs, that has crashed the actual SREC value, which is a significant input into the revenue equation of a developer.

So now you're seeing in New Jersey basically the SREC market is down about 75 percent year-to-date, which is going to put tremendous pressure on any developers there, and those projects, as somebody mentioned, just won't get done unless the economics are attractive enough. So it's another state in the U.S.

MR. ELLIS: I'm going to suggest that you might tell the Commission what an SREC is exactly.

MR. PETRINA: An SREC is a solar renewable energy credit, which has a value that is attached to it dependent upon the alternative compliance that a utility may have to make if they don't meet their RPS requirements. So it's supposed to be a free-trading security, let's say. But we can provide more detail on that in the briefs.

MR. CASSISE: That would be helpful. Also, I believe Mr. Young had mentioned various laws in

China, renewable energy laws in China. I was writing some of them down, but I wondered if you could give me a little more detail on some of the laws that you had listed in your general testimony.

MR. YOUNG: Okay. Thank you. China has, similar to the United States -- it has a combination of both federal and local programs that have come out. It actually started a few years ago with some isolated, almost a test province programs that had capped amounts, which we can follow up on. This was in the European style of a feed-in tariff such that an investor who put a system on starts earning money on a per kilowatt hour.

Actually, before that, there was also a upfront incentive, similar to what we have with the ITC here, where an investor would receive, for example, 30 percent one time only, then you're done. This year, it has brought about a national feed-in tariff which by then is a minimum rate for anywhere where you would receive a certain amount per each kilowatt hour.

In this regard, I think it would also be very fruitful that we would summarize the different -- the scopes.

MR. CASSISE: Okay. Yeah, that would be

helpful. I guess just in general -- because we also heard this morning that there is absolutely no home market in China. I mean, are some of these incentives and these laws trying to incentivize an increase in the Chinese home market for these products?

MR. YOUNG: There is no specific carve-out that I'm aware of for the residential market. And first, you are correct. By the nature of the demographics in Asia, we have a lot of you know, 15- to 20-story structures, especially in the urban shifts, so that the amount of roof, of ownership, is minimized.

Having said that, there is abundant commercial rooftops, or what we would call here commercial rooftops, and, of course, open fields, and especially where the government has access. And this includes universities, hospitals, and whatnot. So there are very active rooftop markets, which would be analogous to the commercial markets, as well as free land which can be apportioned, which is analogous and is a utility-scale type development, both.

MR. CASSISE: Yeah, but the Chinese government hasn't mandated a certain increase in capacity of generating electricity via solar products? I mean, you can address that in the brief, but --

MR. YOUNG: But there is a rooftop program that was announced, but is not specifically tied to residential versus commercial or other.

MR. CASSISE: Okay.

MR. YOUNG: Yes. We'd be happy to return on that.

MR. CASSISE: That would be helpful. Mr. Young, while I have you --

MR. ELLIS: I'm sorry. Excuse me, Mr. Cassise, there might be another answer.

MR. CASSISE: Oh, I'm sorry.

MR. ELLIS: A little more on that question.

MR. PETRINA: Just to supplement Thomas' answer, I think it's important to know that different countries are implementing different incentives as we speak. If you look at India in 2009, they really began to implement their incentive program. China has as well. And there are targets that have been set in terms of expected installations by 2015 and 2020. And I believe a year ago the answer would have been different as to how big China is as a market, but today I think it's a very significant market.

And, you know, we won't know the numbers for 2011 until the numbers are compiled in 2012. But Yingli as a company specifically is shipping more than

20 percent of its product into the Chinese market in the first three quarters of 2011. I think that's a very significant signal as to how viable that market is.

MR. CASSISE: Okay. Mr. Young, I just wanted to go back to you for a second and discuss this bankability concept that you were discussing. And I'll try to describe how I think I understood it, which was that in order to finance a very large project, you need investors, you need capital, and that the banks or the investment bankers, they hire the third-party engineering consultant reports to do a technology risk assessment. And the technology risk is I believe whether the technology will be obsolete in 25 years or whether the U.S. producer will still be around in 25 years.

If you could expand on that, I kind of caught half of it.

MR. YOUNG: Okay. That's actually a very good, you know, line of questioning because it encompasses more than one area. There is a technical due diligence. We know that the module technology has been around since the fifties, so there is no doubt or minimal doubt that it would work when you activate it. The issue is more stability and the degradation rate

of the performance, or even best data coming from projects that have used this, you know, panel brand A or AA or B, so that you see the history of the performance.

Of course, the ultimate goal is that the project will have a predictive output, which naturally declines over time, which is inherent of the technology nature.

On the other issue of the viability, hand in hand with such purchase or investment there is a warranty that will back up the performance of the module in any given year or any period of years. And unlike maybe another semiconductor industry, where you buy a mobile phone and you only expect it to last, you know, two years, or even an automobile that has chips that would be, you know, maybe five or ten years, there is an issue, of course, of the ability for a warranty to be met over time.

And so increasingly these banks, in parallel with the third-party engineering report, will routinely and on a project-by-project basis look at the financial strengths of the underlying warranty provider, i.e., the manufacturer because if you are potentially making a claim that their performance would not be up to its estimated level in year 19,

say, then you would have a right to go back to someone who would presumably be required to back that warranty.

MR. CASSISE: Okay. This is done on a product-by-product basis, not on a company-by-company basis, so the consultants aren't giving each company a technology risk rating or anything of that nature, are there?

MR. YOUNG: My understanding is that in general there is a relatively small amount for any given brand. You know, for us, for example, there may be three popular models or four that are generally chosen. So if an assessment is done on a brand, it generally will encompass perhaps the specific modules that are being proposed for a project.

MR. CASSISE: Okay. I think I have it. But it's a good segue into what we were discussing this morning, which is what the Petitioners allege was a relatively new phenomena of the Chinese companies financing or at least aiding in the financing of the large utility projects. If anyone would like to address that issue.

MR. EFIRD: Roger Efird, Suntech. For those of us in the solar industry, this is a relatively new concept. But I would like to clarify. For the

customers, this is not new at all. This is standard operating procedure in building power plants. If I want to buy a GE turbine for some gas-fired power plant, GE steps up to the plate with the product and the financing.

This is the way business is being done in the large-scale power plant business. The solar industry doing rooftops and residential, we were never exposed to this until the large-scale utility market came about. So when we're dealing with a project developer or a large-scale construction company who has got the contract to build something like this, it is an expectation and it is standard operating procedure in that industry that if you are a supplier of some of the major components going into that that during the construction phase that you will participate.

Now, sometimes you may participate. There may be a premium or interest paid to you during that period that you're providing construction, helping to provide construction finance. There are times when you're actually asked to become part of a legal consortium where for a temporary period of time you actually become an equity holder in the project. And when the project is then sold to its final user, the

consortium breaks up.

There are numerous ways that that is done. And it is new to us in the solar business. But it is certainly not new in the construction of power plants.

MR. CASSISE: But, Mr. Efird, I'm curious to know if this is a relatively new phenomenon because more utilities are purchasing these and are used to big projects, or is this a recent phenomenon because credit has dried up and you are just replacing what used to be put in place by a bank, financing that used to be put in place by a bank.

MR. EFIRD: Even when credit was readily available, I believe that this has always been a practice in building power plants. But I want to back up just a little bit on what you said. I don't want you to have the impression that utility companies are buying a lot of solar systems. There are a few utility companies out there that have purchased solar systems, but utility companies are major customers for the electricity that is being produced by these projects.

But utility companies, most of the projects being done out there are being done by independent power producers. These are large private companies that are not utilities. They build power plants, and

they build them on long-term contracts. They have a utility company signed up to buy that electricity. But more often than not, the utility company is not the owner of these large-scale power plants.

Some utility companies do choose to own and operate their own assets. But many, many companies, they want a big solar system in their service territory, and they're willing to buy all the electricity that comes out of that system on a long-term contract. But they don't build them, construct them, and operate them. The majority of the customers that my company has been successful with have not been utility companies. They have been private companies that build power plants and sell electricity to utility companies, on the wholesale scale.

MR. CASSISE: Yeah. I was just trying to -- I wasn't distinguishing between private or public utility. It was more just the magnitude of the project, I suppose, you know, whether that customer would expect some sort of financing, whereas, of course, if I was going to buy a solar panel for my house, I wouldn't expect to get financing from you. That was my only point.

MR. HANNAH: If you will, Ken Hannah, MEMC. We do a lot of the development of these projects, and

the way to think of this discussion is solar -- think of it as an asset class. There are two pieces. There is a utility that is looking for the electricity, the output. But the financing we're talking about is we design, develop, install a system. Then we're looking for an investor to buy that system.

So that investor could be a bank. It could be a pension fund. It could be anyone that is looking for a rate of return over the performance of this asset over a 20-, 25-year period. So it gets complicated when you start thinking about there is the electricity piece and the financing. But I think it's simplest to think of there are people like us, what Sheldon does. We go and develop these plants. We're out talking to different investors, pension funds, private equity companies, I mean, banks. And they're looking at this underlying asset, which is this bankable product that a number of these folks in the room produce, and they're wanting to decide whether they want to invest their precious capital in this asset and have a return over a long period of time.

So there is two pieces. There is the electricity generation, which is what the plant produces. That's what the utility is looking for, right? And they're paying on a per cent per kilowatt

hour basis for that electricity, and they're going to lock a power purchase agreement in over a period of time. And then these investors are actually buying this power plant.

So hopefully that will help a little bit in terms of some of the different nomenclature that we're using.

MR. CASSISE: No. That's helpful.

MR. KIMBER: If I may, one quick add-on, and that is just, you know, we're in the market for lots of capital. We have done almost a half million dollars of financings in the last, you know, year, debt and equity. The debt and equity markets -- correct me if I'm wrong, Ken -- for our asset class are working pretty well, and you can get quite a lot of private capital out there from the bank market, from the institutional market, folks like Prudential and Mazuho, who have done a lot of deals.

I don't think there is a lack of capital. I actually don't think the practice -- certainly, we haven't seen the practice of Chinese module manufacturers lending or buying -- you know, putting equity in projects as being pervasive. We haven't -- I can honestly say we've had one company even suggest it, and it was nothing more than, you know, one quick

comment. And that was actually focused less on the term financing and more on essentially vendor financing, which is kind of what Roger is talking about, where they basically decide we can take payment later post-construction when you go online at COD, right, which is something very common in almost any industry.

MR. CASSISE: Well, let me -- you know, from what we heard this morning, there were certain financing deals that had -- you know, they seem like long-term exclusivity contracts. I mean, that was how they seemed described to me at least, that we'll finance the entire project, but you have to buy all of the cells in the future from us.

Again, any detail, any -- and I understand that some of these things may be better discussed in the confidential briefs. But anything that anybody can offer here in public would be helpful.

MR. EFIRD: Roger Efird, Suntech. We have never done that.

MR. PETRINA: And Rob Petrina, Yingli America. We have never done that.

MR. KING: Alan King, Canadian Solar. We don't do that either. We spend an inordinate amount of time trying to cultivate relationships with banks,

with lending institutions so that we can put the companies together so that they can work out their own financing, but we don't provide financing.

MR. YOUNG: That would also be the same for Trina Solar.

MR. CASSISE: Okay. All right. I'd like to shift a little bit and talk about the thin film technology. You know, we heard this morning that there are very distinct market segments and very different products and different manufacturers. I would like to get everyone's take here. Is there an agreement in the industry that there are different inputs and a very different production process in making these products? Do the parties agree at least on that much?

MR. KING: There is a different production process of thin film versus crystalline silicon. However, at the end of the day, you're producing electricity. And frankly, that's what everyone is buying, is electricity.

MR. CASSISE: No. I understand that. But the actual material inputs and the production process, does anybody make both products using the same production equipment?

MR. EFIRD: Roger Efird with Suntech. No.

The production equipment is quite different between a thin film technology and crystalline technology. There are companies that manufacture both, but they generally do it with separate factories.

MR. CASSISE: Okay. And of the three market segments, you know, the residential, the commercial roofing, and the utility, we heard this morning that there was slight overlap in the utility market segment. But other than that, there wasn't any interchangeability within these market segments. Now, I've heard a different story in your general testimony, that thin film and the crystalline compete in all three. But if I could get a breakdown of like the shares. You know, like is it -- in the residential is -- you know, the different shares of the crystalline versus thin film in residential and commercial roofing and the utility. Just estimates would be helpful at this point.

MR. EFIRD: I'll do the best I can with that, and the term slight overlap. If thin film has the number one market share in the utility-scale solar business, I don't see how you can classify that as a slight overlap. They have the number one share, and they've held it for at least the last three years. So let's use words like maybe dominate that market share

instead of slight overlap.

Now, thin film has been less successful in its attempts to get into the commercial roof and the residential sector. Some of the inherent disadvantages of thin film come to play more in commercial and residential. That's not to say that the thin film companies are not trying. One of the largest companies in America, Dow, Dow Solar has just introduced a thin film replacement for asphalt shingles.

Now, asphalt shingles, that screams the residential market. You don't put asphalt shingles on commercial buildings. For solar, the largest producer of thin film in the United States made a $30 million equity investment in 2009 in the U.S.'s largest installer of rooftop systems, a company called SolarCity in California. It was a $30 million equity investment in that company, and part of the deal was a five-year contract for 100 megawatts of thin film modules to be used in their projects.

They do not do anything on the ground. All of the projects that SolarCity does are rooftop projects. So the investments are there. United Solar is a thin film company that has been in business more than 20 years in the U.S. They do not do any utility-

scale business. Their entire business for the last 20 years has been based on rooftop, and off-grid as well as rooftop stuff.

So in terms of market share, I don't have that data. I don't really know what it is. I know what the marketing efforts, and I certainly know what the results are in utility. I think their market share in the two other markets are small at this time, but they are certainly developing products and trying to get their business done in those markets.

MR. CASSISE: So you would say there was a slight overlap.

(Laughter.)

MR. EFIRD: I think so.

MR. CASSISE: I know he would not say that. Now, if you could quantify those market shares in a brief, that would be helpful.

MR. ELLIS: We'll be glad to do that, Mr. Cassise.

MR. CASSISE: Also probably for the brief, I had asked earlier, the earlier panel, about what share, what percentage of U.S. production of the modules were produced by what I had termed assemblers. If you could give me an estimate in the brief on what that share in China that you believe of the modules

that are assembled or produced by the assemblers.

MR. ELLIS: Okay. We'll be glad to do that also. We'll do the best we can in coming up with that information.

MR. CASSISE: I believe that's all the questions I have.

MS. DeFILIPPO: Thank you, Mr. Cassise. Mr. Rees, questions for this panel?

MR. REES: Thank you. Thank you, panel. Thank you for your testimony. I'll try to be as brief as I can be, and Mr. Cassise is always helpful in that regard. So I guess the first question is really -- I hear this from Mr. Ellis, and, Mr. Gurley, I heard it from you, too. I sense the disappointment in your voices when you talk about this scope matter. Disappointment is probably a light word.

And I guess what I would say is -- and I'm open-minded; the Commission is open-minded. I think that issue will really come down to a lot of what Mr. Cassise is asking you about the specifics of how you think the data has been affected, and if it has, what the consequences of that are. And then at the end of that, you get to this question, so what do you do about it.

And I would just ask you in your post-

conference brief to -- if you're going this extra step of not simply pointing out to the Commission staff or assisting the Commission staff in remedying any data issues, if there are data issues -- if you're going the extra step, which I thought I heard a whiff off in the opening, which was, well, this deserves some greater sanctions, such as a negative determination in the preliminary phase on that basis -- it would be useful in your post-conference brief to articulate clearly your legal support for that sort of a remedy for these issues.

The Commission, of course, is a creature of statute. It doesn't have inherent power that an article III court would have. But it has express and implied powers. And so anything you have, if you pursue that argument and that line of thinking, any full articulation of it in your brief would certainly be helpful, up to and including any examples that you can point to of any Commission investigations where you think -- if you think they're useful to your position.

MR. ELLIS: That's fine. We'll be glad to do that. I'd just point out there are two points. It's not necessarily -- or it's not only a punitive reaction to a behavior by one party or the other in

terms of use of -- you know, the outcome of a negative determination. It is also the point that you do not have the evidence, the substantial evidence, required to reach an affirmative determination, a reasonable likelihood determination because of the fact that on day 19, after you've collected a lot of data, we discovered that it's incomplete. It's inadequate. You do not have data to reach an affirmative determination on these new universes of products or sales. But we'll spell that out in more detail, and I'm glad to do --

MR. REES: And I'd invite you to spell that out. That's very useful. Thank you. On the issue of domestic like product, Mr. Cassise has hit on most of the key points. As I understand it then, to the extent there is an issue here, it really seems to devolve to this question of whether thin film is part of a single domestic like product with -- or rather whether the -- that the domestic like product definition should include as a single like product thin film, and thus expanding beyond the scope, to the extent the scope has excluded thin film.

Were there any other like product issues that, Mr. Ellis, you were aware of or wanted to telegraph to us that you were considering? I'm not

holding you to anything, but I just -- so far, that's what I've heard, and that's what I would expect to see in the brief, a full articulation of your --

MR. ELLIS: Okay. At this time, I don't think we have other issues.

MR. REES: Okay.

MR. ELLIS: But as long as you don't hold me to that when it comes time to write the brief.

MR. REES: Of course. That wouldn't be fair of me.

MR. ELLIS: Okay. Thank you very much.

MR. REES: And obviously, to the extent you can point to record evidence on each of those six factors regarding domestic like product. I take it there is a concordance, maybe the only concordant -- or maybe one of the very few I've heard, on at least a point about manufacturing facilities, production processes, and production employees. To use this reference point of overlap, there it seems agreed there is no overlap between thin film in terms of the U.S. domestic industry. There is no overlap on that point between thin film and the like product as the Petitioners would articulate it, the so-called CSPV cells.

MR. BUTTON: Can I touch on that?

MR. REES: Maybe there is an issue there. Maybe there is no concordance there either.

MR. BUTTON: Mr. Rees, of the six factors, I think there is, you know, probably a view here that you've heard expressed that as to the manufacturing activity itself, the two have important dissimilarities in the way they're made. However, what you are hearing very explicitly is with the remaining ones, which you typically also consider in making a determination such as characteristics and uses, they say it's spot on, that it's used to make the same thing, which is electricity, and that it is used by the same types of customers and the same types of applications. And then you work down the chain. It has the same channels of distribution.

The producer perceptions are the same. You know, we had that quote in here for First Solar. It sure thinks that they compete with crystalline silicon. The annual reports of some of the companies around this table include in their 10K, their SEC filings, their belief that they compete against crystalline silicon. And you have customers talking that you've heard who contact and receive bids from both for different kinds of projects.

So I think that's a very solid

interpretation of that, and you work your way through the others, including down to price in the sense that these are head-to-head competitions, so that the prices are very much related that way. So I believe if you go through the remaining elements of the like product criteria, you have more than the average, so to speak, similarity and a concordance with the like product finding.

MR. NICELY: This is Matt Nicely with Thompson Hine for SunEdison. I'd just point out too that of those factors, legally speaking, no one of them is dispositive. And also, as has been made clear here today, it is critical to recall that this thin film issue operates legally for us in two ways, one with respect to like product, but critically important, it sets -- the pricing of thin film sets the benchmark for the other product, hence being a causation issue as well as a like product issue.

MR. REES: No. And that point has been driven home repeatedly. I understand that on this issue of competition, it's everyone's position it seems, at least from these panels, that as a condition of competition the Commission would be remiss if it did not seriously consider the question of thin film and its impact in the U.S. marketplace, regardless of

how the domestic industry -- or rather the like product is defined.

No. But that's very helpful. I appreciate the points. Obviously, I have no position on this. It's just it's helpful to hear you, Mr. Button, explain those, and to the extent the post-conference brief articulates that with record cites, it's useful for the Commission as it considers the issues going forward.

MR. BUTTON: Mr. Rees, if I could just add one other point to make sure it doesn't get missed, the relevance to this proceeding with respect to thin film is that there are two. One of them has to do with like product. The second and independent one is a causation force. Whether or not you decide that thin film isn't a like product, what you're hearing is that they are very much competitors, and the thin film costs of production and the pricing that results from that capability and the active head-to-head competition in the market results in thin film's pricing having a direct impact on the pricing during the pricing of the crystalline silicon product.

MR. REES: Thank you. That's helpful. On the issue of domestic industry, I gather your definition would be that it would track your like

product definition, and that as the industry would include producers of the thin film and the so-called CSPV cells under your definition.

I didn't hear any dispute about assemblers of CSPV cells and whether they are engaged in sufficient production-related activities to be considered members of a domestic industry. I don't know if you're in a position you can comment on that now, Mr. Ellis. But at the very least, if you were raising an issue on that point -- you've heard Petitioner's position -- it would be useful to have that in your post-conference brief, your arguments.

MR. ELLIS: We can't address that now, especially given the disruption, shall we say, of the scope definition, which may apply to the like product and domestic industry. So we're going to have to hold that off for our brief.

MR. REES: Of course, understood. And similarly with respect to related parties, and what role they play. Petitioners did at least in their petition articulate some theories regarding related parties that they identified. If you depart from their view of the world on those issues, explaining that in your post-conference would be very useful to the Commission, as would under your definition of

domestic like product, specifically identifying if it's a broader world, it would be useful for the Commission if you can point out where in the questionnaire data and other sources of information, where you spot related parties issues and identify where under your definition of the domestic industry, if it were broadened, as we've just talked about in terms of the like product, whether there would be any producers who -- whether there is an issue or potential issue that any producers should be excluded from consideration for material injury purposes, their data, based on their related nature, whether it's because they import directly themselves, for example, or because of their close business ties to subject country producers or exporters.

MR. ELLIS: Okay. If we have issues on that, we will obviously address them in the post-hearing.

MR. REES: Okay, thanks. And then similarly, I think I put a bunch of questions to the other side, and I would invite you, rather than run through the litany, whether it is captive production or whatever, to the extent you -- if you feel it appropriate and if you disagree, but especially if you disagree with the other side, laying out your

arguments on those points. And I appreciate you're in no position to discuss those here.

MR. ELLIS: Every question you ask, we will answer.

MR. REES: Well, but my point is you don't even have to answer those -- if you don't even see it as an issue, I don't even expect --

MR. ELLIS: No. More seriously, we will take a look at the questions and decide whether we have issues and address them. We aren't able to at the moment, though.

MR. REES: Thank you. I guess the last couple of questions I have just go to again seeing if there is any concordance, I'll call it. And then I'll leave it to my learned colleagues up here to really dig in more deeply. But you saw this morning the slides that were presented, including those from an economist, and they included -- I think I got them here. Yeah. Slide seven of Mr. Kaplan's, Dr. Kaplan's, presentation was the expansion of China's industry is export driven. That was the title of it. And he pointed out Chinese demand versus -- well, he included exports and imports -- or inventories, production, and capacity.

Are these fundamentals disputed, that the

Chinese industry is export driven? Is that in dispute here? Well, if you want to answer in your post-conference brief, that's fine as well.

MR. ELLIS: Yeah. Export driven has a pejorative flavor to it. So I don't know if we would agree to that, whatever the level of exports. Those are two different ideas. But in any event, we can address that further in the post-conference.

MR. REES: Sure. And then with respect to slides 12 and 13 of that same presentation -- and this is stuff obviously you'll have a full opportunity to rebut in your post-conference submission. But this representation that there is over-supply in China. I guess that's the factual point driven, and it identifies, for example, global demand as 1.2 gigawatts in 2012 versus a Chinese capacity of 3.5 gigawatts, which continues to grow, according to the slide.

It would be useful if you -- and then the next slide showed export markets in the EU, and it represented that they were contracting in 2012. And it would be useful if you addressed in your post-conference brief -- you're welcome to do so here, but rebutting any representations you think were unfair or inaccurate in your post-conference brief.

But Mr. Petrina seems to want to --

MR. PETRINA: Sure. Rob Petrina, Yingli Americas. I think if you look at the data, it comes in our industry from an eternity ago in July, and I think since then a number of companies from China, specifically Yingli, who I can speak to, has made it clear that they will not be expanding in 2012 due to the market conditions.

So I think it is important to recognize that as our industry changes, people make different decisions. So perhaps a year ago, as you've seen from 2008-2010, everybody expanded rapidly because of the conditions that existed. And I think now looking forward, people have made different decisions.

So I think at that point in time, that was one way to look at it. I think today the story is very different. So that's important to clear the record on.

MR. REES: That's all I have. Thanks.

MS. DeFILIPPO: Okay, Mr. Rees. Ms. Christ, questions from you?

MS. CHRIST: Yes. And I also want to take the opportunity to thank you all for coming here today, and particularly for providing us an opportunity to expand the realm of information and

perspectives that we get of the industry.

I wanted to start, as I did last time, with the beginning of this production process, and thank you for providing information on the raw materials. If we could look at slide six, you have spot prices and contract prices. And I was trying to find out, there is huge gap, particularly during the 2006-2008 period. If you don't have the information now, if you could provide later. What share of production is covered by product that was sold at those two prices? So, for example, the $500 a kilogram for polysilicon, are we looking at 50 percent of the market that purchased or produced -- or was that purchased at that price, or is it 2 percent?

You know, what share of the market in these different periods were covered either by the contract price or the spot price?

MR. BUTTON: I believe this may require some confidential data for the individual companies. But, however, it might be useful to make the following couple of observations. First of all, both contract prices -- contract prices went up a great deal, as you can see from here, and spot prices did as well. And to the extent that the pricing had an effect on the market as a whole, you can see this.

I'm going to ask my colleague to turn to slide 13, called the big blue one. You know, what you see is that it was big enough to have the module prices rise that same period of time. So what it is in terms of -- you've got enough producers of modules who had to resort to higher costs for their polysilicon, including through the spot market, I think you may hear as well, that it had a substantial direct effect on market pricing for modules.

MS. CHRIST: Yeah. I see that there is a spike there. But I'm still trying to figure out what percentage of the industry, to the extent that you have that information, is covered by the contract prices, and to the extent that you know how long those contracts are. We heard this morning anywhere one, three, five years. So if you purchased product in 2008 under contract, what percentage of the industry or your best guess would be covered by that price currently?

MR. BUTTON: Very good. We can ask the companies here to provide some confidential information on that topic.

MS. CHRIST: Okay. And then I just wanted to make sure I understand the information that you're presenting. On slide seven, the polysilicon prices,

are you using the contract or the spot price, or a blend, in making these?

MR. BUTTON: I beg your pardon. This is a blend, as it were.

MS. CHRIST: Okay.

MR. BUTTON: I believe -- I will have to give you the exact data. I don't want to mischaracterize it now, just precisely what it is. We can provide you the original source.

MS. CHRIST: And I guess I'd like to go back to slide 13. You had mentioned this increase in prices for modules -- it looks like it started around 2004 into 2009. Is there any way that you could sort of match this or give us some information in terms of whether there was any shift in the market share, particularly in the United States or global between thin film and CSI? So, for example, did we see during that period an increase in the share of thin film modules? And if you don't have the share, also potentially the growth rate in production of those two types of cells or panels.

MR. BUTTON: I don't have that information with me. If the members of the industry have that, otherwise it's a topic that we would do some research on.

MR. HANNAH: You know, I could comment. We were a polysilicon manufacturer back in the 2005 time frame. You know, almost all of the polysilicon that we were manufacturing was going directly into our semiconductor business. And it was at that time where the solar industry had started to grow, and there was a demand for polysilicon. And so as the cycles would come through the semiconductor industry, those of us that didn't have our production committed to someone -- and it was only those that weren't purely polysilicon manufacturers, so a lot of the people that were doing what we do in that particular piece of the value chain, that was their business.

So they had locked a lot of their production into those contracts. We were one of the few people that we were producing it all for internal consumption. So we had excess as the semiconductor industry went into a downturn. And so there was a significant demand and people willing to pay very high prices for that material.

As those prices went up during that time period is really when thin film started to gain some momentum as an alternative source of energy. And to be quite honest, had that shortage not happened, and people saw the pricing go up, you may never have seen

people continue to invest in thin film technology. But because of the cycle time required to put that polysilicon in, it's a two-year cycle. If I decide today that I want to add capacity, you're not going to see that output for two years.

And so there were a lot of companies around the world that had invested in assets and were worried about where that silicon was going to come from. And at that time is when you started to see these thin film guys get a lot of momentum in the marketplace.

We can provide some specific information in the briefing. But in general, that was the market phenomena that was happening.

MS. CHRIST: Well, you have made a couple of points in terms of the effect of polysilicon prices on module prices, as well as thin film as a substitute. I think that was the second part, aside from the like product issue, the causation. And so it would be helpful if to help clarify those two points, if we could get an idea of sort of, you know, when we're looking at such a large gap between the price, spot and contract, as well as sort of, you know, who is purchasing, at what prices, and how it is moving through the production chain and showing up in the panel production and the cell production, it would be

helpful, and also for the causation, to the extent that if there is an increase in the polysilicon prices that do then feed into the panel prices, do we see a difference in growth rates for the purchase and production of panel versus thin film or a market share shift between those two.

So to the extent that you can elaborate on those, that would be very helpful.

MR. BUTTON: To the extent that we have some data on that, we'll be happy to provide that.

MS. CHRIST: That would be great. Thank you. Also, you had mentioned -- oh, there has been mention of developers, engineering, procurement, construction firms. Are these firms sort of independent of solar panel producers, and so they come out there. There is a developer, and he kind of has a bid, or are they connected to the firm? And how does the competitive dynamics, particular for these large-scale projects, get affected by the relationship between solar panel companies and sort of these developers in procurement kind of companies?

MR. KIMBER: Yes. I'll lay out just generally how the sort of downstream power development industry tends to work, and then I'll talk a little bit about how solar has been slightly different.

Generally speaking, you know, you're familiar with polysilicon wafer cells through to modules.

So from the equipment end down, you basically have a development team, which is siting, permitting, interconnection. That's a development shop. That's what we do. That's what SunEdison does. Then you have what is called EPC, engineering, procurement, construction. And that's -- I think SunEd does some of that on their own. We do less of that. We partner with large construction firms, and there are many of those in solar today. And then, you know, further downstream you'll find sort of operators and owners of assets.

So that's kind of the value chain in the downstream end of power. And that's the same whether you're in wind, gas-fired, solar. The relationship then between those folks and equipment suppliers, the energy development value chain tends to be integrated less by ownership and more by contract because you take the natural gas-fired industry, for instance. Typically, what holds a natural gas-fired project together is a series of contracts.

You know, the fuel contract is a long-term contract with a creditworthy counterparty behind it. The power contract, the PPA is the same way. And then

there is -- it starts to look the same way in solar, where you have long-term contracts for equipment. The warranties are long-term commitments by the counterparties, and long-term contracts then to operate the equipment once it is in the field. And that's how you bring -- this whole contractual integration, this package of contracts, is essentially how you bring the large amounts of financing that this industry needs because it is very capital-intensive.

So you've seen that a lot. We do a lot of long-term contracts with module suppliers, and that's the typical interaction. Over the last couple of years, as panel prices have fallen and, you know, the dynamics of the industry have changed, you have seen some acquisition. So you have seen some vertical integrations. You have seen First Solar buy a whole host of developers. You've seen SunPower buy a whole host of developers. You have seen integration the whole way up from the polysilicon and MMEC buying SunEdison.

Our parent company, Sharp Electronics, is a module manufacturer as well. So people have tried to consolidate the various parts of the upstream and the development team to try and figure out how to sort of stay in the market, I think, to try and find a winning

combination. I can't say that we have a clear winner at this point. But that's the history of what has been happening.

MS. CHRIST: I'm just trying to get an idea. It seems that at least for the utilities scale, there is this intermediary, which is what you've called like the development shop, and it seems that there is more and more solar panel companies that are acquiring development shops or development arms. And to the extent that you have information on that, that would be helpful to see where the marketing of it is going.

MR. KIMBER: I mean, we can provide it. But I think it would be largely speculative. But we'll show you -- we'll try and document what I've just said.

MS. CHRIST: Okay. I think I have just one more question on slide five. The levelized cost of electricity, or silicon versus thin film, do these numbers sort of represent an average of what might otherwise be a range? I mean, is there a range of levelized cost for thin film, a range of levelized cost for silicon, a range of levelized cost for gas, a range of levelized cost for solar fuel over which within that range there is overlap between different technologies?

MR. BUTTON: The study from which these data are taken is based on a series of what are described as hypothetical parameters that were assumed across a whole variety of technologies: gas, nuclear, coal, wind, and so forth, and solar, including these two. So those assumptions out there. And the idea is that if you standardize all of them, what is kind of the rankings. And that's what the ranking is here.

I can't tell you the specific dollar, the meaning of the delta between those two specifically, other than it's there and it's significant. I'll be happy to provide some additional commentary and the underlying document that went with it, as requested by Mr. Cassise as well.

MS. CHRIST: I'm sorry. I fibbed. I have one more question. You mentioned economies of scale, and if you can elaborate on this in your post-conference brief, I'd be happy, just to the extent that you could elaborate on the role of economies of scale in the industry. Are the economies of scale dependent on sort of new technology, how it is that, you know -- is it just basically a larger plant, or is it actually getting a new plant with different kind of technologies in it? If you could just elaborate on the role of economies of scale in the industry and its

relation to the price of your products, that would be great.

MR. BUTTON: We'll be happy to do that in the brief.

MS. CHRIST: Okay. Thank you.

MS. DeFILIPPO: Thank you, Ms. Christ. Questions from Ms. Warrington?

MS. WARRINGTON: Thank you. Just a few questions this afternoon. I mentioned this morning the 5-watt range for categorizing peak watts. I wanted to ask you for your opinion on the competition between the peak watts, you know, comparing the 220-watt panel to a 225-watt panel. What are your thoughts on the competitiveness of those watt ranges?

MR. EFIRD: Roger Efird, Suntech. In many applications, bigger is better, more power is better. There traditionally have been some exceptions to that. A residential roof application traditionally would have two installers installing the system, and a ladder to get to the top of the roof.

Optionally, something in the range of around 200 watts or 180 to 200 watts was always the typical size module that was used for a residential application. There was some discussion this morning about microinverters, and that is a very small

inverter. Maybe it's a little bit bigger than a pack of cigarettes. It attaches to the back of the module itself.

When the microinverters started coming into our market three, four, five years ago, they started driving up the wattage of modules because the microinverters became more and more efficient. They would handle more and more power. The 225 to 230 or 235 watt module is extremely popular today because it still has a physical size that makes it convenient for a installation with the use of any kind of mechanical lifting devices to get it on the roof. And at the same time, it takes full advantage of the microinverters who have a peak power of about 225, 2235 watts. So I have got a very good electronic -- a match between the electronics and the module itself.

So if you were talking about the residential market, and to some degree some overlap into the commercial roof market, that is a very popular module. I really don't think it is a very popular module for a large scale solar. Generally, that gets up in the 275 to 300 watts. They are much larger. Two guys can carry them. There is no ladder involved. You're working on the ground, and there is less wiring.

MS. WARRINGTON: Thank you. Any other

comments?

MR. KING: Just a clarification. When you said 220 to 225 watt module, you're talking about the customer's preference for a 225-watt module versus a 220-watt module, or are you talking about the range of wattage?

MS. WARRINGTON: A 225-watt module versus a 220-watt module.

MR. KING: I think simply customers prefer the most efficient product they can buy. So we see that the most efficient module will be the one that is preferred by the most customers. So if you have a choice between a 220- and a 225-watt module, unless there is questions in the system design as far as the inverters are concerned or the design of the system, most customers would prefer a 225-watt module over a 220-watt module.

MS. WARRINGTON: Just to follow up with that. So if a customer was interested in a 225-watt module because of the efficiency, but it wasn't available at the time, would they be -- do you think they would be okay with purchasing a 220-watt module in its place?

MR. KING: For the most part, yes.

MS. WARRINGTON: Okay. Thank you. Also,

with prices, comparing them across the sectors, I had asked this morning also comparing prices across residential and non-residential and utility markets. And I think, Mr. Petrina, in your testimony earlier this afternoon, you had mentioned lower prices in the utilities sector. If you wouldn't mind elaborating on that a little bit, and any other comments from others are welcome also.

MR. PETRINA: Sure. Robert Petrina with Yingli Americas. I think the reasoning behind what I stated was that typically utility-sized projects are much larger, and the counterparty is typically a financially very sound company, and the transactions are again larger, thus lower transaction costs. So you would assume -- and we see that you typically see lower prices in those types of transactions.

Also, it's important to look at, you know, the pulldown effect from other prices from thin film, as I mentioned before. That drives that as well, so I think that's important to note.

MS. WARRINGTON: So could you also see the same type of instance in the, say, large-scale residential if you're selling to a developer and they purchase a large amount for a housing development or something like that? Do you think the same instance

could be seen there?

MR. PETRINA: Again, it depends on a lot of factors, right? So it's not just the size of the order. It's who the people you're working with are, who is their financial backers, and so on and so forth. Those are all very important. All those being equal, I think you would see that, you know, the numbers would look relatively the same. But they're never really equal. So --

MS. WARRINGTON: Okay. Thank you. And one final question. This one is for Mr. Efird of Suntech. In your testimony this afternoon, you mentioned your panels, Suntech's panels, were at a higher wattage level than panels made by SolarWorld. Do you consider your panels non-competitive with those of SolarWorld due to the wattage range? Is that the only difference?

MR. EFIRD: Roger Efird, Suntech. That would depend on the market segment that you were talking about. I think the point that I was making is that during that period of interest, the number of modules that we brought, that we imported in that particular category, you're going to see is very, very small.

We have a factory in Goodyear, Arizona that

brings in cells from China and assembles modules. And we filled out that questionnaire, and I think you'll see that it's going to look kind of strange. But our answer is zero. We didn't make a single module during that period of time that falls into that category.

The demand for our -- we make whatever there is the demand for. And the demand for our products tend to be because of the markets that we have more success in, tend to be the higher wattage 275, 280, 285, 290 watts. That range is the heart of our product line. We manufacture products starting at 5 watts and going up to about 300 watts, off-grid, on-grid, just, you know, all things to all people in the solar industry.

But, you know, we do not manufacture that many within the range that the questionnaire was asking about.

MS. WARRINGTON: Thank you. I have no further questions.

MS. DeFILIPPO: Thank you, Ms. Warrington. Mr. Yost?

MR. YOST: Good afternoon. Again, I'd like to join my colleagues and coworkers in thanking you for your appearance and the very valuable testimony you have given us this afternoon. I'm looking at

Petitioner's slide 7 from this morning on the handout, and looking at your slide number 14. Slide 7 was shutdowns and layoffs. And for those who aren't looking at the slide, they began with BP Solar, listed SpectraWatt, Evergreen, SOLON, Solar Power Industries, SolarWorld, and Calisolar, either as plant shutdowns and outsourcing or as workforce reductions.

Just one initial question for clarification. Is Calisolar, the last one listed as shutting down their cells, the same one that you list as number three as building a 16,000 metric-ton polysilicon plant in Mississippi? And I'm wondering what is going on there. Are they simply shifting cell production from one location to another?

MR. EFIRD: Roger Efird, Suntech. Yes, that is the same company. They are in the polysilicon business as well as in the solar cell business. I think the layoffs that they did on their solar cell factory in California is one thing. The building a new polysilicon plant in another state is another thing altogether.

MR. YOST: Okay. That segues into my main question, and that is do you have any further information as to why these companies may have shut down any alternative explanation?

MR. EFIRD: I'd like to speak on behalf of the shutdown of BP Solar. I was the director of marketing for BP Solar up until early 2005. In late 2004, Lord John Brown, the CEO of BP, came in from England, put us all in a conference room, and announced that the manufacturing wars in solar were over, and the Japanese had won. He said, I'll give you two days. I want a whole new marketing strategy developed in the next two days. What are we going to do?

Two days later, we reported back to John Brown that we needed to get out of the manufacturing business. BP's brand was extremely strong at the end user level, and that the company should move downstream and become much more involved in marketing to the end user. Manufacturing is not BP's core strength. That's not a manufacturing company.

So the following year, at that time, the Japanese were -- they owned the markets worldwide, and we were complaining about the Japanese, the way we are the Chinese today.

MR. YOST: So in your experience, this was related to Japanese imports, or Japanese production, rather than Chinese?

MR. EFIRD: No. I really think it was a

strategic marketing decision. It took five years to implement. But immediately thereafter, they began contracting for other manufacturers around the world to make modules and put the BP Solar label on them. That began immediately. And five years later, they finally finished out by shutting down the last of their factories.

MR. YOST: Oh, I see. Okay. I didn't catch the very first state. So this was a five-year -- a longer term implementation.

MR. EFIRD: Yes.

MR. KING: Hi. Alan King from Canadian Solar, formerly of Evergreen Solar. The big problem that Evergreen faced was they have a very unique wafering technology that didn't translate into their downstream operations. The wafering technology created a cell that was not industry standard, which required specific proprietary equipment in order to create cells to handle the metalization, the fingers and the bus bars, as we heard this morning, as well as to then panelize it and turn it into a module.

While they did a great job with their wafering and continue to try to survive as a wafer company -- let's clarify that -- they were unable to create a price competitive or cost competitive solar

module. Thank you.

MR. YOST: Comments on any of the other companies, either now or in the post-conference? Okay. Well, I invite you to --

MR. ELLIS: Yeah. I think we'll do the rest in the post-conference.

MR. YOST: Okay. That would be very helpful. Thank you very much. And I have no further questions.

MS. DeFILIPPO: Thank you, Mr. Yost. Mr. David, questions for this panel?

MR. DAVID: Great. Thank you very much. Andrew David, Office of Industries. I'd like to echo my colleagues in thanking everyone for being here today. So I just want to start out with a question on the manufacturing process similar to the one I asked this morning. I'll start with Mr. Efird, and then if the other manufacturers here want to weigh in.

To what extent have you automated your cell and module manufacturing? Is there significant differences across the industry? Do you make decisions, well, at this stage, we can do just with manual labor. It doesn't make sense to automate. Or do you just generally move towards automating most stages of the production process for cells and

modules?

MR. EFIRD: Roger Efird, Suntech. Secretary Chu, the Secretary of Energy, visited our factory in Wushi, China. I guess it was about one year ago. And he has stated publicly several times since then that the most automated factory he has ever visited was the Suntech factory.

We purchased a company in Europe, in Germany, several years ago that manufactures equipment used to automate factories. So our business at the current time is not only do we manufacture solar cells, et cetera, but we also own a company that manufactures the high tech equipment.

We don't sell any of that anymore because we use everything coming out of that German factory for our own internal uses.

MR. KING: The majority of labor that goes into the manufacture of a solar panel happens in the actual mod fab area. The metalization, AR coating, the creation of the solar cell really operates with a minimal amount of human intervention. Our factories in China are primarily automated. They're very large factories, so we do have a fair number of factory workers working in lay-up areas and working with the final inspection of the panels.

But I think for the most part the amount of automation that exists in the United States is comparable to the amount of automation at least that major manufacturers are trying to install, that Tier One manufacturers are trying to install in their factories in China as well.

MR. DAVID: So next I just want to clarify with the off-grid modules. So I know there are specific modules we heard this morning and this afternoon that can be made that, you know, certain wattages or outputs that are mostly used in the off-grid segment. Is there a point at which a certain wattage where you get to 175 watts, and that same 175-watt module is used in an on-grid residence and an off-grid residence? Is there a point at which you kind of stop making an off-grid specific module and all modules are on-grid or off-grid, regardless of -- the same module can be used in both on-grid and off-grid?

MR. KING: My experience is that I think as was said this morning and was said this afternoon that off-grid modules are primarily lower wattage modules because they suit a particular application, whether it be, as Maneer said for his off-grid lighting, or whether it be for remote habitat, or in cases where

I've seen in Nicaragua, where you have an 80-watt solar panel running a light and a computer in a small house.

So I think it's relative to the demand. I've also seen houses in California that are off-grid that use full-size solar panels as part of their -- on the roof, just as you would a typical solar system. The difference, of course, is that they're not connected to the grid. They have battery backup and serve the same purpose. I think it's important to keep in mind that it's really more relative to the individual application as it is to the size of the panel. I think typically the largest selling off-grid panel -- and correct me if I'm wrong -- was 120-watt panel.

MR. AZZAM: Actually, 180 watts, 185 watts, is -- you know, we're using those on a pretty frequent basis. And you can get into -- you know, those can be used in on-grid situations. You can hook them in the appropriate series connection to build up the voltage. So certainly there is overlap.

A lot of what is important to understand is that you build up the voltages in a solar panel based on the number of solar cells, how you connect those. And that's different in the manufacturing setting on

how these guys lay out their modules. And often times, it requires additional steps. So it is actually more costly in their process to do those types of panels versus when they're putting it into an on-grid, they would lay them out and have different arrays of solar cells, and perhaps even cut -- you know, in our case, in the smaller wattages, you have to actually cut the solar cells, which adds another step to it.

So all of that is built into the differences. But there is a stage when -- and I said, I put the benchmark at 200 watts really and below, and the voltage being appropriate for the battery charging as being the total definition of where you separate on-grid and off-grid. These guys may have their own ways of differentiating.

But if you look at most catalogs of those companies that offer both types of products, they will separate clearly on-grid and off-grid solar panels.

MR. DAVID: Okay. Thank you. And my last question just goes back to the pricing and thin film driving down the -- and the point that a number of folks made that thin film was one of the factors driving down the price of crystalline silicon modules.

When you talk about thin film driving down

the price of crystalline silicon, are you specifically cadmium telluride, or are you talking all three of the major thin film technologies?

MR. PETRINA: I mean, I think if you look at the market share of the various thin film technologies, there is a few that stand out. So I do think that the pressure comes from a number of different technologies, not strictly cad tel.

MR. DAVID: Okay.

MR. KIMBER: If I could just speak on behalf of my parent company, that is probably the other prevalent thin film in the market right now. That's an amorphous silicon that Sharp is making at volume. They're using most of it in the Japanese market right now. We don't get a huge amount of imports. And for the record, they are putting it on mainly residential rooftop, so thin film on rooftop.

MR. DAVID: Okay. No further questions. Thank you.

MS. DeFILIPPO: Thank you, Mr. David. Mr. McClure?

MR. McCLURE: Thank you. Jim McClure, Office of Investigation. Thanks to all of you coming. I will follow my previous practice. I don't have questions. I do have one request. I at least, and I

think others, do better with pictures or exhibits. I don't think we have any exhibits of the thin film cells. So if you could get some of those to us, we'll take care of them really well.

MR. AZZAM: That's fine. I love to give gifts to the staff. But I think that thin film, if I'm correct, are modules, not cells.

MR. McCLURE: Okay, whatever.

MR. AZZAM: So it is a bigger thing. But I'm sure we can figure out how to get one here. But it's not going to be sitting on your desk. It's going to look like that.

MR. McCLURE: Well, I just think in particular the Commissioners do find that helpful.

MR. AZZAM: Yes, I agree, they do. And we can do that.

MR. McCLURE: Thank you.

MS. DeFILIPPO: Thank you, Mr. McClure. I just have a couple of things to follow up on. Mr. Azzam, you may have said this, and I apologize if you did and I didn't catch it. In your applications in sort of the off-grid applications, is thin film technology used, or is it mostly the polysilicon?

MR. AZZAM: It is mostly the polysilicon. the thin film is not as efficient, and we're putting

up solar panels on top of poles. And if you go to something less efficient, you create a bigger sail, and it loads the pole. And that's frequently the case. The voltage is actually also different. It's a different voltage to work with. So we do use it, but a lot less frequently. And that's generally the case for off-grid.

MS. DeFILIPPO: Okay. One last question for you. And this might be something that you would prefer to put into any post-conference submission. You noted earlier in your direct testimony that U.S. producers abandoned the off-grid market. To the extent that you can provide any information supporting that, for example, did you purchase any solar cells from U.S. producers, and did you make requests to buy some and they didn't, any information that you could provide on that would be helpful.

MR. AZZAM: Okay. We'd be happy to do that.

MS. DeFILIPPO: I'm sorry. Hold on.

(Pause.)

MS. DeFILIPPO: We've talked a lot about the polysilicon -- the price of polysilicon affecting or driving the price for the solar cells. Do the raw materials used in the thin film have that similar relationship, where as raw material prices for the

products used to make the thin film, do they influence the thin film prices as much, the same, less?

MR. BUTTON: I would just make an opening statement and turn it over to the industry, is that First Solar, with whom we've been speaking a great deal, doesn't use crystalline silicon. It uses cadmium telluride. However, whether the other elements that are used to produce the thin film module are under price pressure, I'd ask others here to comment.

MR. KIMBER: So the other dominant thin film module in the market is a Sharp amorphous silicon thin film. They use silane gas, which is a derivative of polysilicon, but because it is a very thin film, they deposit onto a glass. And so it's much -- actually, the semiconductor is actually much thinner than the wafers that are in there. And so the amount of the commodity that goes in is much, much lower. It's a much smaller percentage of the total cost module.

MS. DeFILIPPO: That's helpful. Thank you.

MR. HANNAH: Yeah, excuse me just a minute.

MS. DeFILIPPO: Sure. Thank you, Mr. Hannah.

MR. HANNAH: Ken Hannah from MEMC. So the precursor that we start with to make polysilicon in

our facility in Pasadena, Texas is silane gas. So we're one of the world's largest producers of silane gas. And so we sell that silane gas into guys that do amorphous silicon. So there is a similar precursor, and I think as Sheldon has demonstrated, I mean, it's a very, very thin layer. But both of those products start with a silane gas or a trichlorosilane gas, which is then utilized in both of those products to some degree.

MS. DeFILIPPO: Following along a little bit with the questions on the relationship between the thin film and the crystalline silicon, and you've talked about how there is influence over the prices of the thin film due to the fact of the price of the crystalline silicon. You also presented in here some data on differences in the efficiency that we've also talked about.

So in comparing these products on a price basis, we talk about it in terms of dollars per watt. Is there any sort of conversion factor, or does that efficiency factor into the price? I mean, if they're less efficient, one would seem to believe there is a gap between the prices that would persist. Is there any way that you calculate or factor in the differences in efficiency into the relative prices?

MR. KIMBER: So as a developer who, as mentioned before, in almost every solicitation for almost every plant we build has at least one thin film proposal, viewing it as obviously a direct substitute to any crystalline product. I can say that we view that efficiency tradeoff -- it has the following impact.

If you have to put more panels in the field because they're lower wattage and lower efficiency, you have to put more balance -- what is called balance of system. So steel, aluminum, the poles that go in the ground. So there is what we call the balance of system penalty, or the BOS penalty. And that efficiency difference is usually roughly for a 14-1/2 percent efficient crystalline module to say an 11 or 12 percent efficient First Solar module, you might see anywhere from, you know, 20 to 30 cents a watt, probably more like 20 now that First Solar is at the 12 percent mark.

So if you're looking at the two products, First Solar would have to come in, you know, a good 15 to 20 cents, probably better, to be equivalent.

MS. DeFILIPPO: That's helpful. Thank you. And the last one is a follow-on to conversations -- or questions that Ms. Christ had. And I'm just going to

try to find my little chart, on the spot and contract pricing for the polysilicon. And I think way, way back in the early portion of this morning, which seems like a distant memory, I believe it was opening statements.

There was a statement I think made by your opening statement that part of the Petitioner's problem perhaps was that they had gotten locked into contracts for purchasing the polysilicon, that that was one of the reasons why they were having difficulties.

To the extent -- and so it seemed a little bit disjointed to what I'm seeing here because it seems like the spot prices are the ones that really spiked and got high, and the contract whole it rose were flatter. To the extent that you can address and make that a little more consistent explanation in your response to Ms. Christ, that would be helpful.

MR. BUTTON: We'd be happy to. But part of the short answer is if you locked in a contract a number of years ago at a high price, okay, and you have to keep buying at that high price, when your opportunity costs just go out the market and buy at a lower price, okay, then that contract has put you in a bad situation. You're now paying high for something

that you could go out and buy low. That goes to your P&L.

MS. DeFILIPPO: Right. I get that. But if I look at this, and I see the blue as way higher, which is the spot and the contract, I'm having trouble making the connection of buying at a high contract price when it is significantly more.

MR. BUTTON: Look at the contract. Is the contract at 85 versus a contract done at 35? That's what you want to keep -- and it's one of the things you want to keep in mind. If you lock in a contract at 85, and you now -- somebody signs a contract more recently at well less than half that. So don't just -- in that particular discussion, don't focus so much on the spot as the change in the contract prices over time.

MS. DeFILIPPO: Okay. Any information you have on length of contract that would go into that to support that argument, that would be helpful.

MR. BUTTON: Okay.

MR. EFIRD: Roger Efird, Suntech. I would like to add that during the time that you had that spike, in order to get into a long-term contract, the length of time was very often five to eight years. So if I signed a contract five years ago, I could still

be paying $85 per kilo for silicon when all of my competitors are paying less than half that today.

MS. DeFILIPPO: Okay. Thank you. Mr. Button, something to add?

MR. BUTTON: Perhaps on my side, conspicuous by its absence, perhaps there has been a lot of questioning with respect to the role of the incentives and the regulator process and the elasticity of demand, which is kind of the third of our three things affecting prices. I was fishing, basically, the opportunity to try to explain that in more detail in our post-conference brief and in terms of question, or to run through it here, because it is a complex -- simple at its core, but complex overall -- key to why we believe that if SolarWorld gets its wish, in other words, you have an increase in the market price of the panels, the elasticities with respect to other power sources is that projects won't happen, and that SolarWorld will not get its wish to have greater volume.

There will be fewer projects and fewer modules sold. And I can explain that in more detail and lay it out in the questions if you wish.

MS. DeFILIPPO: That would be helpful. I would appreciate that.

MR. BUTTON: Thank you.

MS. DeFILIPPO: Any other questions from staff before we release this panel? With that, I thank you all very much for all of your direct testimony and for sitting for hours and answering our questions. It has been very helpful

The last we will have is closing statements. We'll give a five-minute break for people to get those organized. So at 3:45, we'll be back with Petitioner's closing.

(Whereupon, a brief recess was taken.)

MS. DeFILIPPO: Welcome back, Mr. Brightbill. It seems like it has been days since I've seen you, but it is still the same day, and we are at the final stages. So please proceed with your closing statement.

MR. BRIGHTBILL: Thank you very much. First, I might point out that Petitioners may well be requesting extra pages on the brief, to the extent that Respondents will be writing four separate briefs. So we'd like to just alert the staff that that may be an issue we'll want to raise shortly after we close tonight.

I want to hit a few points in rebuttal. Mr. Hannah and several others in their testimony basically

said if this case succeeds, prices will go up. Prices of power plants and big solar projects will go up. This just proves our point as far as injury and causation. If you eliminate the dumped and subsidized imports, prices will go up.

I wanted to also make a point regarding Canadian Solar, which was here today. One of the shutdowns that we pointed out was SpectraWatt. And there is double harm there because SpectraWatt, the domestic producer, did auction its equipment off to Canadian Solar for five cents on the dollar, reportedly to be taken back to China.

With regard to thin film, we heard a lot today about thin film. Thin film is not part of the like product. Yes, both technologies generate electricity. That is not the test the Commission puts forward, as you well know. We can talk about steel and pipe cases and so forth. I think Dr. Kaplan laid it all out for you in terms of the like product factors.

China has crushed the crystalline silicon market. That has had some incidental effects on thin film as well. Chinese imports are highly concentrated in crystalline silicon, not in thin film. That's partly why the case is brought the way that it is.

Also, the thin film market is significantly smaller than crystalline silicon in all three market segments. And I would also point out that Respondents in many of their 10Ks and public statements have noted one of the biggest risk factors in the market is global over-capacity. And what they are talking about when they say that is crystalline silicon over-capacity, again not thin film because China doesn't compete and doesn't play in thin film.

A couple of other minor points. Yingli noted that they've only added capacity to meet demand. I would just point you to Dr. Kaplan's slides on that. Chinese capacity exceeds all of world demand by a factor of three. They are not just here to meet demand. They also alleged that SolarWorld is primarily a residential supplier. That is absolutely not the case.

Why don't I go to Dr. Kaplan for a few points on China, and then I'll sum up.

MR. KAPLAN: Right. What was most striking to me sitting in this room in the afternoon was the lack of discussion about why we're here, and the lack of the discussion about the statute. Tim, when I'm done, will you go over the statutory points that must, must be looked at in every case, and were not

discussed?

I want to go over pretty much in 15 pages of unrebutted points that I made about the causes of this problem. You had 15 representatives from China and their attorneys, 8 or 9 people from China, and they looked at each other and said, we'll answer in the post-hearing brief to see if we're export oriented.

I mean, I was stunned. This is an industry that at the highest levels of the government in the most important economic documents produced in China, their five-year plan, point at this industry, call this industry out, and says they're going to dominate this industry. Then they proceed with tens of billions of dollars of subsidies to support this industry.

They build massive capacity, outstripping world demand, to supply this industry, and then they export the vast overwhelming majority to markets outside of China. I didn't hear anything about that in the afternoon. I heard that, you know, maybe you could put a thin cell on a roof somewhere.

The main issue has not been discussed, and it has been unrebutted. And I think that at least in terms of what has driven this market, in the world market, the Commission and the staff should take note

to as best build up this record to allow the Commission to see where this capacity came from, why it's there, how it was subsidized, and what it caused in world markets. Thank you.

MR. BRIGHTBILL: And I'll just echo Dr. Kaplan's points. It is remarkable what you didn't hear at all this afternoon, and that is what you are required to consider: volume, price, and impact of Chinese imports. The volume of imports is overwhelming. Those import levels from China are nothing less than an attempt to take over the market. You have seen the data. China's market share, up from 8 percent to 45 percent, even more than 50 percent in the most recent month.

With regard to export orientation, too, let me just give you Suntech Power's form 20(f), page 15. "In 2010, we sold 94.7 percent of our products to customers outside of China." This industry is very export-oriented. China is only able to move this import volume because it has completely undercut the market in terms of price. The results you're compiling will show massive Chinese underselling, prices falling 40 to 50 percent in the last 12 months.

Also, we have material injury to the U.S. industry. You have the evidence of seven crystalline

silicon producers who have been forced to shut down or lay off more than 1,700 workers. Your investigation will show even more harm than that.

Against this wealth of evidence, we heard a lot of arguments about alternative causes, some of them conflicting, but nothing from the other side that begins to explain why this harm has occurred to the U.S. industry and its workers. This is not an issue of crystalline silicon versus thin film technology. These are two completely different products and technologies.

It is not an issue of imports from any other country. It's not an issue of cost differences. Polysilicon pricing does not explain what has occurred in this market. It's not an issue of Chinese imports just coming in to meet U.S. demand. And it's not an issue of U.S. Government policies pulling cell and module prices down.

One thing has pulled cell and module prices down. That's Chinese imports. The bottom line for you as the staff, if the U.S. solar market is so great and so strong, and if demand is growing, if this is the key to our green energy future, then why is the U.S. solar cell and module industry fighting for its very existence?

Keep this is mind as you weigh the data coming in. There is really only one answer. It is dumped and subsidized Chinese imports. We trust that the Commission and staff, after reviewing the evidence, will clearly understand what has happened in this market and return affirmative determinations. Thank you.

MS. DeFILIPPO: Thank you, Mr. Brightbill and Dr. Kaplan. We will now have closing statement for Respondent. Mr. Ellis, are you doing the honor? Thank you.

MR. ELLIS: Thank you. I'd like to offer some closing remarks. I appreciate it has been a long day, and I appreciate the very thorough questioning and the interest you have shown in this case. It has been a tiring, but also very invigorating afternoon.

A few major points. First, as we have been discussing, it has been an unprecedented move, what the Petitioner did, and I notice they didn't address that either, when last night, after multiple apparently unsuccessful attempts to clean up the scope of this case, they dramatically changed the scope by announcing that it now includes, in addition to Chinese cells imported into the U.S., also modules assembled from Chinese cells, regardless where the

assembly occurs, and modules assembled in China from cells, no matter where those cells are produced.

These are remarkable expansions of the scope of the investigation, and this last minute revision results in significant gaps in the data that you've collected. These are not the sort of minor gaps of information that you often have to work around in preliminary stage investigations. To the contrary, as I said earlier, they're whole segments of the market for which the Commission has woken up this morning to discover you have no data.

For example, importers of modules made in third countries from Chinese cells, or producers and exporters in third countries of modules assembled from Chinese cells, and Chinese producers of modules from third-country cells. The Petitioners made it impossible for the Commission to do its job. It has made it impossible for the Commission to render a reasonable likelihood determination that can withstand the standard of substantial evidence. The Commission cannot issue an affirmative determination on the basis of the record in this investigation with that gaping absence of data.

Second, I will talk about subsidies for a moment. Dr. Kaplan's arguments on subsidies are

inflammatory, but they're off-point. Here we're focusing on injury and causation, and we have talked extensively about those issues. The inflated claims of subsidies will be addressed at the Department of Commerce.

Third, turning to a couple of points on the merits, as you heard from several witnesses, Petitioners improperly defined a like product, and accordingly the domestic industry in this case. The Commission examines several factors, as you well know, to determine whether or not various products comprise a single like product. Our witnesses have explained that silicon and thin film technology compete head to head in all three segments of the market, that is, large utility, commercial rooftop, and residential rooftop. Whether or not they are perfectly substitutable in all situations, that is not the well-established standard that the Commission applies.

Silicon and thin film products share similar characteristics in end uses. They're interchangeable. They're sold through similar channels. They're perceived similarly by customers and producers, and they compete with each other head to head on price. They are therefore by application of your tests undoubtedly like products.

Third, I would like to recap -- actually, it's fourth. I'd like to recap a few of the critical conditions of competition that our witnesses have discussed with you today. Importantly, demand in this industry is driven by government incentive programs, both in the U.S. and abroad. In the U.S., federal and state governments have made a concerted effort to expand the use of solar energy and to reduce the generation cost of solar power to achieve that goal. Europe has done likewise and over a long time period, with the result that it has a much larger market for solar energy than the U.S.

Another important condition of competition to keep in mind is that demand for solar power and demand for solar modules are highly price elastic. What this means is that an increase in solar module prices such as would occur with the imposition of duties sought by Petitioner would inflate the price of solar electricity because the price of modules is a large share of the price of the electricity itself.

The result is that demand for solar electricity, and accordingly demand for the modules, will decline sharply.

Fifth, turning to the topics of injury and causation. You have heard that there is no plausible

injury argument based on the volume of imports of this case. Petitioner has publicly stated that its U.S. volume increased in 2008, declined with the recession in 2009, but then skyrocketed in 2010 and the first half of 2011, in line with the explosive growth of solar powered demand. That's Petitioner's own statements we've heard. This is not the trend of an industry that the Commission considers suffering from volume-based injury.

On the price issues, we'll have to address those in our post-hearing brief.

Indeed, despite what the Petitioner has told you, the demand for solar modules in the U.S. has grown substantially over the 2008 to 2011 period, as a result of the declining installed cost of solar power permitted by the combined impact of lower polysilicon prices and the government incentives that we've talked about today.

And in its public statements during the POI, SolarWorld has made clear that it has been very successful financially. Up until the very end of the POI, that is, the second half of 2011, Petitioner was making public announcements of its success, and we have quoted them already. We have seen some of them.

On the issue of price, while SolarWorld

complains about a 30 percent reduction in module prices during the past year, there are several important factors unrelated to imports from China that help explain this decline. Most important, of course, is the price of polysilicon, which is the key raw material.

Could we put up that slide again, please? There is a slide that shows that one. As you can see, the polysilicon prices have declined since 2009, and the prices of wafers and cells have followed suit. There is a clear cause and effect here going on. This is consistent with the history of a wide range of semiconductor-type products involving inputs such as silicon.

As shown during Dr. Button's testimony, the price of voltaic modules has been declining progressively over many years. The short-term increase during 2004 to 2008, the graph we also saw, was directly tied to a temporary shortage in polysilicon. The decline in module prices thereafter simply continued the long-term trend going all the way back to the mid 1980s, driven by decline in polysilicon prices, thin film competition, and regulatory pressure.

Finally, on the issue of threat, as you have

heard, there have been new investments continuing to come online in the U.S., such as by General Electric and First Solar, demonstrating confidence in the future of U.S. solar manufacturing. These investments are made with the full understanding that the price of polysilicon is likely to continue to decline, with inevitable implications for continued decline in the prices of the silicon modules.

Moreover, demand in emerging markets, and most notably China itself, as we heard this afternoon, is accelerating significantly. The Chinese producers are poised to supply such growing demand.

In sum, there are two reasons that the Commission must issue a negative determination and terminate this investigation. First, because of the severe evidentiary inadequacies caused by the unprecedented effort to expand the scope late in the proceeding; and second, because what evidence there is on the record does not support a finding of even a reasonable indication or reasonable likelihood that injury is likely to be caused by the subject imports. Rather, several other factors, most notably the dramatic decline in polysilicon prices, pricing pressure from competing lower cost thin film producers, and incentives generated by government

regulation of the pricing of energy explain the recent financial trends in the market and their impact on the Petitioner. Thank you.

MS. DeFILIPPO: Thank you, Mr. Ellis. On behalf of the Commission and the staff, I would like to thank all of the witnesses who came here today, as well as counsel, for helping us gain a better understanding of the product and the conditions of competition in the crystalline silicon photovoltaic cells and modules industry.

Before concluding, please let me mention a few dates to keep in mind. The deadline for submission of corrections to the transcript and for submission of post-conference briefs is Monday, November 14th. If briefs contain business proprietary information, a public version is due on Tuesday, November 15th.

The Commission has tentatively scheduled to vote on this investigation for Friday, December 2nd, and it will report is determination to the Secretary of the Department of Commerce on Monday, December 5th. Commissioner opinions will be transmitted to the Department of Commerce on Monday, December 12th.

Parties are reminded that the Commission's new e-filing procedures became effective yesterday, on

November 7, 2011. Please contact docket services with any questions or concerns on the e-filing procedures.

With that, I thank you all again for coming, and this conference is adjourned.

(Whereupon, at 4:06 p.m., the preliminary conference in the above-entitled matter was concluded.)

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

CERTIFICATION OF TRANSCRIPTION

TITLE: Crystalline Silicon Photovoltaic Cells and Modules from China

INVESTIGATION NO.: 701-TA-481 and 731-TA-1190

HEARING DATE: November 8, 2011

LOCATION: Washington, D.C.

NATURE OF HEARING: Preliminary Conference

I hereby certify that the foregoing/attached transcript is a true, correct and complete record of the above-referenced proceeding(s) of the U.S. International Trade Commission.

DATE: November 8, 2011

SIGNED: LaShonne Robinson
Signature of the Contractor or the Authorized Contractor's Representative
1220 L Street, N.W. - Suite 600
Washington, D.C. 20005

I hereby certify that I am not the Court Reporter and that I have proofread the above-referenced transcript of the proceeding(s) of the U.S. International Trade Commission, against the aforementioned Court Reporter's notes and recordings, for accuracy in transcription in the spelling, hyphenation, punctuation and speaker-identification, and did not make any changes of a substantive nature. The foregoing/attached transcript is a true, correct and complete transcription of the proceeding(s).

SIGNED: Rebecca McCrary
Signature of Proofreader

I hereby certify that I reported the above-referenced proceeding(s) of the U.S. International Trade Commission and caused to be prepared from my tapes and notes of the proceedings a true, correct and complete verbatim recording of the proceeding(s).

SIGNED: W. Andre Bellamy
Signature of Court Reporter