FTC Workshop - Something New Under the Sun: Competition & Consumer Protection Issues in Solar Energy
June 21, 2016
Segment 4
Transcript

HAMPTON NEWSOME: Let's go ahead and get our seats, and we'll get started here in a second. OK, good afternoon. I'm Hampton Newsome. I'm an attorney in FTC's Bureau of Consumer Protection. My co-moderator here is Jonathan Hill. He's an attorney in the General Counsel's office. And we know it's late, and we want to thank you for sticking around for the fourth quarter, here, and digging deep. It should be a really interesting panel. Lots of interesting issues here.

So now we're basically pivoting to consumer protection issues and the rooftop solar area, and a lot of these issues are significantly different from questions we've been talking about earlier today. Our focus is on the burgeoning solar market, and how individual residential consumers-- what the kinds of purchasing decisions that they're faced with. And the questions we're looking at are, what kinds of decisions they're looking at. Do they understand what's being offered? Do they grasp the financial aspects of these transactions? Are they receiving accurate information from marketers?

And we're going to structure this like some of the other panels. Each panelist will give a short presentation and then we'll have a discussion of the issues. And during this discussion, we'll go well beyond FTC's role in this area. So we'll be talking about industry education efforts and state involvement through the Attorney General's offices, and PUCs and other agencies, and that kind of thing. But before we do, I just wanted to give a little background about FTC's role in the consumer protection world, just to give some context.

Under the FTC Act, the commission has authority to address deceptive and unfair practices. The core issues involved with this authority are the FTC's work on deceptive advertising. And, in a nutshell, this means that marketers must tell the truth, have substantiation for all express and implied claims and, where appropriate, have competent , reliable evidence. It also means that if claims are made that have to be qualified or explained, those qualifications should be clear and prominent.

In the world of rooftop solar sales, this means that marketers should not misrepresent any aspect of their product, whether they're talking about material terms of a contract, including the payments, the warranties, the cost terms of the lease, the energy savings of the product, or the environmental benefits. There are also marketing rules that can apply, such as the Do Not Call rule, and rules related to financial disclosures. So the FTC has done some work already with solar issues. As some of you know, last year the staff issued a consumer guide called Solar Power for Your Home that introduces interested consumers to some basic questions and issues they should consider in exploring solar options. And as the chairwoman mentioned in her opening remarks this morning, this spring the Commission, in conjunction with the Department of Justice, filed a federal court action related to alleged illegal robocalls involving leads for solar installations.

But in addition to this FTC work there but many other entities involved. There are many other issues, and what we're doing today is to try to get a better understanding of what's happening, and so we look forward to hearing from our excellent panelists. We're looking at, what are the big challenges? What's being done right? What's being done Wrong? And also, what improvements are needed to help consumers in their purchasing decisions? So with that, I'm going to pass it along to John.

JONATHAN HILL: Thanks, Hampton, and thank you to all of our panelists today. We're very excited with the group we've got here, and I'd like to do a quick introduction. To my left we have Robert Margolis, who's a senior analyst and group manager for the Strategic Energy Analysis Center at The National Renewable Energy Lab. Next to Robert we've got Shannon Baker-Branstetter, who is policy council for Energy and Environment Cosumers Union. Next we have Tom Kimbis, who's the interim president at Solar Energy Industry Association.

Next we have Shennan Kavanagh, who's the deputy chief of the Consumer Protection Division in the Massachusetts Attorney General's Office. And finally we have Rich Sedano, who's a principal and US programs director with the Regulatory Assistance Project. As Hampton mentioned, our panel will be structured primarily is a discussion, but we would like to just go ahead-- oh, sorry. As Hampton mentioned, our program will be structured primarily as a discussion, but we'd like to give each one of the panelists a couple minutes to present some of the issues that they feel are most pressing in the consumer protection space. So with that, we'd like to start with Robert.

ROBERT MARGOLIS: Sure, thank you very much, Jonathan. So I'm an analyst. I think a lot about information, and data, and market transparency. I'm also a consumer. We're all consumers, right? So I guess I have a question since we're all consumers. How many people in the room, please raise your hand, have received a quote for a solar system? Raise you hands.

OK, a little bit of a bias here, because we are obviously interested in solar. Does anybody know what was in that quote in terms of an assumption about the escalation rate for electricity, in terms of calculating the economic benefits? Anybody? Raise your hand. I've got one or two. OK, can you tell me what it was? 3%, we've got a 3%. So we have anybody that's any higher than 3%?

AUDIENCE: 6%.

ROBERT MARGOLIS: 6%. Do we have anybody that was lower than 3%? Do we get anybody-- yell it out. Do you get a 0%? We got anybody got 0%? Actually, I got a quote that had a 0% escalation rate assumed for electricity. But think about that. And so-- wow, I don't think I've heard 6%, or seen that in numbers very often, but anywhere from 0% to 6% in terms of the escalation rate assumed about the price of electricity.

So if I'm trying to estimate what the payback for a system is there's a whole bunch of assumptions. There's assumptions about the performance of the system, whether it's going to last. There's assumptions about whether net metering is going to persist, and there's assumptions about whether the price of electricity that I'm going to get paid under net metering, for example, is going to increase over the life of that system.

And, I asked it on the rate escalation for electricity because, in many ways, what we assume about future prices for electricity is probably the biggest risk area for consumers. When we do analysis for the payback on PB systems we look at three areas of risk. So the first is the technical risk. Does the equipment perform? And today, most equipment that's out there comes with 20 or 25 year warranty on the panels, and something like five, to 10, to 15 year on the inverters, and the equipment is pretty reliable. There may be some issues about installation. If systems aren't installed well they won't perform, so there are some questions about how do you manage the risk on the installation side. But in general, if they system is installed reasonably well it's going to last.

So there's really minimal technical risk. There's also some risk on the annual performance due to whether the sun shines more or less on an annual basis, and there's a little bit of variability in that. So from year to year you might have a little bit more benefit or a little less benefit, but over the course of the life of a system it's pretty much going to be within a couple percent of what you predict when you run our performance models. So really, the biggest area for risk for consumers and investing in solar has to do with the regulatory rate structure issues. And we've heard a lot to talk about, today-- actually, I'm sorry, I missed some of the sessions. But I know that the sessions I was here at least, about rates and net metering, what's the right way to do that.

But people are investing in these systems, and when they're being sold systems there's, in some sense, an implicit belief on the part of the consumers, I think, and an implicit sort of sales strategy on the part people are selling solar that the existing regulatory structure-- that rates that are there today are going to be there for the next 20, 25 years possibly, and that that's what their pay back on their systems are estimated on. So again, in the interest of keeping this really short I picked one topic to focus on in my five minutes. And I guess I pose it as, from a regulatory standpoint, what disclosures to customers should be required in the sales process, with respect to what about rates? And, should you be required to go with a standard set of escalation assumptions, or at least clarity on it? Or, disclaimers about existing regulatory structure may not exist, or it may change, and that could change the economics and make some risk in the process.

So I will mention the quotes that I got. I got quotes that had very different prices, and one they quoted me a payback of about 15.8 years. I live in Virginia, so solar doesn't work very well here. To be honest, it's not a great economic investment, per se, if you're just looking at the pure economics of it. I got a quote for a similarly sized system that was about 30% percent higher in initial cost, but they had a 3% assumed escalation rate in electricity rates, and it came out that it had about the same pay back. So again, it was a weird that I got one quote that was much higher cost, but they presented it to me as if it would have a similar economic benefit.

So again, I think there's a lot of room for consumers to be confused about what the system sizes are, what their performances will be, and how to interpret the economics of the benefits versus costs. Thank you.

SHANNON BAKER-BRANSTETTER: So just to give you a little bit of background on Consumers Union, it's the advocacy division of Consumer Reports. And so Consumer Reports has done some coverage of the solar market, and we've also worked with IREC and others to kind of help support solar checklists of things that consumers should think about when they are

approaching possible solar purchases. And generally, on the advocacy side we're supportive of cost effective solar for consumers. We think consumers should have choices in the electricity market and distributed generation solar should be one of them.

That being said, we do think that, at this point, solar does need better consumer protection. Consumers right now, for the most part, are getting electricity from regulated utility, and so it makes sense that in transitioning to another electricity product that they would expect consumer protection in that realm as well. And I think this has probably been mentioned, but electricity really is an essential service, especially for seniors and people who may be home during the day. Electricity can be essential for medical services as well, so everyone agrees that reliability is important. But then beyond that, affordability is important. Thousands of consumers every month get shut off from their electricity, and so affordability and reliability need to go hand in hand.

So there are already pretty big problems in the home contractor market for home renovations, remodeling, and so while we have no reason to believe that solar is worse than some of those companies and some of the unscrupulous practices that go on with home contractors, since this is a growing market we think this is a good opportunity to kind of get ahead of problems. And right now, most solar consumers tend to be a little savvier than non-solar customers, and so as the market continues to expand there is a risk for bigger problems and bigger manipulation or deceits.

So the three biggest problems we think are facing consumers when they're approaching installation are the difficulty comparing offers. Robert mentioned the difference in assumptions can vary pretty wildly. And then both in terms of escalating costs, and even understanding the difference between a lease and a PPA can be difficult for consumers. And then the second thing is difficulty understanding the contracts and negotiating the contract itself. That's not unique to solar contracts, but since consumers are coming from a pretty low information point of view on solar, it's especially problematic in negotiating the contract.

And then the third thing, really, is dealing with bad actors, and those are things like fraud, misrepresentation, and then the robocalls, as Hampton mentioned. So we have a robocall advocacy campaign and we push for strong enforcement of the Do Not Call Registry, and we've heard from some of the robocall complaints that people complain when they already have solar and they're still getting these robocalls. So they can be pretty widespread and pretty egregious, and a lot of people, also, who don't even have a roof.

So let's see, so some of the difficulties and challenges in addition to the assumptions and low consumer awareness, a lot of the company names sound the same, which can be a problem, I think, for reputation and for the big name companies to make sure that their reputation is being protected but, also, consumers may not know to look for the address to compare to major name companies if it sounds similar. And so one of the potential solutions we would like to see, and that FTC could be a real partner or leader on, is developing a consumer template that then states could require solar companies to present in their disclosures and as part of any contract.

And so I'm sure Tom will talk more about this, and SEIA does have lease and PPA disclosures, and we think that's a great start. It really does have a lot of the key information that people would need so that they can compare solar offers, and we think that there are a few more things that could be improved upon that but, also, states would need to actually pass it and enforce it for it to be effective, so the consumers really know what they're getting into. And we can get into some of the details of what would be in that kind of disclosure, but something along the lines of a good faith estimate, and that way consumers could compare among offers, and then also would have an average basis to compare across a time period. So it's not just the next five years or the payback period but, really, what is the comparison to my utility costs over the next 20 years, and what's the average cost per kilowatt hour.

So I think that that was all I wanted to say for now. Oh, I was going to say also, as well, that some states have tried to implement a template, and some states do have a voluntary template. So it would be expanding on a current idea, but we would hope to see that so the consumers really can compare apples to apples and understand the disclosures in a very simple format. There are lots of disclosures that could fill up 20 pages, but there needs to be a balance between simplicity and thoroughness. And so something along the two page range that is comparable would be really useful.

TOM KIMBIS: Great, thanks, Shannon. So good afternoon, and thanks to FTC for allowing solar industry to be here today, and happy solstice. I know you scheduled this exactly on the summer solstice, where you get the most sun on the longest day of the year. I think if you have one take away from me and when I have to say today it's that the solar industry is firmly committed to consumer protection. The education of consumers and solar companies alike on the right way to do business is a top priority for SEIA, which is our national trade association. Education, standardization of forms and disclosures, such as Shannon spoke about, and collaboration with federal, state, and local authorities is the winning path to increase consumer understanding, maximize the transparency of the residential solar transaction, and also ensure that those who don't follow the rules suffer the consequences.

It's a really great, exciting time for solar. You heard some of the numbers on the earlier panels. There's innovation happening across solar research and development, manufacturing, ownership and financing models, which allow more Americans a competitive choice for electricity. At the same time, that rapid expansion can't come at the cost of uninformed consumers. That's why we're committed, even as our industry grows at nearly 100% this year, to consumers understanding solar even better now than when solar was a much smaller market. Residential solar, similar to other home improvement industries, relies heavily on word of mouth for success.

So studies from universities and national laboratories, such as Robert's, show that solar customers ask family, they ask friends and neighbors before choosing a company, and then they talk to those groups after going solar. So it's very important that that information that they're conveying is positive. It took 40 years to celebrate the one millionth solar panel in the United States, which we probably did this year, and yet, it's only going to take 24 months to hit that second million. Customers who understand what they're getting are more likely to have good experiences and be satisfied customers.

But on the other hand, solar companies who take shortcuts for a quick buck damage the consumer experience and solar's reputation, and no doubt, the customer's friends, families, and neighbors will hear about it. So that second million won't happen if the customer isn't treated right. So there's a strong business case for solar companies to take consumer protection seriously, in addition to the very core legal reasons. Consumer protection abuses by a few bad apples in our industry represent a threat, but, that said, our experiences to date show that the vast majority of consumer protection complaints or problems are not due to intentional acts. They're due to misunderstandings between the company and consumer, and that's what we're trying to work on very hard at SEIA in the development of our consumer protection committee that's developed a wide range of materials to help make sure consumers fully understand the solar transaction.

At the heart of our work is the SEIA Solar Business Code. Last year, we passed this voluntary code of conduct that all 1,000 SEIA member companies must abide by, the first time this has ever happened at the national level within the solar industry. That represents roughly 80% to 90% of residential transactions. This code-- and it's right here, you can download it on the SEIA website if you want to take a look-- is written in a way so that the industry knows the right way to do advertising, marketing, and contracting.

And, Robert, to your point, section 3.12 talks specifically about the acceptable way of calculating those escalations of electricity rates, and actually specifies the types of sources that can be used, whether it's DOE, EIA, state, previously published, and utility forecast, et cetera. But it limits it in a certain way, so they can't just be, well, I'm a contractor and I've been in this business 10 years, so my projection is it's going to be a 5% escalation rate. We've seen that before, and we don't want to see it again. In addition, The Better Business Bureau is now using this guide across its own 114 chapters to help resolve complaints that they receive.

The core issue here is building a more informed consumer base that fully understands the solar proposition. We developed a residential guide as well as a powerful educational tool that provides tips on evaluating whether your home is right for solar in the first place, then information about the different ways you can go solar from a financial perspective, the tough questions to ask when evaluating among solar companies, and then how to ensure the best outcome once you've selected a solar firm. And several states now have this guide posted for public information on their websites.

It's critical that consumers understand contract terms like payments, RECs, UCC filings, and can easily compare offers. The SEIA-adopted model lease and PPA contracts that were created by a US Department of Energy working group are clear, they use standardized language, and they allow companies the flexibility to innovate. Also key is making the paperwork simpler, which Shannon mentioned.

We firmly believe that consumers can benefit from clear disclosures. We've heard this over and over again. There's been some confusion between the company and the consumer. That clear disclosure is important. That's why we've released, even just yesterday, our lease and PPA disclosure forms, which summarize the key details so that consumers can understand and compare offers, and see the key terms of the agreement in a short three or four page form. You can think about it as a GFE, a good faith estimate, or sort of a HUD-1 in a home sale. Some of

SEIA's largest residential solar companies have already committed to using these contracts and using these disclosures in all of their sales processes by the end of this year.

This work by SEIA and its companies is an ongoing effort. We haven't gotten it all right. It's a work in progress, so we welcome all the opinions of folks in this panel and in the audience. It's an ongoing effort to increase consumer understanding. There's more coming, including a community solar consumer protection guide, because there are slightly different issues there, some that are specific to certain states. Spanish editions will be coming out next month as well as a cash sale disclosure form later this summer. Our code of conduct is impactful but, alone, it's insufficient to ensure certain behavior. That's why it's so important to understand that the industry's productivity in this area is only part of the answer. Our efforts only complement, they don't supplant the hard work of regulators such as the FTC, the FCC, the CFPB and state HEs to protect consumers and use governmental enforcement powers.

So one misconception that we see often in the press, and among certain lawmakers alike, is that we need more consumer protection laws that are specific to solar. This doesn't make sense, it just doesn't. We already have a full suite of federal, state, and local laws that protect consumers from all types of deceptive practices, regardless of the product or the service offered. For instance, regulators use the FTC Act and similar laws to take on false advertising or misleading claims, like savings claims. Contract laws and fraud laws have been on the books in states for over a century.

More recent laws, such as the 40-year-old consumer leasing act, or Reg M, require leases to include key contract terms such as payment schedules, security filings, and warranties. And as for robocalls, I mean, who likes them? I hate them. Our industry hates them. We'd love to get rid of them. We;re working with the FTC and the FCC we meet with every quarter to figure out, how do we get rid of them? What can we do?

It's not only solar, but the other issues that are pestered by this part of the industry. In fact, we're partnering with a brand new lead generation industry trade association that just recently formed here in Washington to help stop unwanted marketing calls, and we'll be doing so in collaboration with FTC and FCC. So in conclusion, the solar industry is at the forefront of consumer protection for many reasons. We rely consumers having great experiences. That means making sure they understand solar fully, they can compare offers, and they can see their problems resolved. Our customers have some of the most carefully considered and advanced protections in the country, and when they make a well-informed decision to go solar, we wind up with happy customers who are producing their own power, saving money, and helping to drive the nation toward a clean and affordable energy future. Thank you.

SHENNAN KAVANAGH: Tom, that was such a diplomatic and even-keeled presentation. I feel like I have to kind of change mine up a little bit to keep the spirit of the cooperative nature of the presentation.

TOM KIMBIS: Well, it is an opening statement after all, Counselor.

SHENNAN KAVANAGH: So the Consumer Protection Division at the Massachusetts Attorney General's Office is charged with the enforcement and conducting investigations of violations of chapter 93 A, which is our very broad consumer protection statute modeled after the FTC Act. And I was asked to speak here today to talk a little bit about some of the consumer issues that we see first hand coming through out office. That being said, we see things when they have already gone wrong, and my office does encourage the expansion of the solar industry in Massachusetts. And, in addition, we feel very strongly about educating consumers and helping to create transparency in the market, so everybody goes in with the clear view of the investment that they're making, which is a long term investment.

Unfortunately, that does not always happen, and the results can be devastating to consumers if they don't understand the commitment they're making when they invest in residential solar. We've talked a little bit today, or, actually, a lot today, specifically about understanding whether you're getting the cost savings associated with what was told to you at the point of sale and generally understanding the options you have with financing solar panels. So I'm not going to talk much more about those, because I think they've been well covered, and, instead, focus on a couple of issues that I think maybe are not necessarily ripe to fully understand, but may be coming down the pike and are things to consider.

Our office put out an advisory in March to bullet point a number of issues that consumers should keep their eyes open for and make sure they understand. And while the consumers, as the purchasers, should be doing their due diligence and educating themselves, it's incumbent upon the industry to make sure that that is possible. It's one thing to get a number of disclosures. It's another thing to get clear information from the person who is actually selling you the product or service.

One issue that has raised concern in Massachusetts are the implications of UCC-1 filings at the Registry of Deeds, and whether or not those create a lien that would encumber the property of the solar panel purchaser such that that homeowner may have difficulties either selling the property or obtaining financing in the form of a home equity line of credit, or refinancing their mortgage. Also in March, the Registry of Deeds, one of the Registry of Deeds, Massachusetts, put out some statistics in the form of a consumer advisory, and the statistics showed that in 2013 151 UCC solar panel filings were recorded. In 2014 there were 683 UCC solar panel filings, and in 2015 there were 1,166.

And at this point in time I am unaware personally, but also from folks that I've spoke to, what the implications of these filings may mean for homeowners. If somebody is in a long term lease or financing, and have obligations on their solar panels, will they be able to easily assign those to a new purchaser, or will it be difficult for somebody to sell their home because a new purchaser doesn't want to take on the obligation of the lease or the solar panels? Is that something that consumers are aware of or told to think about when they're making a decision to invest in solar panels?

What if a consumer wishes to get a line of credit on their home or to refinance their mortgage? HUD guidelines provide that if there is an encumbrance on real property, the homeowner can not convey that real property and, therefore, may not be eligible for FHA insured financing. An

encumbrance includes if the new purchaser of the property has to undergo a credit approval before the seller can convey the real estate. So what do the contracts say when a consumer signs up for solar installation about whether a subsequent purchaser of the property would have to undergo a credit check in order to be able to take assumption of the liability under the lease or the purchase agreement?

There's been already activity, as has been spoken about before, generally, about misrepresentations and false advertising. We have seen complaints come through our office that involve alleged misuse of homeowners' signatures, where somebody sees a flyer that asks them to provide their name and to sign the card in order to get information about a particular solar company or solar panel option, and it turns out that that card is actually a binding contract and they've signed themselves up to receive the services. Other contracts may assign the tax credits or other incentives that are promised to the homeowner if they get solar panel to the company itself, so the homeowner actually never sees the benefits of those tax credits. Is that clearly disclosed to the consumer? And in my personal opinion-- and I'm not speaking from my office-- but I believe that any such provision would be unconscionable, especially if the homeowner is signing up in large part to get the incentives that are offered.

And then, what happens if a solar panel company closes? These are long term investments and, as Tom was saying, you know, there are many industry players that are in and doing this work correctly, but it's a new industry and a growing industry, and there may be people getting involved without really understanding how the industry works and how it's capitalized, and what happens when they go out of business. Homeowners may be left with projects that are either incomplete, or they may have put deposits in to have projects begun and the projects have never begun. What do homeowners do to get replacement services to finish those projects? What can homeowners do to get their money back if they paid it to a failing company? What do homeowners do if they have a warranty that was provided to them under the initial service provider, and that service provider can no longer perform under that warranty?

So in conclusion, I do agree with Tom that in light of the newness of the industry and some of the unanswered questions, it behooves both regulators and the industry to have meetings and talk about concerns so there's ways for the best players in the industry to address those before they come up. But I don't think that it's only upon the consumer to make sure that the consumer is educating him or herself. It's also incumbent upon the industry to make sure that they're presenting this product and this long term investment just like a mortgage, in a way that makes sense, given the damages that could occur in the long run to consumers.

RICH SEDANO: OK, well, thanks for the opportunity, staff, to help out on this, and I had three points I wanted to make. The first one has been covered pretty well, and that's on standardization for things like disclosures. And the only couple of things I wanted to add to that is how important it is for the confidence of customers. I've been involved in regulation for a long time and watched energy efficiency grow, and there are all these different barriers that programs have to accomplish with energy efficiency. And one of them is just getting the customers to appreciate that this stuff actually works.

Now, this can be multiple times the amount of dollar investment, although there are some energy efficiency projects are $10,000 for a house, so we get up into that scale. And so I think, in order to achieve the consumer confidence that's necessary to, for example, meet the objectives of New York reforming the energy vision-- in which they want customer resources to be the principal resource for supplying the grid over the next decades-- or the California loading order, in order to meet a lot of social objectives consumer confidence is very, very important. And we should consider that with other big ticket items in homes, like heating systems for space and water, we leave the customer kind of out there, I think, in a lot of ways. When there's water on the floor or no heat in the winter, the customer is kind of out there. And so the potential for just letting the customer be out there is certainly, actually, the more likely outcome. It's actually very interesting that we're having this depth of conversation on this, and I guess I'm kind of hoping that maybe that will help splash back on some of the other big ticket energy items that customers can face.

The second thing I wanted to talk about was government operations. I worked in state government for a long time. I ran the agency the included both the consumer advocacy and the state energy office where I worked, and was deeply embedded in the public utility activities and worked with the Attorney General's Office on a lot of things. And as I was thinking about the invitation to come here, I realized the important synergies that all of the state agencies that have something to do with this really need to have in order for this to go well. The PUC is involved with establishing rates, with creating a stable regulatory environment so that even though we need to disclose the potential for government policy changing, we would rather it didn't change. And so it's important for the PUC to establish some backdrop of stable regulation for everyone to work in.

The Attorney General has the consumer protection, and as we heard from Ann, from Washington state, earlier, there is an important reason for them to be coordinated, and I appreciated what she had to say and support it. The State Energy Office Ann didn't mention, and the State Energy Office is an important place to validate information. Customers-- I talked about customer confidence. Having a trusted adviser, a place where a customer can go with an 800 number or to a website to get some sense of, what should I be hearing here in this conversation? What should I be looking for in these papers? Not just the sense that there's a lot papers and they're the same, which is useful-- standardization is very useful-- but to actually be able to go and get some of what you're hearing validated.

So the State Energy Office is a very important aspect to all of this. And returning to the Attorney General for a moment, during the period of time when we went to retail competition, or during the time when telecommunications was being deregulated, I recall that the National Association of Attorneys General were very helpful in picking out the critical things that states could do to assure that the transition that was underway was successful for consumers. And so guidelines that the National Association was able to produce I think were very helpful then, and I have the feeling that they'd be very helpful now. And in speaking with Tom in advance of this, he reminded me that there are licensing boards that govern the contractors and tradespeople involved in these things in states. And certainly, they should be part of the conversation to have a useful response from state government to this. I think from the FTC's perspective, I would just hope that they would be able to give support and comfort to good behavior at the states.

The last point I wanted to make has to do with the word prosumer. Earlier today, at various times, different speakers talked about production on site that was within the customer's usage, and at other times other people talked about the idea that customers should be able to be enabled to do whatever they want to do. I think where we're headed is the notion of a prosumer kind of blowing the doors off of a lot of people's conception of what customers are about, and that customers are going to want to do what they want to do. And if they want to produce three times, or four times, or 10 times their usage because they happen to have the capacity, both physically and financially to do that, I think it's going to be up to states who are interested in some of the priorities that I've talked about in New York and California to help them figure out how to do that. So the idea of getting rate design right-- and usually when I'm asked to talk about PV I'm asked to talk about rate design, so I'm happy that's not the feature of this. But I think as we get into the notion of prosumer, part of it is just getting out of the sense that we've had for the first 30 years of PV development, where it's incidental to the grid. It's as almost inconsequential to the grid. You won't even notice it on the grid.

Well, that's not happening anymore. Now it's an important resource on the grid, and for those states and utilities that choose to use it that way we're going to have to adapt to new expectations of customers and new regulatory forms that's going to change that. One final facet about that is that we're increasingly not going to be talking just about solar. We're going to be talking about customer services integrated that includes solar, and storage, and demand response, and energy efficiency, and other building services that are going to be serving customers' needs. And those kinds of things that are going to challenge us further, but I think increasingly that's where technology and where customers are going to want us to go. Thanks.

JONATHAN HILL: Thank you, everyone. We'd like to first of all start-- if anyone would like to respond to anything that they've heard so far, feel free. Yes, Tom?

TOM KIMBIS: You just, I think-- a couple of comments back to Shennan, I think they're very apt comments about what's happening in the Commonwealth. I just want to address a few different points because I think they have been perhaps misunderstood, especially in the media. One is having to do the UCC filings. There certainly have been a larger number of UCC filings increasing. The reason for that is because there's more solar systems going in.

What the UCC-1 filing does is, when you have a third party system, is it provides a public notice that the solar company owns a certain part of personal property on the house. So that way, Mr. Smith can't just turn around and sell the house to somebody else and represent that the solar system on top of his house is his own. This provides a public notice that there's a third party that owns that system that's on top of the house, whether it's a power purchase agreement or a lease. So it's actually not an encumbrance at all on real property.

However, since solar is new-- and a lot of the issues we deal with come down to solar is kind of new to many people and to many markets. It's not very well known by settlement attorneys or by realtors. So we actually have a member of our consumer protection committee who's going to be addressing the National Association of Realtors at their national conference in September. We're going to be speaking with the appraisers as well as a number of the different-- there's several different title company associations. Then, get kind of the word out about what the UCC-1 is.

So it only covers the solar equipment. It does not encumber the home. It does not create lien. It actually says in the UCC-1, this does not create a lien. So again, I think this is something that has to do partly with education, and a lot of it is up to us as an industry to work with the states that are out there and to work with the various different other industries that I mentioned that involve residential real estate to ensure they understand what the UCC-1 is intended to do in this situation. Second is just to Shennan's point about the new company. This is a tough one when you talk about warranties.

I think it's not something that's explicitly-- I don't have a great answer for this one. I don't think it's something that's exclusive to solar. If you're hiring a home contractor to put in your kitchen, as I did when I had a two-year-old and one on the way, and they wind up walking away halfway through the kitchen-- that's kind of my fault, it's kind of his fault, but I probably should have done a little more homework. It's hard when you have a newer industry like solar moving in to your area.

But again, this is why we really encourage in our consumer guide-- and we actually require all of our members to give out the residential guide, where it says to contact the Better Business Bureau, contact the state for licensing requirements. Ask for references and make sure that that company has not only done a good job in, say, doing an addition on the back of house, but actually has done good solar jobs. And that's, I think, the best we can do at this point in terms of having the consumer get as educated as they can through checking references.

And lastly, under the misuse of cards and the signatures, can you throw those guys in jail? Because we can't, but that's fraud. That's pure fraud, and they all deserve to go to jail, including the ones who take the ITC away and bury it in three point font at the bottom of the contract. So I think were in complete agreement on that.

SHENNAN KAVANAGH: Can I respond very briefly? Right, and starting with the latter point of the misuse of signatures, yes, that's fraud. And again, I want to emphasize that we see things come through our office when they're egregious, usually, and when something has gone wrong. So I'm not to suggest that every company is out there fraudulently using folks' signature. It's more to just raise the issue that this is something we've heard about that's been floating around.

Going back to the UCC filings, yeah, you know, I-- the UCC serves that purpose, right? To show that there's an ownership interest in the fixture on the property, and I understand what you're saying, Tom, that it's not, at least your representation, the industry's intention to put a lien on the property. But doesn't the UCC filing operate kind of as a de facto encumbrance on the property? Because anybody that's going to purchase-- be a subsequent purchaser of that property has to want to take on the solar panels and whenever remains on the lease or the financing agreement as part of that purchase of the property. And doesn't it then make it more difficult, in a free market, for a consumer to sell their home when it has a solar panel on it than when it does not?

TOM KIMBIS: So that's a good question. So I think taking it out of the legal construct and getting more into, well, this home has a leased solar system on it, and you're trying to sell it, and I'm trying to buy it. Am I interested in it? Partly what we see is that it's sort of a self selection. That I might not be interested in your home because it has a solar panel, or I might be very

interested in your home because it has a solar system on it. Just like if you're on the water or you're not on the water, or you're on a busy street or not a busy street.

But if it's a situation in which we actually, from [INAUDIBLE] or consumer protection committees [INAUDIBLE] represents such a high percentage, it's actually quite a rare instancr-- and rarer than I even throught-- where you have a seller and a buyer who agree on everything except for the fact that there is this lease up there. What happens in those instances? Well, there's a couple of options, and sometimes they're included in the actual contract itself.

One is, you can simply have-- the seller can just sort of buy out-- there's a financial way to do it where the seller could buy out the lease, essentially. It could be-- that could be paid by the seller or buyer. That's sort of just the market economics behind it. But we're seeing increasingly is that we want to make sure in that situation, rare as it is, that consumers are still happy about the transaction. So what we're seeing is a lot of the larger residential companies are actually giving you a couple options, including the ability to move the system to your new home for a relatively small fee. Some companies are charging as little as $300 to $500 to move the system within a certain radius. I don't know if it's 50 or 100 miles. It depends on the company.

But this is something where we need to kind of innovate as we come up against these issues that are kind of the exception rather than the rule, and find solutions. That's one of them, is this ability to kind of uproot the system and move it, because it will still function. That's what we've seen to date.

SHENNAN KAVANAGH: That's very interesting.

RICH SEDANO: So the one thing-- first of all, Tom's opening remarks were very compelling. But what I will say is that the amount of money coming into the industry is significant, and the amount of financial engineering that is distinguishing some of the participants is significant. And when we saw it 20 years ago with telecommunications and long distance providers is that we started getting away from innovators and into market share growers, and the tactics became more boiler room type tactics.

And so I guess what I want to says is, it's not a consumer risk that would be disclosed. This is a risk to overseers, regulators. That the risks, I think, as there's more money coming into this, as we see 100% percent growth year over year, is that the kinds of people who are coming in to fill that increasing market are not necessarily going to be exactly the same people, or like the same people that have been part of the initial growth. They're going to be financial engineers who are looking to financial engineer, and are not going to be taking such pride in the installations.

Now, perhaps they'll be driven out. Perhaps they'll be discouraged by the requirements, but I guess I'm forecasting that we're going to have to be keeping up with an increasing trend of people who are not going to necessarily be focusing on Shennan's concerns right off the bat. They're going to be focused on returns right off the bat.

TOM KIMBIS: And hopefully, those are the types of companies I think we see in other industries that fail, and fail quickly, because they're not--

RICH SEDANO: But the thing that you don't want to see happen, I suspect, is what did happen in telecommunications, which are these entities needing to get certified by states. You're not really interested in that. And the reason states want to do that is so they can throw them out, so they can do something to them once they do misbehave. You'd like to have them, I think, execute and not have to go through that.

JONATHAN HILL: I think the conversation demonstrates that there is-- these contracts in these sort of transactions are extremely complicated. And where are consumers supposed to go to get this type of information? How do they compare the offers that they're seeing [INAUDIBLE]? How do they educate themselves in the best decisions [INAUDIBLE]?

SHANNON BAKER-BRANSTETTER: Yeah, so I think there are great resources out there for finding out general information, and the kinds of things that people should think about. FTC, DOE's handouts, IRECs, as I mentioned. But I think to really get into the nuts and bolts of the solar offers and the contracts, I think that consumers are mainly relying on the solar companies themselves to answer questions about the contracts and to understand the different offers. And that's probably pretty problematic, because in addition to the outright fraudulent, or misrepresentation, or burying things in fine print-- I think those are the more egregious things that we all agree on shouldn't happen. But we spoke earlier, in earlier sessions, about the value of solar and who gets it, the utility or the consumer, and what is the value proposition for solar customers, and what are the cost shifts to non-solar customers.

But there's also the same thing a play about the value of solar between the solar provider, solar installer, and customers. So things like tax credits, things like RECs, and then of course the differential between the utility rates and the average rate that you'd be getting from the solar installation by generating the electrons yourself. So those three things aren't really that transparent for the most part. If you're buying a new kitchen there may be some things you don't really know. I don't really know how much time it takes to install something, so maybe the labor can be fudged a little bit. But people, I think, have a better sense of what the hardware that they're installing, and there aren't these other kind of abstracts incentives.

So that's, I think, why we really push for a disclosure that really list out these things in a uniform way, so that people really can compare them and know if they're missing out on a certain value. If they know that-- because they may not know what a REC is, and so they may not even know that they're signing away that value. So that way, I think it kind of evens the playing field between the solar installer and the customer.

RICH SEDANO: Well, I mentioned the state energy offices and I think, let's steal from the models from energy efficiency that we have, where we can create case studies that people can see themselves in the experiences of others, and where some of the most important variables can be included in a story that people can see. When I ran an energy office, we were the place to go for the admittedly prehistoric solar industry that existed at that time, but we were able to send people to trusted providers of solar services. And maybe that's more complicated now, but I think that we should all be reaching out to [INAUDIBLE], which I think is not here, to engage them on what their members can do.

HAMPTON NEWSOME: OK, we have about 20 minutes here so let's talk a little bit about deceptive claims out there, what people are seeing. This morning we talked a lot about energy savings claims. This idea that the solar seller is telling the customer, well, your energy costs are going to be going up this percentage over the next 10, 15 years. And that seems to be-- there's some concern about that. How common are those types of claims? How accurate are the ones that are being made out there? Is there a way to make that claim-- to substantiate it? Are there sources to do that? What can you guys say about that issue?

TOM KIMBIS: Well, I think when we put together-- just to start the discussion-- when we put together the Solar Business Code, Hampton, we were kind of confronting that issue. I don't know how prevalent the issue is in terms of inaccuracies, but I think one of the things we wanted to get to with this business code was to define the ways in which you should be able to show that number that you're providing as a company, to the consumer, where it came from, and make sure that it's from some established source. So we actually list sources in here. I mentioned earlier, but in the Department of Energy. We have in here the State Utility Commission, the EIA, a retail utility or electricity generation source servicing the system location, rate case filings, historical utility price data, industry experts or other qualified consultants. In which case, you need to explain where it's coming from.

So I think one way to get a little bit more transparent with the consumer is to say that, if you are making a claim about savings you have to put down how you made that calculation, and you have to not only show where the underlying data comes from, but also using a minimum number of years of projections. So you can't just do it based on one year projections. It's got minimum number of years in here. So that's one thing to at least get the conversation started.

SHANNON BAKER-BRANSTETTER: And I think those are all possibly legitimate sources, but I still go back to the need for it to be more uniform and less wiggle room, because those assumptions and those data can still provide wildly different underlying numbers. So I think that having some format, almost like a table of if utility rates go up 2%, you know, and then compare over the next five years, 10 years, 15 years, and then compare to your electric bill or your cost under your solar contract. So you're really comparing apples to apples.

How much would I be paying over the next 15 years under this scenario of electric rates? How much would I be paying for solar energy for the next 15 years under these assumptions? And have those assumptions the same across disclosures and, that way, you can really compare different solar offers. And it should be specific to your utility. Not generic for the state or the region, but for your utility.

HAMPTON NEWSOME: Are there any other common types of claims that are being made out there that warrant discussion that have come on anybody's radar that they're concerned about?

RICH SEDANO: One issue, Hampton, relates to shared renewables. I want to say community solar, except that term seems to have been hijacked by everybody else who wants it to mean whatever they want it to mean. So I'm just going to say shared renewables, generally, presents distinct issues for customers, because now they are trying to understand a financial transaction and how the utility is going to treat them. And I think at this point we have, for example, the

Minnesota shared renewables program in which, in many cases, the renewables never actually make it to the community because it gets taken up by large corporations looking for sustainable-- accomplishing sustainable goals and take up all the capacity. So I think there is some general complaints about this reaching average individuals. The original virtual net metering was for average individuals and, increasingly, that's challenging for them.

ROBERT MARGOLIS: Sorry, so I would say that another area that there can be some confusion is around SRECs, and particularly if you sell your SRECs, can you claim that you have solar? Or what's the value of those SRECs? We see that, for example, here in DC where SRECs have a very high value. And I have a friend who got quotes here DC, one in which they sold the SRECs as part of the package and they got a price that was a third of what it would be if they wanted to keep the system with the SRECs. And the reality is maybe that would've been the better thing for them to do, to try to sell the SRECs on their own but, again, it's confusing.

So now she's going to get a system, sell the SRECs, can she say she has green energy or not in her home? So what the value is for them, how they're sort of presented to the consumer when you sell them, if you don't tell them, how can you actually sell them, those types of things. What value do they have, and how should they be incorporated sort of the sales process is an area of potential confusion.

HAMPTON NEWSOME: Is there-- does anyone have any suggestions for-- and this came up earlier, about how it's unlikely the average consumer understands what a REC is. Is there any talk of ways to clarify that to consumers? Is it relevant to all consumers in these transactions? Is it different if I'm putting solar on top of my house versus, say, I'm entering into a community solar arrangement? Does that make a difference in terms of what I need to know about RECs?

RICH SEDANO: Well, Hampton, one idea about that is this case study idea. If we produce some case studies of people who have either kept the RECs or sold the RECs and put some words around that to explain what that means, then you have a page or two page thing that you can give to a customer that puts it in context. Because it is a pretty abstract concept, and yet in my experience in social and entitlement programs, people figure out a lot of very complicated thing very successfully if it means money or other objectives for them. So I think we can help them do that.

TOM KIMBIS: I would add, too, Hampton, we confronted this issue, too, as an industry, and in putting together a business code one thing we require all of our member companies to do is, we state that RECs are a material term in any contract. Now, not every state has a REC market, so it's not going to apply everywhere. But where does apply, we make it clear that-- and state, right in here-- that many consumers are unfamiliar with SRECs, or RECs, and their characteristics. And so if you're in a state in which a REC market exists, the company must take steps to educate the consumer about the RECs, providing the consumer with a copy or link to the CRS publication, which is the best one we've found out there.

CRS is a nonprofit, and they work very diligently in the SREC market to explain how exactly SRECs work, and how they can double counted, et cetera. So rather than reinventing the wheel, we worked with them. So our companies have to provide a copy of that guide, and then if an

agreement assigns the RECs to a company instead of to a consumer, which might happen in a contract, the company has to explain that the consumer no longer has the right to trade or sell the REC, and tells them a little bit about something that's very dear to your heart, Hampton, I know, which is the green guides, and that they can't talk about the fact that they're generating clean energy or green energy anymore, et cetera.

HAMPTON NEWSOME: OK, before-- in a second we'll get into the role of state agencies, and also the efforts by industry on codes of conduct and that kind of thing. Before we do, does anybody have anything else on advertising claims and potential deceptive claims out there?

TOM KIMBIS: Just one more that we see quite often is free. It drives me nuts. We get a flyer in the mail, it will say free solar-- a free solar system. That's a violation, in almost every instance, of our code, and we will go after those folks if they're SEIA members, to warn them and potentially take action against them. The only way in which you can say that you're getting free solar system is, essentially, if the person has won it, as in, like, a lottery, and you're just giving it away. But if you're giving them a free hardware-- if you're giving them hardware that you're not charging them for, but they have to enter into a lease, or a PPA, or some other arrangement, that's not free. So that's something we found to be very common across states, Massachusetts to California, and we've been trying to crack down on that one.

JONATHAN HILL: We know that when consumers run into issues with their solar contracts and their solar providers, they can go to state AG's or the FTC for enforcement of unfair and deceptive acts and practices, the laws that we've heard about SEIA's consumer dispute resolution mechanism. My question is, what is the sort of appropriate balance for these types of remedies, and are these tools sufficient to address consumer issues in the solar industry, or is there something else that's needed?

SHENNAN KAVANAGH: I think, if I understand your question, it really depends on the nature of the issue. So if it's an extreme circumstance where a company has failed, it's very difficult, even with enforcement power or investigatory power, to make consumers whole in that circumstance. In Massachusetts, we do have a home improvement contractors fund that registered home improvement contractors-- and that does include solar installation companies-- have to put into when they register. And if a consumer gets a judgment against a company, and attempt to collect from that company, and the company is judgment-proof or defunct, then that consumer can make a claim up to $10,000 to the guarantee fund as a backstop. Because it's very difficult-- in those circumstances you have to look at issues of, if the business is defunct, of principal liability or piercing the corporate veil to be able to get money back for consumers if they've already paid out of pocket.

And, in addition, a lot of the consumers may have ongoing financial obligations to a third party finance company that may not have been part of the alleged unlawful conduct. So what happens when those obligations are still arising every month, but somebody only has two solar panels out of 20 installed in their home, and they're not getting the services? So those are very tricky situations on the worst case scenario end. On the best case scenario end, coordinating with industry members and trying to take a preemptive approach to any problems that are of concern,

that we hear come through our office, is the best approach, in order to hopefully prevent those problems from happening to begin with.

Understanding more about the industries and looking at bad players obviously helps educate our office in terms of knowing what types of issues to keep our eyes open for. And I think most state regulators have a division in their office that's the outward facing division that will take the consumer complaints coming in off the ground, and when there's kind of a one off situation, work with-- in an advocacy, in an assistance role-- work with that individual company to try to resolve those one off issues.

RICH SEDANO: Is your staffing enough to do what you have to do now?

SHENNAN KAVANAGH: Say again?

RICH SEDANO: Is your staffing enough to do what you're doing now? I mean, you're keeping up?

SHENNAN KAVANAGH: It's, you know-- right, well, there's a lot of consumer protection issues that come through our office, so solar is just one of many. Certainly, I do have to say we have to pick and choose our enforcement actions based on the contact and level of harm. Our outward facing consumer assistance unit does an incredible job with working with individuals to try to get them resolutions, but it requires industry to also want to work towards a resolution. So that all depends, again-- to answer John's question-- on the nature of the issue itself and the player involved.

TOM KIMBIS: And I think, just to quickly follow up on that, I think I see the role of SEIA as not going after real hard criminals, but instead some of, maybe, the smaller issues. That maybe there's not enough bandwidth within the state. We've had some states who are just-- not Massachusetts-- we've had some states that are not as familiar, don't have as big of a market, refer complaints over to us for resolution.

I think the best thing that we can try to do as an industry is-- the kind of prophylactic sids-- is through education. It's making sure that our companies understand what they should and shouldn't be doing. And to the extent we can partner, with as we are, with the Better Business Bureau and the NAACP, getting the message out there to consumers about what they should do to prepare themselves to avoid getting into misunderstandings, so that we don't have as many disputes coming through the system. So that states that are going through battles over budget have to allocate precious FTEs-- nobody wants to hire an extra FTE to deal just with solar. So instead, I think it's our role-- I see our role as being mostly on the front end. And then to the extent we can help, if there's something to offload we can try to do that on the back end for smaller issues.

SHANNON BAKER-BRANSTETTER: Just one other thing. So I think that some of the gaps in consumer protection on solar probably are general consumer protection gaps. Lack of funding for AG's offices, or lack of just protections in general, either by statute or common law. And then, while I think it's admirable that SEIA is trying to self police and trying to get their numbers to do

a good job on the front end-- that's really, I think, very important-- in terms of consumer compensation for when something does go wrong there's not a mechanism for doing that. And also, a lot of states now have pretty tight limits on small claims court.

Some states it's only like $2,000 or $3,000 that can be recovered in small claims court, and some solar contracts also require consumers to go to mandatory binding arbitration. So there are-- but again, that's not unique to solar, but there are limited recourses for consumers, and so state enforcement and strong consumer protection laws generally are just really important in this area. And FTC enforcement is just really important in this area because there's not much of a back stop otherwise.

HAMPTON NEWSOME: Well, we'll go ahead and wrap it up there, three minutes early. We also-- we're going to stick up here while Pat Schultheiss comes and gives the closing remarks, but I want to thank-- on behalf of Jonathon and myself I want to thank you guys. It was a very interesting panel, thanks.

[APPLAUSE]

PAT SCHULTHEISS: Are these on? Yeah, I guess they are. Hi, thanks, Hampton. I'm Pat Schultheiss, and I am an attorney in the Office of Policy Planning. I just want-- this is going to be quick. I want to thank you all for coming today. I'm not going to keep you long because I know you either have flights, or trains, or some way to get home, and I don't really have anything more of substance to add to what has been a full day of excellent presentations and discussion. But we do want to close by thanking those who made this workshop possible.

First, we want to thank our panelists and speakers. For those of you who don't know, as a government agency we cannot pay honoraria or travel expenses, for that matter, to speakers when we put together a program like this. So we are really appreciative of all the speakers who came here today and generously shared their time and expertise with all of us. And I want to thank you on behalf of the FTC and all the workshop team. We'd also like to take the opportunity to acknowledge the enthusiasm, dedication, and hard work of all the FTC staff who helped to make this workshop success. As some of you know, it takes a lot of people to put on a workshop like this and today's was no exception.

Although we can't begin to thank everyone by name who has contributed to this effort, we'd like to recognize those who have provided significant support and help. First, we'd like to thank Chairwoman Ramirez, who has been supportive of this project from the very beginning, and who actually arranged her schedule today so that she would be here to open the workshop this morning. We'd also like to give a special thanks Marina Lao the director of OPP, the Office of Policy Planning, who really had the original idea for a project on rooftop solar, which eventually led to the decision to organize this workshop. We all greatly appreciated her leadership, enthusiasm, and active participation in all aspects of putting together this workshop, so thank you, Marina.

The two attorneys who were the co-leaders of the workshop team also deserves special recognition, Derek Moore and John Cecil. Their hard work, substantive knowledge, and team

leadership really brought this workshop from an idea to a reality. Additionally, we want to thank the core workshop team who helped organize the workshop, Ellen Connelly from the Office of Policy Planning, Mark Hegedus and Jonathan Hill from the Office of the General Counsel, Jim Mongoven and Brian Telpner from the Bureau of Competition, Hampton Newsome from the Bureau of Consumer Protection, Larry Schumann from the Bureau of Economics, John Hilke, who was a former FTC economist, wo continues to share his expertise in electricity markets with us as an economic consultant, and Jade Eaton, who is an attorney for the DOJ's antitrust division.

We'd also like to thank Henry Su, the chairwoman's attorney adviser, who actually worked very closely with us on this workshop from the very beginning. And I guess I should mention that I was also a member of this team, and I'd like to thank the rest of the team for allowing me to be a part of it because I really didn't know that much about this industry. I'm relatively new to this industry, and they let me be a part of it and learn the industry as we went along. So thank you, guys. We'd also like to thank the following senior managers for supporting this project, including providing key staff and helpful feedback during the planning stages. Debbie Fienstein, the director of the Bureau of Competition, Jessica Rich, the director of the Bureau of Consumer Protection, Ginger Jin, the director of the Bureau of Economics. and Dave Shonka, acting general counsel.

I'd also like to personally give a shout out to Carol Reynolds who is an attorney in BCP, who provided important feedback and guidance throughout the planning process and many of the consumer protection issues. And then critical, of course, to the success of any project is the work of the support staff, and I'm pleased that, as an agency, we have a very good practice of thanking those who helped make the magic happen. Those who made significant contributions include Chris Brian and Waleed Abbasi from the Office of Policy Planning, Teresa, AKA TJ, Peeler and Nathan Luskey from the Division of Consumer Business Education who designed the logo, the web page, the agenda, and all the other workshop materials you've seen, Fawn Bouchard and Crystal Peters from our events staff, who helped with everything, Brandon Miles, who worked on helping them get us set up in the room, Michael Bumfiss, who helped us with security, Bruce Jennings, James Murry, and Glen Savoy, who ensured early on that our technology needs were anticipated, and ensured that everything ran today as smoothly as possible, Frank Dorman and Peter Kaplan from the Office of Public Affairs, Tara Koslov from the Office of Policy Planning and Richard Custard from the Office of Public Affairs, who did all the tweeting for the workshop today.

And finally, I want to thank the group of wonderful volunteers who helped with the various, on site logistics today. That's Esther Lee, Oren Vitenson Taylor Becker, Martin Sicilian, Taylor Nafisi, and Vinayak Balasubramanian. I apologize. And they were here all day. They helped us-- all of them helped us in various capacities throughout the day. And as someone whose last name is often mispronounced, I sincerely apologize if I just mispronounced somebody's name, which I suspect I did. And finally, I just want to remind you that the public comment period will remain open until August 22ed of this year, and we will welcome your comments. And the webcast transcripts and speaker presentations will go up on the web event page soon, and the public comments will also be posted. Again, thank you all for attending and have safe travels home. Thank you.
[APPLAUSE]